

King of Prussia Rail Project

An Extension of the Norristown High Speed Rail



October 2017

Draft Environmental Impact Statement



KING OF PRUSSIA RAIL PROJECT
Upper Merion Township, Montgomery County, Pennsylvania

**Draft Environmental Impact Statement
and Draft Section 4(f) Evaluation**

Prepared pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, [42 U.S.C. § 4321 et seq.]; Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act [40 C.F.R. Part 1500-1508]; Federal Transit Administration Standard Operating Procedures for Managing the Environmental Review Process (August 2016); Fixing America's Surface Transportation (FAST) Act [Public Law 114-94, 129 Statute 1312]; Federal Transit Laws [49 U.S.C. § 5323(c) and § 5309]; Section 4(f) requirements [49 U.S.C. § 303]; National Historic Preservation Act of 1966 [54 USC § 300101 et seq.], Section 106 [16 U.S.C. § 470f]; Executive Order 11990 (Protection of Wetlands); Executive Orders 11988 and 13690 (Floodplain Management); Clean Water Act [33 USC § 1251 et seq.]; Executive Order 12898 (Federal Actions to Address Environmental Justice in Minority and Low Income Populations); the Endangered Species Act of 1973 [16 U.S.C. § 1531]; and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 [42 U.S.C. § 4601], among others.

Prepared by the
Federal Transit Administration
U.S. Department of Transportation



and



Southeastern Pennsylvania Transportation Authority

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Abstract

The Federal Transit Administration (FTA) as the federal lead agency, in cooperation with SEPTA as the local Project sponsor, provides this Draft Environmental Impact Statement and Draft Section 4(f) Evaluation (DEIS) for the King of Prussia Rail Project (Project) in Upper Merion Township, Montgomery County, Pennsylvania. The Project would extend existing Norristown High Speed Line (NHSL) service to the King of Prussia-Valley Forge area of Upper Merion, a distance of approximately 4.4 miles. This DEIS evaluates the environmental, transportation, social, and economic benefits and impacts of the Project, including No Action and Action Alternatives. The DEIS identifies a recommended Locally Preferred Alternative (LPA), which is also considered the NEPA preferred alternative per 40 CFR 1502.14(e). Following the DEIS public comment period, SEPTA may choose to select an LPA after examining the comments received during the DEIS public comment period, and other relevant information. After completion of the environmental process, SEPTA will consider officially adopting a Project alternative for implementation.

FTA may issue a single Final Environmental Impact Statement and Record of Decision pursuant to Public Law 114-94, 23 USC139(n)(2) as amended by the Fixing America's Surface Transportation (FAST) Act, unless FTA determines statutory criteria, or practicability considerations preclude issuance of the combined document pursuant to Section 1319.

Comments on the DEIS

The DEIS is available for comment through December 4, 2017. The DEIS is available for viewing on the Project website, www.kingofprussiarail.com, at the Upper Merion Township Library, at the Montgomery County-Norristown Public Library and at the Upper Darby Free Public Library-Municipal Branch. The DEIS is available for public review upon request at the SEPTA office located at 1234 Market Street, Philadelphia, PA. Any person with special needs, such as English language assistance, should contact SEPTA for assistance. During the review period, FTA and SEPTA will hold public hearings at two locations to provide the opportunity for comment on the DEIS. The dates, times, and locations of the public hearings are as follows:

Monday, November 13, 2017

DoubleTree Hotel, 301 West DeKalb Pike, King of Prussia, Pennsylvania, 19406
Open House and Private Oral Comments: 1 to 2 p.m. and 5 to 6 p.m.; Presentations: 2 p.m. and 6 p.m.;
Public Oral Comments: 2 to 4 p.m. and 6 to 8 p.m.

Wednesday, November 15, 2017

Norristown Municipal Building, 235 East Airy Street, Norristown, PA 19401
Open House and Private Oral Comments: 5 to 6 p.m.; Presentation: 6 p.m.;
Public Oral Comments: 6 to 8 p.m.

Comments on the DEIS may be submitted in writing to the Project mailbox at the address below:

KOP Rail Project Mailbox
c/o McCormick Taylor, Inc. ATTN: SPD
Two Commerce Square
2001 Market Street, 10th Floor
Philadelphia, PA 19103

Comments may also be submitted by e-mail to info@koprail.com or through the Project website. The public comment period deadline of December 4, 2017 is posted on the Project website.

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Executive Summary

The King of Prussia Rail Draft Environmental Impact Statement/Draft Section 4(f) Evaluation (DEIS) describes and summarizes the transportation and environmental benefits and impacts of extending Norristown High Speed Line (NHSL) rail transit service to the King of Prussia Mall and other destinations in the King of Prussia-Valley Forge area of Upper Merion Township, Montgomery County, Pennsylvania (Figure ES-1). The Federal Transit Administration (FTA) is the lead federal agency for this Project, and the Southeastern Pennsylvania Transportation Authority (SEPTA) is the Project sponsor.

ES-1 Purpose of the Draft Environmental Impact Statement

The DEIS builds upon previous studies, particularly SEPTA's 2003 *Norristown High Speed Line (Route 100) Extension Draft Alternatives Analysis*, which identified a range of alternative alignments to extend NHSL rail service to the King of Prussia-Valley Forge area. The DEIS assesses five Action Alternatives and the No Action Alternative. The DEIS was prepared in accordance with the National Environmental Policy Act of 1969 (NEPA). It includes a Draft Section 4(f) Evaluation, prepared in accordance with Section 4(f) of the U.S. Department of Transportation Act of 1966, as well as other applicable laws. The DEIS guides decision-making and meets the federal and state regulatory obligations of FTA and SEPTA.

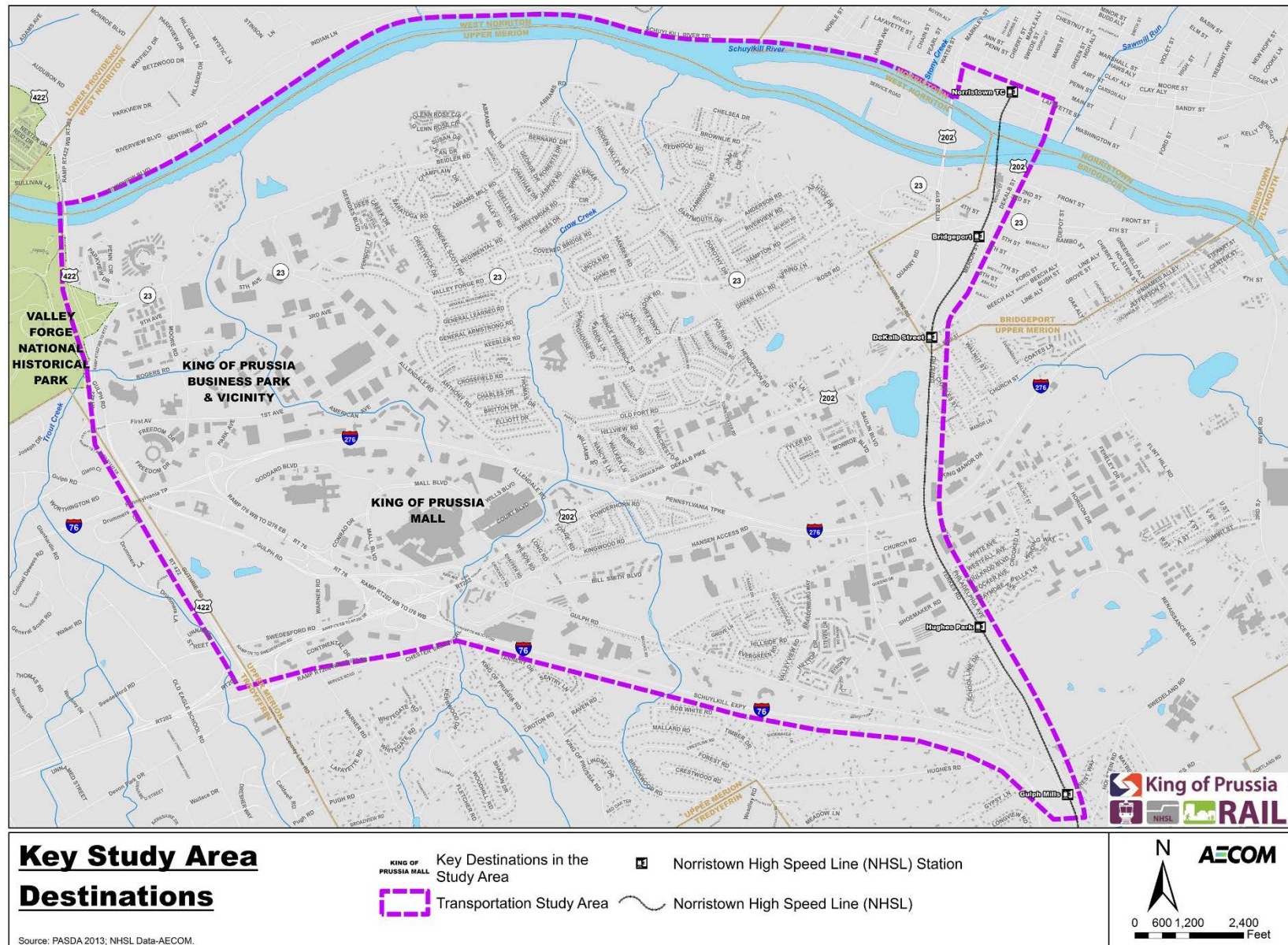
ES-1.1 Project Purpose and Need

The purpose of the proposed Project is to provide faster, more reliable public transit service to the King of Prussia area that:

- Offers improved transit connections to the area from communities along the existing Norristown High Speed Line, Norristown, and Philadelphia;
- Improves connectivity between defined key destinations within the King of Prussia area; and
- Better serves existing transit riders and accommodates new transit patrons.

The need for expanded transit service in Montgomery County has been identified for more than 20 years in regional studies and local plans. The Project need stems from existing transit service deficiencies that are expressed by long travel times, delays due to roadway congestion, required transfers leading to two or more seat trips, and destinations that are underserved or currently not served by public transit. These needs are compounded by growing population and employment in the area, concentrations of major commercial development in King of Prussia and significant planned development for the area.

Figure ES-1: Transportation Study Area



ES-2 Alternatives Development

On June 27, 2013, FTA and SEPTA initiated the NEPA process for the Project with a Notice of Intent (NOI) in the Federal Register. FTA and SEPTA then began the development and evaluation of alternatives with a “long list” of alternatives that focused on rail service, as bus mode was eliminated as not achieving the Project purpose and need. The “long list” of alternatives was screened through a three-tiered evaluation process consisting of progressively more detailed levels of scrutiny. Tier 1 screening eliminated alternatives that did not achieve the Project purpose and need or would not be reasonable to build, operate or maintain. Tier 2 examined the surviving alternatives for engineering/right-of-way needs, markets to be served, system connectivity, support for transit-oriented development, and community and environmental impacts. As a result of Tier 2 analysis, all but the five Action Alternatives that are considered in this DEIS were eliminated; the alternatives that were eliminated did not perform as well as the five that were retained.

Tier 3 consisted of a detailed analysis of the five Action Alternatives in terms of their potential benefits and impacts on the transportation, natural and human environments. The results of the Tier 3 analysis are reported in this DEIS along with a comparison with the No Action Alternative. In addition, the DEIS reports the input FTA and SEPTA received from the public, agencies and other stakeholders, and how that input was used to refine the alternatives and identify a recommended LPA. SEPTA identified the recommended LPA in Spring 2016 based on the technical information in the DEIS and the results of public, agency and stakeholder coordination to date (also documented in the DEIS). The recommended LPA is one of the five Action Alternatives that are evaluated in the DEIS.

Also in this DEIS, FTA and SEPTA are pursuing two design options for the recommended LPA that would reduce the potential impacts of the recommended LPA. Each of the recommended LPA design options would modify a portion of the recommended LPA; the remainder of the recommended LPA would be unchanged. Either or both design options could be applied to the recommended LPA as a minimization strategy.

SEPTA, in coordination with FTA and the Delaware Valley Regional Planning Commission (DVRPC), developed a transportation study area for the Project that encompasses the greater King of Prussia-Valley Forge area. The transportation study area is bounded roughly by the Schuylkill River, US Route 422, I-76 (Schuylkill Expressway) and the existing NHSL.

The DEIS discusses how alternatives were developed and evaluated, and it describes how and why SEPTA identified the recommended LPA. In addition, the DEIS evaluates the benefits and impacts of the five Action Alternatives, the recommended LPA design options and the No Action Alternative. The Action and No Action Alternatives are described in the following subsections.

ES-2.1 No Action Alternative

The No Action Alternative is the 2040 condition of transportation facilities and services within the transportation study area if the Project is not implemented. The No Action Alternative assumes that, with the exception of the Project, all other committed projects listed in the financially

constrained element of the *Connections 2040 Plan for Greater Philadelphia*, the long-range transportation plan of the DVRPC, are built and operating. The No Action Alternative projects consist primarily of committed capacity and operational improvements to regional and local study area roadways, particularly US Route 422 and the PA Turnpike. In addition to these committed projects, the No Action Alternative consists of highway and transit networks, transit service levels, traffic volumes, and forecasted demographics for the horizon year 2040. The No Action Alternative provides the basis against which the Action Alternatives and recommended LPA design options are compared.

ES-2.2 Action Alternatives and Recommended LPA Design Options

Each Action Alternative evaluated in the DEIS would extend NHSL rail transit service approximately four miles from the existing line to the King of Prussia Mall and farther west, ending in the vicinity of the Valley Forge Casino Resort (VFCR). Each Action Alternative is described below and shown in Figure ES-2. Each Action Alternative and recommended LPA design option also assumes completion of all committed transportation projects listed in the financially-constrained element of DVRPC's *Connections 2040 Plan for Greater Philadelphia*. Among the Action Alternatives, SEPTA identified the PECO/TP-1st Ave. Action Alternative as the recommended LPA. Additional descriptions and maps of the Action Alternatives and related infrastructure are provided in the DEIS.

- PECO-1st Ave.:**
 The PECO-1st Ave. Action Alternative would use a portion of the PECO electric utility corridor, passing in front of (to the south of) the King of Prussia Mall, turning north to use a portion of the Norfolk Southern

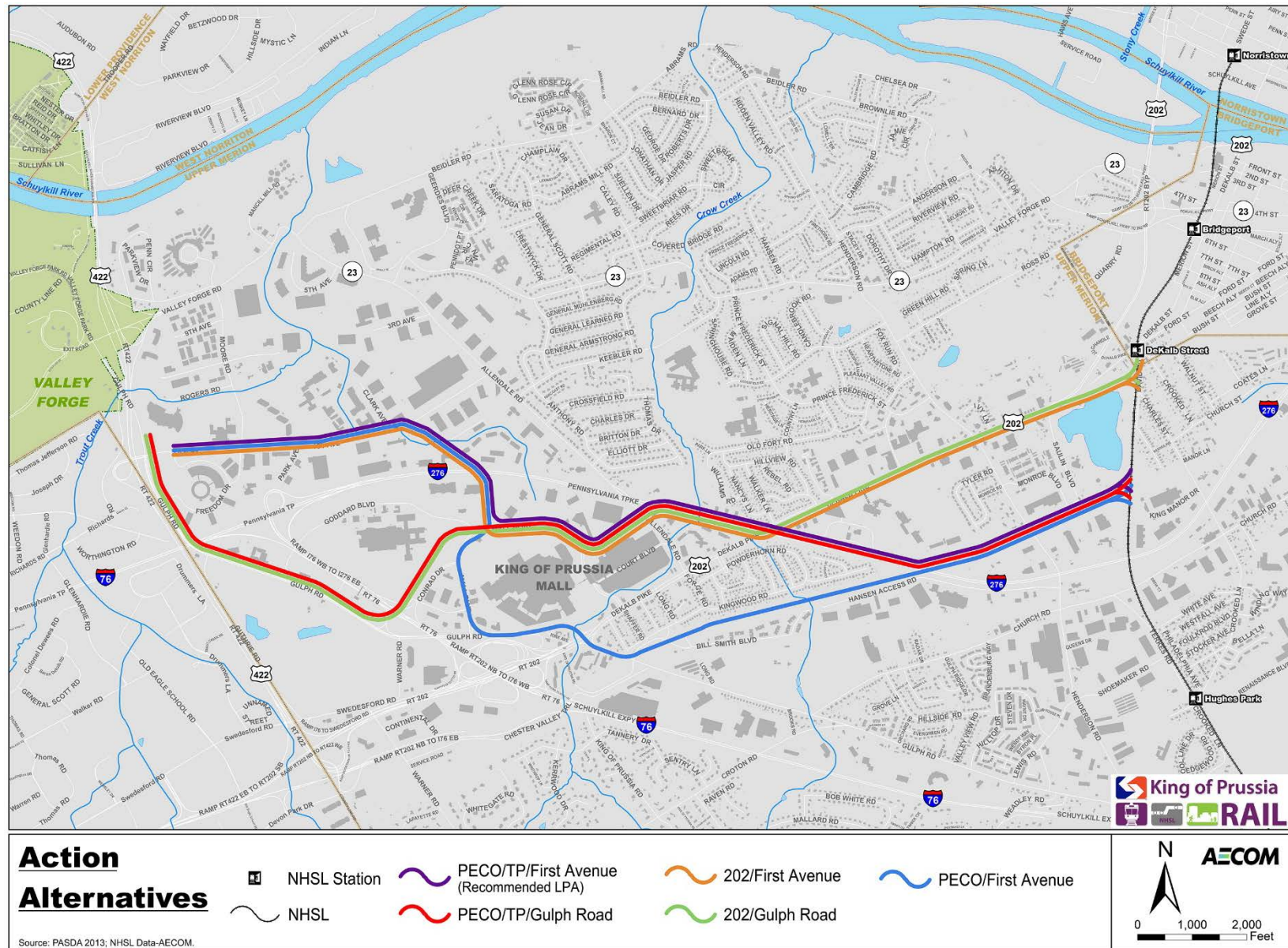


Conceptual rendering of what the recommended LPA could look like along 1st Avenue.

Source: Bergmann Associates, PC, 2016.

- PECO/TP-1st Ave. (recommended LPA):** The PECO/TP-1st Ave. Action Alternative would use a shorter portion of the PECO electric utility corridor (compared to PECO-1st Ave.) and a portion of the PA Turnpike, passing behind (to the north of) the King of Prussia Mall, turning north to use a portion of the NS Industrial Track before turning west along 1st Avenue and ending near the intersection of 1st Avenue and N. Gulph Road in the vicinity of the VFCR.

Figure ES-2: Action Alternatives



In response to specific concerns about proximity effects of the recommended LPA identified during public and stakeholder coordination activities, SEPTA developed the following two design options for the recommended LPA. Each would reduce potential proximity effects of the recommended LPA. One or both design options could be applied to the recommended LPA as a minimization strategy, subject to public comments on the DEIS.

- **PA Turnpike North/South Option:** This recommended LPA design option would reduce the potential proximity effects (visual and noise) of the recommended LPA on residential properties adjacent to and on the south side of the PA Turnpike. In this design option, the recommended LPA and its infrastructure would be the same as described above between the NHSL and the PA Turnpike; and it would be the same as described above west of the PA Turnpike. Where the PA Turnpike crosses the PECO corridor, the PA Turnpike North/South Option would turn off the PECO electric utility corridor onto the north side of the PA Turnpike. East of US Route 202, the elevated guideway would begin to cross over the PA Turnpike as well as US Route 202. As the alignment reaches the south side of the PA Turnpike, the design option would end and the recommended LPA alignment would resume.
- **9/11 Memorial Avoidance Option:** This recommended LPA design option would reduce the potential proximity effects (visual) of the recommended LPA to the 9/11 Memorial on the King of Prussia Volunteer Fire Company property. In this design option, the recommended LPA alignment and its infrastructure would be the same as described above between the NHSL and just east of the King of Prussia Volunteer Fire Company property; the recommended LPA alignment and its infrastructure would also be the same as described above west of proposed Court station. As the recommended LPA approaches the Fire Company and just east of the memorial, the 9/11 Memorial Avoidance Option would turn west off the PA Turnpike right-of-way (ROW) and cross the Fire Company property, re-joining the recommended LPA alignment along Mall Boulevard west of Allendale Road.
- **PECO/TP-N. Gulph:** The PECO/TP-N. Gulph Action Alternative would use the same portions of the PECO electric utility corridor and the PA Turnpike as the recommended LPA, passing behind (to the north of) the King of Prussia Mall, turning south to connect to N. Gulph Road before turning west along the N. Gulph Road and ending near the intersection of 1st Avenue and N. Gulph Road in the vicinity of the VFCR.
- **US 202-1st Ave.:** The US 202-1st Ave. Action Alternative would use portions of the US Route 202 corridor and the PA Turnpike right-of-way, passing behind (to the north of) the King of Prussia Mall, turning north to use a portion of the NS Industrial Track before turning west along 1st Avenue and ending near the intersection of 1st Avenue and N. Gulph Road in the vicinity of the VFCR.

- **US 202-N. Gulph:** The US 202-N. Gulph Action Alternative would use portions of the US Route 202 corridor, passing behind (to the north of) the King of Prussia Mall, turning south to connect to N. Gulph Road before turning west along N. Gulph Road and ending near the intersection of 1st Avenue and N. Gulph Road in the vicinity of the VFCR.

Each Action Alternative and recommended LPA design option would have the following infrastructure and design elements:

- **ROW needs** – The Project would primarily use existing transportation and utility rights-of-way in the transportation study area.
- **Primarily elevated guideway** – Use of an elevated, dedicated guideway structure for most of the alignment would avoid impacting the operation of existing roadways and other transportation systems.
- **Stations** - Five to seven stations would be provided in the transportation study area depending upon the route of each alternative. Station areas were selected based on their potential to attract ridership, access and safety, engineering feasibility and local planning.
- **Park-and-ride Facilities** - One park-and-ride facility would be provided in the vicinity of the VFCR. Three of the five Action Alternatives (the recommended LPA, PECO-1st Ave., and PECO/TP-N. Gulph), as well as each recommended LPA design option, would provide a second park-and-ride facility in the Henderson Road area. Park-and-ride facilities would provide for drop-off and pick-up of riders by bus and automobile.
- **Kiss-and ride Facilities** - Proposed station areas without park-and-ride facilities would be kiss-and-ride facilities with walk and bicycle access; kiss-and-ride facilities would provide for drop-off and pick-up of riders by bus and automobile, with no park-and-ride component.
- **69th Street Transportation Center in Upper Darby Township, Delaware County** - One new station track would be provided along the north side of the existing NHSL tracks, ending at the existing station building. The new track would serve the existing northern platform on its north side. The platform would be widened to serve the new track.
- **NHSL** – SEPTA would upgrade the signal system on the NHSL to accommodate the Project.

- **Vehicles** – - To accommodate KOP Rail, SEPTA would use its existing fleet of N5 rail vehicles that operates on the NHSL (Figure ES-3), plus six new vehicles. New vehicles would also be serviced at the existing SEPTA NHSL maintenance facility, approximately 0.25 mile from the 69th Street Transportation Center in Upper Darby Township.

Figure ES-3: SEPTA N5 Vehicle



Note: Photo of existing SEPTA N5 vehicle.
Source: SEPTA, 2015.

- **Traction power substations (TPSS)** – TPSS would be provided at approximately 1.0 mile intervals along the proposed guideway alignment.
- **Signal Bungalows** – Small sheds holding signal equipment would be located adjacent to the guideway.
- **Stormwater Management Facilities** - Drainage from the proposed park-and-ride facilities would be managed by stormwater management facilities that would be provided near the park-and-ride facilities.
- **Americans with Disabilities Act Compliance** - The Project would comply with the Americans with Disabilities Act of 1990, as amended.

ES-3 Summary of DEIS Findings

The DEIS evaluated the No Action Alternative, the Action Alternatives and the recommended LPA design options to assess their effectiveness in achieving the Project's purpose and need as well as benefits and impacts. This evaluation provides a basis for decision-makers and the public to compare and assess the alternatives. Table ES-2 summarizes the benefits and impacts of each alternative and describes minimization, mitigation and Project commitments.¹

SEPTA used study areas that are appropriate for each type of environmental resource that is evaluated in the DEIS. In addition to the transportation study area described in Section ES-2, the following study areas are most commonly used:

¹ Table ES-2 presents quantitative and qualitative results for each alternative and recommended LPA design option. The quantities for the recommended LPA design options are shown as the differences (greater or less than) compared to the recommended LPA quantities. If there is no difference in quantity compared to the recommended LPA, the code "ND" (no difference) is used.

Project study area - The Project study area consists of two parts. In the King of Prussia area, the Project study area is the geographic area within 500 feet on either side of the centerline of each Action Alternative, as well as ½-mile from the center point of each proposed station area. In Upper Darby, the Project study area is the geographic area within 100 feet on either side of the centerline of the proposed new track at SEPTA's 69th Street Transportation Center. The two parts of the Project study area are shown on the maps in Appendix A.

Limit of disturbance area (LOD) - The LOD is the boundary within which proposed structures and construction activities would occur; it describes the outside edge of the temporary or permanent disturbance areas of each Action Alternative and recommended LPA design option based on the level of engineering completed to date (maps, Appendix A).

ES-3.1 Effectiveness in Achieving the Purpose and Need

The No Action and Action Alternatives vary in their ability to achieve each element of the Project purpose and need. The purpose and need statement is presented in Section ES-1. While each Action Alternative would provide faster, more reliable public transit service to, from and within the transportation study area, performance varies among the alternatives for the following factors: travel time savings, ridership increase, rate of mode shift, parking capacity, and access to jobs, parks, and community facilities. The recommended LPA would perform as well as or better than the other Action Alternatives in these factors by providing the most transit travel time savings for existing bus riders (217,000 travel hours annually) and close to the highest travel time savings for existing automobile travelers who shift to using the Project (2.0 million hours annually), the highest ridership increase (increase of 9,500 average weekday riders on the NHSL), increase in transit parking capacity (1,470 spaces), access to jobs (15 million square feet), number of parks served (5) and access to community facilities (7).

ES-3.1.1 The Need for Faster, More Reliable Public Transit Service to the Area

ES-3.1.1.1 No Action Alternative

The No Action Alternative will not provide faster, more reliable public transit service to, from or within the transportation study area. Existing roadway-based transit service problems related to on-time performance, reliability and travel times will be worse by 2040 as traffic congestion and delays increase as a consequence of foreseeable growth and development.

ES-3.1.1.2 Action Alternatives

Each Action Alternative and recommended LPA design option would provide faster, more reliable public transit service, with varying degrees of effectiveness (Table ES-2). By operating on its own rail corridor and not in mixed traffic on roadways, each Action Alternative would eliminate the extra time experienced by existing bus service operating on congested roadways, such as on the Schuylkill Expressway, as well as the unpredictability of travel time because of variable travel conditions on roadways.

ES-3.1.2 The Need for Improved Transit Connections To, From and Within the King of Prussia-Valley Forge Area

ES-3.1.2.1 No Action Alternative

The No Action Alternative will not improve transit connections to and within the transportation study area. Depending on the bus route, riders will continue to transfer among the bus routes to get to their destinations. The No Action Alternative will not change existing connections between transit, bicycle and pedestrian networks in the transportation study area.

ES-3.1.2.2 Action Alternatives

Each Action Alternative would improve transit connections to and within the transportation study area by:

- Providing direct, rail transit service between the 69th Street Transportation Center and King of Prussia as well as between Norristown Transportation Center and King of Prussia while continuing to provide service between 69th Street Transportation Center and Norristown Transportation Center; and,
- Serving three defined key destinations: King of Prussia Mall, King of Prussia Business Park and Valley Forge National Historical Park, as well as other destinations in the transportation study area.



Conceptual rendering of what the recommended LPA could look like at the King of Prussia Mall.
Source: Bergmann Associates, PC, 2016.

Differences in the performance of the Action Alternatives and recommended LPA design options are due to the number and location of proposed station areas with respect to jobs, community facilities and parks (Table ES-2).

ES-3.1.3 The Need to Better Serve Existing Transit Patrons and Accommodate New Patrons

ES-3.1.3.1 No Action Alternative

The No Action Alternative will not better serve existing transit patrons and accommodate new patrons. Forecasted growth and foreseeable development in the transportation study area through 2040 will place more demands on the transportation system than it can accommodate. Adding buses to the transit system serving the transportation study area to meet future demand is not a viable solution as it is not possible to overcome the roadway congestion problem.

ES-3.1.3.2 Action Alternatives

Compared to the No Action Alternative, each Action Alternative and recommended LPA design option would better serve existing transit patrons and accommodate new patrons by providing direct rail transit service to transportation study area destinations, and providing additional transit service capacity beyond what SEPTA can accommodate today despite rationalizing its bus services.

ES-3.2 Transportation and Safety Effects

ES-3.2.1 Public Transportation

The following bus, rail and bus shuttle services operate in the transportation study area:

- **Bus** - SEPTA operates six bus routes to, from and within the transportation study area. Each route serves the King of Prussia Mall; however, only three serve all of the three key destinations in the transportation study area. Three bus routes connect to Center City Philadelphia via the Schuylkill Expressway (I-76). Total average weekday ridership across the six bus routes exceeds 6,300 passenger trips.
- **Rail Transit** - SEPTA's NHSL operates along 13.5 miles of dedicated rail guideway between the 69th Street Transportation Center in Upper Darby and the Norristown Transportation Center. The NHSL skirts the eastern edge of the transportation study area and does not directly serve the key destinations within it. Currently, NHSL riders destined to or from the transportation study area must transfer to SEPTA bus service at the Gulph Mills, DeKalb Street or Norristown Transportation Center stations. Examination of 2015 data shows an upward trend in ridership on SEPTA's NHSL in recent years, with a FY 2015 average weekday ridership of 11,620, a 36% increase from FY 2010.
- **Bus Shuttles** - Two shuttle services operate in the transportation study area, providing connections between some transportation study area destinations and SEPTA's NHSL and Regional Rail services.

In the existing condition, bus riders are subject to the same roadway congestion delays as motorists because buses share roadway travel lanes with general traffic. Existing travel speed survey data show low average vehicular speeds of 20 miles per hour along the Schuylkill Expressway eastbound during the morning peak period; slow travel speeds result in four of the six bus routes having average on-time performance rates below SEPTA's standard of 80%. In the transportation study area, delays occur in the existing condition at key roadway intersections that buses travel through, such as 1st Avenue/Moore Road and US Route 202/Henderson Road. Travel times on existing bus routes vary from ride to ride depending on roadway traffic conditions, time of day, weather and other factors. As a result, bus travel times are unreliable.

Current total employment in the King of Prussia submarket of the greater Philadelphia region is the highest of any submarket outside Philadelphia. The 2016 DVRPC-adopted forecasts estimate that Upper Merion Township's population will increase from 28,620 (2015 US Census estimate) to 34,003 in 2040, which is an increase of just under 19%, or nearly 0.8% annually. DVRPC's adopted 2016 municipal-level employment forecasts show that Upper Merion Township will have the greatest absolute employment change in the DVRPC region, rising from 57,038 (2015 US Census estimate) to 65,430 in 2040, a nearly 15% increase. This is an absolute increase of 8,292 and represents the highest absolute employment growth forecasted in that period for municipalities in Montgomery County. The population and employment forecasts translate to growth in traffic volumes in the transportation study area by 2040, which will increase roadway congestion and cause longer and more unreliable bus travel times.

ES-3.2.1.1 No Action Alternative

In the No Action Alternative, SEPTA would continue to operate the NHSL and the six bus routes that serve the transportation study area. The No Action Alternative includes no projects to improve the transit system in the transportation study area beyond rehabilitation and maintenance projects in SEPTA's capital budget. No improvements in transit travel conditions (service frequency, travel time savings, travel connections, ridership or mode shift) are contained within the No Action Alternative. Destinations in the transportation study area that are not currently well-served by transit will continue being not well-served. Existing bus on-time performance problems, slow average bus travel speeds and unreliability attributable to roadway congestion, would persist and worsen as traffic congestion and delays increase over time.

ES-3.2.1.2 Action Alternatives

Ridership and Mode Choice

Compared to the No Action Alternative, the Project would have the following transit service benefits:

- **Increase Transit Boardings** - The Project would increase transit boardings at Project stations in the transportation study area by 10 to 13% in 2040 depending on the Action Alternative. A "boarding" is defined as when a person enters a transit vehicle for travel. These data, shown in Table ES-2, demonstrate demand for transit in the transportation study area. The recommended LPA and PECO/TP-N. Gulph Action Alternative would have the highest increases.
- **Increase Transit Trips and Transit Ridership on NHSL** - Each Action Alternative would reduce auto-based trips and increase the number of trips using park-and-ride facilities and walking to transit stations. Within the transportation study area, mode shift rate increases of 1.3 to 1.5 percent above the 2.3 percent mode share rate for the No Action Alternative were identified depending on the Action Alternative (Table ES-2). The recommended LPA and PECO/TP-N. Gulph Action Alternative would have the highest increases in mode shift rates. Each Action Alternative would also increase average weekday transit ridership on the NHSL by 7,500 to 9,500, with the recommended LPA and PECO/TP-N. Gulph Action Alternative having the highest increases.

- **Increase Transit Mode Share** - Each Action Alternative would increase the transit mode share by 57 to 65 percent compared to the No Action Alternative, with the recommended LPA and PECO/TP-N. Gulph Action Alternative having the highest rates of increase.
- **Serve Travel Markets and Key Destinations** - Each Action Alternative would increase transit travel options to, from and within the transportation study area, thereby serving the largest suburban employment center in the Greater Philadelphia region. Each Action Alternative would provide transit stations within ½ mile of the three key transportation study area destinations: King of Prussia Mall, King of Prussia Business Park and Valley Forge National Historical Park. Potential shuttle services or multi-use paths could provide connections from proposed stations to the Valley Forge National Historical Park and other destinations, such as Children's Hospital of Philadelphia. As indicated by DVRPC's forecasts, Project stations and park-and-ride facilities within the transportation study area would improve the ability of residents and other travelers to walk to stations or to park at a rail transit facility within the transportation study area, as opposed to having to travel to find rail transit access and park-and-ride facilities.
- **Modify Existing SEPTA Bus Service** - As part of each Action Alternative and recommended LPA design option, SEPTA would make several changes to its bus routes to eliminate service redundancies created by the Project, adjust routes to serve proposed stations and park-and-ride facilities, and optimize operating efficiency in light of these changes. Buses would be routed to serve Project stations as well as to complement Project service to key destinations.
- **Reduce Transit Travel Time** - Each Action Alternative would reduce transit travel times to, from and within the transportation study area (Table ES-2). For example, the estimated Project travel time between Center City and the King of Prussia Mall (53 minutes) contrasts with existing bus service travel time on SEPTA routes 124 and 125, which can range from a scheduled run time of 97 minutes up to 105 minutes due primarily to traffic congestion on I-76.

Travel times among each Action Alternative would vary by approximately one to two minutes per trip depending on the number of station stops in the transportation study area, the length of each Action Alternative as well as the type of service offered by a particular train (limited, express and local, as currently offered on the NHSL). As reported by the Economy League of Greater Philadelphia and shown in Table ES-2, the shift of existing bus riders to using the Project rail service would save 104,000 to 217,000 hours per year in travel time to and from the transportation study area, depending on the Action Alternative. For existing automobile drivers, the shift to using the Project rail service would save 1.7 to 2.1 million hours annually for travel to and from the transportation study area, depending on the Action Alternative. The recommended LPA and PECO/TP-N. Gulph Action Alternative would have the highest travel time savings from shifting existing bus riders and existing automobile drivers to using the Project rail service.

- **Improve Transit Service Reliability** - Each Action Alternative would also improve reliability. By operating on its own rail corridor and not in mixed traffic on roadways, each Action Alternative and recommended LPA design option would eliminate the extra travel time experienced by existing bus service operating on congested roadways, such as on the Schuylkill Expressway, as well as the unpredictability of travel time because of variable travel conditions on roadways.

ES-3.2.2 Roadways

Transportation study area highways (the Pennsylvania Turnpike (I-276), Schuylkill Expressway (I-76), Pottstown Expressway (US Route 422), and DeKalb Pike (US Route 202)) experience heavy volumes of traffic and congestion, especially during peak travel periods. I-76, for example, functions at or near capacity during most peak periods and many non-peak travel periods under existing conditions. By 2040, I-76 will function at capacity in nearly all travel periods. In addition, portions of key transportation study area roadways operate at or near capacity in the existing condition as modeled by DVRPC. By 2040, growth in roadway traffic volumes will increase the amount of congestion on roads such as US Route 202, Henderson Road, Saulin Boulevard, Moore Road and 1st Avenue, among others.

ES-3.2.2.1 No Action Alternative

In the No Action Alternative, some committed projects, such as the addition of travel lanes on US Route 422, will increase roadway capacity. Others, such as the proposed Lafayette Street extension and new Turnpike exit in Norristown, will address specific access needs. Despite these projects, capacity analysis of key transportation study area intersections indicates that increased traffic volumes will cause more intersections to operate at or near capacity, with more congestion and longer travel delays compared to the existing condition.

ES-3.2.2.2 Action Alternatives

Although mode choice analysis results reported for the Action Alternatives would be beneficial for transit service, mode choice would not change forecasted 2040 congestion conditions on most portions of transportation study area roadways. However, each Action Alternative would provide several benefits regarding roadway operations. First, each Action Alternative would provide rail guideway on elevated structure over the roadway network to minimize roadway and traffic impacts. Second, SEPTA would address the operation of a number of intersections the Project would affect in the vicinity of proposed park-and-ride facilities. Analysis indicates that most intersection operations would be the same or better with the intersection optimization proposed by SEPTA as part of mitigation for the traffic impacts of each Action Alternative. Where poor intersection operations remain despite optimization, congestion and travel delays would be experienced.

ES-3.2.3 Pedestrian and Bicycle Facilities

Pedestrian and bicycle facilities in the transportation study area include sidewalks and multi-use trails such as Montgomery County's Chester Valley Trail. Sidewalks are present in some areas and absent in others, resulting in a discontinuous pedestrian and bicycle network in terms of serving destinations.

ES-3.2.3.1 No Action Alternative

Two projects in the No Action Alternative will improve pedestrian and bicycle accommodations in the transportation study area: the 1st Avenue Streetscape and Multi-Use Trail project (also known as the 1st Avenue “Road Diet” project) and the planned Chester Valley Trail Extension. These projects will increase pedestrian and bicycle access and connections to some destinations. However, existing pedestrian and bicycle facility deficiencies that are not specifically addressed by the committed projects in the No Action Alternative would remain. The No Action Alternative would have no impact on pedestrian and bicycle facilities.

ES-3.2.3.2 Action Alternatives

Each Action Alternative would provide rail guideway on elevated structure over pedestrian and bicycle facilities, which would minimize potential negative impacts on pedestrian and bicycle facilities. Proposed stations and park-and-ride facilities would have multi-modal access and appropriate pedestrian and bicycle facilities that would be connected to the existing, adjacent sidewalk network. Existing pedestrian and bicycle facility deficiencies that are not specifically addressed by the Project or the committed projects in the No Action Alternative would remain.

ES-3.2.4 Public Parking Facilities

No existing public on-street parking or public parking garages, or planned public parking projects, are within the proposed limits of temporary or permanent disturbance of each Action Alternative. Existing parking areas are private and associated with commercial and office land uses. The No Action and Action Alternatives would have no impact on public parking facilities.

ES-3.2.5 Railroad Facilities and Operations

Two active NS rail freight lines traverse the transportation study area. The Harrisburg Line runs along the east and north sides of the study area, and in the northern portion of the transportation study area it serves Abrams Yard, a key freight activity center. The Dale Secondary runs through the southern portion of the transportation study area. In addition, the transportation study area includes two former rail freight corridors, the former Chester Valley Branch and the former North Abrams Industrial Track. As well, SEPTA regional rail serves Norristown Transportation Center and 69th Street Transportation Center; SEPTA trolley service serves the 69th Street Transportation Center.

ES-3.2.5.1 No Action Alternative

No planned freight, passenger or commuter railroad projects or changes to such facilities are included in the No Action Alternative. Montgomery County owns a portion of the former Chester Valley Branch right-of-way and plans to extend the Chester Valley Trail on the former railroad corridor.

ES-3.2.5.2 Action Alternatives

None of the Action Alternatives would directly impact active freight or passenger rail operations. Action Alternatives, including the recommended LPA, that use 1st Avenue would be aligned along a small portion of the former North Abrams Industrial Track corridor north of the PA

Turnpike. SEPTA is coordinating with NS regarding the use of that portion of their unused corridor.

ES-3.2.6 Safety and Security

The existing transportation system in the study area includes design and operational elements that promote safe operation and interaction among the multiple modes that are present. Examples of such elements include roadway intersection signalization, pedestrian walk signals and striped crosswalks. Existing fire, rescue and police services rely on the existing transportation network to provide their services to the Project study area, such as responding to incidents.

ES-3.2.6.1 No Action Alternative

Safety and security for the No Action Alternative will include the existing policies and operational elements that are present in the transportation study area. The sponsors of each No Action Alternative project are expected to promote safe operations of the new facilities in the context of the transportation study area environment. Existing fire, rescue and police services will continue to operate within the existing roadway network. Growth in transportation study area roadway congestion has the potential to increase response times.

ES-3.2.6.2 Action Alternatives

The grade-separated design of each Action Alternative would separate Project operations from other modes, thereby eliminating potential for at-grade crossing conflicts. Grade-separation also allows SEPTA to separate the proposed vehicle power source from places that people typically occupy, which is a critically important safety provision.

Each of the Action Alternatives and recommended LPA design options would be designed and operated in accordance with SEPTA's existing rail operations safety and security protocols and procedures for the NHSL, which would be updated to include specific requirements for the Project prior to revenue service. The Project would be designed in accordance with SEPTA's *Design Criteria Manual* for the NHSL.

ES-3.3 Impacts to the Natural and Human Environment

The performance of each Action Alternative and recommended LPA design option compared to the No Action Alternative in regard to the natural and human environment categories and factors is presented in Table 8-4.1.

ES-3.3.1 No Action Alternative

The No Action Alternative will be partly consistent with local and regional plans and will partly support economic development because transit service improvements that are integral to these plans are not part of the No Action Alternative. The No Action Alternative will have low to no visual impacts as a result of planned transportation projects, but it will not reduce vehicle miles traveled or benefit air quality. The No Action Alternative may have localized noise impacts near planned transportation project work areas, and it will not reduce fuel costs incurred by the traveling public or road and pavement costs.

ES-3.3.2 Action Alternatives

The Action Alternatives and recommended LPA design options would perform equally well in the following natural and human environment categories and factors: land use and economic development, number of potential full commercial property acquisitions, potential impacts to historic properties, air quality and cost. For other categories and factors, performance among the alternatives differs and is summarized below.

- **PECO-1st Ave. Action Alternative**

- Advantages - The PECO-1st Ave. Action Alternative would perform better than the other Action Alternatives and recommended LPA design options in the least number of community facilities potentially impacted. Compared with the recommended LPA, the PECO-1st Ave. Action Alternative would have fewer impacts on forest habitat. The PECO-1st Ave. Action Alternative would have no potential to impact to the State-endangered plant.
- Disadvantages - The PECO-1st Ave. Action Alternative would perform less well than the other Action Alternatives and recommended LPA design options in the relatively high number of partial residential and parks acquisitions, proximity impacts to parks including parks crossed, high visual impacts, relatively high amount of soil disturbance, fields impacts, and number of potential PECO transmission tower conflicts. It would have more potential areas of contaminated materials and hazardous materials concern and less energy savings than other Action Alternatives and recommended LPA design options. PECO-1st Ave. potentially would use more properties protected by Section 4(f) than the recommended LPA, the recommended LPA design options and US 202-1st Ave.

- **PECO/TP-1st Ave. Action Alternative (recommended LPA)**

- Advantages - The recommended LPA would perform better than some Action Alternatives in: the number of partial and full residential acquisitions, least number of parks impacted or crossed, and visual impacts. It would perform as well as some other Action Alternatives in: community facility impacts, air quality benefits, potential noise impacts, wetlands impacts and areas of contamination concern. The recommended LPA would have no potential to impact the State-endangered plant. The recommended LPA potentially would use fewer properties protected by Section 4(f) compared to PECO-1st Ave., PECO/TP-N. Gulph and US 202-N. Gulph.
- Disadvantages: The recommended LPA potentially would have more impacts to community facilities than PECO-1st Ave. It potentially would have more partial residential property impacts, more soil disturbance, more new impervious surfaces and potentially more utility conflicts than US 202-1st Ave. and US 202-N. Gulph. The recommended LPA potentially would have more partial commercial property impacts than PECO/TP-N. Gulph. The recommended LPA would have more impacts to forests than the other Action Alternatives and recommended

LPA design options. The recommended LPA potentially would use as many properties protected by Section 4(f) as the recommended LPA design options and US 202-1st Ave.

○ **PA Turnpike North/South Option (for recommended LPA)**

- **Advantages** - The PA Turnpike North/South Option would perform better than the other Action Alternatives and the 9/11 Memorial Avoidance Option in potentially requiring no full or partial residential acquisitions. It would perform similarly to the recommended LPA in the number of partial and full commercial acquisitions, least number of parks impacted or crossed and number of potential PECO utility tower conflicts. The PA Turnpike North/South Option would have less visual impacts compared with the recommended LPA. It performs as well as some other Action Alternatives in: community facility impacts, air quality benefits, potential noise impacts and wetlands impacts. Compared to the recommended LPA, the PA Turnpike North/South Option would potentially impact less forest. The PA Turnpike North/South Option would have no impact on the State-endangered plant. The PA Turnpike North/South Option potentially would use fewer properties protected by Section 4(f) compared to PECO-1st Ave., PECO/TP-N. Gulph and US 202-N. Gulph.
- **Disadvantages** - The PA Turnpike North/South Option potentially would impact more area of forest than the PECO-1st Ave., US 202-1st Ave. and US 202-N. Gulph Action Alternatives, and the 9/11 Memorial Avoidance Option. The PA Turnpike North/South Option potentially would use as many properties protected by Section 4(f) as the recommended LPA and US 202-1st Ave.

