

Southern Beltway; US-22 to I-79

A CONSTRUCTION UPDATE

JANUARY, 2018




Pittsburgh Traffic Congestion

- ▶ Pittsburgh's geography
- ▶ I-376 most congested traffic corridor outside NYC/LA
- ▶ Pittsburgh International Airport
- ▶ Pittsburgh lacks a dedicated beltway





TRAFFIC			
	Parkway East Turnpike to Blvd of Allies	36 MIN	21 MPH
	Route 28 Turnpike to Veterans Bridge	24 MIN	32 MPH
	Parkway North I-79 to Veterans Bridge	22 MIN	31 MPH
	Parkway West Airport to Ft Pitt Bridge	69 MIN	15 MPH

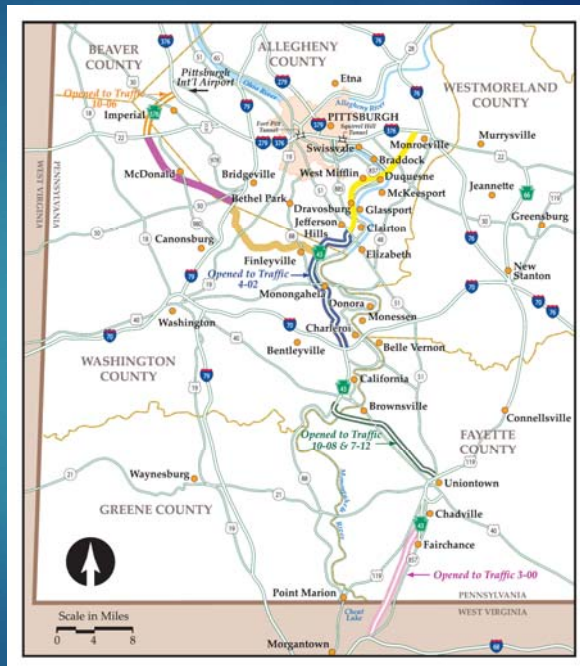


Southern Beltway

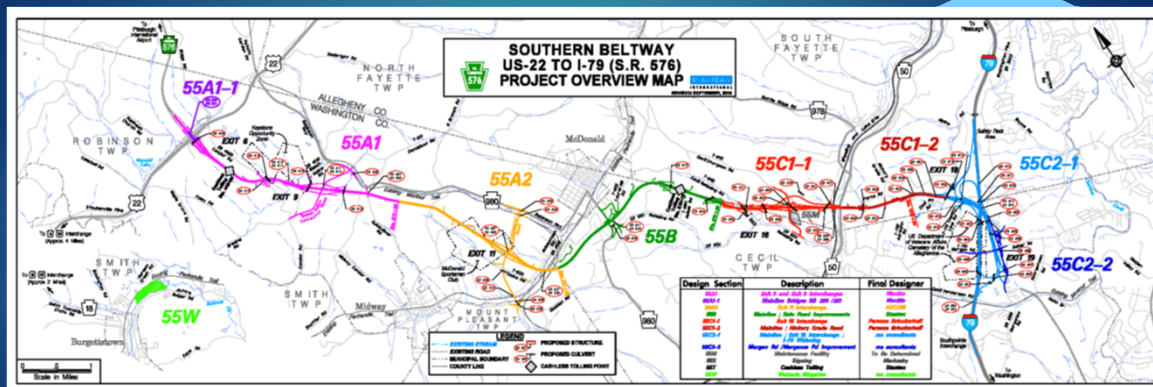
-  I-376 to US 22
-  US 22 to I-79
-  I-79 to Mon/Fayette

Mon/Fayette EXP

-  I-68 to Route 43
-  Uniontown to Brownsville
-  I-70 to PA -51
-  PA-51 to Pittsburgh



