

STRAIGHT LINES

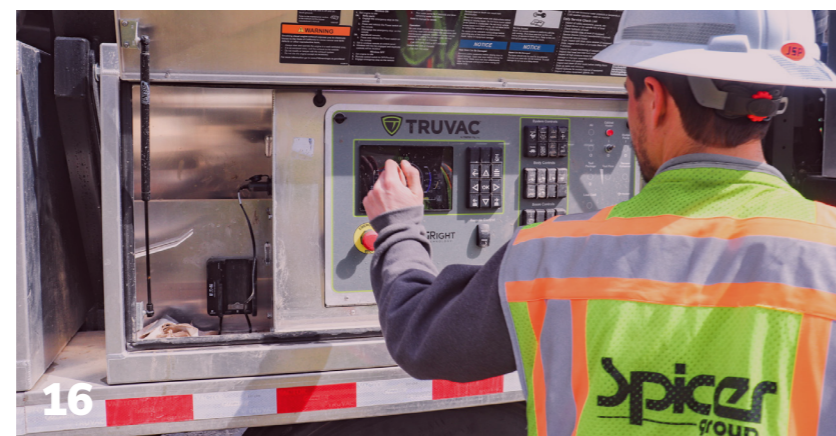
Spring 2022



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Cover Photo: Little Tobacco River Intercounty Drain Culvert Installation | Clare, MI



NEW

HIRES

ETHEN BEAVER

Ethen was recently hired as a Survey Technician in the Survey Service Group in our Atlanta, Georgia office. He was previously employed by Forsyth County government.

BRIDGET BRENNAN

Bridget recently joined our Applied Technologies Service Group in our Lansing office as a Project Assistant. She earned her associate degree from Lansing Community College in Business with Travel and Tourism.

LUCAS CAMPEAU

Lucas was recently hired as a Design Engineer in the Structural Service Group in our St. Johns office. He recently graduated from the University of Michigan with a bachelor's degree in Civil Engineering.

KAYLA COPPINGER

Kayla was recently hired in our Municipal Service Group in our Saginaw office as a Project Assistant. She earned her bachelor's degree in Marketing, Management, and Advertising from Northwood University.

MICHAEL COURNEY

Michael was recently hired in as a CAD Technician in the Water Resources Service Group in our Saginaw office. He is currently attending Mott Community College for his associate degree in CAD and Design.

LOGAN DRAKE-SOLTES

Logan was recently hired as a Survey Technician in the Survey Service Group in our Manistee office. He earned his associate degree in Arts from West Shore Community College, an associate degree in Surveying Technology, and his bachelor's degree in Surveying Engineering from Ferris State University.

CLIFTON EGGERS

Clifton recently joined our Survey Service Group in our Atlanta, Georgia office as a Survey Crew Chief. He graduated from Texas A&M University with a bachelor's degree in Science Engineering Technology.

DAMIAN GITCHELL

Damian was recently hired as a Survey Technician in our Survey Service Group in our Saginaw office. He graduated from Delta College with an associate degree in Science and attended Averill Career and Opportunity Center in Saginaw for Engineering and AutoCAD.

AUSTIN KRAUSE

Austin recently joined our Survey Service Group as a Survey Technician in our Saginaw office. He was previously employed as a commercial diver in Germany and graduated from CDA Technical Institute in Jacksonville, Florida in the air mixed gas commercial diver program.

TYLER PIGGOTT

Tyler was recently hired as a Survey Technician in our Survey Service Group in our St. Johns office. He earned his associate degree in Criminal Justice from Lansing Community College and is an ASE certified technician.

MATTHEW SCHWALENBERG, P.E.

