

InMOTION



Ensuring Change is Good

by Joe McMahon, P.E., CEO



I learned long ago that, in today's world, you need to embrace change. What I learned most recently is that change can give you whiplash.

When I started McMahon 30 years ago we replaced our portable typewriter with an IBM Selectric, and used Wite-Out® to correct mistakes. We used wet faxes and snail mail. Push button telephones were our advanced communication devices.

Today, the world of Internet, Outlook and emails, PDA's, cell phones, airplanes, and cable/Tivo has now merged our work and personal lives.

In a two-week stint earlier this year, Peggy and I traveled to Colorado, returned to Florida, bought a home, and left for a month in Australia/New Zealand (A trip everyone should consider!). We even squeezed in a visit with my sister in California on the way to Australia. In all that time, I maintained close contact with the office and clients – I felt like I was truly a road warrior.

However, while Down Under, my Blackberry was inoperative. I put the device in my bag and forgot about it. It

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Volunteerism

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

Like any profession, engineering has its professional organizations: engineers representing engineers. Examples include The National Society of Professional Engineers and the Institute of Transportation Engineers. There are also business or transportation industry related organizations, such as Transportation Management Associations (TMA's) whose membership includes other professions united in the same common interest: transportation.

In either case, these organizations rely heavily on volunteers to fulfill their intended functions, including advocacy, development of new technology, and advancement of standards of practice, career development, and community service as their mission. At McMahon, we promote staff participation in such organizations because while as self-serving as it may appear from our company's perspective, it is also vital to the personal career development of our staff. Engineering is not just sitting in front of our computers performing traffic analysis, writing a report, or AutoCADDing a left turn lane, it is dealing with people—clients, engineering peers, agencies, and the community. And such experience, and more, can be gained through volunteer staff participation in such organizations, never mind the company recognition and networking opportunities.

McMahon staff gets involved

We are proud that our staff includes a national engineering society president, several past presidents of regional organizations, engineers (including young engineers) of the year, members of engineering and industry boards of directors, many, many chairs of professional committees, and members of municipal planning commissions. They voluntarily serve our profession and the public good, and their accomplishments often go unnoticed except internally within our organization. But we salute them here, and the contributions they have made.

Their contributions, outside the technical realm of engineering are broad: outreach to schoolchildren; science, math, and building competitions; Habitat for Humanity projects; guidelines for ethical conduct by young engineers; awards and scholarships. In the technical, but obviously, community benefit realms are pro bono engineering reviews as part of municipal planning bodies and pro bono engineering services related to community/neighborhood projects. All require their time, mostly



Richard S. Prentice (left), Senior Design Specialist of McMahon, was inducted as National President of the American Society of Highway Engineers, on June 3, 2006 at the National Conference in Williamsburg, VA.

outside of work, and certainly outside their personal lives. This makes their contributions even more meaningful and our appreciation to them more significant.

DID YOU KNOW?

The Interstate Highway System Turns 50 this year

"Have you ever had a weekend pleasure trip utterly spoiled by running into a big traffic tie-up at the close of the day when everyone is tuckered out?" then Vice President, Richard Nixon, posed this question. The question had an answer in the Federal Highway Act of 1956 coming into legislation. That act stated:

- federal government would pay 90 percent of the cost because the government recognized that this project was national in scope
- road design standards would accommodate traffic levels forecasted for 1975, which was later modified to a 20-year forecast

Further modification to the act included:

- all Interstates were required to be at least four lanes with no at-grade railroad crossings (1966)
- existing toll roads could continue as Interstate toll roads provided they met Interstate standards
- U.S. Congress decided to repay states with toll roads that later became Interstates (1991)

For more interesting facts on the Interstate Highway System, go to

<http://www.eisenhower.archives.gov/highway.htm>.

Transit Agencies Benefit from New Small Starts Program

by Glenn D. Leggett, Transit Planner

The Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (better known as SAFETEA-LU) was signed into law, on August 10, 2005. SAFETEA-LU expands the scope of two ground-breaking pieces of legislation, the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and the Transportation Equity Act for the 21st Century (TEA-21) of 1998.

Proponents of ISTEA and TEA-21, recognizing the impending completion of the Interstate Highway System, as well as changing regional development patterns, sought to devolve primary responsibility for transportation decision making from the federal to state and local governments. In essence, a new focus on community building, environmental protection, improved transportation connections, enhanced accessibility, and mode choice would supplant the nation's historic emphasis on road building.

Traditional funding program

Under this legislation, a New Starts program was developed to fund local transit initiatives. Projects eligible for New Starts funding include fixed guideway systems using a separate right-of-way, fixed catenary systems, and exclusive bus facilities. Thus, new rapid transit, commuter rail,

streetcar/light rail, and bus rapid transit lines could potentially qualify, as could repair and upgrading of existing infrastructure.

