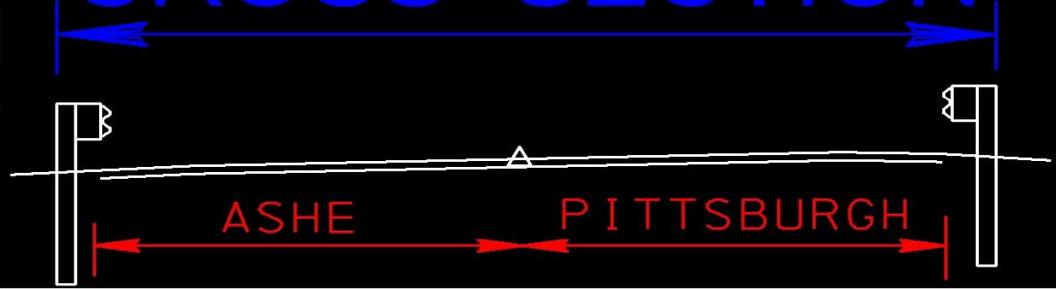




CROSS SECTION



Spring 2016

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Kathryn Power, P.E.



A Message from the President Anthony Castellone, PE, PTOE



Where does the time go? As we *Spring Ahead* through April, we look forward to longer days, warmer weather and new beginnings. Yes, memories of the Holiday's via iPhone photos of family & friends, and rising temperatures shower us with hope for new beginnings. For many of us, sight of that first daffodil give us hope that that we can – and will:

- Get our taxes done before April 18th,
- Plan and book that summer vacation,
- Look forward to working our gardens, and
- Fire up our grills sooner than later.

In our business, a new construction season is upon us, and while those orange barrels may remind most travelers and commutuers of a new construction season, they will soon become a constant reminder of our professional accomplishments. Yes, we welcome those orange barrels – much like the sight of that orange belly of spring's first robin - except when those barrels are encountered during that summer trip to east coast beaches or our favorite vacation getaway! How many of you critique these "crazy" MPT set-ups?

OK, so maybe I'm getting a head start on spring's optimism; empowered by the fact that I just put away my snow blower until next winter season! And why not? Since my last "President's Message" the Commonwealth has a "new" 2015-16 fiscal year budget...and is beginning the political negotiating and jockeying for next year's budget. Thank goodness our industry is apolitical – though we cannot let our guard down in protecting our hard fought Act 89 dollars. As certain as that "arrow" flies, time will likely require us to argue our positions for additional funding once again - perhaps before this decade is over. Maybe a little (spring) birdie can whisper some of these concerns in Secretary Richards' ear when she visits western PA for a combined dinner meeting with ASHE-Franklin, Southwest -ASHE, ASHE Mid-Allegheny and ASHE-Pittsburgh sections on April 20th in Cranberry, PA. This should be a phenomenal evening, so register now if you haven't already (details in this issue of Cross Section).

*"The beginning
is the most
important part
of the work."*

- Plato

*"We must always change, renew, rejuvenate
ourselves, otherwise we harden."*

-Johann Wolfgang von Goethe

Finally, registration is now open for [ASHE's National Conference at Pittsburgh's Wyndham Grand Hotel, May 19-21, 2016](#). I hope to see you there to help celebrate new beginnings of our season: Pirates baseball, spring golf with ASHE colleagues and the beginning of a new ASHE year!

**In a Joint ASHE Dinner Meeting on April 20, 2016
The Franklin Section, the Mid Allegheny Section, the
Pittsburgh Section and the Southwest Penn Section**



Are Honored to Welcome

Leslie S. Richards,

PennDOT Secretary of Transportation

The Dinner Meeting will be held at:

DoubleTree by Hilton Pittsburgh - Cranberry

910 Sheraton Drive, Mars PA 16046

RSVP by Friday, April 15, 2016

Registration information is available
via the Pittsburgh Section website:

<http://pittsburgh.ashe.pro>

**Online registration and payment via credit
card is now available through the
Pittsburgh Section web-page!**

6:00 PM | Social Hour

7:00 PM | Dinner

8:00 PM | Presentation

Registration

\$55 | Members

\$65 | Non-Members

Note that ONLY online registrations will be accepted.

