

Professional Engineer

MARYLAND SOCIETY OF PROFESSIONAL ENGINEERS – A State Society of the National Society of Professional Engineers

This Spring, the Maryland General Assembly ...

- **Failed** to pass a **sales tax on engineering and laboratory services**, but watch for the tax to come back at a **special session** of the legislature this Fall.
- **Passed** a **stormwater management law** that will greatly affect how stormwater is managed in Maryland.
- **Failed** to pass bills that would have set up **task forces** on statewide stormwater management and sediment control or improving local stormwater management practices.
- **Failed** to pass bills imposing **fees on new impervious surface development**, granting income tax credits for **low impact development**, establishing a Water Pollution Control Fund, or **redirecting Bay Restoration Fund** expenditures.
- **Passed** a law eliminating *temporary* professional engineering licenses in Maryland.
- **Failed** to pass bills that would have authorized additional credits on **green building tax credits**, set **new mandates** for high performance buildings, provided **price preference** for construction of new high performance school buildings, or required that all new State buildings of at least 5,000 sq. ft. be **high performance building**.
- **Passed** a law establishing a **Green Building Council** in the Dept. of General Services.
- **Passed** a law approving **qualification-based selection** for architectural and engineering services by Frederick County.
- **Failed** to pass a bill that would have eliminated the need for a **property to be improved** to allow a surveyor to file a mechanic's lien.

See details on legislative issues beginning on page 3

State PE Board Actions

New Titleblock Regulation Goes into Effect July 1

A new regulation requiring professional engineers who sign and seal engineering documents to add professional certification to the effect that the professional engineer **prepared or approved the drawings** goes into effect July 1. The professional engineer will also be required to state his or her license number and the expiration date of the license.

The Board advanced several reasons for the new regulation. First, by expressly certifying that he or she prepared or approved the documents, the engineer is reminded of the professional responsibility (and liability) that he or she assumes when signing and sealing documents. "Approved" under Maryland regulations means that the licensee has the technical knowledge and responsible control over the content of the technical submissions during the preparation and performed substantive review and had authority to make revisions with regard to the preparation of the submission.

Second, by requiring placement of the expiration date, a licensee is reminded of the importance of checking the date, avoiding the confusion that sometimes occurs when a mailing address is changed without notifying the Board or other problems that occasionally occur with the delivery of renewal notices.

The new regulation will be COMAR 09.23.03.10.

Register Now – we're conducting another one-day, hands-on workshop introducing the new TR 55 for Windows small watershed hydrology program on July 17 on the Catonsville campus of the Community College of Baltimore County. See our website – www.mdspe.org -- for details.



**MARYLAND SOCIETY OF
PROFESSIONAL ENGINEERS**

A State Society of the National Society
of Professional Engineers

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MDSPE College of Fellows



William R. Gluck, P.E. Named MDSPE Fellow

Past President William R. Gluck, P.E., has been named to the Society's College of Fellows. He is the third member so honored.

Bill's professional career spans thirty-six years, the first twenty-two of which were spent in private practice with several Baltimore-Washington area firms - Rummel, Klepper & Kahl in Baltimore, NUS Corporation in Gaithersburg, and John E. Harms, Jr. & Associates in Pasadena.

Fourteen years ago, he made a career move into government service joining the Maryland Department of General Services. Currently, he is Chief of the Project Management and Design Division in the Office of Facilities Planning, Design and Construction.

Bill holds a Bachelor of Science degree in Civil Engineering from Penn State University, and a Master of Science degree in Civil Engineering from the University of Maryland, College Park.

He is a member and Past-President (1997 – 1998) of the Maryland Society of Professional Engineers, and serves on the Board of Directors of the Engineers Club in Baltimore, where he is also Chairman of the Engineers Week Council.

'BMP's Are Out; 'ESD' Is In

"Environmental site design." Get used to the term. It is also called "low impact development." Developers will have to rely even heavily on their site designers when Maryland's new stormwater management law and regulations go into effect next year. The new law requires MDE to establish regulations and a model ordinance that requires implementation of environmental site design to the maximum extent practicable.

Developers will be required to demonstrate that ESD has been implemented to the maximum extent practicable and that standard best management practices have been used only where absolutely necessary. MDE is also required to review planning & zoning or public works ordinances to remove impediments to ESD implementation.

What is 'environmental site design'?

