
According to the Pennsylvania Department of Transportation (PennDOT), at least 5,490 of the more than 32,000 (17%) bridges in the commonwealth are structurally deficient, including approximately 800 in need of outright replacement. These bridges are, on average, more than 50 years old and many pre-date the Great Depression.

Through MAP-21, through our federal government Americans will spend only $120 billion on our nation’s economic backbone of highway, rail, and transit infrastructure over the next two years.

The Good News: This extension is for 2 years instead of 3 months.

The Bad news: 1. Congress deepened Pennsylvania’s crisis with a $111 million per year allocation cut.
2. MAP-21 fails to adequately, fully, and sustainably pay for the maintenance of our roads and bridges.

To pay the same as we did 20 years ago, is an adjustment of about 27¢ per day. Even if doubled to pay for repairs made more costly because we delayed making them when they were inexpensive, whether by fuel consumed or weight and miles using the roads, the adjustment is about the price of only a half a donut a day.

Here’s how our Congress voted:

<table>
<thead>
<tr>
<th>House District</th>
<th>Representative</th>
<th>Senate</th>
<th>Senator</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA 3</td>
<td>Mike Kelly</td>
<td>yea</td>
<td>Bob Casey</td>
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<tr>
<td>PA 4</td>
<td>Jason Altmire</td>
<td>yea</td>
<td>Pat Toomey</td>
</tr>
<tr>
<td>PA 5</td>
<td>Glenn Thompson</td>
<td>yea</td>
<td></td>
</tr>
<tr>
<td>PA 9</td>
<td>Bill Shuster</td>
<td>yea</td>
<td></td>
</tr>
<tr>
<td>PA 12</td>
<td>Mark Critz</td>
<td>yea</td>
<td></td>
</tr>
<tr>
<td>PA 14</td>
<td>Mike Doyle</td>
<td>yea</td>
<td></td>
</tr>
<tr>
<td>PA 18</td>
<td>Tim Murphy</td>
<td>yea</td>
<td></td>
</tr>
</tbody>
</table>

We expect that our elected officials are pleased for at least getting something passed. Are you?

One of the above went so far as to say “I am proud of what this Congress accomplished in passing MAP-21”.

American Business Leader Lee Iaccocca Asks: “Where have all the Leaders Gone?”

America needs leaders. Interstate highway President Eisenhower was such a leader.

Americans must FUND our infrastructure. Not finance it. Not borrow money from Spain, China, or our grandkids. FUND it. That means pay for what we use.

Private investors only fund relatively small capital improvements for which they can generate a Return on Investment. Private funding does not pay to maintain what we already have.

For road infrastructure, a means of generating sustained revenue must be identified, and implemented.

This is what you pay Congress to do. How will YOU vote?

2008: 13 Americans died, 98 hospitalized.
Dear Members,

The ASCE Pittsburgh Section is embarking on a 2012-2013 year full of promise and many opportunities! These opportunities will be focused on expanding the technical skill sets of our membership while providing social and professional networking forums essential to fostering individual career development, and promoting the business development of our employers.

- Our Institutes will once again be offering many interesting seminars featuring state-of-the-art projects and the latest technology;
- The Young Members’ Forum will continue their focus on developing young professionals into the leaders of tomorrow;
- Our Annual Kick-off Dinner features Jeff Reinbold, Superintendent of the National Parks of Western Pennsylvania, to present the design and construction of the Flight 93 Memorial;
- We celebrate February’s Engineers’ Week with our Section’s Annual Awards Dinner!
- Extraordinary ASCE Pittsburgh Section initiatives and highlights for the upcoming year include the
  - Structural Engineering Institute’s May hosting of the National SEI Structures Congress;
  - the formation and resurgence of our Section’s Transportation and Development Institute; and
  - greater collaboration with - and hosting of numerous functions by - the Pittsburgh Section’s Northwest PA Branch!

With these and many other outstanding functions currently being planned, the value in ASCE Pittsburgh Section membership has, arguably, never been greater! However, perhaps its greatest value is the platform it provides as our membership continues to inform and educate our elected officials and general public regarding the continuing decline of our infrastructure – and the urgent need to take appropriate legislative action to address these critical issues. Using our position as one of the most well respected engineering societies in the state, the ASCE Pittsburgh Chapter has made great strides in this regard. Due in part to our efforts, the vast majority of Pennsylvania’s elected officials now acknowledge the magnitude of our infrastructure problems – and the need to take corrective action. At this critical juncture, we as ASCE members must remain vigilant in educating their constituents to ensure public support for much needed funding mechanisms!