Hotel rooms are available for an ASHE rate of \$129/night. Hotel reservations must be made by April 6, 2016 by calling 1-800-222-8733. Identify your affiliation with ASHE when making your reservation.

*Due to venue policies and popularity of our dinner meetings, **we cannot accept walk-ins.**
Please register prior to the event or you will be turned away at the door.



WOMEN'S FORUM

with Secretary of Transportation Leslie Richards

April 20, 2016 | 2 - 4pm

Leslie Richards, *PennDOT Secretary of Transportation*

Tammi Halapin, *Principal, Collective Efforts*

Courtney Ehrlichman, *Deputy Executive Director, Traffic21 Institute at Carnegie Mellon University*

Lisa Cooper, *Vice President, JMT*

Beth Nury, *Owner, Beth's Barricades*

Jan Oliver, *ALCOSAN, Director of Regional Conveyance*

MODERATOR: Cheryl Moon-Sirianni, *PennDOT District 11-0 A/E-C-Design*

Register online at: <https://eswp.com/event/town-hall-event/>

ASHE Pittsburgh | ESWP | WTS Members: \$15,

Government Rate: \$15, Nonmembers: \$25



The Chadwick
10545 Perry Highway
Wexford, PA 15090

The Women's Forum will include female leaders in the A/E/C industry and will encourage an interactive, "Town Hall" discussion.

Women in all stages of their careers are encouraged to **save the date** for this event!

Light refreshments will be served.



ENGINEERS' SOCIETY
of
WESTERN PENNSYLVANIA

WTS
Advancing Women in Transportation



Young Members Social Recap



On March 1, we held a Young Member Social at Industry Public House in Lawrenceville. The event featured Mark Magalotti, Ph.D., P.E., updating the group on the Transportation Graduate Programs at the University of Pittsburgh, Swanson School of Engineering.



Save the Date!

July 21, 2016

Pittsburgh Pirates vs. Milwaukee Brewers

Zambelli Fireworks Night!



For this year's Pirate Outing, it will be a combined event through ASHE Pittsburgh, ASHE Southwest, and ASHE Franklin. We will tailgate at Atria's on Federal Street prior to the game, where all attendees will receive a Pirates Hat. Children can register for a chance to be a Dugout Buddy, where they will get to watch batting practice from the dugout before the game.



2016 Transportation Forum:

Innovations in Financing and Project Delivery in Transportation Engineering

ASHE Pittsburgh partnered again this year with the University of Pittsburgh Swanson School of Engineering, to present the 2016 Transportation Forum. This is our fifth year sponsoring this event at the University. Other sponsors for the Forum included PennDOT, WTS - Women in Transportation and the Center for Sustainable Transportation Infrastructure. Maggie Moore from ASHE Pittsburgh worked throughout the year organizing this program with Dr. Mark Magalotti. Mark is the Co-Director of CSTI and Coordinator of the Graduate Program in Transportation Engineering at the University.

PennDOT staff, ASHE members as well as University of Pittsburgh Students and Alumni are invited to participate in the Forum, with this year's attendance setting a new record.

The Forum serves as a vehicle to relay valuable research information done by the University for PennDOT to Designers, Contractors, Owners and Students. It provides 5 PDHs for attendees who complete the survey and questionnaire at the conclusion of the Forum.

The theme this year was *Innovations in Financing and Project Delivery in Transportation Engineering*.

The morning session included a lineup of University Research Topic presentations.

[Dr. Kent Harries P.Eng.](#), Associate Professor at the University presented the results of a study on 50 ksi Steel H-Pile Capacity. In this study a number of tests were illustrated comparing 50 ksi H-Piles with the old standard 36 ksi piles in deep foundations. To summarize, these 50 ksi piles are less costly and provide additional pile capacity. The results of this study are making their way to PennDOT Design Manual 4.

[Dr. Ervin Sejdic](#), Assistant Professor and [Nicholas Franconi](#), Graduate student, of the University of Pittsburgh's Department of Electrical and Computer Engineering presented "Remote Sensing for Bridge Scour Projects – Phase 3 Field Testing Installation". This was a follow up from a past presentation where attendees got to see how this clever innovation was field tested on a low flow bridge in Armstrong County. Scour is the number one cause of bridge damage and this solar and battery powered system allows continuous monitoring of structures cheaply.