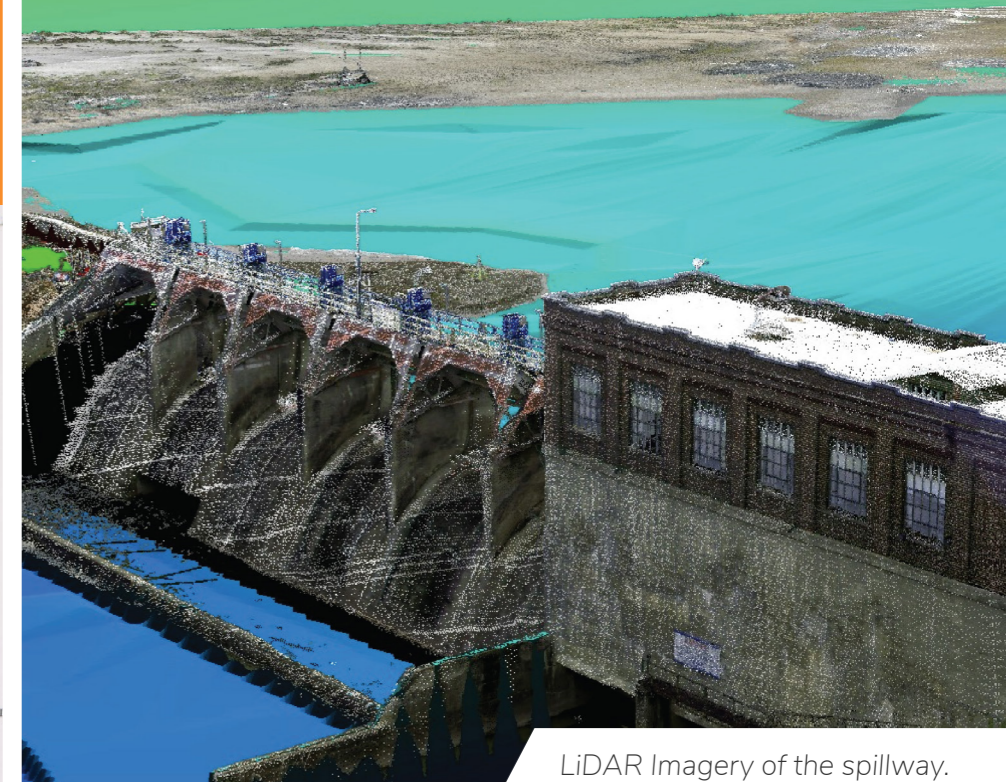
Matthew recently joined our Planning Service Group in our Traverse City office as a Project Engineer. He earned his bachelor's degree in Environmental Engineering from the University of Wisconsin – Platteville. He is a member of ASCE (American Society of Civil Engineers) and AWWA (American Water Works Association).

SURVEYING SERVICES

Used at Sanford and Edenville Dams Receive ACEC Award



Pictured from left to right: Casey Bierlein, P.S. (Spicer Group), Ron Hansen, P.E., P.S., Vice President (Spicer Group), David Kepler, President of FLTF, and Brian Boals, P.E., Senior Project Manager (Spicer Group).



LiDAR Imagery of the spillway.

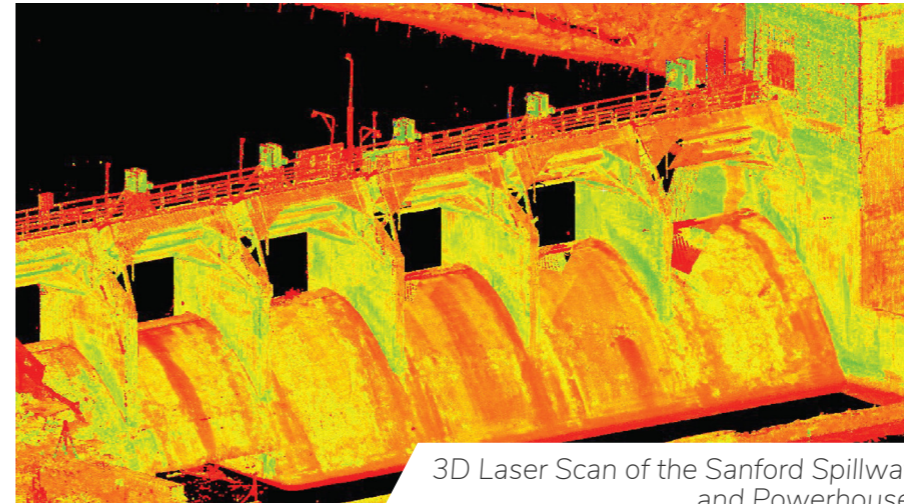
SPICER GROUP AND FOUR LAKES TASK FORCE were recently presented with the Surveying Honorable Conceptor Award by the American Council of Engineering Companies of Michigan at the ACEC/M Engineering & Surveying Excellence Awards Gala in Plymouth, MI. This awards program recognizes engineering and surveying firms for projects that demonstrate an exceptional degree of innovation, complexity, and value.

Spicer Group and FLTF were given the award for the ongoing surveying services including the use of both traditional and cutting-edge remote sensing technology. These services are key in helping engineers design and reconstruct the damaged Sanford and Edenville Dams, bringing back Sanford and Wixom Lakes, and implementing earth stabilization work and prioritizing problem areas.

