# NORTHERN TRANSPORTATION AND AIR QUALITY SUMMIT (NTAQS)

August 24 – 26, 2010
Cambridge, Massachusetts

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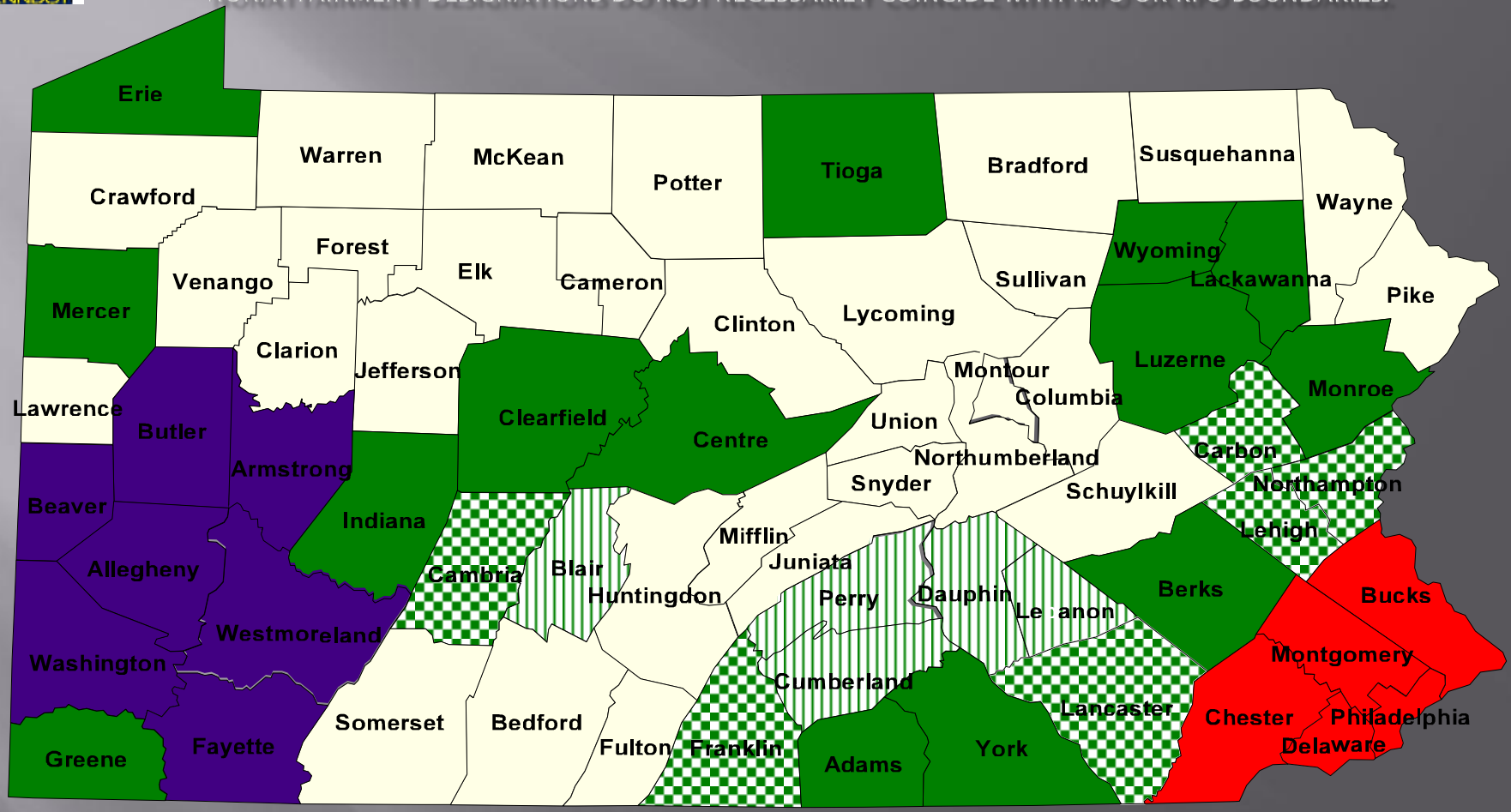
Pennsylvania DOT