Finally [Amir Nasrollahi](#), Graduate Student Department of Civil and Environmental Engineering presented "Noninvasive Assessment of Existing Concrete in Bridge Decks". Amir explained how a new non-destructive testing mechanism employs either magnetostrictive or piezoelectric transducers to shoot high non-linear solitary waves into a concrete deck that reflect back to a free falling striker. This discrete particle model simulation helps quantify concrete strength without coring into the deck and breaking concrete cylinders.



This also can identify areas where too much water may have

accumulated during a possible rainfall event when the deck was constructed.

All of the presentations can be found at:

<http://engineering.pitt.edu/Sub-Sites/Centers/CSTI/Content/2016-Transportation-Forum/>

The afternoon session provided insight on PennDOTs P3 Award Winning Public Private Partnership Rapid Bridge Replacement Program.

Michael Bonini, Director PennDOT Office of Public Private Partnerships led off the afternoon by describing an overview of the program and its goals of utilizing Act 88 Legislation to use private entities to design, develop, construct and operate/maintain public facilities for up to 99 years. At the conclusion of the contract the facility is returned to PennDOT in good condition. This contract between PennDOT and the private entity exchanges payments for the transfer of responsibility for these structures for the stated time frame. This innovative process uses a best value approach as opposed to a low bid selection.

Gary Kleist, PennDOTs Rapid Bridge Replacement Manager explained that after PennDOT reviewed more than 2000 structurally deficient bridges statewide they reduced the list to 558 bridges. These bridges were then grouped into one P3 Project with an operating schedule of 25 years.

This arrangement allows the ability to group similar items in order to reuse details and methodologies. Overall this provides accelerated project delivery with faster construction rates utilizing repeat tasks in different locations. It also allows the opportunity to tap into vast private resources leveraging their interest to shift key risks away from the Department.

This project is currently underway. Information regarding this project can be found at <http://parapidbridges.com>

The afternoon concluded with a Panel Discussion on the Rapid Bridge Replacement Program moderated by Maggie Moore. Mike and Gary were joined on the panel by Scott Benjamin, Deputy Project Manager, Walsh (P3 Contractor), Scott Gallaher, P.G., Senior Vice President, TRC Solutions (P3 Quality Assurance) and Jim Bintrim, RBR Production Manager, HDR (Design).

This open discussion answered questions from the group. The dialogue provided insight from the perspective of each of the team members and proved to be valuable information to be used as lessons learned for future P3 projects.

We look forward to next year's Transportation Forum at the University of Pittsburgh and another opportunity to learn about the research being done to improve our field of transportation! We will see you there!





February Dinner Recap



The ASHE Pittsburgh February dinner meeting was held at Cefalo's, in Carnegie Pennsylvania. The topic of the meeting was the Squirrel Hill Tunnel Rehabilitation Project, where two great speakers discussed the recently completed project. Jon McHugh, the project manager from Gannett Fleming, Inc., provided a comprehensive overview of the project from design through construction. The rehabilitation project included roadway, structural, life safety, ventilation, electrical, control/system integration, over-height truck detection, and architectural work. All of these items of work resulted in a very complete and detailed set of construction plans for Walsh Construction and Sargent Electric and their subcontractors. One key to success was the community interaction between the District and the City of Pittsburgh when the tunnels were closed and traffic was detoured. A special tribute to Ron Morgan who was the original project manager for the project was a very nice touch by Jon McHugh. Lou Ruzzi, the District 11-0 Bridge Engineer for the Pennsylvania Department of Transportation, provided an owner's overview of the project. Lou also talked about his work as Chairman of T20 Tunnels (AASHTO—Subcommittee on Bridges and Structures (SCOBS)) and how the lessons learned from the Liberty and Armstrong Tunnels were applied to the Squirrel Hill Tunnel, in addition to future PennDOT design and inspection projects for tunnels. The inspection was a combination of SPACETEC, Penetradar GPR, Penetradar IRT/Video, and physical inspection with the results compared against each other. Eric Veydt donated the winnings from the 50/50 raffle to the ASHE Pittsburgh Scholarship fund. A big thank you to Eric, way to pay it forward!