In 2018, Spicer Group was hired by FLTF to perform various surveying services to help alleviate bank erosion and collapsing seawalls along the shores of Sanford Lake, Wixom Lake, Secord Lake, and Smallwood Lake. These lakes were formed by the construction of dams along the Tittabawassee and Tobacco Rivers in Midland and Gladwin Counties. Combined, the surface area of all lakes when at full pool is 5,424 acres, and there are approximately 6,255 residences along the shoreline of the lakes.



Partially demolished spillway at Edenville Dam.



3D Laser Scan of the Sanford Spillway and Powerhouse.

In May of 2020, Midland and Gladwin counties were hit with several days of severe weather that included record rainfall which caused the Edenville and Sanford dams to fail. This caused major flooding to surrounding landowners upstream and downstream of the dams as well as severe damage to the Smallwood and Secord dams. Hundreds of businesses and residential properties in Gladwin, Midland, and Saginaw counties suffered major flood damage estimated at \$200 million. This amount does not include the cost to repair the dams, which is currently estimated to be around \$250 million.

The lakes have a direct impact on the local economy. Before the dams failed, the lakes were heavily used by recreation enthusiasts for a variety of purposes—boating and fishing being two key ones. Local restaurants, gas stations, bait shops, grocery stores, and retail shops depend on the yearly wave of

**SPICER GROUP'S ROLE
ON THIS PROJECT IS
KEY IN RESTORING THE
LAKES TO HELP THE
REGION THRIVE AGAIN.**



visitors to the lakes to sustain their businesses. An economic impact assessment completed by Public Sector Consultants Inc. in 2013 for the Sanford Lake Association and Sanford Lake Preservation Association noted that Sanford Lake alone is responsible for nearly \$4 million in spending in the region. The floods have had a devastating effect on those local businesses and spending in the region. Spicer Group's role in this project is key in restoring the lakes to help the region thrive again.

As instructed by FLTF, Spicer Group's survey team shifted its responsibility to supporting the design teams during various design tasks that now focus on the restoration and reconstruction of the failed dams. Spicer Group's survey services continues to support the FLTF's design initiatives by combining cutting-edge technologies with traditional surveying methods to produce accurate and complete datasets to support the engineering tasks for the FLTF team.

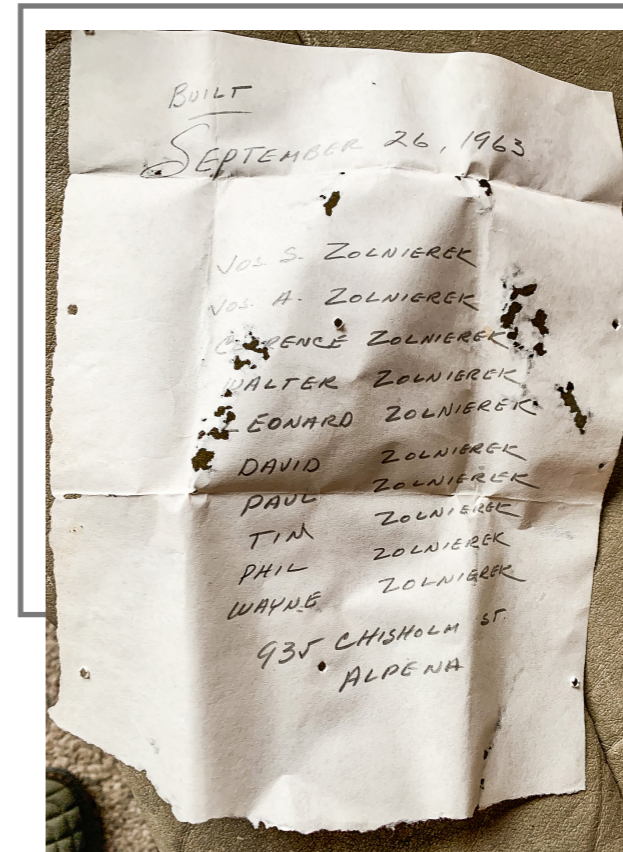
Airborne LiDAR, UAV-based LiDAR and imagery, single and multibeam sonar, 3D laser scanning, precision monitoring, and conventional surveying were all used to capture high-resolution data. This data supports the complete short and long-term engineering and construction needs of the project team to help restore the four lakes to their prior state for everyone to enjoy in a sustainable way for many years into the future.





ZOLNIERЕК RETIRES FROM SPICER GROUP

While recently remodeling an old family cabin near Alpena, former Spicer Group Principal Wayne Zolnierек, P.E., found a note buried behind a wall he was tearing down. Handwritten names of several family members including his father, uncles, and even himself were on the piece of paper. Zolnierек was three years old when that note was written.