As defined in new law, environmental site design means using small-scale stormwater management practices, nonstructural techniques and better site planning to mimic natural hydrologic runoff characteristics and minimize the impact of land development on water resources. This includes optimizing natural features like drainage patterns, soils and vegetation, and minimizing use of impervious surfaces, concrete channels, roofs and pipes.

It also includes slowing down runoff to maintain discharge timing and to increase infiltration and evapotranspiration, as well as using other nonstructural practices or innovative stormwater management technologies approved by MDE.

Plan requirements

MDE's new regulations must specify that all stormwater management plans be designed to maintain 100% of average annual predevelopment groundwater recharge volume for the site, prevent soil erosion from any development project and prevent, to the maximum extent practicable, an increase in nonpoint pollution. They must also specify that the regulations be designed to maintain the integrity of stream channels for their biological function, as well as for drainage, and protect public safety through the proper design and operation of stormwater management facilities.

All stormwater management plans must also be designed to minimize pollutants in runoff from new development and redevelopment to order to restore, enhance and maintain the chemical, physical and biological integrity of the waters of the State, protect public health, safeguard fish and aquatic life and scenic and ecological values and enhance the domestic, municipal, recreational, industrial, and other uses of water as specified by the Department.

Continued on next page

Legislature Eliminates Temporary PE License

Maryland will do away with the Temporary Professional Engineer License that permits an out-of-state PE to work on a single project in Maryland for no more than 12 months. The bill to eliminate the license was introduced by Delegates MaryAnn Love and Carolyn Krysiak at the request of MDSPE after the State PE Board tried unsuccessfully to advance the bill through the State's administrative machinery.

An individual already licensed by another state may be licensed by our State Board by reciprocity – if the requirements in the original state are equal to or greater than the requirements set in our State law.

"There are, in fact, states whose requirements fall are short of Maryland's requirements," MDSPE's executive director, Bob Mead, told the Senate and House committees hearing the bill.

"There are states where far less experience is required to take the examinations, and states where licensure is granted without any examination at all under certain conditions."

Mead regularly monitors meetings of the Maryland State Board for Professional. "I saw the consternation of the Board Members at a recent meeting when they granted, on advice of their legal counsel, a temporary license to an out-to-state engineer who clearly failed to meet requirements for licensure in Maryland under other conditions," Mead said.

"It seems to me that we should relieve the Members of our State Board of the necessity to grant a license to an individual whose qualifications they question based upon this Temporary License provision of our State statute, he added. "Qualified individuals are able to gain Maryland licenses by reciprocity quite readily, and our Board will have greater control over them then through this process."

Elimination of the temporary license also reduces the amount of staff time spent on the process, a fact welcomed by all licensees whose license fees are based on the cost of the Board's operations.



Gov. O'Malley signs HB 413 as MDSPE Executive Director Bob Mead observes.

ESD continued

Channel protection strategies must be implemented to reduce downstream erosion in receiving streams and prevent increases in the frequency and magnitude of out-of-bank flooding from large, less frequent storm events.

The new rules and regulations must also establish a comprehensive process for approving grading & sediment control plans and stormwater management plans, and specifies that this comprehensive process take into account the cumulative impacts of both plans.

Short deadlines

MDE was also ordered by the legislature to evaluate options for a stormwater management fee system and an appropriate schedule of fees necessary to improve the enforcement of the provisions Title 4, Section 2 of the Environment Article of Maryland state law.

The new law becomes effective on Oct. 1, and the legislature gave the department until Dec. 1 to report its findings to the appropriate legislative committees.

Parties at the table

Several members of the design community provided testimony in opposition to the bills on behalf of the Maryland State Builders Assn.

"Despite what you may have heard about the development industry, there are people in the industry who care about the environment and how our projects impact the environment," wrote Kevin E. Hedge, PWS, AICP, environmental manager at Columbia-based Christopher Consultants, Ltd.

Hedge pointed to local codes that often do not allow designers to create development projects that utilize LID principles to their fullest extent.

"We recognize a desire to create change and support doing so, although we believe the method proposed in this bill is not right for this situation, Hedge wrote. He favored an approach like the "Builders for the Bay" roundtable that has been competed in seven bay watershed jurisdictions in Pennsylvania and Maryland. This approach has been a collaborative one with builders, community and; business representatives, environmental groups, local code enforcement and public safety agencies present.

"We recognize the task is not easy, and will take time and money," he wrote. "However, we would support a bill which encourages stakeholder participation in local code revisions, establishes realistic time frames for achieving change, and provides funding to local governments to make the necessary changes."

