The **READY-MIXER**

Virginia Ready-Mixed Concrete Association 630 Country Green Lane Charlottesville, VA 22902-6478 Phone: 804-977-3716 Fax: 804-979-2439



DECEMBER 2003

READY MIXED

Corporate Day: A New Tradition

NVRMCAC Reports 2003 Accomplishments at Annual Meeting

By Hessam Nabavi, R.A., VRMCA Director of Industry Services Northern Virginia Region

The Second Annual Corporate Day in the Northern Virginia Ready-Mixed Advisory Council (NVRMCAC) was held on November 12, 2003. It was well received, effective, and educational. This tradition had started in 2002 for two reasons: 1) to present goals and accomplishments of the Council and the committees in promoting the use of concrete; and 2) to create accountability for the members to participate with the activities of the council, and increase the attendance of the monthly council meeting, which will ultimately increase the use of concrete.

Roy Eller of Newington Concrete, and Coun-

cil Chairman, kicked off the meeting by welcoming everyone and introducing the executive leadership and committee leadership.

During lunch, James Selkregg, President of Newington Concrete and Virginia Ready-Mixed Concrete Association, also welcomed everyone and asked all the members for the active support of the council by attend-

Concrete Paving Primer

Two Informative Articles about Paving with Concrete

In this issue, paving mixes and concrete pavement restoration are covered in two informative articles that provide a wealth of technical information, which can be applied in a variety of ways, including education and promotion.

The articles are:

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Members take a break during Corporate Day.

ing the monthly meetings and getting involved in the council's promotional efforts. Then NVRMCA Chairman Roy Eller invited Doug Easter, VRMCA Deputy Director, to give his report. Easter complimented the council for its accomplishments this year and gave a brief report about VRMCA's legislative and regulatory activities. He

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Senior GOP Lawmaker Files Gas Tax Legislation

MANASSAS REPUBLICAN DELEGATE Harry Parrish has pre-filed legislation for the 2004 General Assembly raising the gasoline tax by 6.5 cents to 24 cents per gallon, which would generate about \$300 million in additional revenues.

Parrish, a key GOP lawmaker, said the revenues raised by his legislation, House Bill 60, would be dedicated to fund transportation projects.

"Transportation is one of the urgent needs of the Commonwealth," Parrish said. "Most of my constituents want something done for transportation. They are tired of spending three hours a day in their car."

Corporate Day ———

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strongly suggested that everyone call his/her legislator or congressman when VRMCA has issues.

David Snyder of Virginia Concrete and Building Committee Chairman began the presentations on committee goals and accomplishments Excerpts from the presentations are provided below.

BUILDING COMMITTEE

Goals: 1) Increase the awareness of concrete within the residential market; 2) Participate in the 2003 Home & Garden Show in Chantilly, VA; 3) Insulated Concrete Form home showcased in Northern Virginia, and 4) Increase participation within the committee.

Accomplishments:

• Capitol Home and Garden Show:

Held February 20-23, 2003 Dulles Expo Center. Hosted a 10' x 20' booth, featuring ICF Construction with samples of stamped and patterned concrete. The booth highlighted various uses of concrete; ICF forms were the "shell" of the booth. Compiled an e-mail list of almost 100 people who were interested in attending an on-site seminar discussing ICF homes.

• Insulated Concrete Forms:

Showcase ICF homes under construction (Sloper Residence - Great Falls, VA; Othrop Residence - Fairfax Station, VA; and Angolia Residence – Great Falls, VA). The promotional opportunities will include Lunch box seminars at the building sites during construction for the design community, potential home buyers, building officials, realtors and custom homebuilders.

• Forced Protection Explosive Demonstration (FPED):

Full Partnership with the Insulated Concrete Form Association to show the benefits of ICF construction to government and military personnel. Ready mix companies cooperated to supply the concrete for the six 10'x10' test vaults. National media coverage in several concrete construction magazines as well as the Insulated Concrete Form magazine.