ADOPT-A-HIGHWAY

ASHE Pittsburgh held its annual spring Adopt-a-Highway cleanup of the Campbells Run Road Interchange on Saturday, April 9th. Thank you to those who made it, despite the frigid temperatures!

Pictured from right to left: Rachel Rzymek, Anthony Castellone, Marc Garfield, Doug Lang, and Daniel Bell-Garrison.



Nominations for the 2016-17 ASHE Pittsburgh Board of Directors

NOMINATING COMMITTEE: KATHRYN POWER, ANTHONY CASTELLONE, MAGGIE MOORE,
SEAN HENDERSON, AND FRANK MAYER

Past President: Anthony Castellone, PE, P.T.O.E..

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Treasurer: Gerald Pitzer, PE

Regional Representative: Kathryn Power, PE

National Board Representative: Brian Krul, PE, P.T.O.E.



BOARD OF DIRECTORS: 1 YEAR

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Dave Williams, PE
Jason Esser, PE
Jamie Unger, E.I.T.

BOARD OF DIRECTORS: 2 YEAR

H. Dan Cessna, PE
Mark Garfield, PE
David Mikec, PE
Mariya Rowley, PE

BOARD OF DIRECTORS: 3 YEAR

Patricia Wardy, EIT
Daniel Laird
Dave Augustine, PE
Kevin O'Connor, PE

JUNE 1ST AT THE NARCISSI WINERY ASHE MEETING!

Young Members Event

Save the Date!

