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**MDOT**

## I-94 Connor to 8-Mile Rehabilitation Project

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MACOMB COUNTY, MI



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### CWSRF & DWRP – Oscoda Charter Township

ROWE helps Oscoda Charter Township battle PFAS ground water contamination.



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### ALS's Involvement in Solar Energy Projects

Air-Land Surveys has been involved with the design and construction of wind and solar farms across the upper midwest.



Replaced the existing HMA pavement



Construction Improvements to the drainage infrastructure



Improved safety for the motoring public

**5.6**

**Miles of Freeway**

**Innovation Led to**

**1/2 in.**

**Asphalt Increase**

**50%**

**Concrete Pavement Repair Increase**



**On Budget**



## I-94 Connor to 8-Mile Rehabilitation Project

### Project Objective

To replace the existing HMA pavement, condition the existing concrete base, make improvements to the drainage infrastructure, and install new pavement markings. ROWE's main goal was to improve the overall infrastructure while maximizing the quality of our service, increasing the materials used for the freeway, and improving safety for the motoring public.

### About the Project

In early March, ROWE was awarded the I-94 - Connor to 8 Mile rehabilitation project. The project encompassed approximately 5.61 miles of freeway along with all the entrance and exit ramps. The road was in desperate need of care due to the years of pavement deterioration that was repaired with cold patching and crack sealing.

To start, ROWE's team reviewed the plans to identify any potential complications or opportunities in which additional resources may be needed or reallocated. From our detailed analysis of the planned quantities, we were able to increase the number of concrete repairs by 50%, creating a better base for the proposed hot mix asphalt. In addition, we were able to increase the thickness of the asphalt by a 1/2 inch over the whole job, while keeping the project within budget.

The first step of this project was to complete full depth concrete pavement repair. After the concrete repairs were completed, the HMA surface was removed from the existing concrete base. When the concrete was exposed, our team of engineers and inspectors thoroughly analyzed the condition of the existing concrete and identified areas where additional repairs called "Detail 7 Repairs"

would be needed. Detail 7 Repairs consist of removing narrow sections of delaminated pavement and replacing it with new HMA. This was done to make sure there was a solid and smooth base for the new HMA to be placed on with the goal of increasing the longevity of the new pavement. When HMA is being placed, high impact vibratory rollers, set to an amplitude of 10-12 impacts per foot, are used to compact the HMA, create a smooth driving surface and to eliminate harmonics in the HMA. Harmonics are eliminated to be less of a distraction to motorists and improve safety.

When we spoke with the Project Engineer Mike Royalty, PE a Senior Associate and Senior Project Manager with ROWE about this project, he remarked, “It’s a good feeling improving this stretch of roadway – especially from a safety and quality standpoint. It’s very fulfilling to use our experience to improve the safety of this area as much as possible. This is a heavily used stretch of freeway that is close to the boarder and it is one of the first things that Canadian citizens see and I take pride in the fact that they will be seeing a fresh and smooth pavement surface.

For worker safety and for the safety of the motoring public, we were able to close the entire freeway on 14 separate weekends. Having the freeway closed significantly increased the contractor’s efficiency, allowing the project to be completed with less lane closure days than would have typically been needed had we used standard lane closure through the work zone.”

### Obstacles

With the size of this project, the motoring public, and the amount of people working on it, there were major obstacles that needed special attention. The biggest obstacle was implementing proper traffic control measures while ensuring safety of the motoring public and the safety of the construction team. Speaking with Mike Royalty about these obstacles, he stated, “When the road is partially open and you’re in the work-zone where the shoulders are narrow and there are a lot of curves – there’s little room for error. We noticed drivers on their phones, driving over the speed limit, and not paying attention. This causes crashes and sometimes, fatalities. To mitigate and overcome these obstacles, we put together traffic control schemes to reduce the anticipated work-zone backups. This was an important step because roughly 60% of all work-zone fatalities happen in the queue (where people are stopped and waiting). We mitigated this by closure of ramps and freeways, detouring people to different freeways and other major highways.

### Conclusion

With quality and the safety of the team put first, there were a few nights in which the project was temporarily halted. However, even with these minor setbacks the team was able to complete the I-94 - Connor to 8 Mile project by mid-October; on time and under budget while exceeding the expectations of the client who made statements such as “A job well done! Looking forward to the next one (with ROWE)!”