○ **9/11 Memorial Avoidance Option (for recommended LPA)**

- **Advantages** - Similar to the recommended LPA, the 9/11 Memorial Avoidance Option would perform better than some Action Alternatives in: the number of partial and full residential acquisitions, least number of parks impacted or crossed, visual impacts, and potential number of PECO utility tower conflicts. It would perform as well as some other Action Alternatives in: community facility impacts, air quality benefits, potential noise impacts and wetlands impacts. The 9/11 Memorial Avoidance Option would potentially impact less forest. The 9/11 Memorial Avoidance Option potentially would use fewer properties protected by Section 4(f) compared to PECO-1st Ave., PECO/TP-N. Gulph and US 202-N. Gulph. It would not impact the State-endangered plant.
- **Disadvantages** - The 9/11 Memorial Avoidance Option potentially would impact more forest than the PECO-1st Ave., US 202-1st Ave. and US 202-N. Gulph Action Alternatives. The 9/11 Memorial Avoidance Option

potentially would use as many properties protected by Section 4(f) as the recommended LPA and US 202-1st Ave.

- **PECO/TP-N. Gulph Action Alternative**

- Advantages - The PECO/TP-N. Gulph Action Alternative would perform better than the recommended LPA in the least number of potential partial commercial acquisitions and fewest areas of contaminated materials concern. It would perform as well as the recommended LPA in the number of partial residential acquisitions, number of full residential acquisitions, number of full park acquisitions, visual impacts, fields impacted, wetlands affected and number of potential PECO tower conflicts. The PECO/TP-N. Gulph Action Alternative would not be a least well performing alternative for any factor or category. The PECO/TP-N. Gulph Action Alternative potentially would use as many properties protected by Section 4(f) as PECO-1st Ave., and US 202-N. Gulph, but would not impact the State-endangered plant.
- Disadvantages – Compared to some Action Alternatives and recommended LPA design options, the PECO/TP-N. Gulph Action Alternative would have more impacts on community facilities, partial property acquisitions, full property acquisitions, natural resources, number of PECO transmission tower conflicts, and energy savings in terms of bus miles. The PECO/TP-N. Gulph Action Alternative potentially would use more properties protected by Section 4(f) than the recommended LPA or its design options.

- **US 202-1st Ave. Action Alternative**

- Advantages - The US 202-1st Ave. Action Alternative would perform better than the recommended LPA in the number of potential partial residential property acquisitions, amount of soil disturbance, amount of forest, amount of fields affected, least number of potential PECO tower conflicts and energy savings in bus VMT. It would perform as well as the recommended LPA in the number of community facilities impacted, number of parks impacted or crossed, visual impacts, wetlands impacts, and potential areas of contaminated materials concern. The US 202-1st Ave. Action Alternative potentially would use fewer properties protected by Section 4(f) compared to PECO-1st Ave., PECO/TP-N. Gulph and US 202-N. Gulph.
- Disadvantages - The US 202-1st Ave. Action Alternative would perform least well in potential visual and noise impacts on community facilities, number of partial commercial property acquisitions, and number of full residential acquisitions. It would perform less well than the recommended LPA in these areas as well as in reduction in automobile VMT. US 202-1st Ave. would have potential to impact the State-endangered plant. The US 202-1st Ave. Action Alternative potentially would use as many properties protected by Section 4(f) as the recommended LPA and the recommended LPA design options.

- **US 202-N. Gulph Action Alternative**

- Advantages - As the US 202-N. Gulph Action Alternative would be primarily aligned in existing roadways, it would perform better than the recommended LPA in potential partial residential acquisitions, amount of soil disturbance, amount of forest, fields affected, number of PECO tower conflicts and reduction in bus VMT. It would perform as well as the recommended LPA in community facilities impacts, number of parks impacted or crossed, visual impacts, wetlands impacts, and potential areas of contaminated materials concern. The US 202-N. Gulph Action Alternative potentially would use as many properties protected by Section 4(f) as PECO-1st Ave., and PECO/TP-N. Gulph.
- Disadvantages - The US 202-N. Gulph Action Alternative would perform less well than the recommended LPA in higher visual and noise impacts on adjacent community facilities, a greater number of partial commercial acquisitions, and less reduction in automobile VMT. US 202-N. Gulph would have potential to impact the State-endangered plant. The US 202-N. Gulph Action Alternative potentially would use more properties protected by Section 4(f) than the recommended LPA, the recommended LPA design options or US 202-1st Ave.

In accordance with Section 106 and its implementing regulations, FTA has determined, with concurrence from the Pennsylvania Historical and Museum Commission and input from other consulting parties, that the recommended LPA would have “no adverse effect” on historic properties because it would not diminish the NHSL location, design, setting, materials, workmanship, feeling or association of such properties in the Project study area as defined by Section 106. The other Action Alternatives have also been evaluated to potentially have no adverse effect on historic properties.

SEPTA has identified potential strategies to minimize or mitigate impacts of each Action Alternative and recommended LPA design option. These strategies and SEPTA’s commitments are reported in the DEIS and summarized in Table ES-2.

The following terms are used frequently in this DEIS:

Adverse: A negative or unfavorable condition.

Avoidance: The act of avoiding impacts to, or keeping away from, something or someone.

Minimization: Measures taken to reduce the severity of adverse impacts.

Mitigation: Measures taken to alleviate adverse impacts that remain after minimization.

ES-3.4 Public Involvement and Outreach

SEPTA has strived to develop and refine each Action Alternative and recommended LPA design option by working with public, agencies and other stakeholders and by incorporating their input into the Project design. Since the initiation of the Project’s NEPA process, and as described in the DEIS, SEPTA has undertaken a public involvement and agency outreach program, holding over 100 public meetings, including pre-scoping and scoping meetings, public information sessions, public meetings and public workshops, committee meetings (steering, technical

advisory, stakeholder advisory and agency coordination committees), agency coordination meetings, elected officials' briefings, public hearings, community working group meetings, neighborhood meetings and backyard visits.

In the NEPA process to date, SEPTA received over 3,100 comments from stakeholders, agencies and the public. Opinions included support or opposition to all or parts of the Project, the Action Alternatives and the recommended LPA design options. Comment themes pertained primarily to the purpose and need, the Action and No Action Alternatives, the potential effects of the Project on the natural and human environment (particularly in regard to proximity noise and visual impacts, safety, economic development and parking), study area geographical coverage, costs and funding and public outreach.

The DEIS provides details on the public involvement and outreach activities, especially as they relate to minority and low-income populations. The DEIS also documents activities undertaken to engage the public. Among the key outcomes of the public involvement process were design refinements to avoid or reduce proximity effects such as noise, visual and privacy impacts, as well as safety. For example, SEPTA is pursuing the two recommended LPA design options that would reduce potentially negative proximity effects by increasing the distance between the recommended LPA elevated guideway and residential properties and a 9/11 Memorial.

ES-3.5 Project Costs and Funding

SEPTA developed preliminary capital costs as well as operations and maintenance costs (O&M) for each Action Alternative² that are shown in Table ES-2. The O&M estimates factored in total rail and bus costs because SEPTA expects changes to bus services in the transportation study area with the Project in operation. Bus service changes are expected to reduce SEPTA's total future bus operating costs. Specifically, SEPTA's total rail O&M cost would increase by approximately just under \$10 million for each Action Alternative, but total annual bus O&M costs would decrease by approximately \$5 million.

Building large-scale transit projects typically requires transit agencies to combine multiple funding types (e.g. grants and loans) and sources (federal, state, regional, local and/or private), and it appears likely that this Project will require the same. SEPTA is planning to pursue Project funding through the FTA's Capital Investment Grant program (also known as "New Starts") and will consider other federal support as available. The remainder of Project funding must come from non-federal sources—state, regional, local and other sources.

ES-4 Balancing Benefits and Impacts

In developing the Action Alternatives and recommended LPA design options that are examined in the DEIS, SEPTA considered ways to refine the conceptual design to avoid or minimize impacts. Yet some negative impacts would occur due to the design and safety standards SEPTA must meet, the developed character of the communities the Project is intended to serve and the need to avoid adversely affecting future operations of other transportation facilities in

² Cost estimates have not been prepared for the design options. If one or both design options advance along with the recommended LPA, SEPTA will have cost estimates prepared.

the transportation study area. Throughout the Project, SEPTA has worked with the public, agencies and other stakeholders to balance the trade-offs between the benefits and the impacts of the Project.

On the benefits side, each Action Alternative would achieve the purpose and need, with the recommended LPA providing the most benefits in the combination of ridership, travel time savings for existing transit riders as well as automobile drivers that shift to using transit, connections to bus services and bicycle pedestrian networks, and connections to jobs, non-residential land uses and parks. These transit service benefits would support the planning and economic development goals of Upper Merion Township and Montgomery County by generating benefits for residents and businesses, as well as the region as a whole, as described below.

The Economy League of Greater Philadelphia determined that regardless of the Action Alternative or recommended LPA design option selected, the Project would generate substantial local and regional economic benefits of different types, summarized in Table ES-1. Upper Merion residents, in general, would benefit economically by having access to more job opportunities, better salaries and the stability afforded by the expanded sources of income (Economy League, 2015; values in 2015 dollars):

Regardless of the Action Alternative or recommended LPA design option selected, the Project would promote and strengthen regional growth

- \$19.7 to \$22.1 million per year in total tax revenue from construction spending alone;
- \$1.1 to \$1.3 billion in local economic activity in the region during Project operations;
- Increased travel options, reduced reliance on autos, travel time savings and reduced transportation costs;
- Improved access to employment opportunities and consumer goods and services; and
- Stable or potential increased property values.

The specific level of local and regional economic benefits realized from the Project would depend on the Action Alternative.

Table ES-1: Local and Regional Economic Benefits of the Project

New Capital Expenditures for Construction
\$1 to \$1.2 billion in Project cost is expected to generate \$1,122.8 to \$1,311.6 million in total construction spending in the region
Less Roadway Congestion
Regional reduction in automobile use by 14.6 to 18.4 million vehicle miles traveled per year
Better Access and Connectivity
<ul style="list-style-type: none"> ○ <u>Regional reduction in travel time for drivers</u>: 1.7 to 2.1 million hours per year, valued at \$36.4 to \$44.5 million ○ <u>Regional reduction in travel time for existing bus transit riders</u>: 104,000 to 217,000 hours per year, valued at \$2.6 to \$4.7 million ○ <u>Connectivity</u>: fewer number of transfers between transit services (a) ○ <u>Reliability</u>: separation from roadway traffic would eliminate travel delays caused by congestion
Less Motor Vehicle Air Pollution
Regional reduction in automobile emissions by 5,200 to 5,800 tons of carbon dioxide emissions; overall reduction in annual cost to mitigate for damage caused by vehicular emissions is valued at approximately \$1.5 to \$1.9 million
Growth in Business and Commercial Real Estate
Approximately 310,000 square feet of new non-residential development in King of Prussia would be stimulated by the Project (b)
Job Growth Across Skill Levels
1,200 new employees per year

Note: Data in this table apply to each Action Alternative and recommended LPA design option.

Sources: Economy League of Greater Philadelphia. 2015. *Connecting KOP*. Monetary values are in 2015 dollars; other estimates are for the coming 20 years. (a) Source: AECOM, 2016; (b) Source: Economy League of Greater Philadelphia and DVRPC's model and demographic forecasts.

Each Action Alternative and recommended LPA design option would have potential impacts on the natural and human environment in the transportation study area. Potential direct impacts are a result of the need for right-of-way, while proximity effects are due to the nearness of the Project to existing land uses.

Recognizing that transit projects have the potential to induce community change, SEPTA is supporting Upper Merion Township and Montgomery County in its land use planning. On the natural environment side, the Project's primary use of existing transportation corridors inherently minimizes potential negative impacts on land and water resources. SEPTA will continue to coordinate with the regulatory agencies to identify measures to avoid or minimize natural

resource impacts during the design and permitting phases of the Project. Where negative impacts of the Project remain, SEPTA will identify and commit to specific mitigation measures intended to offset remaining impacts to the natural and human environment. Although some mitigation measures are enforced by federal and state regulations, many of SEPTA's mitigation measures will be project-specific commitments it will make with the affected public, stakeholders and agencies in the transportation study area.

ES-5 Next Steps

FTA has signed the DEIS and distributed it to federal, state and local agencies, as well as stakeholders and other interested parties. There is a 45-day review period for the DEIS; the comment deadline is posted on the Project website (www.kingofprussiarail.com). During the DEIS review and comment period, the DEIS is available in local libraries in the transportation study area and on the project website. A public hearing will occur during the public comment period. Following the DEIS review and comment period, FTA and SEPTA will consider the comments received on the DEIS and other relevant information prior to selecting an LPA and making decisions on the recommended LPA design options to pursue.

FTA may issue a single Final Environmental Impact Statement (FEIS) and Record of Decision pursuant to Public Law 114-94, 23 USC139(n)(2) as amended by the Fixing America's Surface Transportation (FAST) Act, unless FTA determines that statutory criteria, or practicability considerations preclude issuance of the combined document pursuant to Section 1319. During the FEIS, SEPTA will continue to coordinate with stakeholders, agencies and the public.

Table ES-2: Summary of Benefits and Impacts – Minimization and Mitigation Commitments

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
Transportation and Safety Effects (Chapter 3)	▪ Serves defined key destinations (King of Prussia Mall, King of Prussia Business Park and Valley Forge National Historical Park) as well as other destinations (Section 3.1.3)	Requires bus routes to serve the 3 key destinations	Yes	Yes	ND	ND	Yes	Yes	Yes	▪ None is warranted.
	▪ Increases average weekday transit ridership on the NHSL by 2040 (Section 3.1.3)	0	+8,500	+9,500	ND	ND	+9,500	+7,500	+7,500	▪ None is warranted.
	▪ Average weekday boardings at Project stations in 2040 (Section 3.1.3)	0	4,952	5,297	ND	ND	5,376	4,192	4,106	▪ None is warranted.
	▪ Reduces peak period transit travel time per trip (Section 3.1.3)	0 minutes	-26 minutes to King of Prussia Mall from Center City Philadelphia (total travel time: 53 minutes) -23 minutes to King of Prussia Mall from Norristown Transportation Center (total travel time: 15 minutes) -9 minutes to King of Prussia Mall from 69th Street Transportation Center (total travel time: 35 minutes) -38 minutes to King of Prussia Business Park from Center City Philadelphia (total travel time: 59 minutes) -23 minutes to King of Prussia Business Park from Norristown Transportation Center (total travel time: 21 minutes) -12 minutes to King of Prussia Business Park from 69th Street Transportation Center (total travel time: 41 minutes) -27 minutes to Center City Philadelphia from King of Prussia (total travel time: 48 minutes)							▪ None is warranted.
	▪ Uses dedicated guideway in Project study area (travel time reliability factor) (Section 3.1.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes	▪ None is warranted.
	▪ Reduces transit travel time by shift to the Project (thousands of hours saved annually) (Section 3.1.3)	0	-186	-217	ND	ND	-182	-153	-104	▪ None is warranted.
	▪ Reduces automobile travel time by shift to the Project (millions of hours saved annually) (Section 3.1.3)	0	-1.7	-2.0	ND	ND	-2.1	-1.8	-1.7	▪ None is warranted.
	▪ Increases percent of transit trips in transportation study area compared to No Action in 2040 (Section 3.1.3)	0 (2040 No Action transit share is 2.3%)	+1.3%	+1.5%	ND	ND	+1.5%	+1.4%	+1.3%	▪ None is warranted.

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
	▪ Changes the number of auto-based trips per day in DVRPC region in 2040 (Section 3.1.3)	0	-5,614	-6,342	ND	ND	-6,123	-5,343	-5,106	▪ None is warranted.
	▪ Changes the number of park-and-ride trips per day in DVRPC region in 2040 (Section 3.1.3)	0	+2,670	+2,827	ND	ND	+2,831	+1,592	+1,580	▪ None is warranted.
	▪ Changes the number of walk-to-transit trips per day in DVRPC region in 2040 (Section 3.1.3)	0	+2,943	+3,514	ND	ND	+3,792	+3,750	+3,526	▪ None is warranted.
	▪ Number of trains per peak hour in transportation study area on 2040 (Section 2.7)	0	6 - King of Prussia to 69th Street Transportation Center 3 - King of Prussia to Norristown Transportation Center							▪ None is warranted.
	▪ Frequency of rail transit service in transportation study area in 2040 (minutes) (Section 3.1.3)	No rail transit service	10 minutes, peak period 20 minutes, non-peak periods							▪ None is warranted.
	▪ Increases transit parking capacity in transportation study area (Section 2.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes	▪ None is warranted.
	▪ Connects to bus and shuttle services; changes to bus and shuttle services are likely (Section 3.1.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes	▪ SEPTA will develop a program of bus service changes to eliminate service redundancies created by the Project, adjust routes to serve proposed stations and park-and-ride facilities, and optimize operating efficiency. ▪ SEPTA will coordinate with the Greater Valley Forge Transportation Management Association (GVFTMA) and King of Prussia Business Improvement District (KOP-BID) to plan appropriate shuttle service modifications to serve Project stations.

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
	▪ Maintains or improves most key roadway intersection levels of service in 2040 with mitigation (Section 3.2.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes	▪ Key intersection levels of service will be maintained or improved with Project mitigation. SEPTA will coordinate with state and local officials to: ▪ Further assess the need for and design specific improvements to intersections affected by the Project. ▪ Develop and implement a Project traffic management plan for affected roadways, bicycle and pedestrian facilities and parking during construction and operation.
	▪ Connects to bicycle and pedestrian network, accommodation at proposed stations (Section 3.3.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes	▪ Accommodate pedestrian and bicycle movements at affected intersections, Project stations and park-and-ride facilities, and make connections to sidewalks adjacent to Project station facilities.
	▪ Non-residential property acquisitions could impact parking (Section 3.4.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes	▪ SEPTA will coordinate with affected non-residential property owners and the Township to address temporary and permanent parking impacts.
	▪ Avoids impacts to active freight and heavy rail lines (Section 3.5.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes	▪ None is warranted.
	▪ Safety is considered in conceptual design (Section 3.6.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes	▪ SEPTA will develop safety plans for Project construction and operation.
Land Use Patterns and Consistency with Plans (Section 4.2)	▪ Consistent with Township and County land use plans (Section 4.2.3)	Partly	Yes	Yes	ND	ND	Yes	Yes	Yes	▪ SEPTA will continue working with Upper Merion Township and Montgomery County to optimize the Project's role in supporting future land use planning.
	▪ Accesses study area jobs (non-residential square feet (millions) within ½ mile of proposed station areas) (Section 8.2.2)	No change	14.9	15.0	ND	ND	14.2	14.5	13.7	▪ None is warranted.
	▪ Accesses community facilities (number of facilities within ½ mile of proposed station areas) (Section 4.4.3)	No change	3	7	ND	ND	7	10	10	▪ None is warranted.

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
	<ul style="list-style-type: none">Potential for construction easements to temporarily change land use, access and parking on affected properties (Section 4.2.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes	<ul style="list-style-type: none">SEPTA will identify temporary staging areas and construction access in coordination with potentially affected property owners. To the extent reasonably feasible, SEPTA will identify such areas within the Project right-of-way or on vacant or publicly owned property.SEPTA will work with potentially affected property owners in regard to easement needs and conditions, resulting in formal easement agreements.SEPTA will restore properties affected by temporary easements to an acceptable pre-construction condition following construction activities, in accordance with individual easement agreements.
Economic Development (Section 4.3)	<ul style="list-style-type: none">Number of proposed station areas within Upper Merion Township's Mixed Use (KPMU) zoning district (Section 4.2.3)	0	2	2	ND	ND	1	2	1	<ul style="list-style-type: none">None is warranted.
	<ul style="list-style-type: none">Potential to affect private property values as a result of direct or proximity effects (Section 4.3.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes	<ul style="list-style-type: none">SEPTA will use avoidance and minimization to address causes of potential negative property value effects (such as visual change, noise and vibration impacts) to the extent reasonably feasible.
	<ul style="list-style-type: none">Potential for temporary changes in access to businesses during construction (Section 4.3.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes	<ul style="list-style-type: none">SEPTA, in coordination with affected businesses and property owners, would identify where temporary changes in business access could potentially occur during construction and develop a plan to avoid or minimize such impacts.
Community Cohesion and Facilities (Section 4.4)	<ul style="list-style-type: none">Avoids splitting or fragmenting residential or business communities (Section 4.4.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes	<ul style="list-style-type: none">None is warranted.
	<ul style="list-style-type: none">Preserves access across existing transportation and utility rights-of-way (Section 4.4.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes	<ul style="list-style-type: none">None is warranted.

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
	▪ Number of community facility properties directly impacted (Section 4.4.3)	Unknown	1	3	ND	-1	3	3	3	▪ SEPTA will examine ways to avoid or minimize negative impacts on community cohesion (see also Property Acquisitions and Displacements, and Visual and Aesthetic Resources). ▪ SEPTA will continue its dialogue with potentially affected neighborhoods to develop minimization and mitigation measures that address negative impacts to the extent reasonably feasible. ▪ SEPTA will continue dialogue with the King of Prussia Volunteer Fire Company to address potential impacts to their property and the 9/11 Memorial. ▪ SEPTA will coordinate with emergency service providers to preserve provider access and circulation.
	▪ Number of adjacent community facilities (potential for proximity visual and noise impacts) (Section 4.4.3)	Unknown	1	4	ND	ND	5	5	4	▪ See Noise and Vibration, and Visual and Aesthetic Resources.
Property Acquisitions and Displacements (Section 4.5)	▪ Number of potential partial property (parcel) acquisitions (Section 4.5.3)	Unknown	59 Residential 46 Commercial 16 Other 121 Total	24 Residential 46 Commercial 15 Other 85 Total	-24 Residential ND Commercial -1 Other -25 Total	ND Residential +1 Commercial -1 Other ND Total	24 Residential 30 Commercial 16 Other 70 Total	2 Residential 95 Commercial 8 Other 105 Total	2 Residential 69 Commercial 9 Other 80 Total	▪ SEPTA would use existing transportation and utility rights-of-way to minimize the number of potentially affected properties and will continue to collaborate with property owners to cause the least impact to property maintenance and operations. ▪ SEPTA has and will continue to coordinate with Simon Property Group regarding proposed use of part of the King of Prussia Mall property. ▪ Permanent property acquisition activities will occur in accordance with the Uniform Act as amended and FTA Circular

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
	<ul style="list-style-type: none">Number of potential full property (parcel) acquisitions (Section 4.5.3)	Unknown	4 Residential 4 Commercial 4 Other 12 Total	4 Residential 4 Commercial 3 Other 11 Total	-4 Residential ND Commercial ND Other -4 Total	ND Residential ND Commercial +1 Other +1 Total	4 Residential 4 Commercial 2 Other 10 Total	19 Residential 4 Commercial 2 Other 25 Total	19 Residential 4 Commercial 1 Other 24 Total	5010.1D, Grants Management Requirements and State laws that establish the process by which SEPTA may acquire real property through a negotiated purchase or through condemnation. <ul style="list-style-type: none">SEPTA will work with potentially affected property owners regarding formal, construction phase easement agreements for temporary construction work areas.SEPTA will restore properties affected by Project-related temporary easements at the end of construction in accordance with individual easement agreements.
Parks, Recreational Land, and Open Space (Section 4.6)	<ul style="list-style-type: none">Potential number of parks directly impacted or crossed (Section 4.6.3)	Unknown	2 impacted: Kingwood Road Park, PECO Easement; 1 crossed: Chester Valley Trail Extension	0 impacted; 1 crossed: Chester Valley Trail Extension	ND	ND	0 impacted; 1 crossed: Chester Valley Trail Extension	0 impacted; 1 crossed: Chester Valley Trail Extension	0 impacted; 1 crossed: Chester Valley Trail Extension	<ul style="list-style-type: none">If PECO-1st Ave. is selected for further study, SEPTA will coordinate with Upper Merion Township on ways to minimize impacts on Kingwood Road Park, the PECO Easement, and the Chester Valley Trail Extension.SEPTA would consider guideway alignment modifications to minimize park impacts and mitigation opportunities. Such as replacement parkland if avoiding park impacts is not reasonably feasible.SEPTA will coordinate with Montgomery County and Upper Merion Township to minimize temporary impacts of construction activity on the Chester Valley Trail Extension and the PECO Easement, respectively (such as trail closures, noise and physical disturbance of the facilities).
	<ul style="list-style-type: none">Accesses parks (number of parks within ½ mile of proposed station areas) (Section 4.6.3)	0	5	5	ND	ND	4	5	4	<ul style="list-style-type: none">None is warranted.
	<ul style="list-style-type: none">Potential for proximity effects on parks (number and names of potentially affected parks) (Section 4.6.3)	Unknown	2 - Kingwood Road Park, PECO Easement	1 - Chester Valley Trail Extension	ND	ND	1 - Chester Valley Trail Extension	1 - Chester Valley Trail Extension	1 - Chester Valley Trail Extension	<ul style="list-style-type: none">SEPTA will coordinate with Montgomery County regarding minimizing proximity effects on the Chester Valley Trail Extension. Strategies to minimize impacts could include vegetative screening and noise abatement, if warranted.

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
Historic and Archeological Resources (Section 4.7)	▪ Potential number and names of historic property impacts (Section 4.7.3)	Unknown	3 - Philadelphia and Western Railway (NHSL); PA Turnpike: Delaware River Extension; American Baptist Churches, USA Mission Center	3 - Philadelphia and Western Railway (NHSL); PA Turnpike: Delaware River Extension; American Baptist Churches, USA Mission Center	ND	ND	5 - Philadelphia and Western Railway (NHSL); PA Turnpike: Delaware River Extension; PA Turnpike: Philadelphia Extension; GE Space Technology Center; American Baptist Churches, USA Mission Center	3 - Philadelphia and Western Railway (NHSL); PA Turnpike: Delaware River Extension; American Baptist Churches, USA Mission Center	5 - Philadelphia and Western Railway (NHSL); PA Turnpike: Delaware River Extension; PA Turnpike: Philadelphia Extension; GE Space Technology Center; American Baptist Churches, USA Mission Center	▪ FTA and SEPTA will continue to consult with the PA Historical and Museum Commission and other consulting parties under Section 106 of the National Historic Preservation Act as the Project advances. ▪ After an LPA is selected, FTA and SEPTA will coordinate with consulting parties to identify minimization strategies for construction and operational phases of the Project in accordance with the requirements and procedures set forth in 36 CFR 800 and complete Section 106 consultation. ▪ None is warranted for archaeology.
	▪ Adverse impacts on historic properties as defined by Section 106? (Section 4.7.3)	Unknown	No	No	ND	ND	No	No	No	
	▪ Potential for archaeological sites in the Project study area is low? (Section 4.7.3)	Unknown	Yes	Yes	ND	ND	Yes	Yes	Yes	

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
Visual and Aesthetic Resources (Section 4.8)	Potential for visual impacts? (Section 4.8.3)	Yes	Yes	Yes.	Yes, but potential impacts on residences are reduced by alignment shift	Yes, but potential impacts on 9/11 Memorial are reduced by alignment shift	Yes	Yes	Yes	<ul style="list-style-type: none">SEPTA would use existing transportation and utility corridors to the extent reasonably feasible to minimize Project visual impacts.SEPTA has worked to address business and resident concerns about the visual impacts of the proposed Project by 1) using elevated guideway that would enable motorists to see businesses from under the structure, 2) proposing a contemporary concept design for the guideway structure, and 3) developing the two recommended LPA design options that reduce potential visual impacts on residences and the 9/11 Memorial.When an LPA is selected, SEPTA will examine ways to further minimize and mitigate visual impacts. Potential strategies could include but may not be limited to, alignment refinements, visual treatments of the Action Alternative elements, and screening.SEPTA's Project construction plan will specify work, staging and storage areas as well as hauling routes, along with schedules for these elements, to manage potential impacts of temporary construction activities such as visual impacts.
Air Quality (Section 4.9)	<ul style="list-style-type: none">Benefits air quality due to reduced weekday peak vehicle miles traveled in 2040 (Section 4.9.3)	No	-7,150 (-0.45%)	-6,484 (-0.41%)	ND	ND	-7,298 (-0.46%)	-7,166 (-0.45%)	-7,945 (-0.50%)	<ul style="list-style-type: none">SEPTA will assess the potential for a Project air quality impact during the FEIS for the selected LPA.Air quality control measures and best management practices for control of dust and vehicle emissions during Project construction will be determined later in design when the details of project construction activities have been developed.

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
Noise and Vibration (Section 4.10)	■ Potential number of noise impacts (Category 2 = where people sleep such as residences; Category 3 = daytime institutional or office use) (Section 4.10.3)	Unknown	66 Category 2 3 Category 3	33 Category 2 2 Category 3	-29 Category 2 ND Category 3	ND Category 2 -1 Category 3	32 Category 2 2 Category 3	29 Category 2 3 Category 3	28 Category 2 3 Category 3	■ SEPTA will undertake detailed noise and vibration analyses during the Final EIS, which will focus on the LPA that will be selected after the DEIS public comment period. ■ Where Project impacts are indicated by detailed analyses, SEPTA will consider noise and vibration control strategies that are both feasible and reasonable.
	■ Potential number of vibration impacts (Category 2 = where people sleep such as residences; Category 3 = daytime institutional or office use) (Section 4.10.3)	Unknown	0 Category 2 1 Category 3	3 Category 2 0 Category 3	-3 Category 2 ND Category 3	ND Category 2 ND Category 3	3 Category 2 0 Category 3	0 Category 2 0 Category 3	0 Category 2 0 Category 3	■ During construction planning, SEPTA will assess the potential for temporary noise and vibration impacts during Project construction and identify measures to minimize construction impacts as warranted.
Natural Resources (Section 4.11)	■ Potential risk regarding underlying geologic conditions (Section 4.11.3)	Yes	Yes – similar to other Action Alternatives	Yes – similar to other Action Alternatives	ND	ND	Yes – similar to other Action Alternatives	Yes – similar to other Action Alternatives	Yes – similar to other Action Alternatives	■ SEPTA will undertake detailed geotechnical studies to assess and characterize potential risks, and develop appropriate design solutions. ■ SEPTA will consult with PECO, PennDOT, the PA Turnpike Commission, Upper Merion Township and other Project study area stakeholders regarding geology conditions and appropriate design within their rights-of-way. ■ SEPTA would refine the alignment and design the structural supports in locations with suitable subsurface conditions. ■ SEPTA would build flexibility and redundancy into the design of the guideway and other structures to minimize potential subsurface problems and impacts.

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
	▪ Amount of potential soil disturbance and change in amount of impervious surfaces (acres) (Section 4.11.3)	Unknown	12.9	9.8	ND	ND	11.0	3.9	4.9	▪ During design, SEPTA will assess and characterize the capabilities and limitations of soils, and develop design solutions that consider soil conditions. ▪ SEPTA will consider means to reduce the amount of new impervious surfaces through design refinements, such as minimizing the dimensions of the guideway, pavement, and structures. ▪ SEPTA will prepare and implement PA-approved erosion and sediment control plans and applicable stormwater management plans during Project construction. These plans will identify appropriate best management practices. ▪ SEPTA will develop specific construction practices that include provisions to minimize potential problems associated with subsurface conditions as the Project is built.
	▪ Amount of potential forest disturbance (potential for impact to a State-endangered plant (*)) (Section 4.11.3)	Unknown	2.9	5.4	-1.1	-1.5	3.7	2.8*	1.1*	▪ SEPTA will consider means to avoid or minimize impacts to existing forests and fields through design refinements. ▪ If US 202-1 st Ave. or US 202-N. Gulph is selected, SEPTA will consult with the PA Department of Conservation and Natural Resources (DCNR) to determine whether and where the identified, protected plant occurs in the Project study area, assess the potential for the Project to affect the plant, if present, and provide mitigation if warranted. ▪ During the FEIS, SEPTA will coordinate with PA Fish and Boat Commission regarding potential waterway impacts for the selected alternative.
	▪ Amount of potential field disturbance (acres) (Section 4.11.3)	Unknown	8.0	3.5	ND	ND	3.5	0.0	0.0	▪ None is warranted.
	▪ Amount of waterways and floodplains potentially affected (acres) (Section 4.11.3)	Unknown	0	0	ND	ND	0	0	0	▪ None is warranted.

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
	<ul style="list-style-type: none">Amount of potential wetlands disturbance (acres) (Section 4.11.3)	Unknown	0.05	0.05	ND	ND	0.05	0.05	0.05	<ul style="list-style-type: none">SEPTA, in coordination with the US Army Corps and PA Department of Environmental Protection, will determine whether the selected LPA would impact wetlands.SEPTA will consider means to avoid wetland and waterway impacts, if present, through design refinements.SEPTA will obtain appropriate permits and approvals where impacts cannot be avoided. SEPTA would implement the conditions of the permits to address negative impacts.SEPTA will work to minimize impacts of new stormwater runoff from its structures using best management practices.
Contaminated Materials and Hazardous Waste (Section 4.12)	<ul style="list-style-type: none">Number of areas of contaminated materials concern within the proposed limits of disturbance (Section 4.12.3)	Unknown	27	25	ND	ND	13	35	23	<ul style="list-style-type: none">SEPTA would perform a Phase II Environmental Site Assessment of the selected LPA prior to right-of-way acquisition.SEPTA would examine means to avoid or minimize and mitigate impacts if the Project has the potential to impact a site with potential contaminated materials and hazardous waste issues.SEPTA would develop and implement Health and Safety Plans and Materials Management Plans for use during construction and operation.SEPTA would develop and implement an Asbestos Abatement Plan and a Lead-Based Paint Assessment Plan if structures would be demolished during construction.

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
Utilities and Energy Use (Section 4.13)	▪ Number of potential conflicts with PECO transmission towers (Section 4.13.3)	0	12	8	ND	ND	8	0	0	▪ SEPTA will coordinate with utility service providers to determine and verify the location of existing utilities. ▪ SEPTA will refine the selected LPA with the goal of avoiding or minimizing negative impacts on utilities during construction and operation of the Project, where reasonably feasible, and identify mitigation measures to address remaining impacts. ▪ Project construction activities would be planned and scheduled to avoid or minimize utility service disruptions. All potential work to relocate and protect utilities would be coordinated with and approved by the utility owner. Planned outages would require notification of affected utility users.
	▪ Reduces annual automobile vehicle miles traveled (million miles) (Section 4.13.3)	Increase in VMT likely	-16.1	-17.5	ND	ND	-18.4	-16.1	-14.6	
	▪ Reduces annual bus vehicle miles traveled (thousands of miles) (Section 4.13.3)	0	-57	-86	ND	ND	-82	-128	-128	
	▪ Annual cost savings for motor vehicle fuel (Section 4.13.3)	Increase in cost likely	Similar to recommended LPA	-\$2.6 to -\$3.2 million	ND	ND	Similar to recommended LPA	Similar to recommended LPA	Similar to recommended LPA	
	▪ Annual reduction in road and pavement maintenance costs (2015\$) (Section 4.13.3)	Increase in cost likely	Similar to recommended LPA	\$350,000 to \$430,000	ND	ND	Similar to recommended LPA	Similar to recommended LPA	Similar to recommended LPA	

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
Environmental Justice (EJ) (Section 4.14)	Disproportionately high and adverse effects on environmental justice populations? (Section 4.14.3)	Unknown	No	No	ND	ND	No	No	No	<ul style="list-style-type: none">Each Action Alternative and recommended LPA design option would improve transit service for all Project study area populations while avoiding or minimizing potential impacts. The PA Turnpike North/South Option is an example of a refinement that reduces potential impacts to Project study area residents.SEPTA has strived for full and fair access to meaningful involvement by low-income and minority populations in Project planning and development. SEPTA has actively sought input and participation from all members of the transportation study area community. Residents have provided important information on community concerns that SEPTA is using in the design and evaluation of the Action Alternatives and recommended LPA design options.SEPTA has and will continue to examine means to minimize impacts to the human and natural environment through design and coordination with stakeholders and the public.SEPTA has identified potential minimization and mitigation strategies in the DEIS and this table to offset short- and long-term impacts of each Action Alternative and recommended LPA design option.SEPTA will identify and apply appropriate mitigation measures for the selected LPA in EJ and non-EJ communities as warranted.

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
Irreversible and Irretrievable Commitment of Resources (Section 4.15)	■ Permanent commitment of natural, material and financial resources? (Section 4.15.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes	■ SEPTA has identified potential minimization and mitigation strategies in the DEIS and this table to offset short- and long-term impacts of each Action Alternative and recommended LPA design option.
	■ Permanent, positive employment, earnings and output effects to King of Prussia (Section 4.15.2)	Unknown	900 to 1,500 new jobs annually 17,000 to 29,000 new employees over 20 years \$79.1 million to \$132.6 million in earnings annually \$1.6 to \$2.7 billion in labor income over 20 years \$540 million to \$946 million to assessed values of real estate over 20 years \$12.8 million to \$22.4 million in new property tax revenues annually							■ None is warranted.
	■ Preliminary Capital Cost for Project (\$ billions) (Section 8.6.2) Source: Economy League of Greater Philadelphia	0	\$1.17	\$1.08	Cost estimates would be developed in the FEIS for the recommended LPA design options if one or both is selected for further study	Cost estimates would be developed in the FEIS for the recommended LPA design options if one or both is selected for further study	\$1.19	\$1.02	\$1.12	
	■ Preliminary Annual Operations and Maintenance Cost (\$ millions) (Section 8.6.2) Values in 2014 dollars	\$13.3	\$9.7	\$9.6	Cost estimates would be developed in the FEIS for the recommended LPA design options if one or both is selected for further study	Cost estimates would be developed in the FEIS for the recommended LPA design options if one or both is selected for further study	\$9.7	\$9.8	\$9.8	

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
	<ul style="list-style-type: none">▪ Preliminary Annual Operations and Maintenance Cost, Net Growth (rail and bus) (\$ millions) (Section 8.6.2) Values in 2014 dollars	\$0.5	\$5.1	\$4.9	Cost estimates would be developed in the FEIS for the recommended LPA design options if one or both is selected for further study	Cost estimates would be developed in the FEIS for the recommended LPA design options if one or both is selected for further study	\$4.9	\$4.9	\$5.2	
Draft Section 4(f) Evaluation (Chapter 5)	<ul style="list-style-type: none">▪ Number of protected properties potentially permanently used (Section 5.3)	Unknown	5	3	ND	ND	5	3	5	<ul style="list-style-type: none">▪ Mitigation measures would be identified by FTA and SEPTA in coordination with the officials with jurisdiction over the affected properties, to retain the features, attributes or activities that qualify each property for protection by Section 4(f).
Indirect and Cumulative Impacts (Chapter 6)	<ul style="list-style-type: none">▪ Potential for indirect and cumulative effects (Chapter 6)	Yes	<ul style="list-style-type: none">▪ Enhances and encourages development and redevelopment processes near station areas<ul style="list-style-type: none">▪ Incremental cumulative effects							<ul style="list-style-type: none">▪ SEPTA has identified potential minimization and mitigation strategies in the DEIS and this table to offset short- and long-term impacts of each Action Alternative and recommended LPA design option.
Preliminary Cost Estimates (Chapter 8)	<ul style="list-style-type: none">▪ Preliminary capital cost estimate for Project (\$ billions) (Section 8.6.2)	\$0	\$1.17	\$1.08	ND	ND	\$1.19	\$1.02	\$1.12	<ul style="list-style-type: none">▪ SEPTA will refine Project cost estimates after an LPA is selected.
	<ul style="list-style-type: none">▪ Preliminary annual NHSL operations and maintenance cost estimate (\$ millions) (Section 8.6.2)	\$13.3	+\$9.7	+\$9.6	ND	ND	+\$9.7	+\$9.8	+\$9.8	
	<ul style="list-style-type: none">▪ Preliminary annual operations and maintenance cost estimate – net growth (rail and bus) (\$ millions) (Section 8.6.2)	\$0.5	\$5.1	\$4.9	ND	ND	\$4.9	\$4.9	\$5.2	
Broad Acceptance by Key Stakeholders and Political Leaders (Chapter 8)	<ul style="list-style-type: none">▪ Supports Upper Merion Supervisors and public preferences to not use US Route 202? (Section 8.4)	Yes	Yes	Yes	ND	ND	Yes	No	No	<ul style="list-style-type: none">▪ None is warranted.
	<ul style="list-style-type: none">▪ Supports Core Stakeholders and public preferences to not use PECO west of PA Turnpike? (Section 8.4)	Yes	No	Yes	ND	ND	Yes	Yes	Yes	<ul style="list-style-type: none">▪ None is warranted.

Resource	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives							Minimization and Mitigation Commitments for Action Alternatives
			PECO-1 st Ave.	Recommended LPA and Its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph		
				PECO/TP-1 st Ave.	Design Options Differences Compared to PECO/TP-1 st Ave.					
					PA Turnpike North/South Option (ND meaning No Difference)				9/11 Memorial Avoidance Option (ND meaning No Difference)	
	▪ Supports Core Stakeholders preferences to use 1 st Avenue? (Section 8.4)	No	Yes	Yes	ND	ND	No	Yes	No	▪ None is warranted.
	▪ Supports Simon Properties/KOP-BID preference to be aligned behind the King of Prussia Mall? (Section 8.4)	No	No	Yes	ND	ND	Yes	Yes	Yes	▪ None is warranted.
	▪ PA Turnpike is willing to consider an alignment in their ROW? (Section 8.4)	Not applicable	Yes	Yes	ND	ND	Yes	Yes	Yes	▪ None is warranted.

Chapter 1.0 Purpose and Need

The King of Prussia Rail Project (Project) would extend Norristown High Speed Line (NHSL) rail transit service to the King of Prussia Mall and other destinations in the King of Prussia-Valley Forge area of Upper Merion Township, Montgomery County, Pennsylvania.

The Federal Transit Administration (FTA) and the Southeastern Pennsylvania Transportation Authority (SEPTA) developed the purpose and need for the Project during the National Environmental Policy Act (NEPA) scoping process, presented it to the public in 2013, and refined it during development of the DEIS. In this Draft Environmental Impact Statement/Section 4(f) Evaluation (DEIS), FTA and SEPTA evaluate alternatives for their ability to achieve the purpose and need for the Project, as well as for their benefits and impacts on the natural and built environment.

1.1 Purpose of the Project

The purpose of the proposed Project is to provide faster, more reliable public transit service to the King of Prussia area that:

- Offers improved transit connections to the area from communities along the existing Norristown High Speed Line, Norristown and Philadelphia;
- Improves connectivity between defined key destinations within the King of Prussia area; and
- Better serves existing transit riders and accommodates new transit patrons.

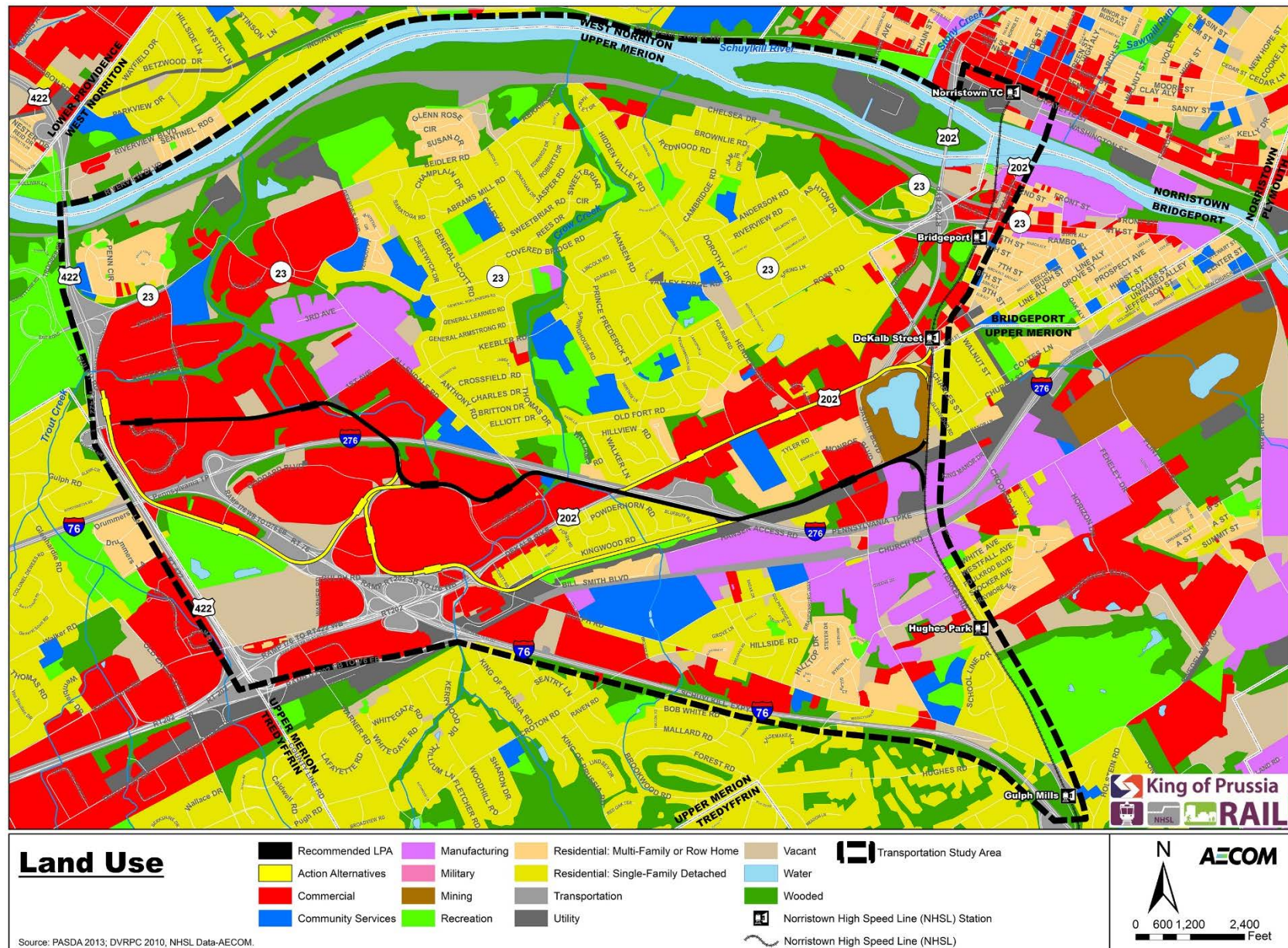
The need for expanded transit service in Montgomery County has been identified for more than 20 years in regional studies and local plans. The Project need stems from existing transit service deficiencies that are expressed by long travel times, delays due to roadway congestion, required transfers leading to two or more seat trips, and destinations that are underserved, or currently not served, by public transit. These needs are compounded by growing population and employment in the area, concentrations of major commercial development in King of Prussia, and significant planned development for the area.

