

UPPER MERION TRANSPORTATION AUTHORITY  
March 13, 2019  
7:00 p.m.

**AGENDA**

1. PLEDGE OF ALLEGIANCE
2. ATTENDANCE
3. APPROVAL OF MEETING MINUTES: January 9, 2019
4. NEW BUSINESS
  - Proposal for the Church Road Bridge Construction Phase Services.
5. EXECUTIVE SECRETARY'S REPORT
6. ENGINEER'S REPORT
7. SOLICITOR'S REPORT
8. FINANCIAL REPORT
9. REQUISITION APPROVALS in the amount of \$ 70,325.83
11. ADJOURNMENT

**UPPER MERION TRANSPORTATION AUTHORITY**  
**January 9, 2019**

The members of the Upper Merion Transportation Authority met for their reorganization and regular meeting on Wednesday, January 9, 2019 in the Township Building, 175 West Valley Forge Road, King of Prussia, PA. The meeting was called to order at 7:02 p.m. and commenced with the pledge of allegiance.

**ATTENDANCE**

Tom Kohler, Chairman  
Lou Zotti, Vice-Chairman  
Carlton Stuart, Secretary (by phone)  
Sally Slook, Executive Secretary  
Jack Smyth, Jr., P.E., Consulting Engineers, Boles Smyth Associates, Inc., (BSA)  
Nicole Feight, Rudolph Clarke, LLC  
Nicholas Hiriak, Director of Finance

**ABSENT**

Marvin Meneeley, Treasurer  
Ian Kingsley, Assistant Secretary/Treasurer

**Transportation Authority Reorganization for 2019**

It was moved by Mr. Zotti, seconded by Mr. Kohler, all voting "Aye" to appoint Ms. Slook as Temporary Chairman. None opposed. Motion approved 3-0.

It was moved by Mr. Zotti, seconded by Mr. Stuart, all voting "Aye" to appoint Mr. Kohler as Chairman of the Authority. Without further nominations from the floor, the nominations were closed and Mr. Kohler was appointed Chairman by a unanimous vote of 3-0.

It was moved by Mr. Zotti, seconded by Mr. Stuart, all voting "Aye" to approve the following appointments en bloc. None opposed. Motion approved 3-0.

Mr. Zotti was appointed Vice-Chairman of the Authority.  
Mr. Stuart was appointed Secretary of the Authority.  
Mr. Meneeley was appointed Treasurer of the Authority.  
Mr. Kingsley was appointed Asst. Secretary/Treasurer of the Authority.

**APPOINTMENTS:**

It was moved by Mr. Zotti, seconded by Mr. Stuart, all voting "Aye" to approve the following appointments en bloc. None opposed. Motion approved 3-0.

Ms. Slook was appointed Executive Secretary.  
Mr. Hiriak was appointed Finance Director.  
The firm of Boles Smyth Associates was appointed as Consulting Engineer, at the rate listed in their letter of intent dated November 29, 2018.  
The firm of Rudolph Clarke, LLC was appointed as Solicitor, at the rate listed in their letter of intent dated December 19, 2018.

**ESTABLISHMENT OF MEETING DATE:**

It was moved by Mr. Zotti, seconded by Mr. Kohler, all voting "Aye", to set the second Wednesday of each month, at **7:00 p.m.** as the Authority's regular meeting date and time. Meetings will be held in the Board Room of the Township Building, unless otherwise advertised. None opposed. Motion approved 3-0.

**REQUISITIONS – January, 2019**

Boles, Smyth Assoc., Inc.	\$ 8,552.30	Trout Creek Bridge Replacement Project for work performed for the Period 11-1-18 thru 11-30-18 INVOICE #33
Boles, Smyth Assoc., Inc.	\$ 18,758.28	Relocation of North Gulph Road (SR 3039) for work Performed 11-1-18 thru 11-30-18 INVOICE #60
Rudolph Clarke, LLC Suite 200 Seven Neshaminy Interplex Trevose, PA 19053	\$ 364.50	Professional Services General representation INVOICE #69527
Rudolph Clarke, LLC	\$ 675.00	Church Rd Bridge INVOICE #69525
Rudolph Clarke, LLC	\$ 121.50	Realen INVOICE #69526
<b>TOTAL:</b>	<b>\$28,471.58</b>	

**Authority Action:**

It was moved by Mr. Stuart, seconded by Mr. Zotti, all voting "Aye" to approve the January 2019 requisitions in the amount of \$28, 471.58. None opposed. Motion approved 3-0.