Competition for New Starts funding is naturally intense as an increasing number of metropolitan areas vie for a limited amount of federal dollars. Since federal approval is normally justified through cost/unit hour or passenger/capital expenditure statistics, densely-populated urbanized areas are the most frequent recipients of New Starts funding. Smaller areas with lower population densities and less ability to create new jobs have often been



Upgrades to the Fitchburg Bus Connection Station may qualify for New Starts funding.

bypassed as a result.

Small Starts funds smaller New Starts

To allow smaller agencies and municipalities a chance to compete for these dollars, SAFETEA-LU created a Small Starts component to the New Starts program. Projects based on planning and Alternatives Analysis that seek less than \$75 million in federal New Starts funds, and cost less than \$250 million, are potentially eligible for Small Starts money. The Federal Transit Administration bases final approval for these projects on several criteria, including cost effectiveness, the area's commitment to public transit-supportive land use policies, and the potential effects on local economic development.

McMahon is currently working with the Massachusetts Bay Transportation Authority (MBTA) and the Montachusett Regional Transit Authority (MART) on the proposed Fitchburg Commuter Rail Line Improvement project. Estimates indicate a potential ridership increase of 40 percent along the line, if travel times from Fitchburg to Boston can be shortened by 20 to 25 minutes. Since the project involves the upgrading of an existing commuter rail line, it may qualify for Small Starts funding.

MID-ATLANTIC REGIONAL NEWS

Sizing Up "Right-Sizing"

by John J. Mitchell, P.E., Associate & General Manager - Fort Washington

In the last few years, the big buzzword in the public sector has been "right-sizing." Various agencies, especially the Pennsylvania Department of Transportation (PennDOT), have been requiring consulting engineers to use the principle ideas of right-sizing in order to "best fit" all transportation projects.

Defining right-sizing

Let's first look at the Federal Highway Administration's (FHWA) perspective in right-sizing. Design policy 23 CFR 625 states that proposed National Highway System (NHS) projects shall provide for a facility that will adequately serve the existing and planned future traffic of the highway in a manner that is conducive to safety, durability, and economy

of maintenance; and be designed and constructed in accordance with criteria best suited to accomplish these objectives. The FHWA has oversight responsibility to make sure projects comply with laws and regulations while improving safety, mobility and environmental stewardship and the public's trust and confidence.

PennDOT officials explained right-sizing in their strike-off letter #432-05-01, dated July 1, 2005. This letter explains "Smart Transportation and Right-Sizing," linking these concepts to the National Environmental Policy Act (NEPA) and to local/regional planning and land use decision making. Their definition of right-sizing is a "best fit" transportation program or projects (all modes) that

meets transportation needs and considers community and regional goals/objectives, quality of life concerns, economic development initiatives, fiscal constraints, and other social/environmental criteria. Right-sizing can be carried through all planning, programming, and project development phases. We can derive the most benefits of right-sizing early on in the process.

Satisfying right-sizing criteria

The bottom line is safety, practicality, and fiscal responsibility. As consulting engineers, we need to examine all options in order to meet this criterion. One example of this is design criteria. Current AASHTO, State, and Local design criteria are

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The Changing Growth Management Act

by R. Trent Ebersole, P.E, Sr. Project Manager & Thomas A. Hall, General Manager – Fort Lauderdale

Florida adopted a Growth Management Act in 1985, which created concurrency management to ensure that sufficient infrastructure, i.e., roads, water treatment, parks, etc., is available to accommodate new development. The responsibility for implementing concurrency management falls primarily on county and city governments via Comprehensive Plans. The State of Florida's Department of Community Affairs (DCA) serves to oversee all concurrency management within the state.

The Florida Legislature has continued to refine the act since its inception, and significantly revised the growth management laws in 2005. The revisions were intended to better connect the planning, implementation, and budgeting for infrastructure improvements.

"Pay as You Grow"

The Capital Improvements Element (CIE) of a Comprehensive Plan deals with the budgeting aspects of concurrency. The 2005 reform emphasizes financial feasibility and project scheduling. Projects identified in years one through three in the CIE must have committed funds. Projects in years four and five may be planned revenues, which could include anticipated increases in tax revenue or Federal and State matching funds. The DCA assesses the movement of projects from planned funding, to committed funding, to implementation, and requires that counties move the projects in the CIE forward to reflect the progression through the funding process. The state refers to it as the "Pay as You Grow" policy.