Duane Laughlin of Crider and Shockey, and Paving and Tilt-Up Committee Chairman, gave the next presentation.

PAVING COMMITTEE

Goals: 1) Develop promotional literature for the spring home and garden show; 2) Create a database of tract and custom home builders; 3) Develop cost analysis of concrete vs. asphalt; and 4) Create a database of new residential communities.

Accomplishments: 1) Developed promotional literature for the spring home and garden show; 2) Created database focusing on custom home builders; 3) Developed comparative cost analysis of concrete vs. asphalt; and 4) Developed paving presentation kit.

TILT-UP COMMITTEE

Goals: 1) Develop database of qualified tilt-up contractors; 2) Present tilt-up PowerPoint for AIA credits as part of the NVACAC Golf Outing; 3) Partner with interested tilt-up contractors in order that they may offer cost analysis for tilt-up construction and technical assistance during presentations to the architectural/engineering community; 4) Continue developing relationships with school system officials; 5) Seek opportunity to present tilt-up method of construction at superintendent's annual meeting; and 6) Meet once per month outside of regional committee meeting.

Accomplishments: 1) Presented tiltup PowerPoint presentation during regular monthly meeting; 2) Developed tilt-up program with speaker for annual golf outing (with Golf Committee); 3) Presented over 20 lunchbox seminar presentations to local architects and engineers; 4) Conducted numerous site visits with architects/school system representatives; 5) Participated in NRMCA/ VRMCA/MRMCA Fall Promoters Workshop; 6) Stafford County School System Press Box Project; 7) Developed an AIA accredited tilt-up presentation & library of support materials; 8) Developed four cost estimates for tilt-up construction vs. masonry for existing Colonial Forge High School in Stafford County; 9) Sent TCA's quarterly newsletter to school design directors and selected architects; 10) Continuing focus on educating architects and school design directors on the benefits of tilt-up construction, and 11) Continuing efforts on building relationships with specifiers.

Gary Downey of Titan America, and Technical Committee Chairman, gave the next presentation.

TECHNICAL COMMITTEE

Goals: 1) Organize a forum between ready-mix producers and testing labs. Purpose is to improve communication between the two parties; 2) Eliminate the Prince William County requirement of an original raised Professional Engineer stamp on mix design submittals.

Accomplishments: 1) Forty-two people attended the forum between testing labs and ready mix producers; 2) Prince William County no longer requires an original raised stamp on mix design submittals and will accept a mix design based on historical data if the engineer of record on a project approves the mix.

Mike Newman of Virginia and Cardinal Concrete, also Media Committee Chairman, gave the next presentation.

MEDIA COMMITTEE

Goals: 1) Finish content development of the informational/interactive website focusing on Northern Virginia that primarily targets consumers by the second quarter of 2003; 2) Work with Treasurer to secure one time development fee of VRMCA Members and Associate Members; 3) Contact all decorative concrete contractors and ICF Contractors to secure fee in advertising on website; and

By Steve Haner

COURAGEOUS. The word gives me pause ever since reading and then viewing the British comedy series Yes, Minister and Yes, Prime Minister. The television series was converted into two of the funniest and wisest books about political philosophy and the bureaucratic impulse. Whenever Sir Humphrey Appleby, the consummate Whitehall civil servant, wanted to stop Cabinet (and later Prime) Minister Jim Hacker dead in his tracks, he would call him courageous.

To Hacker, that meant he was putting the good of the nation ahead of personal or party gain. In other words, he must be screwing up, so he reconsidered.

At a recent Virginia Association of Counties meeting, a county supervisor applied that word to a recent position adopted by

the Virginia Chamber of Commerce. After I spent a few minutes advocating a significant increase in the motor fuels tax, which would be the first adjustment in 17 years, the county supervisor came up and threw that word at me.

