McMahon
MOTION
Vol. 7, No. 1
Winter 2003
News For Transportation Enthusiasts

Quest for Quality

By Joe McMahon, P.E., CEO

Life is often more complicated than we would like. This is true as we strive for excellence in McM's engineering practice. Our rapid growth poses a major challenge to maintaining the highest standards.

It is our continuous goal to manage projects "on time, on budget, with quality," providing excellent technical services while meeting our clients' financial, product, and timing requirements.

Our desire to provide "Responsive Transportation Solutions" to our clients can sometimes be at odds with our need to consistently follow our quality assurance/quality control (QA/QC) operating procedures. The carpenter's adage to "measure twice, cut once" to avoid costly mistakes requires dedication and discipline in the face of client deadlines and other pressures.

QA/QC vital to the process

At the center of our QA/QC process is the requirement for peer review at every step in our process. It requires that every aspect of a design or traffic study have two pairs of eyes on it.

QA/QC requires proactive communication. As traffic studies and designs need to be reviewed by senior professionals and/or supervisors, time must be programmed into their busy schedules and the clients' deadlines. Advance notice must be provided so that reviews and necessary changes can be made prior to client deadlines.

Two other aspects of the QA/QC process are vital: First, continuous attention paid to updates of engineering standards and second, training. The latest technical requirements from departments of transportation, professional organizations, and other sources of standards and procedures are consistently sought and included in our technical services.

Our professional development is also continuous and includes one-on-one training with experienced professionals, internal training workshops, and attendance at seminars and professional society meetings. Continuing education and

(continued on back page)

Reaching Out to Youth About an Honorable Profession

By Rod Plourde, Ph.D., P.E., President

This topic has always been very dear to me, because I believe that our nation's youth do not perceive engineering as a glamorous profession. And why aren't engineers perceived at the same level as doctors, lawyers, and teachers? Is it because we tend to work more behind the scenes, or not in the constant public eye? That's probably part of the problem. But could it be that we don't do enough to advertise or promote our profession, including its opportunities, challenges, accomplishments, and distinguished fraternity?

I strongly believe that promoting engineering as a profession should begin at the middle-to-high school level. Even the elementary school level is not too early. It's at these early stages when our children and future leaders will begin to ask themselves, "What do I want to be when I grow up?"

National Engineers Week, held each February, is an excellent example of such outreach, with programs such as the Delaware Valley Engineers Week Council's "Future City Competition," where 7th- and 8th-graders, supported and mentored by their teachers and practicing engineers, design and build models of their future cities.

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Congratulations Rod!

McMahon Associates is proud to announce that Rodney P. Plourde, Ph.D., P.E., President and Principal, was runner-up for 2003 Delaware Valley Engineer of the Year in the election held this past November. We fully support and endorse Rod in his continued commitment to success and high standards of excellence in the engineering industry and the community, and we wish him the best in his candidacy for Engineer of the Year in 2004.

Did You Know?

States' Ballot Issues Add $17B for Highways and Transit

State transportation funding measures voted on in November 2002 will add over $17 billion to transportation projects across the nation over the next 20 years. For example, in Miami-Dade County, FL, voters increased the sales tax by one cent with all revenue dedicated to transit funding. Other states will allocate the funds for improvements to highways, roads, and bridges.

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McMahon in Motion is edited and designed by:
Word Work Communications
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The Private Development Process in Massachusetts

Part 1 – Safeguarding the Environment

by Gary McNaughton, P.E., Associate & Senior Project Manager

By the time a transportation project begins, traffic engineers already have completed several preliminary phases.

Developing any property in Massachusetts starts with an environmental review process through the Massachusetts Environmental Policy Act (MEPA) Office. MEPA requires state agencies to study the environmental impacts of their actions and that they take all practical means and measures to minimize environmental damage, including considering alternatives to a proposed project.[i] MEPA then issues a Secretary of Environmental Affairs certificate that includes enforceable mitigation commitments.