1.2 Context

1.2.1 Existing Land Use

SEPTA, in coordination with FTA and the Delaware Valley Regional Planning Commission (DVRPC), developed the transportation study area for the Project. The transportation study area encompasses the greater King of Prussia-Valley Forge area and is bounded roughly by the Schuylkill River, US Route 422, I-76 (Schuylkill Expressway), and the existing NHSL. Most of the transportation study area is located within Upper Merion Township, while small portions lie within Bridgeport and Norristown. In general, predominant land uses within the transportation study area are residential (32%), commercial (21%) and manufacturing (9%) (see Figure 1-1.1).

Figure 1-1.1: Existing Land Use



The greater King of Prussia-Valley Forge area is at the intersection of several major highways: the Pennsylvania Turnpike, I-76 (Schuylkill Expressway), US Route 422 and US Route 202 (DeKalb Pike). Located in southeastern Pennsylvania, it is about 15 miles away from Center City Philadelphia. Over the past five decades, the area has developed into one of the most important activity centers in the greater Philadelphia region in terms of employment, shopping, and visitor destinations; other commercial activities; and resident population. Outside of Philadelphia, Upper Merion Township, including the greater King of Prussia-Valley Forge area, is the largest suburban employment market in the Philadelphia region with 57,038 jobs (2015 Census Employment Estimate, DVRPC, October 27, 2016, *Analytic Data Reports 023*).

Three key destinations in the transportation study area are the King of Prussia Mall, the King of Prussia Business Park and Valley Forge National Historical Park. Figure 1-1.2 shows these key destinations in the transportation study area. The King of Prussia Mall and associated development provides approximately 12,500 jobs (U.S. Census using OnTheMap, 2012). At more than 2.6 million square feet of commercial space (Upper Merion Township, 2012), the King of Prussia Mall is the largest shopping mall on the East Coast of the United States and the largest shopping mall in the United States in terms of leasable retail space (ranked by square footage of gross leasable area). According to the King of Prussia Business Improvement District (KOP-BID), King of Prussia Mall attracts about 20 million visitors annually, or about 55,000 per day (KOP-BID, 2016).

Nearby, the King of Prussia Business Park supports 19,000 jobs among its business, office, hotel, light industrial, and warehouse uses (U.S. Census using OnTheMap, 2012). Valley Forge National Historical Park, with a main entrance at the western periphery of the transportation study area, is a premier historical, cultural and recreational destination. The park attracts 2.1 million visitors annually (KOP-BID, 2016).

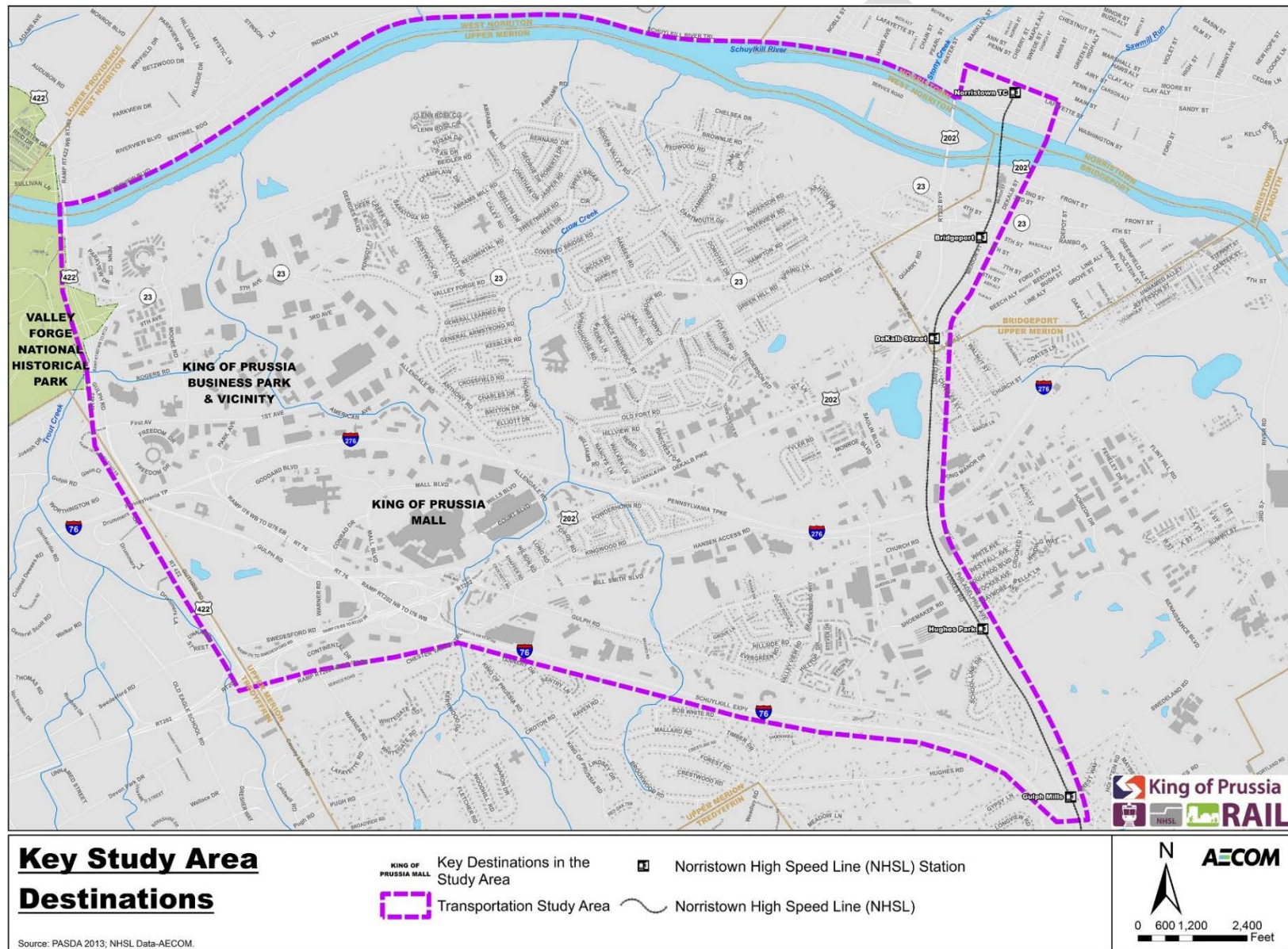
Key nodes of commercial activity are found in the area along US Route 202, with nearly 4,000 jobs and Henderson Road with over 6,000 jobs (U.S. Census using OnTheMap, 2012).

1.2.2 Planned Development and Changing Land Use

The transportation study area is developed with minimal available vacant land; Upper Merion Township's most recent *Act 209 Land Use Assumptions Report* (2014) estimated vacant land at 5%. Despite this fact, Upper Merion Township continues to receive numerous land development proposals each year, with most of the development in the form of intensification and redevelopment of previously developed properties.

Specific development activities include recent King of Prussia Mall expansion as well as elements of the approved Village at Valley Forge that are currently under construction. The latter elements will add up to 2 million square feet of commercial space, 500 hotel rooms, and 3,000 residential units to Upper Merion Township.

Figure 1-1.2: Key Study Area Destinations



Upper Merion Township's *Land Use Plan* (2005), zoning ordinance and *2020 Vision Plan* provide the framework for potential future growth. While the township has not officially designated redevelopment areas, its *Land Use Plan* identifies potential "mixed-use" areas and "important tracts." A stated goal of the *Land Use Plan* is to create a sustainable environment and create more compact, mixed-use development in the King of Prussia area. To achieve this goal, the *Land Use Plan* contains a "Transit-Oriented, Mixed-Use" land use designation that is intended to encourage compact, walkable development around future train stations and the existing station at Hughes Park.

To further the *Land Use Plan* goals, Upper Merion Township, in cooperation with the KOP-BID, recently revised the Township's zoning code to guide future land use in the King of Prussia Business Park. The revised code lays out a vision for the future of land use along these corridors, encourages walking and public transportation use, and allows for mixed-use development.

1.2.3 Population and Employment Growth

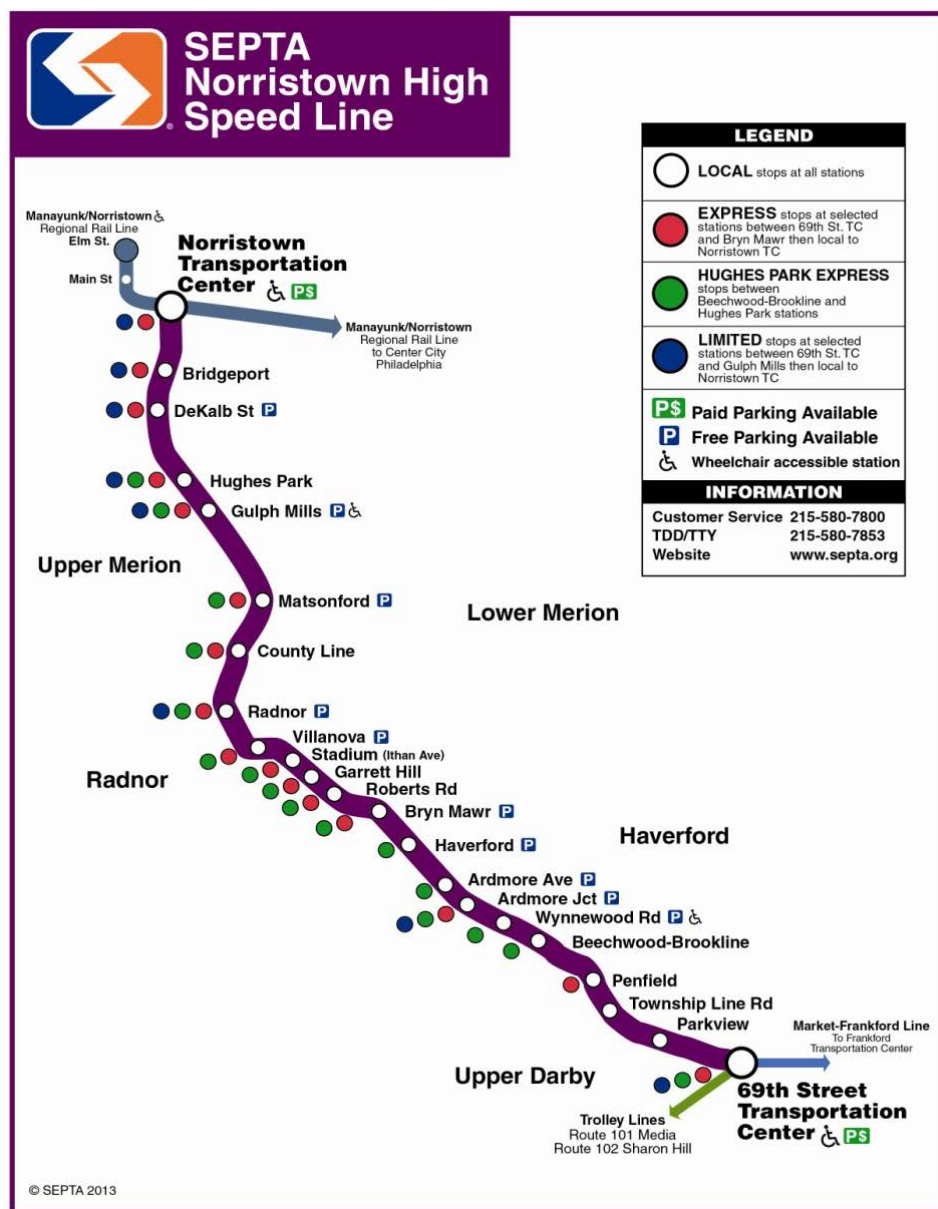
DVRPC, the metropolitan planning organization for the region, adopted forecasts that Upper Merion Township's population will increase from 28,620 (2015 Census estimate) to 34,003 in 2040, which is an increase of 18.8%, or 0.76% annually on (DVRPC, 2016). Other municipalities along the NHSL have forecasted overall population increases ranging from 2.08% (Haverford) to 24.26% (Bridgeport).

DVRPC's adopted October 27, 2016 municipal-level employment forecasts show that Upper Merion Township is forecasted to have the greatest absolute employment change in the DVRPC region and employment will rise from 57,038 (2015 US Census estimate) to 65,430 in 2040, a 14.7% increase. This is an absolute increase of 8,292 and represents the highest absolute employment growth forecasted in that period for municipalities in Montgomery County.

1.2.4 Existing Rail Transportation

The NHSL operates between the 69th Street Transportation Center in Upper Darby Township in Delaware County and the Norristown Transportation Center, in the Municipality of Norristown, in Montgomery County, as depicted in Figure 1-2.1. Connections to SEPTA's Regional Rail system are available at the Norristown Transportation Center via transfer to the Manayunk/Norristown Line, a commuter rail line providing service between Norristown and downtown Philadelphia, and to eight SEPTA bus routes. At the 69th Street Transportation Center on the NHSL, connections can be made to Center City Philadelphia via SEPTA's Market-Frankford Line, and to other parts of Delaware and Chester Counties via SEPTA's Route 101 and 102 Trolleys and 18 SEPTA bus routes.

Besides service to Norristown and Upper Darby, the NHSL serves a number of important origins and destinations along its route including academic institutions such as Haverford College, Bryn Mawr College, Villanova University, Eastern University, Cabrini College and Rosemont College; Bryn Mawr Hospital; and several residential communities with dense population and employment on the Main Line.

Figure 1-2.1: Norristown High Speed Line

Source: SEPTA, 2015

Although the NHSL passes through Upper Merion Township, the rail line runs a few miles east of the King of Prussia Mall. Reaching the King of Prussia Mall and other destinations in the transportation study area from the NHSL requires a transfer to/from bus service.

Table 1-2.1 shows the 2014 average weekday passenger loads at each NHSL station in both the northbound and southbound directions for all NHSL service operated. These data show that the busiest stations, after the 69th Street Transportation Center and Norristown Transportation Center are Bryn Mawr, Gulph Mills, Ardmore Junction, Radnor, and Hughes Park.

Table 1-2.1: NHSL 2014 Average Weekday Ridership

Station	Northbound			Station	Southbound		
	Boards	Leaves	On Board		Boards	Leaves	On Board
69th St. Transportation Center	4,840	0	4,840	Norristown Transportation Center	1,473	0	1,473
Parkview	21	27	4,834	Bridgeport	131	25	1,579
Township Line Road	14	55	4,793	DeKalb Street	239	7	1,811
Penfield	16	213	4,596	Hughes Park	245	28	2,028
Beechwood Brookline	22	171	4,447	Gulph Mills	561	42	2,547
Wynnewood	10	127	4,330	Matsonford	29	7	2,569
Ardmore Junction	109	489	3,950	County Line	15	1	2,583
Ardmore Avenue	21	95	3,876	Radnor	379	70	2,892
Haverford	15	151	3,740	Villanova	121	21	2,992
Bryn Mawr	74	611	3,203	Stadium	105	9	3,088
Roberts Road	24	65	3,162	Garrett Hill	110	14	3,184
Garrett Hill	12	112	3,062	Roberts Road	78	20	3,242
Stadium	6	126	2,942	Bryn Mawr	582	60	3,764
Villanova	23	112	2,853	Haverford	157	9	3,912
Radnor	59	328	2,584	Ardmore Avenue	97	14	3,995
County Line	1	19	2,566	Ardmore Junction	453	92	4,356
Matsonford	4	27	2,543	Wynnewood	119	9	4,466
Gulph Mills	49	607	1,985	Beechwood Brookline	160	10	4,616
Hughes Park	34	273	1,746	Penfield	228	18	4,826
DeKalb Street	7	181	1,572	Township Line Road	66	11	4,881
Bridgeport	14	142	1,444	Parkview	21	21	4,881
Norristown Transportation Center	0	1,444	0	69th St. Transportation Center	0	4,881	0
Totals	5,375	5,375	0	Totals	5,369	5,369	0

Source: SEPTA, 2014 Ride Checks (5/6/2014), all day, all service on the NHSL.

When the NHSL was first constructed and for many years that followed, the predominant direction of travel was the traditional peak-direction, suburb-to-city commute to the 69th Street Transportation Center with a transfer to downtown Philadelphia via the Market-Frankford Line in the morning and the reverse pattern in the late afternoon. However, beginning in the 1970s and into the 1980s, the passenger flow gradually shifted to a reverse commute pattern from Philadelphia. The reverse commute phenomenon largely reflected intensive office development near the Radnor Station but also service sector employment at Bryn Mawr Hospital. Subsequent extensive land development in Upper Merion Township and in the transportation study area, in particular, contributed to new work and shopping trips. However, NHSL passengers must transfer to bus at Gulph Mills Station, DeKalb Street or Norristown Transportation Center to reach the King of Prussia Mall and other destinations in the transportation study area.

NHSL passengers from communities along the line, Norristown and Philadelphia must transfer to bus at Gulph Mills Station, DeKalb Street Station, or Norristown Transportation Center to reach the King of Prussia Mall and other destinations in the transportation study area.

Subsequent extensive land development in Upper Merion Township and in the transportation study area, in particular, contributed to new work and shopping trips. However, NHSL passengers must transfer to bus at Gulph Mills Station, DeKalb Street or Norristown Transportation Center to reach the King of Prussia Mall and other destinations in the transportation study area.

Average weekday ridership on the NHSL has seen a relatively steady increase over the past decade. The NHSL is ranked highest in terms of average daily ridership of all SEPTA's Suburban Transit Routes.

1.2.5 Existing Bus Transportation

Six SEPTA bus routes serve the transportation study area; they are bus routes 92, 99, 123, 124, 125, and 139 (see Figure 1-2.2). Table 1-2.2 provides data for each route including the number of daily trips, number of trips on the Schuylkill Expressway (I-76), total mileage traveled on the Schuylkill Expressway, average speed on the Schuylkill Expressway, average weekday ridership, cumulative on-time performance, and annual ridership.

Ridership on SEPTA's six transportation study area bus routes has increased steadily since Fiscal Year 2010 with an overall increase of 36% in the past five years (SEPTA, 2015 Annual Route Operating Reports). Total average weekday ridership across the six bus routes exceeds 6,300 passenger trips as reported in Table 1-2.2.

Figure 1-2.2: Transportation Study Area SEPTA Bus Routes and Shuttle Services

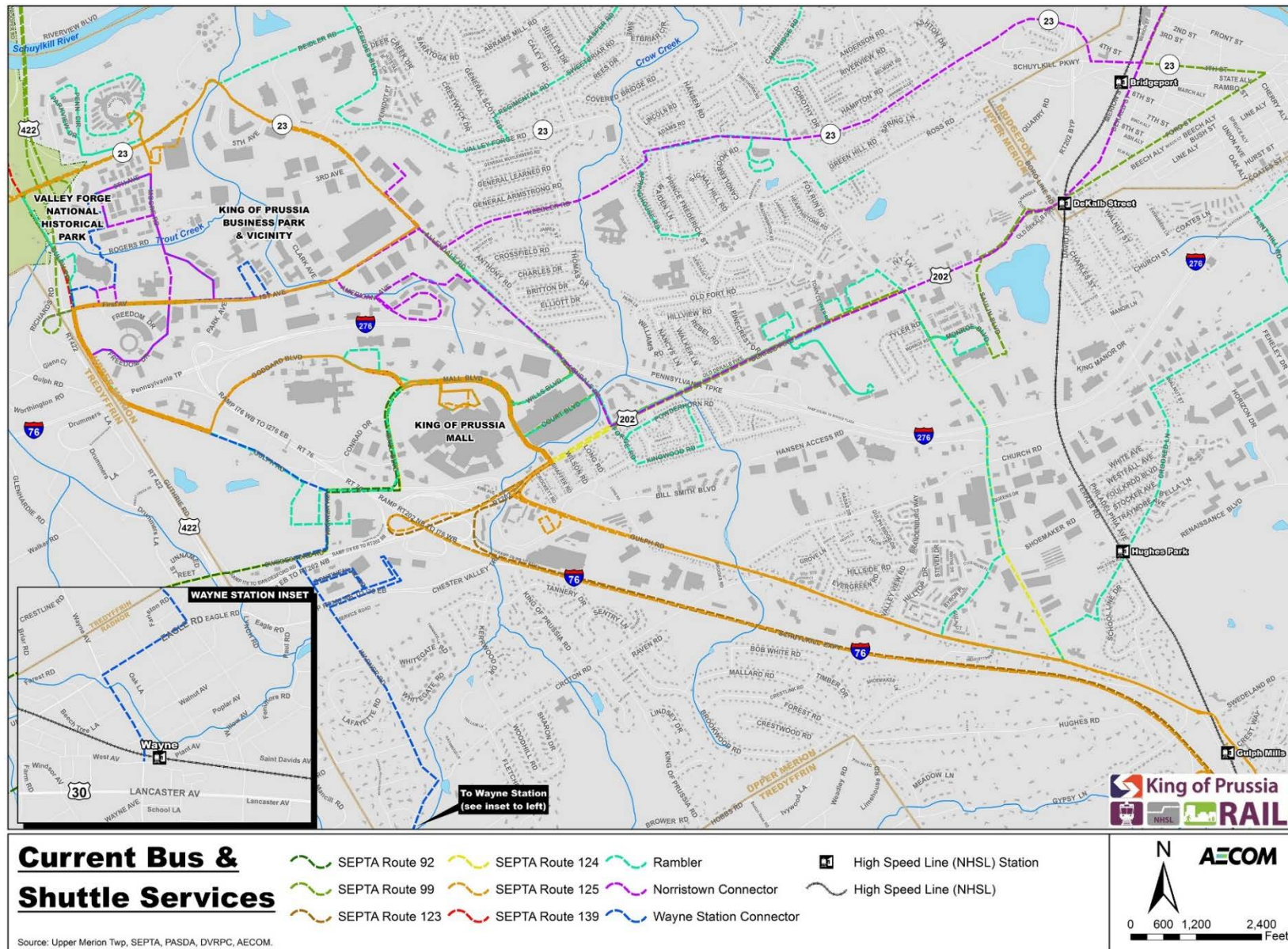


Table 1-2.2: Summary of Bus Service Levels and Operations

Bus Route	Number of Weekday Bus Trips	Number of Trips on I-76	Total Miles on I-76	Avg. Speed on I-76 EB AM (mph)	Avg. Speed on I-76 WB PM (mph)	Avg. Speed on I-76 WB AM (mph)	Avg. Speed on I-76 EB PM (mph)	Weekday Ridership	On-Time Performance	Number of Saturday Bus Trips	Number of Sunday Bus Trips	Annual Ridership
92	25	No service along I-76						402	71%	20	n/a	121,260
99	62	No service along I-76						1,381	79%	55	33	405,820
123	51	51	204	20.3	16.9	47.4	15.5	817	84%	51	41	328,590
124	59	59	811	20.3	16.9	47.4	15.5	1,452	66%	51	37	481,590
125	70	70	959	20.3	16.9	47.4	15.5	1,767	63%	52	38	532,220
139	32	No service along I-76						491	82%	21	n/a	138,280
Total Weekday Ridership:								6,310				

Sources: SEPTA *Route Statistics*, bus schedules, Annual Service Plan (2016), AECOM/M&S travel time study (2012).

1.2.5.1 Travel Time and Reliability

Regarding travel time, bus riders are subject to the same congestion delays as motorists, as buses share roadway travel lanes with general traffic. As Table 1-2.2 indicates, 181 buses from SEPTA bus routes 123, 124 and 125 travel 1,982 miles each weekday on the Schuylkill Expressway (I-76). Existing travel speed survey data show low average vehicular speeds of 20 miles per hour along the Schuylkill Expressway eastbound during the morning peak period and 17 miles per hour westbound during the evening peak period. As a result, bus routes 124 and 125, which run the longest distance on the Schuylkill Expressway (14 miles per one-way trip), have some of the lowest cumulative on-time performance in the entire SEPTA bus system. SEPTA's on-time performance standard for bus service is 80%, but the on-time performance rates for these routes are below that at 66% and 63%, respectively.

The travel speeds and times reported in Table 1-2.2 are averages, which means that travel times on existing bus routes can vary from ride to ride depending on roadway traffic conditions. During periods of heaviest congestion, such as in poor weather or during accident events involving other vehicles for example, roadway congestion can be heavier than normal and travel times can be longer. Roadway congestion at any given peak hour also varies from day to day depending on typical factors, such as employment and child care schedules and routine roadway maintenance activities. As a result, bus travel times tend to be unreliable.

1.2.5.2 Travel to and Among Key and other Study Area Destinations

Because the NHSL does not serve the transportation study area, transit travelers must use existing buses or transfer to SEPTA bus service from the NHSL to reach key and other destinations. SEPTA bus routes 124 and 125 currently connect with the NHSL at the Gulph Mills Station, while route 99 connects with the NHSL at the DeKalb Street Station and Norristown Transportation Center. The minimum of a two-seat transit trip introduces inconvenience and additional travel time in order to complete the entire trip.

For existing bus riders on three of SEPTA's six bus routes, only one key destination (the King of Prussia Mall) is served. As a result, riders traveling to the Business Park, Valley Forge National Historical Park, and potentially other destinations in the transportation study area on these three routes, must transfer to another bus route to complete their travel. Simply adding these other destinations by changing the routing used for these bus routes is not a practical solution as total travel times for passengers destined elsewhere on these routes can become long, and routing changes may eliminate service to other existing stops. Two of six routes serve the US Route 202 area and one route serves the Henderson Road area. Each transfer adds to a rider's overall travel time. Having to make a transfer and then waiting some period of time at a bus stop for the next bus to arrive reduces the convenience of transit travel. Public comment from some transit users noted that using transit can take longer, sometimes much longer, to reach destinations in the transportation study area than travel by personal automobile. Because of the inconvenience of longer travel times and transfers, bus can be a less desirable and less competitive travel mode to driving.

1.2.6 Commuter Shuttle Service

A commuter transit shuttle service connects the King of Prussia Business Park to SEPTA's rail system at the Norristown Transportation Center and Wayne Station. The Greater Valley Forge Transportation Management Association (GVFTMA) and the KOP-BID provide connecting shuttle services as a complement to SEPTA transit services. Shuttle buses serve a different function than SEPTA services. While SEPTA services provide a connection between King of Prussia and other areas in the Philadelphia region, shuttle buses primarily provide "last mile" connections between nearby transit stations and employment areas or residential areas. The shuttle enables transit travelers, particularly workers, to access destinations in the Business Park. The commuter transit shuttle operates Monday-Friday during the morning and evening commute. It operates in roadway traffic, experiencing the same congestion and delays as traveling by personal automobile.

1.2.7 Transit Service Markets

Existing land use patterns in the Philadelphia region have led to increased suburb-to-suburb travel to and from key and other destinations in the transportation study area and increased urban-to-suburban travel (reverse trip-making) from urban centers (Norristown, Upper Darby and Philadelphia) to suburban centers (King of Prussia-Valley Forge). The diversity of land uses in the transportation study area means that both origins and destinations for transit patrons are present. With 57,038 jobs in the transportation study area and 28,620 residents, there are three distinct travel markets:

- Travel from within the transportation study area to destinations outside the transportation study area — This pattern reflects people traveling from the transportation study area, such as residents and employees, to destinations along the NHSL and to Philadelphia. This travel pattern is typically a relatively short to moderate-length trip across a portion of the transportation study area as part of a longer trip outside the transportation study area. Trips are characteristically from residential communities in the transportation study area to access the NHSL and bus services, or travel by personal vehicle.
- Travel from outside the transportation study area to key and other destinations in the transportation study area — This pattern reflects employees, shoppers, and other travelers from outside the transportation study area, especially from locations along the NHSL and Philadelphia to destinations in the transportation study area, such as the King of Prussia Mall and the King of Prussia Business Park. These trips use bus, the NHSL with a transfer to bus services or shuttle, or personal vehicle to access transportation study area destinations. These trips involve relatively short distance travel within the transportation study area as part of a longer trip.
- Travel within the transportation study area — Some travel occurs entirely within the transportation study area, involving primarily residents, employees and shoppers traveling from residential communities to destinations within the transportation study area. Characteristically, this travel is by personal vehicle, unless bus service is convenient to both travel ends.

Consistent with the second bullet above, the transit ridership data for the six existing SEPTA bus routes in the transportation study area (shown in Table 1-2.2) and the transit ridership data for the existing NHSL (shown in Table 1-2.1) indicate that a transit market exists for trips destined to the transportation study area, to and from Philadelphia, Upper Darby and Norristown, and from other points along the NHSL.

A transit market exists for trips destined to the King of Prussia area, to and from Philadelphia, Upper Darby, and Norristown, and from other points along the NHSL.

Transit-dependent persons are a population sector found in each of the three transit market sectors previously described. Transit-dependent persons are typically defined as those persons in households with no cars or persons in households below the poverty line. The transit-dependent populations in the transportation study area, as well as the urbanized centers of Philadelphia, Upper Darby, and Norristown, are adversely affected by limited connectivity and the unreliability of the existing transit services to and from the transportation study area.

1.2.8 Roadways

The Schuylkill Expressway (I-76) is the major freeway facility connecting the transportation study area to Center City Philadelphia, serving as a gateway from the rest of Pennsylvania and southern New Jersey. Three SEPTA bus routes serve the transportation study area and travel on I-76. As shown in Table 1-2.3, I-76 functions at or near capacity in both directions during most peak periods and many non-peak travel periods under Base Year (2013) conditions. By 2040, I-76 will function at capacity in both directions in nearly all travel periods. As traffic volumes increase and no change in roadway capacity occurs, travel times and delays for buses and other vehicles will increase.

High volumes of traffic traveling to, from, and within the transportation study area cause a significant amount of traffic congestion on area roadways in the existing condition. DVRPC analysis verifies this condition, as reported in AECOM's 2013 *Existing Conditions and Future "No Build" Conditions Technical Memorandum*. Existing traffic volumes approach and in some locations exceed the capacity of area roadways. The roadways most affected are I-76, I-276, and US Routes 422, 202 and PA Route 23. However other transportation study area roadways, such as Gulph Road, Henderson Road and 1st Avenue, also experience congestion, particularly in peak travel periods. By 2040, forecasted growth in traffic volumes will cause area roadways to be more congested, with increased delays over more and longer roadway segments.

Table 1-2.3 V/C Ratios for I-76 – 2013 Base Year and 2040 No Action Conditions

I-76	2013 Base Year				2040 No Action			
Westbound	AM	MD	PM	NT	AM	MD	PM	NT
Gulph Road to US-202	.96	.88	1.14	.67	.93	.86	1.15	.71
I-476 to Gulph Road	1.07	.92	1.15	.74	1.08	.93	1.16	.77
Hollow Road to I-476	.99	.87	1.13	.76	1.00	.91	1.17	.81
Belmont Road to Hollow Road	1.12	.97	1.25	.82	1.12	1.01	1.29	.87
City Avenue to Belmont Road	1.12	.99	1.31	.84	1.12	1.02	1.33	.88
Montgomery Drive to Roosevelt Boulevard	.87	.87	1.10	.67	.86	.89	1.10	.69
Girard Avenue to Montgomery Drive	.89	.89	1.13	.68	.88	.90	1.13	.70
Eastbound	AM	MD	PM	NT	AM	MD	PM	NT
US-202 to Gulph Road	1.22	1.06	1.23	.87	1.21	1.04	1.20	.88
Gulph Road to I-476	1.21	1.11	1.27	.92	1.23	1.11	1.27	.92
I-476 to Hollow Road	1.15	.98	1.15	.91	1.23	1.02	1.16	.94
Hollow Road to Belmont Road	1.31	1.13	1.34	.99	1.36	1.17	1.35	1.03
Belmont Road to City Avenue	1.36	1.17	1.37	.97	1.40	1.20	1.37	1.00
Roosevelt Boulevard to Montgomery Drive	1.11	.88	.99	.70	1.14	.90	1.01	.72
Montgomery Drive to Girard Avenue	1.12	.89	1.01	.72	1.15	.91	1.02	.74

Notes: MD = Midday; NT = Nighttime; red hatching indicates where volumes equal or exceed capacity ($v/c \geq 1$); V/C values close to or greater than 1 indicate a heavily traveled roadway that experiences congestion.

Source: DVRPC, 2015.

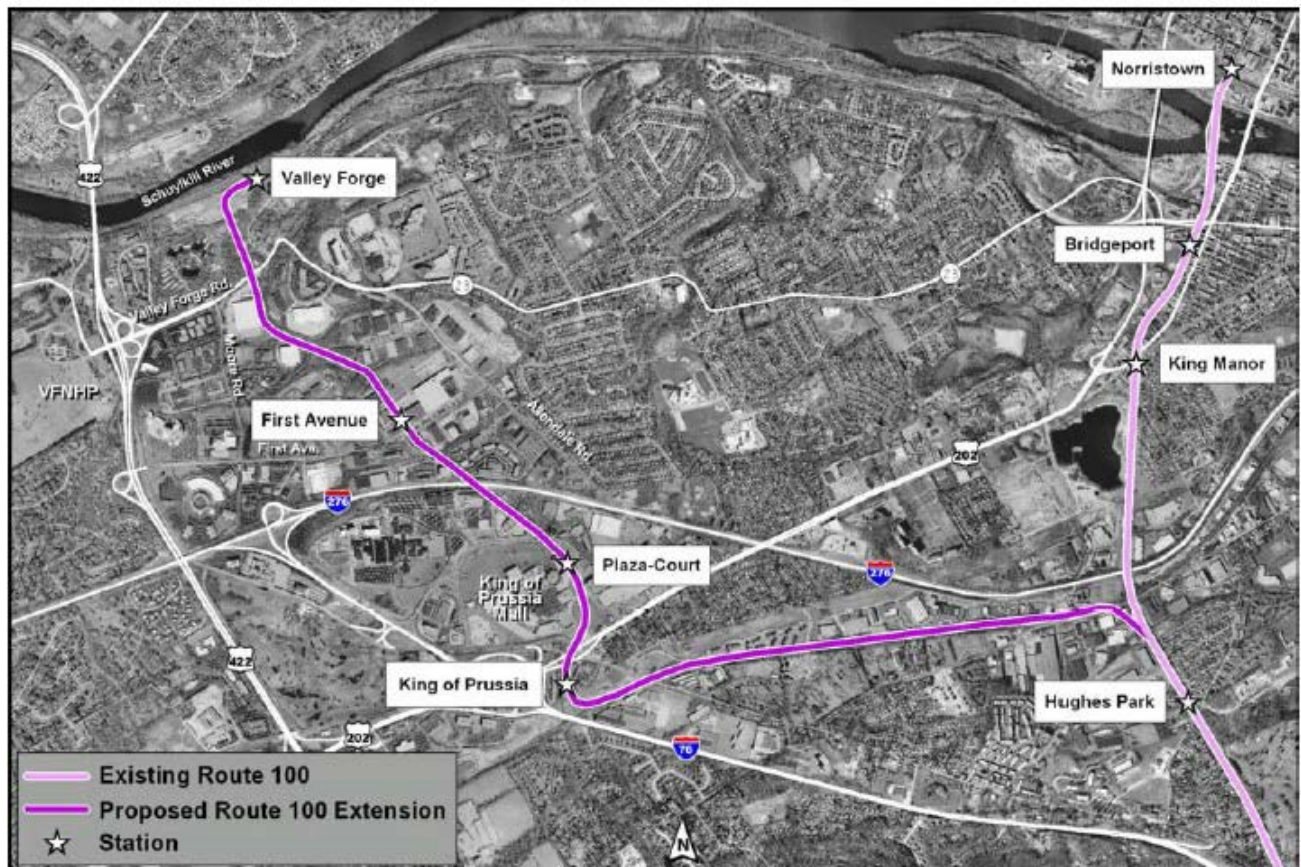
Traffic trying to avoid these most affected roadways creates congestion problems on other roads, such as Croton and King of Prussia Roads, Henderson and Church Roads, or within Valley Forge National Historical Park. When crashes or incidents occur or traffic is rerouted for other reasons, many other roads and intersections in the transportation study area bear the burden of significant congestion problems.

1.3 Project History

Deficiencies in transit service to, from and within the transportation study area have been identified in various forms for more than 20 years in regional transportation studies and in Upper Merion Township's adopted 2005 *Land Use Plan*. As early as 1996, SEPTA and its partners in the region explored potential solutions reported in the 1998 *Norristown High Speed Line (Route 100) Extension Feasibility Study*, followed by the 2003 *Norristown High Speed Line (Route 100) Extension Draft Alternatives Analysis*. These studies examined the potential extension of NHSL rail transit service to the transportation study area. Concurrently, the 2001 *Schuylkill Valley Metro Major Investment Study/Draft Environmental Impact Statement* and 2003 *Cross County Metro Alternatives Analysis/Draft Environmental Impact Statement* were undertaken, which among other findings pointed to the need for transit improvements to better serve the transportation study area.

SEPTA's 2003 *Norristown High Speed Line (Route 100) Extension Draft Alternatives Analysis*, identified a range of alternative alignments to extend NHSL rail service to the transportation study area, screened the alternatives, and evaluated the feasibility and cost to implement such an extension. Based on the results of the study, SEPTA decided to pursue Alternative A1, which would extend NHSL service to the transportation study area using part of the two Norfolk Southern corridors in the area, making stops at King of Prussia Road, the King of Prussia Mall, the Business Park and the vicinity of PA Route 23 near Mancill Mill Road (near Valley Forge National Historical Park) (Figure 1-3.1). However, SEPTA did not adopt Alternative A1 as the Locally Preferred Alternative. At the time, SEPTA's focus was on applying its limited capital funds to maintenance and repair of its existing infrastructure rather than on investment in expansion projects. This decision resulted in the extension of the NHSL being included as an unfunded project in the original DVRPC *Connections 2040 Plan*. However, with the passage of Pennsylvania's Act 89 legislation and a doubling of SEPTA's capital budget, the *Connections 2040 Plan* was amended in 2013, and the proposed Project is now shown as a funded project.

Figure 1-3.1: Alternative A1, 2003 NHSL Extension Draft Alternatives Analysis



Source: SEPTA, 2003 Norristown High Speed Line (Route 100) Extension Draft Alternatives Analysis, Exhibit 21

Since the 2003 NHSL study, the following activities occurred that provide context for the proposed Project:

- DVRPC's regional travel demand model, which is the basis for forecasting transit ridership and traffic volumes for major transportation projects, has been updated to a new platform and reflects 2013 transit ridership.
- The KOP-BID and Upper Merion Township worked together on new zoning for the King of Prussia Business Park. The zoning district includes changes to support mixed-use and transit-oriented development that, in turn, could support future transit stops.
- Both Upper Merion Township and Montgomery County have completed updates to their comprehensive and land use plans to help support higher transit service levels.
- DVRPC's adopted, fiscally constrained Long-Range Transportation Plan (*Connections 2040*) includes higher transit service levels in the transportation study area.
- Passage of Pennsylvania's Act 89 legislation that increased funding for transportation projects and included providing capital needs for transit projects. Act 89 allows SEPTA to study potential expansion projects in addition to continuing its investment in existing infrastructure maintenance and repair.
- There are two new prospects for funding sources: the Commonwealth of Pennsylvania passed legislation that allows for public-private partnerships; and the KOP-BID was formed with the intent of providing funding for capital projects in the King of Prussia area.
- The transportation study area continues to experience growth and investment in its retail, dining, hospitality, office, and tourism sectors.

By 2012, the combination of the foregoing activities provided a favorable context for SEPTA to again consider improving transit service to the transportation study area.

In 2012, SEPTA began preparations for entering the NEPA process to further evaluate the potential to extend NHSL rail transit service to the transportation study area. These activities included initiating a public and agency outreach program, developing a long list of alternatives, developing a three-tiered screening and evaluation process to examine proposed alternatives, and completing the first tier of screening and evaluation for the Project. These activities are described in greater detail in Section 2.1.2. The long list included alternatives from SEPTA's 2003 *Norristown High Speed Line (Route 100) Extension Draft Alternatives Analysis*, new concepts SEPTA and its engineering consultants developed, and ideas identified through agency, stakeholder, and public outreach activities. When the Notice of Intent (NOI) to prepare a NEPA DEIS for the Project was published by FTA on June 27, 2013, SEPTA had identified 12 alternative alignments for further screening and evaluation. More discussion of NEPA initiation and screening activities for the Project is provided in Section 2.1.3.

1.4 Need for the Project

As shown in the description of the transportation study area in Section 1.2 Context, the market exists for potentially expanding transit service to, from and within the transportation study area. This market currently is not served well due to limitations of the existing transportation infrastructure and the deficiencies in current transit service. Specifically, the need for expanded transit service has three components: (1) faster, more reliable public transit service; (2) better transit connections to and within the transportation study area; and (3) transit service to better serve existing patrons and accommodate new patrons.

1.4.1 Need for Faster, More Reliable Public Transit Service to the King of Prussia Area

Existing bus and complementary “last mile” shuttle bus services are the only transit options for access to key and other transportation study area destinations. Bus riders are subject to the same roadway congestion delays as motorists, as buses share roadway travel lanes with general traffic. As Table-1-2.2 indicates, existing travel speed survey data show bus routes 123, 124 and 125 have low average vehicular speeds during peak periods. Slow travel speeds result in on-time performance rates for the six bus routes of 63% to 84% depending on the route. Routes 124 and 125 use the Schuylkill Expressway and have the poorest average on-time performance rates of 66% and 63%, respectively.

The Project need has three components: (1) the need for faster, more reliable public transit service; (2) the need for better transit connections to and within the transportation study area; and (3) the need for transit service to better serve existing patrons and accommodate new patrons.

The developed character of land use and challenging physical geography alongside the Schuylkill Expressway provide little opportunity to increase and assure more roadway capacity or provide a dedicated, parallel transit corridor. It is for these reasons that PennDOT has no currently programmed investments to widen the Expressway. Thus, another transit solution is needed to overcome these deficiencies.

Travel times on existing bus routes vary from ride to ride depending on roadway traffic conditions, driver schedules, weather and other factors. As a result, bus travel times are unreliable. The inability of some SEPTA bus routes to achieve SEPTA’s on-time performance standard and the occurrence of slow peak period travel speeds cause travel time by bus to be lengthy and unreliable. Expected future growth in roadway volumes, described in Section 1.2.8, will increase roadway congestion, causing longer and more unreliable bus travel times. As a result, there is a need for a faster, more reliable, public transit service, one with travel times that are competitive with travel times by personal automobile.

SEPTA has rationalized its transit network serving the area in terms of service frequency, destinations served, and connections between bus and NHSL modes. Rationalization means that SEPTA provides the number of buses, scheduled bus trips and stops necessary to efficiently meet transit demand given the characteristics of the existing roadway network and its operating capabilities.

The inability of many SEPTA bus routes serving the area to achieve SEPTA’s on-time performance standard and the occurrence of slow peak period travel speeds, particularly along the Schuylkill Expressway, results in lengthy and unreliable travel times by bus. It is infeasible to overcome the problems SEPTA’s bus transit service experiences by only considering the bus mode. Another transit solution is needed to address these deficiencies.

1.4.2 Need for Improved Transit Connections to and within the King of Prussia-Valley Forge Area

The need for improved transit connections is demonstrated by two problems. First, not all of SEPTA's six bus routes serving the transportation study area access the three key and other transportation study area destinations. As described in Section 1.2.5, some routes only serve the King of Prussia Mall, while other routes serve several other destinations. As a result, a rider may have to transfer to another bus route may to access some destinations, or between key or other destination.

Second, existing NHSL riders from communities along the NHSL, from Norristown and from Upper Darby must transfer to bus service to reach transportation study area destinations (Section 1.2.5). In making this transfer from NHSL to bus, additional travel time is required for those riders to connect to key destinations that are only a few miles from the existing NHSL line. For NHSL riders from Philadelphia traveling to key destinations within the transportation study area, this is the second transfer to a third, different transit service to make the trip (SEPTA's Market-Frankford Line, the NHSL and then bus).

Each transfer among bus and/or rail services adds to a rider's overall travel time and reduces the convenience of transit travel. Because of the inconvenience of longer travel times and transfers, bus is a less desirable and less competitive travel mode to driving.

For these reasons and with growing ridership markets to key and other transportation study area destinations, there is a need for transit services to connect to these destinations in a manner that is more convenient and time-competitive with travel by personal automobile and reduces the need for transfers among transit modes to reach transportation study area destinations.

1.4.3 Need to Better Serve Existing Transit Patrons and Accommodate New Patrons

Ridership on SEPTA's six transportation study area bus routes and rail transit services at the Norristown Transportation Center has increased steadily since Fiscal Year 2010 with an overall increase of 36% in the past five years (SEPTA, 2015 Annual Route Operating Reports). Recent as well as forecasted growth and development by 2040 that are described in Sections 1.2.1, 1.2.2 and 1.2.3, including growth in jobs (14.7%) and population (18.8%), recent mixed use re-zoning of the Business Park in anticipation of future redevelopment, increased shopping opportunities (155,000 new square feet of retail space at the King of Prussia Mall) and 3,000 new residential units at the Village at Valley Forge will place more demands on the transportation system. With six bus routes and an increasingly congested roadway network, the market for improved transit service as an alternative to travel by personal automobile to, from and within the transportation study area will continue to grow.