**MEETING MINUTES APPROVAL:**

It was moved by Mr. Zotti, seconded by Mr. Stuart, all voting "Aye" to approve the meeting minutes of December 12, 2018 as submitted. None opposed. Motion approved 3-0.

**NEW BUSINESS**

None.

**EXECUTIVE SECRETARY'S REPORT**

**Development Plan Updates**

Ms. Slook stated there were no changes.

Mr. Kohler said he spoke to Rob regarding going through all of the projects that are still in the budget to ensure all fees are being paid. A letter with this information would be sent out and will include the Solicitor.

## **ENGINEER'S REPORT**

### **Potential New PA Turnpike Interchange at Henderson Road**

A status update was provided by DVRPC, since the September public meeting, the project team has completed existing conditions modeling for the AM and PM peak hours in the study area, particularly US 202 and Henderson Rd and the proximity of the potential interchange.

### **Prince Frederick Extension**

A meeting was held today at the request of the Glasgow Tract development team, with the Township, Transportation Authority and Montgomery County Planning Commission in regards to the project and the process of moving forward. Review of the Glasgow Tract developer's updated roadway design to ensure consistency with the original Prince Frederick Extension and Saulin Boulevard Extension design. Continued coordination with Montgomery County for Chester Valley Trail Extension Project.

### **Relocated North Gulph Road**

The project is in the preliminary engineering wrap up stage with the environmental clearance and safety review submissions. The boring logs were completed for the new road. The draft noise analysis was completed and no noise mitigation is anticipated to be required. There were meetings before the shutdown with Valley Forge and the landscape architect, along with Pat Quigley, environmental sub consultant to talk about the landscape plan. It was noted that a lot of progress was made in the meeting with roadside maintenance and they were especially thrilled to be involved early in the project. There is advancement in the Section 106 process which is the historic and archaeological elements of the projects. A meeting is coming up in mid-January with the Section 106 Specialist at PennDOT to go through the project so construction can begin in the summer. At the December progress meeting it was informed that Montgomery County and PennDOT are both really supportive of introducing the trail into this project but an important caveat is the park service being onboard because the trail would go through their land.

### **Trout Creek Bridge**

Continued progress of the Safety Study and getting that into PennDOT. BSA is developing a preliminary Traffic Signal Plan (TSP), Traffic Control Plan (TCP) and updating the Safety Study with crash records.

### **Church Road Bridge over SEPTA Route 100 Line**

Utility clearances from Sunoco were received, and coordination is ongoing from PECO Gas and Aqua. Comments from PECO were received regarding the request of their branch line in a sleeve as it goes over the trolley lines and having the sleeve extend back beyond the approach slabs of the bridge. This differs from the initial requests made before the structure plans were approved, resulting in structure plan modifications. SEPTA is still working on the reimbursement agreement.

A discussion followed about the pending items needed, noting final comment on Traffic Control Plan (TCP), Constructability Review and the revision of plans which requires PennDOT's review.

## **SOLICITOR'S REPORT** - no report

**FINANCIAL REPORT FOR DECEMBER 2018**

Mr. Nick Hiriak, Finance Director, commented on the December and year-to-date budget report.

**ADDITIONAL BUSINESS**

None.

**ADJOURNMENT**

There being no further business to come before the Authority, the meeting adjourned at 7:43 p.m.

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**SALLY SLOOK  
EXECUTIVE SECRETARY**

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**THOMAS KOHLER  
CHAIRMAN**

Minutes Approved:  
Minutes Entered:



**Boles, Smyth** Associates, Inc.  
Consulting Civil Engineers Since 1972

March 6, 2019

Upper Merion Transportation Authority  
175 W. Valley Forge Road  
King of Prussia, PA 19406

Attn: Ms. Sally Slook  
Acting Executive Secretary

Ref: Replacement of Church Road Bridge Over SEPTA  
Route 100 (Norristown High Speed Line)

Sub: Transmittal of Price Proposal for  
Agreement 064129 (Supplement H)  
Construction Phase Services

Dear Sally:

We are herewith transmitting this proposal for Construction Phase Services for replacement of the Church Road Bridge over the SEPTA Route 100 (Norristown High Speed Line) rail line. This proposal is necessary to complete Construction Consultation and other related services by the design team during the project construction phase.