Courageous is not the right word. Foolhardy or self-deluding, maybe, but we're not being courageous. It is the Chamber's business to think about Virginia 's economic future. We are acting out of economic self-interest. The trick is to persuade 51 in the House and 21 in the Senate that they don't need to be courageous either.

The Chamber's position is simple the way to address the transportation problem is to increase the principal revenue source, the motor fuels tax, for the first time in 17 years. The change need only reflect 17 years of inflation, and in economic terms is not a "real" increase. The guy at the pump realizes most things cost more than they did 17 years ago.

The effect of flat revenue, rising maintenance and increasing debt costs on the construction budget is clearly visible in VDOT's projections (*see table*). That \$750 million annual construction figure works out to about \$100 per year per Virginian and has to cover

everything, from interstate projects down to paving county dirt roads.

I submit the guy at the pump understands the 17.5 cents per gallon is a user fee. The more we drive, the more we pay. Big trucks and commercial vehicles on the road all day pay far more than the family sedan. The gas tax is so fair and efficient economics that teachers cite it as an example. President Reagan increased the federal gas tax and lost zero brownie points with the true blue conservatives.

Use the example of my daytrip to the Homestead (which is where the Virginia Association of Counties always meets, much to the chagrin of reporters who can't afford it). To so I thought. Then one supervisor said the whole plan was doomed unless the formula was revised and an even higher percentage of the revenue went to mass transit. Another started talking about how impact fees were the real answer (tax housing to build roads? How is that more logical?). In response to this column, I'm sure I will hear once again from the land use utopians with their Vision of the Perfect Urban Milieu or some such that always has me looking around for Big Brother.

This doesn't need to be that complicated. The transportation funding structure that has been in place since 1986 is sound. We don't need to restructure a thing. The problem is that the main

> source of revenue, the gas tax, is fixed in place and its value has been deeply eroded by inflation. According to an inflation cal-

culator I found on the internet, something that cost \$17.50 in 1986 would cost more than \$29 now. A gas tax of 29 cents would put us too far ahead our neighbors, but each penny would raise \$50 million annually for the construction program.

If we kept the existing formulas, all regions would benefit and all modes of transportation would get a share.

The state has other pressing financial needs, but those problems have built-in solutions. When the state squeezes higher education, tuition rises (another user fee). When the state issues unfunded mandates for K-12, the local property taxpayer picks up the tab. One way or another, those programs get funded.

With transportation, it's different. There is no way to directly shift the cost and still raise the needed funds. The price we pay for the state's benign neglect is measured in something far more valuable than money—lost time. And as the problems accumulate, we start losing jobs. No more referendum votes. On this one, the General Assembly and the governor need to just do it.

Steve Haner is vice president for public policy with the Virginia Chamber of Commerce. This article first appeared in Bacon's Rebellion.

The Case for a Gas Tax Increase

travel about 350 miles round trip used about 12 gallons of gas. The state gas tax cost me \$2.10, the same \$2.10 it had cost me since 1987 (and I probably drove a less efficient car then and it cost me more.) I paid my "toll" at the pumps in Staunton.

Is that \$2.10 really any different than the tolls I pay on work days on the Powhite Parkway? I pay \$3.30 round trip, which probably works out to at least a dime a mile. The toll we pay the state for using the "free" highway system, collected at the gas pump, is now well less than a penny a mile for motorists with a newer car, and under our proposal would stay near one cent per mile for all but the largest or oldest vehicles.

What is the difference between the ten cents we pay on the toll road and the one cent we pay on the open road? The extra money is for lawyers, bankers, interest payments to the bond holders, an extra layer of administration at the Richmond Metropolitan Authority and all those toll takers. (There is a place for toll roads, bridges and tunnels, but don't kid yourself the money is all going to concrete, steel and construction workers.)