Writing on behalf of the Maryland National Capitol Building Industry affiliate of the Maryland State Builders Assn., Loiederman Soltesz senior vice president Mary C. Giles, P.E., raised major point-by-point concerns about three provisions in the act in opposing the legislation as introduced.

Regarding to the requirement that environmental site design techniques replicate the predevelopment

hydrologic and water quality regime, she stated that different land development projects lend themselves to different opportunities for ESD (or LID) techniques, and that it is not appropriate to *mandate* ESD on all projects.

"Thoughtful consideration needs to be given by counties and municipalities in what is not," she wrote, and added that maintenance costs of ESD techniques vs. traditional centralized stormwater ponds needs to be further evaluated.

Regarding the requirement that there be no increased peak stormwater runoff.. for the 2-, 10-, and 100-year storm events, she stated that "This bill goes 'back in time' in requiring and 10 year storm attenuation – this requirement has been proven ineffective."

She added that it would be very problematic and necessary to require 100-year control on all projects.

Regarding the issue of minimizing pollutants in stormwater runoff from new and existing development, she noted: "The State of Maryland seems to continually rethink and strengthen the stormwater management regulations, but what about others farm more significant pollutant generators? ... Refining stormwater management regulations will barely put a dent in the problem of pollutant loading in the Bay."

Andrew T. Der, an associate and director of environmental services for Loiederman Soltesz, also filed a letter on behalf of the Maryland National Capitol Building Industry Association. Der is an environmental scientist who heads environmental services for six LSA offices in Maryland and Virginia and is a former manager with the Maryland Department of the Environment. He directed his comments to the chemical, biological and physical integrity of receiving stream water quality.

Der said that the proposed bill, as well as the justifying document from the Environment Maryland, Waterkeeper Alliance and Patuxent River Keepers, unfortunately makes incorrect and invalid presumptions. Further, some of the proposed criteria conflict and are incompatible with current stormwater management criteria in place. And he gave specifics.

For example, he points out that the bill requires compliance with the water quality standards of the receiving waters., which he calls inappropriate for two reasons.

"First, the EPA NPDES criteria as was as the Manual have determined that the use of current BMPs assumes water quality compliance," he said. "The other reason is that it would mandate chemical monitoring of storm flows, which is technically unsound because some standards can be exceeded in nature and the pre-existing condition is not accounted for."

Bottom line, Der asserted that the bill as proposed inappropriately specifies technical and water quality standards in detail, which he called inappropriate in general to do in a law.

"A law should be more generic and leave rule making to the administrative agency through regulating promulgation," he wrote.

"In addition to over stating technical specifications, the bill also proposes criteria which are unattainable or simply unsound. It requires complete 100 percent of

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quality and quantity back to pre-development volume. Even in a pure pristine and natural state, some flood volumes, erosive velocities, sediments and nutrients are generated from natural sources”

In spite of their technical experts testimony in opposition to the bill, the Maryland State Builders Association supported the bill, but with amendments. MSBA President Kathleen M. Maloney pointed out that the amendments offered by MDE require them to draft a model ordinance and review the feasibility of establishing a stormwater fee. MSBA supports the bill with these amendments, she said.

On the other hand, the environmental community came on strong in favor of the bill.

A group of six groups including Environment Maryland and Patuxent Riverkeeper accepted amendments offered by MDE but added more of their own. One would clarify the intent of the bill, that the use of environmental site design must be the primary, mandatory approach to managing stormwater. The second would require MDE to create a comprehensive process for permitting runoff both during construction and after development, ensuring that the regulatory process will take into account the cumulative impacts of development on water quality.

The Chesapeake Bay Foundation urged a favorable report on the bill with a dozen or so recommended amendments few of which were adopted.

Christopher Kloss, senior environmental scientist with the Low Impact Development Center, offered two-pages of testimony essentially extolling the virtues of low impact development. He concluded by saying the institutionalizing LID will have two significant impacts.

“First,” he stated, “LID designs require developers to more effectively manage the runoff and pollutants which they create. Second, LID is an important tool to be used when developing a watershed approach to stormwater control and natural resource protection.”

The Natural Resources Defense Council supported the bill with a letter detailing numerous beneficial side-effects of low impact development: Cleaner water, enhanced water supplies, cleaner air, reduced urban temperatures, increased energy efficiency, community benefits and cost savings.