We appreciate the efforts of the Upper Merion Transportation Authority in advancing project. If you have any questions, please contact me.

Sincerely,

A handwritten signature in black ink, reading "John Smyth, Jr." with a stylized flourish at the end.

John Smyth, Jr. P.E.  
Vice-President

Cc: Sidney New, P.E., Gannett Fleming, (w/encl.)

AGREEMENT #064129-H  
 Church Road (T-801) Bridge over SEPTA Route 100 Rail Line  
 (MPMS #16396)  
 MONTGOMERY COUNTY

PROPOSAL SUMMARY  
 Part V - Construction Phase Services

Total Proposal Amount	Total Proposal Amount	\$	132,823.17
	Part I	\$	109,383.68
	Part II	\$	253,892.95
	Part III	\$	99,313.63
	Part IV	\$	314,845.75
(Construction Phase Services)	Part V	\$	132,823.17
	Overall Agreement Amount	\$	910,259.18

This proposal contains \$5,200.00 of certified Disadvantaged Business Enterprise (DBE) participation representing 3.9% of the total proposal amount.

All Parts of this agreement include \$170,332.59 in services performed by certified Disadvantaged Business Enterprises (DBEs) for 18.7% of this Contract.

Proposed Method of Payment:	Specific Rate of Compensation
Estimated Contract Period:	30 Months

Engineers Name:	Boles, Smyth Associates, Inc.
Address:	2400 Chestnut Street Philadelphia, PA 19103

Federal ID No:	23-1863016
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Contact Person:	Jack Smyth Jr., P.E.
Position:	Project Manager

BSA PRICE PROPOSAL  
AGREEMENT #064129-H  
Church Road (T-801) Bridge over SEPTA Route 100 Rail Line  
(MPMS #16396)  
MONTGOMERY COUNTY

Part V - Construction Phase Services

Straight Time Factor 2.5073

Total Proposal Amount \$132,823.17

This proposal contains \$5,200.00 of certified Disadvantaged Business Enterprise (DBE) participation representing 3.9% of the total proposal amount.

Proposed Method of Payment: Specific Rate of Compensation  
Estimated Contract Period: 30 Months  
Total Estimated Hours: 1025

Engineers Name: Boles, Smyth Associates, Inc.  
Address: 2400 Chestnut Street  
Philadelphia, PA 19103

Federal ID No: 23-1863016

Contact Person: Jack Smyth Jr., P.E.  
Position: Project Manager  
Telephone No.: 215-561-2644

Proposal Prepared By: Michael C. Boles



BSA PRICE PROPOSAL  
AGREEMENT #064129-H  
Church Road (T-801) Bridge over SEPTA Route 100 Rail Line  
(MPMS #16396)  
MONTGOMERY COUNTY

COST SUMMARY

Total Specific Rates of Compensation	\$ 101,490.15
Direct Costs Other Than Payroll	\$ 2,250.00
Direct Cost By Others	\$ 26,449.97
Escalation of Specific Rates of Compensation	\$ 2,633.05
Total Cost	<u>\$ 132,823.17</u>

DERIVATION OF STRAIGHT TIME FACTOR

The Firm's Agreement Overhad Rate is	124.851%
Direct Payroll Portion	1.0000
Overhead (124.851%) Portion	<u>1.2485</u>
Subtotal	2.2485
Profit Portion (11.51% of Direct/Indirect Payroll)	<u>0.2588</u>
Straight Time Factor	2.5073

DERIVATION OF OVERTIME AND/OR HAZARDOUS DUTY FACTOR

None

DIRECT COSTS OTHER THAN PAYROLL

\$2,250.00

DIRECT COST BY OTHERS

\$26,449.97

ESCALATION OF SPECIFIC RATES OF COMPENSATION

\$ 2,633.05

AGREEMENT #064129-H  
 Church Road (T-801) Bridge over SEPTA Route 100 Rail Line  
 (MPMS #16396)  
 MONTGOMERY COUNTY  
 PART V - CONSTRUCTION PHASE SERVICES  
 SPECIFIC RATE OF COMPENSATION

**1 Post-Design Activities**

Senior Engineer	0 hrs. @	\$137.90	=	\$0.00
Senior Prof. Staff	10 hrs. @	\$137.09	=	\$1,370.90
Professional Staff	20 hrs. @	\$94.78	=	\$1,895.60
Technical Staff	50 hrs. @	\$63.81	=	\$3,190.50
Subtotal	80 hrs.			\$6,457.00

