

ROUTES

611

&

263

Corridor Study

Montgomery County

HATBORO/JENKINTOWN
BOROUGHES
ABINGTON/CHELTENHAM
/UPPER MORELAND
TOWNSHIPS

Implementation Support

Part A
Developing
Supplemental Transit
Service for the 611 Corridor



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The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

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A. Background

This study is a continuation of the planning effort that began with the *Routes 611/263 Corridor Study* conducted by DVRPC with the Phase 1 and Phase 2 reports completed in 2008 and 2009, respectively. The Phase 2 report developed a list of improvement recommendations for the corridor. Representatives from the five corridor municipalities (Abington Township, Cheltenham Township, Hatboro Borough, Jenkintown Borough, and Upper Moreland Township) agreed that a priority next step was to identify and analyze the network of shuttle buses in the corridor and see how they could be coordinated and serve a wider market.

DVRPC staff embarked on an effort to identify, as much as possible, the shuttle operators serving the corridor and determine where service overlaps and where consolidation is feasible. This information was made available to decision makers for them to decide on the best approach towards implementation.

B. Purpose

In conducting this study, the approach was to evaluate the problem and develop recommendations by addressing the following issues:

- a. Analyze current shuttle bus service and strategies used by operators within the study area;
- b. Identify where redundant service exists, as well as opportunities for service consolidation that could lead to reduced operating costs and greater efficiencies;
- c. Identify transit service gap areas that could be served by a shuttle;
- d. Identify potential boarding points within the corridor;
- e. Enhance connectivity to fixed route transit service; and
- f. Identify employers/customers who would benefit from coordination.

This corridor-wide project is focused on transit service accessibility and improvement. With bus and rail transit coverage being uneven, it is beneficial to provide supplemental service where none now exists. Special emphasis was placed on identifying low-cost improvements that would enhance the traveling experience of the shuttle rider. In addition, preliminary cost estimates were developed for different scenarios based on frequency of service and coverage.

C. Area SEPTA Transit Service

The Southeastern Pennsylvania Transportation Authority (SEPTA) is the primary transit provider in the corridor with frequent bus and rail service. This transit analysis included an overview of:

- Headways and end terminus points;
- The connectivity of the corridor's bus routes with the corridor's regional rail stations;
- The connectivity of the corridor's transit resources with major residential and employment centers; and
- The connectivity of the corridor's transit service to service providers, such as hospitals and schools.

Rail Service

SEPTA operates a large network of regional rail lines. Within the corridor, there are four separate rail lines (West Trenton, Warminster, Glenside, and Lansdale/Doylestown) and ten stations. Several of the stations in the southern portion of the corridor are served by multiple rail lines.

The SEPTA rail network is focused on providing service to and from Center City Philadelphia. Travel times to Suburban Station in Philadelphia range from as low as 22 minutes from Melrose Park, to as high as 42 minutes from Hatboro. Peak hour headways range from a low of three minutes at Jenkintown, to a high of 36 minutes for stations served solely by the Warminster Line.

Within the study area there are 10 regional rail stations. However, there are six stations within close proximity to PA Route 611 or PA Route 263. These are: Crestmont, Hatboro, Jenkintown, Noble, Willow Grove, and Elkins Park. The Olney Rail Station on the Broad Street Line, while outside the study area, provides a starting point to many of the trips to the area.

Bus service

SEPTA Route 77 bus travels east – west between Chestnut Hill and northeast Philadelphia. The route passes through the corridor on Glenside Avenue, Greenwood Avenue, and a short length of Old York Road in Jenkintown. It is the only SEPTA route that has a stop near the Jenkintown-Wyncote Regional Rail Station. Additionally, it stops near the Glenside Regional Rail Station.

A total of 13 weekday SEPTA Route 77 buses serve Jenkintown Rail Station between the hours of 6:33 am and 6:54 pm. Weekday buses are primarily coordinated with the inbound Glenside, West Trenton, and Lansdale/Doylestown trains and the outbound Lansdale/Doylestown trains. The limited transfer opportunities have minimized the relevance of the SEPTA Route 77 bus as a commute option.

SEPTA Route 55 travels north – south through the corridor on PA Route 611, originating at Olney Transportation Center and continuing to Willow Grove Park mall and Cross Keys Place Shopping Center. During the day, there are 71 weekday buses to Willow Grove Park Mall and 20 weekday buses to Cross Keys Place Shopping Center in Doylestown.

SEPTA Route 28 travels north and east through the corridor from Fern Rock Transportation Center to Cottman Avenue and Torresdale Avenue. During the day, there are 34 weekday buses stopping at Elkins Park Station and Fox Chase Station.

D. Shuttles Serving the Corridor

There are several local shuttle buses, shown in Figure 1, that serve the corridor and supplement existing SEPTA bus or rail service. In many instances, they provide that important last-mile connection from residential complexes or public transit nodes to employment sites. The following are some of the major service providers within the PA 611 corridor:

Penn State University Abington Bus and Van Service

Penn State Abington offers students free bus and van transportation during the fall and spring semesters. The shuttles connect the university with Jenkintown Rail Station, Rydal Rail Station, Olney Transportation Center, and the Market – Frankford Line. Remote parking and shuttle service is provided to transport current students to and from the Greenwood Road campus. In addition to the free bus service, PSU Abington does offer a free van service departing from the Sutherland Visitor Lot to the Jenkintown and Rydal Train Stations.

