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ROWE Provides Inspection and Testing for Slide-In Bridge

This summer, two ROWE staff members provided inspection and testing for MDOT’s innovative US-131 slide-in bridge project in Aetna Township, MI. The project started a new trend of bridge replacement methods in Michigan and was subsequently used for a similar bridge replacement in Lowell Township, MI.

During traditional bridge construction, crews demolish the old bridge and build the new one in its place, rerouting drivers during the entire process. For the slide-in method, crews build the new bridge next to the old bridge, demolish the old bridge when the new one is complete, then slide it into place by pulling (as in the US-131 project) or pushing. The process greatly shortens detour time. In August, it took crews about 23 hours to slide northbound lanes of the \$1.5 million US-131 bridge over 3 Mile Road into place, then they set it on the abutments, placed new guardrail, and paved the approaches. After learning from the experience, it took only six hours to slide the southbound side in September. Instead of an approximately five-month detour had the old replacement method been used, traffic was detoured just five days for each side of the bridge.



Above, the crew slides the north lanes of the bridge in August. Click [here](#) for an MDOT video of the August slide-in.

Wastewater Plant Improvements Made Possible with SRF Loan



Above is the plant during construction.

ROWE staff is often presented with tight deadlines to assist communities with applying for and using grants and loans. We understand meeting funding request deadlines makes the difference in the availability of these precious dollars. In just four months, ROWE analyzed and designed more than \$4.5 million of improvements to the City of St. Louis, MI’s existing wastewater treatment plant so they didn’t miss out on applying for a low-interest loan from the State Revolving Fund. The City of St. Louis received the loan and construction began in October 2013. ROWE is currently providing construction engineering services and project completion is expected in March 2015.

During the design phase, ROWE provided several options to the city to replace their aging rotating biological contactors with an automated system that provides energy-efficient and low-maintenance equipment. Improvements to the plant include two new oxidation ditches with brush aerators, an anaerobic selector tank, clarifier refurbishments, sand filter refurbishments, and replacement of various pieces of process equipment. The replaced process equipment includes return-sludge pumps, thickened sludge pumps, samplers, a ferric feed system, chlorinators, HVAC, and laboratory equipment.

The oxidation ditch system includes a control system equipped with variable frequency drives and a PLC, which modulates the speed and number of aerators operating at any given time based on the dissolved oxygen levels in the ditches. This modulation results in energy savings and lower chemical usage, both of which equate to cost savings for the city.

Challenging Work Setting Doesn’t Deter Dam Improvements

Limited access to the project area, work-day restrictions, and weak concrete were a few challenges the ROWE team overcame to successfully rehabilitate a 187-year-old dam in the City of Northville, MI.

ROWE had discovered during a 2010 inspection of the Yerkes Pond Dam that the concrete headwall at either side of the 62-foot-wide dam had deteriorated. We also detected undermining in its concrete spillway apron. The plan to rehabilitate the headwalls was to remove some of the deteriorated concrete and replace it with new concrete. However, deep into the headwalls, the concrete was still soft so workers had to remove more than expected. They also had to increase the amount of steel reinforcement in the headwalls.

Just getting to the work area was a challenge. Due to homes and trees, there was no public access to the dam on its north side. On the south side is the historic Mill Race Village public park. ROWE designed an access road to the dam within the park. After construction, the access road was repurposed as a walkway along the river. On weekends, special events like weddings took place at the park, limiting work to Monday-Thursday. At the end of work on Thursday, the crew had to “hide” their equipment so it wouldn’t be unsightly in the background of the wedding photos or the park’s special events.

The refurbished dam has strong headwalls again and the undermined apron has been repaired and extended to attenuate the flow to protect the river bottom. Since the dam was built nearly two centuries ago and it is adjacent to a historic village, the aesthetics of the finished surfaces used materials from the period, such as natural stone “rip-rap” set in the concrete apron and a simple concrete surface on the headwalls.



At top, with the absence of water, the undermining of the dam’s concrete spillway apron can be seen during construction. At left is the dam after improvements were completed.



MDOT Chooses ROWE for E-Construction Pilot Project

ROWE was selected for, and successfully administered, an MDOT pilot project utilizing e-construction methods for asphalt paving along I-94, from Masonic Boulevard to the Clinton River Bridge in the City of St. Clair Shores, Macomb County. E-construction is a virtually paperless method for document management utilizing ProjectWise software. All stakeholders involved in project delivery use this software for submittal and approval of project documentation. The use of e-construction saves time and money for MDOT, contractors, subcontractors, suppliers, local agencies, and consultants. It also makes each entity accountable since ProjectWise is a transparent program for all project participants to store and view project documentation. As of October 2014, all MDOT construction engineering contracts are administered with the use of e-construction.

ROWE Meets Short Deadline for \$1M Project

When a 12-month timeframe to complete the reconstruction of portions of Clay and Court Streets in Lapeer, MI was shortened to approximately eight months due to an important community event, ROWE met the challenge. ROWE helped the city prepare a Community Development Block Grant - Downtown Infrastructure Grant (CDBG-DIG) application for which the city was awarded \$749,999 from the Michigan Economic Development Corporation. The grant, along with support from Lapeer County and the city's water and sewer funds, brought the total project cost to just under \$1.1M. Understanding that incorporating an environmental improvement was a key component of the application, ROWE created several renderings for a rain garden and public gathering place for inclusion in the submittal.