**2 Shop Drawing Review**

Senior Engineer	40 hrs. @	\$137.90	=	\$5,516.00
Senior Prof. Staff	100 hrs. @	\$137.09	=	\$13,709.00
Professional Staff	40 hrs. @	\$94.78	=	\$3,791.20
Technical Staff	80 hrs. @	\$63.81	=	\$5,104.80
Subtotal	260 hrs.			\$28,121.00

**3 Construction Consultation**

Senior Engineer	40 hrs. @	\$137.90	=	\$5,516.00
Senior Prof. Staff	110 hrs. @	\$137.09	=	\$15,079.90
Professional Staff	80 hrs. @	\$94.78	=	\$7,582.40
Technical Staff	140 hrs. @	\$63.81	=	\$8,933.40
Subtotal	370 hrs.			\$37,111.70

**4 Other Post-Design Activities**

Senior Engineer	10 hrs. @	\$137.90	=	\$1,379.00
Senior Prof. Staff	80 hrs. @	\$137.09	=	\$10,967.20
Professional Staff	100 hrs. @	\$94.78	=	\$9,478.00
Technical Staff	125 hrs. @	\$63.81	=	\$7,976.25
Subtotal	315 hrs.			\$29,800.45

**TOTAL DIRECT PAYROLL**

Senior Engineer	90 hrs. @	\$137.90	=	\$12,411.00
Senior Prof. Staff	300 hrs. @	\$137.09	=	\$41,127.00
Professional Staff	240 hrs. @	\$94.78	=	\$22,747.20
Technical Staff	395 hrs. @	\$63.81	=	\$25,204.95
Subtotal	1025 hrs.			\$101,490.15

AGREEMENT #064129-H  
Church Road (T-801) Bridge over SEPTA Route 100 Rail Line  
(MPMS #16396)  
MONTGOMERY COUNTY

DIRECT COSTS OTHER THAN PAYROLL

SEPTA Raill Access Training Certifications (5 Employees at \$450.00/Seat) 2250

	Subtotal	\$2,250.00
		\$0.00
	TOTAL	\$2,250.00

DIRECT COST BY OTHERS

GeoStructures, Inc.	\$	21,249.97
PAQ, INC. (PAQ)	\$	5,200.00
		\$ 26,449.97

ESCALATION OF DIRECT/INDIRECT PAYROLL COSTS

We Anticipate a 3% Cost of Living Increase on July 1, 2019  
The Anticipated Notice to Proceed Date is July 1, 2019  
Estimated Completion Date 7/31/2016  
Duration 30 Months  
\$ 47,952.15 X 5.4910% \$ 2,633.05

ESCALATION OF DIRECT/INDIRECT PAYROLL COSTS

Escalation Factor	12 Month @	1.0300	12.3600
	12 Month @	1.0609	12.7308
	6 Month @	1.0927	6.5564
	30		31.6472
Escalation =	31.6472 divided by	30 Months =	5.491%

AGREEMENT #064129-H  
 Church Road (T-801) Bridge over SEPTA Route 100 Rail Line  
 MONTGOMERY COUNTY  
 EMPLOYEE CLASSIFICATIONS

Rates in Effect  
 From July 1, 2018  
 to June 30, 2019

NAME	CLASSIFICATION	ACTUAL HOURLY RATE	SPECIFIC RATE	AVERAGE SPECIFIC RATE
<b>A. SENIOR ENGINEERS</b>				
J. - Smyth	Senior Engineer	\$55.00	\$137.90	\$137.90
T. F. Boles	Project Engineer	\$55.00	\$137.90	
<b>B. SENIOR PROFESSIONAL STAFF</b>				
J. Smyth, Jr.	Design Engineer	\$53.55	\$134.27	\$137.09
M. C. Boles	Eng. Coordinator	\$55.00	\$137.90	
R. G. Wagenmann	Trans/Public Works Spec.	\$55.00	\$137.90	
S. R. Little	Transportation Specialist	\$55.00	\$137.90	
R. R. Leapson	Prof. Land Surveyor	\$55.00	\$137.90	
W. Au	Structural Engineer	\$54.50	\$136.65	
<b>C. PROFESSIONAL STAFF</b>				
P. J. Boles	Eng. Technician	\$40.10	\$100.54	\$94.78
D. Plett	Designer	\$37.30	\$93.52	
C. J. Zebly	Civil Ewngineer III	\$36.00	\$90.26	
<b>D. TECHNICAL STAFF</b>				
B. F. Hensyl	Eng. Technician	\$18.00	\$45.13	\$63.81
S. L. Gregory	Eng. Technician	\$31.35	\$78.60	
T. J. Rybas	Eng. Technician	\$27.00	\$67.70	