Routes

Two buses provide free transportation from Philadelphia.

- Bus #1's route begins at Broad and Olney.
- Bus #2's route begins at Bridge and Pratt Streets.
- Three vans provide free transportation to and from the off-campus student parking lots and the Rydal Train Station.

Schedule

Campus Van Schedule to Huntingdon Field and Target

Van service to Huntingdon Field and Target runs approximately every 15 minutes on the following schedule:

- Huntingdon Field (Huntingdon Road by Susquehanna Road)
7:30 AM until 9:30 pm (Fridays until 5:30 pm)
- Target on Route 611 (Near London Road).
7:30 am until 9:30 pm (Fridays until 5:30 pm)
- All van service ends at 5:30 pm on Fridays

In addition to regular van schedule (evening hours):

- Van service to Colonnade Apartment Complex
- Van service to Jenkintown Train Station
7:00 pm, 8:00 pm, 9:00 pm

Rydal Train Station

- Van picks up starting with 7:40 am train. YellowBird Bus (Bridge & Pratt route) continues pickups during the day.

York Road Apartments

- First pickup at 7:45 am
- Last pickup at 5:45 pm
- Van runs hourly at 45 minutes past each hour

Two-Hour Delay bus schedule:

- **Broad & Olney Bus**
First pickup Time: 9:15 am at Broad and Olney. Then resume regular schedule.
- **Bridge & Pratt Bus**
First pickup Time: 8:30 am at Bridge Street. Then resume regular schedule.
- **"Peak" schedule:**
Monday, Tuesday, Wednesday: Leaves Broad and Olney 8:00 am and 8:15 am
Thursday, Friday: Leaves Broad and Olney 8:15 am

Lynnewood Gardens Bus Service

Lynnewood Gardens is a 1,800 unit residential rental community in Elkins Park with approximately 5,000 residents. Approximately 50 Penn State Abington students reside in this complex along with almost an equal number of Abington Memorial Hospital employees. There is one van and one minibus that provide shuttle service to several locations on weekdays between 6:00 am and 7:30 pm.

The current service operates a southbound loop that serves Elkins Park Train Station, Salus University (Penn State Shuttle connection), and Broad and Olney. This has three AM trips and two PM trips. The second loop operates service to the Cedarbrook Mall which is just to the west of Lynnewood Gardens. This service provides two AM trips and four PM trips.

Holy Redeemer Hospital Shuttle

Located in Meadowbrook, Holy Redeemer Hospital provides two supplementary shuttle buses daily for its employees.

Supplementary Employee Shuttle

These buses operate from Broad and Olney and Bridge and Pratt to the Hospital. These buses serve three time periods that roughly coincides with employee shift times.

- Approximately 60 – 70 employees use this shuttle daily.
- Operating cost approximately \$130,000 per year.
- The hospital is considering discontinuing service except for early and late shifts.
- Typical shift times: 7:00 am – 3:30 pm; 3:30 pm – 11:00 pm; 11:00 pm – 7:00 am. The afternoon shift has the most riders.

Community Shuttle

There is a community shuttle that serves Holy Redeemer-affiliated medical facilities along Huntingdon Pike for outpatients. This is operated on an as-needed basis.

Other Huntingdon Valley Area Shuttles

- Rydal Park shuttle takes residents from the Rydal Park retirement community in Rydal to various destinations.
- Gloria Day Church in Huntingdon Valley provides shuttle service for its members.