The League of Conservation Voters supported the bill, saying that it will stop the state from having to spend more money on clean-up later on by addressing the problems of new development before they start.

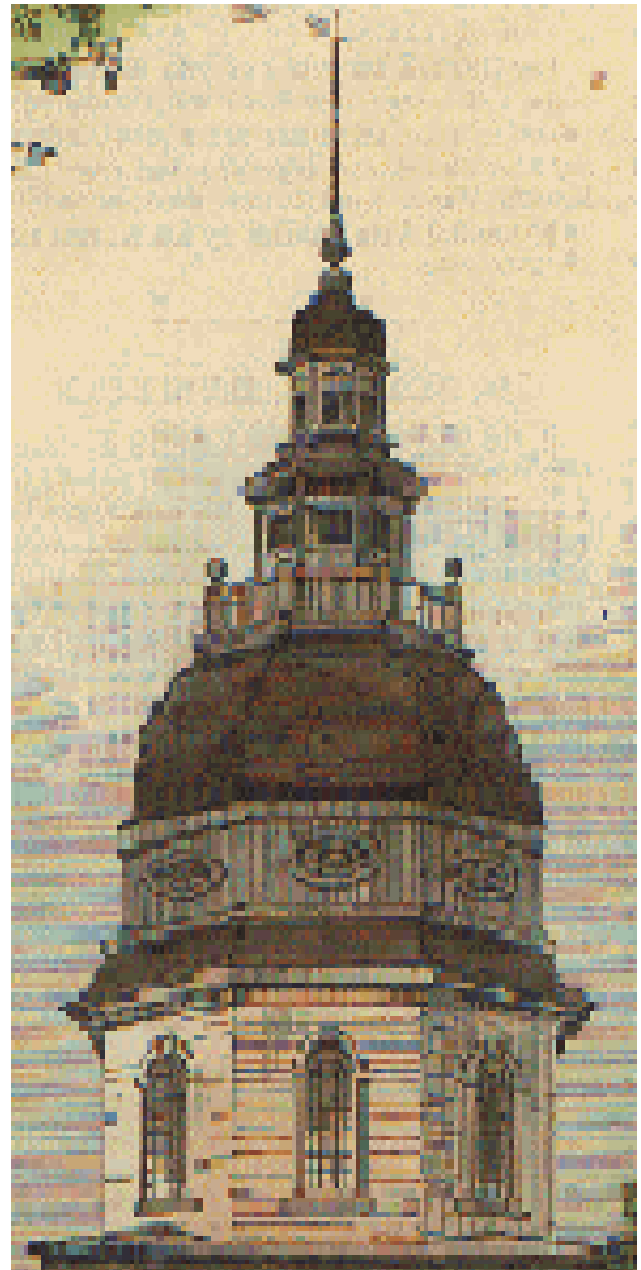
The Maryland Green Party praised the bill because it both allows and requires local governments to become responsible for regulating the amount of stormwater that results from development. They would also have local

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governments closely monitor the physical, chemical and biological properties of the water to ensure the health and safety of human, animal and plant life.

Lee Hudson, director of State advocacy for the Evangelical Lutheran Church in America, bore “witness to wise care of created resources” and called for stronger participation of the Department of Natural Resources in the stormwater management process.

“If science is a central value in this putative process, we would see a wider disciplinary approach with more participants,” he said. “Specifically, the science represented within DNR needs to be present in any process that makes recommendations.”



Congratulation to the Newest Class of Maryland's Professional Engineers

We congratulate these newest licensed Professional Engineers. Many participated in our Feb. 23 recognition ceremony and were inducted into the Order of the Engineer.