**DRAFT PRICE PROPOSAL**  
**Construction Phase Services**  
**Church Road (T-801) Bridge over SEPTA Route 100 Rail Line (MPMS #16396)**  
**Upper Merion Township, Montgomery Co., PA**

**PROPOSAL SUMMARY**

**Total Estimated Engineering Cost:** **\$21,249.97**

**Total Estimated Man-Hours:** **129**

**Proposed Method of Payment:** **Cost Plus Net Fee**

**Geotechnical Consultant:** **GeoStructures, Inc.**  
**Federal I.D. No.:** **23-3047359**

**Contact Person:** **Bashar S. Qubain, Ph.D., P.E.**

**Proposal Prepared By:** **Bashar S. Qubain, Ph.D., P.E.**

**Cost Summary**

a. Direct Labor Cost	\$7,306.00
b. Overhead (165.04%) x Direct Labor Cost	\$12,057.82
c. Subtotal: Direct + Indirect Costs	\$19,363.82
d. Profit: Subtotal (c) x Profit from ECMS, Category B (0.094)	\$1,820.20
e. Direct Costs Other Than Payroll	\$0.00
f. Mileage expense	\$65.95
g. Subtotal (c)+(d)+(e)+(f)	\$21,249.97
i. Escalation of Direct and Indirect Payroll Costs	\$0.00
j. Premium Pay for Overtime and/or Hazardous Duty	\$0.00

**Total Engineering Cost** **\$21,249.97**

**LIST OF ANTICIPATED PROJECT EMPLOYEES**

NAME	PROJECT ASSIGNMENT	RATE	AVERAGE RATE FOR CATEGORY
Bashar S. Qubain	Chief Geotechnical Engineer	\$83.50	\$83.50
Eric J. Seksinsky Jianchao Li	Senior Project Engineers	\$64.00 \$62.00	\$63.00
Daniel Eshete Kamil Nuzha	Project Engineers	\$42.50 \$40.00	\$41.25
Vasili Martysiuk	Staff Engineers	\$33.00	\$33.00

## Man-Hour/Direct Payroll Cost Estimate

### Task 1 - Post-Design Activities and Project Management

*Review of grouting qualifications, geotechnical related issues with alternatives, coordination, etc.*

Chief Geotechnical Engineer	8	hours @	\$83.50 /hour	\$668.00
Senior Project Engineers	16	hours @	\$63.00 /hour	\$1,008.00
<b>Subtotal</b>	<b>24</b>	<b>hours</b>		<b>\$1,676.00</b>

### Task 2 - Construction Consultation

*Meetings (6): 1 Pre-construction + 5 construction progress (assume 1 hr. prep. + 4 hrs. meeting = 5 hrs.)*

Senior Project Engineers	30	hours @	\$63.00 /hour	\$1,890.00
<b>Subtotal</b>	<b>30</b>	<b>hours</b>		<b>\$1,890.00</b>

*Special purpose field views (5): assess grouting and verify foundation subgrade (assume 5 hrs. each)*

Chief Geotechnical Engineer	5	hours @	\$83.50 /hour	\$417.50
Senior Project Engineers	10	hours @	\$63.00 /hour	\$630.00
Project Engineers	10	hours @	\$41.25 /hour	\$412.50
<b>Subtotal</b>	<b>25</b>	<b>hours</b>		<b>\$1,460.00</b>

*Review and response - 5 geotechnical related RFIs (assume 5 hrs. for each RFI)*

Senior Project Engineers	5	hours @	\$63.00 /hour	\$315.00
Project Engineers	20	hours @	\$41.25 /hour	\$825.00
<b>Subtotal</b>	<b>25</b>	<b>hours</b>		<b>\$1,140.00</b>

