

InMOTION



Continuing Mission *(continued from page 1)*

In 2007, more than 150 staff members have again been given the opportunity to be heard. Separate meetings were held in our New England, Mid-Atlantic, and Florida regions.

Over the years we have heard many things, some we may not have wanted to hear, but from these perhaps our greatest accomplishments have come.

One recurring theme is the continuing need to improve our communication with our staff. It is easy to communicate good news. Sharing the news that is not so good is much harder.

Every year I provide the CEO's State of the Firm presentation at our Shareholders Meeting. I now also present the unedited State of the Firm in each of the firm's offices. The PowerPoint presentation is then placed on the McMahon intranet.

Staff who come to us from other firms tell us that our planning sessions are unique. They are grateful for the opportunity to learn about McMahon and share their ideas for the firm. Many share the thought that, if nothing else were to come of the planning sessions, the mere fact that we take the time to get together to celebrate each other and McMahon is benefit enough.

Based on this observation, we are planning a company-wide planning session in 2008 where our entire firm will get together in Pennsylvania. It will be a fitting celebration of our continuing mission to serve our clients well and provide a caring work environment for our staff.

Make a Plan for Your Bridges *(continued from page 3)*

It is important that local communities have a bridge program in place which consists of:

- an inventory of bridges,
- an inspection program, and
- a plan for future maintenance and replacement.

The first step is to inventory all the bridges under their jurisdiction. The second step is to be sure the municipality is satisfying the federal mandates for inspection. Some DOT's can aid in this process.

The next phase for a local bridge program is planning, which can consist of preventative maintenance, rehabilitation, and a replacement strategy for bridges. Preventative maintenance, such as new joint seals, cleaning, and painting, can extend the life of a bridge. Rehabilitation is costly, but will defer the higher costs associated with replacement. Replacement planning is the most costly item and the main reason every municipality should have a long-term plan in place.

Continuing Mission

by Joe McMahon, P.E., CEO



At McMahon, our ongoing mission is two-fold: to provide responsive and effective transportation solutions and a commitment to a caring work environment.

The first part is paramount. We aim to serve our clients well as a trusted advisor and deliver solutions to their transportation challenges.

To achieve that vital first part of our ongoing mission, we are committed to the second: providing a first-rate, caring work environment for our staff, including a competitive compensation and benefits package.

As this goes to press, McMahon is completing its 23rd consecutive year of planning sessions, a practice that sets us apart from our peers.

In 1985, our first "pizza planning session" involved our full staff of nine sitting around one table. Everyone was given their chance to reflect on the past, critique our operations, and offer their ideas on how to improve as we met the challenges of the coming year. Since the beginning, we've recorded the decisions of every year's planning session and monitored their implementation.

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Making Better Engineers

by Rodney P. Plourde, Ph.D., P.E., President

How do we make better engineers? The answer is complex, but vital to the continuation of, and improvement in, the service we provide. Looking back at my own experience, certain things jump out as vital to professional and personal development. They include:

Intern and Co-op Programs

Intern and cooperative work programs provide engineering students both on-the-job training and insight to the career they are considering. For us as employers, it is an excellent recruiting tool, and provides us the opportunity to test a person's abilities and character before offering them a full-time position.

Mentoring Programs

Young engineers need more than technical training. An on-the-job mentor provides guidance on professional development or even life-work balance issues. When the mentor is not an immediate supervisor, the engineer can seek help without ground rules, and simply count on a relatively independent sounding board who the engineer respects.

Professional Development Programs

Continuing education can be provided as much within the office, through Internal Training Workshops (ITW's), as well as through universities and professional societies.

Professional Society Involvement

Engineering societies not only provide professional development opportunities, but also networking opportunities, which are vital to the growth of a young engineer.

Cross-Training

Specialization certainly has its place, but a broad understanding can strengthen an engineer's work. Cross-training of young engineers is important to help them develop a big picture of engineering's role and responsibilities in a project and society. It also benefits the employer to be able to assign different types of projects.