FIRST NAME	LAST NAME
KIMBERLEY	ADAMS
DANIEL	AGEE
JILL	ALBEE
JULIO	ALEGRE
GEORGE	ALEXANDER, JR.
YAHYA	ALIABADIZADEH
PETER	ALLEN
STEVEN	ANDERSON
CHARLOTTE	ARMSTRONG
RAJASEKHAR	BASAVARAJU
GERARD	BAXTER, II
PATRICK	BAYNES
RYAN	BERGER
THOMAS	BOYER
RYAN	BRANNAN
GUSTAVO	BRAVO
JACOB	BRODSKY
RANDALL	BRYAN
MICHAEL	BUCKMAN
YUBARAJ	BUDHATHOKI
STEVEN	BUR
CORY	BUXTON
MARIO	CALABRETTA
MICHAEL	CASEY
HAO	CHEN
XIAOHU	CHEN
HEIDI	CHERRY
ANTWAN	CLARK
BETH	CRUTCHFIELD
JASON	CURNS
GEORGE	DEI-TUTU
CHABIRAM	DEORAJ
MADELEINE	DRISCOLL
MATTHEW	DUDLEY
KORKUD	EGRICAN
CARLOS	ESPIÑOLA-OSORNO
BAHRAM	ETESAMYPOUR
RONALD	FISCHER
ERNEST	FOUNTAS, JR.
JOHN	FRANCIS
MICHAEL	GAINES
GEORGE	GARDES
JOEL	GLADFELTER
AMY	GRAVER
COREY	GRAY
ANGELA	GRIFFITH
PHILIP	GROTHEER
CHRISTINA	GUZMAN
TAFESSE	GYES
JAMES	HARKNESS, JR.
ERIC	HARP
NICHOLAS	HAVRILLA, JR.
DAVID	HECKMAN
ISAAC	HENRY
JASON	HETRICK
STEPHANIE	HILL
MICHAEL	HOITINK
JOHN	HORKY
MD	HUQ
GARY	KLEIST
SYLKE	KNUPPEL
BINOY	KOODHATHINKAL
NATHANIEL	KRUMPE
ZHIHUA	KUANG

Pictured at right:

State Board Members Skip Harclerode, P.E. (I) and Steven Arndt, P.E., present Ruihua Tao, Ph.D., P.E., her official wall certificate at our Feb. 23 ceremony. Skip, Steven and Ruihua are all MDSPE members. Ruihua earned her B.S. at Beijing Jiootong Univ. and her Ph.D. at Michigan State.



FIRST NAME	LAST NAME
FRED	LAU
DONNA	LEIGHT
LAURA	LEWIS
ERIC	LINDSTROM
CURTIS	LIPSEY
SHANNON	LUCAS
JONATHAN	MARTIN
FREDERICK	MAY
ANTHONY	MC CONNELL
FREDERICK	MEETRE
NICHOLAS	MILLER
SHERYL	MITCHELL
JENNIFER	MOSSER
RAMEZ	NAGUIB
YVONNE	NELSON
ROLEX	NJUGUNA
AARON	OVERMAN
KAJAL	PANCHOLI
RAJAN	PARADKAR
CARL	PENSKI
LARS	PETERSON
RICHARD	PIETRYKA
NICHOLAS	PITEO
MEGHAN	POWELL
JOHN	RAAB
MICHAEL	RANDOLPH
LISA	RAUENZAHN
JEFFREY	ROBERTA
DIANE	RUBIN
ERIN	SHAFFER
HAFIZULREHMAN	SHAIKH
MAHMOOD	SHEHATA
MICHAEL	SHERREN
MATTHEW	SICHEL
JACOB	SMITH
VANESSA	SMULLEN
JOSEPH	STANTON
JOHN	STITZ
XIN	SUN

FIRST NAME	LAST NAME
PAUL	SUTTON
THOMAS	SYVERTSEN
MARCUS	TADROS
STANLEY	TALBOTT
RUIHUA	TAO
MICHAEL	TAYLOR
ANDREW	TEETERS
WAYNE	THOMPSON
SHEILA	THURSTON
SATISH	THYAGARAJAN
ERIC	TRAENKNER
DONALD	TUSING
BRADLEY	UDVARDY
BAVEY	VADDER
THOMAS	WENSINK
CARYN	WILLIAMS
DAN	WILLIAMS
CRAIG	WILLIAMS, JR.
TRAVIS	WILSON
THOMAS	WIRTH
DONGNING	ZHANG

Join us in Annapolis On Sept. 14 when we honor the next class of newly licensed Maryland Professional Engineers and conduct an Order of the Engineer installation.



2006 Outstanding Achievement Award



The Baltimore Engineering Week Council presented its 2006 Achievement Award to the Joint Venture of Johnson Mirmiran and Thompson, Inc. and KCI Technologies, Inc.

The project was a comprehensive process evaluation and design for Enhanced Nutrient Removal (ENR) for the City of Baltimore's Patapsco Wastewater Treatment Plant.

This project was commissioned by Baltimore City to comply with the ENR Program implemented by the State of Maryland to meet new discharge goals for upgraded WWTPs by 2010.