Discussing the idea in front of the Virginia Association of Counties was preaching to the choir, of course. Or

Lasting Concrete Streets Rest Upon Solid Designs

In the design of concrete streets, questions often pop-up in the designers mind that may make them uncomfortable using concrete. These include: What is needed from my subbase? How do I fix the subgrade? Do I need special concrete? What reinforcing steel is needed? Where do I place joints? Do I need dowels? And on and on.

Being able to answer these questions, and many more is paramount in designing and constructing a concrete street that will last decades into the future. However, as with many complex problems, concrete pavements follow the old 80 / 20 rule; whereby getting a few specific things correct (i.e. 20 %), one can eliminate approximately 80% of all problems. As such, here are the important items that need to be answered when designing a concrete street:

Is a Subbase Necessary?

Unlike other paving materials, the structural strength of a concrete pavement is largely within the con-

Collector (ADTT = 100)

Minor Arterial (ADTT = 300)

Minor Arterial (ADTT = 600)

crete itself due to its rigid nature. This means loads are distributed over large areas resulting in very low pressures on the subgrade. This makes it unnecessary to build up subgrade with strength thick layers of subbase material. Note that high

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volume roads, such as highways, generally fail by pumping and eroding of the subgrade at pavement joints and edges. In these applications, a subbase reduces the potential for soil erosion under the pavement slab. Since low volume roads do not fail in this manner, they do not require subbases and in most cases can be placed directly on the compacted subgrade.

When preparing the subgrade soils, they should be kept to a uniform material type and density. Abrupt changes in subgrade type can result in the differential movement due to frost action or swell of expansive soils. Changes in volume can be substantially reduced by compacting the soil at 1 to 3 percentage points above optimum moisture content. Soft spots that show up during construction should be excavated and recompacted with the same type of materials as the adjacent subgrade.

How Thick Should the Pavement Be?

Concrete pavement thickness depends on the traffic load, subgrade and climate that the pavement will be exposed to. For most city streets, secondary and primary roads, and general aviation airports, the thickness is in the range of 4 to 9 inches. Note that specifications that arbitrarily put a minimum thickness requirement on con-

crete pavement thickness may mean that the pavement is over-designed for its use. All pavement design procedures have been developed and calibrated to account for the traffic that will actually use it. As such, mandating a minimum thickness is inefficient.

The table below shows typical thicknesses for concrete streets with and without concrete curb-and-gutters for different applications. Note curb and gutter provides edge support, which reduces critical edge stresses and deflections.

What Concrete Mixture Is Necessary?

Concrete paving mixes are designed to produce the desired flexural strength and to give satisfactory durability under the conditions the pavement will experience during its service life. Since the mode of failure for concrete pavement is flexural fatigue, it is important that the concrete have adequate flexural strength to resist cracking from flexural fatigue. Under average conditions, the

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	Concrete Flexural Strength			
	600 psi		650 p:	si
Traffic Classification	with	w/o	with	w/out
	C&G	C&G	C&G	C&G
Light Residential (ADTT = 3)	5.0	5.5	5.0	5.5
Residential (ADTT = 10)	5.5	6.5	5.0	6.0
Residential (ADTT = 20)	5.5	6.5	5.5	6.0
Collector (ADTT = 50)	6.5	7.5	6.0	7/0

6.5

7.5

7.5

8.0

8.5

9.0

6.5

7.0

7.5

7.5

8.0

8.5

Pavement Directly on Subgrade Pavement on Granular Subbase **Concrete Flexural Strength** 650 psi 600 psi with w/o with w/o C&G C&G C&G C&G 5.0 5.5 5.0 5.0 5.0 5.0 6.0 5.5 5.0 6.0 5.0 5.5 6.0 7.0 5.5 6.5 6.0 7.0 6.0 7.0 7.0 8.0 6.5 7.5 7.0 8.0 7.0 8.0

On Subgrade, k-value = 100 psi/in; On Subbase, k-value = 200 psi/in ADTT = Average Daily Truck Traffic

Designs

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concrete should achieve a 28day flexural strength of 550 to 700 psi.