ANNUAL
ASCE-ASHE-CAWP-ESWP-PSPE-SAME



YOUNGER MEMBER JOINT SOCIAL

FRIDAY, APRIL 22nd, 2016

5:00 PM



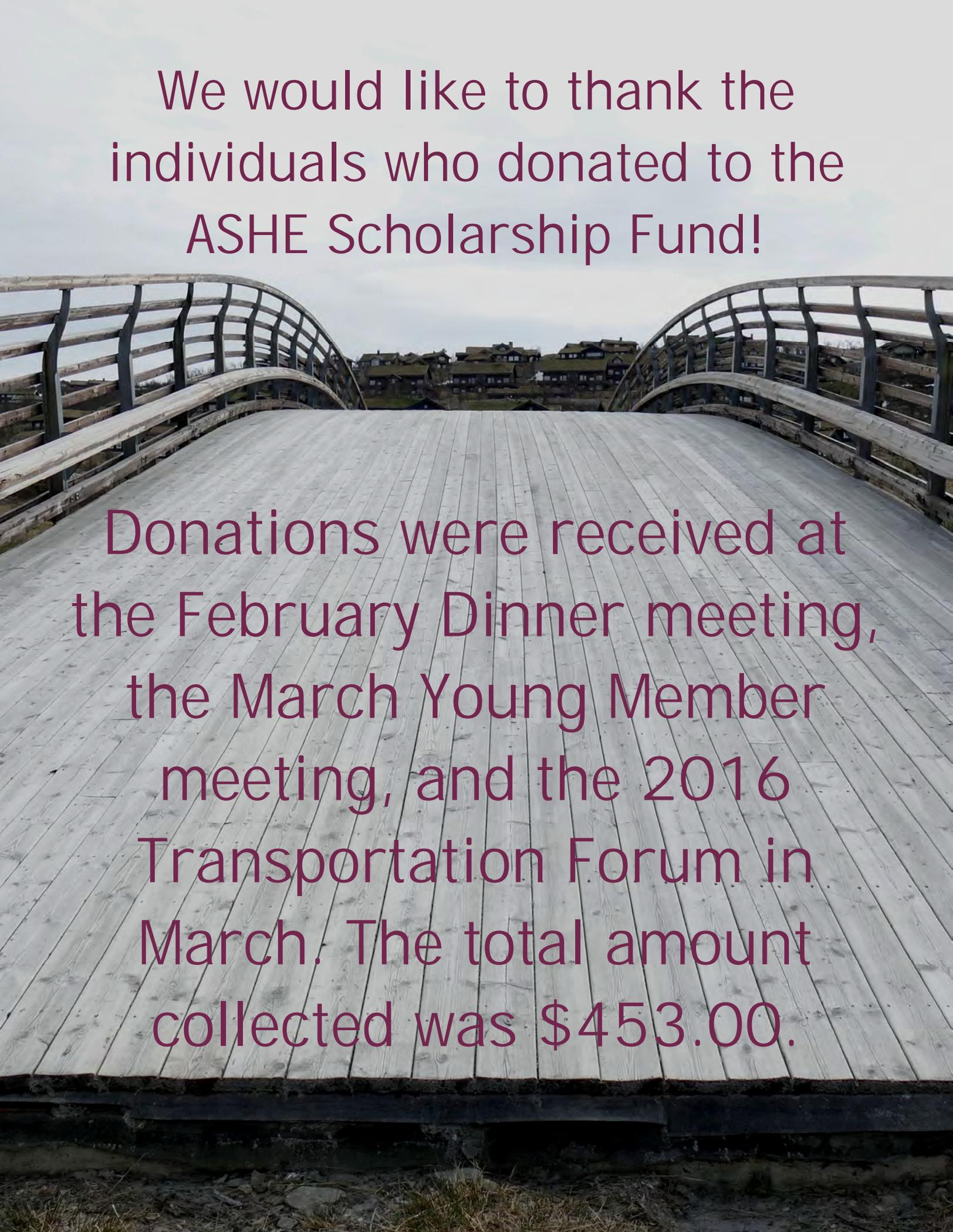
<http://www.mariospgh.com/eastside/>

MARIO'S EAST SIDE SALOON

5542 WALNUT ST, PITTSBURGH, PA 15232

\$5 cover for drinks and heavy appetizers

Come out to network with other young professionals from the Pittsburgh area and hear what the various organizations are all about! We'll see you on the roof!

A photograph of a wooden bridge with a railing, leading to a view of houses in the distance. The bridge is made of light-colored wood and has a curved railing. The houses in the background are dark-colored with gabled roofs. The sky is overcast.

We would like to thank the individuals who donated to the ASHE Scholarship Fund!

Donations were received at the February Dinner meeting, the March Young Member meeting, and the 2016 Transportation Forum in March. The total amount collected was \$453.00.

Chartiers Creek Bridge No. 6 (CC06) Rehabilitation Project

By: Mark J. Pavlick, P.E.
HDR Engineering, Inc.

HDR was contracted by Allegheny County Department of Public Works in 2008 to work on the rehabilitation or replacement of four bridges in Allegheny County. Included in this group was Chartiers Creek Bridge No. 6 (CC06), which carries Carothers Street/Third Avenue over Chartiers Creek and is located in Scott Township and Carnegie Borough. The project involved the rehabilitation of an existing simple-span riveted steel Warren truss.

The bridge, built in 1927 and rehabilitated in 1979, is a single span truss with a span length of 140'-0". The bridge deck consists of a variable thickness concrete slab supported on buckle plates. There are two 2'-8" high concrete parapets and sidewalks on the left and right sides with aluminum pedestrian railings. The bridge roadway measures 27'-10" curb-to-curb and carries two lanes of bi-directional traffic. The bridge deck is supported by a stringer/floorbeam floor system with cantilevered support brackets for both sidewalks. The floor system frames into the trusses, which are supported by two concrete abutments with concrete wingwalls.

REHABILITATION

The rehabilitation of the bridge in the design phase consisted of replacement of the existing sidewalks and pedestrian railings; strengthening of two gusset plates and two floorbeams; replacement of the bottom lateral bracing; truss bearing retrofit; repainting of the structure; milling of the deck and approach roadway; placing a latex modified concrete overlay on the deck and placement of a bituminous wearing surface on the approaches. There were also abutment concrete repairs and safety improvements associated with the project.