### Task 3 - Shop Drawing Review

*Assume 5 geotechnical related shop drawing reviews at 5 hrs. each*

Senior Project Engineers	5	hours @	\$63.00 /hour	\$315.00
Project Engineers	20	hours @	\$41.25 /hour	\$825.00
<b>Subtotal</b>	<b>25</b>	<b>hours</b>		<b>\$1,140.00</b>

<b>TOTAL</b>	<b>129</b>	<b>hours</b>	<b>TOTAL</b>	<b>\$7,306.00</b>
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**Mileage expense**

11 trips x 11 miles/trip = 121 miles @ \$0.545/mile

*Mileage expense*      \$65.95  
***Mileage expense***      **\$65.95**



## PA TURNPIKE Interchange Study



# memorandum

**Date:** February 27, 2019

**To:** Steering Committee, PA Turnpike Interchange Study at Henderson Road

**From:** DVRPC Office of Corridor Planning

**Subject:** February 2019 Project Update

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## Project Status and Next Steps

Since the December 2018 bimonthly update, the project team has completed travel demand modeling for the 2045 No Build Scenario. **This memo presents two types of inputs applied to the 2045 No Build Scenario: 1) locally funded transportation projects that affect roadway capacity, and 2) demographic changes (population, number of households, and employment).** These input changes affect the 4-step travel demand model – trip generation, trip distribution, mode choice, and assignment – and will remain the same for the 2045 Build Scenario. Please note that the 2045 Build Scenario, which will be modeled after the 2045 No Build analysis is complete, will additionally assess the impact of the proposed new interchange on traffic circulation.

Moving forward, the project team will work on the 2045 No Build microsimulation model to determine the impact of this future growth on the local roadway network *without the proposed interchange*. The 2045 No Build microsimulation model results will be shared with the steering committee in the April 2019 bimonthly update.

## Inputs to the 2045 No Build Scenario

Two types of changes were made to the regional model network in the development of the 2045 No Build Scenario: 1) changes to the transportation network and 2) changes to household, population, and employment inputs. The scenario includes locally funded and regionally significant transportation projects, and it captures the impact of background growth and new land developments. Transportation network and demographic changes affect the 4-step travel demand model: trip generation, trip distribution, mode choice, and assignment.

**It is important to note that this memo shows data inputs, and it is not an assessment of traffic volumes generated by the presence or absence of the proposed new interchange.** The 2045 No Build Scenario does not include the proposed new interchange, and projected **2045 No Build** traffic volumes will be shared with the steering committee in the April 2019 memo.

## *Local Transportation Projects Included in the 2045 No Build Scenario*

By default, the regional model network includes regionally significant projects that are funded in the DVRPC Long-Range Plan. In addition to these, the project team added local projects implemented with local funding sources that will alter traffic operations or roadway capacity.

### Connecting People, Places & Prosperity in Greater Philadelphia

The Delaware Valley Regional Planning Commission (DVRPC) fully complies with Title VI of the Civil Rights Act of 1964 and related nondiscrimination statutes in all activities. For more information, visit [www.dvrpc.org/GetInvolved/TitleVI](http://www.dvrpc.org/GetInvolved/TitleVI).

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## PA TURNPIKE Interchange Study



The locally-funded projects added to the 2045 No Build model for this study are:

### **Brooks Road and South Gulph Road Improvements**

- New eastbound right-turn lane and overlap phase on South Gulph Road
- New westbound through lane on South Gulph Road from Church Road to west of Brooks Road
- New eastbound through lane on South Gulph Road between Brooks Road and Croton Road

### **Church Road and South Gulph Road Improvements**

- New traffic signal
- New southbound left-turn lane on Church Road

### **South Gulph Road and Crooked Lane Improvements**

- New eastbound through lane on South Gulph Road
- New westbound through lane on South Gulph Road from Gypsy Lane to Crooked Lane
- New southbound right-turn lane on Crooked Lane

### **Prince Frederick Street and Saulin Boulevard Extension**

- Construction of loop road from intersection of US 202 and Saulin Boulevard to intersection of Henderson Road and Prince Frederick Street: one lane in each direction and an inside left-turn lane for access to neighborhood streets
- Intersection improvements at US 202 and Saulin Boulevard and Henderson Road and Saulin Boulevard