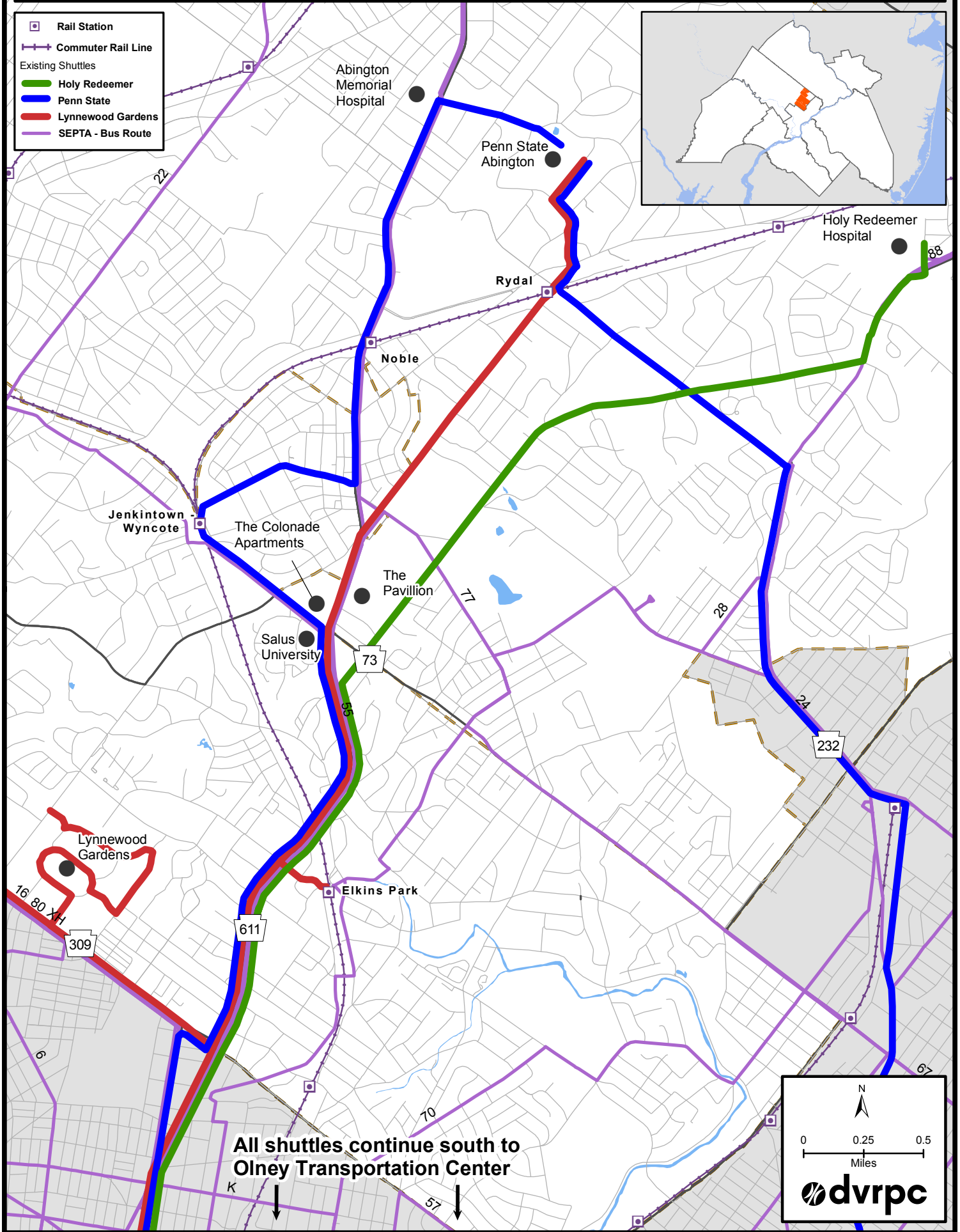
Shuttles Serving Jenkintown Rail Station

On the morning of November 1, 2011, a spot survey of shuttle buses serving the Jenkintown Rail Station was conducted. Between the hours of 6:35 am and 8:40 am, a total of six shuttle buses discharging 27 passengers were observed.

These vehicles primarily shuttle residents from major apartment complexes to the rail station. While this is a limited two-hour sample, and should not be viewed as comprehensive, it is evident that there is excess capacity on these vehicles.

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Figure 1: Existing Service



E. Opportunities to Improve Service

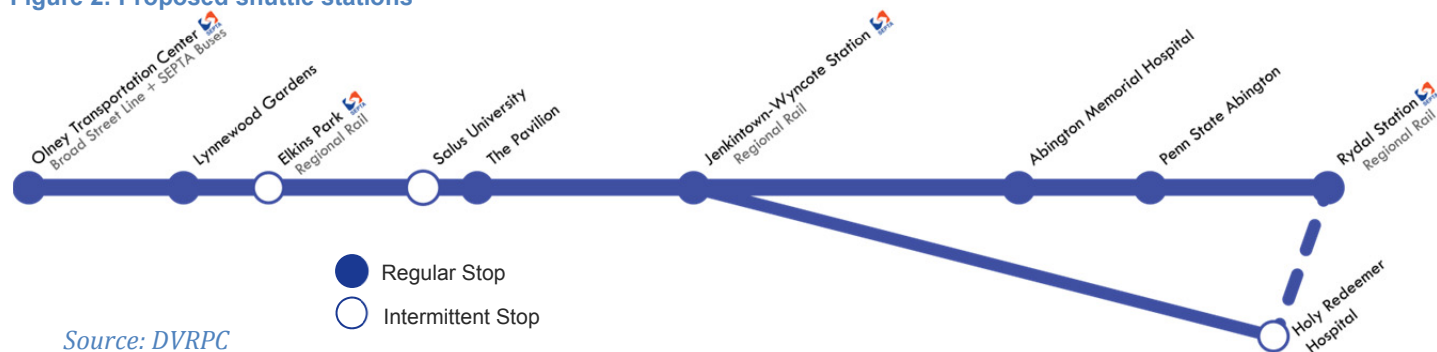
Proposed Shared Shuttle System

Two shuttle proposals are presented below that assess and respond to the opportunities along the corridor to share transit service between several major employers, institutions, and residence communities. Working from the group of active participants, a series of stops beginning at Olney Transportation Center and extending to Penn State Abington and Holy Redeemer Hospital has been proposed. The scenarios that follow are an attempt to create beneficial partnerships between these entities to improve service on the corridor and lower overall spending on transportation.

The proposed shared shuttle system would create a replacement for existing services for several stakeholders along the corridor. Figure 2 shows the proposed loop. The shuttle loop would provide an alternative service for Penn State University-Abington's Bus #1 and provide supplemental coverage in place of the Rydal van connection currently offered. Both scenarios provide Holy Redeemer with an alternative to their current shuttle system by providing expanded connections at shift change periods. Lynnewood Garden's southbound serving loop could be replaced through this shared shuttle, serving all stops on that loop outside of the apartment complex. Finally, Abington Memorial Hospital would be provided with additional service beyond the SEPTA 55 bus which provides the only transit access for hospital staff.