In frost-affected areas, concrete pavements must also be protected from freezing and thawing and from the action of deicing salts. It is essential that the mix have a low water-cement ratio, an adequate cement factor, sufficient entrained air content and adequate curing.

The quantity of air entrainment necessary for weather-resistant concrete varies with the maximum size aggregate, and is typically in the range of 5 to 7.5% for pavements in the Northeast. In addition to making the hardened concrete weather-resistant, entrained

air improves the concrete while it is still in the plastic state by preventing segregation, increasing workability and reducing bleeding.

Also, the quantity of mixing water is a

critical influence on the durability and weather-resistance of hardened concrete. The least amount of mixing water that will produce a plastic, workable mix will result in the greatest durability in hardened concrete. For concrete pavements exposed to freezing and thawing and deicing salts, a minimum cement content of 564 lbs / CY and a maximum water/cement ratio of 0.45 is recommended.

How Far Apart Should the Joints Be?

Transverse contraction joints are used to control transverse cracking. Contraction joints relieve (1) tensile stresses that oc-

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cur when the slab contracts and (2) curling and warping stresses caused by differential temperatures and moisture contents within the slab. In general, for plain jointed concrete city street pavements, the joint spacing should not exceed 24 to 30 times the pavement thickness with a maximum spacing of 15 ft. Distributed steel or wire mesh only serves to hold cracks tightly together and does not add to the structural strength of the pavement. If transverse contraction joints are properly spaced as above, no intermediate cracking should occur and the steel or mesh should be eliminated.

Longitudinal joints are The quantity of mixing water installed is a critical influence control longion the durability and tudinal crackweather-resistance of ing. They usuhardened concrete. ally are spaced to coincide with

to

lane

markings at 8 to 12-ft intervals and typically should not be greater than 13 ft. Both transverse and longitudinal joints are sawed into the concrete after it has set and to a depth equal to one-fourth to one-third (D/4 to D/3) of the pavement thickness.

Are Dowels Necessary?

The need for dowels in transverse contraction joints depends on what type of service will be required of the pavement. Dowel bars are not needed in residential pavements or other light traffic streets, but they may be needed on arterial streets carrying heavy volumes and weights of truck traffic. A good rule of thumb is that if a pavement goes through a proper design procedure, such as the AASHTO, ACI, or PCAPAV Design Procedure, and the design is 8 inches or more, use dowels. If the design is less than 7 inches, do not use dowels, because there is not enough truck traffic to cause faulting.

Between 7 and 8 inches, you are in a grey zone, and the use of dowels depends on the amount of trucks, the traffic patterns (channelized or non channelized), speed, etc.

Do I Need to Seal the Joints?

Joint sealing is intended to minimize both the infiltration of surface water and incompressible material into the joint system. Secondarily, sealing reduces the potential for dowel bar corrosion by reducing entrance of de-icing chemicals. There are some errant claims that joint sealants prevent surface water from entering the joint system, but modern vacuum tests clearly show that no sealant will provide a perfectly watertight seal.

Across all pavement applications, the most common joint sealant remains the hot-pour liquid sealant. Silicone sealants and compression seals have been adopted by some specifying agencies and are quite common in airport and highway pavements.

For street and local roads, some agencies in the Midwest are adopting a single saw cut and fill philosophy. With this philosophy, the contractor makes his initial saw cut to initiate the joint. Then instead of making a second widening cut, the initial saw cut is filled with the sealant material. The advantage of this is that it is quicker, and it keeps the joint narrower, which minimizes wheel noise.

This article was adapted from the ACPA Publication, Design of Concrete Pavement for City Streets, IS184P. To order, call toll-free 1-800-868-6733.