“My dad wrote down the names of everyone who helped hand-build that family cabin and stashed it behind a wall before covering it,” Zolnierек said. “It’s been there ever since. That was 59 years ago and was my first official construction project.”

From then on, his passion for the construction trade became a key ingredient to his successful professional career and recent well-deserved retirement from Spicer Group.

“Ever since I can remember, I’ve been involved with some type of construction,” Zolnierек said. “My dad and my uncles taught me a lot about the technical details of carpentry and the importance of doing stuff right.”

After Zolnierек graduated from Eisenhower High School in Saginaw, he started his own licensed construction business named craftily as Wayne Zolnierек Construction, which he still holds the license for today. He focused primarily on residential remodeling. In 1978 he enrolled at Delta College where he took several pre-engineering classes and graduated with an associate’s degree in science. He continued his own business while working with Carl Zimmerman Builders for nearly nine years.



At the age of 27, Zolnierек went to work for a large construction company in Grand Rapids, building very expensive homes for lucrative customers. An on-the-job disagreement with a licensed engineer about a particular construction task led him to seek more knowledge about the trade.

“I was taught a certain way on how to do certain construction-related tasks and I was confident in my abilities,” Zolnierек said. “One of the licensed engineers on the job site said what I was doing was wrong. I disagreed with him. But he was able to prove me wrong, and he showed me why.”

That moment sparked a yearning for a more technical understanding of construction. He decided to leave the construction business temporarily and enrolled in Michigan State University’s engineering program in 1989. He saved almost enough money during previous years to allow him to not have to work while attending class before graduating in 1991 with a Bachelor of Science degree in Civil Engineering.

With a newly-trained brain in the construction trade and a better understanding of the technical aspects of how structural components work together, Zolnierек was hot to find a job where he could design and construct commercial buildings.

A job fair led him to an interview with current Spicer Group principal Larry Protasiewicz, P.E. Shortly after, he found himself working for recently retired and former principal Mark Latsch, P.E. He spent those early years at Spicer Group doing bridge inspections—not exactly what he planned.

“I only planned on being here for four years while attaining my professional engineer license,” Zolnierек said.

But then he began designing roads with Merlyn Luoma and eventually managing the construction of those roads. He also attained his Michigan professional engineering license, which took him five years.

“Back then we had three construction inspectors,” Zolnierек said. “Now we have 27. I think we had 35 employees total at the company. Now, we are pushing 280.”

Zolnierек went from designing roads and inspecting construction projects to growing the Construction Service Group at Spicer Group. He played a major role in forging new relationships, establishing the department, and kick-starting a working relationship with the Michigan Department of Transportation.

“We got our first MDOT contract in 1999,” Zolnierек said. “We began with them by providing as-needed inspection services for the Bay City TSC. Ever since, we have been doing our best to provide the best services for them and all of our clients to ensure projects get built according to specifications.”

Zolnierек became an Associate at Spicer in 2000, a Senior Associate in 2002, a Shareholder in 2004, and a Principal in 2006. Throughout his time in the office and in the field, Zolnierек focused significantly on ensuring his staff understood both the importance of projects getting built correctly and understanding how much clients rely on Spicer Group to make sure things get done right. It can be agreed upon by most that just about any construction project that Spicer Group was responsible for overseeing over the last 30 years most likely had Zolnierек’s eyes on it at some level.

“Things are different now,” Zolnierек said. “A while back, everything was designed by hand, now it’s all computerized. But we still have to go out in the field and make sure jobs are being done right. We still have to work with contractors, and we still have to hold ourselves accountable.”

He said being outside and working alongside his staff and construction crews are what he’s going to miss the most. Zolnierек was fortunate enough to meet a lot of people and work on a lot of interesting projects.



“One of my most memorable projects was the 102-inch concrete pipe we put down Weiss Street in the City of Saginaw with Dan’s Excavating and Champagne and Marx,” Zolnierек said. “I got to work closely with the late Saginaw County Road Commissioner Walt Wendling.”

Zolnierек said that as much as he loves his job and Spicer Group, it was time to start spending more time with his family and doing more of what he does on the side—fishing and hunting. Like many other recently retired successful leaders, Zolnierек experienced the ups and downs of a growing company and the effects an unstable economy can have on a business.

But, whatever traits he learned from his father and uncles beginning way back when he was three can surely be attributed to his successful legacy he left behind at Spicer Group. Spicer Group’s Construction Service Group owes a lot of its success and growth to the hard work of Zolnierек.