By consolidating existing shuttle services into a single service provider, fewer vehicles will be needed to provide the same or better service. The two scenarios are described below. The first would provide service primarily along Route 611 with periodic service to Holy Redeemer Hospital. In the second scenario, all buses would serve Penn State and Holy Redeemer in a continuous loop.

Figure 2: Proposed shuttle stations



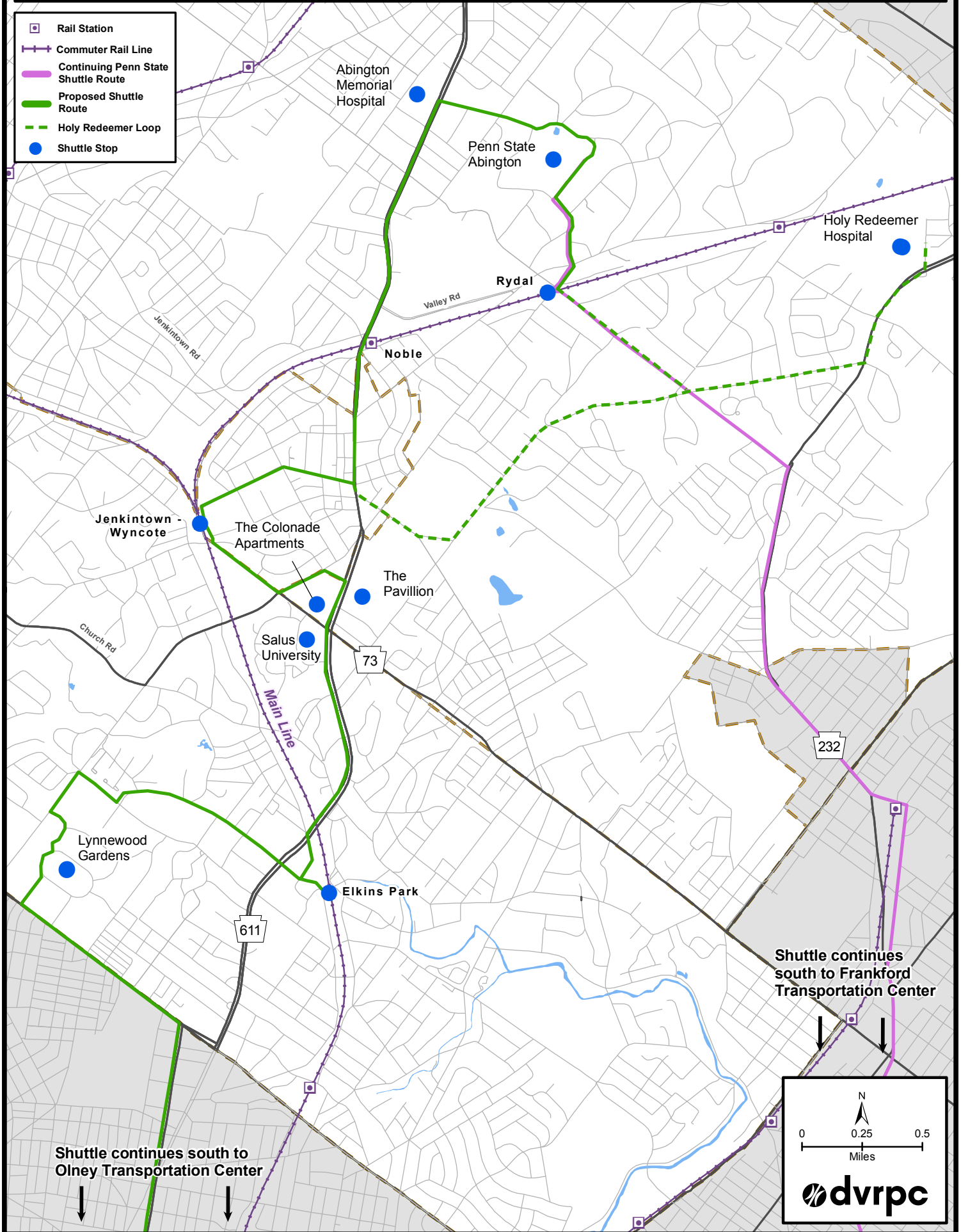
Shuttle Service Description

Scenario 1:

- This new shuttle link shown in Figure 3 would operate service to seven regular stops and three intermittent stops.
- Under the proposed system clients would be served at 20-minute headways during the AM peak hours which extend from 6:00 am to 9:00 am. During the off-peak hours in the middle of the day, service would operate at one hour headways, serving all stops.
- Beginning at 5:00 pm and lasting until 7:00 pm, PM peak scheduling would operate at 20-minute headways. After 8:00 pm and continuing until 10:00 pm, the shuttles would return to one hour headways.
- During the 18 weeks between May and September when Penn State is not in session and on weekends, service could be reduced to provide express service between Abington Memorial Hospital, Holy Redeemer Hospital, Jenkintown Station, Lynnewood Gardens, and Olney TC.