Restore 40 to 60-Year-Old Streets with Concrete Overlay

Many communities in the Northeast have 40-60 year old concrete pavements that have served well, but are now in need of some type of repair. Often time, an agency's first and only thought is to temporarily 'cover it up' with an asphalt overlay. However, this is not their only option. Two better and more cost-effective methods of restoring these pavements to a smooth, safe roadway are Concrete Pavement Restoration (CPR) and unbonded concrete overlay.

CPR is used when a concrete pavement is in reasonably good condition with only slight deterioration. CPR's function is to bring the structural capacity or rideability of a pavement to an improved, acceptable condition, which in turn, extends the pavement's service life. These techniques are applied not only to repair deterioration in the existing pavement, but also to prevent the same deterioration from occurring in the future.

The table to the right shows the available CPR techniques. Each technique is designed specifically to repair or prevent the recurrence of a certain distress or a combination of distresses. While each technique can be used individually, they are typically more effective when several are used together.

The choice of which CPR activity to implement depends on what distresses are present in the pavement. However, it should be noted that Diamond Grinding should be included in almost every CPR project. The reason for this is that the driving public judges a rehabilitated pavement on its ride quality and diamond grinding improves the final ride to that of a new pavement.

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The term 'unbonded' is used to describe two separate distinct pavements with one on top of the other. Unbonded overlays use a thin asphalt "separation interlayer" (stress relief layer) between the new and existing concrete so that concrete layers act independently of each other. Essentially, the separation interlayer acts as a cushioning device that prevents distresses from underlying pavement from reflecting into the overlay. As such, they are a much better option for deteriorated concrete pavements than an asphalt overlay.

The major advantage of unbonded overlays is that they require little preoverlay repair and can be applied to deteriorated pavements. In fact they are most cost effective when the existing concrete pavement is badly deteriorated. The key to long-term performance of an unbonded overlay is the interlayer and the best material to use is an asphalt separation layer at least one inch thick. At this thickness, the interlayer should cover all deterioration in the existing slabs and eliminate any 'keying' action that may occur at the joints, which eliminates any reflective cracking from the underlying

concrete pavement.

With respect to pre-overlay repair, typically other procedures can occur simultaneously to aid in speed of construction. New drainage systems, pavement widening and new curb and gutter installations can be incorporated into the new pavement. After these construction processes are complete, the paving may begin. The asphalt separator layer is followed directly by the new concrete overlay. Additionally, offsetting the joint layout by approximately 3 ft improves load transfer and reduces the chance of roughness due to pumping.

The actual concrete overlay thickness will depend on several factors, but experience has shown that an unbonded concrete overlay between four and eight inches of plain, unreinforced pavement will perform well for most urban applications.

Concrete Pavement Restoration Technique Used to:	
Full-Depth Repairs	Repair cracked slabs and joint deterioration
Partial-Depth Repairs	Repair joint and crack deterioration and surface distress
Diamond Grinding	Extend serviceability; improve ride and skid resistance; reduce noise
Dowel-Bar Retrofit	Restore load transfer at joints and cracks
Joint and Crack Resealing	Minimize infiltration of water and incompressible material into joint system
Slab Stabilization	Fill small voids underneath the concrete slab
Cross-Stitching	Repair low and medium severity longitudinal cracks
Grooving	Reduce wet weather accidents and prevent hydroplaning
Retrofitting Edge Drains	Add a longitudinal drainage system
Retrofitting Concrete Shoulder	Decrease pavement edge stresses and corner deflections

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4) Assist all other committees in promoting their events to various Radio/TV and Print media.

Accomplishments: 1) ICF Article in NVBIA's monthly magazine (Home Builder Publication); 2) Prince William Journal/Stafford Times coverage of May's FPED Blast Force Demonstration; 3) All Advisory council committee chairs helped develop content for their specific area of the website; 4) Media Committee members keep website current and enter updates: 5) Site is: www.concreteadvisor.com with explanation that we are an advisory council of VRMCA. Main focus is Northern Virginia homeowners with a Ready Mix Plant locator; information about decorative concrete contractors; ICF contractors; and answering general concrete questions; and 6) VRMCA Collateral Folder Design Suggestion Folder will be used to create a corporate image of the advisory council to hold promotional material for presentations.