Thank you, Wayne, for your dedicated efforts and hard work in making Spicer Group the great company it is today.



BEDFORD TOWNSHIP WASTEWATER TREATMENT PLANT

Gets Updates, Improvements, Expansion to Services

MONROE COUNTY - For half a century, the Bedford Township Wastewater Treatment Plant (WWTP) has been turning wastewater from Monroe County businesses and homes into clean water for its customers. The plant, located on LaVoy Road, is large enough to process more than 13 million gallons of wastewater per day and is operated by the Monroe County Drain Commissioner (MCDC) with funding supplied by users in Bedford Township.

Built in the early 1970s, much of the treatment plant has been maintained and upgraded in the past five decades. Some of the original equipment and processes, however, have continued to be in operation since the plant's opening day.

"We had a few items of the original equipment from when the plant was constructed," David Thompson, the Monroe County Drain Commissioner, said. "Throughout the years, we've had excellent staff at the wastewater treatment plant, and they have

maintained everything so well. We were able to get quite a bit of life past the expected life span because things were so well taken care of."

Spicer Group has been assisting Monroe County and the Bedford Township Wastewater Treatment Plant facility with improvements, maintenance, and equipment replacement projects for ten years. In 2015, Spicer Group completed an asset management plan for the wastewater collection system and WWTP which identified numerous capital improvements that needed to be addressed for the plant to continue providing its service.

After completing the asset management plan, Monroe County was approved for a \$17 million State of Michigan Revolving Fund loan to complete an overall comprehensive project that included 25 system additions, replacements, and improvements at the WWTP and three sanitary sewer pump stations.



“
THE UV PROCESS ELIMINATES THE NEED FOR WWTP STAFF TO HANDLE DANGEROUS CHLORINE GAS, RESULTING IN A SAFER WORK ENVIRONMENT. IT ALSO ELIMINATES POTENTIALLY HARMFUL DISINFECTION BYPRODUCTS REDUCING THE ENVIRONMENTAL IMPACT.

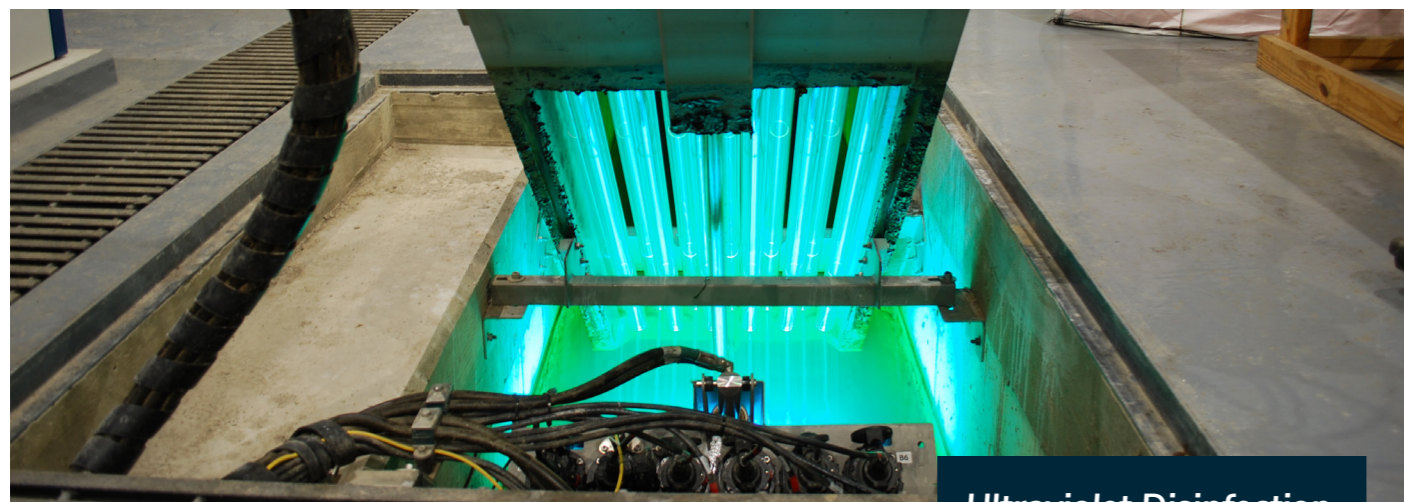
- Phil Westmoreland, P.E., Spicer Group Principal ”

At the WWTP, these comprehensive improvement projects took place within seven buildings, updated 16 processes, and added eight new processes. The improvements extended the useful life of the plant by another 50-100 years, ensuring safe and efficient infrastructure for providing a public service.