Bus service capacity is a function of vehicle size and the number of possible daily and peak hour trips. As described in Section 1.4.1, SEPTA has already rationalized its transit network serving the existing transportation study area demand in terms of service frequency, destinations served and connections between bus and NHSL modes.

Adding buses to the transit system serving the transportation study area to meet future demand is not a viable solution as it is not possible to overcome the roadway congestion problem. Thus, there is a need for another solution that will both increase transit service capacity and enhance service quality to better serve existing transit patrons and to accommodate new transit riders traveling to, from and within the transportation study area.

Chapter 2.0 Alternatives Considered

This chapter summarizes the alternatives development, analysis and evaluation process that defined the alternatives that are the subject of the DEIS. These alternatives include: five Action Alternatives, including a recommended Locally Preferred Alternative (LPA), two recommended LPA design options and the No Action Alternative.

2.1 Alternatives Development and Evaluation

This section provides a summary of Project-related studies that SEPTA conducted prior to initiating the NEPA process for the Project as well as a summary of activities that SEPTA undertook after initiating the NEPA process to further develop and evaluate alternatives.

2.1.1 Previous Studies

As discussed in Chapter 1, deficiencies in transit service to the transportation study area (Figure 1-1.2) have been identified in various forms for more than 20 years in regional transportation studies and in Upper Merion Township's adopted 2005 *Land Use Plan*. Early studies, particularly SEPTA's 1998 *Norristown High Speed Line (Route 100) Extension Feasibility Study*, followed by the 2003 *Norristown High Speed Line (Route 100) Extension Alternatives Analysis*, pointed to the need for transit improvements to better serve the King of Prussia-Valley Forge area and examined potential extension of NHSL rail transit service to the area.

Then, as described in Section 1.3, a number of events occurred that provided context for the proposed Project and readied the region to make a transit investment: DVRPC's regional travel demand model update, new zoning in the King of Prussia Business Park, township and county updates to the comprehensive and land use plans to support higher transit services levels and additional prospects for capital project funding.

The combination of these events provided a favorable context for SEPTA to again consider improving transit service to the transportation study area. SEPTA first considered whether improvements to existing bus service would overcome the problems experienced serving the transportation study area.

2.1.1.1 Bus Service Mode

SEPTA's transit network serves the transportation study area by means of six bus routes (92, 99, 123, 124, 125 and 139) that provide service to and from Philadelphia and the surrounding area as well as connecting service to NHSL stations (Section 1.2.5). Within the context of the existing roadway network, SEPTA's transit network is rationalized in terms of service frequency, destinations served, and connections between bus and NHSL modes. This means that SEPTA provides the number of buses, the scheduled bus trips and the stops necessary to efficiently serve the traveling public given the characteristics of the existing roadway network and its operating capabilities.

Owing to congested roadway conditions, particularly in both directions on the Schuylkill Expressway during peak travel periods, on-time performance rates for SEPTA bus routes, as shown in Table 1-2.2, range from a low of 63 percent (route 125, which runs the longest distance on the Schuylkill Expressway (I-76)) to 84 percent (route 123). Only two of six routes achieve SEPTA's on-time bus performance standard of 80 percent. The average bus travel speed on I-76 during the eastbound morning peak period is 20.3 miles per hour; in the westbound evening peak, average bus travel speeds are lower at 16.9 miles per hour. The inability of many SEPTA bus routes to achieve on-time performance and the occurrence of slow peak period travel speeds, particularly along the Schuylkill Expressway, cause travel time by bus to be lengthy and unreliable. Expected future growth in roadway volumes, described in Section 3.2.2, will increase roadway congestion, causing longer and more unreliable bus travel times.

The developed character of land use and challenging physical geography alongside the Schuylkill Expressway provide little opportunity to increase roadway capacity or provide a dedicated, parallel transit corridor. It is for these reasons that PennDOT has no currently programmed investments to widen the Expressway. Thus, another transit solution is needed to overcome these deficiencies.

As reported in Section 1.2.8, roadways in the transportation study area experience traffic congestion and delays, particularly in peak travel periods. Existing traffic volumes approach and in some locations exceed the capacity of area roadways. Aside from I-76, the roadways most affected are I-276, Routes 422, 202 and 23, and other roadways, such as Gulph Road, Henderson Road and 1st Avenue. As noted above, these conditions cause travel time by bus to be lengthy and unreliable in the existing condition. By 2040, forecasted growth in traffic volumes will cause area roadways to be more congested with longer delays over more roadway segments. In 2040, longer bus travel times and less reliability can be expected.

While SEPTA could potentially increase bus service between the NHSL and transportation study area destinations, bus travel time and reliability would be subject to the same roadway congestion and delays as the routes SEPTA already operates. In addition, more buses would not overcome the inconvenience of transfers between NHSL rail and bus modes. Thus, increasing bus service in the transportation study area would not achieve the Project need for providing faster, more reliable public transit service, or better accommodating existing and future transit patrons. Therefore, no bus service alternatives were considered in the DEIS. Bus alternatives were explored in both the 1998 and 2003 studies referenced above. The 2003 study evaluated a bus alternative as a baseline alternative and the 1998 study evaluated a bus alternative as both a lower cost, transportation systems management alternative and as a fixed route bus alternative operating along busways and on local roads.

2.1.2 Pre-Scoping Activities

Prior to NEPA scoping, FTA and SEPTA initiated a public and agency outreach program, developed a long list of alternatives, developed a three-tiered screening and evaluation process to examine proposed alternatives and completed the first tier of screening and evaluation for the Project. This subsection describes these activities. More detail on the screening and evaluation

is provided in the 2015 *KOP Rail Tier 1 & 2 Screening Results Technical Memorandum*, which is available on the Project website (www.kingofprussiarail.com).

2.1.2.1 Public and Agency Outreach Program

SEPTA developed and implemented a Public Involvement Plan and Agency Coordination Plan to guide public and agency outreach for the Project (Appendix C). The outreach program consists of agency, stakeholder, technical and steering committees that offer guidance and direction regarding Project activities, as well as public meetings and workshops during which SEPTA, in coordination with FTA, provide information and seek input. SEPTA also initiated a program of meetings and a “listening tour” with other stakeholders to begin a two-way dialogue during pre-scoping and the NEPA process. Continuing this public outreach beyond the pre-scoping period, SEPTA maintains a Project website and uses social media for outreach. Chapter 7 provides more detail regarding the public and agency outreach program for the Project.

2.1.2.2 Alternatives Development and Evaluation

FTA and SEPTA initiated the alternatives development and evaluation process by developing a “long list” of alternatives that primarily use existing transportation corridors or utility rights-of-way and were focused on rail alternatives only as bus alternatives had been eliminated for the aforementioned reasons. Transportation and utility corridors are typically linear in nature, providing an opportunity to co-locate a transit service alignment. The developed character of such corridors reduces the potential for Project impacts on the natural and built environment. Corridors considered in the long list of alternatives included the following key corridors: I-76, I-276/PA Turnpike, US Route 202, N. Gulph Road, Moore Road, Norfolk Southern Railroad (NS) right-of-way (ROW), NS Abrams Yard and the PECO electric utility corridor.

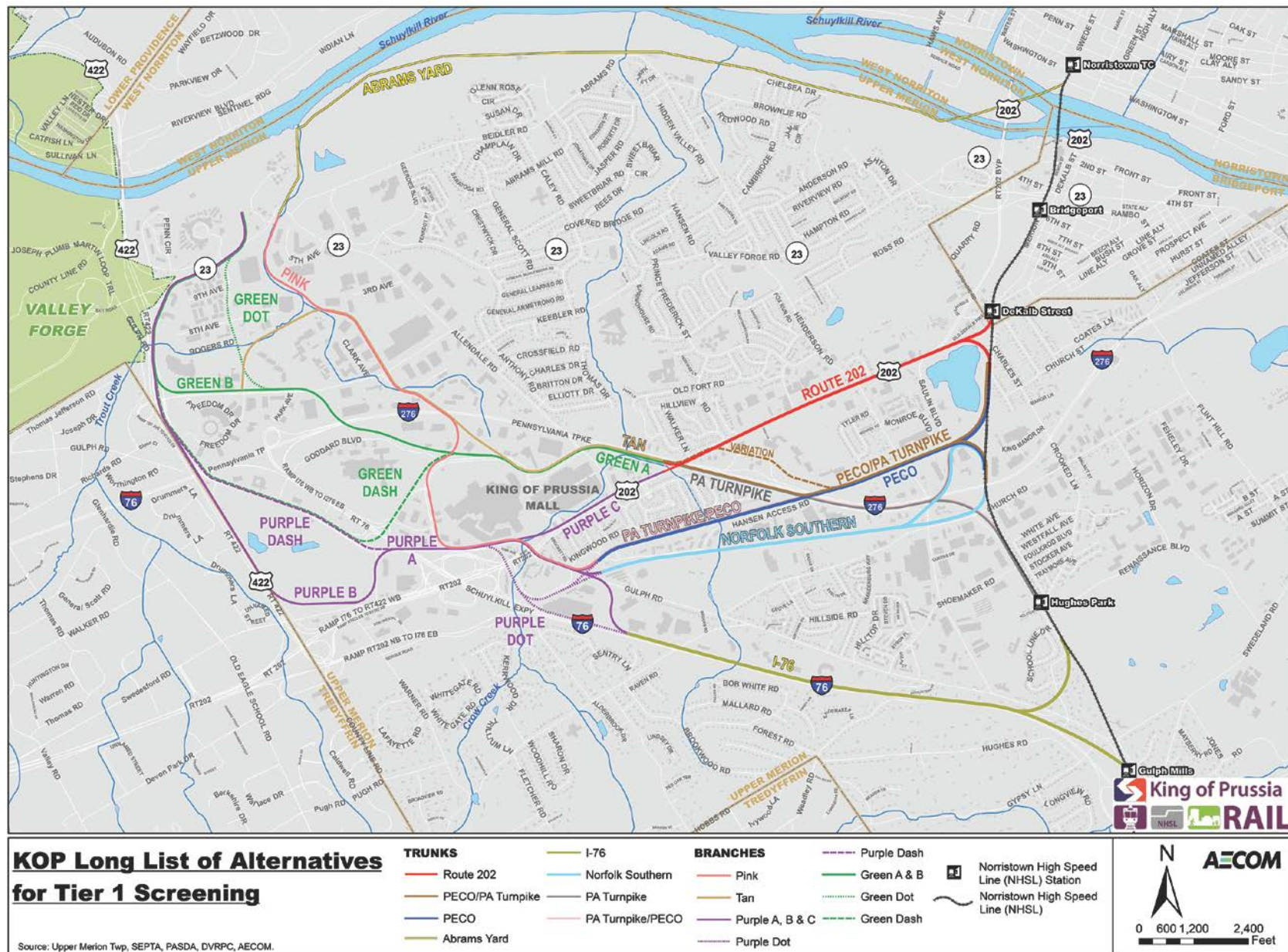
The list included alternatives resulting from SEPTA’s 2003 *Route 100 Extension Draft Alternatives Analysis*, new concepts SEPTA and its engineering consultants developed, and ideas identified through agency, stakeholder and public outreach activities in early 2013. Figure 2-1.1 shows the long list of alternatives.

2.1.2.3 Three-Tiered Screening and Evaluation Approach

The three-tiered screening and evaluation process was designed to help SEPTA identify and screen a wide range of proposed alternatives. Each step of the process (Tier 1, Tier 2 and Tier 3) results in progressively fewer alternatives that would then undergo progressively more detailed levels of scrutiny. The Tier 1 screening, completed during pre-scoping, was a fatal flaw test intended to ensure the reasonableness of an alternative to be carried forward for further consideration; Tier 1 was conducted in two steps. FTA and SEPTA put each alternative through an evaluation process that consisted of the following steps:

- Step #1: A draft purpose and need statement was developed in consultation with SEPTA and FTA, and through the public and agency outreach program noted above. Does the alternative meet the Project’s purpose and need? If not, the alternative was considered fatally flawed and was eliminated from further consideration. Those that met the purpose and need moved on to Step #2.

Figure 2-1.1: Long List of Alternatives for Tier 1 Screening



- Step #2: Is the alternative reasonable to build, operate and maintain relative to the other alternatives? Can the dimensions (length, width and height) of the alternative be reasonably accommodated? If Step #2 could not be met, the alternative was considered fatally flawed and was eliminated.

Of the 30 alternatives evaluated in the Tier 1 screening, 18 were eliminated, and 12 were advanced for further study. Among the 12 alternatives carried forward for further study there were some common alignments; SEPTA grouped these common alignments for comparative analysis. Alternatives were then named for the common “Trunk” corridor each uses between the NHSL and the King of Prussia Mall: US Route 202, the PECO electric utility corridor (PECO), and for the PECO alternatives that also use the PA Turnpike (PECO/TP). Figure 2-1.2 shows the 12 alternatives advanced to Tier 2 screening and groups them by Trunk in the following list:

- PECO alignments – 3
- PECO/TP alignments – 3
- US 202 alignments – 6

Trunks and Branches

In the DEIS, each Action Alternative is composed of two parts:

Trunk: Using the analogy of a tree, each Action Alternative has a main trunk, which is the part of the alignment beginning at the existing NHSL and ending at the King of Prussia Mall.

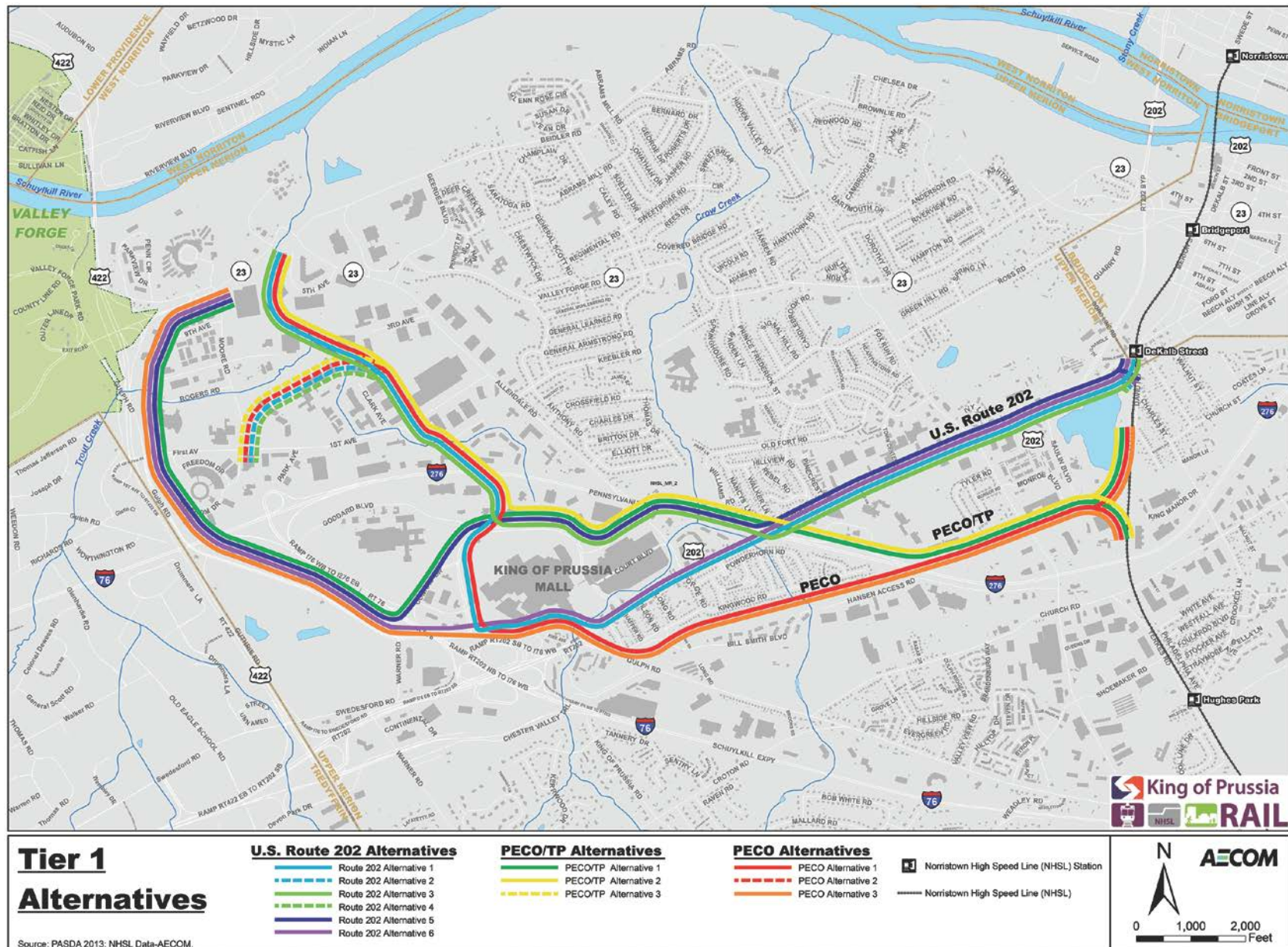
Branch: Extending from the trunk is a branch. The branch extends west from the King of Prussia Mall to the western Project terminus near the Valley Forge Casino Resort.

2.1.3 NEPA Initiation - Scoping and Alternatives Development

FTA and SEPTA initiated the NEPA process for the Project on June 27, 2013, with the publication of a Notice of Intent (NOI) to prepare an Environmental Impact Statement for increased transit service to King of Prussia, Pennsylvania. The NOI stated that the purpose of the Project is to provide “faster, more reliable public transit service that offers improved transit connections to the King of Prussia-Valley Forge area from communities along the existing Norristown High Speed Line, Norristown and Philadelphia; improve connectivity between major destinations within the King of Prussia-Valley Forge area; better serve existing transit riders; and accommodate new transit patrons.” The modal alternatives identified for evaluation were a No Action Alternative and rail transit alternatives. Bus transit alternatives in existing roadway travel lanes were specifically excluded from the study for the reasons provided in Section 2.1.1 and in consideration of previous studies.

Upon publication of the NOI, SEPTA initiated the scoping process by inviting interested individuals, organizations and agencies to provide their ideas, comments, and concerns regarding possible alternatives, alignments and station locations in the study area.

Figure 2-1.2: Preliminary Alternatives for Tier 2 Screening



In Tier 2 screening, SEPTA developed the alternatives surviving the Tier 1 screen into Preliminary Alternatives, meaning that a more detailed definition of each alternative was developed, including an initial service strategy (a preliminary rail service schedule). Further, four alternatives with at-grade (at or near the existing ground surface) elements were identified and added during Tier 2 in response to input received during scoping. This input requested that SEPTA consider building some parts of the Project on the surface of the ground rather than primarily elevated. As a result, a total of 16 alternatives were examined in the Tier 2 screening:

- PECO alignments – 4 (3 fully elevated, 1 with at-grade segments)
- PECO/TP alignments – 4 (3 fully elevated, 1 with at-grade segments)
- US 202 alignments – 8 (6 fully elevated, 2 with at-grade segments)

Figures 2-1.3, 2-1.4 and 2-1.5 show the 16 Preliminary Alternatives that were considered in Tier 2, grouped by Trunk. More detail on the Tier 2 screening and evaluation is provided in the 2015 *KOP Rail Tier 1 & 2 Screening Results Technical Memorandum*, which is available on the Project website (www.kingofprussiarail.com).

The Tier 2 screening process took a closer look at the Preliminary Alternatives by focusing on five categories of measures:

- Engineering/right-of-way needs category – measures: private area affected by guideway, other structures affected, order of magnitude capital cost estimate, number of intersections affected and number of institutions involved for right-of-way
- Market served category – measures: existing non-residential area served, existing office area served, 2040 daily Project trips, number of existing residential units served
- System connectivity category – measures: number of existing bus service connections, number of existing parks, trails and recreational areas served
- Support for transit-oriented development category – measures: number of stations in areas with transit-supportive zoning, KOP-BID area served
- Community and environmental impact assessment category – measures: impacts to water resources (floodplains, wetlands and streams), impacts to parks, trails, and recreation/open space areas, number of properties affected, potential visual change, potential temporary access change

Whereas most measures within each category distinguished performance between the Preliminary Alternatives, ridership and capital costs were found to be similar among the alternatives. Therefore, the focus of Tier 2 analysis was on the remaining measures. Of the remaining measures, SEPTA identified three (number of at-grade intersections affected, other affected structures and impacts to water resources), in which the potential impacts were significant enough for SEPTA to conclude that they should be considered fatal flaw criteria.

Figure 2-1.3: Preliminary PECO Alternatives

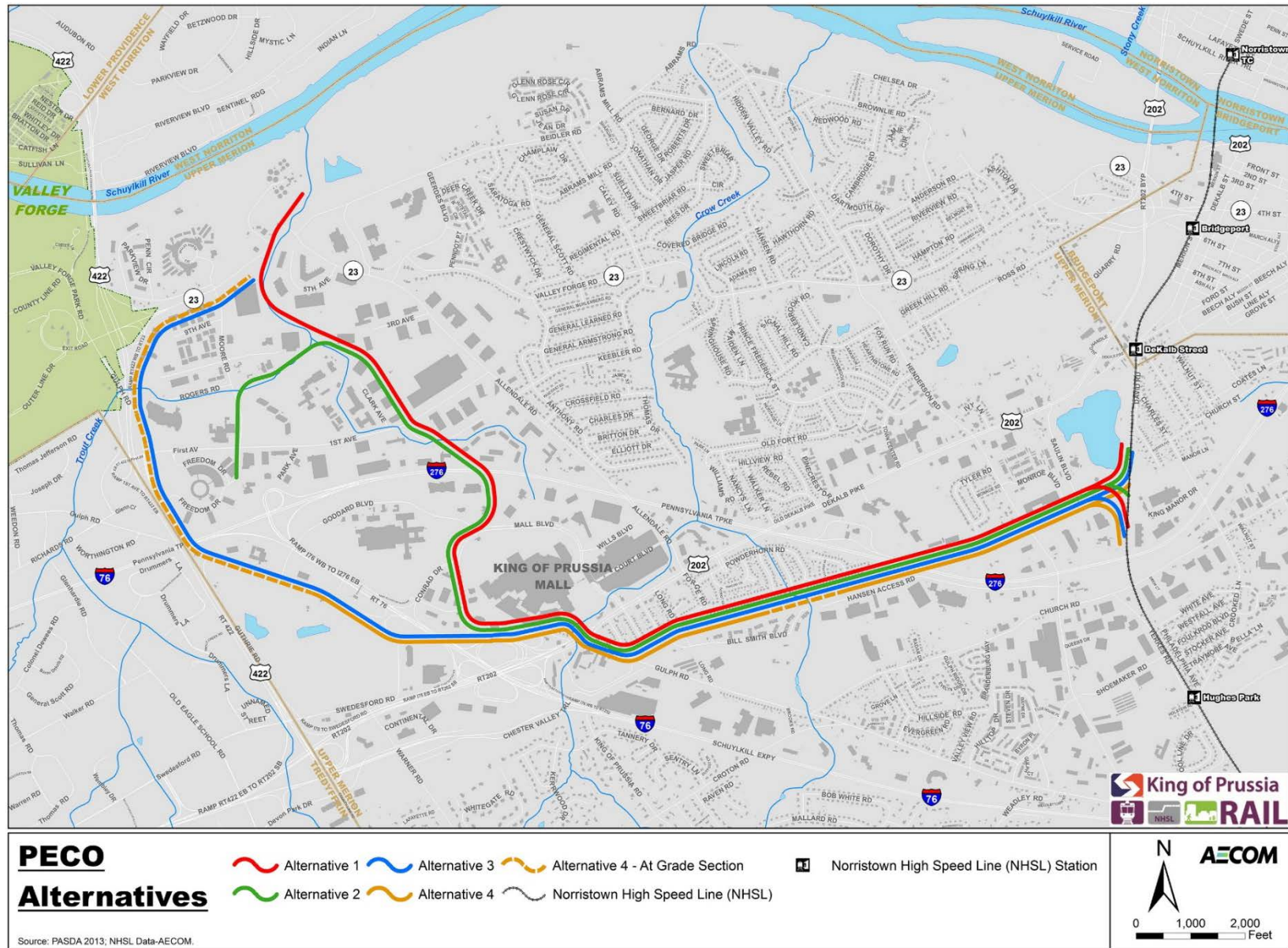


Figure 2-1.4: Preliminary PECO/TP Turnpike Alternatives

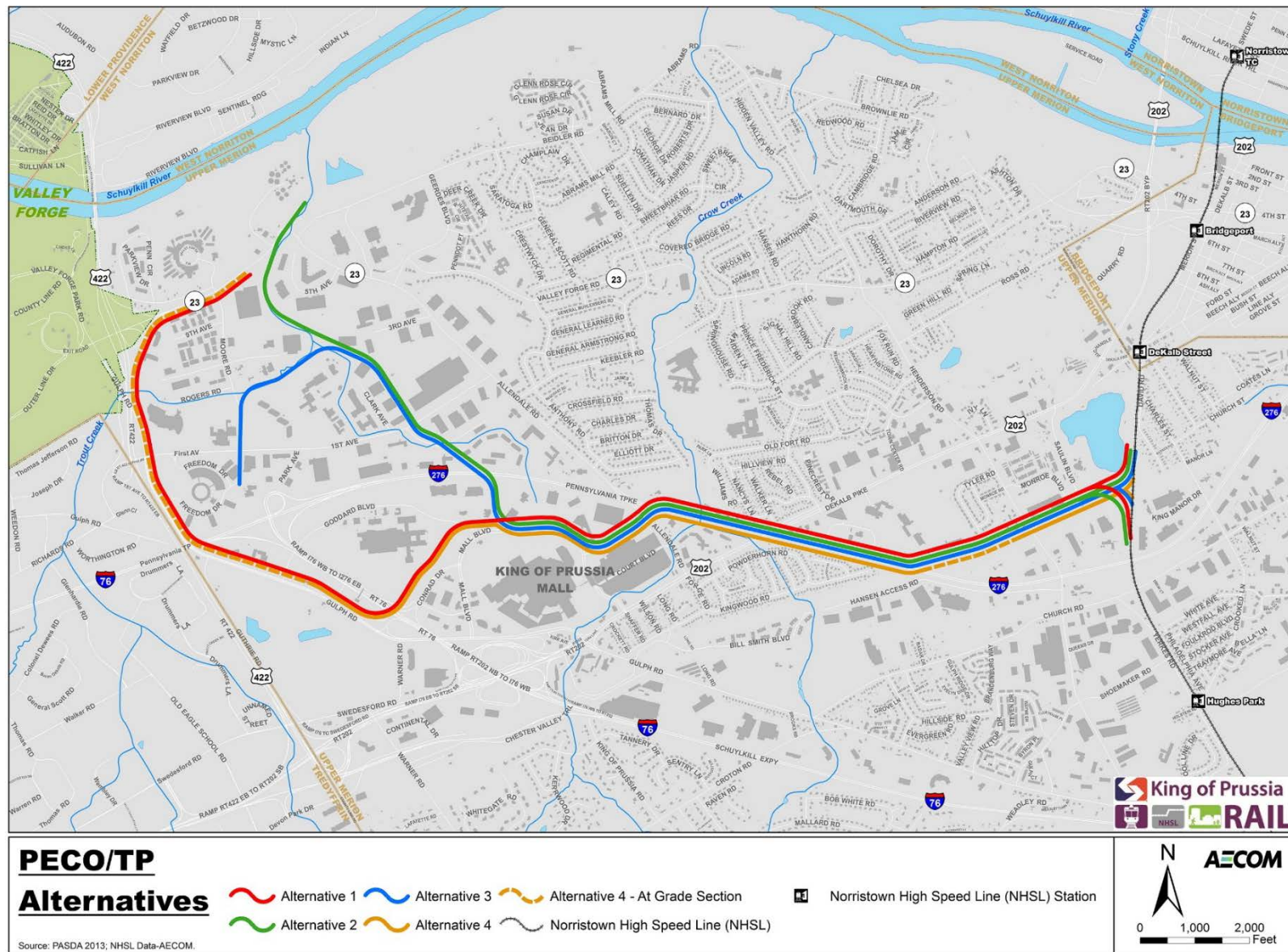
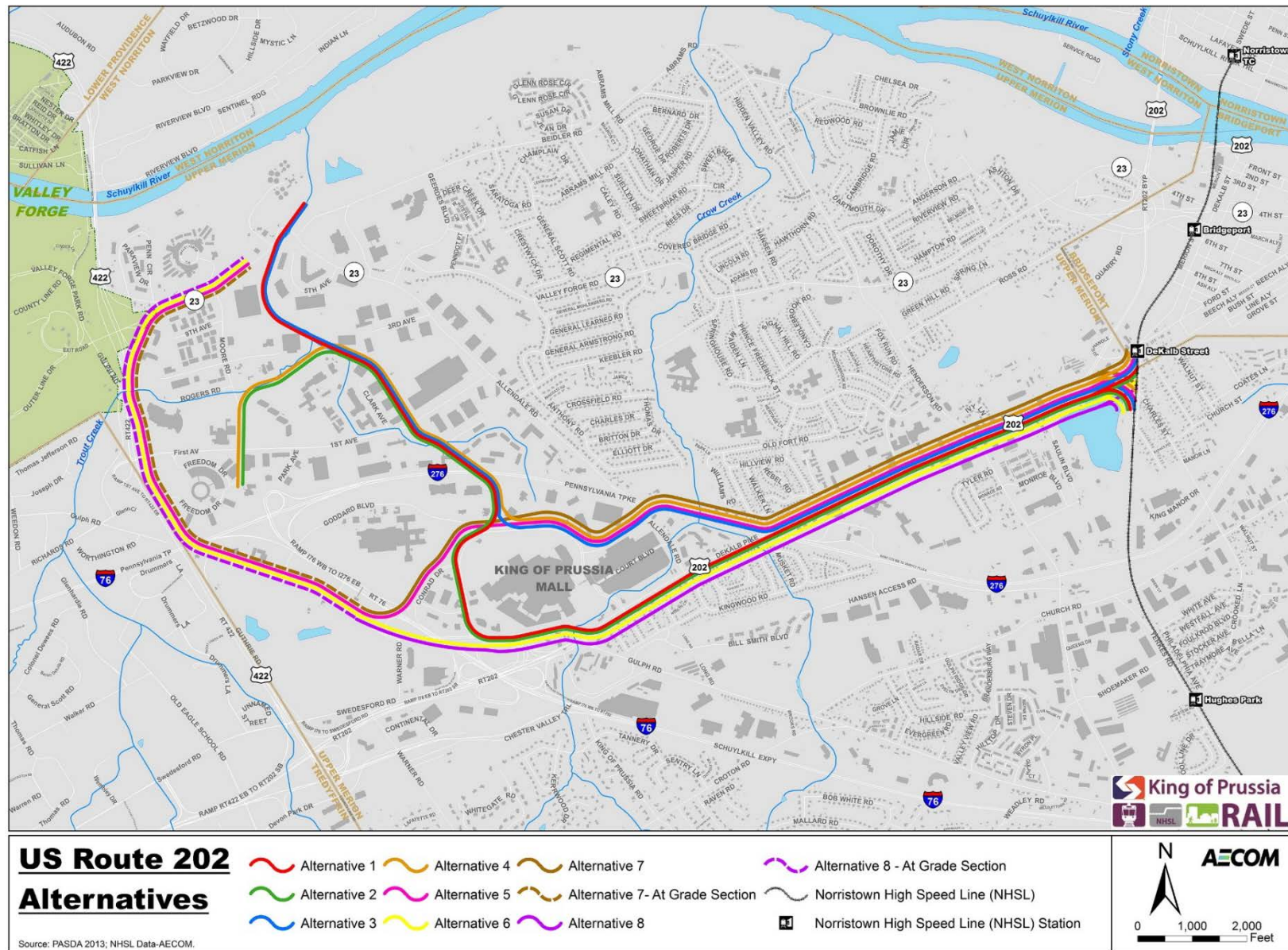


Figure 2-1.5: Preliminary US Route 202 Alternatives



Regarding number of intersections affected, the alternatives with at-grade elements would cross through 11 intersections along N. Gulph Road. These intersection crossings would have to be gated, thereby stopping traffic operations each time a train was present. With frequent intervals between trains during peak travel periods, the traffic impact would be significant at all 11 intersections and unlikely to be mitigatable. In regard to the number of other affected structures measure, the underpass of N. Gulph Road and US 422 under the Pennsylvania Turnpike would require full reconstruction to accommodate the track alignments of the at-grade alternatives along N. Gulph Road. For these reasons and with the support of stakeholders, the four at-grade alternatives (PECO Alternative 4 - At Grade Section, PECO/TP Alternative 4 – At Grade Section, US Route 202 Alternative 7 – At Grade Section and US Route 202 Alternative 8 – At Grade Section) as shown on Figures 2-1.3, 2-1.4 and 2-1.5 were eliminated from further study.

Regarding impacts to water resources, the four Preliminary Alternatives aligned on the northern portion of the former industrial track right-of-way, north of East 8th Avenue, were found to have the potential for higher impacts to streams compared with the other Preliminary Alternatives. Alternatives with higher impacts to streams are unlikely to be approved by the U.S. Army Corps of Engineers (USACE) since USACE's Section 404 permitting program encourages selection of an alternative with the least impact to wetlands and streams. For these reasons, and with the support of agencies and stakeholders, the four Preliminary Alternatives using the northern portion of the former industrial track right-of-way were eliminated (PECO Alternative 1, PECO/TP Alternative 2, US Route 202 Alternative 1 and US Route 202 Alternative 3) as shown on Figures 2-1.3, 2-1.4 and 2-1.5. The Tier 2 screening analysis for the eight remaining Preliminary Alternatives was quantitative, allowing SEPTA to compare the differences among the eight alternatives. Specific ratings were determined for each Preliminary Alternative using the Tier 2 measures. The results of Tier 2 screening showed that several Preliminary Alternatives had a high number of superior-performing measures in each criterion listed previously, compared to the other alternatives.

SEPTA also examined these Tier 2 results by looking at the Preliminary Alternatives by Trunk and Branch groups. Using this approach, the alternatives that best represented each Trunk and Branch combination were identified. SEPTA, with public input and with the support of agencies and stakeholders and as detailed in the 2015 *KOP Rail Tier 1 & 2 Screening Results Technical Memorandum*, ultimately decided to retain a diversity of trunks and branches as the Project advanced to Tier 3 analysis. Specifically, SEPTA decided to retain three Trunks (PECO, PECO/TP and US 202) and two Branches (1st Ave. and N. Gulph) for further study. This decision enriched the comparative evaluation process and provided the agencies with flexibility in future decision-making. By taking these steps, SEPTA was able to arrive at a reasonable range of alternatives retained for detailed analysis in Tier 3. Further details about agency and stakeholder coordination and decision-making during Tier 2 can be found in Chapter 7.

In Tier 2 evaluation during scoping, SEPTA learned more about the Preliminary Alternatives, the potentially affected environment, and the views of the stakeholders and agencies involved. Each of these factors pointed toward the need to refine the alternatives before entering Tier 3 analysis to avoid or minimize impacts, to reduce costs or to respond to ongoing agency or stakeholder input. As a result, the retained alternatives were refined to shorten the length of the alignments and/or to modify or adjust short sections of the alignments. Specifically, alternatives

using the N. Gulph Branch were shortened. Shortening the length of this branch translated into savings in estimated capital costs with minimal decreases in forecasted ridership. Also, the Moore Road branches were realigned to follow 1st Avenue to complement the planned “Road Diet” and “Complete Streets” initiative of Upper Merion Township on 1st Avenue, as well as to reduce impacts to private property and waterways, and to reduce estimated capital costs. Additionally, trunks that use the PA Turnpike were shifted from placement in the median to placement on the south side of the highway corridor to address agency concerns regarding stormwater management, utility relocations, construction staging, maintenance and protection of traffic during construction and operation. This shift reduced estimated capital costs and offered a wider range of potential construction methods for the trunks that would use the PA Turnpike corridor.

The Tier 2 process resulted in identifying the following five alternatives that warrant further study in Tier 3 (Figure 2-1.6):

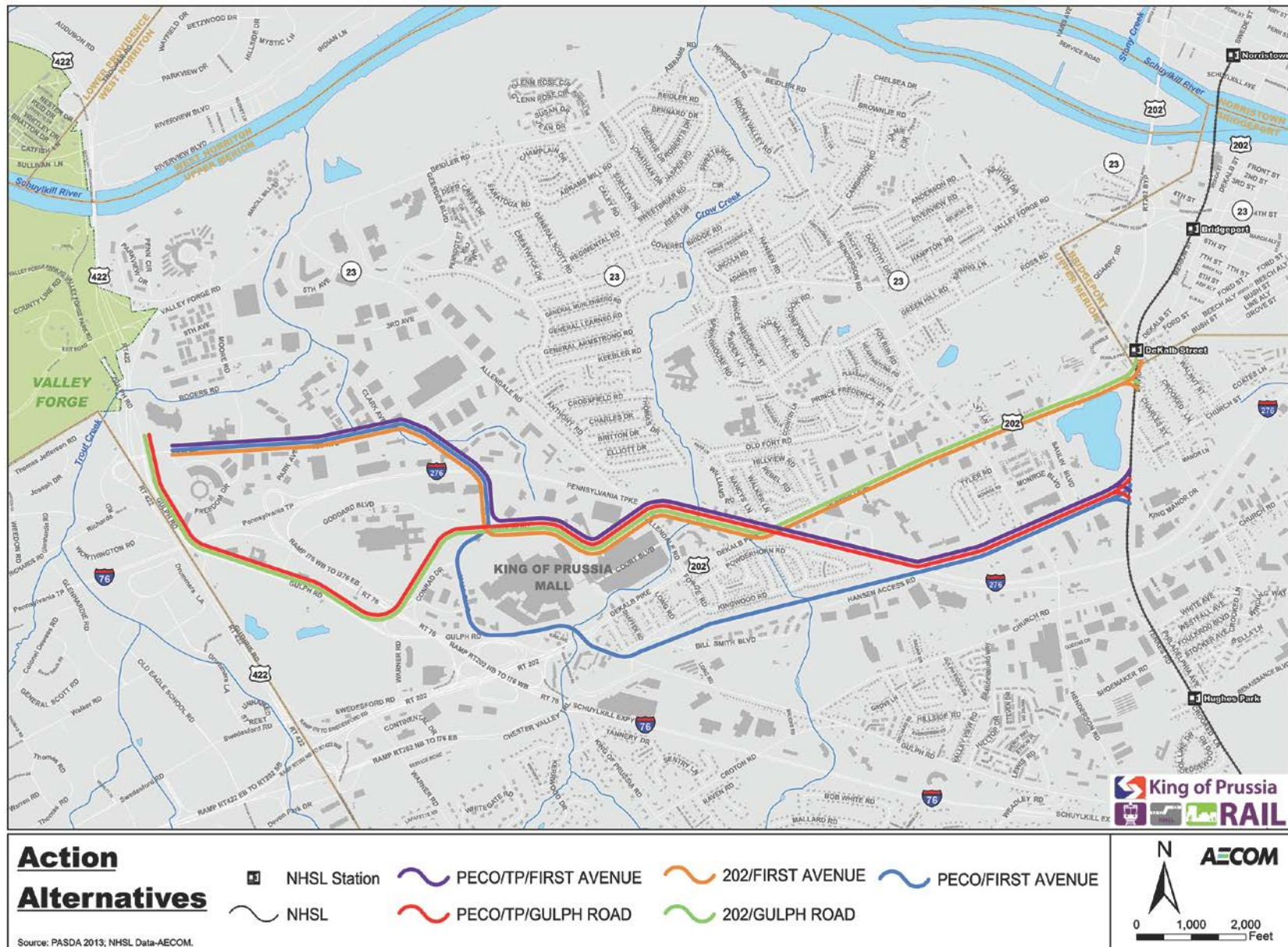
- PECO-1st Ave. Action Alternative (PECO Trunk and 1st Ave. Branch)
- PECO/TP-1st Ave. Action Alternative (PECO/TP Trunk and 1st Ave. Branch)
- PECO/TP-N. Gulph Action Alternative (PECO/TP Trunk and N. Gulph Branch)
- US 202-1st Ave. Action Alternative (US 202 Trunk and 1st Ave. Branch)
- US 202-N. Gulph Action Alternative (US 202 Trunk and N. Gulph Branch)

SEPTA provided agencies, stakeholders and the public with more details on these alternatives at workshops held in March 2015 and received additional, valuable input to carry into the Tier 3 screening and evaluation process. Key themes included a preference for Action Alternatives aligned behind the King of Prussia Mall, support for parking at the western terminus of the Project, need for multi-modal station access and parking, concerns about noise and visual impacts, high construction and visual impacts of the US 202 Trunk, no benefits for some impacted residents, positive as well as negative economic and property value effects, high residential impacts along PECO Trunk, Project complements Upper Merion Township’s 1st Avenue “Road Diet” project and safety. Further details about agency and stakeholder coordination and the public involvement process are provided in Chapter 7, including Table 7-1.1.

2.2 DEIS Alternatives

The purpose of the DEIS is to provide information to aid FTA and SEPTA in their decision-making process by examining and evaluating five Action Alternatives for a new possible rail connection between the existing NHSL and destinations in King of Prussia. As noted previously, Project Scoping set the stage for the range of alternatives and the scope of issues evaluated in the DEIS. Both Project Scoping and the DEIS process have included environmental and engineering studies and opportunities for agency and public input and stakeholder interaction.

Figure 2-1.6: Action Alternatives for Tier 3 Analysis



The DEIS considers the five “Build” Alternatives that were retained for further study at the end of the Tier 2 screening (Section 2.2), and the No Action Alternative. Each Build Alternative, known as an Action Alternative in the DEIS, is a combination of one Trunk and one Branch, forming a single continuous alignment from the existing NHSL to the western terminus of the Project.

Of the five Action Alternatives, SEPTA identified PECO/TP-1st Avenue as the recommended Locally Preferred Alternative (recommended LPA). By recommending an LPA, SEPTA and FTA are presenting the PECO/TP-1st Ave. Action Alternative as the alternative that best achieves the Project purpose and need and avoids or minimizes impacts on the natural and built environment when compared with the other alternatives in the DEIS. SEPTA identified the recommended LPA based on the technical information in the DEIS and the results of public, agency and stakeholder coordination to date (also documented in the DEIS). The findings of the Tier 3 analysis reported in the DEIS, in conjunction with concurrent agency, stakeholder and public outreach, enabled SEPTA’s identification of the recommended LPA. Chapter 8 details the reasons and process by which SEPTA identified the recommended LPA. FTA and SEPTA provided agencies, interested parties, stakeholders and the public with detailed information and the rationale for the recommended LPA in meetings held in February and March 2016 and received additional, valuable reaction and input, which is documented in Chapter 7.

However, each Action Alternative including the recommended LPA, as well as the No Action Alternative, is evaluated in detail in the DEIS. Assessing the five Action Alternatives and the No Action Alternative in the DEIS enables agencies, stakeholders and the public to consider and provide comment on the recommended LPA and the other alternatives. In accordance with the requirements of NEPA 23 CFR 771.125(a)(1), FTA and SEPTA will consider public, agency and stakeholder comment on the DEIS and the alternatives received during the DEIS comment period. Following the DEIS public comment period, SEPTA may choose to select an LPA. The selected LPA could be any one of the alternatives being considered in the DEIS, not necessarily the recommended LPA. After completion of the environmental process, SEPTA will consider officially adopting a Project alternative for implementation.

The DEIS also evaluates two design options for the recommended LPA, which SEPTA is considering to minimize specific Project impacts on the Project study area community: the PA Turnpike North/South Option and the 9/11 Memorial Avoidance Option. Each of these options would modify a portion of the recommended LPA; the remainder of the recommended LPA would be unchanged. Either or both design options could be applied to the recommended LPA as a minimization strategy.

To summarize, the DEIS evaluates the following alternatives and design options:

- PECO-1st Ave. Action Alternative
- PECO/TP-1st Ave. Action Alternative (recommended LPA)
 - PA Turnpike North/South Option (for the recommended LPA)
 - 9/11 Memorial Avoidance Option (for the recommended LPA)
- PECO/TP-N. Gulph Action Alternative
- US 202-1st Ave. Action Alternative

- US 202-N. Gulph Action Alternative
- No Action Alternative

Table 2-2.1 summarizes the general characteristics, including the number of stations and park-and-ride facilities, of each of the alternatives and recommended LPA design options. As described in Section 2.3, each Action Alternative and recommended LPA design option would serve key destinations in the transportation study area. However, each Action Alternative and recommended LPA design option varies in the ability to provide walk access to other destinations. As a result, the number of station areas and park-and-ride facilities varies by Action Alternative and design option.

Table 2-2.1: Characteristics of DEIS Alternatives

Element		No Action Alternative	Alternative							
			PECO-1 st Ave.	PECO/TP-1 st Ave. and recommended LPA Design Options				PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph
				PECO/TP-1 st Ave. (recommended LPA)	Design Options Differences Compared to PECO/TP-1 st Ave					
					PA Turnpike North/South Option	9/11 Memorial Avoidance Option				
Stations	Number of Stations/Park -and-Ride Facilities	N/A	5/2	5/2	ND	ND	6/2	6/1	7/1	
Approximate % of Guideway	Elevated on Columns	N/A	80	86	ND	ND	87	96	96	
	On Retained Fill	N/A	13	0	ND	ND	0	0	0	
	At-Grade	N/A	7	14	ND	ND	13	4	4	

N/A = not applicable; ND = no difference compared with the recommended LPA.

Source: AECOM, 2016.