# Background on Pennsylvania's Planning Process

- 15 Metropolitan Planning Organizations
  - 14 nonattainment or maintenance for ozone or PM
- 8 Rural Planning Organizations
  - 5 nonattainment or maintenance for ozone
- 37 (of 67) ozone nonattainment or maintenance counties
- 23 (of 67) $PM_{2.5}$ nonattainment counties (some partial counties)

# PA OZONE NONATTAINMENT & MAINTENANCE AREAS
# 8-HOUR 0.08 PPM O3 STANDARD (JUNE 16, 2010)

NONATTAINMENT DESIGNATIONS DO NOT NECESSARILY COINCIDE WITH MPO OR RPO BOUNDARIES.




## Area Status Key

(patterns denote EPA area designations)

- Nonattainment (NA)
- Maintenance
- Moderate NA
- Attainment

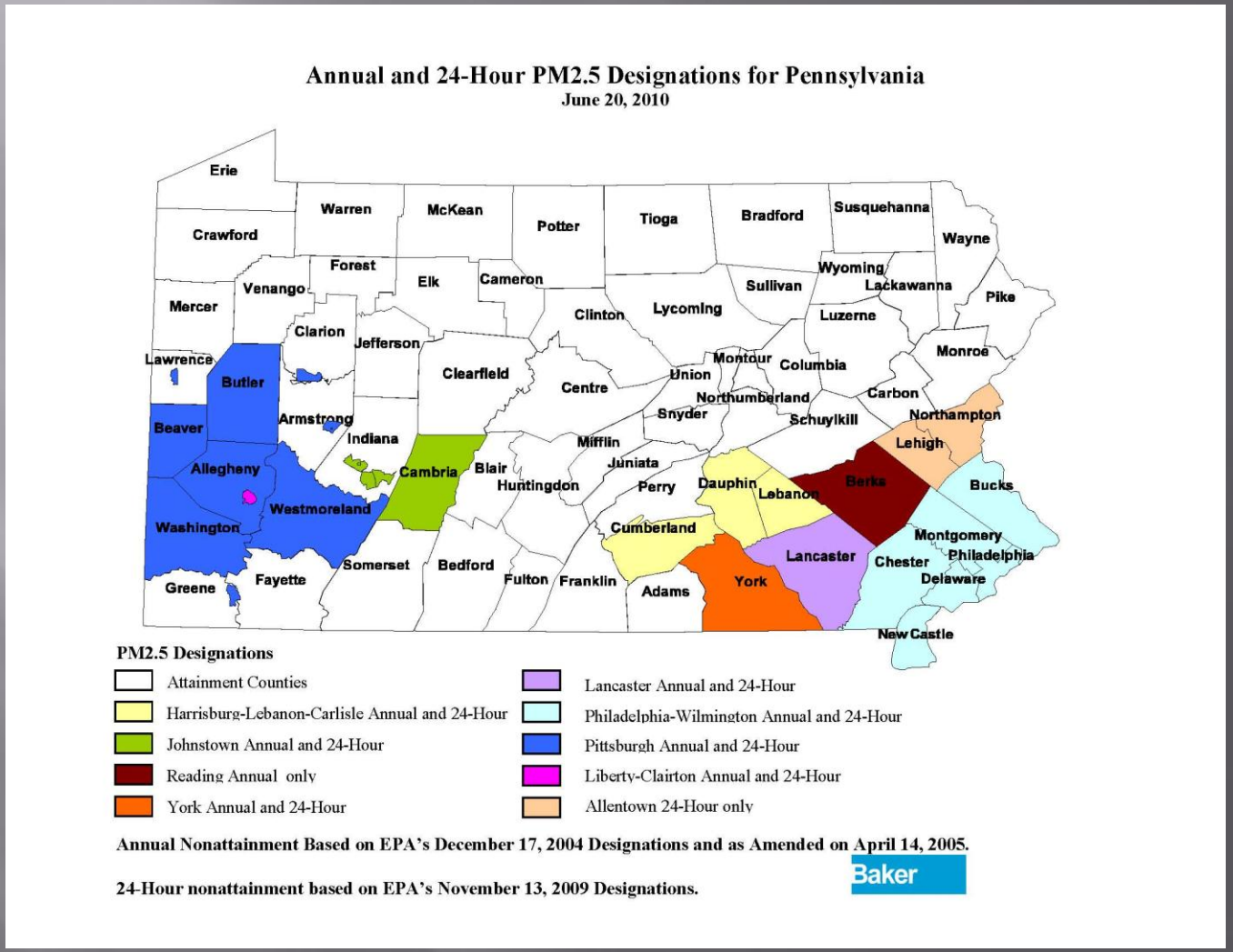
**Multi-State Areas**:

Greater Philadelphia: DE: Kent New Castle, Sussex MD: Cecil NJ: Atlantic, Cape May, Burlington, Camden, Cumberland, Gloucester, Mercer, Salem, Ocean (Moderate)

Greater Youngstown: OH: Mahoning, Trumbull, Columbiana (Basic)

Baker

# PA PM Nonattainment Areas



# Southwestern Pennsylvania Commission (SPC)

- This presentation focuses on innovative diesel, freight and intermodal CMAQ-funded projects in the SPC region
- Second largest MPO in PA
- Comprised of ten counties in southwest PA
- Pittsburgh is largest City
- Nonattainment for ozone, $PM_{2.5}$ and $PM_{10}$ *
  - * Liberty/Clairton Boroughs only

# A TALE OF 4 INNOVATIVE CMAQ PROJECTS

- Homer City Phase 2
- Locomotive Diesel Engine Retrofit (B&P Rail Yard)
- Locomotive Diesel Engine Retrofit (Brookville Rail Yard)
- Marine Diesel Engine Retrofit

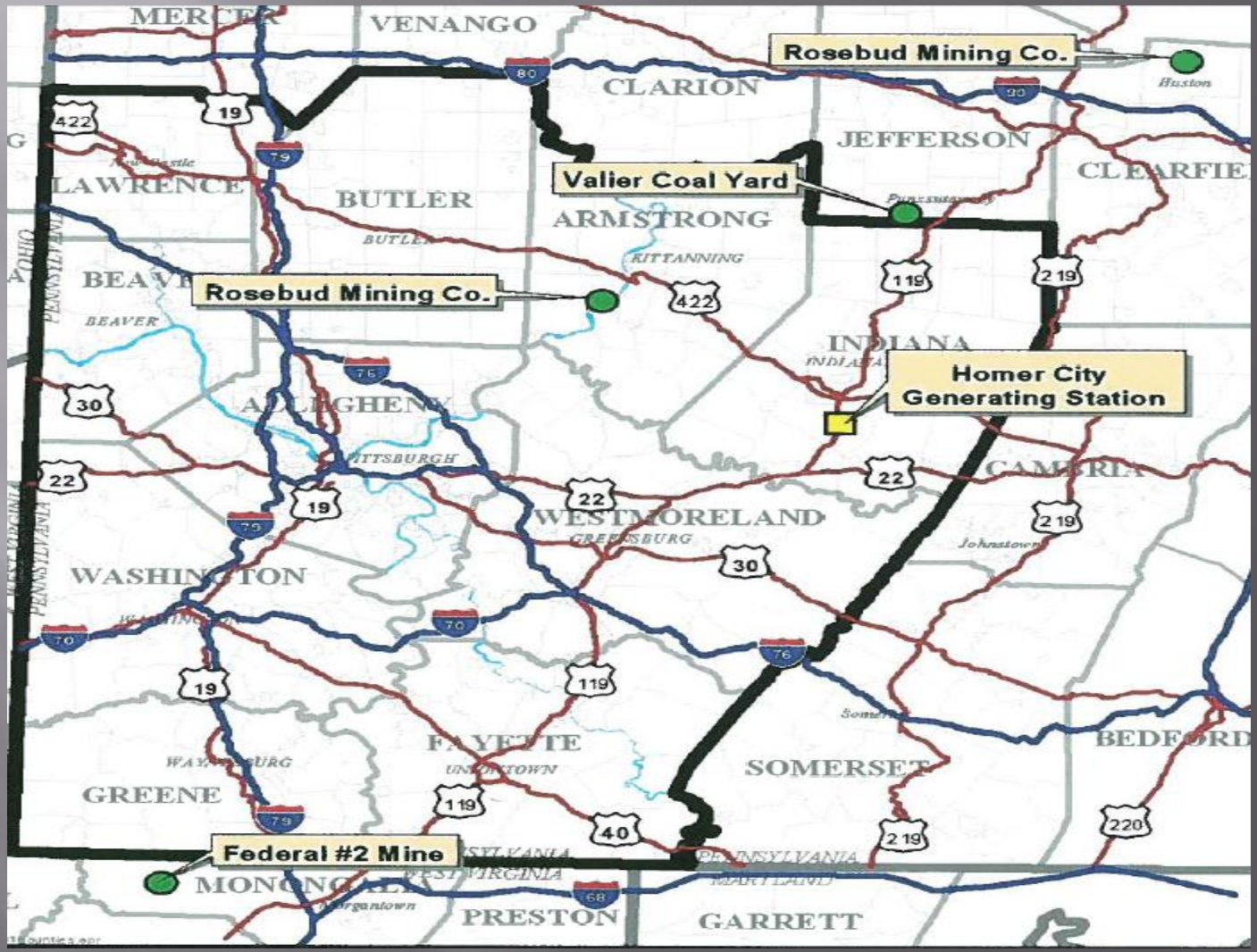
# Buffalo and Pittsburgh Railroad: Homer City Phase 2