The improvements included the installation of completely new processes such as an ultraviolet (UV) disinfection, a final effluent water system, and a sludge dewatering press. Improvements were also made to existing plant processes such as the secondary clarifier brush system, reconfiguration of the plant drain, installation of energy-saving variable frequency drives (VFDs) on new and existing pumps, and isolating slide gates in the influent wet well channels. Equipment at the end of its useful life was also replaced, such as the primary sludge pumps, digester gas equipment, and heat exchangers.

Architectural improvements made to the plant included remodeling and adding to the administration building, a locker room addition, and blower sound attenuation. The new ultraviolet disinfection installed replaced the plant's former process of injecting chlorine gas into the effluent as a final step to creating clean water. The UV disinfectant process uses nothing but ultraviolet lamps that are submerged in the effluent. This UV light instantaneously neutralizes any microorganisms in the water.

“UV has been successfully used to disinfect drinking water and wastewater for many years,” Spicer Group Principal Phil Westmoreland, P.E., said. “The UV process eliminates the need for WWTP staff to handle dangerous chlorine gas, resulting in a safer work environment. It also eliminates potentially harmful disinfection byproducts, reducing the environmental impact.”



Ultraviolet Disinfection

Thompson said he was “very excited” about replacing the chlorine disinfection process at the plant.

“We are moving away from very dangerous chlorine gas cylinders on-site and moving to a more environmentally friendly method for disinfection,” he said. “I think this is a great step towards the future.”

Another new process installed was the sludge dewatering press system. This press reduces the liquid in the waste by using compression pressure on the liquid, turning it into a dry dirt composition rather than the liquid sludge the plant previously produced.

The resulting solids “cake” is stored on a 10,000 square foot concrete pad where it continues to dewater until it is time to remove it and be hauled away.

“When all is said and done, the plant staff will not be maintaining and repairing old equipment. This will allow them to focus on other aspects of the collection system and plant and enable them to use their time more efficiently,” Spicer Group Project Manager Tracy Anderson, P.E. said.

Once the design was complete, bidding was advertised and awarded to Heaney General Contracting, Inc., based in Ypsilanti, as the general construction contractor. The improvement projects were set on a schedule that would allow the contractor's construction crews to work around the plant's operation, as the plant had to remain in operation while construction was happening. The improvements made and equipment selected to replace systems or add to the plant and wastewater infrastructure with this project lessened the impact the plant has on the environment by improving the overall energy efficiency of the plant, use of less environmentally harmful processes within the plant, and reducing the amount of waste product the plant produces. Wherever possible, energy-efficient equipment was installed when replacing equipment or installing new equipment within the wastewater treatment plant and at the improved pump stations.

With the replacement of aged, inefficient equipment and systems, the plant will realize enough energy savings to counter the additional energy use from the UV disinfection. Chemical costs will be reduced by 10% per year, and the water savings from the use of the final effluent water will reduce potable water usage from South County Water System.

Spicer Group was responsible for all the design, survey, bidding assistance, construction administration, inspection, and coordination on this project.

Sludge Dewatering

Press System



Drinking Water Infrastructure Management in the Village of St. Charles

For over 100 years, the Village of St. Charles has provided drinking water to its residents.

Like many communities in the region, the Village began with wooden water pipes. Upgrades, improvements, and additions have taken place since then and now the Village provides drinking water services to more than 860 customers, including residents, businesses, schools, municipal buildings, and an assisted living facility.

