

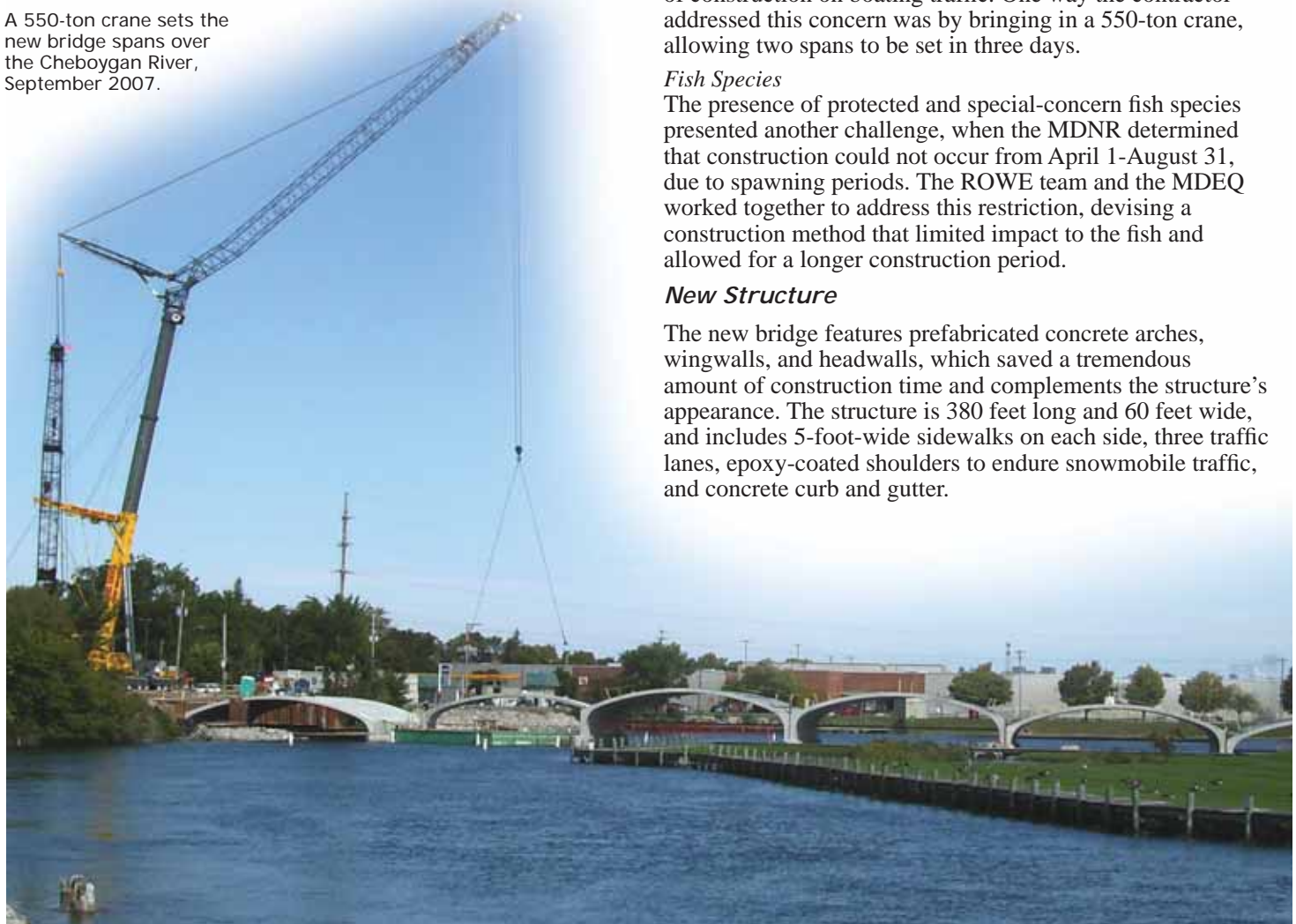


## New Bridge Conquers Challenges to Serve Northern City

The newly constructed \$7 million Lincoln Avenue bridge in Cheboygan, MI is the first multiple-span, 60' precast "Con Span" bridge structure to be placed in the United States. It stands ready to transport residents and visitors over the Cheboygan River, allowing them to take advantage of the year-round diversions this northern Michigan city offers.

Rowe Incorporated, assisted by United Design Associates, Inc., faced several unusual challenges during design, including scheduling, permitting, constructability, and recreational requirements.

A 550-ton crane sets the new bridge spans over the Cheboygan River, September 2007.



### *Project Challenges*

#### *Gas Line*

A gas line running across the structure was one of several challenges the project team faced. A project of this scope typically requires an entire year to complete, but the gas line, which serves as the main feed for an adjacent community, could not be shut down from late September to early May. The team decided at that point to use precast members for the structure to save time.