## 2007 TIP – Project completed in 2009

- **Project purpose**
  - Rebuild 25 miles of rail line between Creekside and Cloe in Indiana County
  - In doing so, coal deliveries to the Keystone Power Plant in Homer City could be made by rail instead of truck

Source: ( http://www.edupic.net/Images/Math/railroad_tracks414.JPG )

# Homer City Generating Station (Creekside to Cloe, Indiana County



# Homer City Phase 2
(continued)

- **Project cost** (2006 numbers)
  - **Total** = $13.20 million
  - **CMAQ** = $3.75 million
  - **B&P RR** = $4.70 million
  - **Other sources** = $4.75 million

# Homer City Phase 2
## ( continued)

- **Project benefits**

  - More efficient delivery of coal to the Keystone Power Plant
  - Reduces nitrogen oxide levels by over 30 tons per year
  - Reduces carbon monoxide levels by over 10 tons per year
  - Helps to retain local jobs
  - Is capable of shifting 175 truckloads of coal from truck to rail per day. ( 4,100 tons of coal per day)
    - Many of the trucks previously traveled on local streets in Ligonier, Blairsville, and other towns along Routes 119, 711, and 981 through the Laurel Valley

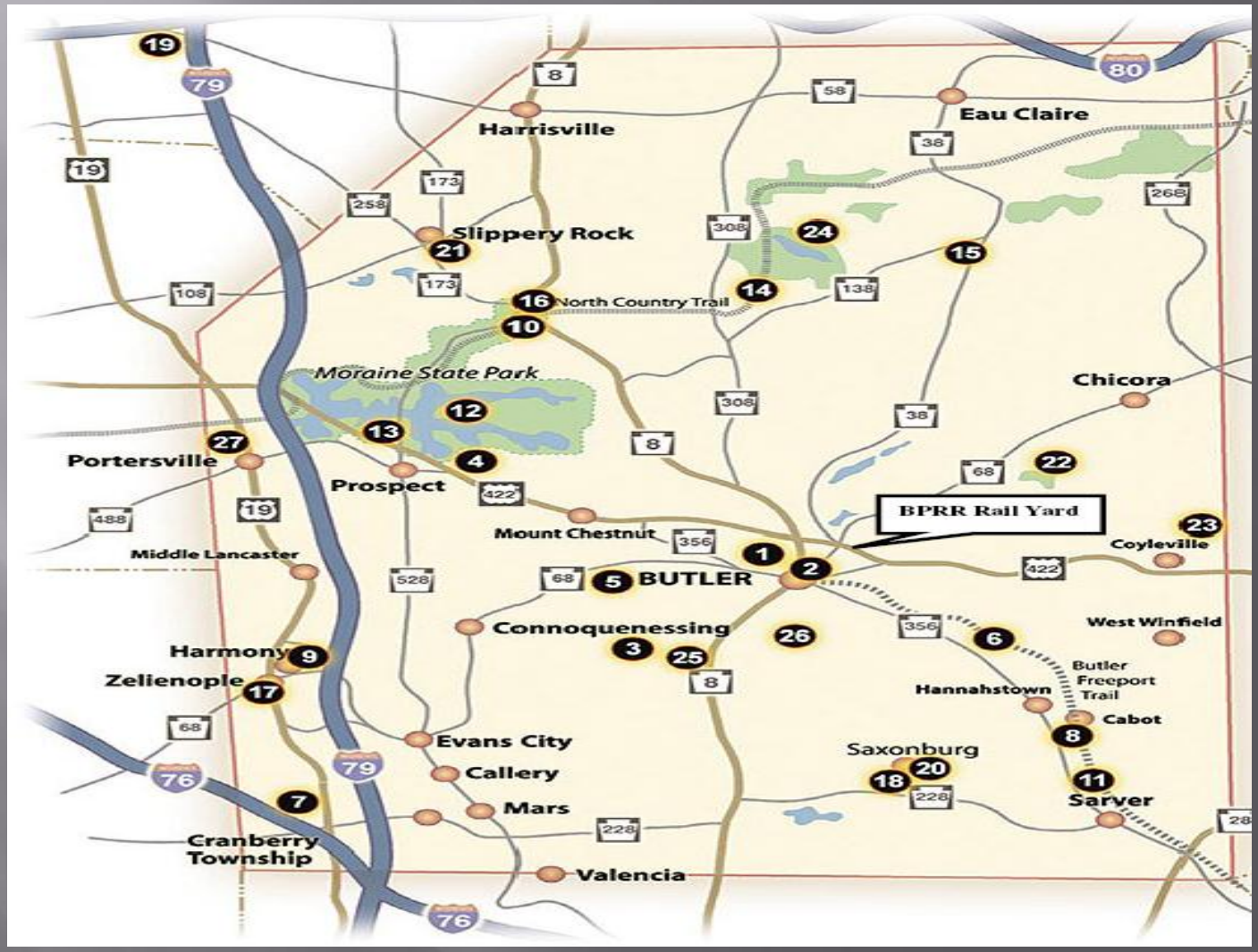
# Locomotive Diesel Engine Retrofit at B&P RR Yard

## 2009 TIP – Project completed in 2010 *

- **Project purpose**
  - Rebuild one diesel locomotive for use in switching operations at B&P's Butler, PA rail yard
  - Replace standard diesel locomotive engines with state-of-the-art low emissions engines
  - * Locomotive commissioned on July 12, 2010

( Source: http://eagle-sky.net/upload/200882010513179.jpg )

# Locomotive Diesel Engine Retrofit at B&P RR Yard



# Locomotive Diesel Engine Retrofit at B&P RR Yard (continued)

- **Project cost.** ( 2008 numbers )
  - **Total costs** = $1.55 million
  - **CMAQ** = $1.24 million
  - **B&P RR** = $0.31 million

# Locomotive Diesel Engine Retrofit at B&P RR Yard (continued)

- **Project benefits**
  - Cleaner rail yard operations at the Butler facility
  - Retains local jobs at B&P's Brookville, PA locomotive repair shop to rebuild the locomotive
  - Reduces Nitrogen Oxide emissions by over 23 tons per year
  - Reduces particulate ($PM_{2.5}$) emissions by nearly 1 ton per year