## Construction Photos





Water main extension project



\$2 million dollar construction cost



Construction will start in September 2021



## Clean Water State Revolving Fund & DWRF

On June 30, 1993 Wurtsmith Air force Base, which played an important role in World War II, Vietnam, and the Persian Gulf War, was closed and parts of the air base were transferred and transformed for various community needs. In mid-March of 2010, almost 17 years after its closure, residents and The Michigan Department of Environment, Great Lakes, and Energy (EGLE) obtained shocking information about escalated PFAS concentrations located throughout Oscoda Charter Township. The highest concentrations were found where areas of the Air Force Base previously existed. More studies then discovered that these PFAS chemicals contaminated parts of Oscoda’s drinking water.

PFAS also known as per- and polyfluoroalkyl substances, are a group of man-made chemicals that includes PFOA, PFOS, GenX, and more. What makes PFAS dangerous is that certain PFAS can accumulate and stay in the human body for long periods of time (EPA.GOV). Studies have shown that PFOA and PFOS can cause reproductive and developmental, liver, kidney, and immunological effects in laboratory animals. These chemicals have also been shown to cause cancer, low infant birth weights, and thyroid hormone disruption. It was later concluded that much of the PFAS came from deicing agents use throughout the base and since this discovery, Oscoda has been working with the Air Force to clean the contaminated water and protect its residents. Unfortunately, years of treatment and negotiations with the Air Force have been very costly for Oscoda Charter Township and they needed to seek outside help.

In 2019, ROWE was called to assist Oscoda Charter Township in locating all funding to address their PFAS contamination. ROWE was able to identify and obtain two funding sources for Oscoda Charter Township: Drinking Water State Revolving Fund (DWRF) and United States Department of Agriculture-Rural Development (USDARD). To start, ROWE assessed the requirements of the

**Studies discovered that these PFAS chemicals contaminated parts of Oscoda’s drinking water.**

**ROWE played a major role in helping to find funding for this project.**

DWRF and Emergency Community Water Assistance Grants (ECWAG). After a lengthy review process in early November, and all the requirements were deliberated, ROWE started the process of putting the applications together.

What made the process for these applications challenging, was that ROWE had to show that other alternatives had been evaluated before applying for the loan and grant. Alternatives such as water source options and the long-term effects of doing nothing, were included in the analysis. Furthermore, the collection, compiling, and reporting of the comprehensive data regarding demographics and the economic conditions of the township had to be completed before their tentative deadline in late May (DWRF) and September (ECWAG).

To complicate things further, in mid-March, ROWE was hit with another obstacle: the economic shutdown due to COVID-19. This made communication scarce and put everything on pause as the whole world attempted to figure out their next step. Eager to complete the applications on time for the client, ROWE used a mixture of conference calls, online sources, and innovative techniques to continue gathering data, while keeping in contact with the township. In early April, due to Oscoda's well-kept documentation and the information collected by the Census, ROWE's team determined that Oscoda Charter Township qualified as a disadvantaged community. Being a disadvantaged community granted Oscoda Charter Township more points and increased their chances of being awarded the loan and significant loan forgiveness. Shortly after in June, ROWE reviewed the preliminary documents with EGLE and the township, and held a public hearing with the township via Zoom to ensure that all requirements for these applications were met.

On July 1st, ROWE successfully completed and submitted the application to the state. Currently, Oscoda Township has been tentatively awarded the loan and EGLE is going through their final review for the DWRF. The ECWAG application process is still pending approval. As of October, ROWE has started finalizing project designs and construction oversight will start June of 2021, on a 2-million-dollar water main extension project for Oscoda Charter Township.

### **Clean Water State Revolving Fund (CWSRF)**

Concurrently with the DWRF, ROWE worked on obtaining CWSRF funding for Oscoda Charter Township. The CWSRF is a federal-state partnership that provides communities low-cost financing for a wide range of wastewater infrastructure projects. The process for this application is very similar to the DWRF, but the information pulled together is related to sewer collection pipes and pump stations instead of drinking water.

In late May, ROWE attended the public hearing, scheduled on the same day at the same venue as the DWRF public hearing. The CWSRF was submitted in mid-July and Oscoda Charter Township has been tentatively awarded the funds. In addition to this, Oscoda was granted principal forgiveness over the life of this 30-year loan. Oscoda plans to use this funding to make improvements to their pump stations and potentially to their sanitary lagoon sewer system infrastructure.