The full extent of the required structure repairs were not known until the bridge was under construction. When the concrete sidewalks were removed for replacement, extensive deterioration of the flanges for the truss vertical and diagonal members was noted. HDR was contacted by the



construction inspector to look at the deterioration firsthand. It was immediately determined that these members would require strengthening. An inspection team was promptly sent to the site to note the extent of the deterioration and document the details so strengthening steel can be bolted onto the existing members. The difficulty of the retrofits was that individual retrofit details had to be developed for members that were previously retrofitted, connected to floorbeams, or had tight clearances to the existing bridge barriers, keeping in mind that the contractor needed to make these repairs before performing work for the new concrete sidewalks. It was also noted during the inspection that the sidewalk fascia stringer connections were extremely deteriorated and needed to be retrofitted. These repairs were completed and with some minor adjustments, the construction was back on schedule.

HISTORIC SIGNIFICANCE

The bridge was built in 1927 and is the longest Warren truss in the Commonwealth of Pennsylvania. The structure has been determined to

be eligible for inclusion into the National Register of Historic Places. An interesting fact is that the bridge was fabricated using Carnegie Steel and is located in Carnegie Borough. As part of the mitigation measures for replacing the deteriorated pedestrian railing, the bridge plaque that was part of the existing railing was installed into the backside of the concrete barrier and visible to the sidewalk pedestrian traffic.

STREETSCAPE ENHANCEMENTS

The CC06 Bridge rehabilitation was perfectly timed to tie into the adjacent streetscape project being performed on both ends of the bridge. Ornamental street lighting, planters and park benches were placed adjacent to the bridge approach roadways as part of the Streetscape project. Although vehicular traffic was detoured during construction, a sidewalk was required to be open to permit pedestrians access to public transportation, restaurants, and shopping centers. Pedestrian access is vital to the community. For the rehabilitation project, the addition of a handicapped ramp and recessed sidewalk lighting in the pedestrian railings and the elimination of the bridge barrier blunt ends improved safety for motorists and pedestrians as well as complimenting the enhancements of the Streetscape project.

SAFETY IMPROVEMENTS

The project has eliminated some safety concerns and improved the public safety in others. The existing steel pedestrian railing was leaning outward away from the sidewalk on both sides of



the bridge. The railing posts were spaced at 17'-6" across the bridge, which was excessive and a safety concern. It was thought that the condition of the railing connections to the sidewalk brackets was deteriorated and may require minor retrofit. When the connections were exposed in construction, they were much worse than expected. New aluminum pedestrian railings were installed with 7'-6" support spacing. The previous post locations were strengthened prior to the installation of the new railing.

The two trailing ends of the bridge barriers had blunt ends. The barrier ends were modified to eliminate this safety concern.

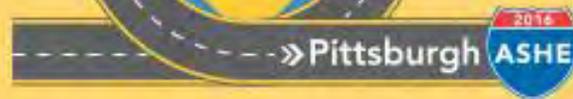
The addition of handicapped ramps on the north end of the east sidewalk not only provides necessary access for the handicapped but also enhances safety for the young and elderly. Pedestrians using the bridge at night will benefit from the increased visibility from the added recessed sidewalk lighting.

FIBER REINFORCED POLYMER SIDEWALK GRATING

The vast majority of the project involved standard engineering materials and construction practices except for the use of FRP (fiber reinforced polymers) grating to replace the existing steel sidewalk grating. This grating is used between the sidewalks and the back of the roadway barriers. The grating was installed between the truss diagonal and vertical members to eliminate a fall hazard and to prevent debris from falling into Chartiers Creek. The UV resistant FRP grating is non-corrosive and was painted with the same paint as the bridge. For field installations, the grating was field cut with a circular saw to limit the gaps between the truss vertical and diagonal members to limit the gaps to approximately 1".

SUMMARY

The rehabilitation of the CC06 Bridge preserves a historic, vital link between Scott Township and Carnegie Borough. The structure was not only strengthened and recoated but also added safety features and tied the bridge in to the community's beautification project.