Each of the five Action Alternatives, the recommended LPA design options and the No Action Alternative assume the improvements to the transportation system of the committed projects contained in the financially constrained element of *Connections 2040 Plan for Greater Philadelphia*, the long-range transportation plan of the Delaware Valley Regional Planning Commission (DVRPC). A list of some of those projects in and around the Project area is shown in Table 2-2.2. The No Action Alternative is the 2040 condition without the Project; it assumes the committed projects will occur. The No Action Alternative serves as a baseline for comparing the Action Alternatives. The Action Alternatives are the 2040 condition with the Project; each Action Alternative assumes the committed projects will occur.

The committed projects consist primarily of planned capacity and operational improvements to regional and local study area roadways, particularly US Route 422 and the PA Turnpike. All but one roadway project operates at the periphery of the transportation study area; the 1st Avenue “Road Diet” project is within the transportation study area. Montgomery County’s Chester Valley Trail Extension is also within the transportation study area. In addition to the committed projects, the No Action Alternative consists of roadway and transit networks, transit service levels, traffic volumes, and forecasted demographics for the horizon year 2040. SEPTA has no control over the scope, timing, implementation or effects of the listed committed projects.

Table 2-2.2: Committed Projects by 2040

Project	Type	Description
New US Route 422 Bridge crossing over Schuylkill River	Highway	New 4-lane bridge westbound; replace bridge eastbound.
Widen US Route 422 from US Route 202 to PA 363	Highway	Widen this 2-mile segment from 4 lanes to 6.
Full interchange at US Route 422 and PA 363	Highway	Complete to a full interchange, with movements in both directions.
PA Turnpike widening from Morgantown exit to Valley Forge	Highway	Widen to 6 lanes throughout.
Lafayette Street extension and new Turnpike exit in Norristown	Highway	Construction on extension underway. Construction on Turnpike exit could start in 2018.
1 st Avenue Streetscape and Multi-use Trail (known also as the 1 st Avenue Road Diet project)	Multimodal	Funded through statewide TAP program. Road Diet, streetscaping and multi-use trail along the length of 1 st Avenue to enhance multi-modal access.
Relocate PA 23/Valley Forge Road and N. Gulph Road	Highway	Move roadway 300 feet east of current entrance with Valley Forge National Historical Park to improve operations and reduce traffic impacts at the entrance to the Park, and create a new Gateway entrance.
Widen Henderson Road and South Gulph Road	Highway	Widen South Gulph Road from Crooked Lane to I-76 intersection at Gulph Mills, and widen Henderson Road from South Gulph Road to Shoemaker Road.
Chester Valley Trail Extension	Multimodal	Extend the Chester Valley Trail to connect with the Schuylkill River Trail in Norristown, a 3.5 mile extension.

Source: DVRPC, *Connections 2040 Plan for Greater Philadelphia*.

2.2.1 No Action Alternative

The No Action Alternative assumes no improvements to the transportation system, other than those contained in the financially constrained element of *Connections 2040 Plan for Greater Philadelphia*, the long-range transportation plan of the Delaware Valley Regional Planning Commission (Table 2-2.2).

2.2.2 PECO-1st Ave. Action Alternative

The PECO-1st Ave. Action Alternative would use a portion of the PECO electric utility corridor as its Trunk, passing in front of (to the south of) the King of Prussia Mall, turning north to cross over the PA Turnpike and into a small portion of the former industrial track right-of-way before turning west along 1st Avenue and ending near the intersection of 1st Avenue and N. Gulph Road near the Valley Forge Casino Resort (VFCR). Figure 2-2.1 shows the alignment of the PECO-1st Ave. Action Alternative.

The Trunk component of the PECO-1st Ave. Action Alternative would branch off the NHSL between the NHSL DeKalb Street and Hughes Park Stations, just south of the old quarry near DeKalb Pike, which is now used by Aqua Pennsylvania, Inc. (formerly Philadelphia Suburban Water Company). At the branch or wye, the proposed double-track guideway would be at ground level (at-grade). As the guideway continues west, parallel to and immediately south of Saulin Boulevard, it would rise as the ground falls in elevation, so that the guideway is elevated on single-column, concrete piers within the PECO electric utility corridor as it crosses Henderson Road and continues in the PECO electric utility corridor. The guideway would run west from Henderson Road along the northern edge of the PECO electric utility corridor. Placement of the guideway elsewhere in the PECO corridor is precluded for two reasons. First, the guideway must avoid intersecting PECO's transmission towers and PECO forbids use of their operating zone between the towers. Second, land dedicated for Montgomery County's planned Chester Valley Trail extension is aligned along the south edge of the corridor.

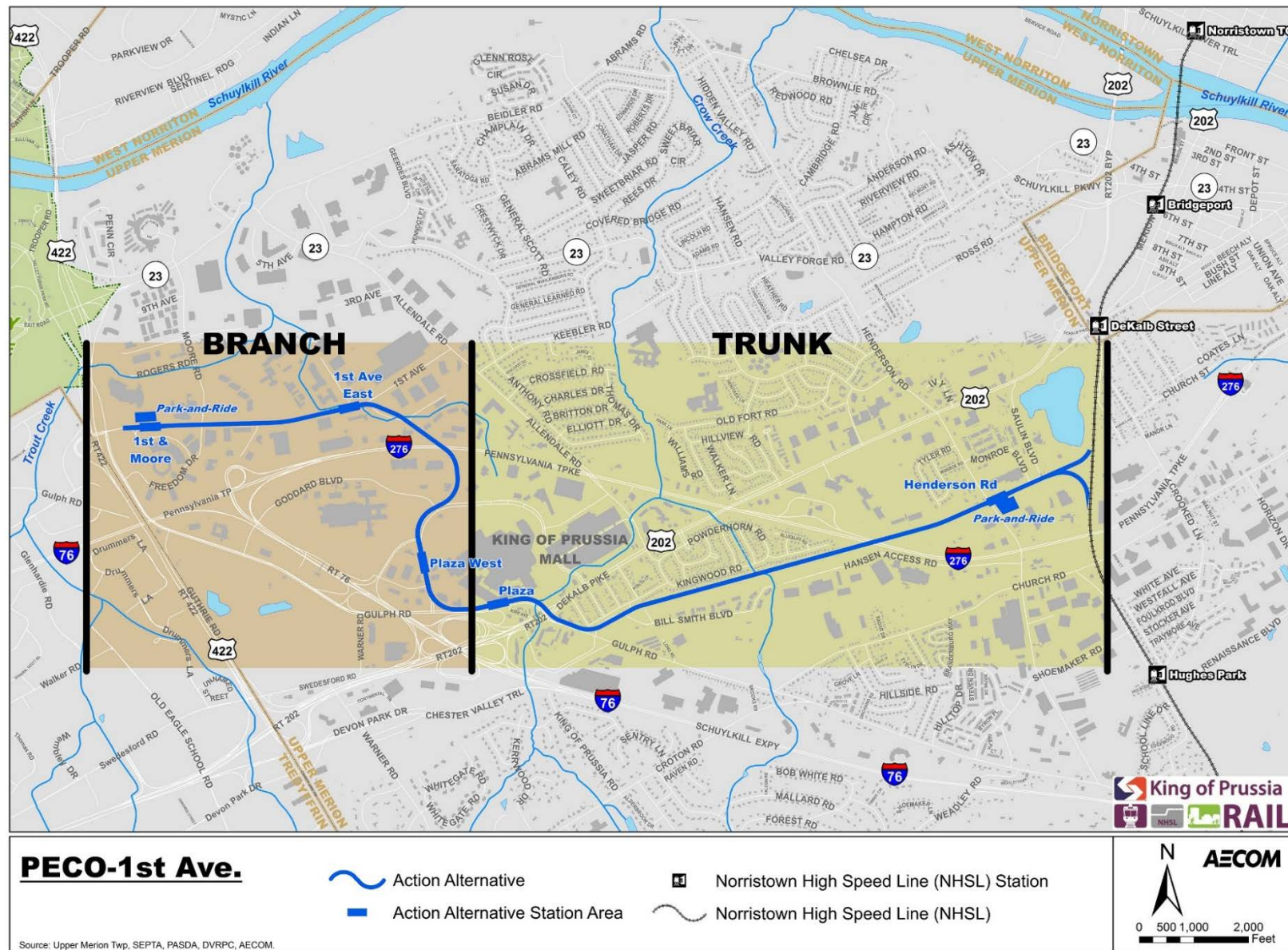
West of the PA Turnpike, the guideway configuration in the PECO corridor would change from a single-column structure to retained fill for approximately 1,700 feet. Further west, the guideway configuration would change from retained fill to a single concrete column structure as the guideway begins to rise on its approach to the US Route 202 crossing at Gulph Road. Along the way, the PECO-1st Ave. Action Alternative would turn northwest off the PECO corridor to parallel Gulph Road on its east side. North of US Route 202, the guideway would continue to parallel the east side of Gulph Road, passing in front of (to the south of) the King of Prussia Mall to the proposed Plaza Station.

Snapshot:

PECO-1st Ave. Alternative

The PECO-1st Ave. Alternative would use a portion of the PECO electric utility corridor as its Trunk, passing in front of (to the south of) the King of Prussia Mall, turning north to cross over the PA Turnpike before turning west along 1st Avenue and ending near the intersection of 1st Avenue and N. Gulph Road near the Valley Forge Casino Resort. The PECO-1st Ave. Alternative is approximately 4.4 miles long and provides five proposed station locations, two of which have potential park-and-ride facilities.

Figure 2-2.1: PECO-1st Ave. Action Alternative



Along the PECO Trunk, two station locations are proposed: Henderson Road near the intersection of Henderson Road and Saulin Boulevard and Plaza Station in front of the King of Prussia Mall. SEPTA proposes to provide a park-and-ride facility on the south side of the Henderson Road Station.

The Branch component of the PECO–1st Ave. Action Alternative would continue west from Plaza Station. The elevated Branch would turn north onto Mall Boulevard and to Plaza West Station. It would continue to follow Mall Boulevard east then turn north to cross over the PA Turnpike. North of the PA Turnpike the alignment would follow American Avenue and cross the former industrial track right-of-way in the King of Prussia Business Park before turning west on 1st Avenue. The elevated guideway would be aligned along 1st Avenue, terminating in the vicinity of the 1st Avenue/N. Gulph Road intersection near the VFCR. As described in Section 2.2, the KOP-BID and Upper Merion Township plan to implement their 1st Avenue Road Diet project (a committed project that will occur with or without the Project) on this portion of 1st Avenue. The Road Diet project would re-configure the roadway within the existing right-of-way, providing a new center median, a single travel lane in each direction, turning lanes and intersection improvements between American Avenue and N. Gulph Road. SEPTA's proposed elevated guideway would be aligned over this portion of 1st Avenue and supported on columns located in the center median, preserving the planned 1st Avenue travel lanes, turning lanes and intersection configurations, as well as their operations. Along the Branch component of the PECO-1st Ave. Alternative, three station locations are proposed: Plaza West near the King of Prussia Mall, 1st Avenue East in the vicinity of Clark Avenue, and 1st & Moore in the vicinity of the VFCR. SEPTA proposes to provide a park-and-ride facility at the 1st & Moore Station.

2.2.3 PECO/TP–1st Ave. Action Alternative (recommended LPA)

The PECO/TP-1st Ave. Action Alternative would use portions of the PECO electric utility corridor and PA Turnpike as its Trunk, passing behind (to the north of) the King of Prussia Mall, turning north into a small portion of the former industrial track right-of-way before turning west along the 1st Ave. Branch and ending near the intersection of 1st Avenue and N. Gulph Road near the VFCR. Figure 2-2.2 shows the alignment of the PECO/TP–1st Ave. Action Alternative.

The Trunk component of the PECO/TP-1st Ave. Action Alternative would turn off the NHSL between the NHSL DeKalb Street and Hughes Park Stations just south of the old quarry near DeKalb Pike, which is now used by Aqua Pennsylvania, Inc. (formerly Philadelphia Suburban Water Company). At the branch or wye, the proposed Project guideway would be at ground level (at-grade). As the guideway continues west, parallel to and immediately south of Saulin Boulevard, it would

Snapshot: PECO/TP–1st Ave. Action Alternative

The PECO/TP-1st Ave. Action Alternative would use portions of the PECO electric utility corridor and PA Turnpike as its Trunk, passing behind (to the north of) the King of Prussia Mall, turning north on a portion of the former industrial track right-of-way before turning west along 1st Avenue and ending near the intersection of 1st Avenue and N. Gulph Road near the VFCR. The PECO/TP–1st Ave. Action Alternative is approximately 3.9 miles long and provides five proposed station locations, two of which have potential park-and-ride facilities.

rise as the ground falls in elevation so that the double-track guideway is elevated on single-column concrete pier-supported structure within the PECO electric utility corridor as it crosses Henderson Road and continues within the PECO electric utility corridor. The guideway would run west from Henderson Road along the northern edge of the PECO electric utility corridor. Placement of the guideway elsewhere in the PECO corridor is precluded for two reasons: the guideway must avoid intersecting PECO's transmission towers and PECO forbids use of their operating zone between the towers. West of Henderson Road, the terrain rises, enabling the guideway to run at-grade in the PECO corridor. Along the PECO corridor, one station location is proposed at Henderson Road near the intersection of Henderson Road and Saulin Boulevard. SEPTA proposes to provide a park-and-ride facility on the south side of the Henderson Road Station.

As the PECO/TP-1st Ave. Action Alternative Trunk alignment approaches the PA Turnpike crossing, the guideway configuration would change from at-grade to single concrete column structure that would carry the guideway across the PA Turnpike to its south side. The alignment would run within the PA Turnpike right-of-way on the south side of the existing noise barrier, outside the Turnpike travel lanes. The guideway would cross over US Route 202. Just east of the intersection of Allendale Road and the PA Turnpike, the alignment would turn southwest toward the King of Prussia Mall, passing behind the King of Prussia Mall on Wills Boulevard and joining Mall Boulevard. In the King of Prussia Mall vicinity, two station locations are proposed: Court Station and Mall Blvd North (Figure 2-2.2). A rendering of what the alignment could look like behind King of Prussia Mall is shown in Figure 2-2.3.

The Branch component of the PECO/TP-1st Ave. Action Alternative would extend west on elevated structure from the Mall Boulevard North Station, turning north to cross over the PA Turnpike. North of the PA Turnpike the alignment would follow American Avenue and the former industrial track right-of-way in the King of Prussia Business Park before turning west on 1st Avenue. The elevated guideway would be aligned in the planned center median of 1st Avenue, terminating in the vicinity of the 1st Avenue/N. Gulph Road intersection near the VFCR (Figure 2-2.2). The KOP-BID and Upper Merion Township plan improvements to 1st Avenue (1st Avenue Road Diet project) that would include providing a center median sufficiently wide to accommodate the guideway piers. The elevated guideway would preserve the planned 1st Avenue travel lanes, turning lanes and intersection configurations, as well as their operations. Along the Branch component of the PECO/TP-1st Ave. Action Alternative, two station locations are proposed: 1st Avenue East in the vicinity of Clark Avenue and 1st & Moore in the vicinity of the VFCR. SEPTA proposes to provide a park-and-ride facility at the 1st & Moore Station.

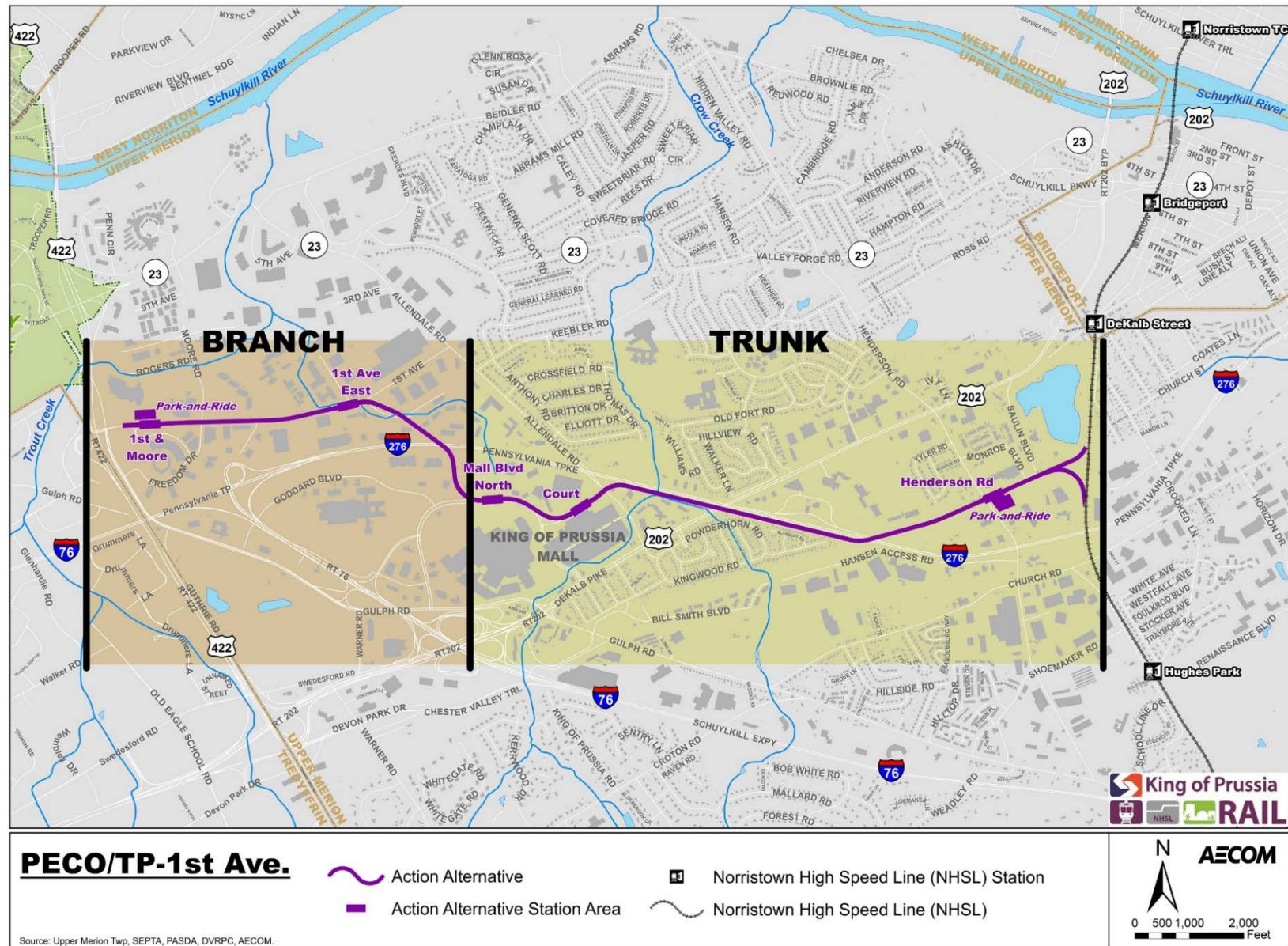
Figure 2-2.2: PECO/TP-1st Ave. Action Alternative

Figure 2-2.3: Rendering of the Project behind the King of Prussia Mall

Conceptual rendering of what the Project could look like along Mall Boulevard behind the King of Prussia Mall. This rendering could represent each of the following alternatives: PECO/TP-1st Ave., the recommended LPA design options, PECO/TP-N. Gulph, US 202-1st Ave., or US 202-1st Ave. It does not show a station layout.

Source: Bergmann Associates, PA, 2016.

2.2.4 PA Turnpike North/South Option (for the recommended LPA)

The PA Turnpike North/South Option is a design option for the recommended LPA that was identified as a response to public comment and is intended to reduce potential impacts on resources. During public outreach in 2016, SEPTA identified an opportunity to reduce the potential proximity effects of the recommended LPA on residential properties adjacent to and on the south side of the PA Turnpike. Residents in the Valley Forge Homes community at that location expressed concerns about the closeness of the proposed elevated guideway to their homes, particularly those homes adjacent to the PA Turnpike ROW. Concerns related to potential noise and visual impacts, loss of privacy, change in property values and risk of sinkhole problems on private property.

In response to these concerns, SEPTA considered the potential for either reducing the height of the guideway in the vicinity of the residences or relocating the portion of the guideway to the north side of the Turnpike. Reducing the height of the guideway would mean placing the guideway at a similar grade as the Turnpike travel lanes. Engineering investigation of placing the guideway at grade identified the potential for conflicts with a complex utility network, including piped waterways and open ditches in the Turnpike ROW. In addition, placing the guideway at grade would require replacement of the US Route 202 overpass to accommodate

the guideway at the location of the existing south abutment. At-grade construction of the guideway between the PECO corridor and US Route 202 also would require more ground disturbance than the elevated structure in the recommended LPA, thereby increasing the risk of sinkhole events. SEPTA determined on the basis of the combination of these potentially significant negative factors to eliminate further consideration of an at-grade alignment.

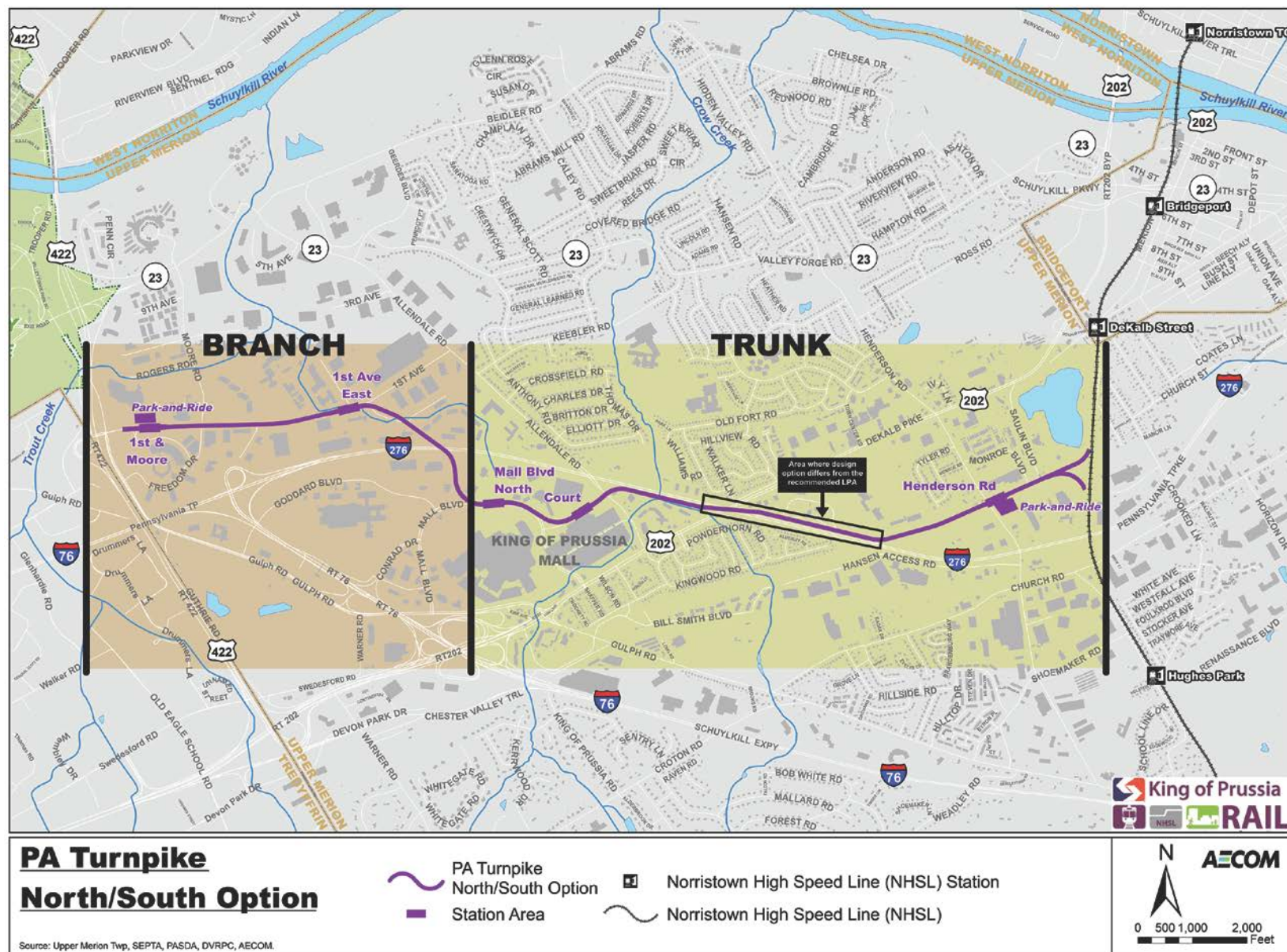
In considering an alignment on the north side of the Turnpike's travel lanes and within the Turnpike's ROW, SEPTA examined existing, adjacent land uses, which include the Turnpike's King of Prussia Service Area between the PECO corridor and US Route 202; north of US Route 202 is the Brandywine Village residential development. While the elevated guideway could cross in front of the Service Area, potential impacts to Brandywine Village as well as Valley Forge Homes should be minimized. As a result, SEPTA developed the PA Turnpike North/South Option, which would align the portion of the elevated guideway on the north side of the PA Turnpike rather than the south side between the PECO corridor and the US Route 202 overpass (Figure 2-2.4). By making this adjustment, the proposed elevated guideway would be on the opposite side of the PA Turnpike from the Valley Forge Homes' residences and the potential impacts of the Project on those residences would be reduced.

The PA Turnpike North/South Option could be applied to the recommended LPA as follows: The recommended LPA would extend west and at grade from the NHSL between the NHSL DeKalb Street and Hughes Park Stations as described in Section 2.2.3. As the recommended LPA guideway continues west, parallel to and immediately south of Saulin Boulevard, it would rise as the ground falls in elevation so that the double-track guideway is elevated on single-column concrete pier-supported structure within the PECO electric utility corridor as it crosses Henderson Road and continues within the PECO electric utility corridor. The recommended LPA guideway would run west from Henderson Road along the northern edge of the PECO electric utility corridor. West of Henderson Road, the terrain rises, enabling the guideway to run at-grade in the PECO corridor. Along the PECO corridor, one station location is proposed at Henderson Road near the intersection of Henderson Road and Saulin Boulevard. SEPTA proposes to provide a park-and-ride facility on the south side of the Henderson Road Station.

Snapshot: PA Turnpike North/South Option

The PA Turnpike North/South Option is a design option for the recommended LPA. As the recommended LPA alignment approaches the PA Turnpike crossing, the transition to the PA Turnpike North/South Option would begin. The guideway support would change from at-grade to a single concrete column structure to carry the guideway along the north side of the PA Turnpike. West of the US Route 202 overpass, the elevated guideway would cross over the PA Turnpike to the south side, resuming the recommended LPA alignment within the PA Turnpike ROW Alternative.

Figure 2-2.4: PA Turnpike North/South Option (for the recommended LPA)



As the recommended LPA alignment approaches the PA Turnpike crossing, the transition to the PA Turnpike North/South Option would begin. The guideway support would change from at-grade to a single concrete column structure to carry the guideway along the north side of the PA Turnpike. West of the US Route 202 overpass, the elevated guideway would cross over the PA Turnpike to the south side, resuming the recommended LPA alignment within the PA Turnpike ROW as shown on Figure 2-2.4. Renderings of what the PA Turnpike North/South Option could look like from US Route 202 and the PA Turnpike at the crossing are shown in Figures 2-2.5 and 2-2.6. By crossing back to the south side of the PA Turnpike, potential impacts to Brandywine Village residences would be minimized and impacts to Valley Forge Homes' residences would be reduced. Where the elevated guideway would cross the PA Turnpike, more substantial support structures would be required within the Turnpike ROW than single columns. A supporting system consisting of paired support columns with a horizontal structure in between, known as straddle bents, would be used. Straddle bents would enable placement of the supports for the elevated guideway within median and landscaped areas while spanning travel lanes and shoulders.

At approximately the location of the King of Prussia Volunteer Fire Company property, the PA Turnpike North/South Option would rejoin the recommended LPA guideway alignment. As described in Section 2.2.3, the recommended LPA alignment would be elevated as it crosses Allendale Road, toward the King of Prussia Mall, following Wills Boulevard and joining Mall Boulevard. In the King of Prussia Mall vicinity, two station locations are proposed: Court and Mall Blvd North (Figure 2-2.2). The recommended LPA alignment would extend west on elevated structure from the Mall Boulevard North Station, turning north to cross over the PA Turnpike. North of the PA Turnpike the recommended LPA alignment would follow American Avenue and the former industrial track right-of-way in the King of Prussia Business Park before turning west on 1st Avenue. The elevated guideway would be aligned in the planned center median of 1st Avenue, terminating in the vicinity of the 1st Avenue/N. Gulph Road intersection near the VFCR.

Figure 2-2.5: Rendering of PA Turnpike North/South Option Crossing US Route 202



Rendering of what the PA Turnpike North/South Option could look like crossing US Route 202 at the PA Turnpike. View is to the south along US Route 202 looking toward the King of Prussia Mall. The US Route 202 travel lanes are in the center, the existing gas station is to the left, and the PA Turnpike North/South Option crosses over US Route 202 from left (east) to right (west). The existing US Route 202 bridge over the PA Turnpike is at the same location as the supports for the design option. Source: Bergmann Associates, 2017.

Figure 2-2.6: Rendering of PA Turnpike North/South Option Crossing PA Turnpike



Rendering of what the PA Turnpike North/South Option could look like as it crosses the PA Turnpike from the north (left) to the south (right) side at the US Route 202 crossing. View is to the east. The PA Turnpike is at the bottom of the rendering; the US Route 202 bridge over the PA Turnpike crosses from left to right in the center of the rendering; and the PA Turnpike North/South Option crosses over the PA Turnpike and US Route 202 at the top. Source: Bergmann Associates, 2017.

2.2.5 9/11 Memorial Avoidance Option (for the recommended LPA)

The 9/11 Memorial Avoidance Option is a design option for the recommended LPA that was identified as a response to public comment and is intended to reduce potential impacts on resources. During public and agency outreach activities in 2016, SEPTA identified the opportunity to reduce the potential proximity impacts of the recommended LPA on the 9/11 Memorial on the King of Prussia Volunteer Fire Company property. Members of the Volunteer Fire Company, the public and the Upper Merion Township Board of Supervisors expressed concerns about the closeness of the proposed elevated guideway to the memorial and the potential negative visual impact of the recommended LPA on the setting of the memorial. In particular, the directional focus of the memorial is toward the northwest where the view is primarily of the open sky. The elevated guideway, within the PA Turnpike ROW, would cross that view and change the context of the memorial.

In response to these concerns, SEPTA developed the 9/11 Memorial Avoidance Option, which would have the elevated guideway turn off the PA

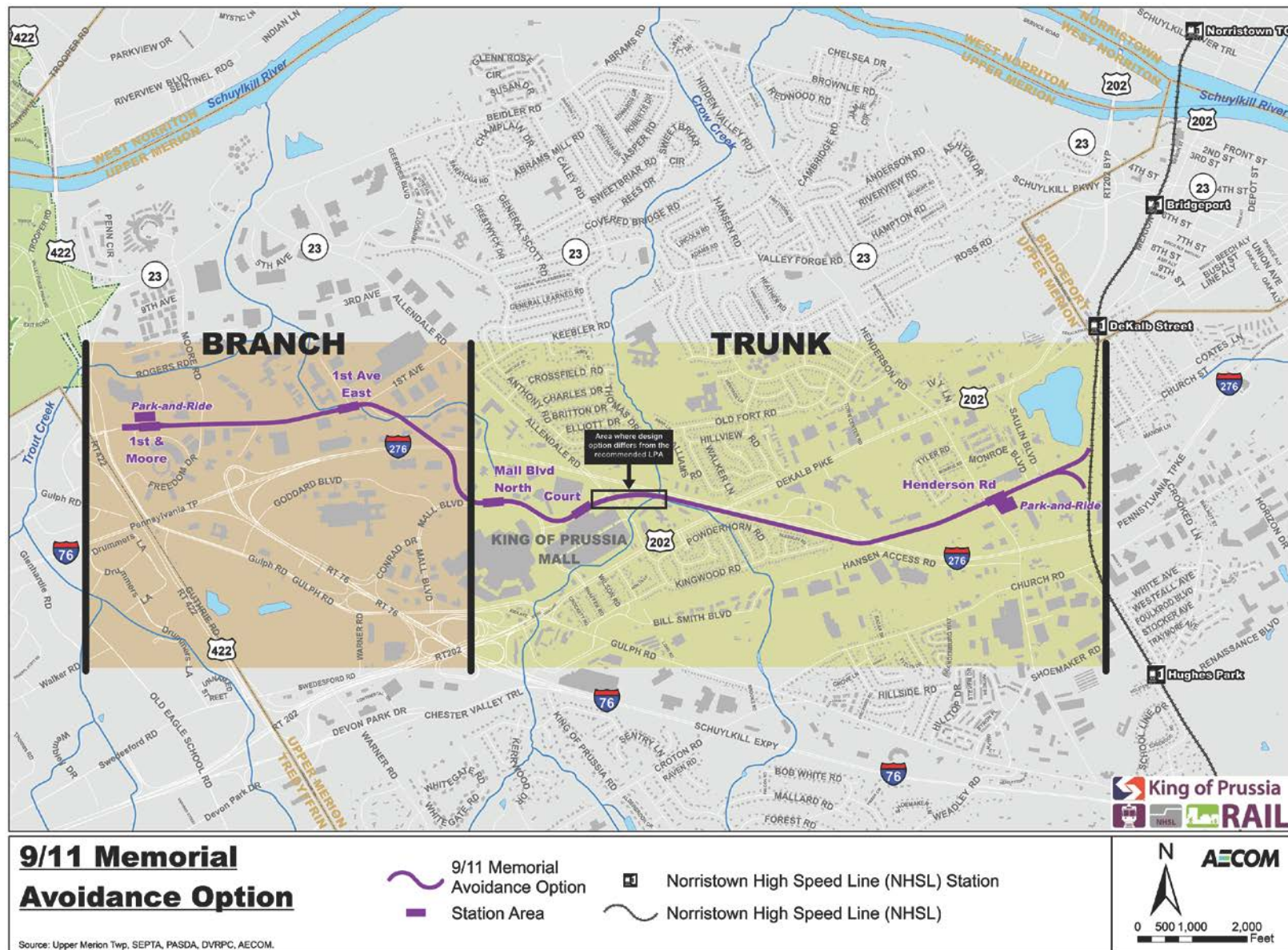
Turnpike ROW east of the memorial and cross the Volunteer Fire Company property (Figure 2-2.7). By making this adjustment, the proposed elevated guideway would be on the opposite side of the memorial from its directional focus, thereby reducing the proximity effect. West of the Volunteer Fire Company property, the elevated guideway would cross Allendale Road, resuming the recommended LPA alignment along Mall Boulevard.

Snapshot:

9/11 Memorial Avoidance Option

The 9/11 Memorial Avoidance Option is a design option for the recommended LPA. As the recommended LPA alignment runs west on the south side of the PA Turnpike ROW and approaches the King of Prussia Volunteer Fire Company property, the elevated 9/11 Memorial Avoidance Option would begin. It would cross the Fire Company property east of the 9/11 Memorial and cross Allendale Road, heading west toward the King of Prussia Mall. Just east of proposed Court Station, the 9/11 Memorial Avoidance Option would end and the recommended LPA alignment would resume.

Figure 2-2.7: 9/11 Memorial Avoidance Option (for the recommended LPA)



The 9/11 Memorial Avoidance Option could be applied to the recommended LPA as follows: The recommended LPA would extend west and at grade from the NHSL between the NHSL DeKalb Street and Hughes Park Stations as described in Section 2.2.3. As the recommended LPA guideway continues west, parallel to and immediately south of Saulin Boulevard, it would rise as the ground falls in elevation so that the double-track guideway is elevated on single-column concrete pier-supported structure within the PECO electric utility corridor as it crosses Henderson Road and continues within the PECO electric utility corridor. The recommended LPA guideway would run west from Henderson Road along the northern edge of the PECO electric utility corridor. West of Henderson Road, the terrain rises, enabling the guideway to run at-grade in the PECO corridor. Along the PECO corridor, one station location is proposed at Henderson Road near the intersection of Henderson Road and Saulin Boulevard. SEPTA proposes to provide a park-and-ride facility on the south side of the Henderson Road Station.

As the recommended LPA alignment approaches the PA Turnpike crossing, the guideway support would change from at-grade to single concrete column structure that would carry the guideway across the PA Turnpike to its south side. The recommended LPA alignment would run within PA Turnpike right-of-way on the south side of the existing noise barrier, outside the Turnpike travel lanes. The guideway would cross over US Route 202. Just south of the intersection of Allendale Road and the PA Turnpike, the elevated 9/11 Memorial Avoidance Option would begin. It would cross the King of Prussia Volunteer Fire Company property to the east of the 9/11 Memorial and cross Allendale Road, heading west toward the King of Prussia Mall. Just east of proposed Court Station, the 9/11 Memorial Avoidance Option would end as it rejoins the recommended LPA alignment.

The recommended LPA alignment would follow Wills Boulevard and join Mall Boulevard. In the King of Prussia Mall vicinity, two station locations are proposed: Court and Mall Blvd North (Figure 2-2.2). The recommended LPA alignment would extend west on elevated structure from the Mall Boulevard North Station, turning north to cross over the PA Turnpike. North of the PA Turnpike the recommended LPA alignment would follow American Avenue and the former industrial track right-of-way in the King of Prussia Business Park before turning west on 1st Avenue. The elevated guideway would be aligned in the planned center median of 1st Avenue, terminating in the vicinity of the 1st Avenue/N. Gulph Road intersection near the VFCR.

2.2.6 PECO/TP–N. Gulph Action Alternative

The PECO/TP–N. Gulph Action Alternative would use portions of the PECO electric utility corridor and PA Turnpike as its Trunk, passing behind (to the north of) the King of Prussia Mall, turning south to connect to N. Gulph Road before turning west along N. Gulph Road and ending near the intersection of 1st Avenue and N. Gulph Road near the VFCR. Figure 2-2.8 shows the alignment of the PECO/TP–N. Gulph Action Alternative.

The Trunk component of the PECO/TP–N. Gulph Action Alternative would turn off the NHSL between the NHSL DeKalb Street and Hughes Park Stations just south of the old quarry near DeKalb Pike, which is now used by Aqua Pennsylvania, Inc. (formerly Philadelphia Suburban Water Company). At the branch or wye, the Project guideway would be at ground level (at-grade). As the alignment continues west, parallel to and immediately south of Saulin Boulevard, it would rise as the ground falls in elevation so that the double-track guideway is elevated on single-column concrete piers within the PECO electric utility corridor as it crosses Henderson Road and continues in the PECO electric utility corridor. The alignment would run west from Henderson Road along the northern edge of the PECO electric utility corridor. Placement of the guideway elsewhere in the PECO corridor is precluded for two reasons: the guideway must avoid intersecting PECO's transmission towers and PECO forbids use of their operating zone between the towers. West of Henderson Road, the terrain rises, enabling the guideway to run at-grade in the PECO corridor.

Along the PECO corridor, one station location is proposed: Henderson Road near the intersection of Henderson Road and Saulin Boulevard. SEPTA proposes to provide a park-and-ride facility on the south side of the Henderson Road Station.

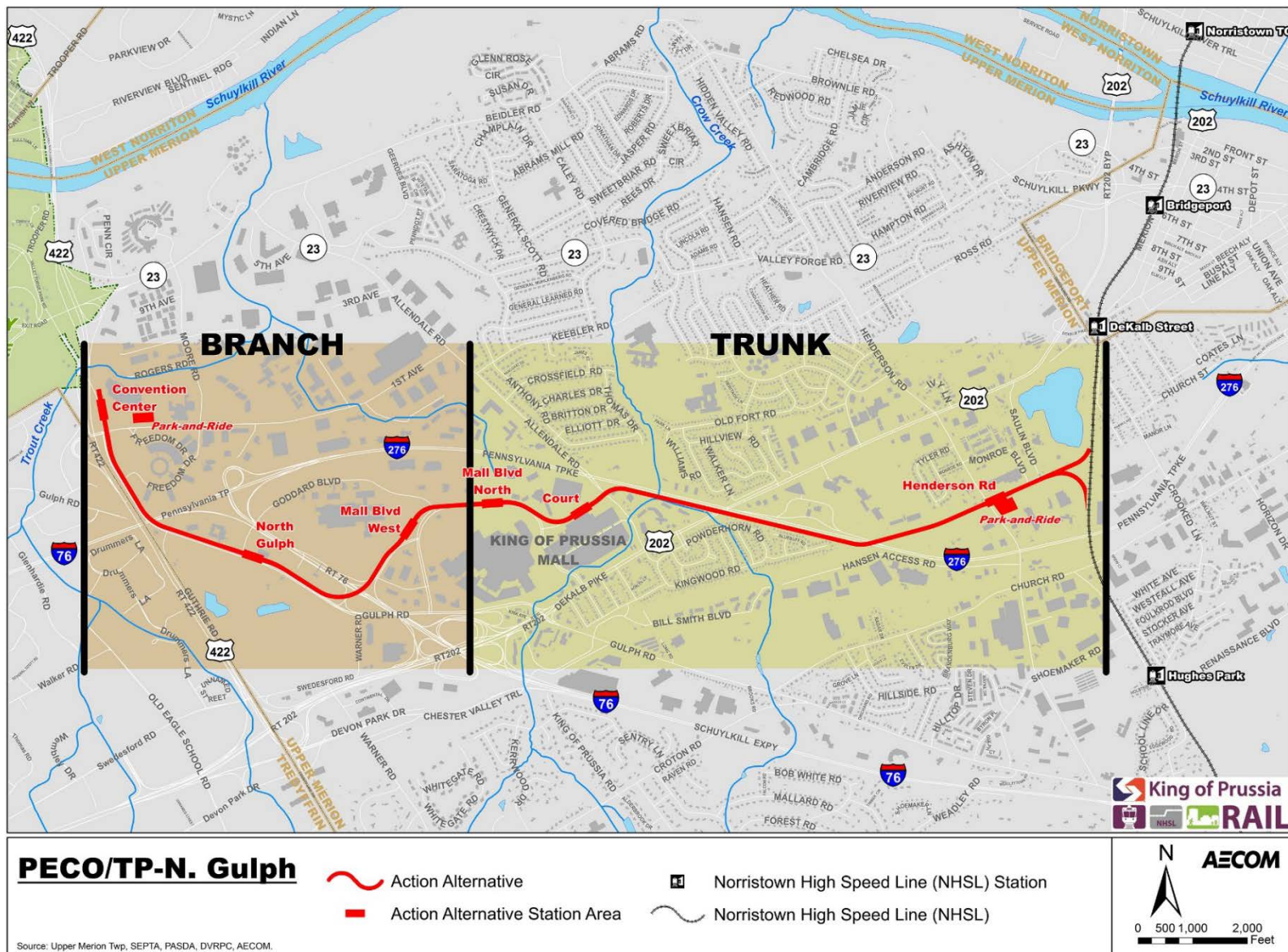
As the PECO/TP–N. Gulph Action Alternative Trunk approaches the PA Turnpike crossing, the guideway configuration would change from at-grade to single concrete column structure that would carry the guideway across the PA Turnpike to its south side. The guideway would run within the PA Turnpike right-of-way on the south side of the existing noise barrier, outside the Turnpike travel lanes, and be similar in this section to the PECO/TP–1st Ave. Alternative (Figure 2-2.8). The guideway would cross over US Route 202. Just east of the intersection of Allendale Road and the PA Turnpike, the alignment would turn southwest toward the King of Prussia Mall, passing behind the King of Prussia Mall on Wills Boulevard and joining Mall Boulevard. In the King of Prussia Mall vicinity, two station locations are proposed: Court and Mall Blvd North (similar in this section to the PECO/TP–1st Ave. Action Alternative as shown in Figure 2-2.8).

Snapshot:

PECO/TP - N. Gulph Action Alternative

The PECO/TP – N. Gulph Action Alternative would use portions of the PECO electric utility corridor and PA Turnpike as its Trunk, passing behind (to the north of) the King of Prussia Mall, turning south to connect to N. Gulph Road before turning west along N. Gulph Road and ending near the intersection of 1st Avenue and N. Gulph Road near the Convention Center. The PECO/TP - N. Gulph Action Alternative is approximately 4.3 miles long and provides six proposed station locations, two of which have potential park-and-ride facilities.

Figure 2-2.8: PECO/TP - N. Gulph Action Alternative



The Branch component of the PECO/TP-N. Gulph Action Alternative would turn south from the Mall Boulevard North Station along Mall Boulevard and Conrad Drive, cross over I-76 and turn west on N. Gulph Road. The elevated guideway would be aligned on the east side of N. Gulph Road, terminating in the vicinity of the 1st Avenue/N. Gulph Road intersection near the VFCR. The elevated guideway would preserve the N. Gulph Road travel lanes, turning lanes and intersection configurations, as well as operations.

Along the Branch component of the PECO/TP-N. Gulph Action Alternative, three station locations are proposed: Mall Boulevard West near the King of Prussia Mall, North Gulph at the planned Village at Valley Forge development, and Convention Center in the vicinity of the 1st Avenue/N. Gulph Road intersection. SEPTA proposes to provide a park-and-ride facility at the Convention Center Station.