Communications

Transportation engineering is more than analyzing and designing; your results and recommendations must be effectively communicated, both written and



General Manager Rik DiCesare oversees Martin Classen as he trains Jill Turnier in new graphic design software at McMahon.

verbal, to project managers and then clients and review agencies. Engineers should be given gradual, increasing exposure to communication of engineering products to clients, agencies, and the public.

DID YOU KNOW?

How does a traffic light detect that a car has pulled up?

You are driving on a quiet roadway, and when you approach, the red light turns green. Were you lucky, or did someone or something know you were there?

Cameras, lasers, and rubber hoses filled with air are among technologies for detecting cars, but the most common is an inductive loop. An inductive loop is a coil of wire embedded in the road's surface. To install the loop, asphalt is laid, and then workers come back and cut a groove in the asphalt with a saw. The wire is laid in the groove and sealed with a rubbery compound, which remains slightly visible.

A traffic light sensor constantly tests the inductance of the loop in the road, and when the inductance rises, it knows there is a car waiting and will trip a change in the signal. So, whether your green light is because you tripped the inductive loop, or you have good timing, you may just be in luck!

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INSIDE:

Corporate Headquarters
425 Commerce Drive, Suite 200
Fort Washington, Pennsylvania 19034
www.mcmtrans.com



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Raised Intersections Create Safer Campus Crossing

by Sylvia Smiley, P.E., Senior Project Engineer

When many people think of traffic calming, speed humps come to mind. While speed humps are inexpensive and effective at lowering vehicle speeds, they do not provide delineated or enhanced pedestrian crossings. When considering traffic calming for the purpose of enhancing pedestrian safety, alternative measures, such as raised intersections, can effectively slow vehicular traffic while improving the visibility of pedestrians.

With raised intersections, the entire intersection is raised nearly to curb level with ramps on all approaches. They cause vehicles to slow down, the added height increases visibility, and the intersection becomes a place to be shared by pedestrians and vehicles.

Raised Intersections Enhance Safety on College Campus
McMahon recently recommended raised intersections to the City of Newton, Massachusetts.

Woodland Road runs through residential areas and the Lasell College campus. Lasell students were crossing in diagonal patterns at two intersections. Concern for pedestrian safety increased after a fatal pedestrian crash occurred in September 2006. Signalized pedestrian crossings were not warranted, but because of the high pedestrian volumes, traffic calming techniques were explored.

Raised intersections were ideal for this situation. Constructed in a contrasting finish at either end of the campus, the raised intersections will not only slow traffic in the intersection, but serve as sort of gate, alerting drivers that they are entering a pedestrian area.

Construction of the two raised intersections is nearly complete. Now, drivers will be alerted to slow down, and pedestrians will be more visible.



Raised intersections are being constructed on Woodland Road in Newton, Mass. to increase pedestrian safety.

Municipalities: Make a Plan for Your Bridges

by John F. Yacapsin, P.E., Associate and General Manager – Camp Hill

According to the US DOT, 12 percent of the bridges in our country are structurally deficient. In Pennsylvania alone, more than 5,900 bridges, 23 percent, are structurally deficient.

Structurally deficient means the bridge has major deterioration, cracks, or other flaws that reduce the load carrying capacity. While many of our bridges are owned and managed by the Pennsylvania Department of Transportation, local municipalities own a surprisingly large percentage.

Working With Limited Funds

Bridge repair money is available, but demand far outpaces what is allotted. Current overall needs, or “cost to improve” the federal highway and bridge system in its entirety, stand at

\$131.7 billion per year, or 87.4 percent more than we spent in 2004.

These monies do not include bridges shorter than 20 feet, many of which are owned by municipalities. States are making small steps in helping local municipalities, but the dollars needed fall short.

A small culvert bridge replacement can cost \$500,000. As the national bridge funding crisis

swirls, one may need to consider ideas that will create funding resources for the future. Municipalities need to be proactive in their planning before getting stuck with a closed bridge.

3-Step Program

Municipalities are required to inspect bridges within their jurisdiction a minimum of every 24 months.