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Figure 3: Scenario 1



Scenario 2:

- Similar to Scenario 1, this shuttle, shown in figure 4, operates service between Holy Redeemer Hospital and Olney Transportation center, making stops at a total of seven locations. The schedule established in this scenario is based on the existing service schedule provided by Penn State Abington’s BlueBird Bus #1 route and the hospital shift change schedules.
- Under the proposed system, hospital employees would be served with three trips to and three trips from in the one-hour window before and after the schedules shift changes at 7:00 am, 3:30 pm, and 11:00 pm. These are shown as hospital express service.
- During the 34 weeks of the Penn State academic session (September to May), service would be expanded during the weekday periods to include the existing or a comparable service schedule to that of the existing Bus #1 schedule.
- Service travel times will remain consistent with Scenario 1 (see Table 2).

Table 3: Scenario 2, Proposed shuttle schedule

		Shuttle Number											
		A	B	C	D	A	B	C	D	C	D		
AM	To Olney TC	Holy Redeemer Hospital	-	-	-	6:55	7:00	7:20	8:17	9:32	11:07		
		Rydal Station	-	-	-	7:01	7:06	7:26	8:23	9:38	11:13		
		Penn State Abington	-	-	-	-	7:13	7:33	8:30	9:45	11:20		
		Abington Memorial Hospital	-	-	-	7:07	7:18	7:38	8:35	9:50	11:25		
		Jenkintown-Wyncote Station	-	-	-	7:14	7:25	7:45	8:42	9:57	11:32		
		The Pavilion	-	-	-	-	7:32	7:52	8:49	10:04	11:39		
		Salus University	-	-	-	-	7:35	7:55	8:52	10:07	11:42		
		Elkins Park Station	-	-	-	-	7:39	7:59	8:56	10:11	11:46		
		Lynnewood Gardens	-	-	-	7:25	7:50	8:10	9:07	10:22	11:57		
		Olney TC ARRIVAL	-	-	-	7:34	7:57	8:17	9:14	10:29	12:04		
		AM											
		To Rydal Station	Olney TC	5:53	6:08	6:19	6:50	7:55	8:05	8:15	9:20	10:35	12:10
			Lynnewood Gardens	6:05	6:20	6:30	7:01	8:06	8:16	8:26	9:31	10:46	12:21
	Elkins Park Station		-	-	6:38	7:09	8:14	8:24	8:34	9:39	10:54	12:29	
	Salus University		-	-	6:43	7:14	8:19	8:29	8:39	9:44	10:59	12:34	
	The Pavilion		-	-	6:46	7:17	8:22	8:32	8:42	9:47	11:02	12:37	
	Jenkintown-Wyncote Station		-	-	6:52	7:23	8:28	8:38	8:48	9:53	11:08	12:43	
	Abington Memorial Hospital		6:17	6:32	7:00	7:31	8:36	8:46	8:56	10:01	11:16	12:51	
	Penn State Abington		-	-	7:04	7:35	8:40	8:50	9:00	10:05	11:20	12:55	
	Rydal Station		6:24	6:39	7:09	7:40	8:45	8:55	9:05	10:10	11:25	13:00	
Holy Redeemer Hospital	6:30	6:45	7:15	7:46	8:51	9:01	9:11	10:16	11:31	13:06			