Southern Beltway; Map and Schedule



Southern Beltway; U.S. 22 to I-79

Overall Facts

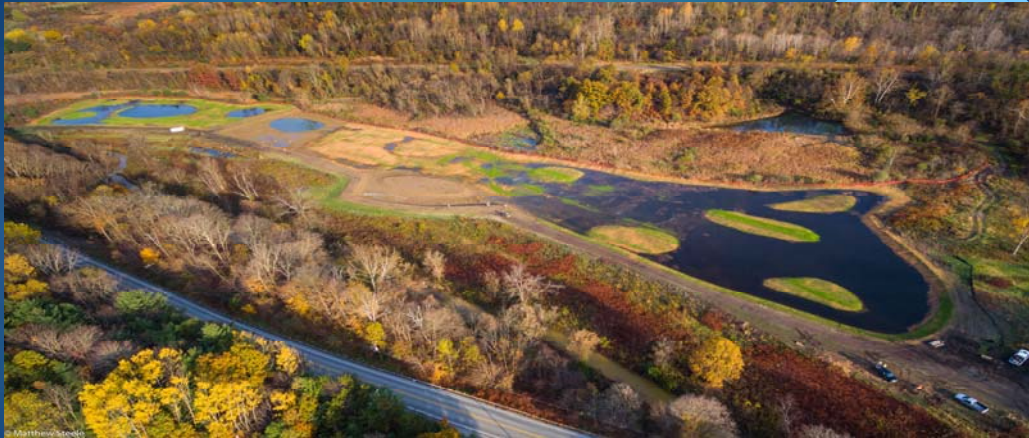
- ▶ 13 miles of mainline, 5 new interchanges, & Cashless Tolling
- ▶ 7 pairs of mainline bridges, 4 bridges on I-79, 5 local bridges
- ▶ 70 mph speed limit and design speed
- ▶ The PTC intends to open the Southern Beltway to traffic in late 2020, and finish work on I-79 in 2021.
- ▶ 25+ M CY of Excavation, 40 Miles of Pipe, 168 Football fields of pavement, 2.5 miles of concrete pre-stressed beams.
- ▶ Total construction cost estimate is \$800M.

Southern Beltway; 55A1-1, Dual Bridges over US-22, Completed March, 2015 Mosites Construction Company, \$14,400,000.



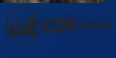
Southern Beltway; 55W

Wetlands Mitigation for Southern Beltway
Cast & Baker, Inc., \$954,000



Southern Beltway; Section 55A1

3.7 miles of Mainline, 7 Bridges, 7 Local Roads, New Interchange
Independence Excavating Inc., \$91M



55A1 Progress to Date:

- ▶ NTP 12/15/16
- ▶ Completion Date 5/17/19
- ▶ Bulk Earthwork is 100% Complete
- ▶ Flexible Pavements are 21% Complete
- ▶ Mainline Rigid Pavement to begin in Spring of 2018
- ▶ Structures are 62% Complete
- ▶ Overall Progress is Roughly 55% Complete with 42% of the schedule used.



Southern Beltway; Section 55B

3 miles of Mainline, 2 Bridges, 5 Local Roads
Joseph B. Fay Company, \$91M



55B Progress to Date:

- ▶ NTP 2/16/17
- ▶ Completion Date 7/26/19
- ▶ Bulk Earthwork is 50% Complete
- ▶ Flexible Pavements are 15% Complete
- ▶ Mainline Rigid Pavement to begin in Summer of 2018
- ▶ Structures are 25% Complete
- ▶ Overall Progress is Roughly 45% Complete with 35% of the schedule used.



55B

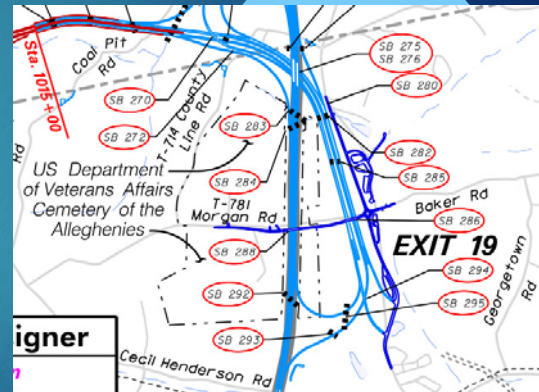
Saturation Mine Grouting

- ▶ Over 500 primary boreholes
- ▶ 260 secondary boreholes
- ▶ 122,000 lf borehole length
- ▶ 26,000CY Grout Planned
- ▶ Verification Borings



Southern Beltway; Section 55C2-2

- ▶ Advertisement: Spring 2018
- ▶ Excavation: 1,000,000 CY
- ▶ Pipe: 10,000 lf, Inlets 95 ea.
- ▶ Concrete Pavement: 50,000 SY estimated
- ▶ Bituminous Paving: 37,000 SY
- ▶ 2 – Overhead Structures
 - ▶ Mainline -270' in length
 - ▶ I-79 - 158' in length
- ▶ New Morganza Road Alignment and Roundabout at Morgan Rd