# Locomotive Diesel Engine Retrofit at Brookville B&P RR Yard

## 2011 TIP – Project programmed on TIP for funding in 2014

- **Project purpose**

  - Rebuild two diesel locomotives for use in line – haul coal train service primarily within air quality nonattainment areas of southwestern PA

  - To replace standard diesel locomotive engines with state of the art low emissions engines

# Lomotive Diesel Engine Retrofit at Brookville B&P RR Yard)

# Locomotive Diesel Engine Retrofit at Brookville B&P RR Yard (continued)

- **Project cost.** ( 2010 numbers )
  - **Total** = $2.44 million
  - **CMAQ** = $1.71 million
  - **B&P RR** = $0.74 million

# Locomotive Diesel Engine Retrofit at Brookville B&P RR Yard (continued)

- **Project benefits**
  - Cleaner rail operations in southwestern PA's nonattainment counties
  - Retains local jobs at B&P's Brookville, PA locomotive repair shop to rebuild the locomotives
  - Reduces Nitrogen oxide emissions by over 70 tons per year
  - Reduces particulate ( $PM_{2.5}$ ) emissions by nearly 2 tons per year

# Marine Diesel Engine Retrofit at Port of Pittsburgh and Inland Waterway System
## 2011 TIP

- **Project purpose**

  - Rebuild 40 towboats equipped with diesel marine engines for use in moving barges carrying freight throughout the Pittsburgh port region

  - The old towboat engines will be replaced with new state of the art low emissions diesel engines

Source: http://en.wikipedia.org/wiki/File:River_towboat_DBQ_IA.jpg

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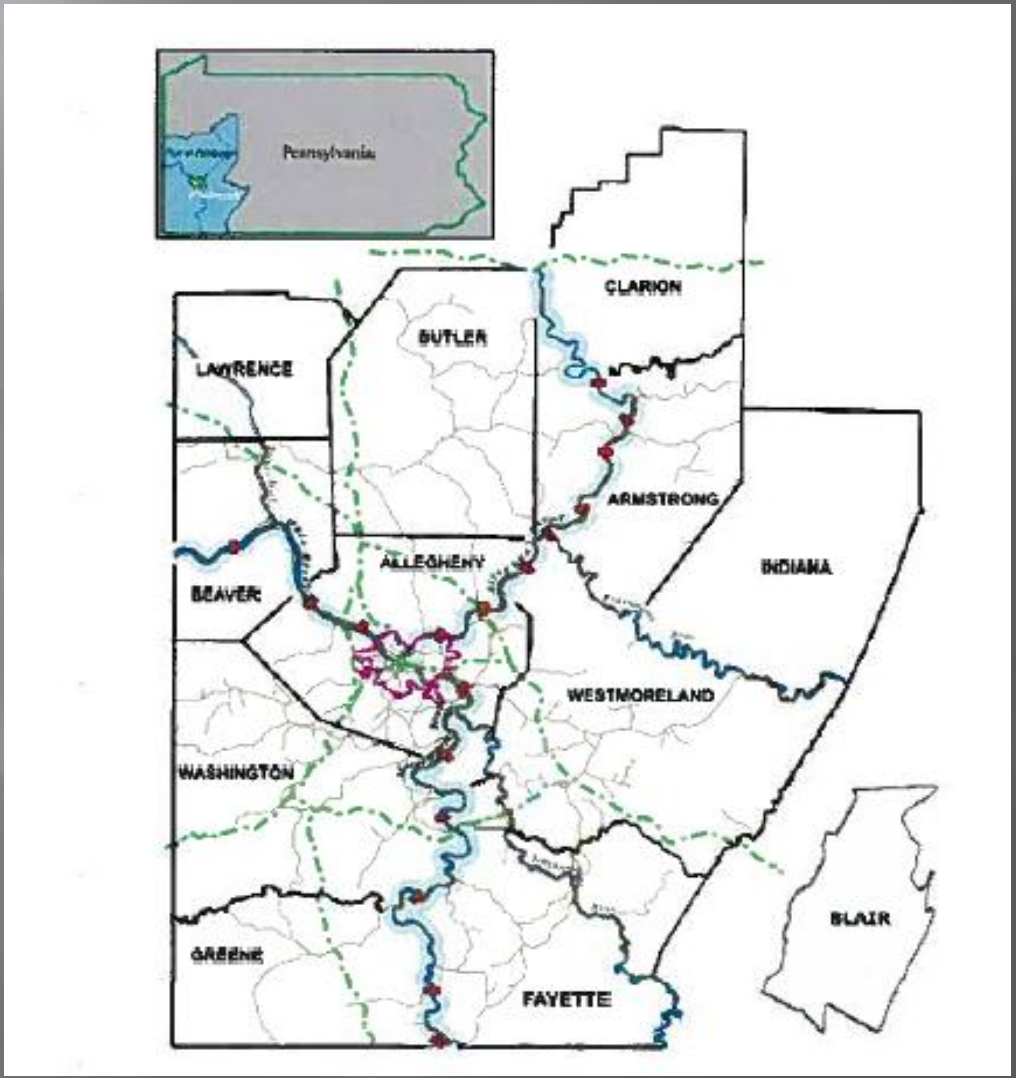
# Marine Diesel Engine Retrofit at Port of Pittsburgh and Inland Waterway System (continued)



