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Issue 3 - September 2010



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## Letter from the Founder

Cedarburg, WI - Welcome to the third issue of our newsletter for our clients, peers and friends. The intention of this newsletter is to communicate with you, about our firms' goals and initiatives. In addition, I'll share important news about our company, projects, and staff.

On September 10th, M<sup>2</sup> celebrated its 7 year anniversary and we owe it all to you, our awesome clients and partners. Thank you for your incredible support and confidence in us. We will continue to be innovative and improve every part of our business. That is our promise to you.

I would also like to congratulate Andy Wells on earning his Wisconsin Professional Engineering Registration. Andy has been with M<sup>2</sup> for the past 4 years and his certification brings the number of PE's on staff to four. Congratulations Andy! If you see him at a meeting, be sure to also congratulate him on earning his "MR." title (he recently got married in August).

This newsletter is archived on our web site so that past editions can be viewed and shared. I look forward to hearing your thoughts. E-mail me at [Minal@msquaredengineering.com](mailto:Minal@msquaredengineering.com)

Sincerely,  
Minal Hahm

## High-Speed Rail Project

A high-speed rail connection between Milwaukee and Madison is well underway. Supported by federal stimulus money, construction is scheduled to begin in the fall of 2010 with a completion goal of 2013. The M<sup>2</sup> staff has been involved in numerous railroad and railway projects throughout Wisconsin and Illinois. However, this is the first cross-state corridor project with a new rail system. Unique site challenges, accelerated schedules, and project design constraints have presented quite a challenge to not only M<sup>2</sup> but to the entire project team.

Under this contract awarded by the Wisconsin High-Speed Rail Authority, M<sup>2</sup> has partnered with HNTB and 16 other smaller firms. M<sup>2</sup>'s project role is performing a hydraulic analysis for all of the bridge crossings and the drainage crossings within the floodway. The timeline for M<sup>2</sup>'s part was even further tightened due to delays receiving federal authorizations to proceed and the need to first have all the new bridges built alongside the existing railroad. In a good faith gesture toward the prime consultant as well as the WisDOT, we started our design and were nearly 40% complete prior to the receipt of a contract.



Three major "land bridges" were required to cross a swampy marshy area by the railroad corridor. The bridges were 8,000 feet, 4,000 feet, and 2,400 feet in length – not your ordinary bridge crossings. M<sup>2</sup> was involved with developing a survey structure report, which included assigning an ordinary high water mark as well as the 100-year associated flood elevation. Other challenges included tracking down accurate modeling data for the stream crossings. Lack of data required a quick site survey of the streams and developing new hydraulic models in many cases. Fast track permitting and approvals were obtained by working hand-in-hand with WisDOT Bureau of Structures staff.

The new railway proposes many benefits; providing new employment opportunities and compared to the welded rail system, it will be much quieter and have many improved safety measures.

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## David's Star Lutheran Church

Jackson, Wisconsin



David's Star Lutheran Church

Washington County, which is just northwest of Milwaukee County, is one of the fastest growing areas in Wisconsin. The Village of Jackson is one of the fastest growing communities in Washington County with a large percentage of them being young families.

With the population growth, came the growth of the congregation at David's Star Lutheran Church and School, the second oldest Lutheran congregation in Wisconsin. And with this awesome growth at both the church and school, a building addition was needed.

M Squared Engineering (M<sup>2</sup>) was retained by the Church to develop a site design that would allow their master plan to be realized, while allowing for the construction to be done in phases.

The first phase started in 2009 which included the addition of a school, a narthex to the existing 150 year old church, and the expansion of two parking areas. M<sup>2</sup> was responsible for the topographic survey, site plan, grading plan, stormwater management, and construction staking. Care was taken to ensure that drainage demands for this phase were met.

Phase II entails the expansion of an existing gravel parking lot on the west side of the church, additional sidewalks, and lighting for the parking areas. The site plan, grading, stormwater management, and construction grading was completed by M<sup>2</sup>. The construction for Phase II is expected to be completed at the end of 2010.