Southern Beltway; Section 55A2

3 miles of Mainline, 5 Bridges, 4 Local Roads, New Interchange

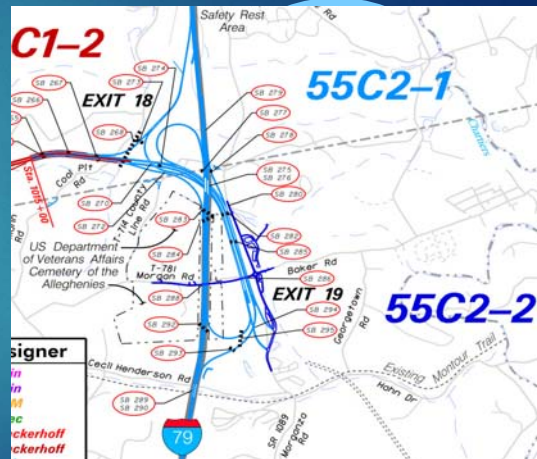
- ▶ Advertisement: 3rd Quarter 2018
- ▶ Excavation: 3,300,000 CY
- ▶ Pipe: 38,000 lf, Inlets 285 ea.
- ▶ Concrete Pavement: 90,000 SY
- ▶ Bituminous Paving: 60,000 SY
- ▶ Bridges:
 - ▶ Dual Set - Mainline Curved Girder, 1,800' long,
 - ▶ Dual Set – Mainline at the new Ft Cherry Interchange, 189' long
 - ▶ 1 Local - above Panhandle Trail, 100' long



Southern Beltway; Section 55C2-1

3 miles of Mainline, 3 miles of I-79, 6 Bridges, 4 Local Roads, New Interchange

- ▶ Advertisement: 4th Quarter 2018
- ▶ Excavation: 9,000,000 CY
- ▶ Pipe: 34,000 lf, Inlets 298 ea.
- ▶ Concrete Paving: 350,000 SY
- ▶ Bridges:
 - ▶ 2 dual sets on I-79
 - ▶ 2 on ramps
- ▶ New interchange at Morganza Road with extensive ramps



Southern Beltway, Section 54ABC

Cashless Tolling Conversion

Golden Triangle Construction Co., Inc. \$4.8M

- ▶ NTP: September 7, 2017
- ▶ Completion Date 7/27/18
- ▶ Includes One New Mainline Cashless Tolling Facility
- ▶ Eliminates 6 existing ramp toll facilities.
- ▶ Extensive coordination with tolling vendor
- ▶ Planned Conversion date of April 29, 2018
- ▶ Overall Progress is Roughly 35% Complete with 30% of the schedule used.



Southern Beltway; Additional Projects

- ▶ Section S; Signing, Advertisement – Early 2019
- ▶ Section T; Cashless Tolling, Advertisement – 2018
- ▶ Section M; Maintenance Facility, Advertisement – Early 2019



Challenges:

- ▶ Oil/Gas Wells
- ▶ PLS – Pickle Liquor Sludge
- ▶ Abandoned Coal Mines/Mined Pittsburgh Coal Seam
- ▶ Community Coordination



Oil/Gas Wells



Gas/Oil Well - Plugging

- ▶ Historical Wells – Drilled in late 1800s.
- ▶ Many have been abandoned for many years.
- ▶ Little or no records exist - Pennsylvania started permitting new wells in 1956
- ▶ Little or no visible signs at the surface
- ▶ Not producing
- ▶ Although these have been sitting for decades, each one must be properly plugged.





McDonald Oilfield

1890-1893;
1,266 wells.

1894-1910
1,000 wells

approx. 2400'
deep

peak 12M barrels
annual



Plugging in McDonald Oil Field

THIS PLUGGING EFFORT IS UNPRECEDENTED NATIONALLY!



Why Plug Them?

Why not just fill over them or cut the ground around them as needed?