### **2021 Construction**

ROWE is completing designs for Oscoda Charter Township and the construction is set to begin in September 2021. The total cost for these upgrades will be approximately 2 million dollars. To learn more about how ROWE can help you, contact Rick A. Freeman, P.E Principal/Vice President.

# AIR-LAND SURVEYS



Solar Power  
Energy



Wind Power  
Energy



Hydropower  
Energy



## ALS's Involvement in Solar Energy Projects

### Overview

The race to convert to alternative energy sources and reduce our carbon footprint is increasing in importance and in production, year over year. In a recent article by Solar Power World, 85.7% of the new U.S. electrical generating capacity added during the first two months of 2020, was provided by solar, wind, and hydropower energies.<sup>1</sup> Furthermore, experts are stating that renewable energy will increase 50% over the next few years.<sup>2</sup> As our nation continues to explore and invest in alternative forms of energy, so does the demand for aerial services regarding alternative energy projects. Many companies are now using aerial services to inspect and monitor turbines or solar panels, which can improve safety, quality, and be more efficient. Understanding the need of our clients, Air-Land Surveys has evolved to serve our clients' most challenging needs.

### Project Services

Over the past few years Air-Land Surveys has been involved with the design and construction of wind and solar farms across, but not limited to, the upper Midwest. Air-Land Survey has been providing aerial imagery, airborne LiDAR, UAV services, digital planimetric and topographic mapping as well as digital orthophotography for projects ranging in size from single parcels to hundreds of square miles. In the event that it is required, additional ground survey services have been provided to ensure every project requirement can be fulfilled.

### Common Scope of Work

Normally once the project limits are identified, an aerial flight plan is established to cover the project area in the most efficient way possible. Air-Land Surveys

**85.7%**  
**Of the new  
U.S. electrical  
generating  
capacity added  
during the first 2  
months of 2020  
was by renewable  
energy**

**50%**  
**Renewable  
energy increase  
over the next  
few years**

uses two imagery platforms which include fixed wing aircraft as well as UAV's. Depending upon the size and scope of the project, airborne LiDAR can also be acquired to gather vertical data for a large area in a short period of time. Once the imagery and LiDAR data are acquired, survey ground control is added to the workflow to establish a controlled aerial solution. Planimetric and topographic data can then be derived from the aerial imagery as well as geometrically corrected digital orthophotography. These powerful tools are then used by the design engineers for layout and construction of the wind or solar farm.

## Statement About Alternative Energy Projects

We recently spoke with Denny Sauers, Jr., Senior Project Manager, about his thoughts regarding aerial solutions for our clients. He said, "Air-Land Surveys is proud to assist in the development and construction of a variety of wind and solar farms across our great country. Through our innovation as a company, we are constantly identifying new ways to provide our clients with the best and most accurate data, while helping them mitigate unforeseen or potential injuries. We believe that it is important to continue to look for different ways to produce alternative forms of energy and we at Air-Land Surveys are thankful for the opportunity to lend our expertise to aid in the progression of these projects."

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<sup>1</sup>- Pickerel, K. (2020, April 21). U.S. renewable energy additions completely overwhelm those by natural gas in first months of 2020. Retrieved from Solar Power World: <https://www.solarpowerworldonline.com/2020/04/u-s-renewable-energy-additions-completely-overwhelm-those-by-natural-gas-in-first-months-of-2020/>

<sup>2</sup>- Ambrose, J. (2019, October 21). Renewable energy to expand by 50% in next five years - report. Retrieved from The Guardian: <https://www.theguardian.com/environment/2019/oct/21/renewable-energy-to-expand-by-50-in-next-five-years-report>



## Mundy Township Parks

5

5-Year Parks & Recreation Plan

\$

\$2 Million Dollar Project



Miracle League Baseball Field



## Mundy Township Park

### Project Overview

ROWE worked with the township to help them establish their 5-Year Parks and Recreation Plan recently. The recreation plan included a concept layout for development of a 100-acre vacant parcel the township owns on Hill Road behind the frontage parcels. The 100-acre parcel was not marketable as a viable tax generating developable parcel for a variety of reasons, so the township decided to convert it to a park for their residents. ROWE helped the township by developing cost estimating, providing assistance with the bonding process, and writing a Michigan Department of Natural Resources Trust Fund (MDNRTF) grant application to fund a portion of the \$2 million project.