The city was awarded the funds in December 2013, which required the project to be completed and grant closed out by December 2014. However, the City of Lapeer hosts the Lapeer Days Festival from Aug. 13-17, which draws thousands of visitors and participants to the city each day. Portions of the festival take place on Court Street, so this project had to be completed prior to the festival.



Above is Court Street north of Clay Street after the work was completed.

The project included reconstruction of two blocks of Court Street (from Nepessing Street to the bridge over Farmers Creek) and one block of Clay Street (from Cedar Street to Court Street). The following elements were included in the project: water main replacement (including directional drilling under the creek), replacing portions of the sanitary sewer and rehabilitating several manholes, street work, including a bike lane (asphalt, curb and gutter, sidewalk), decorative LED lighting, a rain garden, and a portion of a future linear non-motorized trail and pedestrian plaza that will later feature an art piece. A retaining wall at the county courthouse and adjacent to Court Street was deteriorating. ROWE designed a replacement wall, but upon further investigation by ROWE during construction, it was determined the wall could be rehabilitated with new brick instead of replacing it. This saved the county money and allowed them to complete other necessary work.



A similar view of the rain garden area before (top) and after (bottom).

Staff Updates

ROWE Names New Associates

Beginning January 2015, five new associates will join ROWE's group of 13 associates; company shareholders who participate in firm management and long-range goal development to improve the quality of services provided to clients.

- **Louis P. Fleury, PE**, is a 15-year ROWE employee who earned a B.S. in civil engineering from Michigan Technological University. As a project manager in the Civil Utilities Division, he specializes in road and utility studies, cost estimating, design engineering, and contract administration of public infrastructure projects.
- **Jeffrey B. Markstrom, PE**, is a six-year ROWE employee who earned a B.S. in civil engineering from Michigan Technological University. As a senior project manager in the Civil Utilities Division, he specializes in feasibility studies, estimating, design, preparation of contract drawings and specifications, project management, and construction management.
- **Lori L. Mudge, PHR**, is a 10-year ROWE employee who earned a B.B.A. in marketing from the University of Michigan and is a certified Professional in Human Resources. As the director of human resources and safety committee chairperson, her responsibilities include recruitment, retention, performance management, employee relations, benefits administration, training, workers compensation, and safety.
- **Matthew J. Seitz, PE, PTOE**, is an eight-year ROWE employee who earned a B.S.E. in civil engineering from the University of Michigan

and an M.S. in civil engineering from Michigan State University. He is a certified Professional Traffic Operations Engineer. As a senior project engineer in the Transportation Division, he assists with the design and analysis of various road and infrastructure projects.

- **John L. Welch II, PE**, is a 12-year ROWE employee who earned a B.S. in civil engineering from Michigan Technological University. As a project manager in the Transportation Division, he assists with roadway design and construction projects of various types, including roadway rehabilitation and reconstruction, curb and gutter, sidewalk, drainage improvements, and ADA compliance for sidewalks and driveways.

Staff Member Becomes CDBG-Certified Grant Administrator

ROWE Project Administrator Steven M. Clark is now a Community Development Block Grant-Certified Grant Administrator. Training for the new certification program, which graduated its first 47 applicants in July, consisted of an overview of federal and state statutory and regulatory requirements to successfully administer a CDBG-funded project. Administrators are located throughout Michigan.

Governor Appoints ROWE Surveyor to State Committee

Michigan Gov. Rick Snyder appointed ROWE Project Surveyor Marvin Myers, PS, to a two-year term on the new State Survey and Remonumentation Committee. The seven-member committee will consult with the Department of Licensing and Regulatory Affairs to create and distribute a model county plan that may be adopted by a county with any changes appropriate for that county. Myers will be representing the northern part of the state's lower peninsula.

For questions about these projects and more, contact Director of Corporate Marketing Jack Wheatley, PE, at JWheatley@rowepsc.com or (800) 837-9131.

ROWE's Corporate Office: 540 S. Saginaw St., Ste. 200, PO Box 3748, Flint, MI 48502 (810) 341-7500

Lapeer Office	Mt. Pleasant Office	Farmington Hills Office	Grayling Office	Tri-Cities Office	Myrtle Beach Office	Air-Land Surveys
128 N. Saginaw St. Lapeer, MI 48446 (810) 664-9411	127 S. Main St. Mt. Pleasant, MI 48858 (989) 772-2138	27300 Haggerty Rd., Ste. F-30 Farmington Hills, MI 48331 (248) 675-1096	403 Huron St. Grayling, MI 49738 (989) 348-4036	419 N. Madison Ave. Bay City, MI 48708 (989) 894-4001	511 Broadway St. Myrtle Beach, SC 29577 (843) 444-1020	540 S. Saginaw St., Ste. 200 PO Box 3748 Flint, MI 48502 (810) 762-6800