Bryan Young of Virginia Concrete, and Golf/ Educational Committee Chairman, gave the next presentation.

GOLF/EDUCATIONAL COMMITTEE

Goals: 1) Work with the selected committee chair to plan and facilitate the spring golf outing/education seminar for architects and engineers.

Accomplishments: 1) Spring outing in May attended by approximately 40 architects/engineers/ local building officials; 2) Professional seminar on tilt-up construction by Glen Stephens; 3) Good turnout by readymix association members; and 4) Opportunity for members to become familiar with local architects and building officials.

Don Cooper of Aggregate Industries, and Membership Committee Chairman, gave the next presentation.

MEMBERSHIP COMMITTEE

Goals: 1) Increase or maintain membership attendance at monthly meetings from an average of 19 members present per meeting; 2) Recruit new members to VRMCA such as stone suppliers and ready-mix producers; 3) Provide timely information updates to members;

4) Maintain updated e-mail/phone contact list to be distributed to all members; and 5) Invite general managers/principals and other company leaders to a "Corporate Day" breakfast/luncheon to update council's promotional efforts for 2003.

Accomplishments: 1) Maintained membership attendance at monthly meetings an average of 19 members; 2) Meeting reminders via e-mail/ faxes: 3) Recruited new members to VRMCA such as stone suppliers and ready mix producers; 4) Provided, via e-mail, a new member incentive program; 5) Provided, via e-mail, a prospective new member referral; 6) Provided timely information updates to members; 7) Forwarded requests by committees using member distribution list; 8) Maintained and updated e-mail/phone distribution list; and 9) Assisted in coordination and notification of corporate day luncheon.

Roy Eller concluded the meeting by asking all the member companies to support the monthly meeting by having a representative present.

Gas Tax _____

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If the increase is approved, Virginia's 24-cent gas tax would be higher than gas taxes in Maryland and the District of Columbia. Maryland's gas tax, which hasn't increased in a decade, is 23.5 cents per gallon; Washington motorists pay 20 cents per gallon.

Parrish, who chairs the House Finance Committee, said he had discussed his proposal with Governor Mark R. Warner. According to Parrish, Warner said he would sign the bill if it passed the General Assembly.

Warner's recent tax reform proposal did not include a gas tax increase. The Governor's office said his proposal would provide an equivalent of a four cent-increase by returning a portion of the insurance-premium tax and debt service on federal notes.

A number of Republicans, including House Speaker Bill Howell, previously have said they may support a gas tax increase, calling it a "user-fee."

In Memory of a Friend

With a deep sorrow we acknowledge the death of Mr. James O'Shaughnessy, a long-time friend of the Northern Virginia Advisory Council and a great public servant with Stafford County Public Schools. O'Shaughnessy, who served as the assistant director of planning and construction with Stafford County Public Schools, died of a massive heart attack on the morning of Tuesday, December 2, 2003. He was 47.

Concrete Field Testing & ACI Schools Schedule

Beginning December 1, 2003, VDOT and the VRMCA have scheduled the VDOT Hydraulic Cement Concrete Field Schools and VRMCA's Concrete Field Testing Technician Certification programs and exams in the same weeks at nearby locations. The 2003-2004 ACI Training Seminar & Exam schedule is as follows:

Roanoke Portsmouth/Norfolk Richmond Staunton Fredericksburg Richmond Jan. 26, 27 & 30 Feb. 2, 3 & 6 Mar. 8, 9 & 12 Mar. 15, 16 & 19 Mar. 22, 23 & 26 May 7, Re-Exam Only



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The Smart Road bridge, at 175 feet tall, is Virginia's fallest bridge. Approximately 9,647 cubic yards of high-strength concrete were used to construct the 2,000-tool long bridge.