# Marine Diesel Engine Retrofit at Port of Pittsburgh and Inland Waterway System (continued)

- **Project Cost** ( 2010 numbers )
  - Total = $22.00 million
  - CMAQ = $4.40 million
  - Other = $17.60 million

# Marine Diesel Engine Retrofit at Port of Pittsburgh and Inland Waterway System (continued)

- **Project benefits**
  - Cleaner marine operations in the Pittsburgh inland waterways system
  - Retain local jobs
  - Reduce nitrogen oxide levels by over 269 tons per year
  - Reduce particulate ( $PM_{2.5}$ ) emissions by over 6 tons per year
  - Reduce volatile organic compounds ( VOCs ) by over 5.5 tons per year

# Summary

- Of all the MPOs/RPOs in PA, SPC has been very receptive to proactive project sponsors who submitted excellent candidate projects and are willing to come up with a greater percent of private funds to match CMAQ funds in order to implement projects that are a bit out of their financial reach.

- On the 2011-2014 SPC TIP (adopted on July 26, 2010), 5 diesel, freight and intermodal projects valued at $42,576,000 ($12,708,000 CMAQ (30%); $29,868,000 other (70%)) are programmed

- This represents 12% of the $102,698,000 CMAQ funds expected during the four-year TIP period

# Future Challenges: Leveraging CMAQ Funds (+)

- All four project examples were public/private partnerships
- Project sponsors supplied their own funds to match public CMAQ money (overmatch in almost all cases)
  - Homer City: 28% CMAQ; 36% other state/fed; 36% B&P RR
  - Butler RR Yard Retrofit: 80% CMAQ; 20% B&P RR
  - Brookville RR Retrofit: 70% CMAQ ; 30% B&P RR
  - Marine Retrofit: 20% CMAQ; 80% towboat operators

# Future Challenges: Jurisdictional Issues (–)

- Once a diesel retrofit project is programmed, getting money obligated is sometimes a challenge.
- Need a federal agency willing/able to manage/administer the project funding.
- In Homer City project, FHWA managed the project.
- For B&P RR completed project – CMAQ funds flexed to FRA.
- For B&P "Brookville" project – FRA reluctant to administer project, FHWA & FRA still negotiating.
- For Marine Diesel retrofit – no federal agency found to administer project yet.
- Seems if it is federal policy to make diesel retrofits a priority, there should be better/easier process in place for the federal agencies to decide which one should administer a given project in order to expedite project delivery.
- Most of the delay we see is due to getting a federal agency to agree to manage the project, not because the project is not "ready to go".

# Questions/Comments

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