#### *Boating Traffic*

The city and U.S. Coast Guard wanted to limit the impact of construction on boating traffic. One way the contractor addressed this concern was by bringing in a 550-ton crane, allowing two spans to be set in three days.

#### *Fish Species*

The presence of protected and special-concern fish species presented another challenge, when the MDNR determined that construction could not occur from April 1-August 31, due to spawning periods. The ROWE team and the MDEQ worked together to address this restriction, devising a construction method that limited impact to the fish and allowed for a longer construction period.

### *New Structure*

The new bridge features prefabricated concrete arches, wingwalls, and headwalls, which saved a tremendous amount of construction time and complements the structure's appearance. The structure is 380 feet long and 60 feet wide, and includes 5-foot-wide sidewalks on each side, three traffic lanes, epoxy-coated shoulders to endure snowmobile traffic, and concrete curb and gutter.



Turf-reinforcing mats line drain and allow vegetative growth.

## Drain Improvements Help Control Erosion

Engineers worked with the Little Forks Conservancy (LFC) and the Midland County Drain Commissioner to repair erosion and enhance a wetland along the Tittabawassee River.

The L & B Drain was an enclosed, subsurface tile structure, inadequately sized to handle the increased water flow that resulted from growing urbanization in the area. Seizing the opportunity to do more than merely repair the damage, the LFC retained ROWE to improve the drain and associated wetlands by using non-typical, innovative methods and materials.

The project resulted in removing tiles and replacing them with turf-reinforcing mats that promote vegetation, blend with the environment, and maintain a more natural setting. The new design utilizes cable concrete at the mouth of the river for added erosion control, while again promoting vegetative cover.

ROWE provided surveying, engineering, landscape architecture, wetland consultation, and contract administration services for the \$100,000 project.

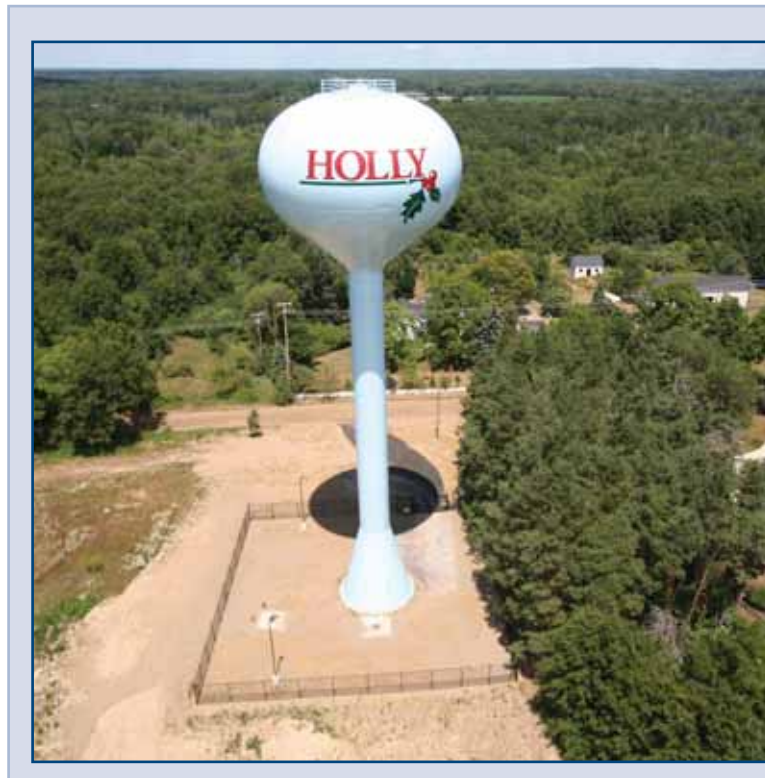
## Deadline Approaches for Small Community Water Systems

All Community Water Systems (CWS) providing water with added disinfectant are required to comply with the EPA's Stage 2 Disinfection ByProducts (DBP) Rule; small water systems (serving fewer than 10,000 people) must develop and submit a monitoring plan by April 1, 2008. A Standard Monitoring Plan must include a description of the water system, as well as a map showing key features, such as wells, treatment plants, and storage tanks. It must also indicate the proposed locations and schedule for collecting water samples to monitor DBPs. Sampling requirements vary, depending upon factors such as system size and water source. Monitoring locations should be selected based on residence time, water age, disinfectant residual, geography, system hydraulics, and TTHM and HAA5 levels.

ROWE can assist your community in developing monitoring plans or addressing other concerns. Contact Doug Scott at the corporate office or your project manager for more information.