2.2.7 US 202-1st Ave. Action Alternative

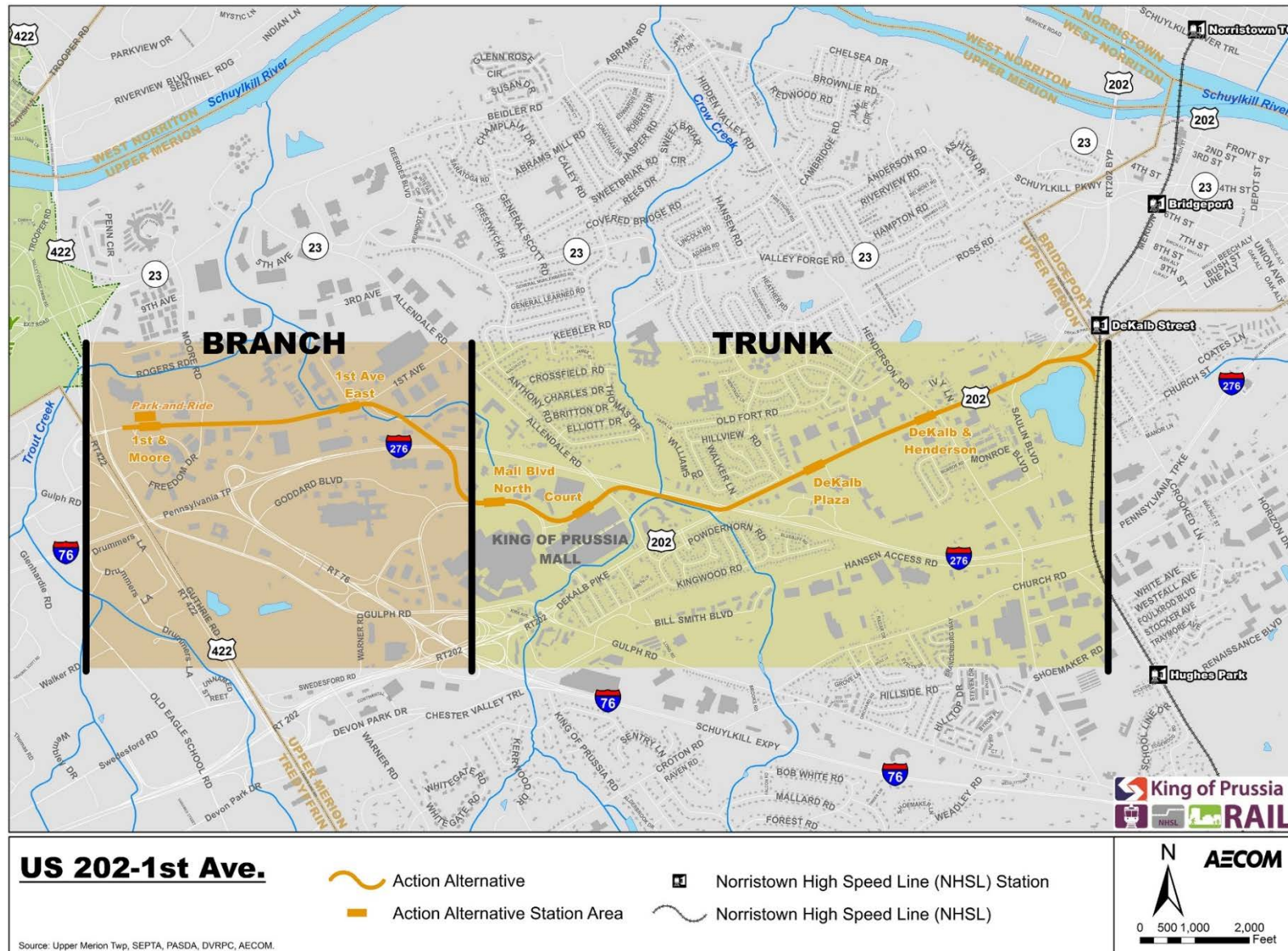
The US 202-1st Ave. Action Alternative would use portions of the US Route 202 corridor and the PA Turnpike right-of-way as its Trunk, passing behind (to the north of) the King of Prussia Mall, turning north to use a small portion of the former industrial track right-of-way before turning west along 1st Avenue and ending near the intersection of 1st Avenue and N. Gulph Road near the VFCR. Figure 2-2.9 shows the alignment of the US 202-1st Ave. Alternative.

The Trunk component of the US 202-1st Ave. Alternative would turn off the NHSL just south of DeKalb Street Station. At the turn or wye, the guideway would be at ground level (at-grade). As the alignment approaches US Route 202, it would rise so that the double-track guideway is elevated on single-column concrete pier-supported structure as it joins and runs west along the centerline of US Route 202. The US 202-1st Ave. Alternative guideway would remain within the existing median and center left turn lane along US Route 202, and would be elevated on structure for the remainder of the alignment. The elevated guideway would preserve existing travel lanes, turning lanes, intersection configurations and operations along US Route 202. Two station locations are proposed on US Route 202: DeKalb & Henderson Station near the intersection of US Route 202 and Henderson Road and the DeKalb Plaza Station slightly west of the King Circle intersection.

Snapshot: US 202-1st Ave. Action Alternative

The US 202-1st Ave. Action Alternative would use portions of the US Route 202 corridor and the PA Turnpike right-of-way as its Trunk, passing behind (to the north of) the King of Prussia Mall, turning north to use a small portion of the NS Railroad Industrial Track before turning west along 1st Avenue and ending near the intersection of 1st Avenue and N. Gulph Road near the VFCR. The US 202-1st Ave. Action Alternative is approximately 3.9 miles long and provides six station locations, one of which has a potential park-and-ride facility.

Figure 2.2-9: US 202-1st Ave. Action Alternative



As the US 202-1st Ave. Alternative approaches the crossing of the PA Turnpike along US Route 202, the elevated alignment would cross the turnpike and turn northwest then parallel the south side of the PA Turnpike. The alignment would run within PA Turnpike right-of-way on the south side of the existing noise barrier, outside the Turnpike travel lanes. Just east of where Allendale Road crosses the PA Turnpike, the alignment would turn southwest toward the King of Prussia Mall, passing behind the King of Prussia Mall on Wills Boulevard and joining Mall Boulevard. In the King of Prussia Mall vicinity, two station areas are proposed: Court and Mall Blvd North.

The Branch component of the US 202-1st Ave. Alternative would extend west on elevated structure from the Mall Boulevard North Station, turning north to cross over the PA Turnpike. North of the PA Turnpike, the alignment would follow a short segment of the former industrial track right-of-way in the King of Prussia Business Park before turning west to join 1st Avenue. The elevated guideway would be aligned in the planned center median of 1st Avenue, terminating in the vicinity of the 1st Avenue/N. Gulph Road intersection near the VFCR. As described in Section 2.2.1, the KOP-BID and Upper Merion Township plan to implement their 1st Avenue Road Diet project (a committed project that will occur with or without the Project) on this portion of 1st Avenue. The Road Diet project would re-configure the roadway within the existing right-of-way, providing a new center median, a single travel lane in each direction, turning lanes and intersection improvements between American Avenue and N. Gulph Road. SEPTA's proposed elevated guideway would be aligned over this portion of 1st Avenue and supported on columns located in the center median, preserving the planned 1st Avenue travel lanes, turning lanes and intersection configurations, as well as operations (Figure 2-2.10).

Figure 2-2.10: Alternative Rendering along 1st Avenue



Conceptual rendering of what the recommended LPA could look like along 1st Avenue. This rendering could also represent the US 202-1st Ave. Alternative, the PECO-1st Ave. Alternative, or the PECO/TP-1st Ave. Alternative. It does not show a station layout.

Source: Bergmann Associates, PC, 2016

Along the Branch component of the US 202–1st Ave. Alternative, two station locations are proposed: 1st Avenue East in the vicinity of Clark Avenue and 1st & Moore in the vicinity of the Valley Forge Casino Resort. SEPTA proposes to provide a park-and-ride facility at the 1st & Moore Station. US 202-N. Gulph Action Alternative

2.2.8 US 202-N. Gulph Action Alternative

The US 202-N. Gulph Action Alternative would use portions of the US Route 202 corridor and the PA Turnpike right-of-way as its Trunk, passing behind (to the north of) the King of Prussia Mall, turning south to connect to N. Gulph Road before turning west along N. Gulph Road and ending near the intersection of 1st Avenue and N. Gulph Road near the VFCR. Figure 2-2.11 shows the alignment of the US 202-N. Gulph Action Alternative.

The Trunk component of the US 202–N. Gulph Action Alternative would turn off the NHSL just south of the DeKalb Street Station. At the branch or wye, the proposed guideway would be at ground level (at-grade). As the alignment approaches US Route 202, it would rise so that the double-track guideway is elevated on single-column concrete pier-supported structure as it joins and runs west along the centerline of US Route 202. The US 202-N. Gulph Action Alternative guideway would remain elevated on structure throughout the remainder of the alignment.

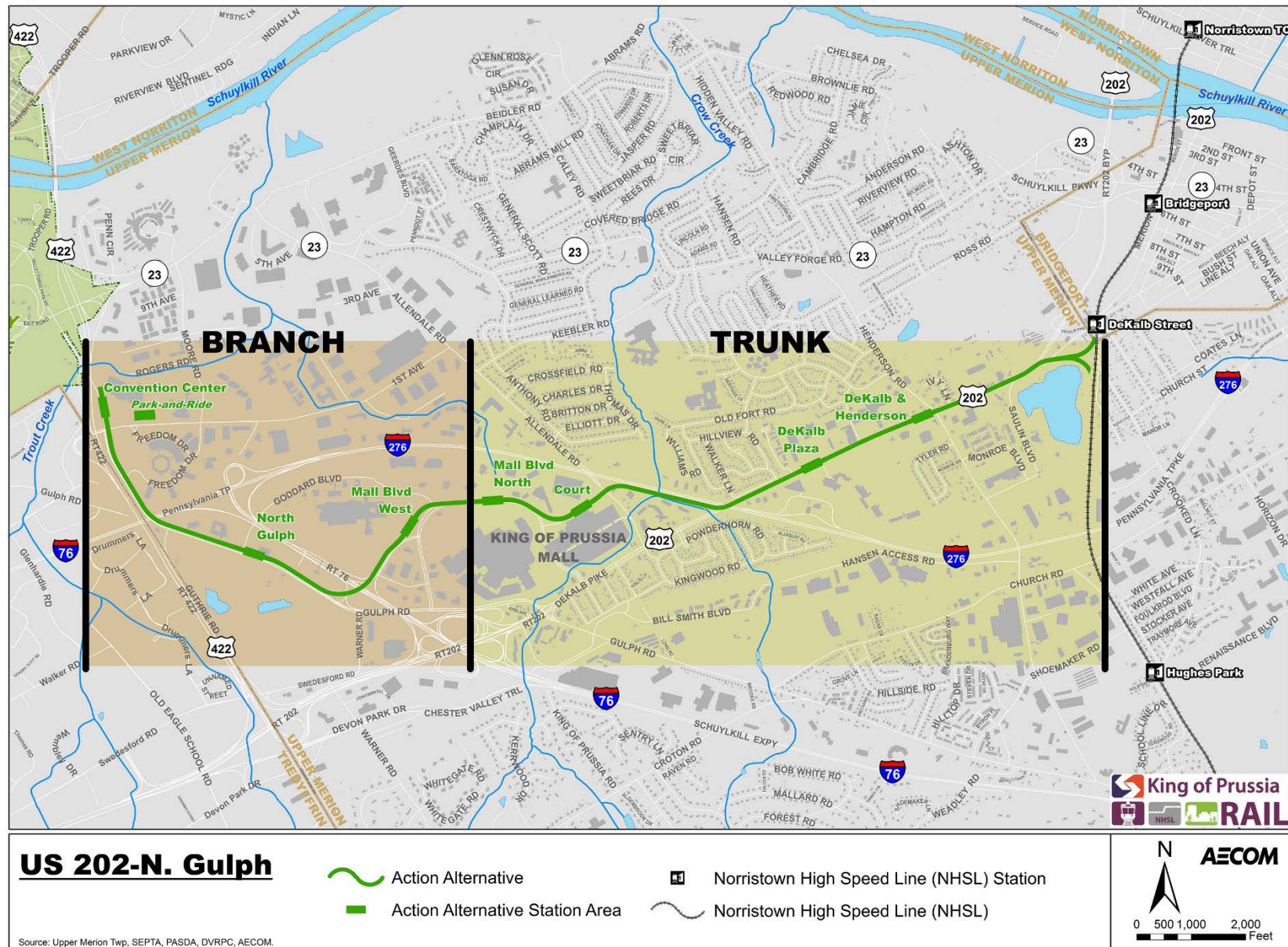
The elevated guideway would preserve the existing travel lanes, turning lanes, and intersection configurations and operations along US Route 202. Two station locations are proposed: the DeKalb & Henderson Station near the intersection of US Route 202 and Henderson Road and the DeKalb Plaza Station slightly west of King Circle intersection.

As the US 202-N. Gulph Action Alternative approaches the PA Turnpike crossing of US Route 202, the elevated alignment would cross the turnpike and turn northwest to parallel the south side of the PA Turnpike. The alignment would run within the PA Turnpike right-of-way on the south side of the existing noise barrier, outside the Turnpike travel lanes. Just east of where Allendale Road crosses the PA Turnpike, the alignment would turn southwest toward the King of Prussia Mall, passing behind the King of Prussia Mall on Wills Boulevard and joining Mall Boulevard. In the King of Prussia Mall vicinity, two station locations are proposed: Court and Mall Blvd North.

Snapshot: US 202-N. Gulph Action Alternative

The US 202-N. Gulph Action Alternative would use portions of the US Route 202 corridor and PA Turnpike right-of-way as its Trunk, passing behind (to the north of) the King of Prussia Mall, turning south to connect to N. Gulph Road before turning west along N. Gulph Road and ending near the intersection of 1st Avenue and N. Gulph Road near the VFCR. The US 202-N. Gulph Action Alternative is approximately 4.3 miles long and provides seven station locations, one of which has a potential park-and-ride facility.

Figure 2-2.11: US 202-N. Gulph Action Alternative



The Branch component of the US 202-N. Gulph Action Alternative would turn south from the Mall Boulevard North Station along Mall Boulevard and Conrad Drive, cross over I-76 and turn west to join N. Gulph Road. The elevated guideway would be aligned on the east side of N. Gulph Road, terminating in the vicinity of the 1st Avenue/N. Gulph Road intersection near the VFCR. The elevated guideway would preserve the N. Gulph Road travel lanes, turning lanes and intersection configurations, as well as operations.

Along the Branch component of the US 202-N. Gulph Alternative, three station locations are proposed: Mall Boulevard West near the King of Prussia Mall, North Gulph at the Village at Valley Forge development, and Convention Center in the vicinity of the 1st Avenue/N. Gulph Road intersection. SEPTA proposes to provide a park-and-ride facility at the Convention Center Station

As the elevated guideway of each Action Alternative and recommended LPA design option approaches the western terminal stations (1st & Moore or Convention Center), the two-track guideway structure would widen from approximately 34 feet to approximately 50 feet wide to accommodate a third track. In the widened area, the third track would provide SEPTA with the necessary track capacity for efficient train operations at the terminal station and along the alignment in those areas.

2.2.9 69th Street Transportation Center

Each Action Alternative, the recommended LPA and the recommended LPA design options would require that SEPTA add one new station track at SEPTA's 69th Street Transportation Center in Upper Darby Township, Delaware County. This new station track is needed in order to support the Project's operating plan. The new track would be aligned along the north side of the existing NHSL tracks, stopping at the existing building along the north side of the existing northern platform. The ballast embankment supporting the existing NHSL tracks would be widened to the north to accommodate the new track. Adjacent to the northern platform, the new track would be supported on an elevated guideway structure. The purpose of using structure rather than continuing the embankment up to the building is to avoid impacting the existing bus stop and turnaround area underneath and adjacent to the new track.

The northern platform would be widened to serve the new track. As with the existing NHSL service, the new track and widened platform would be designed to enable level passenger boarding. The existing windbreak wall along the northern edge of the existing platform would be removed and rebuilt along the northern edge of the proposed guideway structure. Elements to be removed include a short section of existing turnout track along the proposed alignment as well as an existing stairway used by passengers exiting from the north platform and by SEPTA personnel. New access to the bus loop would be provided with a stairwell and walkway. The existing track embankment retaining wall would be relocated to the north edge of the new embankment and the existing track turnout would be replaced. Other portions of the 69th Street Transportation Center would not be affected or changed by the proposed Project.

2.3 Station Areas and Park-and-Ride Facilities

To address the need for additional transit system connectivity, station areas were identified for each Action Alternative. In considering station locations, SEPTA gave primary consideration to engineering feasibility, access to key transportation study area destinations, relative square footage of non-residential and office space within ½ mile of station areas as a measure of the size of potential service areas, existing land use, travel time effects and ridership. Engineering feasibility has to do with whether a station could be built in a location as a matter of sound engineering judgment. In this evaluation, factors such as terrain, relationship to roadways, intersections, driveways, other structures and other conditions were considered.

To address the Project need for connections between the three key destinations: King of Prussia Mall, the King of Prussia Business Park and Valley Forge National Historical Park, each Action Alternative would provide at least one station area with access to each of these key destinations. As the alignments of each Action Alternative vary from one another, the ability of each Action Alternative to provide access to other transportation study area destinations varies. For example, the Action Alternatives with a US 202 Trunk are the only alternatives that would provide a station area along US Route 202; the walking distance from other alignments is too far to provide a station serving US Route 202. Other destinations served by proposed station areas and park-and-ride facilities include US Route 202 (by the US 202 Trunks), the Henderson Road area (by PECO and PECO/TP Trunks), the Valley Forge Casino Resort (by the 1st Avenue Branches) and Village at Valley Forge (by the N. Gulph Branches).

During Tier 2 screening, the relative square footage of existing non-residential and office space within ½ mile of proposed station areas was used to provide a comparison of the size of potential station service areas. This calculation used county property tax records to identify the amount of square footage of these uses. For each alternative, the station area sub-totals were added together, adjusting for overlapping station area boundaries, to obtain the total existing non-residential area and total office area potentially served by each alternative. The results of this calculation are shown in Table 2-3.1. This and other tables in the DEIS that are similarly organized compare quantities for the recommended LPA design options with the recommended LPA quantities. The quantities for the recommended LPA design options are shown as the differences (greater or less than) compared to the recommended LPA. If there is no difference in quantity compared to the recommended LPA, the code “ND” (no difference) is used.

Table 2-3.1: Relative Size of Station Service Areas

	No Action Alternative	Action Alternatives						
		PECO-1st Ave.	PECO/TP-1ST Ave. and Design Options			PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph
			PECO/TP-1st Ave. (Recommended LPA)	Design Options Differences Compared to PECO/TP-1 st Ave				
				PA Turnpike North/South Option	9/11 Memorial Avoidance Option			
Non-residential development served (millions of square feet)	N/A	14.9	15.0	ND	ND	14.2	14.5	13.7

N/A = not applicable; ND = no difference compared with the recommended LPA.

Source: AECOM, 2015 *KOP Rail Tier 1 and Tier 2 Screening Technical Memorandum*.

Table 2-3.1 indicates that the recommended LPA (and the design options) and PECO-1st Ave. Action Alternative would service the highest square footage of non-residential and office land uses (15 and 14.9 million square feet, respectively). The PECO/TP-N. Gulph and US 202-1st Ave. Action Alternatives would serve less square footage because less square footage of non-residential and office land uses occur in the N. Gulph Road and US Route 202 station areas (14.2 and 14.5 million square feet, respectively). US 202-N. Gulph would serve the least square footage of non-residential and office uses around proposed station areas (13.7 million square feet).

Existing land use was also factored into station area identification because providing stations and park-and-ride facilities would require the use of land adjacent to the proposed guideway. For example, SEPTA identified the PECO corridor as a potential site for the Henderson Station area and park-and-ride facility (for each Action Alternative except the US 202 alternatives) because of the amount of land potentially available in that location. By contrast, the commercially developed US Route 202 corridor could accommodate station areas but does not provide the amount of land SEPTA would need for a park-and-ride facility.

Project travel time is a function of the length of each Action Alternative, the number of stations and average travel speed. Each time a train stops at a station, travel time is increased compared to travel time without a station stop because the train must decelerate as it comes into the station, stop at the station and then accelerate as it leaves the station. To achieve desired travel time on the proposed extension, SEPTA has to balance the number of stations it provides with its travel time goals. In considering this balance, SEPTA determined it could achieve desired travel time with five to seven stations.

SEPTA then considered ridership. Station areas were assessed in terms of the potential to attract ridership. For example, an additional station area was identified along US Route 202 in Action Alternatives with a US 202 Trunk because additional ridership would be captured in that linear commercial area.

Additional considerations in proposed station area and park-and-ride location identification were based on other urban design principles, including access and safety, land area availability and local plans. For example, proposed station areas must be accessible to pedestrians, bicyclists, and automobile drivers, while allowing adjacent roadway and sidewalk networks to operate in a safe manner.

As a result of these considerations, the number of station areas and park-and-ride facilities varies by Action Alternative. SEPTA identified five to seven proposed station areas along each Action Alternative alignment and one to two proposed park-and-ride facilities. (Figures 2-2.1, 2-2.2, 2-2.8, 2-2.9 and Table 2-3.2).

Most stations would function as kiss-and-ride-locations, allowing patrons to be dropped off by bus, shuttle or car, along with pedestrian and bicycle access. The Convention Center Station or the 1st & Moore Station, depending on Action Alternative, and the Henderson Road Station for the PECO and PECO/TP Action Alternatives only, would function primarily as park-and-ride locations, with daily car parking areas for patrons. The park-and-ride stations would include separate drop-off areas for buses and shuttles, as well as kiss-and-ride, bicycle and pedestrian access.

The design of the stations largely follows a consistent format. The kiss-and-ride stations would provide a small area for short-term parking for dropping off or picking up passengers (kiss-and-ride) and space for connecting buses or shuttles serving the station. Patrons would exit buses, shuttles and cars on the right side of the designated lane onto a sidewalk, which would lead to the station. Stairs and elevators would provide patron access to the elevated station platform via a proposed pedestrian bridge. All driveways would be located a minimum distance of 25 feet from intersections, as per the requirements of state law. Stormwater management such as inlets and/or detention basins would be developed where needed.

Station areas would have an aerial component and at-grade components. Access for boarding trains would be provided from a center island platform on the aerial structure in each station area. The platforms would be approximately 150 feet long to serve two-car trains with planned platform space to allow for three-car trains; platforms would have elevator and stair access. Where station areas are located above roadways, access to and from the platforms and ground level sidewalks would be from stairways, elevators and an overhead pedestrian bridge. The bridge would provide access to ground level sidewalks on either side of roadways beneath the guideway structure by stairs and elevators. The ground level sidewalk would then provide access to the at-grade components of the station area: areas for buses and shuttles, as well as the kiss-and-ride area, and at stations where it is proposed to be provided, the park-and-ride area.

Table 2-3.2: Proposed Station Areas

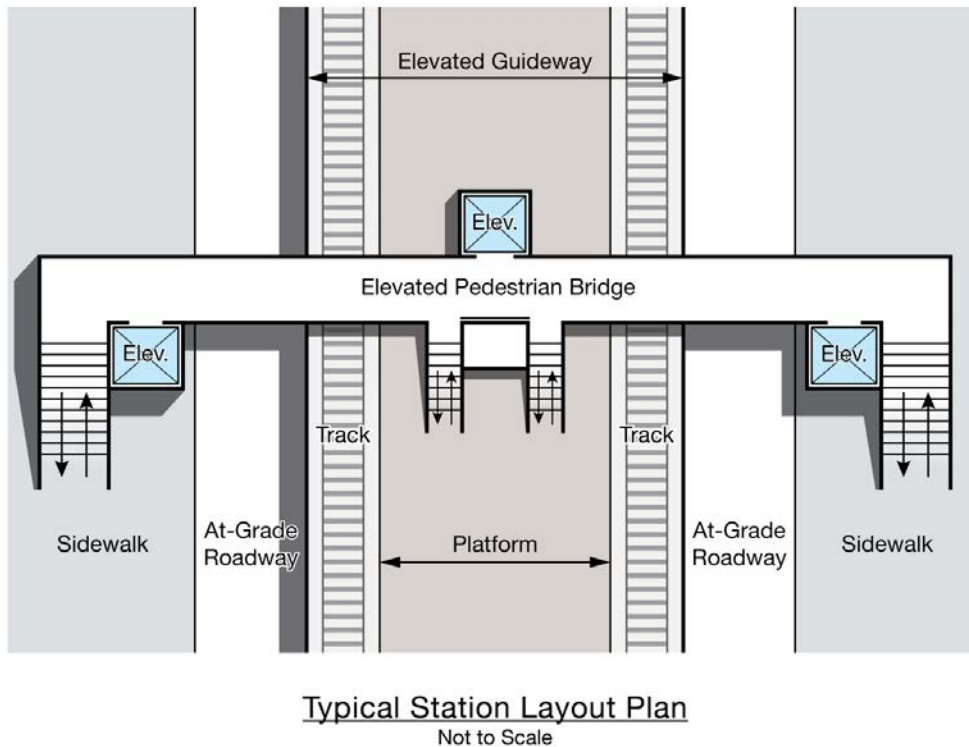
Station Areas	Details	No Action Alternative	Action Alternatives						
			PECO-1 st Ave.	PECO/TP-1 st Ave. and Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph	
				PECO/TP-1 st Ave. (Recommended LPA)	Design Options Differences Compared to PECO/TP-1 st Ave				
					PA Turnpike North/South Option				9/11 Memorial Avoidance Option
Convention Center (park-and-ride)	Structure parking, approx. 720 spaces; access: 1 st Avenue, N. Gulph Road	N/A			ND	ND	•		•
Court (kiss-and-ride)	Access: Wills Road	N/A		•	ND	ND	•	•	•
DeKalb & Henderson (kiss-and-ride)	Access: US Route 202, Henderson Road	N/A			ND	ND		•	•
DeKalb Plaza (kiss-and-ride)	Access: US Route 202	N/A			ND	ND		•	•
1st & Moore (park-and-ride)	Structure parking: approx. 720 spaces; access: 1 st Avenue	N/A	•	•	ND	ND		•	
1st Avenue East (kiss-and-ride)	Access: 1 st Avenue	N/A	•	•	ND	ND		•	
Henderson Road (park-and-ride)	Surface parking, approx. 750 spaces; access: South Henderson Road, Saulin Boulevard	N/A	•	•	ND	ND	•		
Mall Blvd North (kiss-and-ride)	Access: Mall Boulevard	N/A		•	ND	ND	•	•	•
Mall Blvd West (kiss-and-ride)	Access: Conrad Drive	N/A			ND	ND	•		•
North Gulph (kiss-and-ride)	Access: N. Gulph Road	N/A			ND	ND	•		•
Plaza (kiss-and-ride)	Access: N. Gulph Road	N/A	•		ND	ND			
Plaza West (kiss-and-ride)	Access: Mall Boulevard	N/A	•		ND	ND			
Total Numbers of Stations		N/A	5	5	ND	ND	6	6	7

Notes: N/A = not applicable; ND = no difference compared to recommended LPA.

Source: AECOM, 2016.

Figure 2-3.1 provides a typical plan view of a possible configuration of a station area located above a roadway. Access would comply with the Americans with Disabilities Act of 1990, as amended.

Figure 2-3.1: Typical Station Layout Plan



Source: AECOM, 2016

As noted, SEPTA proposes two park-and-ride facility locations, one near the VFCR (Convention Center or 1st & Moore stations, depending on Action Alternative) at the western terminus of the Project and one near Henderson Road close to the eastern terminus of the PECO and PECO/TP Action Alternatives only. The Convention Center park-and-ride facility would serve the proposed Convention Center or 1st & Moore Station areas, depending on the alternative. The facility is recommended, based on park-and-ride estimations completed as part of the ridership forecasting work, to provide approximately 720 parking spaces within a structure on the north side of 1st Avenue. The proposed facility overlies portions of the existing parking area of the VFCR and would accommodate the displaced parking in the total number of available parking spaces.

The Henderson Road park-and-ride facility would serve the Henderson Road Station area of the PECO or PECO/TP Action Alternatives. The Henderson Road park-and-ride facility is recommended to include two connected surface parking lots providing approximately 750 spaces, based on park-and-ride estimations completed as part of the ridership forecasting work, on the east side of Henderson Road.

Station layouts are depicted on the Action Alternative maps that can be found in Appendix A. All proposed stations are conceptual in nature and subject to change as continued dialogue and refinement of station area plans occurs with property owners and other stakeholders.

2.4 Bus and Shuttle Services

As indicated in Chapters 1 and 3, SEPTA currently provides bus service in the transportation study area. SEPTA would likely modify or adjust some bus routes to serve proposed Project stations or to respond to service redundancy. These adjustments could include modifications to headways, routes or hours of service.

In addition to SEPTA bus service, the GVFTMA and the KOP-BID provide connecting shuttle services as a complement to SEPTA bus and rail services. Shuttle buses serve a different function than SEPTA buses. While buses provide a connection between King of Prussia and other areas in the Philadelphia region, shuttle buses primarily provide “last mile” connections between nearby transit stations and employment areas or residential areas. SEPTA anticipates changes to the current shuttle bus system as well as changes to the SEPTA bus network operating in the study area as a result of the Project. During identification of the proposed station areas, SEPTA determined that there is a limit to the number of stations that could be provided, while still providing timely service in the transportation study area. To strike that balance, some destinations would not be within walking distance of a station, depending on the specific Action Alternative. However, GVFTMA and the KOP-BID are committed to modifying existing shuttle services to provide last mile service from some stations to other transportation study area destinations. After an alternative is adopted as the LPA and the Project advances, SEPTA, in partnership with GVFTMA and the KOP-BID, will develop a bus and shuttle service plan that examines existing and desired services, optimizes bus services in the context of the Project and determines warranted and complementary connecting shuttle services.

Service Plan:

Each year, SEPTA prepares a service plan to guide the delivery of its bus and regional rail services. The plan describes service and revisions proposed for the upcoming budget year, together with preliminary proposals and financial estimates for the subsequent 5-year period.

A new service plan will be required to integrate the Project into SEPTA’s overall transit system. The new service plan will examine existing and desired services, optimize bus services in the context of the Project, and determine warranted and complementary connecting shuttle services.

2.5 Vehicles

SEPTA proposes to provide Project service using its existing fleet of N5 rail vehicles that operate on the NHSL (Figure 2-5.1), plus six new vehicles. The N5 vehicles, manufactured by ABB Traction, provide level floor boarding at station platforms and are equipped for electrical power by third rail, as currently used by SEPTA on the NHSL. Each vehicle has a seating capacity of 60 passengers and a total capacity of 100 passengers including standing capacity. Vehicles are climate-controlled with heating and air conditioning. Each vehicle is equipped with signaling and automatic train control. The vehicles can be run individually or coupled together to form 2-car trains.

Figure 2-5.1: SEPTA N5 Vehicle



Note: Photo of existing SEPTA N5 vehicle.
Source: SEPTA, 2015.

2.6 Other Infrastructure

Vehicles would be serviced at the existing SEPTA NHSL maintenance facility, approximately 0.25 mile from the 69th Street Transportation Center. Some upgrades to the existing facility would be needed and are anticipated to be interior to the facility only. Using the existing facility eliminates the need to provide a new maintenance facility in the transportation study area.

Other infrastructure required to support the proposed Project in the transportation study area includes traction power substation (TPSS) facilities, signal huts and stormwater management facilities.

- **TPSS** - Electrical power would necessitate the use of TPSS facilities at approximately one mile intervals along the proposed alignment. A TPSS is a cluster of transformer units and related equipment typically housed in a small building immediately adjacent to the rail guideway. For the Project, TPSS facilities would be located in close proximity to the Project and would be at grade (on the ground). Conceptual zones for the locations of TPSS facilities are shown on the maps contained in Appendix A. Locations for the TPSS facilities will be identified and the effects evaluated in the FEIS. Design of the TPSS facilities would occur during preliminary and final design for the Project, as a traction power supply study will determine the exact number of required substations. Specific site selection would be made based on the results of a combination of assessments including traction power simulations (based on peak headways, rolling stock, vertical grades, speeds, and other operational factors), available real estate,

available power sources, suitability for TPSS structures, and natural and human environmental impacts. Environmentally sensitive lands, protected lands, historic properties or residential areas are typically not suitable sites. TPSS facilities are typically fenced and screened from view with trees and shrubs. Vehicular access to TPSS facilities is needed for maintenance during rail operations.

- **Signal huts** - Small sheds known as signal huts house equipment to support the operation of the train signal systems. Signal huts are typically located immediately adjacent to the rail guideway, within the Project LOD. Signal huts would most likely be on the aerial guideway structure. Specific locations and design of the signal huts for the Project would occur during preliminary and final design.
- **Stormwater management facilities** Water runoff from new paved surfaces would be managed at station and park-and-ride facility sites with stormwater management facilities. These facilities could take the form of vegetated drainage swales, underground or surface water detention basins or other accommodations depending on Pennsylvania regulations (PA Code Chapter 102, Erosion and Sediment Control) and specific Project conditions. Area for stormwater management facilities has been preliminarily identified and accommodated within the Project LOD. Design of stormwater management facilities would occur during preliminary and final design.

2.7 Operating Characteristics & Signal System

Each Action Alternative, the recommended LPA and the recommended LPA design options would provide a “one seat ride” service from the 69th Street Transportation Center or the Norristown Transportation Center (NTC) to any proposed station area in King of Prussia using the NHSL and the proposed extension. The NHSL currently runs 13.5 miles between the 69th Street Transportation Center in Upper Darby and the NTC in Norristown. When Project service is implemented, it would operate during the same hours as the NHSL. The NHSL currently operates from approximately 4:30 a.m. to 2:30 a.m., providing approximately 22 hours of service per day. Current service frequency varies from approximately five to 20 minutes depending on the time of day, the day of the week and service type. Service types include limited service, express service, and local service, each with differing stop patterns. Weekend service is primarily local service. Service is bi-directional, with trains originating and/or terminating at the Norristown Transportation Center, the 69th Street Transportation Center, Bryn Mawr Station or Hughes Park Station.

For each Action Alternative, the proposed service frequency is the following:

- NTC to King of Prussia:
 - 20 minute headways each way during peak periods (6:00am–10:00am and 3:00pm–7:00pm)
 - 20 minute headways for all other times

- 69th Street Transportation Center to King of Prussia:
 - 10 minute headways each way during peak periods (extension of Hughes Park service, some existing trains and new trains)
 - 20 minute headways all other times (includes extension of Hughes Park service, some existing trains and new trains)

Operating plans for the Action Alternatives reflect peak period service delivery goals of six trains per hour per direction (TPHPD) between 69th Street Transportation Center and King of Prussia (10 minute headways in peak period), as well as three TPHPD between Norristown Transportation Center and King of Prussia (20 minute headways in peak period). The future operating plan increases service on the existing corridor through the introduction of extension trips. The four Hughes Park trains that operate during the peak period would be replaced by six trains per hour to King of Prussia. In the off-peak, the future operating plan calls for three TPHPD between 69th Street Transportation Center and King of Prussia. In addition, three TPHPD would be scheduled to operate between Norristown Transportation Center and King of Prussia for the duration of the day.

Table 2-7.1 presents the number of trains per hour (TPH) along specific NHSL segments. Specifically, the conceptual operating plan for the Project for each direction of travel involves six TPH between the transportation study area and 69th Street Transportation Center during the peak period, four TPH between Norristown Transportation Center and 69th Street Transportation Center, three TPH between Norristown Transportation Center and King of Prussia and four TPH between Bryn Mawr and 69th Street Transportation Center. In total, the addition of the Project would require 17 TPH, which is 7 additional TPH as compared to the 10 TPH that operate today.

Table 2-7.1: Number of Project Trains per Hour by NHSL Segment

NHSL Segment	Peak TPH	Off-peak TPH
KOP to 69th Street Transportation Center	6	3
KOP to Norristown Transportation Center	3	3
69th Street to Norristown Transportation Center	4	3
69th Street to Bryn Mawr	4	0

Source: LTK 2016, *Operating and Maintenance Cost Model Results*. Report available on www.kingofprussiarail.com

Each Action Alternative would have identical service on the existing NHSL; the service plans among the Action Alternatives vary only by the travel times, station stops and distances along the extension. On the existing NHSL, service levels would increase from current operating plans, but express and limited stopping patterns are expected to remain the same. However, for the extension service, trains would no longer turn back at Hughes Park Station, and trips to King of Prussia would follow the existing Hughes Park Limited and Express stopping patterns on the NHSL.

Rail simulations performed on the operating plans for each Action Alternative identified that a high-capacity signal system along the NHSL and extension is needed. In the operating plan, trains from 69th Street Transportation Center to King of Prussia must follow trains from NTC to

King of Prussia on two minute headways. Reliable operation of the plan requires a high capacity signal system on the extension tracks for any Action Alternative. The simulations also identified that additional rail vehicles would be required; the cost for these additional vehicles is included in the capital cost estimates for the Project.

End-to-end travel time for each Action Alternative would be approximately 16 minutes between the NTC and the King of Prussia Business Park, and 36 minutes between the 69th Street Transportation Center and the King of Prussia Business Park. Differences in travel time are a function of the varying number of station stops among the Action Alternatives, the length of each alternative, and the type of service offered to/from King of Prussia by a particular train (limited, express and local, as currently offered on the NHSL). As an example, express service to King of Prussia from the 69th Street Transportation Center could be as short as 22 minutes of travel time. Average train travel speed in the transportation study area would be approximately 35 miles per hour.

As the Project advances, SEPTA will refine the operating plan for the new rail service and determine fares.

2.8 Overview of Construction Activities

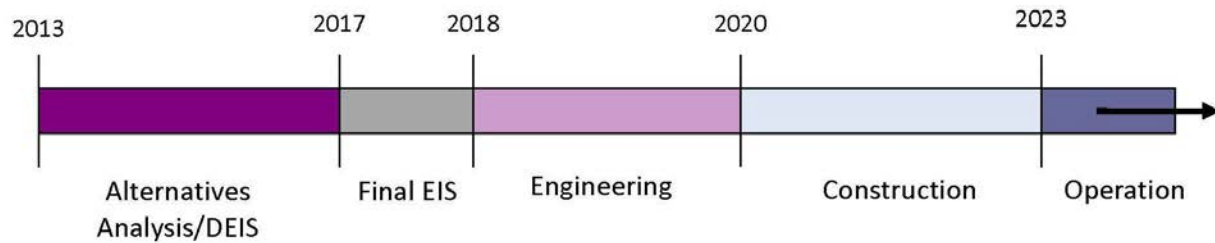
This section describes, to the extent feasible, how construction of the Project might be undertaken. As the Project design advances, SEPTA will develop a specific construction plan describing construction sequencing, equipment and methodologies. SEPTA is considering a variety of methods to construct the Project. Under any method of constructing and operating the Project, SEPTA will remain responsible for the Project and will be responsible for honoring all commitments made as part of the NEPA process.

2.8.1 Construction Schedule

SEPTA anticipates construction of the Project from 2020 to 2023, with revenue service beginning in 2023. SEPTA may select multiple contractors, each of whom would be responsible for a section of the Project. (Figure 2-8.1) The time to construct each Project section would differ based on the types of Project elements in each section, site characteristics, weather, structural design and other factors, such as the relationship among the construction sections.

Table 2-8.1 identifies typical construction activity tasks and average durations; actual construction activities and durations will be determined by SEPTA in coordination with its contractors during development of the Project construction plan during Project design.

Construction activity is likely to begin simultaneously in several sections of the Project to accommodate activities such as the elevated guideway. The time necessary for each activity would vary depending upon such factors as work hours, traffic restrictions, the types of utilities requiring relocation, and contractors' means and methods.

Figure 2-8.1: Project Schedule**Table 2-8.1: Typical Construction Activities**

Activity	Tasks	Average Time Required ¹
Pre-construction survey	Locate utilities, establish right-of-way and Project control points and centerlines, and relocate survey monuments	6 months
Site preparation	Relocate utilities and clear and grub right-of-way (demolition), establish detours and haul routes, erect safety devices and mobilize special construction equipment, prepare construction equipment staging areas and stockpile materials, and establish maintenance of traffic	18 months
Heavy construction	Construct the elevated guideway, including foundation elements, construct at-grade trackway, reconstruct adjacent roadways and sidewalks	36 months
Medium construction	Lay track work, construct stations and park-and-ride facilities, install drainage, minor earthwork and roadway paving	26 months
Light construction	Finish work, install system elements (electrical, signal, and communications), lighting, landscaping, signage and striping, close detours, clean up and test system	24 months
Pre-revenue service	Test communications, signaling systems, train operators and maintenance personnel	9 months

¹Activities may overlap

Typically, construction activities including trucking would occur 6 days a week, 15 hours per day. There would be instances when certain construction activities could take place during weekends or other times. Trucking would be permitted only on designated truck routes. Figures 2-8.2 and 2-8.3 illustrate types of rail transit construction equipment and activities. SEPTA will determine actual construction activities and equipment needs during development of the Project construction plan during Project design.

Figure 2-8.2: Elevated Guideway Construction

Potential construction technique for elevated guideway in roadway median. Temporary construction structures are yellow; permanent guideway structures are white. Source: AECOM, 2016; Honolulu Rail System.

Figure 2-8.3: Elevated Guideway Construction

Potential construction technique for elevated guideway in roadway median. Temporary construction structures are yellow; permanent guideway structures are white. Source: AECOM, 2016; Dubai Metro.

2.8.2 Minimization and Mitigation

SEPTA would develop and implement a construction plan prior to the start of Project construction. The plan would identify procedures and protocols for avoiding impacts to the

transportation, natural and human environments during Project construction. The activities described in this section are preliminary and subject to change as the Project design advances. The potential impacts of construction result from several activities:

- **Haul routes and access points** - The impacts of moving materials and equipment to the construction site and removing unwanted materials would be experienced on haul routes and at access points. Construction site access points would be established where the workers, materials, and equipment would enter the staging areas or the site and where equipment and unwanted materials would leave the site. Where reasonably feasible, access points would be located at staging areas to reduce the need for additional movements of material and equipment. By limiting access points to specific locations, SEPTA will minimize potential impacts to surrounding properties and resources and limit potential impacts on the transportation network. Potential haul routes would be identified on public roads to move equipment and materials to construction site access points, as well as to remove unwanted materials.
- **Staging Areas** - The storage of materials and equipment, the assembly of components and the management offices and other facilities for workers would occur within staging areas. Staging areas may be located within the construction site (LOD) in some cases, but this may not always be reasonably feasible given the various site constraints such as existing terrain, existing development and the roadway network. Where reasonably feasible, land area needs and impacts would be minimized by locating staging areas on sites designated for permanent non-guideway elements of the Project, such as the station areas and park-and-ride facilities. In other cases, temporary construction easements would be sought on public land, when possible, or on private land.
- **Activities and Sequencing** - The construction work would be performed on the site, which would range from shallow excavation to installing the at-grade portions of the guideway to the construction of the elevated guideway, stations, park-and-ride facilities and related infrastructure. Construction sequencing would be determined when detailed construction activities are more fully developed, but SEPTA anticipates that multiple parts of the Project would be under construction simultaneously, and the elevated guideway likely would be built in pieces. Due to the duration of the construction of certain elements, some communities potentially would be affected for longer periods of time than others.
- **Transportation Management** - Potential impacts to the affected roadways typically would be temporary lane closures or complete closures of a street for brief periods, and the need for flagging operations. Temporary lane closures or complete roadway closures could impact the bus and shuttle travel times and routes. To the extent reasonably feasible, street and lane closures would occur at off-peak hours. Additionally, construction activities could necessitate temporary adjustments to service schedules for bus, shuttle bus or the NHSL, or temporary suspension of service on portions of the NHSL. For temporary suspension of NHSL service, SEPTA would provide substitute bus service, where needed. As discussed below, SEPTA will prepare a Transportation Management Plan, including a public outreach and information component, to minimize

the potential impacts of construction on the transportation system and to inform the public of changes in the system before they occur.

- **Environmental Compliance** - SEPTA will prepare an Environmental Compliance Plan as discussed below to ensure compliance of the construction activities with federal, state and local requirements and the commitments and mitigation measures that will be identified in the Record of Decision (ROD) for the Project.

2.8.3 Transportation Management Plan

A Transportation Management Plan (TMP) would be developed and implemented for the Project in coordination with SEPTA, Montgomery County, Upper Merion Township and other providers of transit and emergency services to minimize negative impacts to transportation. The major elements of the TMP typically include, but may not be limited to, schedule and timeline, public information and outreach program, monitoring plan and a maintenance of traffic plan that includes traffic control, detours, temporary lane closures, transit and roadway operations management including transit service adjustments and substitute services, bicycle and pedestrian accommodation and parking accommodation for affected non-residential property owners.

SEPTA would be responsible for the plan's public information and outreach program, which is intended to inform motorists, transit riders, residents, businesses, schools, emergency service and delivery providers and the public regarding temporary changes to traffic patterns, detours and transit services. Appropriate lines of communication would be maintained with emergency service providers throughout construction regarding current and upcoming construction activities, potential issues and planned route changes.

2.8.4 Environmental Compliance Plan

SEPTA will develop and implement an Environmental Compliance Plan (ECP) as design advances and prior to the initiation of construction activities. The plan will identify and describe the management of environmental commitments and mitigation measures as the Project design advances. The objectives of the plan are to:

- Identify environmental compliance requirements of the Project that pertain to applicable federal, state and local regulatory permit conditions and the procedures defined to meet them
- Incorporate environmental commitments and mitigation measures stipulated with the Final Environmental Impact Statement (FEIS) and ROD to ensure that these requirements are identified in construction contract documents
- Define responsibilities and actions required to maintain compliance with environmental requirements during design and construction, and to effectively respond to problem situations or agency/public concerns
- Establish necessary procedures for communication, documentation and review of environmental compliance for each construction contract

- Describe protected resources within the Project study area and types of mitigation measures needed to protect them
- Ensure that contractor(s)' submittals properly document the work required in the contractor documents
- Ensure that contractor(s) employ means and methods to avoid or minimize impacts to the environment and public in compliance with the construction contract documents

The ECP would identify commitments and mitigation measures related to the proposed construction methods and activities. Additional commitments and mitigation measures for long-term operation and short-term construction-related impacts to transportation and environmental resources are identified in Chapters 3 and 4 of the DEIS.