A year of opportunity is before us!...and a time to embrace all that the ASCE Pittsburgh Section has to offer. Get involved. Make a difference!

Sincerely,

Bill Gross – ASCE Pittsburgh Section President
September Kick-Off Meeting Presents Flight 93 Memorial And Recognizes New ASCE Life Members

Jared L Cohon, Ph.D., P.E.,
Jerome Nicholas Dettore, P.E.,
Mark J Gera, P.E.,
Ralph Whitmel Gilbert Jr., P.E.,
David F Kundrat, P.E.,
Ronald L Lewis, P.E.,
Robert E Liljestrand, P.E.,
Robert H Luffy, P.E.,
Oscar T. McConnell, P.E.,
Edward James McGee, P.E.,
RonalD Neufeld, Ph.D., P.E.,
Richard Joseph Perin
Thomas Riester, P.E.,
Richard Schmitz, P.E.,
Luis E Vallejo
Thomas R Vandling, P.E.,
James L Withiam, D.GE,
David L Wright, P.E.,
President
President
President
Chief Operating Officer
Associate Professor
President & CEO
Director
VP for Transportation Services
VP and General Manager
Retired
Principal
Engineer

Carnegie-Mellon University
Michael Baker Corporation
Gibson-Thomas Engineering
ASCE Pittsburgh Section

J.T. Boyd Company
Geneva College
American Bridge Company
L. Robert Kimball
AECOM
University of Pittsburgh
Consol Energy
Mackin Engineering Co.
Svedala Industries Inc.
University of Pittsburgh
D’Appolonia Consulting Engineers
Allegheny County Dept. of Public Works
Introducing Partially-Grouted Riprap: A New Alternative for Protecting Scour-Prone Bridges

By: Jeff Hans, PE, Vice President, CHA Companies

Bridges over waterways are under constant attack by moving water, especially during floods. Erosion of the soils around and under bridge foundations is called scour, and according to the Federal Highway Administration (FHWA), it is the leading cause of bridge failures in the US.

After several scour-related bridge collapses in the mid 1980’s, FHWA began requiring bridge owners to rate structures for scour risk, predict their performances during floods, and develop plans of action (POAs) for each structure to protect motorists from catastrophic bridge failures before, during, and after severe weather events.

Predicting bridge performance against scour is as much an art as it is a science. Unlike normal structural deterioration, scour is not linear and dramatic changes to a bridge’s structural integrity can occur after any flood event. Rating bridges for scour is only part of the challenge; protecting them is the ultimate goal. Clearly, repairing a bridge is less costly than replacing one.

Proven countermeasures (long term POAs) provide the best protection for vulnerable bridges at a fraction of the cost of full bridge replacements. Recently, a new type of countermeasure was introduced in the United States: Partially-Grouted Riprap, or PGR. PGR has been widely used in Europe with great success. It offers several advantages over traditional countermeasures: it generally requires less material than traditional countermeasures, minimal channel excavation is needed, and it performs better during floods. Presently, the FHWA lists PGR as a recommended protection alternative in its latest scour design manual, HEC 23 (http://www.fhwa.dot.gov/engineering/hydraulics/pubs/09111/).

PGR construction involves placing angular stone on top of a gravel filter base and/or geo-textile fabric. Flowable cement-based concrete grout is used to partially fill the voids between stones, interlocking the armoring stone and concrete grout. This increases the mass of the repair, and significantly increases its hydraulic stability.

My firm, CHA, was involved in one of the first PGR installations in the United States. The repair was performed on a 25’ single-span bridge that was damaged by severe spring floods and ice jams in 2011. This flood resulted in one abutment being undermined, a washed-out roadway approach, and minimal remaining embedment of the substructure footings. PGR repair was recommended based on several factors, including the minimal excavation required to place the recommended 18” thick stone layer. Further, it was determined that the PGR repair would withstand twice the expected peak flow velocities.

Installation occurred during the fall of 2011, and the resulting protection afforded by the repair is expected to help keep the bridge in service for many years.

For more information on PGR, contact the author, Jeff Hans, PE, at (412) 264-0370 or jhans@chacompanies.com. Jeff is a Vice President and Project Manager at CHA Companies of Moon Township as well as the Chairman of the ASCE Pittsburgh Section’s Transportation and Development Institute. He has 28 years of highway and bridge design experience.
The Region’s Greatest Asset
by Timothy D. Brett, P.E., Lennon Smith Souleret Engineering, Inc.