Not allowed

The wells must be properly plugged to prevent pollution – This isolates fluids from flowing into other producing zones, coal mine voids, fresh water zones, and the surface



Plugging Process

- ▶ A rig cleans out everything in the well from surface to the previous well bottom (or an attainable bottom agreed to by the Department of Environmental Protection (DEP)).
- ▶ Well is Logged
- ▶ A cement plug is placed across all former producing zones and then cement is put to surface.
- ▶ We cement to surface so the surface elevation can be changed to the required height for the roadway after the plugging.
- ▶ If the well is not under the planned roadway, we install a permanent marker.
- ▶ Plugging sounds easy - getting down to bottom is our largest cost.
 - ▶ Drilling, Milling or Fishing









Oil/Gas Well Summary

- ▶ Completed 18 wells to date: 3 on 55A1, 16 on 55B 6.
- ▶ Anticipate 25 -30 more to plug in remaining sections.
- ▶ Costs incurred so far to plug wells:
 - Max - \$552,508
 - Min - \$82,445
 - Avg - \$230,336
 - PaDEP told us \$60,00
- ▶ Well Bottom original depths: 1700' to 2500'.
- ▶ Cost of a rig running 24 hours a day: \$10,000.
- ▶ Average time on a well is 29.5 days
- ▶ **ZERO Injuries**



Pickle Liquor Sludge

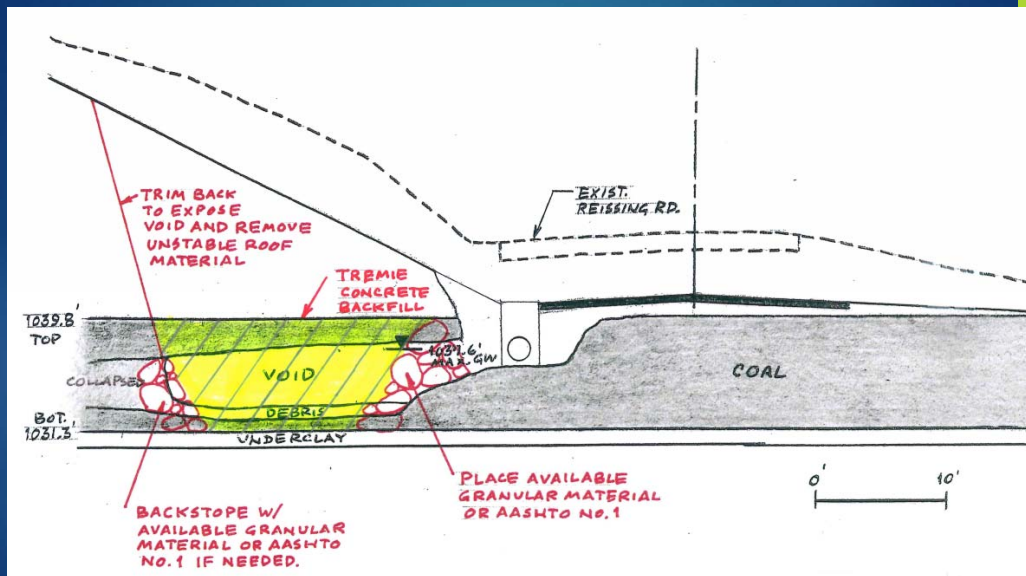
- ▶ Waste product from the steel pickling process; basically pickling fluid that's been neutralized with lime.
- ▶ Dumped previously in conjunction with ongoing strip mining operations.
- ▶ Was considered acceptable disposal method at the time (1950s or 60s)
- ▶ Very strong odor when first uncovered but quickly dissipates
- ▶ Identified in plans for on-site encapsulation
- ▶ Change in regulations results in off-site disposal.
- ▶ Limited to nighttime operations by receiving landfill
- ▶ Unanticipated schedule and cost impacts





Abandoned Coal Mines/Mined Pittsburgh Coal Seam





Community Coordination/Impacts

- ▶ Community Meetings
- ▶ Coordination with Local Political Representatives
- ▶ Impacts – Some real/ some perceived

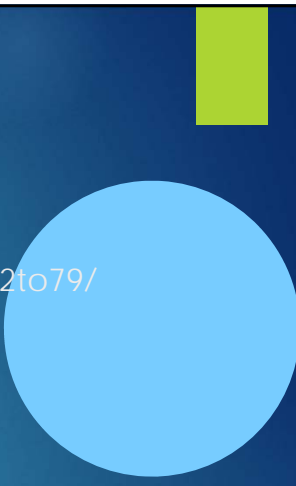




What's Next?

- ▶ This time next year, with all major sections underway:
 - ▶ \$1.5M per working day
 - ▶ 1,200+ workers
 - ▶ 100 CM and Inspection Staff





Visit us at:

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Questions?