Whether a private sector project is subject to MEPA jurisdiction depends on the need for a state agency's action and a number of review thresholds. Review thresholds identify categories and aspects of projects, such as their nature, size, or location, that may cause damage to the environment, either directly or indirectly. If a project meets at least one threshold under MEPA's jurisdiction, the project requires MEPA review, which may include either an Environmental Notification Form (ENF) or an ENF and a Mandatory Environmental Impact Report (EIR).[ii]

The MEPA review categories include:

- **Land**
- **Rare Species**
- **Wetlands, Waterways, and Tidelands**
- **Water**
- **Wastewater**
- **Transportation**
- **Energy**
- **Air**
- **Solid and Hazardous Waste**
- **Historical and Archaeological Resources**
- **Areas of Critical Environmental Concern**
- **Regulations**

[i] Massachusetts Environmental Policy Act Office
[ii] 301 CMR 11.00: MEPA Regulations, Section 11.03: Review Thresholds

McMahon Associates specializes in transportation impacts and associated mitigation, is experienced with the overall MEPA process, and has coordinated MEPA filings. Although the majority of the transportation review thresholds do not apply to private developments, moderate-to-large projects often exceed traffic generation and parking thresholds. The most common thresholds relative to traffic volumes and parking for private developments include:

Environmental Notification Form

- 2,000 or more new Average Daily Traffic (ADT) volume on roadways providing access to a single location.
- 1,000 or more new ADT on roadways providing access to a single location and construction of 150 or more new parking spaces at a single location.
- 300 or more new parking spaces at a single location.

Environmental Notification Forms and Mandatory Environmental Impact Report

- 3,000 or more new ADT on roadways providing access to a single location.
- 1,000 or more new parking spaces at a single location.

In the next newsletter, we will discuss the process for filing ENFs and EIRs. Additional information on the MEPA process can be found at **http://www.state.ma.us/envir/mepa.**

Reaching Out to Youth About an Honorable Profession *(continued from page 1)*

But further initiatives could be taken, such as working with engineering organizations to extend outreach on engineering as a profession to youth at the middle school, high school, and early college levels. Formation of a Speaker's Bureau to encourage and actively involve participation of engineers in career days, "Show and Tell" sessions, and other youth competitions beyond the Engineers Week Council's activities could be planned. These same speakers could also mentor college students on their career paths and speak before other groups.

What we can do

We engineers can promote our profession by simply disseminating information. Further, we can demonstrate the attractiveness of our profession in terms of interesting projects and accomplishments. We can also mentor college students and help them choose a career path. And finally, we can impress upon students that many of our country's most successful and well-respected public figures were engineers: presidents, inventors, astronauts, and even professional athletes! Ours is a noble profession, because of what we contribute as both citizens and professionals to society.

Florida Regional News

Addressing Problems Facing South Florida

Part 3 – Florida's Transportation Economy

by John DePalma, Associate & General Manager, and Kim D'Aprile, Administrative Assistant

Florida's transportation economy reflects the state's urban sprawl, heavy reliance on motor vehicles, and growing population.

Florida experienced a surge of building in the 1980s due to a booming economy. Eastern areas adjacent to the ocean became overdeveloped, and Florida's government began to regulate development east of I-95. As developers pushed westward, their activity contributed to today's urban sprawl problems. Infill of Florida's eastern urban region is encouraged by the South Florida Regional Planning Council through Eastward-Ho!, the council's campaign to correct development issues.

Security issues also affect the transportation economy. Florida is currently the second most visited state in the nation, but since 9/11, there has been an increase in tourist automobile travel, which puts a greater burden on roadways.

Although both public and private sectors are being cautious of their finances at this time, it appears that the economy is on the rebound. Many states, such as Colorado, Texas, and Nebraska, have budget deficits and are cutting transportation improvement projects. Florida's transportation economy, on the other hand, will likely remain stable. As the state's population increases and roadway systems deteriorate due to higher vehicular use, highways and bridges will require more maintenance and/or expansion.

Proof of growing populations is found in Florida's housing increase this year. In Palm Beach County, buyers closed on 1,012 used homes in October 2002, nearly the same as September 2001's record sales of 1,080, according to Ken Duke, Chief Executive of the Regional Multiple Listing Service in Palm Beach Gardens. Meanwhile, Treasure Coast used-home sales surged 18 percent last month, to 403 from 342 in September 2001, according to the Florida Association of Realtors.

Although Florida's population growth helps to offset the effects of a slowing economy, many companies may use the current economic environment to focus on development and training programs for the future, so that they stand ready when the economy rebounds.

PA Regional News

New Traffic Calming Techniques Speed Safety Initiatives

by Marie Pantalone, P.E., Project Manager

Statistics on traffic-related injuries and deaths seem to correlate to high speed limits, but traffic calming improvements can increase safety for drivers and non-motorists. As speed limits rise, the number of fatalities increases. In 1995, approximately 84,000 pedestrian injuries and 5,585 pedestrian fatalities occurred in the U.S (National Highway Traffic Safety Administration, 1996).

