

**The Pittsburgh Professional Engineer**  
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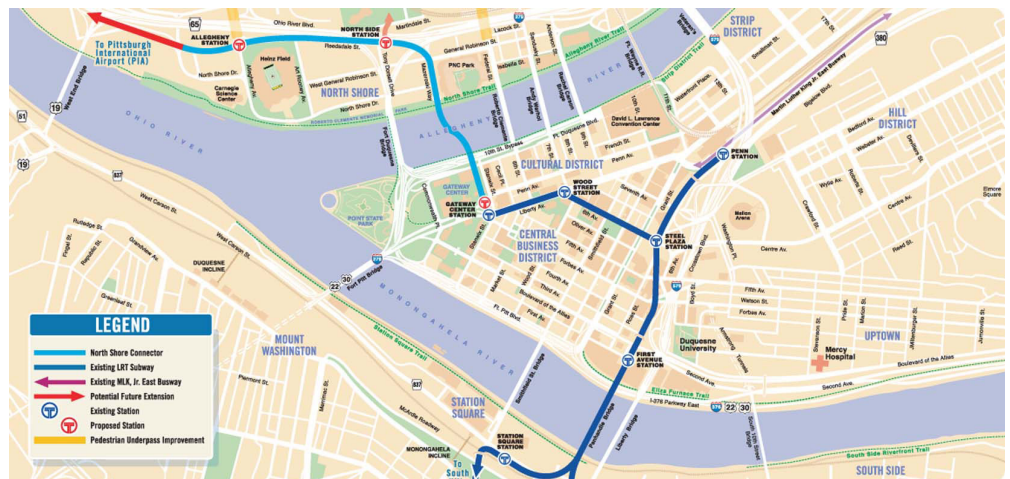
January 2008

## North Shore Connector – The Latest News

The January meeting for the Pittsburgh Chapter of PSPE will be on the topic of the North Shore Connector Project. Kirk Thompson, one of our Directors and involved with the project for the Port Authority, will make the presentation. The Port Authority web site ([www.portauthority.org](http://www.portauthority.org)) under the link for “News” has a wealth of information on the project. Below are a few excerpts.

### Basic Facts:

- ▶ The project is a 1.2-mile extension to the current 25-mile light rail transit system
- ▶ The total project cost : \$435 million (80 percent federally funded)
- ▶ The project will serve rapidly-developing North Shore, including the new Del Monte and Equitable Resources headquarters, PNC Park, Heinz Field, Marriott Springhill Suites, Carnegie Science Center, Community College of Allegheny County and other cultural, business and residential destinations.
- ▶ The project enables future expansion of the T to the Pittsburgh International Airport, the Parkway West/Airport Corridor, the North Hills and other areas within Allegheny County.
- ▶ The project will support approximately \$377 million in new economic development and \$750 million in existing development as well support thousands of direct and secondary jobs through engineering, design, project management, construction and operation. The American Public Transportation Association estimates that every dollar invested in public transportation returns up to \$6 in economic and other public benefits, and that every \$10 million in capital investment sparks up to \$30 million in business sales.
- ▶ The project positions the Port Authority to accommodate thousands of people who will live, work, shop and spend leisure time on the North Shore in coming years while providing a new option for thousands of others who already travel there – all without adding traffic congestion.
- ▶ The project directly links the North Shore, Downtown, Station Square and South Hills employment, business, residential, entertainment and retail centers.



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# MATHCOUNTS®

## MATHCOUNTS 2008 PLEASE VOLUNTEER

Each year, for the past 24 years (since 1984-1985), the Pittsburgh Chapter of PSPE has sponsored the MATHCOUNTS competition for 7<sup>th</sup> and 8<sup>th</sup> grade students. The first competitions were held at Carnegie Mellon (twelve schools participated). We then moved to the University of Pittsburgh to be able to use the Benedum Auditorium (last year, 32

schools participated). Now, we are moving one more time to Robert Morris University to take advantage of the facilities there.

One thing that does not change is the Chapters' need for volunteers and companies who are willing to donate time and financial support for the competition.. We would like to extend a special thanks to the corporations and individuals for their historical support. We recognize these donations in the Mathcounts Competition Booklet and in the program and during the presentations at the National Engineer's Week Banquet.

We would like to send out a request for individuals and engineering firms in the Pittsburgh area to consider financial support for this wonderful opportunity. This year, thus far, the Michael Baker organization has provided a contribution. There are many needs for this support. If you or your company would like to make a donation to MATHCOUNTS, please contact Virginia Dailey at [ddengr@city-net.com](mailto:ddengr@city-net.com).

If you may be interested in volunteering for the February 2, 2008 Competition, please contact Tom Schwartzmier via e-mail [toms@nauticom.net](mailto:toms@nauticom.net).

### PSPE 2008 Winter EIT / PE Refresher Courses Announcement

The Pittsburgh Chapter sponsors refresher courses twice yearly for both the Engineer in Training (EIT/FE) and Professional Engineer (civil discipline) exams. Courses meet one evening per week to complement the semiannual examinations administered in the Commonwealth of Pennsylvania. This coming spring 2008, the PE exam is scheduled for Friday, April 11 and the EIT/FE exam is scheduled for Saturday, April 12.