To help with the process, a proportionate fair-share mechanism has been developed. Historically, development orders for projects that would impact a public

facility (such as an over-capacity road) would be contingent on developer commitment to improvements needed to bring the facility up to an acceptable level of service. The concept of proportionate fair-share allows the project to include a commitment to an appropriate share of the cost for those improvements in order to move forward in the approval process. Specifically, the applicant would receive a certificate of concurrency satisfaction upon execution of a proportionate fair-share agreement. A proportionate fair-share agreement could speed up the entitlement process for a land use application, but it is important to understand that Building Permits or Certificates of Occupancy will not be issued until the improvement corresponding with the fair-share contribution is completed.

Project move with financial commitment

This means that the county will need to commit to the project by putting it in its CIE. This is significant because, if developer contributions constitute a small portion of the project's estimated cost, the county will need to make up the missing funds until, or unless, additional developments commit to fair-share contributions. If the county doesn't move the project forward and put it in the work program, the development will not receive building permits. Depending upon the specific language, a county's proportionate fair-share model may place a time limit on a concurrency certificate whereby it expires prior to the developer's ability to obtain the building permit.

State law requires counties to adopt a proportionate fair-share ordinance by December 1, 2006.



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NEWLY AWARDED PROJECTS

NEW ENGLAND

- Westfield Pavilion Development Project, Town of Westfield, MA
- City of Newton, Peer Review for Northport Development, City of Newton, MA
- Fitchburg Commuter Rail, Alternatives Analysis, Fitchburg, MA

FLORIDA

- Powerline Road Widening, Pompano Beach, FL
- Sawgrass Technology Park, Broward County, FL
- Lox Road Area Land Use Amendment Transportation Studies, Palm Beach County, FL

MID-ATLANTIC

- S.R. 0202 Gateway Improvement Project, Solebury Township, Bucks County, PA
- Brandywine Trail Pedestrian Bridge Project, West Bradford Township, Chester County, PA
- Spring-Ford High School 10th Avenue Roadway Extension Traffic Impact Study, Montgomery County, PA

Ensuring Change is Good

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was a delight to learn that my technology addiction was only temporary. I confess that I checked emails every few days at Internet cafes.

Amazingly, I found that McMahon flourished while I was away despite my not being in 24/7 contact!

Upon returning, however, I found an hour-old email from a client, "Joe, we missed you! Call me as soon as you can!" I had missed the whirlwind of work; I haven't slowed down since.

Though immersed in the swirling cauldron of rapidly changing personal and professional lives, we need to make time to reflect. While away, I regained my joy of reading for pleasure, and just admiring the scenery around me. I am now scheduling time when I turn off the computer, Blackberry and TV. I suggest you do the same, but be careful while taking time to smell the roses, you may get whiplash.

Mid-Atlantic Regional News (continued from page 2)

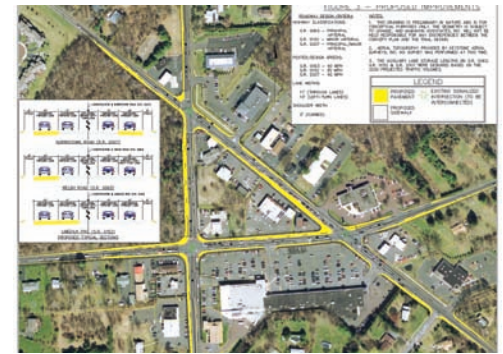
actually flexible. In addition, many of us avoid obtaining design exceptions on projects because of the time delay involved. However, if it makes sense to obtain one in order to save money and satisfy local opinion on the project, then it is our duty to work closely with the review agencies to adequately right-size the project without jeopardizing the safety of the project.

Balanced, cost-effective projects

Finally, PennDOT states that during the project conception stage, it would be cost-effective to identify environmental and cultural resource constraints, along with transportation needs and analysis. Looking for early avoidance, minimization, or mitigation of impacts would not only provide cost-effective solutions but also expedite project delivery.

It is estimated that construction costs increase somewhere between 10 to 20 percent per year. So, for every year a \$5 million project is delayed, it could cost anywhere from \$500,000 to \$1 million more to build the project the next year. This does not include compounding, but I believe we all get the point. If we all can follow these guidelines, it will lead to a better-balanced and fiscally constrained Transportation Improvement Program (TIP). Once

that happens, more projects get built and we are better serving our true client, the traveling public.



This example conceptually depicts new lane configurations at a triangle intersection. Roadway segments can provide two travel lanes per direction, with a dedicated center left-turn area. Intersection approaches can be widened to provide a shared through/right-turn lane, and continue to provide a second through lane and left-turn lane. Roadways can also be widened to receive two lanes for traffic leaving intersections. These are just a few examples of improvements that demonstrate the design of cost-effective lane widths to maximize existing and future capacity at intersections.

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