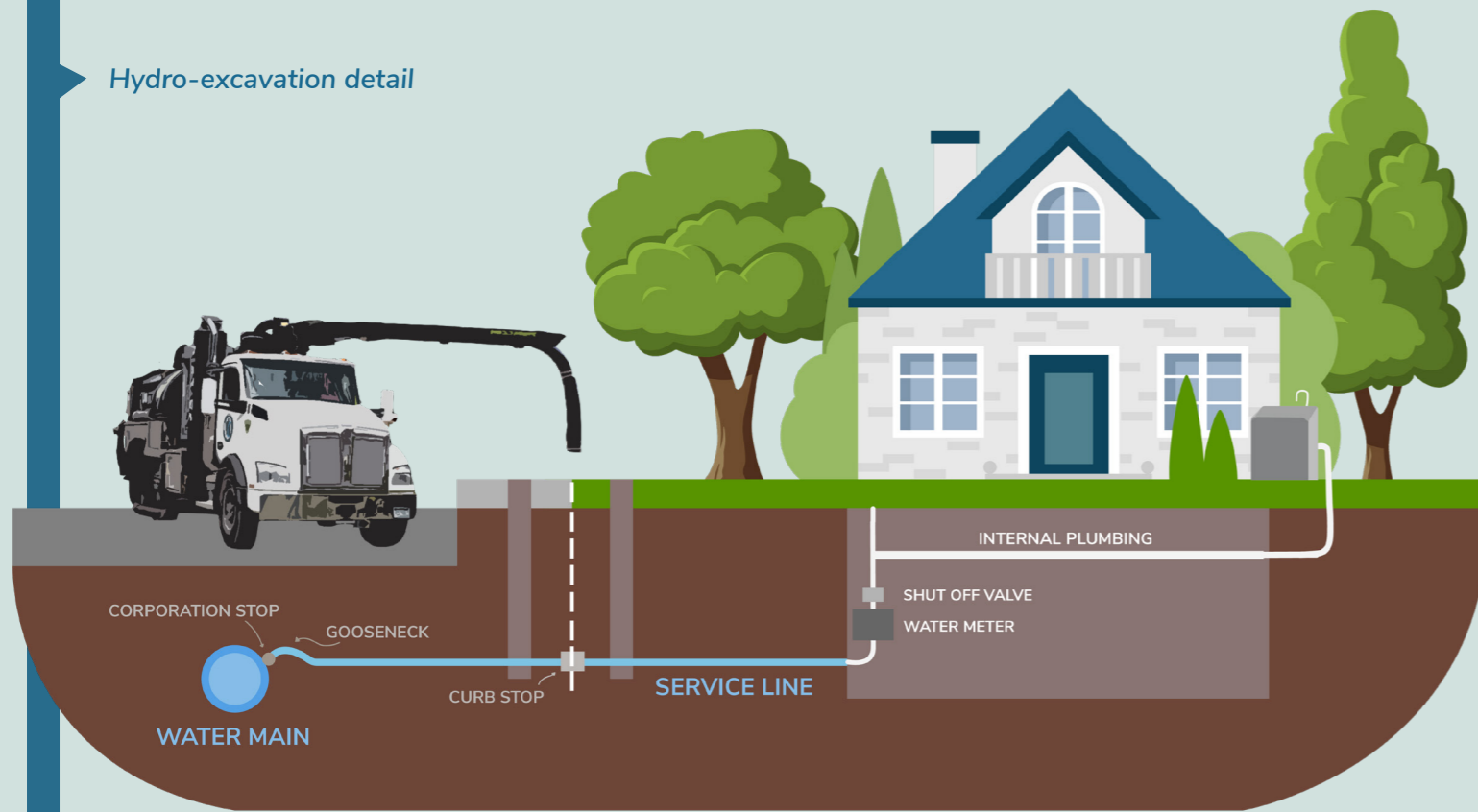
“It is a very important service – probably the most important service that we provide,” St. Charles Village Manager Hartmann Aue said.

Now, the Village’s water distribution system includes 19 miles of water main and a 250,000-gallon water tank. Portions of the water system that were built in the 1920s remain in operation today and in 2019, the Village began working with Spicer Group to develop an asset management plan for the entire system to continue to provide a high level of service, comply with new regulations from the State of Michigan, and replace any lead service lines within the system.



Neil Noack (right) overseeing the hydro-excavation process as the existing water service is being exposed for verification.

Hydro-excavation detail



New state regulations enhanced drinking water requirements and mandated the removal and replacement of lead service lines in all municipalities. In 2020, the state announced grants and loans available through the Michigan Clean Water Plan for communities to assist with projects needed to comply with these new state regulations.

Spicer Group assisted the Village with applying for this grant money and the Village was awarded \$397,000 to develop a drinking water asset management plan.