Bridge inspections should be a part of any roadway program.

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OUR SERVICES

- Traffic Engineering
- Transportation Planning
- Highways
- Transit
- ITS & Traffic Signal Systems
- Data Collection
- Structures
- Dams & Water Resources
- Highway Safety
- Land Survey
- GIS
- Construction Observation & Maintenance

For more information, please contact **McMahon** at any of the following locations:

MID-ATLANTIC

Fort Washington, PA
Jack Mitchell, P.E., General Manager
215.283.9444

Camp Hill, PA
John Yacapsin, P.E., General Manager
717.975.0295

Exton, PA
Chris Williams, P.E., General Manager
610.594.9995

Yardville, NJ
Mark Roth, P.E., General Manager
609.585.5745

Bowie, MD
Joe DeSantis, P.E., PTOE, Regional Manager
301.464.3955

FLORIDA

John DePalma, Regional Manager

Palm Beach Gardens, FL
Trent Ebersole, P.E., General Manager
561.840.8650

Fort Lauderdale, FL
Tom Hall, Associate
Rik DiCesare, General Manager
954.771.0776

Miami, FL
Juan Carlos Villalba, P.E., PTOE, Sr. Project Manager
305.222.1945

Fort Myers, FL
Mike Spitz, P.E., Sr. Project Manager
239.337.7335

NEW ENGLAND

Bill Steffens, Regional Manager

Boston, MA
Gary McNaughton, P.E., PTOE, General Manager
617.725.0099

Taunton, MA
Gary McNaughton, P.E., PTOE, General Manager
508.823.2245

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FLORIDA REGIONAL NEWS

Property Tax Reform and Cost Recovery Prompt Changes

by John P. Kim, P.E., PTOE, Senior Project Manager

Florida, like much of the United States, has experienced an historic increase in property values. Local governments have benefited from the increase in property tax revenues, and have used these revenues to increase staff and improve or expand public services.

Recent downturns in the housing market have prompted a public demand for property tax reform, which threatens local government's ability to provide services. Staff reductions have already begun, leaving some municipalities ill-equipped to handle traffic planning needs. Cost recovery can help combat this loss.

What is Cost Recovery?

Cost recovery allows the public sector to pass the cost of public services on to the private entity that triggers the need for services. Two principal reasons for the public sector to use a cost recovery system are:

1. **Fair Share.** Costs for evaluating proposed improvements don't have to be absorbed by current taxpayers.

2. **Expert Review.** Experts can be retained for reviews, freeing up valuable staff time.

The private sector benefits from cost recovery as well:

1. **Timeliness.** Reviews can take longer in the public sector because the person performing the reviews may be burdened with other duties. A consultant must often commit to a maximum review time and hold to it.
2. **Specialized Experience.** Consultant reviewers typically have worked for both public and private sectors, so the reviews are likely to include a thorough understanding of the key issues and will present comments fairly.

Cost recovery is not difficult to implement or manage and is already a proven method for providing timely and expert reviews of land development related materials. Given the challenges ahead, expect to see more cities and counties moving toward cost recovery.

NEWLY AWARDED PROJECTS

MID-ATLANTIC

- Intersection Improvements at Park Road (SR 1010) and Business Route 222 (SR 2005), PennDOT District 5-0
- Traffic Signal Design Open End Contract (2nd consecutive term), PennDOT District 6-0
- Traffic Planning for Independence Mixed-Use Community, Charter Homes, East Hempfield Township, Lancaster County, PA

NEW ENGLAND

- Lake Williams and Fort Meadow Dams, Emergency Action Plans, City of Marlborough, MA
- Billerica Energy Center Construction Access Route Assessment, Billerica, MA
- Traffic Management Plans for Zakim Bridge Repairs, Boston, MA

FLORIDA

- Estero Boulevard Corridor Improvement Plans, Estero Boulevard, Lee County, FL
- The Isle Casino and Racetrack Traffic Analysis, City of Pompano Beach, Broward County, FL
- Districtwide Traffic Operations Studies, FDOT District 4