### Project Details

The park project was phased into two parts due to available funding. The first phase was funded bond funds and included the infrastructure portion of the park. A 340-parking space parking lot was installed along with approximately 1,500 feet of storm sewer, 1,000 feet of public water main, an entrance drive, overhead lighting, a sledding hill, and stormwater management. The second phase consisted of the successful MDNRTF grant items of the project. This included a 10-foot-wide asphalt trail that starts at the parking lot and flows around the perimeter of the 100-acre picturesque park and stretches for approximately 2 miles. The construction of the infrastructure and trail has recently been completed.

In the future, the park will be developed with active and passive recreation

**1,500**  
Feet of Storm Sewer

**340**  
Parking Spaces

**1,000**  
Feet of Water Main

**100**  
Acre Park



in mind. One of the next phases of the park is a Miracle League baseball field. This is a special field for mentally and mobility impaired persons. The field will be much smaller than a regular sized field and will have a special surface that enables better traction and includes a rubberized field. There are no other Miracle League fields within 30 miles of this proposed field, so it is needed regionally. Another MDNRTF grant application will be submitted to assist with funding.

We reached out to Chad Young, Township Manager, Charter Township of Mundy and this is what he had to say about the project, “The board devoted a great deal of time and energy into figuring out how we could improve the quality of life for our residents. When we started to conceptualize the park project, we needed to ensure that the park was an asset that could be used by not only Mundy Township but all of Genesee County. To make this possible, we paved wider trails, provided plenty of parking for everyone, and we will be adding restrooms. The park provides a lovely place to allow our communities to come together and enjoy a purpose-built park regardless of demographic or ability, which is crucial during these unprecedented times. A unique and important feature of the park is that it provides a dedicated barrier-free athletic field that can be used by anyone from youth on up. This field will serve as the future home for the Miracle League of Greater Flint, which is a fantastic organization with a remarkable cause.”

### **About the Miracle league**

The Miracle League eliminates potential barriers that could keep children with mental and physical disabilities off the field and lets them experience the joy of America’s favorite pastime, baseball. To eliminate barriers for the league’s members, the Miracle League teams play on a custom-designed, rubberized turf field that accommodates wheelchairs and other assertive devices while helping to prevent injuries. Setting baseball aside, there’s much more to the league. The league helps build new friendships, self-esteem, and creates mutual respect amongst all athletes. To learn more about the Miracle League,

**Link:** <https://www.miracleleague.com/about-2/>



USDA



Perform all  
Cadastral Surveying



Creating a  
Control Map



Surveying Services  
to be completed in  
January



## Cadastral Surveying for United States Forest Service (USFS) – Huron National Forest

### Delineation of the Huron Manistee Forest

On August 1, 2020 ROWE partnered with J. Card Surveying on a five-year cadastral surveying contract for the United States Forest Service (USFS). The project site is located in the Huron National Forest which spans approximately 437,000 acres (approximately 685 square miles). ROWE's portion of the project for the first year is to delineate and post 11.3 miles of new boundary line, 0.75 miles of previously posted line that shall be reposted, 0.75 miles of previously posted boundary line that needs to be corrected, and .075 miles of previous posted line that shall be maintained for property boundaries adjacent to other land. In early October, ROWE began the control work to complete all tasks described above.

### The Process

Collaborating with J. Card Surveying, ROWE agreed to perform all cadastral surveying work excluding the final staking, for the first year. To start, ROWE reviewed deeds and historical survey information and began the Public Land Survey System (PLSS) control measurements to monuments required to retrace the USFS boundaries. A monument is a permanent marker that is set by a land surveyor to mark or reference a point on a property. In the Public Land Survey System, every section of land has eight corners on the exterior and there is also a 'center of section'. These corners are the controlling corners for all the properties within that section and are very important.