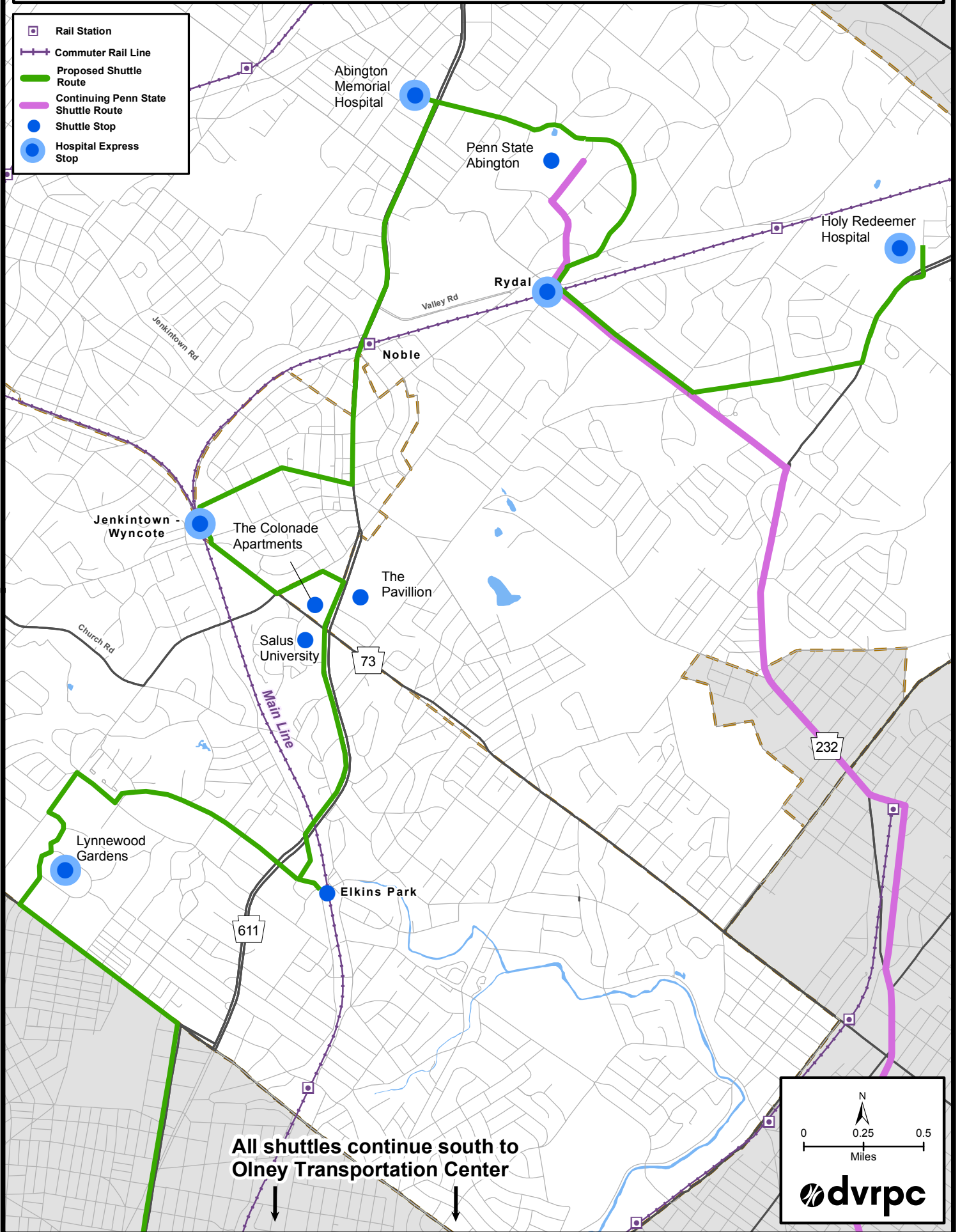
		Shuttle Number								Hospital 3rd Shift Service										
		C	A	B	D	C	A	B	D	A			B			C				
PM	To Olney TC	Holy Redeemer Hospital	-	-	-	13:37	14:27	15:05	15:18	15:32	16:17	16:37				23:05	23:15	23:30		
		Rydal Station	-	-	-	13:43	14:33	15:11	15:24	15:38	16:23	16:43				23:11	23:21	23:36		
		Penn State Abington	-	-	-	13:50	14:40	-	-	15:45	16:30	16:50				-	-	-		
		Abington Memorial Hospital	-	-	-	13:55	14:45	15:17	15:30	15:50	16:35	16:55				23:17	23:27	23:42		
		Jenkintown-Wyncote Station	-	-	-	14:02	14:52	15:24	15:37	15:57	16:42	17:02				23:24	23:34	23:49		
		The Pavilion	-	-	-	14:09	14:59	-	-	16:04	16:49	17:09				-	-	-		
		Salus University	-	-	-	14:12	15:02	-	-	16:07	16:52	17:12				-	-	-		
		Elkins Park Station	-	-	-	14:16	15:06	-	-	16:11	16:56	17:16				-	-	-		
		Lynnewood Gardens	-	-	-	14:27	15:17	15:35	15:48	16:22	17:07	17:27				23:35	23:45	0:00		
		Olney TC ARRIVAL	-	-	-	14:34	15:24	15:44	15:57	16:29	17:14	17:34				23:44	23:54	0:09		
		PM																		
		To Rydal Station	Olney TC	13:25	14:23	14:38	14:50	15:35	-	-	16:25	17:20			21:53	22:13	22:38			
			Lynnewood Gardens	13:36	14:35	14:50	15:02	15:46	-	-	16:36	17:31			22:05	22:25	22:50			
	Elkins Park Station		13:44	-	-	-	15:54	-	-	16:44	17:39			-	-	-				
	Salus University		13:49	-	-	-	15:59	-	-	16:49	17:44			-	-	-				
	The Pavilion		13:52	-	-	-	16:02	-	-	16:52	17:47			-	-	-				
	Jenkintown-Wyncote Station		13:58	-	-	-	16:08	-	-	16:58	17:53			-	-	-				
	Abington Memorial Hospital		14:06	14:47	15:02	15:14	16:16	-	-	17:06	18:01			22:17	22:37	23:02				
	Penn State Abington		14:10	-	-	-	15:18	16:20	-	-	17:10	18:05			-	-	-			
	Rydal Station		14:15	14:54	15:09	15:21	16:25	-	-	17:15	18:10			22:24	22:44	23:09				
Holy Redeemer Hospital	14:21	15:00	15:15	15:27	16:31	-	-	17:21	18:16			22:30	22:50	23:15						

Hospital Express Service

Source: DVRPC

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Figure 4: Scenario 2



Benefits of Proposed Services

The proposed shared shuttle service would have several benefits over the existing dispersed systems that serve the corridor. Included in these benefits is access to a greater number of destinations offered through shuttle service. Through combining the services, the proposed scenarios reach more destinations than the independent systems currently offer.

Travel Time

The proposed shuttle system maintains or improves upon the current travel times experienced by users of existing services along the corridor. Some degradation of travel time that is experienced in the proposed scenarios (as shown in table 4) is the result of increased queue times and additional stops.