For many in southwest PA, little thought is given on a daily basis to what could be called this region’s greatest physical asset: An abundance of water. Mainly through the 3 rivers, this asset provides a source of drinking water, a location for recreation, provides the means to transport goods, supports an industrial base and provides for economic development opportunities. However, as with any asset, unless attention is provided to it, an asset can lose its value.

Since the early to mid 1900s, this region has seen a tremendous increase in river quality. So much so that in 2005 Pittsburgh hosted the Bass Masters Tournament. Even with this vast improvement work still remains to continue to improve the water quality of the region’s waterways and to continue to use them as economic drivers for the region.

Currently, each year during wet weather events, the region’s sewer systems discharge billions of gallons of wastewater into the region’s waters. To address these discharges, in 2004, a majority of the 83 municipalities tributary to the Allegheny County Sanitary Authority, ALCOSAN, entered into consent orders with PaDEP and Allegheny Health Department. Also, in 2008, ALCOSAN entered into a Consent Decree with the Department of Justice, EPA and PaDEP.

On July 31, ALCOSAN released its draft Wet Weather Plan to address wet weather overflows of sewage into the Region’s waterways. ALCOSAN has estimated that the cost to implement the Plan to comply with the federal regulations is $3.6 billion dollars. This would represent the single largest infrastructure project this region has undertaken. At this price tag, the sewage rates to pay for this project exceed 2% of the median household income for the municipalities in the service area. Therefore, ALCOSAN is proposing to implement a plan that would still address wet weather overflows in a phased approach to reduce the financial impact to rate payers.

ALCOSAN’s final Wet Weather Plan is due by January 2013 while the municipalities are required to submit final feasibility studies to PaDEP and ACHD in July 2013.

With continued invest in areas that look to improve our region’s water quality; it can be assured that future generations will continue to benefit from the region’s greatest asset.


Chairman, Environmental & Water Resources Institute, ASCE Pittsburgh.

14th Annual 3 Rivers Wet Weather Sewer Conference
October 17-18, 2012
Monroeville Convention Center

More than 400 municipal officials, engineers, managers, public works directors and wet weather experts will gather on October 17-18 to learn, educate and share experiences for overcoming the wet weather problems that have plagued the Pittsburgh region for decades. Scores of exhibitors will share their products and services while local, regional and national speakers will present educational sessions on a variety of wet weather issues, including municipal sewer agreements, sewer system rehabilitation techniques and green solutions. See the conference brochure for details at www.3rww.org
Reach Out!! Educational Outreach Program Needs You!

Our Pittsburgh Section and YMF outreach directors are embarking on an effort to streamline and increase our interactions with local high school students as part of our educational outreach initiatives. We’ve enjoyed warm receptions at those high schools we’ve visited and have big plans for the coming year.

Our goal is to promote Civil Engineering as an attractive and viable career option for those in high school while they are making education and future career choices. This effort requires more than just the few of us who are officers within the Pittsburgh Section.

Those interested in donating your time and skill to the outreach committee, please contact your Section Educational Outreach Chairperson, Matt Kusic (Matt.Kusic@LRKimball.com), or your Section YMF Outreach Chairperson, Linda Kaplan (LKaplan@GFnet.com).

Help us build momentum, excitement and involvement within the Pittsburgh Section and within the local high schools as we market our profession and all that we do!!! We look forward to your involvement!!!!

Will You Be Allowed To Vote?

- The new Voter ID law will be in effect Election Day, November 6.
- Does your photo ID match your voter registration exactly? e.g., given name or maiden name for middle initial. Current address. Correct spelling?
- Can’t find your voter registration card to compare? Call your county election division. In Allegheny County, the number is 412-350-4510.

Recruiting Professional Engineers

The Pennsylvania Department of Transportation is launching and effort to recruit Professional Engineers to State Government. PennDOT as well as other state agencies employ Professional Engineers. Many vacancies are anticipated due to retirements.

Working for state government can be a rewarding experience. To be considered for employment, one’s name must be placed on a State Civil Service List. To learn more about these opportunities and to apply, visit the State Civil Service Commission website at www.scsc.state.pa.us, and select Job Seekers.

“If you don’t know where you are going, you’ll end up somewhere else.”

-Yogi Berra
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To change your address and to update your membership information, go to the website www.asce.org and select “Update Your Membership” under the “Members Only” link, or call (800) 548-2723 and ask for the membership department. Also contact the editor so that the change(s) can be made to the local database.

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