Next, the survey team will witness the controlling PLSS monuments required to delineate the property. This is done by locating key monuments and finding

**437,000**  
Acres of forest

**11.3**  
Miles of new  
boundary line

**5**  
Year contract

**685**  
Square miles

witnesses to the monument. The surveyor's field notes will describe what was used for the witness and a bearing and distance to the object from the monument. In the event a monument is ever disturbed by activities such as logging or road construction, the monument witnesses help to reestablish the position of the monument. These witnesses could be a nail in a power pole, a large oak tree, a maple tree, corner of a signpost, building corner foundation, or something that can be identifiable and measurable if you need to reestablish the monument.

When marking boundary lines, the survey team used Carsonite composite posts that are set approximately every 200 feet. These posts are flexible and mainly made up of fiberglass and are planted in the ground using a special tool. The survey team will then place a USFS boundary sticker on these posts to delineate the boundary line. Also used to delineate a USFS boundary line is quarter face blaze on USFS trees within 3 to 4 feet of the surveyed line. For the quartered blaze, a surveyor uses an axe to take off the first surface of bark and the first layer of soft tissue. The quartered area is typically 5 to 6 inches long and 3 to 4 inches wide and can sometimes be scribed. The blaze process does not affect the tree because it only takes the bark and the first layer of soft tissue off the tree. Blazing the tree is also a more useful way of marking the tree because it will last longer than the oil-based paint and provides a clearer indication of the boundary line.

Currently, ROWE's survey team is creating a Control Map that will be submitted for approval by USFS. A control map for this project contains the public land survey measurements of the area worked on. This map is used for reporting/delineating the boundaries of the subject parcel and possibly the adjacent boundaries if needed. Once approved, J. Card Surveying will do the final staking and the project will be completed. The first year of surveying services, is set to be completed in mid-January.

### **Why Were We Chosen?**

With the stakes high and the competition fierce, we asked project manager, Cole Sorenson, why he thought we were awarded the 5-year subbing contract. Cole stated, "With our experience in the type of work needed, the proximity of our surveying crew, and our involvement within the surrounding communities, ROWE was able to build a comprehensive resume that made us the right candidate for J. Card Surveying." Cole followed this statement with "I'm really happy that we were awarded this contract and it's a great opportunity for ROWE and J. Card Surveying to combine their know-how and resources on this project to provide the USFS a quality product for years to come."





Zoning Ordinances



Transportation Plans



Economic Development Planning



## Planning Department – Zoning Administration

### Overview

ROWE’s Planning Department provides zoning administration services for communities of different populations with tailored scopes of service. The title Zoning Administrator refers to the main person in charge of enforcing a community’s Zoning Ordinance. This can be a very busy/diverse job which includes conducting pre-application meetings/inquires; issuing enforcement violations or investigating complaints; reviewing zoning permits, sign permits, site plan reviews, and variance applications; preparing public notices; and providing staff support to the Planning Commission and Zoning Board of Appeals. ROWE Planners have Zoning Administration Certifications through Michigan State University Planning & Zoning Center and our qualified staff has a depth of planning knowledge due to the diversity of rural, suburban, and urban clients we work with on a weekly basis. We also help clients with projects like text amendments to their zoning ordinance, master plan updates, and five-year reviews as part of our zoning administration contracts.

ROWE commonly works with community staff to help coordinate, process, and complete various tasks. Our level of involvement in day-to-day business can vary greatly depending on the community. We can work remotely in many cases with municipal staff sending applications to us via mail or email. Another more involved option is for our staff to have floating office hours; where, when need, we reserve time weekly to be at the municipal office in person. For some clients, we have established days/hours where we work at the municipal office to meet with the staff and the public. As with all

**The title Zoning Administrator refers to the main person in charge of enforcing a community’s Zoning Ordinance.**

**Please call us today to discuss our Zoning Administration services.**

**(800) 837-9131**

our community planning services, we are happy to work with each client to develop a scope of services that best meets your specific needs. Please call us today to discuss our Zoning Administration services.