## South Side Park

Grafton, Wisconsin

The Village of Grafton is planning a park on a 20 acre parcel located at the southeast edge of the Village. With recent residential development in the area, the Village felt that this parcel was perfect to help meet the goals of the Village's adopted Park and Recreation Plan.

The first phase of the plan involves grading out the northern 10 acres of the property, installing a playground area, temporary parking lot, and an open air shelter. A pedestrian access path will also be constructed to allow foot traffic throughout the park.



South Side Park Site Development

Future plans for the property include baseball and soccer/football fields, basketball and tennis courts, and a permanent paved parking lot with the intention of providing recreational activities for up to 100 people. The completion of the first phase is expected in 2011.

M Squared Engineering (M<sup>2</sup>) was retained by the Village of Grafton to create the master grading plan and a stormwater management plan. M<sup>2</sup> also performed a topographic survey of the 10 acres designated for this park.

The completed site survey was utilized to develop the grading plan, incorporate stormwater management features, park amenities, access roads, and the parking area. Stormwater management features on the project site include vegetated swales, a wet detention pond, and a buffer strip.

These stormwater features were incorporated into the site layout in such a way as to provide an aesthetically pleasing park setting as well as to provide stormwater quality and quantity management in accordance with Village of Grafton and State DNR requirements.

Because this was a local project and benefited the community, M<sup>2</sup> reduced their design fees by fifty percent as part of M<sup>2</sup>'s "giving back" initiatives.

## STH 79 Bridge

Boyceville, Wisconsin

Head north on STH 79 through the small town of Boyceville and you will be greeted with miles of rolling agricultural countryside. One peculiar facet of Western Wisconsin's geography is that when settlers moved into the area, it seems each European ethnicity staked out its claim to a different valley. Thus, traveling STH 79 just past the CTH O junction, you will cross Slovak Valley Creek. The narrow roadway bridge, which crosses the creek, was deemed obsolete and scheduled by WisDOT to be replaced.

Partnering with Ayres Associates on this bridge replacement design, M<sup>2</sup> was tasked with redesigning the bridge crossing. The current twin box culverts will be replaced with either a bridge or new culvert. Hydraulic analysis, site survey of the stream and adjacent floodplain areas, wetland delineation coordination, and developing bid documents will all be a part of the scope. M<sup>2</sup> will also be providing WisDOT with final bid documents, design study report, encroachment report, and a traffic management plan (TMP) for the site. Coordination with WisDOT NW Region staff as well as the project team for the surrounding overlay project for STH 79 will be required. A joint Public Information Meeting will be held for both projects. The project will begin in September, 2010 and end by June, 2011.

The partnership with Ayres presents an excellent opportunity for M<sup>2</sup> to expand our services. Ayres has agreed to informally mentor M<sup>2</sup> on this project. Guidance will be provided on technical and procedural areas in developing the design and plans for the bridge replacement. Ayres will perform the structural design and the hydraulic analysis.

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## News Continued

From Page 2 **BRIDGE**



*Roadway Bridge - Slovak Valley Creek*

As the Prime, M<sup>2</sup> will be providing the project management/coordination, plan preparation, and the design reports. Once completed, M<sup>2</sup> will be ready to provide a stronger role on future bridge replacement projects.

## Family Dollar

*Green Bay, Wisconsin*

Family Dollar is a chain with over 6,700 stores from Maine to Arizona and now in 2010 there is a proposed development on an approximate 1.3 acre site in Green Bay, Wisconsin. The development includes an 8,000 sf steel framed building along with associated parking, driveways, and utilities.

M Squared Engineering (M<sup>2</sup>) was retained to design the site by a Florida developer. M<sup>2</sup> will perform an ALTA survey, topographic survey, and CSM as required for combining three existing parcels and associated easements. Asbestos abatement will be required for an existing building on one of the parcels that will be demolished as part of the project.