Because SEPTA is considering a variety of construction methods, the plan would be flexible and tailored to the selected type of construction contract. The ECP would be updated as design and construction progresses and if further environmental impacts are identified. Periodic reviews of the plan and procedures would be performed to ensure continual improvement of the plan's adequacy.

Chapter 3.0 Transportation Effects

This chapter describes year 2013 and 2040 horizon year transportation conditions in the transportation study area and the potential benefits and impacts of the No Action Alternative and the Action Alternatives on the transportation network. The 2013 data serves as a baseline for assessing the existing condition on the transportation network. For comparison, potential Project benefits and impacts related to the transportation network are evaluated in the 2040 horizon year. Use of a horizon year to evaluate transportation network benefits and impacts is typical for transportation projects.

In this assessment, the transportation study area, defined in Section 1.2.1, is primarily used. Additionally, public transportation benefits and impacts are assessed for public transportation services in the NHSL service area (the service area is depicted on Figure 3-1.1), which includes the Market-Frankford Line, the SEPTA 101 and 102 Trolleys, the Norristown/Manayunk Regional Rail Line, and the Paoli-Thorndale Regional Rail Line, as well as SEPTA's Victory and Frontier bus services.

The assessment considers benefits and impacts on the transit and roadway networks, bicycle and pedestrian facilities, parking, freight railroads and operations, and safety and security. If the benefits and impacts of more than one alternative are similar, the results are reported together in this section. However, when the benefits and impacts differ between the alternatives, each is discussed separately. This assessment builds upon several analytical studies including travel demand modeling and ridership forecasting output as provided in DVRPC's *Ridership Forecasting Technical Memorandum*, roadway intersection capacity analysis provided in the 2017 *KOP Rail Tier 3 – Transportation Technical Memorandum*, and bus and shuttle service planning provided in the 2015 *KOP Rail Bus and Shuttle Service Improvement Plan Technical Memorandum*.

DVRPC's forecasts were performed for each Action Alternative. Forecasts for the recommended LPA design options were not performed because the design options were developed later as a result of public outreach. If one or both recommended LPA design options are selected for further study, SEPTA would have DVRPC prepare forecasts for them. However, as indicated in this chapter, the performance of the recommended LPA design options in regard to transportation is anticipated to be similar to the recommended LPA.

3.1 Public Transportation

3.1.1 Methodology

Operational benefits and impacts of the Action Alternatives on public transportation use and services were considered by examining forecasted ridership demand and potential changes to existing facilities once the Project becomes operational. This evaluation applied travel forecasts DVRPC developed by using their travel demand model. The forecasts were developed for a baseline year of 2013, representing the existing condition, and for a future horizon year of 2040. These forecasts are used to estimate the No Action Alternative conditions and the subsequent

changes in travel that would result from the introduction of the Project into the transportation system for the Action Alternatives.

3.1.2 Affected Environment

3.1.2.1 Existing Transit Services

SEPTA operates six bus routes (92, 99, 123, 124, 125, and 139) to, from, and within the transportation study area. Each route serves the King of Prussia Transit Center, a transit center located near the JC Penney store at the King of Prussia Mall. Most bus routes serve other stops in the area, while three connect to Center City Philadelphia via the Schuylkill Expressway (I-76). Sections 1.2.5 and 2.1.1 further describe existing bus transit services. Table 1-2.2 provides data for each route, including the number of daily trips, number of trips on the Schuylkill Expressway, total mileage traveled on the Schuylkill Expressway, average speed on the Schuylkill Expressway, average weekday ridership, cumulative on-time performance, and annual ridership.

SEPTA's NHSL operates along 13.5 miles of dedicated rail guideway between the 69th Street Transportation Center in Upper Darby and the Norristown Transportation Center in Norristown, serving the Main Line area in Delaware and Montgomery Counties. The NHSL skirts the eastern edge of the transportation study area and does not directly serve the identified key destinations within it. Currently, NHSL riders destined to or from the transportation study area must transfer to or from SEPTA bus service at the Gulph Mills, DeKalb Street, or Norristown Transportation Center Stations.

The NHSL line is on exclusive right-of-way, collects power from a third rail, and has high-level station platforms. There are 22 stations on the NHSL. SEPTA operates local (all stops), express and limited service on the NHSL on a frequent schedule with a service span from approximately 4:30 AM to 2:30 AM Mondays through Fridays. There is also less frequent service on Saturdays and Sundays. The total number of weekday trips is 204, while the number of Saturday trips is 114; the number of Sunday trips is 93. Ridership data for SEPTA's NHSL shows an upward trend in recent years, with a FY 2015 average weekday ridership of 11,620, a 36% increase from FY 2010 (see Table 3-1.2).

Express and limited services stop only at select stations, thereby decreasing the travel time between the 69th Street and Norristown Transportation Centers. Norristown express service travels between 69th Street Transportation Center and the Norristown Transportation Center in approximately 30 minutes, and stops at thirteen intermediate stations between 69th Street Transportation Center and the Norristown Transportation Center. Norristown limited service travels between 69th Street Transportation Center and the Norristown Transportation Center in approximately 23 minutes, stopping at only five intermediate stations between 69th Street Transportation Center and Norristown Transportation Center. Bryn Mawr local service travels between 69th Street Transportation Center and Bryn Mawr in approximately 11 minutes, stopping at eight intermediate stations between 69th Street Transportation Center and Bryn Mawr Station.

On weekdays between 6 AM and 9 AM, 28 trains depart from 69th Street Transportation Center with the following breakdown of service:

- Limited: 8 trains, 23-26 minute scheduled travel time to Norristown Transportation Center
- Express: 2 trains, 30 minute scheduled travel time to Norristown Transportation Center
- Bryn Mawr Local: 7 trains, 11-minute scheduled travel time to Bryn Mawr Station
- Local to Hughes Park: 8 trains, 23 or 24-minute scheduled travel time to Hughes Park Station

On Saturday, NHSL service operates mostly at a 20-minute frequency through much of the day; on Sunday, NHSL service operates mostly at a 30-minute frequency through much of the day.

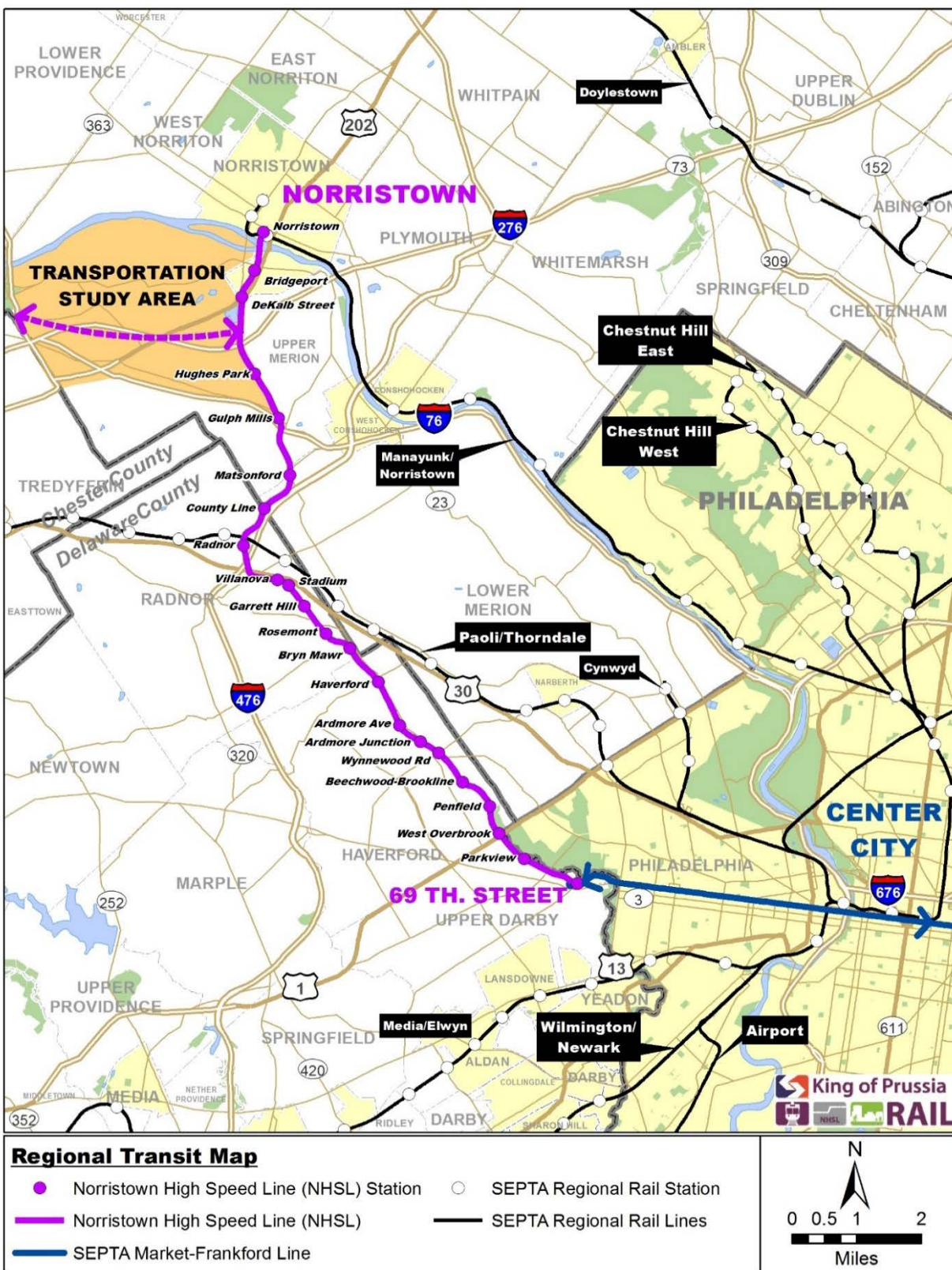
As described in Section 1.2.4, connections to SEPTA's Regional Rail system from the NHSL are available at the Norristown Transportation Center via transfer to the Manayunk/Norristown Line, a regional rail line providing service between Norristown and Center City Philadelphia, and to eight SEPTA bus routes. Additionally, connections to Center City Philadelphia from the NHSL are made at the 69th Street Transportation Center, where transfers can be made to SEPTA's Market Frankford Line (rail rapid transit) as well as to SEPTA's 101 and 102 Trolley Lines and to 18 SEPTA bus routes. Figure 3-1.1 is a graphic showing the existing NHSL service area, the transportation study area described in Section 1.2.1, SEPTA's Manayunk/Norristown regional rail line, SEPTA's Market-Frankford Line, and the proposed Project to extend NHSL service to the transportation study area. Table 3-1.1 provides a brief description of the transit services in the NHSL service area.

Table 3-1.1: Public Transit Services in the NHSL Service Area

Provider	Service	Description
SEPTA	Victory Bus	20 suburban bus routes; 14 routes serve the 69th Street Transportation Center
SEPTA	Frontier Bus	22 suburban bus routes; eight routes serve the Norristown Transportation Center
SEPTA	Regional Rail	13 rail lines with over 150 stations; 9 rail lines are shown on the NHSL Service Area map in Figure 3-1.1
SEPTA	101, 102 Trolleys	Located in Delaware County, trolleys run mostly on exclusive rights-of-way; although not shown on Figure 3-1.1, each serves the 69th Street Transportation Center
SEPTA	Market-Frankford Line	Subway and elevated rail service between 69th Street Transportation Center and Frankford
SEPTA	NHSL	Rail service between 69th Street Transportation Center and Norristown Transportation Center

Sources: SEPTA, 2016.

Figure 3-1.1: NHSL Service Area



Source: AECOM, 2016.

Ridership data for SEPTA's NHSL shows an upward trend in recent years, with a FY 2015 average weekday ridership of 11,620, a 36% increase from FY 2010 (see Table 3-1.2).

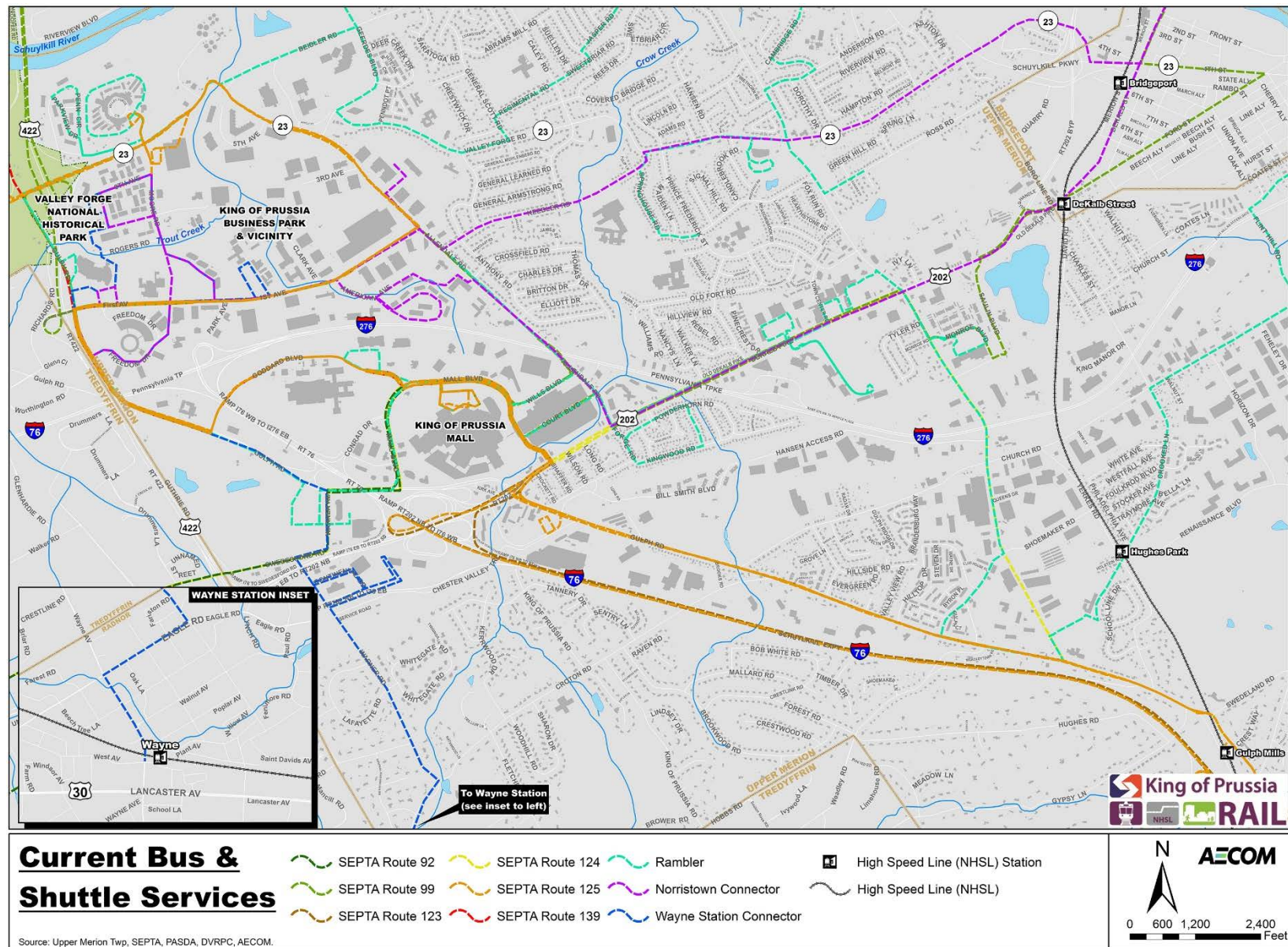
As described in Section 1.2.6, two shuttle services operate in the transportation study area, providing connections between some study area destinations and SEPTA's NHSL and Regional Rail services. One commuter transit shuttle service provides weekday peak period service on two routes between the King of Prussia Business Park and SEPTA's Regional Rail system at the Norristown Transportation Center (Norristown Connector) on the Manayunk/Norristown line and Wayne Station on the Paoli/Thorndale line (Wayne Station Connector). This shuttle helps to fill the "last mile" gap between rail service and the Business Park, a key destination in the transportation study area. In addition, the Upper Merion Rambler provides local circulation during weekday mid-days. Figure 3-1.2 shows the current bus and shuttle services.

Table 3-1.2: NHSL Average Weekday Ridership, 2010-2015

Year	Average Weekday Ridership	Percentage Increase
2010	8,530	--
2011	9,275	8.7
2012	9,465	2.0
2013	10,050	6.2
2014	10,669	6.2
2015	11,620	8.9

Source: SEPTA, 2015. *Annual Route Operating Ratio Report* (FY 2010 through FY 2015)

Figure 3-1.2: Current Bus and Shuttle Services



3.1.2.2 Existing Transit Travel Conditions

Bus riders are subject to the same roadway congestion delays as motorists because buses share roadway travel lanes with general traffic. As Table 1-2.2 indicates, existing travel speed survey data show low average vehicular speeds of 20 miles per hour along the Schuylkill Expressway eastbound during the morning peak period and 17 miles per hour westbound during the evening peak period. Slow travel speeds result in four of the six bus routes having average on-time performance rates below SEPTA's standard of 80%.

Other roadway congestion delays in the transportation study area also affect bus service on-time performance. As described in Section 3.2.1 and shown in Table 3-2.2, delays occur in the existing condition at key roadway intersections that buses travel through, such as 1st Avenue/Moore Road, and US Route 202/Henderson Road. The delay at these intersections in the PM peak period is 20 and 124 seconds, respectively. In year 2040 with the No Action Alternative, delay at these intersections will increase to 95 and 294 seconds, respectively (Table 3-2.3).

Travel times on existing bus routes vary from ride to ride depending on roadway traffic conditions, time of day, weather, and other factors. As a result, bus travel times are unreliable. The inability of many SEPTA bus routes serving the transportation study area to achieve on-time performance and the occurrence of slow average peak period travel speeds, particularly along the Schuylkill Expressway, causes travel time by bus to be lengthy and unreliable. KOP-BID shuttle service and the Rambler are also subject to variable travel times due to roadway congestion.

The NHSL has superior on-time performance at 99%, compared to that of SEPTA bus routes, as a result of operating on its own dedicated right-of-way.

3.1.2.3 Transit Service Markets

As described in Section 1.2.7, the ridership data for the six existing SEPTA bus routes (shown in Table 1-2.2) in the transportation study area and the current NHSL passenger loads (shown in Table 1-2.1) indicate that a transit service market already exists for trips destined to the transportation study area, to and from Philadelphia, Upper Darby, and Norristown, and from other points along the NHSL. With 57,038 jobs, the transportation study area is the largest suburban employment center in the DVRPC region. The diversity of land uses in the transportation study area means that both origins and destinations for transit patrons are present.

Among the six existing bus routes, three serve each of the three key destinations in the transportation study area. However, the other three bus routes only serve the King of Prussia Mall. As described in Section 1.4.2, regarding service to other transportation study area destinations, two of the six routes serve the US Route 202 area and one route out of the six serves the Henderson Road area. As a result, riders traveling to the King of Prussia Business Park, Valley Forge National Historical Park, and other destinations in the transportation study area on some bus routes must transfer to another bus route to complete a trip. If these bus riders use the NHSL or Regional Rail for part of their trip, this is their second transfer among transit services.

The U.S. Census reported in the 2011-2015 American Community Survey (5-year) that 81 percent of Upper Merion Township's resident workers drive alone, while only 4% use public transportation. Also, in 2014, the Pennsylvania Turnpike Commission reported a 62,989 average daily traffic volume at the Valley Forge/King of Prussia PA Turnpike Interchange, the highest of any interchange on the PA Turnpike corridor and only a portion of the total transportation study area traffic volume in a single day. By comparison, weekday ridership on all six bus routes combined was 6,310 in 2014 (Table 1-2.2). These data indicate that the market share the six bus routes currently captures is small compared with the amount captured by automobile travel. Reasons for traveling by personal automobile as opposed to transit are typically rooted in convenience as borne out by public comment from existing transit users who noted that using transit can take longer, sometimes much longer, to reach destinations than travel by personal automobile. Despite SEPTA's rationalization of existing bus services, as described in Section 2.1.1, some key and other transportation study area destinations are not served by some buses, and transfers among bus routes add time and inconvenience to travel.

3.1.3 Environmental Consequences

3.1.3.1 No Action Alternative

In the No Action Alternative, SEPTA would continue to operate the NHSL and the six bus routes that serve the transportation study area. The No Action Alternative includes no projects to improve the transit system in the transportation study area beyond rehabilitation and maintenance projects in SEPTA's capital budget. No improvements in transit travel conditions are contained within the No Action Alternative. Despite the transit demand evidenced by SEPTA's ridership data reported in Tables 1-2.1 and 1-2.2, destinations in the transportation study area that are not currently well-served by transit will continue being not well-served.

Despite forecasted growth in the transportation study area, which is described in Section 1.2.3, no change in the frequency of transit service to the area will occur in the No Action Alternative. Expected future growth in roadway volumes, described in Section 3.2.1, will increase roadway congestion, causing longer and more unreliable bus travel times. Existing bus on-time performance problems and slow average bus travel speeds and unreliability attributable to roadway congestion, described in Section 1.2.5, would persist and worsen as traffic congestion and delays increase over time (Sections 1.2.8 and 3.2.2). These forecasted roadway network conditions are described in Section 3.2 below.

3.1.3.2 Action Alternatives

The following discussion of the Action Alternatives is organized by long-term operational effects and short-term construction effects.

LONG-TERM OPERATIONAL EFFECTS

The assessment of long-term operational benefits and impacts of the Action Alternatives on public transportation considers several factors that enable comparison of the alternatives in terms of the effects on transit ridership, mode choice, travel time savings and reliability, and travel markets.

Ridership

The DVRPC prepared ridership forecasts for the No Action and Action Alternatives; the report on their ridership forecasting methodology can be obtained from the Project website at www.kingofprussiarail.com. Ridership forecasts have not been prepared for the recommended LPA design options. The recommended LPA design options assume the same ridership forecasts as the recommended LPA, as relocation of a portion of the guideway is not expected to substantially change ridership. If one or both of the recommended LPA design options advances as part of the recommended LPA, ridership would be evaluated in greater detail in the FEIS. Any change in ridership that is determined to occur at that time would be reported in the FEIS. As part of each Action Alternative and recommended LPA design option, SEPTA anticipates several changes to its bus routes that serve the transportation study area in order to eliminate service redundancies created by the Project, adjust routes to serve proposed stations and park-and-ride facilities, and optimize operating efficiency in light of these changes. Of the six bus routes serving the transportation study area, SEPTA anticipates that service would no longer be offered on the route 123 since this route would be redundant to the service that the Project would provide; the other five bus routes would continue to be operated but with some modifications. Most SEPTA bus routes would continue to serve the King of Prussia Mall; however, end-of-route layovers would be at the proposed Mall Boulevard North or Plaza West Stations. Buses to the King of Prussia Mall would serve a single mall bus stop and transfers between bus and rail would occur at Project stations. These anticipated changes to SEPTA bus routes were incorporated into the ridership forecasting process for each Action Alternative.

Ridership is measured in terms of the amount of increase in average weekday linked transit trips and average weekday transit boardings. A “linked transit trip” includes the transfers or transit mode changes required to make a trip. For example, a trip from home to work using bus and NHSL would be counted as one “linked transit trip.” A “boarding” is defined as the number of times a person enters a transit vehicle for travel. A single passenger’s trip from origin to destination could include multiple transit boardings—for example, boarding a bus, followed by boarding the NHSL. The results of the ridership analysis are as follows:

- Average Weekday Linked Transit Trip Increase - Table 3-1.3 presents the forecasted increase in average weekday linked transit trips on the NHSL for each Action Alternative as compared to the ridership forecasted to occur for the No Action Alternative in the 2040 horizon year as well the baseline existing condition (2013). The 2013 and 2040 forecasts are distinct from one another. The 2013 forecasts are trips that would be generated based on existing land use, demographics and 2013 trip-making data in the travel demand model. The 2013 forecasts quantify the average weekday linked transit trip increase that would use each Action Alternative if it were built and in operation today. These results indicate that ridership demand for the Project is present in the existing condition.

The 2040 forecasts are the average weekday linked transit trip increases that would be generated based on future land use, demographics, the No Action Alternative projects and 2040 trip-making data in the travel demand model. The 2040 forecasts quantify the average weekday linked transit trip increase on the NHSL for each Action Alternative if it were built and in operation in 2040. These results indicate that ridership demand for the

Project is present in the future condition. The PECO/TP Action Alternatives would generate 9,500 additional NHSL transit trips per day in 2040 compared to the No Action Alternative. The PECO-1st Ave. Action Alternative would generate 8,500 additional NHSL transit trips in 2040. The US 202 Action Alternatives would generate 7,500 additional trips per day in 2040. Variations in ridership by Action Alternative are primarily a function of the number and location of proposed stations in relation to trip-generating land uses.

The rate of change between the 2013 baseline forecast and the 2040 horizon forecast for the Action Alternatives is in line with the 5-county growth rate for both employment and population in the Pennsylvania portion of the DVRPC region. It also reflects the highway capacity improvements that are part of the horizon year transportation networks. In comparison to 2013, horizon year highway capacity improvements contained in the 2040 transportation network (part of the committed projects contained in the DVRPC *Connections 2040 Plan*) for the No Action Alternative and the Action Alternatives have an effect on travel times, both highway travel times as well as travel times for park-and-ride access to transit stations, which result in shifts of demand.

- Average Weekday Transit Boardings, NHSL Service Area - DVRPC provided forecasted weekday transit boardings data at the NHSL service area level and at the transportation study area level. Each Action Alternative is projected to generate new transit boardings in the greater NHSL service area in 2040, resulting in an increase in total NHSL service area transit boardings by 2-3% for each Action Alternative over the No Action Alternative as shown in Table 3-1.4. Ridership forecasts are shown in Table 3-1.4, broken out by type of transit service to show how each Action Alternative would generate transit boardings.

Table 3-1.3: Action Alternatives Ridership Increase Forecast, 2013 and 2040

Action Alternative	Average Weekday Ridership Increase on NHSL (2013)	Average Weekday Ridership Increase on NHSL (2040)
PECO/TP-1 st Ave. (recommended LPA) (a)	8,500	9,500
PECO/TP-N. Gulph	8,000	9,500
PECO-1 st Ave.	8,000	8,500
US 202-N. Gulph	7,500	7,500
US 202-1 st Ave.	6,500	7,500

(a) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would each have similar forecasted ridership to the recommended LPA.

Notes: Reported as the forecasted increase in average weekday ridership on the NHSL for each Action Alternative compared to the average weekday ridership forecasted for the 2040 No Action Alternative, rounded to the nearest 500 as obtained from DVRPC provided ridership forecasts. *Source:* DVRPC Tier 3 Forecast, Run Dates 4/3/15 and 6/2/15

Table 3-1.4 shows how each Action Alternative would affect average weekday transit boardings on other transit services in the NHSL service area, including connecting transit services. For example, the Project would increase transit boardings not only on the SEPTA NHSL but also on

the SEPTA Market-Frankford Line, which connects the NHSL at 69th Street Transportation Center to Center City Philadelphia. Transit boarding increases are also expected on the SEPTA Frontier Bus division as well as SEPTA 101 and 102 Trolleys as a result of the Project. Each Action Alternative would decrease transit boardings on the SEPTA Victory Bus division and Regional Rail service.

Table 3-1.4: Average Weekday 2040 Transit Boardings, NHSL Service Area

Transit Service	No Action Alternative	PECO-1 st Ave.	PECO/TP-1 st Ave. (recommended LPA) (a)	PECO/TP-N. Gulph	US 202-N. Gulph	US 202-1 st Ave.
SEPTA Victory Bus	54,230	51,411	51,752	51,735	51,477	51,602
SEPTA Frontier Bus	20,638	22,981	23,343	23,347	22,410	22,934
SEPTA Regional Rail	118,211	117,361	117,164	117,205	118,175	118,040
SEPTA Route 101, 102 Trolleys	8,234	8,395	8,413	8,391	8,383	8,372
SEPTA Market-Frankford Line	196,890	199,828	200,412	200,348	199,670	199,560
SEPTA NHSL	11,354	19,809	20,621	20,704	19,025	18,899
Subtotal of Above - 2040 NHSL Service Area Transit Boardings	409,557	419,785	421,705	421,730	419,140	419,407

(a) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would each have similar forecasted transit boardings to the recommended LPA.

Source: DVRPC Tier 3 Forecast, Run Dates 4/3/15 and 6/2/15

DVRPC also forecasted average weekday boardings by station (for existing NHSL stations and Project stations) for each Action Alternative (Table 3-1.5). Compared to the No Action Alternative, each Action Alternative is forecasted to attract additional riders to the NHSL. Compared to the No Action Alternative, the Project is forecasted to almost double ridership on the NHSL (Table 3-1.4 and Table 3-1.5).

As can be seen in Table 3-1.5, Project stations in the King of Prussia Business Park and Henderson Road business areas, including the stations with park-and-ride facilities, are forecasted to generate more ridership than stations located in areas with lower concentrations of commercial and office development. The maps in Appendix A show the Project station areas and park-and-ride facilities for each Action Alternative and recommended LPA design option.

Table 3-1.5: Average Weekday 2040 Boardings by Station, NHSL Rail Stations and Project Stations

Station	No Action Alternative	PECO-1 st Ave.	PECO/TP-1 st Ave. (recommended LPA)	PECO/TP-N. Gulph	US 202-N. Gulph	US 202-1 st Ave.
Norristown Transportation Center	1,328	1,942	1,945	1,945	1,868	1,816
Bridgeport Station	227	234	231	236	269	270
DeKalb Street Station	390	180	173	243	294	300
Hughes Park Station	259	341	325	322	370	347
Gulph Mills Station	615	465	470	468	510	527
Matsonford Station	29	32	32	33	34	33
County Line Station	35	36	36	36	36	36
Radnor Station	333	362	362	356	317	339
Villanova Station	213	284	303	292	291	292
Stadium (Ithan Avenue) Station	278	294	306	307	312	319
Garrett Hill Station	160	182	190	191	183	184
Roberts Road Station	190	209	219	212	214	220
Bryn Mawr Station	520	638	638	642	631	629
Haverford Station	245	263	280	280	269	281
Ardmore Avenue Station	39	43	45	45	44	45
Ardmore Junction Station	579	633	538	576	599	505
Wynnewood Road Station	406	447	517	500	454	535
Beechwood-Brookline Station	172	211	225	223	216	225
Penfield Station	326	340	340	336	339	336
Township Line Road Station	42	55	55	54	57	53
Parkview Station	102	120	123	121	124	118
69th Street Transportation Center	4,866	7,548	7,970	7,910	7,403	7,382
Total NHSL Stations	11,354	14,857	15,324	15,327	14,833	14,793

Station	No Action Alternative	PECO-1 st Ave.	PECO/TP-1 st Ave. (recommended LPA)	PECO/TP-N. Gulph	US 202-N. Gulph	US 202-1 st Ave.
Henderson Road (park-and-ride) Station	-	1,114	1,169	1,160	-	-
Plaza Station	-	694	-	-	-	-
Plaza West Station	-	1,290	-	-	-	-
1 st Ave East Station	-	612	-	586	-	593
1 st & Moore (park-and-ride) Station	-	1,242	-	-	-	-
Court Station	-	-	602	583	451	447
Mall Blvd North Station	-	-	1,283	1,778	1,051	1,576
Mall Blvd West Station	-	-	188	-	99	-
North Gulph Station	-	-	571	-	961	-
Convention Center (park-and-ride) Station	-	-	1,484	1,269	1,155	954
DeKalb & Henderson Station	-	-	-	-	180	216
DeKalb Plaza Station	-	-	-	-	295	321
Total Project Stations	-	4,952	5,297	5,376	4,192	4,106
Total 2040 NHSL and Project	11,354	19,809	20,621	20,704	19,025	18,899

Notes: Forecasted 2040 average weekday boardings are provided for all Project stations. "-" denotes no boardings at a station because that particular station is not part of that Action Alternative. There are no Project stations in the No Action Alternative as there would be no Project. (a) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would each have similar forecasted transit boardings to the recommended LPA.

Source: DVRPC Tier 3 Forecast, Run Dates 4/3/15 and 6/2/15.

The results for ridership as measured by transit boardings are as follows:

- Average Weekday Transit Boardings, Transportation Study Area - DVRPC's forecasted average weekday boardings show projected new transit boardings in the transportation study area in Table 3-1.6. Compared to the No Action Alternative, an increase of 10-13% in 2040 total transportation study area transit boardings for each Action Alternative demonstrates demand for transit in the area.

The lowest gain in 2040 total transportation study area transit boardings would occur with the US 202-N. Gulph Action Alternative, while the highest gain would occur with PECO/TP – N. Gulph Action Alternative, followed closely by the recommended LPA (PECO/TP – 1st Ave.). Decreases in transit boardings are forecasted to occur on some SEPTA bus routes (particularly the route 123, which is the only SEPTA bus route in the

transportation study area that is not expected to continue to operate under each Action Alternative, and the route 125), while some SEPTA bus routes, such as route 92 and route 139, are forecasted to gain transit boardings under each Action Alternative.

Some shifts are forecasted to occur in study area transit boardings to the NHSL under each Action Alternative from SEPTA rail services (the Paoli-Thorndale Regional Line and the Manayunk/Norristown Regional Rail Line). The Paoli-Thorndale and Manayunk/Norristown Regional Rail lines come within three miles of the transportation study area and are shown on Figure 3-1.1. The Project is forecasted to attract some transit riders from these two rail services because of the Project's park-and-ride facilities as well as the Project's more frequent service levels as compared to regional rail.

Table 3-1.6: Average Weekday 2040 Transit Boardings, Transportation Study Area

Transit Service	No Action Alternative	PECO-1 st Ave.	PECO/TP-1 st Ave. (recommended LPA) (a)	PECO/TP-N. Gulph	US 202-N. Gulph	US 202-1 st Ave.
SEPTA Bus Route 92	741	1,921	1,900	1,939	2,042	2,105
SEPTA Bus Route 99	1,691	1,662	2,025	1,834	1,400	1,572
SEPTA Bus Route 123	1,227	-	-	-	-	-
SEPTA Bus Route 124	1,877	2,252	2,214	2,204	1,860	1,992
SEPTA Bus Route 125	2,734	244	305	308	259	273
SEPTA Bus Route 139	468	936	987	1,157	913	1,042
Total Bus	8,739	7,015	7,430	7,441	6,475	6,984
SEPTA NHSL	11,354	19,809	20,621	20,704	19,025	18,899
SEPTA PAO (Paoli-Thorndale Regional Rail Line)	25,530	24,934	24,782	24,787	25,463	25,378
SEPTA NOR (Manayunk/Norristown Regional Rail Line)	11,235	11,053	11,034	11,066	11,275	11,246
Total Rail	48,119	55,796	56,437	56,556	55,763	55,523
Total 2040 Study Area Transit Boardings	56,858	62,811	63,867	63,998	62,237	62,507

"-" denotes no forecasted average weekday 2040 transit boardings as the route 123 bus service is not anticipated to be operated under the Action Alternatives; (a) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would each have similar forecasted transit boardings to the recommended LPA.

Source: DVRPC Tier 3 Forecast, Run Dates 4/3/15 and 6/2/15.

Mode Choice

Using their travel demand model, DVRPC analyzed the effect of each Action Alternative on mode choice; i.e., the change in the choices travelers would make among transportation types (modes) to accomplish the trips forecasted to be made in 2040. DVRPC analyzed mode choice

at the transportation study area level and at the regional level, encompassing the entire 9 county MPO region of DRVPC, consisting of Bucks, Chester, Delaware, Montgomery and Philadelphia in Pennsylvania and Burlington, Camden, Gloucester and Mercer in New Jersey. In particular, DVRPC determined the changes in the numbers of trips by automobile, by transit using a park-and-ride facility, and transit trips by walking to a transit station. In this analysis, a trip is defined as travel from one point to another; a trip-end is an end point of a trip (either origin or destination).

Table 3-1.7 summarizes the results of DVRPC's mode shift forecasts. The results indicate that each Action Alternative would reduce auto-based trips and increase the number of trips using park-and-ride facilities and walking to transit stations. Among the Action Alternatives, the recommended LPA would provide the most reduction in automobile-based trips per day (6,342) because of the locations of Project stations. The PECO/TP-N. Gulph Action Alternative and the recommended LPA would provide the most increase in park-and-ride to transit trips (2,831 and 2,827, respectively). The US 202-1st Ave. Action Alternative would provide the most increase in walking trips to transit (3,750) because of the locations of Project stations along the commercial area of US Route 202.

Table 3-1.7: 2040 Mode Shift, Action Alternatives

Action Alternative	Number of Trips Per Day in DVRPC Region			Increase in Percent of Daily Trips Using Transit	
	Reduced Automobile-Based Trips	New (Increased) Park-and-Ride to Transit Trips	New (Increased) Walk to Transit Trips	Percent in DVRPC Region	Percent in Transportation Study Area (b)
PECO-1 st Ave.	-5,614	+2,670	+2,943	+0.02	+1.3
PECO/TP-1 st Ave. (recommended LPA) (a)	-6,342	+2,827	+3,514	+0.02	+1.5
PECO/TP-N. Gulph	-6,123	+2,831	+3,792	+0.02	+1.5
US 202-1 st Ave.	-5,343	+1,592	+3,750	+0.02	+1.4
US 202-N. Gulph	-5,106	+1,580	+3,526	+0.02	+1.3
No Action Alternative				0	0

(a) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would each have similar mode shift to the recommended LPA; (b) DVRPC mode shift analysis, 2016.

Source: DVRPC.

Within the transportation study area, differences in the size of mode shift were identified among the Action Alternatives: approximately a 1.5 percent increase in transit mode share for the recommended LPA and the PECO/TP N. Gulph Action Alternative; a 1.4 percent increase in transit mode share for the US 202-1st Ave. Action Alternative; and a 1.3 percent increase in transit mode share for the PECO-1st Ave. and US 202-N. Gulph Action Alternatives. These transit mode share increases compare to the findings for transportation study area in 2040 without the Project (No Action Alternative), where 2.3 percent of trips will be by transit. Each Action Alternative would increase the transit mode share by 57 to 65 percent compared to the No Action Alternative, with the recommended LPA and the PECO/TP-N. Gulph Action Alternative having the highest percentage of increase.

Travel Time Savings and Reliability

Travel times among the Action Alternatives would vary by approximately one to two minutes per trip depending on the number of station stops in the transportation study area that the Action Alternative has and the length of each Action Alternative. The recommended LPA (PECO/TP-1st Ave.) would have the fewest stations (five) among the Action Alternatives and the shortest length at 3.9 miles and, thus, offers the shortest travel time. The Action Alternative having the longest travel time would be the US 202-N. Gulph Action Alternative. It would have the most stations (seven) and the longest length (4.3 miles). However, benefits to travelers, in terms of travel time, as a result of implementing any one of the Action Alternatives would accrue to existing NHSL riders who currently transfer from the NHSL to bus to reach the King of Prussia Mall or the King of Prussia Business Park, as well as to new NHSL users who switch from bus. In each case, travelers would experience a faster trip, a more reliable travel time, and convenient access between the King of Prussia Mall, the King of Prussia Business Park and Center City Philadelphia, Norristown Transportation Center or 69th Street Transportation Center.

In each Action Alternative, the Project would reduce transit travel times between the transportation study area and the Norristown Transportation Center, 69th Street Transportation Center (in Upper Darby Township) and Center City Philadelphia. Table 3-1.8 presents existing travel times using bus, the NHSL and the Market-Frankford Line as derived from SEPTA schedules, transit operating records and calculations developed and presented by the Economy League of Greater Philadelphia in their 2015 report, *Understanding the Economic Impacts of SEPTA's Proposed King of Prussia Rail Project*. Also shown are future one way travel time estimates for transit riders using the Project.

The results indicate that in the existing condition, transit travel times to the King of Prussia Mall from Center City, Norristown Transportation Center and 69th Street Transportation Center in Upper Darby are approximately 79, 38, and 44 minutes, respectively. Transit travel times to the King of Prussia Business Park from Center City, Norristown Transportation Center and 69th Street Transportation Center in Upper Darby are approximately 97, 44 and 53 minutes, respectively. Transit travel time to Center City from the transportation study area is approximately 75 minutes.

As shown in Table 3-1.8, the Project would reduce future transit travel times. Trips to the King of Prussia Mall from Center City, Norristown Transportation Center and 69th Street Transportation Center in Upper Darby would be approximately 53, 15 and 35 minutes, respectively. The transit travel time savings would be 26, 23 and 9 minutes, respectively.

Project travel times to the King of Prussia Business Park from Center City, Norristown Transportation Center and 69th Street Transportation Center in Upper Darby would be approximately 59, 21 and 41 minutes, respectively. The Project travel time savings would be 38, 23 and 12 minutes, respectively. Travel times for the Project between the King of Prussia Business Park and the 69th Street Transportation Center would be approximately 36 minutes for local service and 22 minutes for express service. Between the King of Prussia Business Park and the Norristown Transportation Center, travel times for each Action Alternative would be 16

minutes. Project travel time to Center City from the transportation study area would be approximately 48 minutes, a savings of 27 minutes compared to the existing condition.

These travel times contrast with existing bus service on SEPTA bus routes 124 and 125, which can range from their scheduled run time of 97 minutes up to 1 hour and 45 minutes, resulting primarily from traffic congestion on I-76. This comparison demonstrates that the Project would provide faster public transit service compared to existing bus service.

A comparison of how transit travel time is spent in existing and future conditions shown in Table 3-1.8 indicates that with the Project, reduced transit riding and wait times would occur:

- **Reduced transit riding time:** The difference in time traveling by bus in the existing condition compared with travel by rail with the Project is due in part to the rail service being on dedicated guideway (on its own rail corridor) and not in mixed traffic on roadways. The Project's dedicated guideway would eliminate the extra travel time experienced by existing bus service operating on congested roadways, such as on the Schuylkill Expressway, as well as the unpredictability of travel time because of variable travel conditions on roadways. Whether traveling from Center City, Norristown Transportation Center, or 69th Street Transportation Center, travel time to the transportation study area would not only be shorter in duration with the Project than the existing condition, but also more reliable.
- **Reduced wait time:** Two factors in 2040 would reduce the time transit users currently spend waiting for service before or between rides. First, with the Project, wait time for transfers between NHSL and bus is eliminated. For example, a future traveler from 69th Street Transportation Center to King of Prussia Mall would not have the existing average 10 minute wait time for the transfer to bus from the NHSL. Second, the Project would provide more frequent transit service to key transportation study area destinations. As described in Section 2.7, for example, the Project's service to King of Prussia from the 69th Street Transportation Center would be every 10 minutes during peak periods and every 20 minutes at all other operating times. This planned service level contrasts with existing bus service that has peak period frequencies of 25-30 minutes (routes 99, 123, 124 and 125) and 60 minutes (routes 92 and 139). More frequent transit service means that travelers would have reduced waiting times for the next train with the Project as opposed to the next bus in the existing condition.

Table 3-1.8: Existing and Future (with Project) Peak Period Transit Travel Times

	Minutes to King of Prussia Mall						Minutes to King of Prussia Business Park						Minutes to Center City from King of Prussia	
	From Center City		From Norristown		From Upper Darby		From Center City		From Norristown		From Upper Darby			
	Existing	Future	Existing	Future	Existing	Future	Existing	Future	Existing	Future	Existing	Future	Existing	Future
	6	2	15	5	8	5	15	2	15	5	87	5	15	5
	63	16	23	10	14	30	72	16	29	16	14	36	60	25
	10	5			10		10	5			10			2
		30			12			36			21			16
Trip Time	79	53	38	15	44	35	97	59	44	21	53	41	75	48
Time Savings	0	-26	0	-23	0	-9	0	-38	0	-23	0	-12	0	-27

Key: Wait Time/Delay, Bus, NHSL, Project/NHSL, Market-Frankford Line

Source: Economy League of Greater Philadelphia. *Understanding the Economic Impacts of SEPTA's Proposed King of Prussia Rail Project*, December 2015.

Travel times among each Action Alternative would vary by approximately one to two minutes per trip depending on the number of station stops in the transportation study area, the length of each Action Alternative and the type of service offered by a particular train (limited, express and local, as currently offered on the NHSL). This difference can be seen in the Economy League's calculation of annual transit travel time savings by each Action Alternative in Table 3-1.9.

Table 3-1.9: Annual Travel Time Savings

Action Alternative	Transit Traveler Shift to Project	Automobile Driver Shift to Project
	Hours Saved Annually	
PECO-1 st Ave.	186,000	1.7 million
PECO/TP-1 st Ave. (Recommended LPA)(a)	217,000	2.0 million
PECO/TP-N. Gulph	182,000	2.1 million
US 202-1 st Ave.	153,000	1.8 million
US 202-N. Gulph	104,000	1.7 million

Source: Economy League of Greater Philadelphia. *Understanding the Economic Impacts of SEPTA's Proposed King of Prussia Rail Project*, December 2015.

(a) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would have similar annual travel time savings to the recommended LPA.

Note: Travel time savings was calculated according to the ridership projections developed by the DVRPC for the year 2040. Savings were determined by the total number of forecasted daily passenger trips to arrive at the travel time saved on a daily basis. Then, an annualization factor of 305.3 (average travel days per year) was applied to the daily figures.

For existing transit travelers, the shift to using the recommended LPA (PECO/TP-1st Ave.) would save the most travel time (217,000 hours per year) for transit travelers to and from the transportation study area. This distinction is achieved by having the fewest stations (five) among the Action Alternatives (a factor it shares with the PECO-1st Ave. Action Alternative) and the shortest length at 3.9 miles (a factor they share with the US 202-1st Ave. Action Alternative). The next highest annual travel time saver (186,000 hours per year) for transit riders would be the PECO-1st Ave. Action Alternative, which has the longest length (4.4 miles) of any Action Alternative but the same number of stops (five) as the recommended LPA. The Action Alternative having the lowest annual travel time savings (104,000 hours per year) for transit riders would be the US 202-N. Gulph Action Alternative. It has the most stops (seven) and a long length (4.3 miles).