## Feedback

*"It has been an excellent decision to take the City of Lapeer Planning Department in the direction we did several years ago. The City of Lapeer had the unique situation of the retirement of our City Planner at the same time our Assistant Planner took a position with another community leaving our Planning Department without any kind of an official planner. I immediately looked to our long-time engineering partner through the Planning Department, Rowe Professional Services, to provide the City of Lapeer support as needed. This quickly evolved into an annual contract with Rowe Professional Services to become the City of Lapeer's certified professional planner. We have been operating this contract on an hourly basis which has saved the City of Lapeer a significant amount of money. One of the most obvious benefits of this agreement is that Rowe Professional Services is a large company with many skilled people working for it. If we need help with planning-related items, Rowe has a deep bench of experts to look to for advice and help. One of the best decisions I have made in my 25 years as a City Manager."*

City of Lapeer

– Dale Kerbyson, City Manager

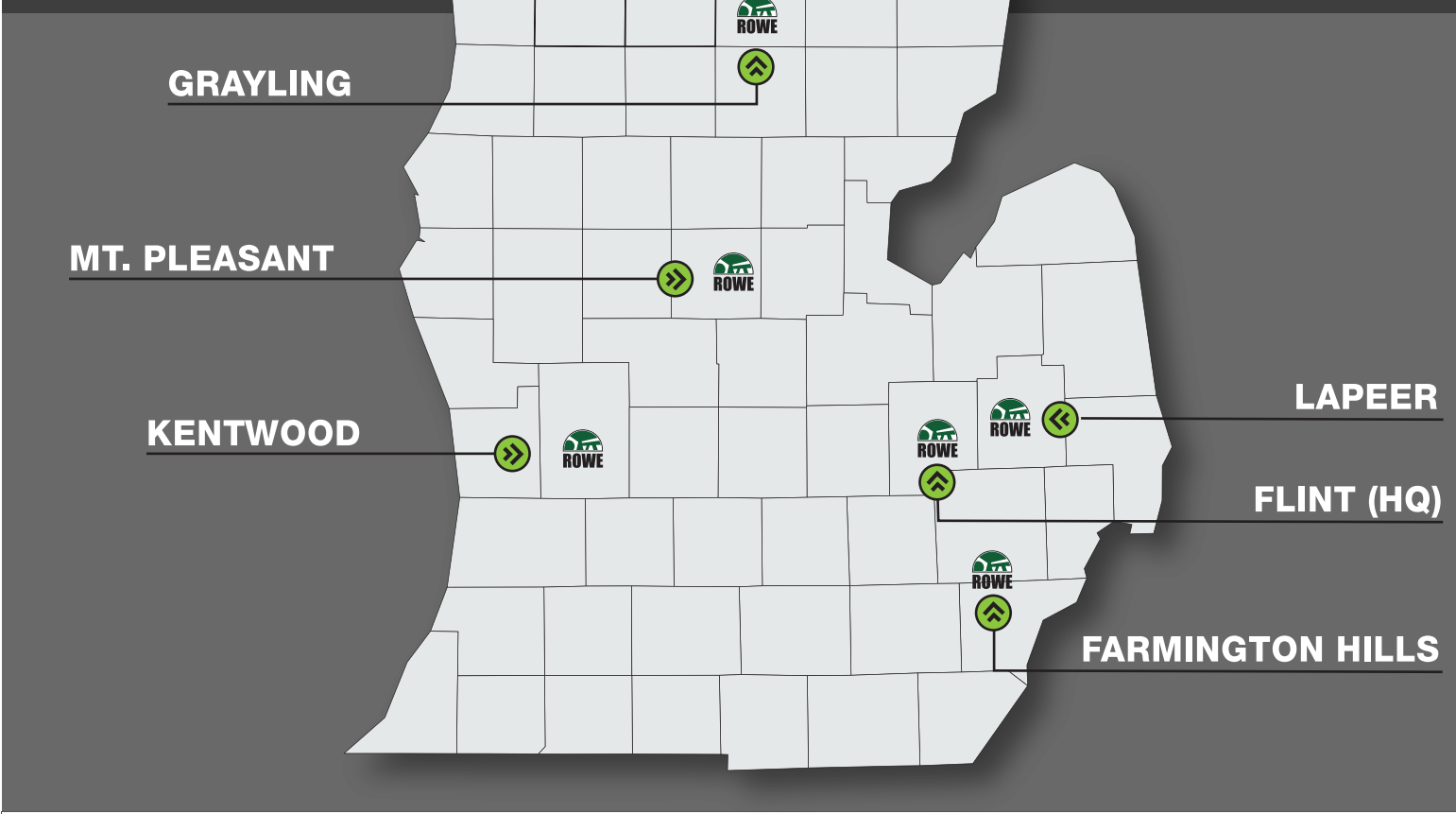
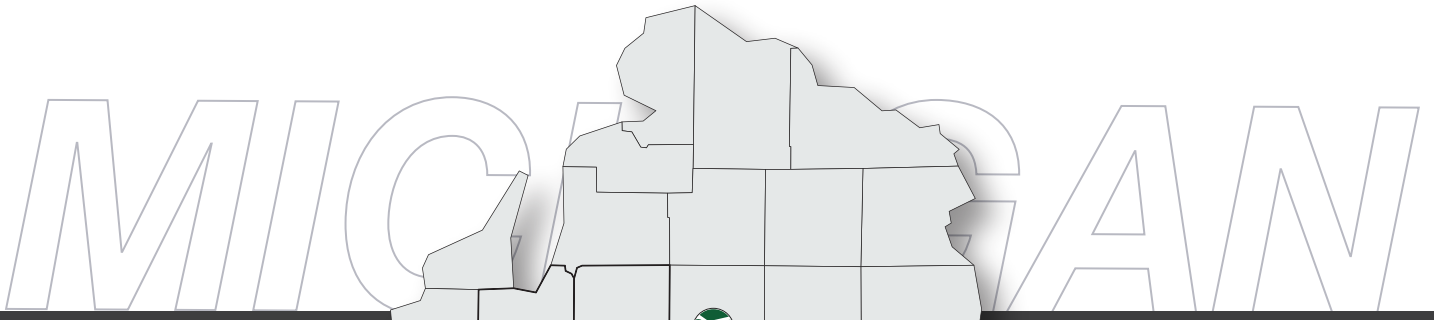
## ROWE Office Update Kentwood, MI