## South Carolina Firm Acquired

ROWE has acquired Carolina Aerial Surveys (CAS), an aerial surveying and land development company in Myrtle Beach, SC. The new office will operate as "Rowe Professional Service Companies of Carolina," and will provide a full complement of professional consulting services, relying on the corporate office for engineering and surveying support. ROWE retained four CAS employees. Principal and Vice President Kent Alexander, PE, will manage the office.



## Population Growth Spurs Water System Improvements

The Village of Holly's rapid population growth caused concern about its ability to provide adequate water service in the future; its agreement to provide water and sewer service to a 1,000-unit development in Holly Township in 2002 exacerbated those concerns. In addition, water from the village's three wells exceeded the arsenic standard that went into effect in 2006.

In 2003, ROWE updated Holly's water computer model, analyzing its ability to meet current and future needs and identifying the impact of potential system upgrades. The updated master plan recommended the following improvements.

- New well
- New 500,000-gallon elevated storage tank
- Creation of a high-pressure zone
- Expansion of the water treatment plant
- Provisions for arsenic treatment
- Five miles of distribution system upgrades

## Hydraulic Modeling Helps Manage Sewer and Water Systems

Providing water service to new developments and separating old combined sewer systems are among the many difficulties communities face in managing public utilities. An analysis of existing systems can determine the improvements necessary, and an accurate understanding of water and sewer system characteristics helps public managers spend their ever-shrinking funds wisely.

ROWE recently developed hydraulic models for Oxford and Grand Blanc townships, the cities of Davison, Lapeer, and Ithaca, and the Village of Caro.

In rapidly growing Oxford Township, engineers developed a water system, distribution, and storage model using WaterCAD software. Analysis included time-dependent logical controls of the complex system of wells, storage tanks, booster pumps, and pressure-reducing valves. By modeling water demands that change hourly, engineers identified portions of the system that may cause flow rates or pressures to fall outside acceptable values.

Grand Blanc Township needed to manage rapid expansion of its sanitary sewer system and identify areas of the existing systems contributing to inflow and infiltration. Engineers are performing ongoing sanitary sewer flow monitoring and using the results to create a calibrated SewerCAD hydraulic model, which will allow the township to make better decisions regarding ways to alleviate inflow and infiltration problems.



## Aged Building Blossoms into Luxury Condos

A building constructed in 1921 was recently transformed into luxury condominiums that front the Saginaw River on Bay City's Water Street. To improve the area's appeal, the city's DDA added streetscape elements, including the following.

- Newly planted trees
- Ornamental lighting
- Sidewalks and curbs
- Brick pavers and street overlay
- Water main replacement

ROWE completed landscaping in conjunction with the building's restoration, to be ready in time for the building's grand opening. The \$550,000 project was developed in close coordination with the Saginaw Riverfront Redevelopment project.



The village authorized proceeding with the improvements in 2005, which resulted in construction of the following.

- New water main and well in 2006
- Delineation of the new high-pressure service area and installation of pressure-reducing, pressure-sustaining valves to create the high-pressure service area in 2006. The improvements replaced two temporary booster stations.
- New elevated storage tank put into service in 2007
- Treatment plant renovations completed in 2007

The \$6 million upgrade doubled Holly's capacity to remove iron and treat for arsenic.



# Staff Updates

## Surveying Honor Society Names Chapter for Firm Leader

Lambda Sigma Land Surveying Honor Society named its Michigan Technological University chapter for ROWE President/CEO and Chairman of the Board **John D. Matonich, PS**, and inducted John as its first honorary member. He graduated from MTU in 1981, the same year he began his career at ROWE.



## New Registrations/Accreditation

Project Engineers **Scott Hemeyer, PE**, and **Jeremy Lynn, PE**, passed the final phase of the state's Principles and Practice of Engineering Exam in December, completing the requirements to



Scott Hemeyer



Jeremy Lynn

become licensed professional engineers. They are both based at the corporate office.

Project Engineer **Robert Haneline, PE, CFM, LEED@AP**, recently earned accreditation in Leadership in Energy and Environmental Design (LEED®). "LEED" distinguishes professionals with the knowledge and skills to steward integrated design and the LEED certification process.



## Promotions

The following promotions were effective in March.

- **Craig Schripsema, PE**, to senior project manager from project manager;
- **Louis Fleury, PE**, to project manager from project engineer;
- **John Welch, PE**, to project engineer from assistant project engineer; and
- **Justin Sprague** to planner from assistant planner.

Comments are welcome and can be addressed to: [LNoe@RoweIncorp.com](mailto:LNoe@RoweIncorp.com)

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