### *Demographic Changes*

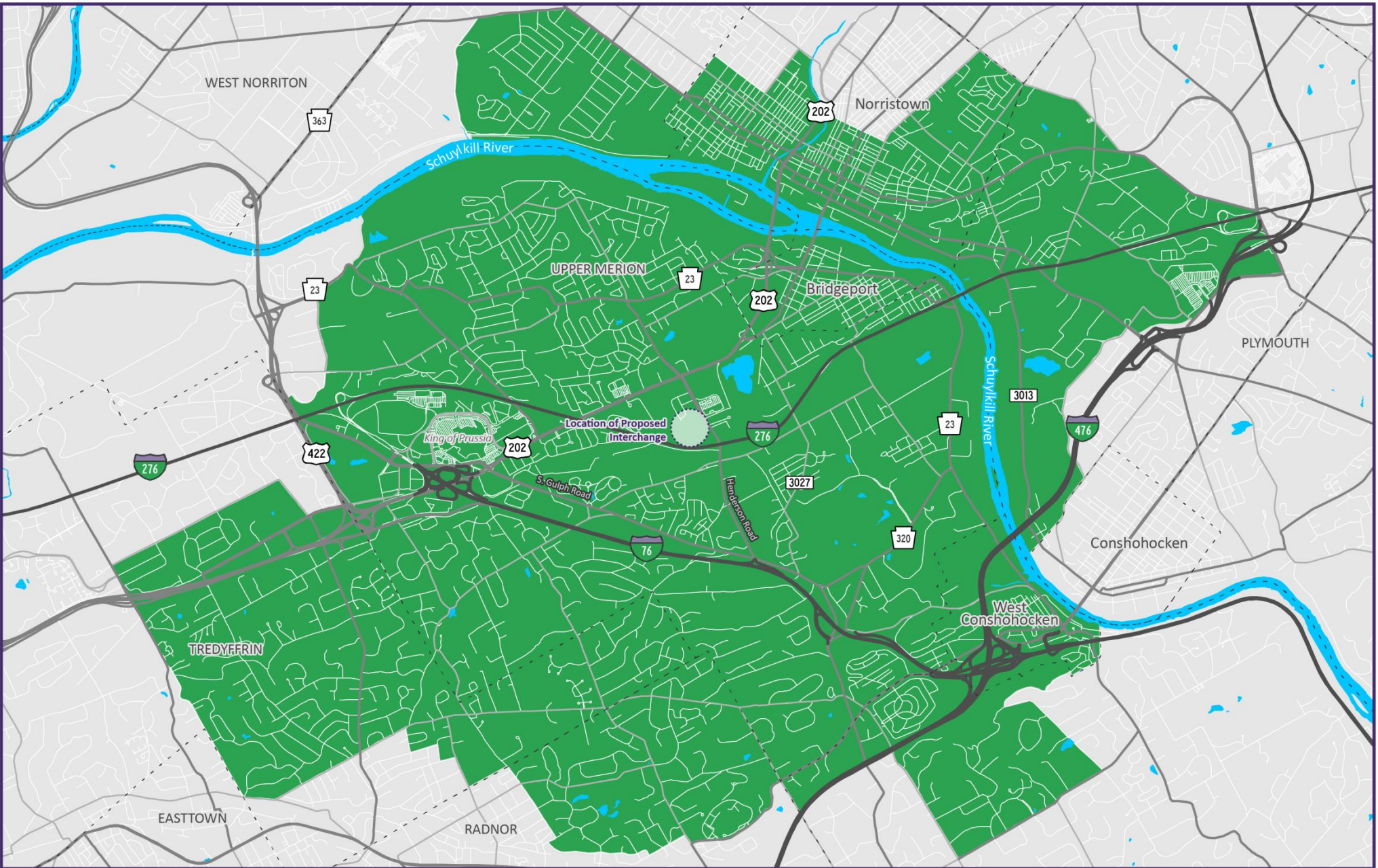
As mentioned previously, population, household, and employment changes affect the 4-step travel demand model. These demographic changes may lead to the generation of more trips and different types of trips, which must be distributed throughout the transportation network.

The 2045 No Build Scenario incorporates population, household, and employment changes resulting from background growth and new developments. **The map on the next page shows the percentage change in these demographic indicators between the base year regional model and the 2045 regional model for study area Traffic Analysis Zones (TAZs).** These demographic inputs will also apply to the 2045 Build Scenario.

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**PA TURNPIKE**  
Interchange Study  
**dvrpc**

Population % Change



**18%**

Household % Change



**18%**

Employment % Change



**22%**

**Demographic Changes (2015–2045)**



Source: DVRPC