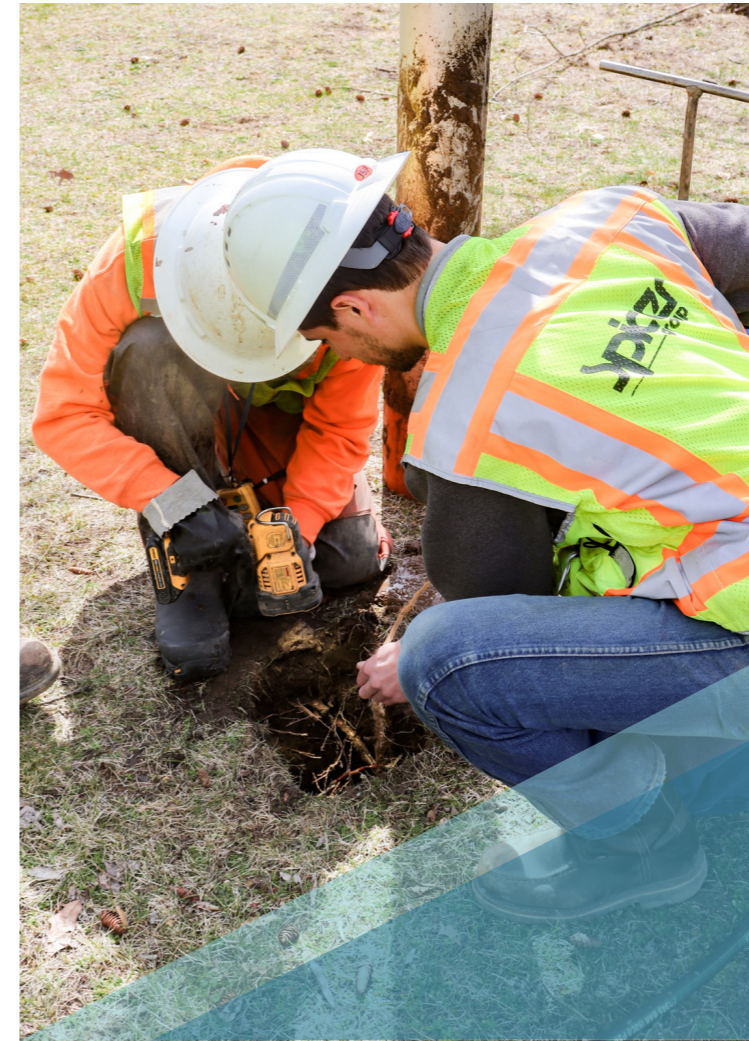
“We’d had success with grants in the past, so it was something the Village jumped on as soon as we saw it,” Aue said. “Without this funding, the Village probably would not have been able to comply with the lead and copper rule of having our distribution service materials inventoried by 2025 as required. It is very costly and would’ve been a huge burden on the Village and the taxpayers.”

With the Drinking Water Asset Management (DWAM) funding in place, one of the first steps in the Village’s grant project was to inventory 20

percent of the water services used to connect to residences and conduct a materials inventory on these assets. Determining the location and type of materials used in these assets allows the Village to build the state-required database. Spicer Group designed a project that would both meet these requirements and be minimally invasive to residents.

For this portion of the project, Spicer Group inspectors worked with a contractor and Village staff to find and verify the location and material used in the drinking water services at three locations at residences – the public and private side of the water shutoff valve at the right-of-way, and the connection inside the residence.

The Village and Spicer Group chose to use the method of hydro-excavation to verify the water service materials. Hydro-excavation is the process of removing soil with pressurized water and vacuum suction. The soil is removed and transferred into a debris tank. This process is less intrusive and has less impact on the surrounding area.



“With this process, there isn’t a large piece of equipment like an excavator or backhoe digging and tearing in the earth. This process works well around existing utilities,” Spicer Group Project Engineer Mitch Jacquain, E.I.T., said. “The overall impact is a lot smaller than what it would be to go out and conventionally excavate.

For this project, Spicer Group created a digital form using Survey123 that an inspector would fill out at each location while the work was being done, tracking the service materials, and capturing photos of the service once they are exposed and identified. St. Charles has been using this, along with the data-driving application Field Maps, side-by-side to

complete the objectives outlined by the DWAM Grant. Using Field Maps allows the Village to map water shut-off locations and enter the water services data into their GIS system.

Uploading to the Village’s GIS system creates visuals that show and analyze which areas may have high concentrations of galvanized or lead lines. The Village will continue to utilize this method to advance its asset inventory until they have reached a complete distribution system materials inventory (CDSMI) by January 2025 as outlined by EGLE.

“This provides us the opportunity to start planning on how we’re going to move forward with the other parts of the lead and copper rule, which is replacing the lead service lines,” Aue said. “This also fits into the big picture plan of replacing decades-old water mains within our overall water system improvement plan. It is a very important piece of the puzzle.”

THIS ALSO FITS INTO THE BIG PICTURE PLAN OF REPLACING DECADES-OLD WATER MAINS WITHIN OUR OVERALL WATER SYSTEM IMPROVEMENT PLAN. IT IS A VERY IMPORTANT PIECE OF THE PUZZLE.

Hartmann Aue
St. Charles Village Manager

For the rest of the year, Spicer Group will use this information and continue to collect more data on the Village’s drinking water system, including infrastructure condition and risk assessment, to develop the Village’s drinking water asset management plan.

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