Total Trips and Headways

The proposed service also sees a substantial improvement over the number of peak and off-peak trips, as well as average headway for riders. By consolidating service, the proposed scenarios reduce average off-peak headways by as much as 10 minutes. Peak headways are reduced to 18 minutes. Additionally, the number of AM and PM peak trips increase while daily trips increase by as much as 100% (see table 5).

Table 4: Approximate travel times by system

Service Provider	Olney TC to:		
	Abington Memorial	PSU-Abington	Lynnewood Gardens
Septa 55	:30	-	-
PSU Bus #1	-	:35	:25*
Lynnewood Shuttle	-	-	:17
Scenario 1	:41	:45	:11
Scenario 1 EXP	:36	-	:11
Scenario 2	:41	:45	:12
Scenario 2 EXP	:24	-	:12

Source: DVRPC

*Requires connection at Route 611/73 to Lynnewood Shuttle

Table 5: Trips and headways by system

Service Provider	AM Peak Trips	PM Peak Trips	Daily Trips	Avg. Headway
Septa 55	12	12	NA	:10
PSU Bus #1	4	4	20	:75
Lynnewood Shuttle	3	2	12	:65*
Scenario 1	12	12	61	:20/:60**
Scenario 2	8	8	36	:18/:55**

*Service before 9AM and after 4:30PM only. **Peak/Off-peak headways.

Source: DVRPC

Vehicle Usage

Despite maintaining shorter headways, reaching more destinations and maintaining similar travel times, the proposed scenarios do not increase the total number of vehicles necessary to achieve the desired service levels. In fact, Scenario 2 is able to decrease the total use of active vehicles necessary during peak hours of service (see table 6) due to greater efficiencies (i.e. a higher load factor).

Table 6: Active vehicle utilization by system

Service Provider	Active Vehicle Usage	
	Peak	Off-peak
Holy Redeemer	2	0
Penn State-Abington	2	1
Lynnewood Gardens	1	1
Combined Existing	5	2
Scenario 1	5	2
Scenario 2	4	2

Source: DVRPC

F. Estimate of Costs

Based on the scenarios above, a set of cost estimates was established for the implementation of these shared shuttle services. Greater Valley Forge TMA (GVF TMA) through its service providers was able to estimate a cost of \$70 per vehicle hour for the operation of service. This estimate was applied to the schedules of each scenario.

Existing Service Estimate

In order to create a comparison of cost for the existing level of service, a baseline cost was established. For those partners that did not provide an approximate cost, an estimated baseline was created. This baseline is based on the cost estimate provided by GVF TMA and is applied to the existing schedules provided by partners along the corridor.

Penn State University-Abington

The proposed shuttle scenarios would provide an alternative to the existing BlueBird Bus #1 service. This service operates for 10 hours a day from Monday to Friday for the 34 weeks a year that class is in session.

Holy Redeemer Hospital

Holy Redeemer Service could be replaced by both shuttle scenarios. These services provide equivalent or better service than the existing shift change service provided by the hospital.

Lynnewood Gardens

Currently Lynnewood Gardens provides shuttle service that could be replaced by both shuttle alternatives. The existing service is part of their southbound loop which serves locations to Olney and Broad. Based on the existing shuttle schedule, this component of the service operates 6.5 hours per day from Monday to Friday for the entire year.

Table 7: Existing service estimated cost schedule

Existing Service					
Provider	Daily Veh. Hrs.	Unit Price	Subtotal	Days	Cost
Penn State	10	\$ 70	\$ 700	5	\$ 3,550.00
				34 weeks	\$ 119,000.00
Holy Redeemer Hospital	n/a	n/a	n/a	7	\$ 2,500.00
<i>Annual cost provided by Holy Redeemer Hospital</i>				52 weeks	\$ 130,000.00
Lynnewood Gardens	6.5	\$ 70	\$ 455	5	\$ 2,275.00
				52 weeks	\$ 118,300.00
Estimated Annual Service Cost					\$ 367,300.00

Source: DVRPC

Based on these estimated baseline service costs, the partners along the corridor combine to spend approximately \$367,300 on shuttle service that could be provided by a single shared shuttle as proposed with the shuttle scenarios.

Proposed Shuttle Service Estimate

The following tables provide the cost estimates for each of the shared shuttle scenarios. For each scenario, a high-end estimate of \$70/vehicle hour was used to calculate cost. Each table shows the total cost assuming only weekday service. It also calculates total service with weekend service provided for a full 52 weeks a year. In order to provide a point of comparison, a low-end bid of \$60/vehicle hour was provided and is noted below each scenario. Within each scenario, the cost was estimated for regular-volume service days: weekdays during the 34 weeks between September and May of Penn State-

Abington's academic year; and low-volume service days which operate on weekends and during the 18 weeks outside of the academic year. Cost can be allocated based on ridership by employer/institution.