Until recently, traffic engineers focused on providing for greater numbers of vehicles and allowing them to travel at higher speeds with fewer interruptions and delays. Pedestrian and bicycle safety was achieved by separating them from motor vehicles through pedestrian-only signal phases or separate facilities like overpasses, bike lanes, or paths. While these approaches delivered some benefits for pedestrians and cyclists, they have also discouraged many people from walking and biking.

The most straightforward approach to speed management is to lower the speed limit, but this is only marginally effective because reducing speed limits lowers speeds only by about one-quarter of the actual limit reduction. Police enforcement has also been a primary tool to decrease speeds, but in order for it to be effective, drivers must continually expect it.

Speed humps lower speeds

New traffic calming methods have been developed to address dangerous roadway environments for non-motorists. Speed humps, typically about 12 to 14 feet in cross-section and three-to-four inches high, have been placed in roadways to cause vehicles to move up and down in a way that is uncomfortable to motorists traveling at all but low speeds, as opposed to speed bumps, which are shorter, higher, and produce a more jarring sensation if crossed at faster-than walking speed.

In addition, lower speeds can be encouraged on broad and narrow streets with use of buildouts and parking, medians to narrow the roadway and redirect traffic, chicanes (diverters), and midblock barriers to close a roadway to through-traffic by creating two short cul-de-sacs.

Such traffic engineering and calming improvements have provided safety and other pedestrian-friendly benefits throughout the country. Traffic engineers have learned which countermeasures are effective and how best to design them. As a result, they have learned the path to public acceptance of, and enthusiasm for, such traffic calming techniques. Our firm has helped many municipalities with these issues and has written a traffic calming procedures manual that can be adopted at the local government level.

New Projects

New England

- **Massachusetts Bay Transportation Authority Fitchburg Line Expansion Study,** Fitchburg, MA
- **Wal-Mart Roadway Widening and Signal Improvements,** Salem, NH
- **Nichols Hill Senior Development Traffic Impact Study,** Middleton, MA

Florida

- **Districtwide General Planning Contract,** FDOT District 4
- **City of Palm Bay Redevelopment Project,** Brevard County, FL
- **MSTU Minor Roadway Design Contract,** Palm Beach County, FL

Mid-Atlantic

- **Traffic Signal Open-End Contract,** Districtwide, PennDOT District 6-0
- **Henry Avenue Bridge Rehabilitation Project,** Philadelphia, PennDOT District 6-0
- **St. Francis Tract/DeLuca Homes Traffic Impact Study and Design,** Bensalem, PA

We Answer Your Transportation Questions

McMahon in Motion will feature one reader's question on transportation in each issue. Our traffic engineers will answer your question in the following issue. Please submit your questions via e-mail to fortwashington@mcmtrans.com.

Question (from previous issue)**:** What revolutionary development of advanced transportation systems demands an equally revolutionary plan for deployment?

Answer: The development and deployment of intelligent transportation systems (ITS) provides the intelligent link between travelers, vehicles, and infrastructure. A projected $209 billion will be invested in ITS between now and the year 2011, with an 80 percent investment from the private sector through consumer products and services.

Both public agencies and motorists stand to gain enormous benefits from ITS technologies. The innovative application of advanced technologies means lower costs, enhanced services, and a healthier environment.

In fact, the Massachusetts Highway Department is undertaking a major ITS program statewide, and MassHighway has retained McMahon Associates to evaluate the efficiency and effectiveness of deploying ITS at the department, and to recommend strategies for enhancement.

Next Question: How long does the average driver spend behind the wheel each day?

Look for the answer in our next issue of McMahon in Motion.

Quest for Quality *(continued from page 1)*

professional society participation are encouraged as staff members pursue advanced degrees and professional registrations.

Life in a consulting engineering environment is challenging. The quest for quality is a continuous journey and not a destination. It is hard, but well worth the effort. Quality is necessary to earn our clients' trust.

BEST PLACES to work in PA 2002

McMahon: One of the Best Places To Work

McMahon Associates has been named one of the Best Places to Work. Ranked 22 out of 50 medium-sized companies, McMahon was recognized by the State of Pennsylvania as a firm that benefits the state's economy, workforce, and business, while cultivating a creative, inspiring, and rewarding environment for its employees, including its definitive salary policy and progression path for engineers related directly to individual performance.

This award exemplifies the company mission to provide a caring work environment that delivers responsive and effective transportation solutions. Positive feedback from our employees resulted in this recognition, which is shared throughout the firm's seven East Coast offices. McMahon's management greatly value their employees' opinions and ideas, and the company is committed to being the firm of choice for all employees. If you would like an opportunity to join our caring, family-like organization, please visit the Career Opportunities section on our website.

www.mcmtrans.com

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