The refresher courses will be held at Robert Morris University in Moon Township. A minimum enrollment of 8 students per course is required. A tuition fee of \$350 is charged for each course, payable to Pittsburgh Chapter, PSPE. The Winter 2008 Refresher Courses are scheduled for 9 sessions beginning Wednesday, February 6, 2008 and running through Wednesday, April 2, 2008. Each course provides 22 hours of instruction. The deadline for course registration is Friday, February 1, 2008. The Civil PE Review class runs concurrently on the same dates as the EIT/FE at Robert Morris University. All classes are scheduled from 6:30 PM to 9:00 PM. For more information and registration materials for future sessions, please check the Chapter web-site <http://www.PittsburghPE.org> or contact the Chapter office at 412-391-0615. Feel free to contact the EIT/FE instructor, Steven Musial, P.E., at 412-956-6448 for additional class information.

#### 2007-2008 Chapter Officers

President – Virginia Dailey, P.E.	Executive Secretary - Kevin Wiley, P.E.
President Elect – Tom Weber, P.E.	Treasurer - John A. Broschious, P.E.
Vice President – Dave Samek, P.E.	Financial Secretary - Reyman Branting, P.E.
State Director - David Briskey, P.E. 2005-2008	Immediate Past President – Darryl Brogan, P.E.

#### 2007-2008 Chapter Directors

Jeff Mazza, P.E. 2005-2008	Brian Schull, P.E. 2006 - 2009
Moe Rayan, E.I.T. 2005-2008	Kirk Thompson, P.E. 2007 – 2010
Vacant Position 2006 - 2009	Joe Garlicki, P.E. 2007 - 2010

**PENNSYLVANIA SOCIETY OF PROFESSIONAL ENGINEERS  
PITTSBURGH CHAPTER**



Invites all current and prospective members to

**JANUARY 17, 2008 Meeting**

**At the Engineers Society of Western Pennsylvania Building**

**337 Fourth Ave., Pittsburgh, PA 15222**

***RECOGNITION OF CHAPTER PAST PRESIDENTS***

***And North Shore Connector Project Presentation***

On Thursday, January 17, 2008, the Pittsburgh Chapter will be recognizing all past Chapter Presidents with a free hors d'oeuvres meeting, followed by a presentation by Kirk Thompson, Board Director, from the Port Authority providing insight into the North Shore Connector Project. Kirk will be giving us the latest status on the project and a slide presentation of the tunnel boring machine and project.

Cocktails: 6:00 PM Social (Cash Bar)

Free Hors D'Oeuvres

Introduction of Past Presidents

Presentation of North Shore Connector Slides

You may make your reservation by filling in the form below and mailing or faxing it to Ryan Bock, ESWP. You may also phone in all of this information to us.

Phone: (412) 391-0615 Fax (412-261-1606) e-mail: [ddengr@city-net.com](mailto:ddengr@city-net.com)  
U.S. Mail; PSPE Pittsburgh Chapter, 337 Fourth Ave., Pittsburgh, PA 15222

Name : \_\_\_\_\_ Contact Info: \_\_\_\_\_

Name : \_\_\_\_\_ Contact Info: \_\_\_\_\_

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**PENNSYLVANIA SOCIETY OF PROFESSIONAL ENGINEERS  
PITTSBURGH CHAPTER**

**Invites ALL Engineers and their guests to the Annual  
NATIONAL ENGINEER'S WEEK BANQUET**

**On Saturday, February 23, 2008**

At The Club at Nevillewood, 1000 Nevillewood Drive, Presto, Pa. 15142

Please Join us for a wonderful evening of fellowship, great food  
and the presentation of the 2008 Engineer's Week Awards

Cocktails: 6:00 p.m. (Cash bar)

Welcome & Presentation of Mathcounts Awards: 7:00pm

Dinner: 7:30 pm

Presentation of Awards: 8:30pm

You may make your reservation by filling in the form below and mailing or faxing it to the Chapter office. You may also phone in all of this information to us. If you opt to make your reservation via e-mail, do not e-mail your credit card info. Payment may be made by calling in your credit card info, faxing this filled in form, or mailing this form with credit card info or enclosing a check. **Cost of Dinner is \$55.00/person if reservations are made by February 5, 2008.** After that, the cost is \$60.00/person.