There is an existing floodplain on the southern third of the property. As the design proceeds, it appears that flood proofing of the proposed building and detention pond may be required. Other design services include grading, stormwater, pavement design, landscaping, erosion control, and utility plans. Site detail sheets and construction specifications will also be required. The stormwater management plan will need to comply with the City of Green Bay regulations. The developer is hoping to start construction of the Family Dollar Store in 2011.

## Facility Update

### M Squared Engineering

After the big move last fall, the new M<sup>2</sup> office is now undergoing some major “curb-appeal” transformations. The brick exterior now has a fresh coat of gray paint that accentuates the craftsmanship of the building.

The eye-catching landscaping planted last fall is now in full bloom and includes a bird feeder viewable from the reception and conference room windows. It is amazing to watch the birds as they flutter through the garden.

The newly installed signs at the entrance of the building as well as by the road, ensure that visitors will easily locate the firm, which is tucked away at the end of a long and narrow, private driveway. As always, the M<sup>2</sup> staff loves visitors so please feel free to stop in at anytime.



*South Elevation - M Squared Office*

From Page 1 **RAIL**

For the rider it is the model choice for 100-500 mile trips, the most beneficial will be the faster travel times. Compared to automotive travel it is less susceptible to delays from inclement weather and unscheduled maintenance. Compared to automotive travel, the rider will have a more productive travel time and the train itself will consume less energy.

Having grown up in India and traveled extensively in Europe, train travel strikes a chord for Minal Hahm, cofounder of M<sup>2</sup>. With all the political debate over this issue, she truly believes that although it is difficult to foresee, the train system, similar to the highway system, will do extremely well in the long run for this country. “It is being implemented in numerous states and my belief is that once this system is in place, it will start to be a natural choice for travel between metropolises...*build it and they will come,*” said Minal.

## Employee Updates

### Wells Earns Professional Engineering Registration

Andy Wells, PE, Staff Engineer at M<sup>2</sup>, has earned his Wisconsin Professional Engineering Registration. Andy has been with M<sup>2</sup> for over four years specializing in stormwater management, hydrologic and hydraulic analysis, site design, residential, commercial and industrial land development, and construction inspection. His expertise further includes hydraulic and water quality modeling and he is responsible for overseeing the CAD department at the firm. The broad range of projects that Andy has worked on has provided him with a wealth of experience.

Andy has a bachelor’s degree in civil engineering from Marquette University in Milwaukee, Wisconsin.

### Wedding Announcement

Staff Engineer, Andy Wells makes the news twice in this column. On Saturday August 14, Andy was married to Alli in St. Paul, Minnesota. Congratulations Mr. and Mrs. Wells!

### New Employee, Gary Ellias

We would like to welcome Gary Ellias to the M<sup>2</sup> staff. Gary has a BS in Mechanical Engineering and 16 years of Microstation and Civil 3D experience. He has worked with WisDOT as well as private firms. Gary commutes from Watertown where he lives with his wife Michelle and their two children.

### Ronstock

Each and every one of us knows someone who has been diagnosed with cancer. Recently one of our employees, Civil Engineering Technician, Ron LaPorte was diagnosed with cancer and is currently undergoing post treatment. In hopes of helping Ron as he goes through this battle, his many friends and family, sponsored a fundraiser to try and help cover some of the medical expenses.

The event was held at Bub’s Irish Pub located in Germantown on July 25th. It was a packed house with live music, food, door prizes, and a place to gather for a common cause. Thank you to everyone for their support.

# Interchange Trivia



For the answers to the trivia,  
please visit our website at:

[www.msquaredengineering.com](http://www.msquaredengineering.com)



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## The M<sup>2</sup> Mission Statement

M Squared Engineering, LLC is a full service civil engineering firm that is committed to enhancing the value of our clients' projects by providing quality service while meeting project schedules and budgets. We will accomplish this by developing a project plan that is customized based on our clients' goals, by maintaining a high level of communication, by creatively exploring solutions during all project phases, and by maintaining our technical level of expertise through continuing education.