The ENR Program set goals for the discharge of treated effluent into bodies of water leading to the Chesapeake Bay at 3 mg/L total nitrogen and 0.3 mg/L of total phosphorus. The ENR program will significantly improve the health of the Bay, which is important to the state's social and economic infrastructure, and will contribute to habitat, water, and air quality improvements.

When implemented, the Patapsco plant's ENR facilities will remove 31% of the nitrogen proposed to be removed by all 66 plants involved in the ENR program. This keystone project will play a significant role in meeting the 2010 nutrient reduction goals.

During the process evaluation stage, two feasible ENR processes were identified: the Modified 2-Stage process and the Biological Aerated Filter (BAF) process. The joint venture conducted concept design development, detailed process modeling, bench scale testing, and a one-year pilot testing program for both processes to prove their performance, identify their robustness, reliability and operations issues, and identify design criteria. The joint venture conducted more refined construction and O&M cost evaluations to identify the best option for Patapsco.

The joint venture then performed an alternatives evaluation based on life cycle costing, ease of operation, ease of maintenance, dependability, constructability, collateral benefits to related portions of the plant, dependability, power and chemical use/impacts, flexibility in operation, temporary construction impacts, odors, noise, and water and air impacts. The evaluation included development of recommendations for modifications or improvements to existing plant unit processes impacted by implementation of the ENR system and determination of impacts on sludge production and characteristics as a result of implementing the ENR system.

The joint venture's engineers designed ENR facilities that consisted of BAFs, followed by fixed-film denitrification filters and re-aeration. Ancillary facilities included fine screening, pumping, flow diversion, and chemical storage and feed facilities for ferric chloride, phosphoric acid, caustic soda, and methanol. Improvements to the existing treatment facilities were developed to **enhance performance** and treatment reliability of the existing secondary process. These include primary sludge pumping enhancements to better control sludge removal from the individual primary settling tanks, improvements to flow distribution and oxygen feed to the oxygen reactors, secondary clarifier enhancements, and improvements for controlling flow distribution to the secondary clarifiers. Reliable performance of the secondary treatment process is essential for successful ENR process operation. Although used throughout Europe and Asia, the BAF technology is rare in the US. Only one other US plant of Patapsco's size has implemented this type of advanced nutrient removal solution. ***The Patapsco plant is the most complex WWTP design configuration to attempt this technology in the US***—the existing plant has a design capacity of 85 mgd and utilizes a pure oxygen activated sludge process for carbonaceous BOD, suspended solids, and phosphorus removal.

Thomas Sprehe, P.E., BCEE, accepts Outstanding Achievement Award from Engineers Week Council Co-chair Kathy Gui



For a full project description, go to www.mdspe.org/newsletter

Order of the Engineer Inducts 13 Professional Engineers



Order of the Engineer Link 59 induced 13 professional engineers in a ceremony at our Engineers Week celebration on Feb. 23. From left to right: Bill Albro, PE, Tony Zhang, PE, Stephie Hill, PE, Peter Allen, PE, John Francis, PE, Ruihua Tao, PE, John Stiltz, PE, Steven Andersen, PE, Chrys Bandon-Bibaum, PE, Eric Harp, PE, Rolex Njuguna, PE, Caryn Williams, PE, and David Thaler, PE.

The Order of the Engineer Ring Ceremony is an event in which an engineer obligates himself or herself to serving the public through his or her engineering talents and education. The Order serves to encourage a spirit of pride in the engineering profession and to present to others a visible symbol of identifying engineers. The Order is unusual in that there are no dues to pay, no meetings to attend, no committees to join, no offices to hold. The pact is with the individuals and their profession.

Order of the Engineer inductees take this pledge:

I am an Engineer. In my profession I take deep pride. To it I owe solemn obligations. Since the Stone Age, human progress has been spurred by the engineering genius. Engineers have made usable Nature's vast resources of material and energy for Humanity's benefit. Engineers have vitalized and turned to practical use the principles of science and the means of technology. Were it not for this heritage of accumulated experience, my efforts would be feeble. As an Engineer, I pledge to practice integrity and fair dealing, tolerance and respect, and to uphold devotion to the standards and the dignity of my profession, conscious always that my skill carries with it the obligation to serve humanity by making the best use of Earth's precious wealth. As an Engineer I shall participate in none but honest enterprises. When needed, my skill and knowledge shall be given without reservation for the public good. In the performance of duty and in fidelity to my profession, I shall give the utmost.

Are you ready to take the pledge? Join us on Sept. 14 in Annapolis.