Celebrating our **50th Anniversary**,
the **ASHE Pittsburgh Section**
is proud to be your host for the

2016 ASHE National Conference

PITTSBURGH

May 19-22, 2016

REGISTER NOW

www.2016conference.ashe.pro

Visit our website for conference information,
including sponsorship and exhibit booth opportunities

Featured Century Club Members

H.W. Lochner, Inc.
Foster Plaza 9, Suite 590

750 Holiday Drive

Pittsburgh, PA 15220

Phone: 412-250-4280

Contact: Tom Bice

Email: tbice@hwlochner.com

Principals: Tom Bice, Kelly Rigot-Gargan, Jane-Ann Patton, Christ West

LOCHNER

KTA-Tator, Inc.
115 Technology Drive

Pittsburgh, PA 15275-1085

Phone: 412-788-1300

Contact: Kimmer Cline, PE

Email: kcline@kta.com

Principals: Ken Tator, PE - Chairman of the Board; Ken Trimber, - President; Dan Adley, CIH, CSP, - CEO

Type of work performed: Construction Inspection, Construction Management (Coatings); Design Services (Coatings)



Markosky Engineering Group

3689 Route 711

Ligonier, PA 15658

Phone: 724.238.4138

Contact: Apryle M. Davis

Email: adavis@markosky.com

Principals: Joyce V. Markosky, P.E.; Mark A. Markosky, P.E.

Type of work performed: Civil Engineering, Environmental Consulting, Construction Services



Buchart Horn, Inc.
2200 Liberty Avenue, Suite 300

Pittsburgh, pa 15222

Phone: 412-261-5059

Contact: Jay Sabo

Email: jsabo@bh-ba.com

Principals: Brian Funkhouser, PE - President; Jay Sabo, PE - Associate Vice President

Type of work performed: Full service engineering and architectural firm





ASHE Member Update



The members of ASHE would like to extend our condolences and prayers to:

Life Member Rudy Melani and his family. Rudy's wife, Nora, passed away February 6, 2016 at the age of 91. Nora worked for PennDOT as a clerk typist.

Member Kanwal P. Chopra and his family. Kanwal's father, Sohan Singh Chopra, passed away on December 20, 2015. He had just celebrated his 86th birthday.

Anyone who has any information about members of ASHE, such as births, deaths, marriages, registrations, etc. are asked to email the information to Ron Todorowski at forthepr@yahoo.com if they would like the information to be listed in the next *Cross Section* newsletter

New Members!

ASHE Pittsburgh would like to welcome its newest members!

Congratulations on joining this organization to further promote a safe, efficient and sustainable highway system by means of innovation and fellowship.

We cannot wait to get to know you!

To join ASHE Pittsburgh, please contact Dave Mikec, Chairman of the Membership Committee!

D.Mikec@gaiconsultants.com



Mark Your Calendars



Upcoming ASHE Pittsburgh Events

April 20, 2016—Joint ASHE Section | April Dinner Meeting

April 22, 2016— Joint ASHE Young Member Meeting—Mario's East Side Saloon

May 19-22, 2016—National Conference: Pittsburgh, PA—Wyndham Grand Hotel

June 1, 2016—Meeting, Narcissi Winery

July 21, 2016—Annual Pirates Outing

Summer 2016—Golf Scramble

October 8, 2016 – Past Presidents' Banquet, St. Clair Country Club

Get ASHE Updates on social media:



Facebook: [http://facebook.com/
ASHEPittsburgh](http://facebook.com/ASHEPittsburgh)



Twitter: @ASHEPittsburgh



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ASHE Pittsburgh thanks the 2015-2016 Century Club Members

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A&A Consultants, Inc.
ACA Engineering, Inc.
AECOM
Alfred Benesch & Company
Amelie Construction and Supply, LLC
American Geotechnical &
Environmental Services, Inc.
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Golden Triangle Construction Company
Greenman-Pedersen, Inc.
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Hill International, Inc.
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T.W. Consultants, Inc.
Traffic Planning & Design, Inc.
Trans Associates Engineering
Consultants, Inc.
TRC Engineers, Inc.
TranSystems
Tri-State Design & Development
Trumbull Corporation
Whitman, Requardt & Associates, LLP
WSP | Parsons Brinckerhoff



c/o Jim Weaver
Jeff Zell Consultants, Inc.
2200 Liberty Avenue
Pittsburgh, PA 15222

This issue of the Cross Section Newsletter was designed and created by Danielle List. To report any corrections please email ListD@pbworld.com