Since opening its Kentwood office in the summer of 2019, ROWE Professional Services Company has enjoyed continued growth and expansion within the West Michigan marketplace. Despite the challenges brought on during 2020, ROWE has continued to work with our clients, responding to the ever-evolving business climate and specific market needs.

Our staff of three has blossomed into a team of more than 15 employees and we now have doubled the physical size of our Kentwood office. The growth of this office allows us to provide additional space, staff, and resources within the greater Grand Rapids market. In addition to this, our West Michigan footprint has continued to experience growth in the civil engineering, surveying, transportation, landscape architecture, aerial photogrammetry, and construction services fields.

As we have for almost 60 years, ROWE will continue to focus on our clients' needs. In 2021, ROWE will continue this tradition of a client focused approach aimed at helping deliver successful projects.





MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

## New Funding Opportunities MI Clean Water Plan

For details about the grants, please contact your ROWE Project Manager, or the website at: [https://www.michigan.gov/egle/0,9429,7-135-3307\\_3515---,00.html](https://www.michigan.gov/egle/0,9429,7-135-3307_3515---,00.html)

### Scan

For interactive links / information,



## ROWE Office Locations

- |           |  |            |   |
|-----------|--|------------|---|
| <b>1.</b> | <b>Flint, MI</b> 540 S. Saginaw Street, Suite 200 48502<br>Tel: 810.341.7500 Fax: 810.341.7573   | <b>2.</b>  | <b>Kentwood, MI</b> 4345 44th Street SE, Suite A 49512<br>Tel: 616.272.7125 Fax: 800.974.1704                   |
| <b>3.</b> | <b>Lapeer, MI</b> 128 N. Saginaw Street 48446<br>Tel: 810.664.9411 Fax: 810.664.3451             | <b>4.</b>  | <b>Farmington Hills, MI</b> 27280 Haggerty Road, Suite C-2 48331<br>Tel: 248.675.1096 Fax: 800.974.1704         |
| <b>5.</b> | <b>Grayling, MI</b> 2342 Industrial Street, Suite A 49738<br>Tel: 989.348.4036 Fax: 989.348.5416 | <b>6.</b>  | <b>Mt. Pleasant, MI</b> 127 S. Main Street 48858<br>Tel: 989.772.2138 Fax: 989.773.7757                         |
| <b>7.</b> | <b>Myrtle Beach, SC</b> 511 Broadway Street 29577<br>Tel: 843.444.1020 Fax: 843.448.3936         | <b>ALS</b> | <b>Air-Land Surveys</b> 540 S. Saginaw Street, Suite 200 Flint, MI 48502<br>Tel: 810.762.6800 Fax: 810.762.6801 |