Office Phone number (412) 391-0615 e-mail: PSPE@PittsburghPE.Org

Office fax (412-261-1606) Mailing Address: PSPE, 337 Fourth Avenue, Pittsburgh PA 15222

Dinner Choice : Choose one of the following:

**Chicken Roman**, All White Meat Chicken Breast Battered in Egg and Imported Romano Cheese

**Baked Stuffed Lemon Sole**, with Canadian Snow Crab stuffing

**Roast Tenderloin of Beef**, with peppercorn sauce

Name : \_\_\_\_\_ Dinner Choice: \_\_\_\_\_

Name : \_\_\_\_\_ Dinner Choice: \_\_\_\_\_

Payment Options:

Credit Card:  MASTERCARD  VISA Card Number: \_\_\_\_\_ Exp. Date \_\_\_\_\_

Name (as it appears on the credit card): \_\_\_\_\_

Check enclosed payable to PSPE Pittsburgh Chapter & mailed to 337 Fourth Ave., Pittsburgh, PA 15222

Directions: On Mapquest.com, enter this address: The Club at Nevillewood, 1000 Nevillewood Dr., Presto, PA 15142



(Article Continued from Page 1)

- ▶ The project improves access to the T for North Side residents.
- ▶ It reduces traffic in the Golden Triangle by making locating the North Side Station under the planned SEA parking garage, making it possible for those destined for Downtown Pittsburgh to use fringe parking on the North Shore and then light rail service to easily circulate to their destination.
- ▶ It is supported by FTA, PENNDOT, Allegheny County, the City of Pittsburgh and stakeholders on the North Side, including the Northside Leadership Conference, as well as the Pittsburgh Cultural Trust, the Pittsburgh Downtown Partnership and the Manchester Citizens Corporation, among others.
- ▶ It sustains the Port Authority's continuous mission to improve and expand public transit services for the residents of Allegheny County, thus making transit user-friendly, accessible and convenient.
- ▶ It is one of the five transit improvement projects included in the President's Fiscal Year 2005 Appropriations Bill.
- ▶ It is scheduled to open in 2011.

Carrie Deutsch  
Michael Georgiadis

5 December 2007

### Waterworks Treatment Plant Report



At the Waterworks Water Treatment Plant, we spoke with engineer Tom Gigliotti about the water treatment process. Throughout our visit, we learned many interesting facts about the treating process.

Mr. Gigliotti first explained to us that the water treatment system is so reliable because it operates mostly on the power of gravity. The plant is set up so that the water flows from one treatment step to the next by gravity alone, thus saving in energy costs and making the plant able to treat the water even if the power goes out. The water is pulled from the nearby Allegheny River to the raw water station, where five pumps pump over 70 million gallons of water per day. The raw water station has high ceilings, as it used to be steam powered. The largest of the five pumps has a

capacity of 120 million gallons of water per day.

Next, Mr. Gigliotti showed us two places where the water is chemically treated. Both liquid and solid chemicals, such as lime, potassium permanganate, and ferric chloride, are first added and either pumped or mixed throughout the water. The water is then mixed with sodium hypochlorite (NaOCl), a similar substance to chlorine, and is disinfected. This substance is 3 times the concentration of bleach. It is extremely potent, and looks like lemonade. There are four tanks of the substance. This step used to be done with chlorine gas, but the dangers were too much, so they switched to the liquid substitute. There are four large vats in a mixer-type setting, which make sure that the chemicals are blended thoroughly in the water. It makes the water about a 7 PH, so it does not damage the pipes as it moves through, and sinks any large unwanted particles. The water then moves through flumes into four giant basins. Each basin is approximately 20 feet deep. This process helps to remove any more particles out of the water, and then moves the water to giant sedimentation basins to let any leftover particles settle.

The next step that Mr. Gigliotti showed us was rapid sand filtration. This process is performed by percolating water down through 18 inches of anthracite coal and 12 inches of sand. Once again, this process ensures that any particles still flowing in the water will be caught. There are 18 filters, and every so often the filters need to be cleaned. The cleaning process involves "backwashing," or flowing the water backwards through the system. Only about one inch of the sand/gravel is lost in this process each year.

The final stop of our tour was the pump station. The water treatment company operates two primary pump stations and eight secondary pump stations. There are 4 pumps in the Aspinwall station, and the station pumps water to a reservoir. There are many backup pumps just in case anything breaks down. The pump station pumps 28 million gallons of water per day, or almost 20,000 gallons per minute. The pumps are centrifugal, and pump the water approximately 230 feet upwards in height. It pumps the water with the pressure of about 100 pounds.

At our visit to the water treatment plant, we learned a lot about the water treatment process. It definitely gave us a higher level of appreciation for the cleanliness of our water! Mr. Gigliotti was an excellent guide, and taught us a lot about this very interesting process.

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### 2007-2008 CALENDAR

#### MEMBERSHIP EVENTS & MEETINGS

Date	Time	Description	Location
January 17, 2007	6:00pm	January Chapter Meeting	Engineers Building
February 2, 2008	8:00am	MATHCOUNTS Competition	Robert Morris Univ.
February 23, 2008	6:00pm	Engineer's Week Banquet	Club at Nevillewood
March, 2008	7:30pm	March Chapter Meeting – Allen Biehler, PA Secretary of Transportation	Engineers Building
April, 2008	TBD	April Chapter Meeting – Tunnel Site Visit	TBD

BOARD OF DIRECTION MEETINGS WILL BE HELD ON: Jan. 17, 2008, Feb. 21, 2008, Mar. 13, 2008, Apr. 10, 2008, May 8, 2008 and June 12, 2008

All BOD meeting are to held @ 5:30PM @ the ESWP Building pending further notice.