Table 8: Estimated cost schedule

Scenario #1					
<i>September-May</i>	Daily Veh. Hrs.	Unit Price	Subtotal	Days	Cost
Weekday	53	\$ 70	\$ 3710	5	\$ 18,550.00
<i>May-September</i>				34 weeks	\$ 630,700.00
Weekday	15	\$ 70	\$ 1050	5	\$ 5,250.00
				18 weeks	\$ 94,500.00
Estimated Annual Weekday Service Cost					\$ 725,200.00
<i>Weekend Service only</i>					
Weekend	15	\$ 70	\$ 1050	2	\$ 2,100.00
				52 weeks	\$ 109,200.00
Estimated Annual Cost w/weekend service					\$ 834,400.00

Scenario #1 at \$60/vehicle/hr. would cost: \$553,600.00 or \$647,200.00 w/weekend service

Scenario #2					
<i>September-May</i>	Daily Veh. Hrs.	Unit Price	Subtotal	Days	Cost
Weekday	35	\$ 70	\$ 2450	5	\$ 12,250.00
<i>May-September</i>				34 weeks	\$ 416,500.00
Weekday	18	\$ 70	\$ 1260	5	\$ 6,300.00
				18 weeks	\$ 113,400.00
Estimated Annual Weekday Service Cost					\$ 529,900.00
<i>Weekend Service only</i>					
Weekend	18	\$ 70	1260	2	\$ 2,520.00
				52 weeks	\$ 131,040.00
Estimated Annual Cost w/weekend service					\$ 660,940.00

Scenario #2 at \$60/vehicle/hr. would cost: \$454,200.00 or \$566,520.00 w/weekend service

Source: DVRPC

Comparing Existing to Proposed

Based on the estimates for operating costs of the proposed shuttle services, Scenario 2 is the most comparable to existing service. Scenario 2 is estimated to cost between \$454,200 and \$529,900 for weekday service. The existing shuttles cost an estimated \$367,300 total for all providers. The added costs include substantial improvements to the service. A comparison of the three scenarios is available in Table 9. Some of the improvements include:

- Improved destination access for all riders compared to existing service offerings.
- More frequent connections to SEPTA Regional Rail stations.
- Additional AM and PM peak trips and 2-27 additional trips daily.
- Better headways at all stops compared to existing.
- Lower active shuttle vehicle use along the corridor during peak periods of travel.
- New service to corridor institutions including Abington Memorial Hospital, Salus University, and the Pavilion.

Table 9: Comparison of services

Service Alternative	Daily Trips	Daily Vehicle Hrs*	Avg. Headway during Peak	Active Vehicles during Peak	Estimated Annual Cost for weekday service
Existing	34	21.5	:60	5	\$ 367,300.00
Scenario 1	61	53	:20	5	\$ 725,200.00
Scenario 2	36	35	:18	4	\$ 529,900.00

*On typical weekday

Source: DVRPC

G. Implementation

Option 1: Continue operations and funding by service providers while cross-honoring riders

Option 2: Employers/Landlords employ a third party service provider to conduct operations

The cost estimates established by this proposal assume moving forward with Option 2, in which participating partners along the corridor employ a third party service provider to conduct operations. This study provides the framework for service that would provide access and efficient sharing of a single system by the large partners along the corridor. Through a cost-sharing agreement employing a third party, the various employers/landlords have the opportunity to defray the cost of a more advanced and efficient system.

Table 10: Institution constituents

Institution	Employees/Students/Residents
Penn State University	3853
Abington Hospital	5400+
Holy Redeemer	4000+
Lynnewood Gardens	3700+
Salus University	2016

Source: DVRPC

Table 10 shows the total number of constituents of each of the institutions along the corridor. These numbers are not sufficient in assessing demand for service. Before advancing plans for a shared service, the interested parties should proceed with an assessment of trip demands of their own individual constituents. Resident and employee surveys or an assessment of existing system demand are sufficient methods for estimating trip demand. Determining ridership demand will be essential to ensuring the system is of the appropriate scale to meet the demands of all parties involved.

Potential Funding Sources

There are costs associated with a revamped and expanded shuttle system. This shuttle service would work best with a dedicated funding stream that will ensure consistency of service. These costs can be met from existing providers as well as from several other sources.

- By enlisting other business entities and institutions such as the Pavillion and Salus University, the cost per participant would be reduced incrementally.
- It is recommended that the local Chamber of Commerce be approached to contribute towards the operating cost. This shuttle could be used as a vehicle to promote business activity in the corridor. The private sector can provide funds that will help offset some of the costs associated with investment and operations.
- Funding through public sources such as the Congestion Mitigation and Air Quality (CMAQ) program could assist in getting this service operational. The CMAQ program is a competitive program that provides funding for projects that contribute to the attainment of the Clean Air Act standards by reducing highway emissions.
- A public/private partnership, involving local municipalities and businesses brought together by the Greater Valley Forge Transportation Management Association (TMA), could realize the benefits to both parties. The TMA can aggressively seek such opportunities by demonstrating the benefits of the shuttle in terms of convenience and reduced cost for both employees and customers.

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Abstract: This study is a continuation of the planning effort that began with the *Routes 611/263 Corridor Study* conducted by DVRPC with the Phase 1 and Phase 2 reports completed in 2008 and 2009 respectively. The Phase 2 report developed a list of improvement recommendations for the corridor. This corridor wide project is focused on transit service accessibility and improvement. With bus and rail transit coverage being uneven, it is beneficial to provide supplemental service where none now exists. Special emphasis was placed on identifying opportunities to consolidate existing service, improve geographic coverage and improve service frequency.

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