For existing automobile drivers and for reasons similar to those described for transit travelers, the shift to using the recommended LPA (PECO/TP-1st Ave.) or the PECO/TP-N. Gulph Action Alternative would save the most travel time (2.0 or 2.1 million hours annually) for travel to and from the transportation study area. The next highest annual travel time saver (1.8 million hours annually) would be the US 202-1st Ave. Action Alternative. The Action Alternatives having the lowest annual travel time savings (1.7 million hours annually) would be the PECO-1st Ave. and US 202-N. Gulph Action Alternatives.

Travel Markets

Each Action Alternative would similarly increase transit travel options and provide improved transit connections to, from and within the transportation study area, thereby better serving the

largest suburban employment center in the Greater Philadelphia region compared to the No Action Alternative. Many destinations within the transportation study area are either underserved or not served by transit today. Each Action Alternative would provide transit stations within ½ mile of the three key transportation study area destinations: King of Prussia Mall, King of Prussia Business Park and Valley Forge National Historical Park. Potential shuttle services or multi-use paths could provide connections from proposed stations to the Valley Forge National Historical Park and other destinations, such as Children's Hospital of Philadelphia. The maps in Appendix A show the locations of proposed stations and park-and-ride facilities for each Action Alternative and recommended LPA design option.

In addition, Project stations and park-and-ride facilities within the transportation study area would improve the ability of residents and other travelers to walk to stations or park at a rail transit facility within the transportation study area, as opposed to having to travel or drive outside the area to find rail transit access and park-and-ride facilities. As the forecasting results in this chapter show, some travelers would switch to the proposed Project from bus, regional rail, or auto travel as a result of improved access in the transportation study area.

As each Action Alternative and recommended LPA design option would serve the King of Prussia Business Park and provide direct service to the Norristown Transportation Center, the KOP-BID shuttle service would no longer be required. However, SEPTA anticipates that the Project would be supported with a new shuttle bus service that would connect Project stations with destinations in the transportation study area that are not within a convenient walk of a proposed Project station. Such a destination for the recommended LPA could be the Children's Hospital of Philadelphia, for example. SEPTA will coordinate with GVFTMA and KOP-BID to plan appropriate shuttle bus service modifications.

SHORT-TERM CONSTRUCTION EFFECTS

Project construction activities have the potential to temporarily impact transit and shuttle bus services where temporary roadway closures require transit service detours and relocated stops. Temporary lane closures could impact the travel times for transit and shuttle bus services and could potentially require temporary schedule adjustments. As described in Section 2.8, lane or roadway closures could occur, potentially requiring alternate routing of existing bus and shuttle services or schedule adjustments. To the extent reasonably feasible, roadway and lane closures would occur at off-peak hours to minimize impacts to transit riders.

Project construction activities for each Action Alternative and recommended LPA design option, could temporarily affect service on the specific bus and shuttle routes listed in Tables 3-1.10 and 3-1.11 below.

Table 3-1.10: Locations of Potential Short-Term Construction Effects to Bus Service

Action Alternative	Bus Route 92	Bus Route 99	Bus Route 123	Bus Route 124	Bus Route 125	Bus Route 139
PECO-1 st Ave.	Mall Blvd. & Gulph Rd.	1 st Ave.	Gulph Rd. crossing of US 202, Mall Blvd.	Henderson Rd. crossing, Mall Blvd.	Gulph Rd., Gulph Rd. crossing of US 202, Mall Blvd., 1 st Ave.	Mall Blvd.
PECO/TP-1 st Ave. (recommended LPA) (a)	Mall Blvd.	PA Turnpike crossing of US 202, Allendale Road crossing, Wills Blvd., 1 st Ave.	Mall Blvd.	Henderson Rd. crossing, PA Turnpike crossing of US 202, Mall Blvd.	Mall Blvd., 1 st Ave.	Mall Blvd.
PECO/TP-N. Gulph	Mall Blvd.	PA Turnpike crossing of US 202, Allendale Road crossing, Wills Blvd., N. Gulph Rd.	Mall Blvd.	Henderson Rd. crossing, PA Turnpike crossing of US 202, Mall Blvd.	Mall Blvd, N. Gulph Rd.	Mall Blvd., N. Gulph Rd.
US 202-1 st Ave.	Mall Blvd.	US 202, Allendale Road crossing, Wills Blvd., 1 st Ave.	Mall Blvd.	US 202, Mall Blvd.	Mall Blvd., 1 st Ave.	Mall Blvd.
US 202-N. Gulph	Mall Blvd. & N. Gulph Rd.	US 202, Allendale Road crossing, Wills Blvd., N. Gulph Rd.	Mall Blvd.	US 202, Mall Blvd.	Mall Blvd., N. Gulph Rd.	Mall Blvd., N. Gulph Rd.

(a) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would each have similar temporary construction impacts as the recommended LPA.

Table 3-1.11: Potential Short-Term Construction Effects to Shuttle Service

Action Alternative	Rambler	Norristown Connector	Wayne Station Connector
PECO-1 st Ave.	Henderson Road crossing, Mall Blvd., Gulph Rd.	1 st Ave.	1 st Ave.
PECO/TP-1 st Ave. (recommended LPA) (a)	PA Turnpike crossing of US 202, Allendale Road crossing, Mall Blvd, Wills Blvd.	1 st Ave., Allendale Road crossing	1 st Ave.
PECO/TP-N. Gulph	Henderson Rd. crossing, PA Turnpike crossing of US 202, Allendale Road crossing Mall Blvd., Wills Blvd., N. Gulph Rd.	Allendale Road crossing	N. Gulph Rd.
US 202-1 st Ave.	US 202, Allendale Road crossing Mall Blvd., Wills Blvd.	US 202, Allendale Road crossing	1 st Ave.
US 202-N. Gulph	US 202, Allendale Road crossing, Mall Blvd., Wills Blvd., Gulph Rd.	US 202, Allendale Road crossing	N. Gulph Rd.

(a) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would each have similar temporary construction impacts to shuttle service as the recommended LPA.

For each Action Alternative, construction activities have the potential to impact NHSL service if temporary adjustments to the NHSL operating schedule and/or suspension of service are needed to construct the wye connection to the existing NHSL. The connection would be made between the NHSL DeKalb Street and Hughes Park Stations. If schedule adjustments are required, SEPTA would issue service advisories in advance of the temporary schedule impact occurring and implement substitute bus service, where necessary. To the extent reasonably feasible, temporary suspension of rail service would occur during off-peak hours to minimize the impacts to transit riders.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operational - SEPTA will develop a program of permanent bus service changes to eliminate service redundancies created by the Project, adjust routes to serve proposed stations and park-and-ride facilities, and optimize operating efficiency. SEPTA will coordinate with GVFTMA and KOP-BID to plan appropriate shuttle bus service modifications to serve Project stations. SEPTA will update the NHSL operating plan to accommodate Project service.

Short-Term Construction – As described in Section 2.8, SEPTA will prepare a Transportation Management Plan to minimize the potential impacts of construction on the transportation system. The plan would include a temporary transit service plan developed by SEPTA in coordination with shuttle operators. This plan would identify potential service changes, include actions to minimize or mitigate temporary impacts such as bus re-routing, adjusted service schedules, and substitute bus service for temporary NHSL service suspensions. In all cases, the plan would include a public outreach and information component to inform the public of unavoidable short-term changes in transit (bus and NHSL) and shuttle bus systems before they occur.

3.2 Roadways

3.2.1 Methodology

The assessment of the potential benefits and impacts of the No Action Alternative and each Action Alternative on roadways relies on the results of analyses contained in the 2017 *KOP Rail Tier 3 – Transportation Technical Memorandum* (Malick & Scherer, PC and AECOM), as well as DVRPC's travel demand modeling and ridership forecasting.

Data used to assess the potential benefits and impacts on roadways included roadway system characteristics, DVRPC forecasted access mode to Project stations with park-and-ride facilities, intersection turning movement volumes, and peak period traffic volumes. Analysis tools included traffic simulation modeling and the DVRPC's travel demand model. Existing 2013 and horizon year 2040 roadway networks and travel patterns were analyzed using the DVRPC travel demand model. Traffic congestion was quantified using the methodologies of the Transportation Research Board's *Highway Capacity Manual*, the national standard for evaluating traffic operations. SEPTA's conceptual plans for the station areas include roadway and intersection improvements, specifically at Project stations with park-and-ride facilities. This section evaluates the impacts of the Project on those intersections and the benefits of the proposed roadway improvements.

Of note, there are no potential at-grade rail crossings of streets, roads, or highways for any Action Alternative. Even though the entire lengths of each Action Alternative are not on an aerial structure, the limited portions of the alignments that are at-grade or on retained fill do not have potential roadway crossings. As a result, intersection capacity analysis for roadway crossing locations was not warranted or performed.

An analysis of the DVRPC forecasts of mode of access to Project stations determined that potential traffic impacts, in terms of operational performance of intersections, are expected to occur only at park-and-ride facilities and that no operational performance impacts would occur at intersections serving Project kiss-and-ride stations. As proposed, the kiss-and-ride stations have no parking spaces for park-and-ride and offer only a small number of short-duration spaces for the specific purposes of drop-off and pick-up of rail passengers to and from trains.

The predominant modes of access to and from the kiss-and-ride stations are forecasted to be walk access and bus/shuttle access; automobile kiss-and-ride access volume to these stations is forecasted to be low. Table 3-2.1 shows the forecasted 2040 mode of access for riders to proposed kiss-and-ride stations and stations with park-and-ride facilities for each Action Alternative during the PM peak period (the four hour time period from 3pm to 7pm), by station. The PM peak period represents the period of time with the highest roadway traffic volumes affecting intersection operational performance. During the four-hour PM peak period in each Action Alternative, forecasted motor vehicle access to the kiss-and ride stations by the kiss-and-ride access mode would not be greater than 31 riders over that entire four-hour time period. Specifically, at all but two kiss-and-ride stations, no more than 20 riders are forecasted to use the kiss-and-ride access mode during the four hour PM peak period. It should be noted that certain stations, such as Plaza (shown in the first section of Table 3-2.1), only occur on one of the Action Alternatives; therefore, this table section does not exhibit any other data.

Table 3-2.1: 2040 Forecasted Mode of Access to Kiss-and-Ride Stations and Park-and-Ride Stations - PM Peak Period

PLAZA: A Kiss & Ride Station						
TIME PERIOD	2040 MODE OF ACCESS	Action Alternative				
		PECO-1st Ave.	PECO/TP-N.Gulph	PECO/TP-1st Ave. (recommended LPA) (a)	US202-N.Gulph	US202 - 1st Ave.
PM	Park & Ride	-	-	-	-	-
	Kiss & Ride	23	-	-	-	-
	Bus or Shuttle	-	-	-	-	-
	Walk-On	230	-	-	-	-
	NHSL to NHSL	2	-	-	-	-
PLAZA WEST: A Kiss & Ride Station						
TIME PERIOD	2040 MODE OF ACCESS	Action Alternative				
		PECO-1st Ave.	PECO/TP-N.Gulph	PECO/TP-1st Ave. (recommended LPA) (a)	US202-N.Gulph	US202 - 1st Ave.
PM	Park & Ride	-	-	-	-	-
	Kiss & Ride	16	-	-	-	-
	Bus or Shuttle	307	-	-	-	-
	Walk-On	165	-	-	-	-
	NHSL to NHSL	0	-	-	-	-
1ST AVENUE EAST: A Kiss & Ride Station						
TIME PERIOD	2040 MODE OF ACCESS	Action Alternative				
		PECO-1st Ave.	PECO/TP-N.Gulph	PECO/TP-1st Ave. (recommended LPA) (a)	US202-N.Gulph	US202 - 1st Ave.
PM	Park & Ride	-	-	-	-	-
	Kiss & Ride	16	-	17	-	16
	Bus or Shuttle	66	-	23	-	51
	Walk-On	159	-	175	-	162
	NHSL to NHSL	1	-	0	-	0

COURT: A Kiss & Ride Station						
TIME PERIOD	2040 MODE OF ACCESS	Action Alternative				
		PECO-1st Ave.	PECO/TP-N.Gulph	PECO/TP-1st Ave. (recommended LPA) (a)	US202-N.Gulph	US202 - 1st Ave.
PM	Park & Ride	-	-	-	-	-
	Kiss & Ride	-	14	14	13	13
	Bus or Shuttle	-	65	57	23	25
	Walk-On	-	139	140	128	131
	NHSL to NHSL	-	3	3	0	0
MALL BOULEVARD NORTH: A Kiss & Ride Station						
TIME PERIOD	2040 MODE OF ACCESS	Action Alternative				
		PECO-1st Ave.	PECO/TP-N.Gulph	PECO/TP-1st Ave. (recommended LPA) (a)	US202-N.Gulph	US202 - 1st Ave.
PM	Park & Ride	-	-	-	-	-
	Kiss & Ride	-	18	18	16	17
	Bus or Shuttle	-	366	544	265	465
	Walk-On	-	180	178	164	170
	NHSL to NHSL	-	0	0	0	0
MALL BOULEVARD WEST: A Kiss & Ride Station						
TIME PERIOD	2040 MODE OF ACCESS	Action Alternative				
		PECO-1st Ave.	PECO/TP-N.Gulph	PECO/TP-1st Ave. (recommended LPA) (a)	US202-N.Gulph	US202 - 1st Ave.
PM	Park & Ride	-	-	-	-	-
	Kiss & Ride	-	4	-	2	-
	Bus or Shuttle	-	18	-	13	-
	Walk-On	-	41	-	19	-
	NHSL to NHSL	-	0	-	0	-

NORTH GULPH: A Kiss & Ride Station						
TIME PERIOD	2040 MODE OF ACCESS	Action Alternative				
		PECO-1st Ave.	PECO/TP-N.Gulph	PECO/TP-1st Ave. (recommended LPA) (a)	US202-N.Gulph	US202 - 1st Ave.
PM	Park & Ride	-	-	-	-	-
	Kiss & Ride	-	17	-	31	-
	Bus or Shuttle	-	14	-	8	-
	Walk-On	-	175	-	312	-
	NHSL to NHSL	-	0	-	0	-

DEKALB & HENDERSON: A Kiss & Ride Station						
TIME PERIOD	2040 MODE OF ACCESS	Action Alternative				
		PECO-1st Ave.	PECO/TP-N.Gulph	PECO/TP-1st Ave. (recommended LPA) (a)	US202-N.Gulph	US202 - 1st Ave.
PM	Park & Ride	-	-	-	-	-
	Kiss & Ride	-	-	-	4	4
	Bus or Shuttle	-	-	-	25	34
	Walk-On	-	-	-	37	43
	NHSL to NHSL	-	-	-	1	2

DEKALB PLAZA: A Kiss & Ride Station						
TIME PERIOD	2040 MODE OF ACCESS	Action Alternative				
		PECO-1st Ave.	PECO/TP-N.Gulph	PECO/TP-1st Ave. (recommended LPA) (a)	US202-N.Gulph	US202 - 1st Ave.
PM	Park & Ride	-	-	-	-	-
	Kiss & Ride	-	-	-	8	8
	Bus or Shuttle	-	-	-	22	24
	Walk-On	-	-	-	80	79
	NHSL to NHSL	-	-	-	0	0

HENDERSON ROAD: A Park & Ride Station						
TIME PERIOD	2040 MODE OF ACCESS	Action Alternative				
		PECO-1st Ave	PECO/TP-Gulph Rd	PECO/TP-First Ave (recommended LPA)(a)	US202-N. Gulph	US202 - 1st Ave.
PM	Park & Ride	232	244	246	-	-
	Kiss & Ride	41	43	43	-	-
	Bus or Shuttle	42	43	37	-	-
	Walk-On	44	43	47	-	-
	NHSL to NHSL	25	27	27	-	-

CONVENTION CENTER/1st & MOORE: A Park & Ride Station						
TIME PERIOD	2040 MODE OF ACCESS	Action Alternative				
		PECO-1st Ave	PECO/TP-Gulph Rd	PECO/TP-First Ave (recommended LPA)(a)	US202-N. Gulph	US202 - 1st Ave.
PM	Park & Ride	172	159	184	101	113
	Kiss & Ride	30	28	32	18	20
	Bus or Shuttle	25	91	41	106	11
	Walk-On	147	168	159	147	152
	NHSL to NHSL	0	0	0	0	0

Source: DVRPC Tier 3 Forecast, Run Dates 4/3/15 and 6/2/15

(a) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would each have similar 2040 Mode of Access as the recommended LPA. PM Peak period is 3pm to 7pm.

3.2.2 Affected Environment

Several major highways serve the transportation study area. These highways include the Pennsylvania Turnpike (I-276), Schuylkill Expressway (I-76), Pottstown Expressway (US Route 422), and DeKalb Pike (US Route 202). While the presence of these highways has made the area attractive for development, particularly commercial development, the highways experience heavy volumes of traffic and congestion, especially during peak travel periods. Forecast data for I-76, presented in Table 1-2.3, show an example of the existing and future traffic conditions on one of the major area highways. I-76 functions at or near capacity during most peak periods and many non-peak travel periods under existing conditions. By 2040, I-76 will function at capacity in nearly all travel periods.

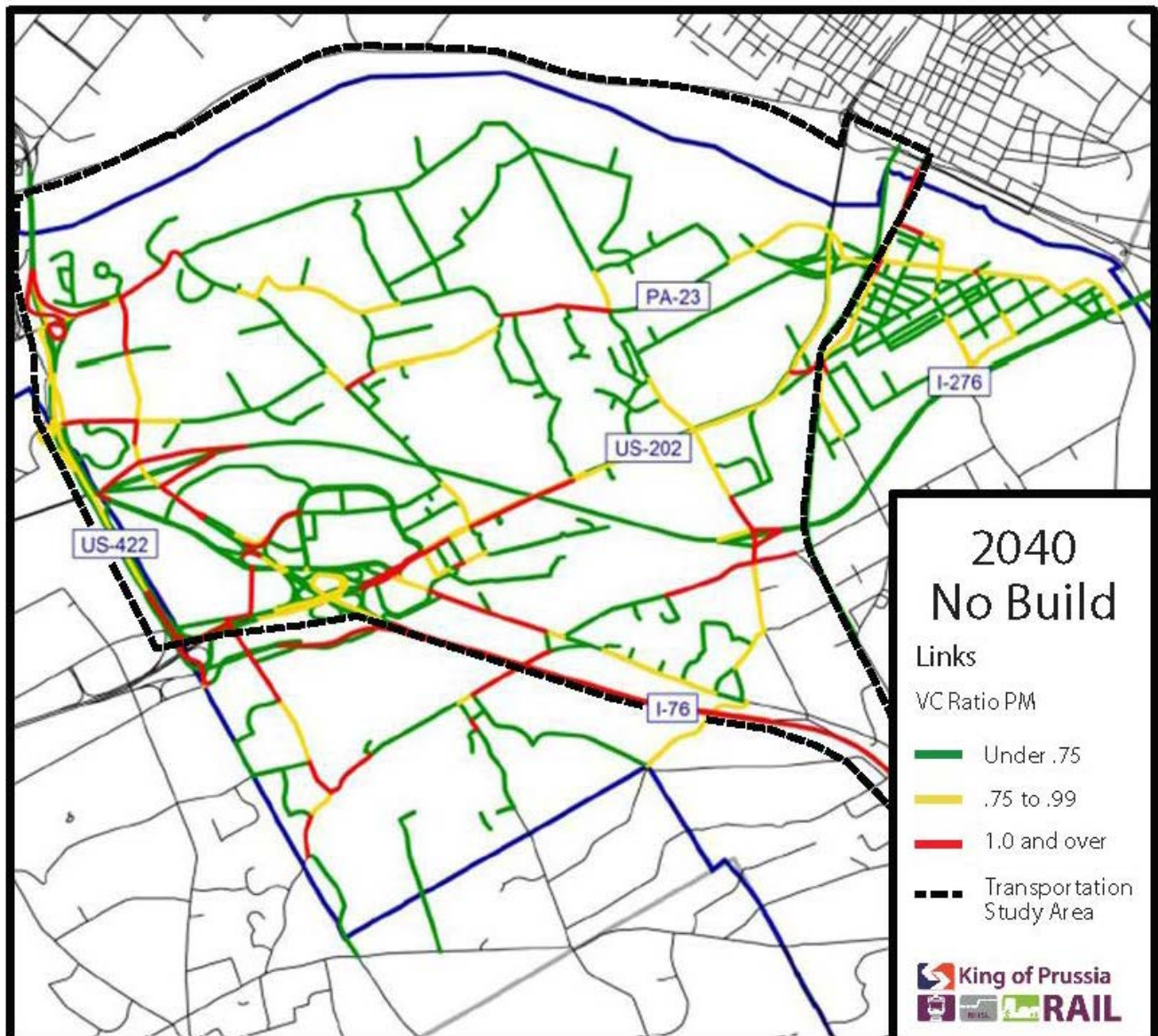
The road network in the transportation study area is composed of roads under PA Turnpike Commission, PennDOT, township, and private jurisdictions. The ability of the network to function is largely related to the capacity of the roadways and intersections to process traffic. DVRPC modeling of transportation study area roadways indicates portions of many key roads currently operate at or near capacity in the existing condition. By 2040, growth in roadway traffic

volumes will increase the amount of congestion on roads such as US Route 202, Henderson Road, Saulin Boulevard, Moore Road, and 1st Avenue, among others (Figure 3-2.1). The measure “V/C” compares the ratio of traffic volume (V) to roadway capacity (C). As the V/C ratio approaches 1, traffic volume is at or near roadway capacity and congestion begins to occur. When the V/C ratio exceeds 1, congestion is present. Based on the modeling results depicted in Figure 3-2.1, travel on transportation study area roads in 2040 will be subject to more congestion and longer delays than in the existing condition.

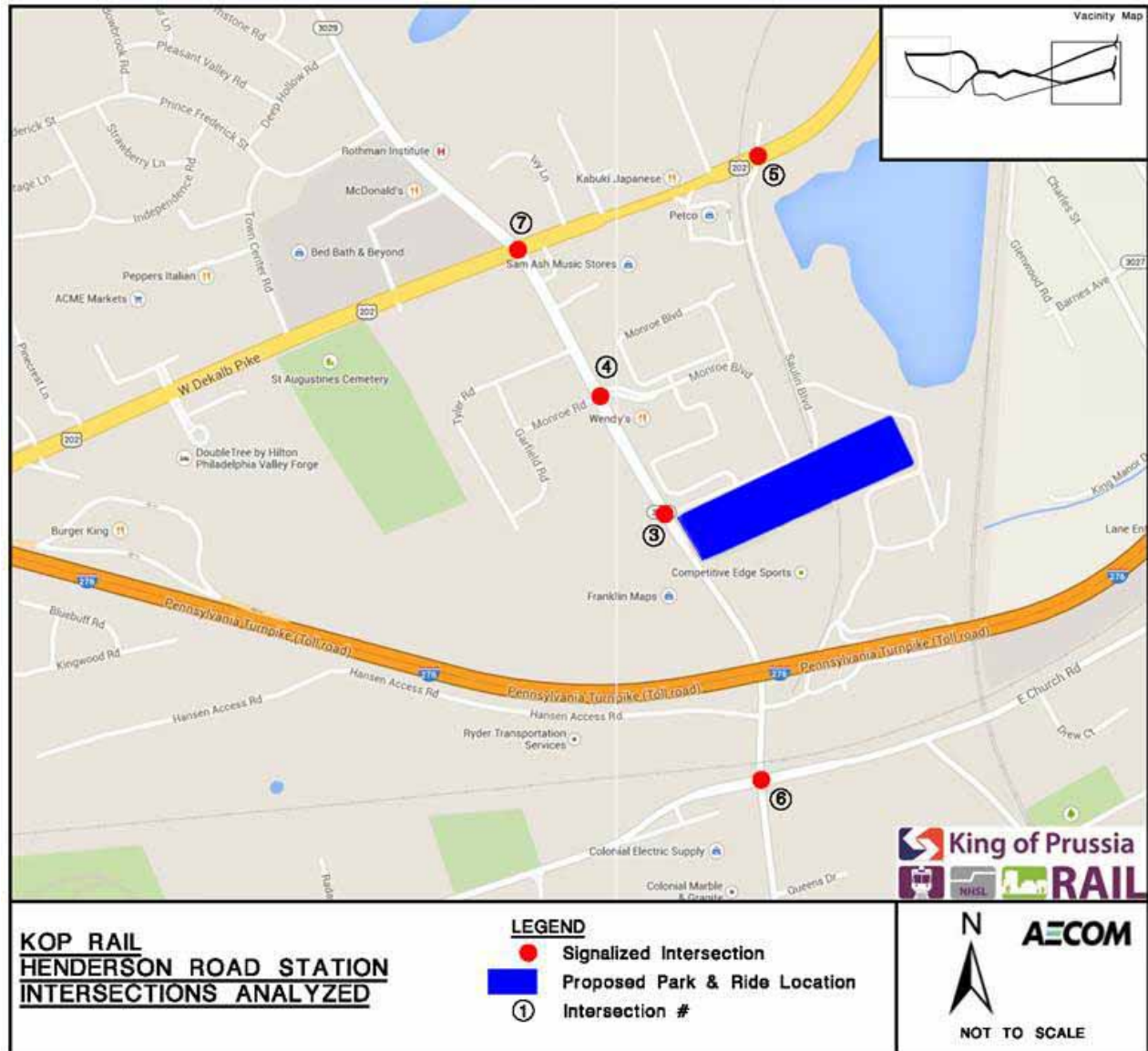
Tables 3-2.2 and 3-2.3 indicate that some roadway intersections will be sources of congestion and delay. To assess intersection function, two measures were used: delay and level of service (LOS). Delay is the additional travel time due to the presence of a traffic control device and conflicting traffic. LOS is a conversion of delay in seconds to a qualitative letter-grade system measuring operational performance. Six LOS levels are used ranging from A to F, with A being the best, B through D being generally acceptable, and E to F being poor.

Intersection capacity analysis was performed at intersection locations at or near the Project park-and-ride facilities to assess the traffic impacts associated with transit riders driving to and from the park-and-ride facilities. Among the five Action Alternatives, the assessment of traffic impacts examined seven signalized intersections near the two proposed park-and-ride facilities (the Convention Center park-and-ride facility and the Henderson Road park-and-ride facility). These seven intersections were selected for study based on the likelihood of experiencing potential impacts from park-and-ride traffic. The selected intersections are the nearest signalized intersections to park-and-ride facility locations along identified inbound/outbound routes. Table 3-2.2 lists the intersections examined. Figure 3-2.2 identifies the five intersections analyzed for the proposed park-and-ride in the area of the Henderson Road Station area. Figure 3-2.3 identifies the two intersections analyzed for the proposed park-and-ride facility in the area near the Convention Center and 1st & Moore Station areas.

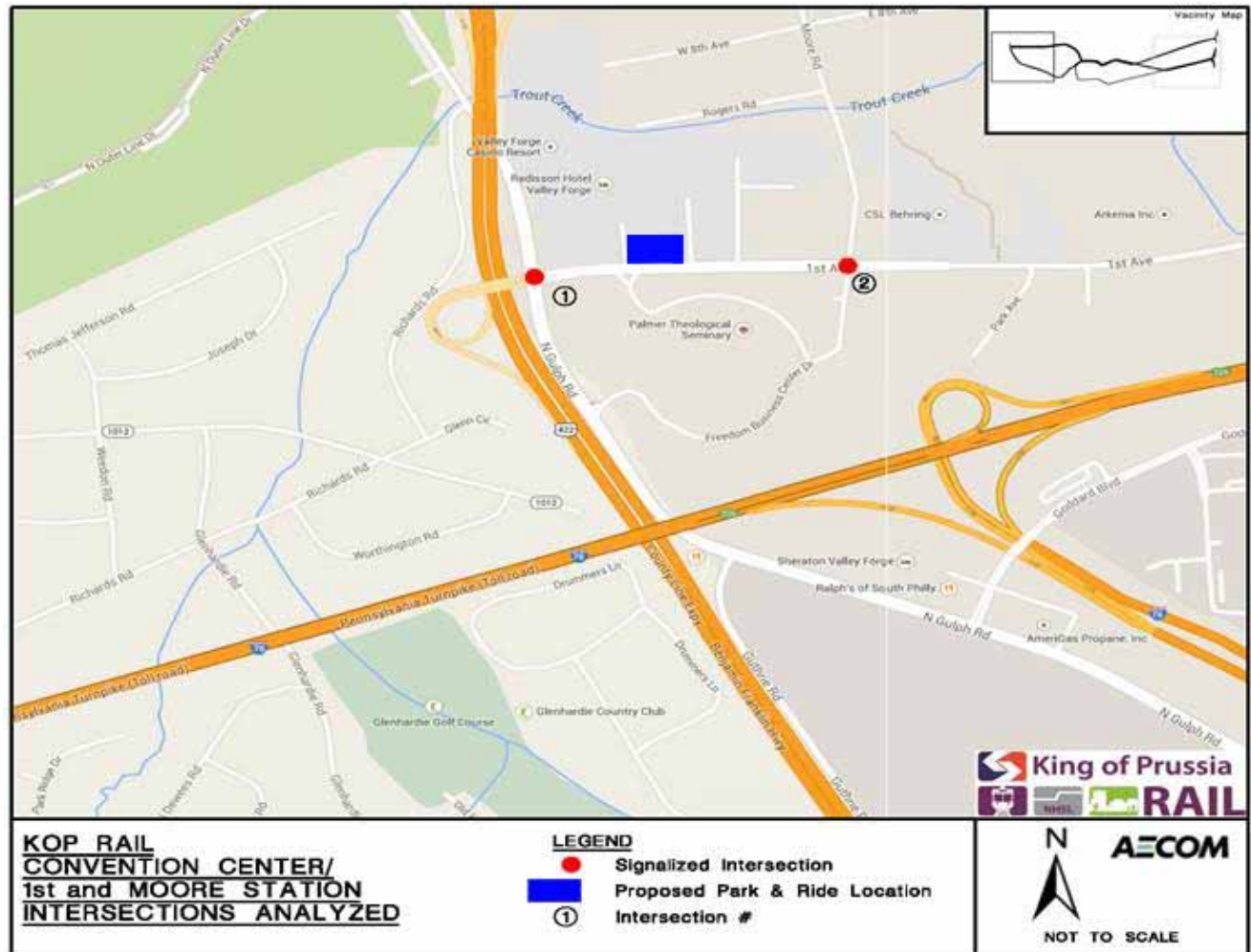
The results of intersection capacity analysis for the existing condition at the seven intersections closest to the proposed Project park-and-ride facilities are shown in Table 3-2.2. These results indicate that existing peak hour LOS ranges from A (at the intersections of US Route 202 & Saulin Boulevard and Henderson Road & Monroe Boulevard) to F (at the intersection of US Route 202 & Henderson Road). This wide range in LOS indicates that some intersections function well while others function poorly today. The locations of poor operational conditions can be linked to heavy volumes and geometric and operational deficiencies. By 2040 without the Project, LOS at these intersections will be worse than the existing condition as increased traffic volumes will cause more intersections to operate at or near capacity. For example, as shown in Table 3-2.3, the intersections of US Route 202 & Henderson Road, Henderson Road & Monroe Boulevard, and Henderson Road & Church Road would exhibit LOS F.

Figure 3-2.1: 2040 Transportation Study Area Roadway Congestion

Source: DVRPC Tier 3 Forecast, Run Dates 4/3/15 and 6/2/15

Figure 3-2.2: Intersections Analyzed: Henderson Road Park-and-Ride

Source: Malick & Scherer and AECOM, *KOP Rail Traffic and Transportation Technical Memorandum*, 2017.

Figure 3-2.3: Intersections Analyzed: Convention Center Park-and-Ride

Source: Malick & Scherer and AECOM, *KOP Rail Traffic and Transportation Technical Memorandum*, 2017.

Table 3-2.2: Existing 2013 Intersection LOS/Delay

Intersection	Intersection Control	AM Peak Hour		PM Peak Hour	
		LOS	Delay (sec)	LOS	Delay (sec)
1 N. Gulph Rd/1st Ave	Signalized	D	46.4	D	52.5
2 First Ave/Moore Rd	Signalized	B	14.4	B	19.1
3 Henderson Rd/Saulin Blvd	Signalized	B	15.3	B	11.2
4 Henderson Rd/Monroe Blvd	Signalized	A	6.4	C	20.5
5 US 202/Saulin Blvd	Signalized	A	6.2	C	27.8
6 Henderson Rd/Church Rd	Signalized	D	37	D	43.1
7 US 202/Henderson Rd	Signalized	E	58.9	F	123.7

Source: Malick & Scherer, PC and AECOM, 2017. *KOP Rail Tier 3 – Transportation Technical Memorandum*

Table 3-2.3: 2040 Intersection LOS/Delay, No Action Alternative

Intersection		Intersection Control	AM Peak Hour		PM Peak Hour	
			LOS	Delay (sec)	LOS	Delay (sec)
1	N. Gulph Rd/1st Ave	Signalized	D	49.6	D	45.8
2	1st Ave/Moore Rd	Signalized	D	36.9	F	95.0
3	Henderson Rd/Saulin Blvd	Signalized	D	49.9	D	39.1
4	Henderson Rd/Monroe Blvd	Signalized	A	9.2	F	335.1
5	US 202/Saulin Blvd	Signalized	B	13.0	D	50.0
6	Henderson Rd/Church Rd	Signalized	E	61.6	F	95.8
7	US 202/Henderson Rd	Signalized	F	166.7	F	294.2

Source: Malick & Scherer, PC and AECOM, 2017. *KOP Rail Tier 3 – Transportation Technical Memorandum*

3.2.3 Environmental Consequences

3.2.3.1 No Action Alternative

In the No Action Alternative, SEPTA would continue to operate the NHSL and the six bus routes that serve the transportation study area but the Project would not be implemented. Projects to improve the roadway system in the transportation study area are included in the financially constrained element of *Connections 2040 Plan for Greater Philadelphia*, the long-range transportation plan of the DVRPC, the MPO for the Philadelphia metropolitan area. These projects are assumed to be built and in service by 2040 and are included in the analyses of the No Action Alternative as well as each Action Alternative in the DEIS. Table 2-2.2 lists the committed roadway projects within the transportation study area, which are presumed to be implemented by 2040. Some projects, such as the addition of travel lanes on US Route 422, will increase roadway capacity. Others, such as the proposed Lafayette Street extension and new Turnpike exit in Norristown, will address specific access needs.

While these projects will help address some transportation study area roadway deficiencies, congestion and travel delays will remain. As shown in Table 3-2.3 above, the capacity analysis of key transportation study area intersections indicates that LOS at these intersections will degrade by 2040 in the No Action Alternative as compared to the existing condition. Increased traffic volumes will cause more intersections to operate at or near capacity. This condition will be the result of the expected increase in traffic volumes.

The 2040 LOS/delay forecasts in Tables 3-2.2 and 3-2.3 indicate that road-based traffic, including SEPTA bus routes 99, 124 and 125, will be negatively impacted in the No Action Alternative. For example, in the PM peak period, bus routes 99 and 124 may require 9 to 12 minutes of additional running time in the transportation study area. Additional running time potentially would impact SEPTA's peak vehicle requirements for these routes and increase operating costs.

3.2.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

Roadway conditions with each Action Alternative assume that the No Action Alternative projects listed in Table 2-2.2 will be implemented as well as the Project. Mode shift analysis results reported in Section 3.1.3.2 indicate that while the Project would attract trips to transit at a rate of up to 1.5 percent higher than the No Action Alternative, the actual number is small in the context of the transportation study area where 97.7 percent of trips in 2040 in the No Action Alternative are forecasted to be by automobile. Mode shift due to the Project, described in Section 3.1.3.2, would not change existing and forecasted 2040 congestion conditions on most portions of transportation study area roadways.

However, the Project would provide several benefits regarding roadway operations. First, each Action Alternative would provide rail guideway on elevated structure over the roadway network to minimize roadway and traffic impacts. Second, SEPTA would address the operation of a number of intersections the Project would affect in the vicinity of proposed park-and-ride facilities. An assessment of Project-related traffic generation in the vicinity of proposed park-and-ride facilities identified the need to make specific improvements to affected intersections to mitigate Project impacts on these intersections from traffic accessing the park-and-ride facilities. The results of assessing the function of these intersections, resulted from specific signal timing and geometrical improvements, are presented in Table 3-2.4.

These results indicate that LOS and delay at most intersections would be the same or better with the intersection optimization proposed by SEPTA as part of mitigation of traffic impacts. Where poor intersection LOS remains, congestion and travel delays would be experienced. A comparison of impacts among the alternatives indicates that the PECO and PECO/TP Action Alternatives would affect the same intersections to a similar extent. In contrast, the US 202 Action Alternatives would affect fewer intersections because a park-and-ride facility is not proposed in the eastern portion of the study area for these alternatives.

SHORT-TERM CONSTRUCTION EFFECTS

Construction activities potentially would result in temporary interruptions or changes to vehicular and pedestrian traffic patterns in the vicinity of Project work areas. Temporary travel lane and/or roadway closures may be required during construction to enable construction access and provide for public and worker safety. To the extent reasonably feasible, roadway and lane closures would occur during off-peak hours. As part of the Project construction plan, in order to minimize potential impacts throughout the study area, SEPTA would identify specific routes (known as haul routes) on the existing street network for movement of trucks and other construction vehicles. During various stages of construction, additional traffic would be generated along these routes by hauling of construction debris, excavation spoils, building materials, and equipment movement.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operational - SEPTA will coordinate with state and local officials to further assess the need for and design specific improvements to the intersections affected by the Project that are listed in Table 3-2.4 as the Project design advances.

Short-Term Construction – For construction worker and public safety, temporary lane closures on roadways may be required for certain activities that occur near travel lanes, such as installing support columns for the guideway structure in a roadway median. Lifting the overhead guideway sections into place at locations where the Action Alternatives cross roadways would also require roadway closure for limited periods of time to protect construction worker and public safety. Roadway closure times and durations would be determined in coordination with the public agency with jurisdiction over the particular roadway and would occur during late night hours to minimize disruption of travel operations. Any land area SEPTA temporarily uses would be a designated construction work area and secured to protect the safety of construction workers and the public. As described in Section 2.8, SEPTA will prepare a Transportation Management Plan to minimize the potential impacts of construction on the transportation system. To the extent reasonably feasible, roadway and lane closures would occur during off-peak hours. SEPTA would work with Upper Merion Township, Montgomery County, PennDOT and the PA Turnpike Commission to identify and implement temporary traffic re-routing or roadway closures, signing and public outreach as needed to inform the public of temporary roadway changes before they occur.

Table 3-2.4: 2040 Intersection LOS/Delay, Action Alternatives

Location		AM	PM	Action Alternative				
Intersection	Streets	AM LOS/Delay	PM LOS/Delay	PECO-1 st Ave.	PECO/TP-1 st Ave. (recommended LPA)	PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph
1	1st/N. Gulph	B/18.1	D/50.6	✓	✓	✓	✓	✓
2	1st/Moore	C/26.4	C/28.5	✓	✓	✓	✓	✓
3	Henderson/Saulin	D/36.5	D/51.4	✓	✓	✓	NA	NA
4	Henderson/Monroe	B/11.1	F/90.7	✓	✓	✓	NA	NA
5	US 202/Saulin	B/14.7	E/70.5	✓	✓	✓	✓	✓
6	Henderson/Church	E/60.4	F/92.8	✓	✓	✓	NA	NA
7	US 202/Henderson	F/155.0	F/257.6	✓	✓	✓	✓	✓

Source: Malick & Scherer, PC and AECOM, 2017. *KOP Rail Tier 3 – Transportation Technical Memorandum*

Notes: Check marks indicate intersections potentially affected by the Action Alternative. Findings for the PECO/TP-1st Ave. Action Alternative (recommended LPA) would apply to the recommended LPA design options.

Short-Term Construction - Regardless of the Action Alternative or recommended LPA design option selected, SEPTA will coordinate with PennDOT, Montgomery County, Upper Merion Township, and the PA Turnpike Commission as it develops and implements a Transportation Management Plan for affected roadways during construction with the goals of maintaining traffic operations and minimizing additional congestion to the extent reasonably feasible.

The Transportation Management Plan, described in Section 2.8, would identify specific impacts to roadways (such as lane or street closures) and specific actions SEPTA would implement to minimize and mitigate temporary construction impacts on roadways. Such actions could include, but may not be limited to:

- Ensuring access to residences and businesses is maintained during Project construction;
- Ensuring emergency access for fire-fighting equipment and evacuations is maintained during construction;
- Implementing temporary routing and circulation, as needed, with directional signing;
- Installing temporary traffic control devices to improve construction-related congestion impacts or other temporary traffic flow problems;
- Providing a public outreach and information component to inform the public of changes in the roadway system before they occur; and
- Restoring affected roadways upon completion of construction.

3.3 Pedestrian and Bicycle Facilities

3.3.1 Methodology

This section documents existing and planned pedestrian and bicycle facilities located within the transportation study area using available information from Upper Merion Township, Montgomery County and PennDOT, as well as field observation of existing transportation study area facilities. Potential benefits and impacts associated with the Action Alternatives (compared with the No-Action Alternative) were qualitatively assessed based on the conceptual design of the Project including the proposed station areas.

3.3.2 Affected Environment

Pedestrian and bicycle facilities in the transportation study area include sidewalks and multi-use trails such as Montgomery County's Chester Valley Trail. Sidewalks are present in some areas and absent in others, resulting in a discontinuous pedestrian network. For example, much of the residential area north of US Route 202, as well as older neighborhoods including Swedesburg, Swedeland, and Hughes Park, have sidewalks, although some gaps exist in the network. However, the rest of Upper Merion Township has scattered sidewalks. Portions of existing bus routes have stops that lack Americans with Disabilities Act (ADA) accessibility and proper sidewalk and crosswalk connections. Local roadway intersections in the vicinity of proposed stations and park-and-ride facilities generally have pedestrian accommodations, including sidewalks, curb ramps, crosswalks, pedestrian push buttons, and pedestrian traffic signals.

A segment of the Chester Valley Trail runs between South Warner Road to the PennDOT park-and-ride area at South Gulph Road via a bridge over the Schuylkill Expressway. The study area also has a few additional short, paved trail segments. In 2009, a short trail opened between Heuser Park and Bob Case Park in the northern portion of the township; and in 2015, another segment opened between Heuser Park and US Route 422. These trail segments are part of a planned regional trail along the west bank of the Schuylkill River.

3.3.3 Environmental Consequences

3.3.3.1 No Action Alternative

Two committed projects in the No Action Alternative (and also assumed for each Action Alternative) will improve pedestrian and bicycle facilities in the transportation study area. The 1st Avenue Road Diet project involves various elements that will improve conditions for multimodal travel along 1st Avenue in the King of Prussia Business Park. Also, the planned Chester Valley Trail Extension will run four miles from the current terminus at South Gulph Road to Norristown. The extension will include pedestrian bridges at South Gulph Road, Henderson Road, and Boro Line Road. These planned improvements will increase pedestrian and bicycle access and connections to destinations that are localized to the areas where the facilities are provided. However, existing pedestrian and bicycle facility deficiencies that are not specifically addressed by the committed projects in the No Action Alternative would remain.

3.3.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

Each Action Alternative and recommended LPA design option would provide rail guideway on elevated structure over pedestrian and bicycle facilities, which would minimize potential negative impacts on pedestrian and bicycle facilities. The Project stations and park-and-ride facilities are being planned for multimodal access. The stations and park-and-ride facilities would have appropriate pedestrian and bicycle facilities including sidewalks, crosswalks, stairs and elevators, elevated boarding platforms at stations providing access to both sides of roadways, and bicycle racks. These facilities would be connected to the existing, adjacent sidewalk network. The Chester Valley Trail and most paved trail segments are within one-half mile of a proposed Project station. All proposed, publicly accessible Project station facilities would meet the provisions for ADA-compliant access. Existing pedestrian and bicycle facility deficiencies that are not specifically addressed by the Project or the committed projects in the No Action Alternative would remain.

SHORT-TERM CONSTRUCTION EFFECTS

Construction of any one of the Action Alternatives or recommended LPA design options could temporarily close or re-route existing sidewalks, roadway crosswalks and bicycle facilities within the Project LOD. SEPTA anticipates that such impacts would occur during construction activities where such activities are at or near bicycle and pedestrian facilities. Closures would be required for construction access as well as public and worker safety. Closures at any particular location would be shorter in duration than the construction duration for the entire Project.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operational - To address bicycle and pedestrian connectivity needs, SEPTA will design stations and park-and-ride facilities to accommodate pedestrian and bicycle modes. As the Project design advances, SEPTA will work with PennDOT, the county and the township to accommodate pedestrian and bicycle movements at intersections the Project would affect, design pedestrian and bicycle routing along and across roadways at appropriate locations near Project station facilities, and make connections to sidewalks adjacent to Project station facilities and to the elevated boarding platforms at stations. Improvements at affected intersections

would include signal timing and phasing adjustments and crosswalks, as needed, to facilitate safe pedestrian and bicycle crossings.

Short-Term Construction - Regardless of the Action Alternative or recommended LPA design options selected, SEPTA will develop and implement a Transportation Management Plan, described in Section 2.8, which will include temporary bicycle and pedestrian accommodation in areas affected by construction. SEPTA would work with Upper Merion Township, Montgomery County and PennDOT to identify and implement temporary routing, signing and public outreach as needed to inform the public of temporary changes before they occur.

3.4 Public Parking Facilities

3.4.1 Methodology

SEPTA inventoried on-street and off-street public parking in the LOD of each Action Alternative. Data sources included field reconnaissance and available mapping. The methodology for assessing potential impacts on public parking facilities involved quantifying the number of parking spaces within the LOD for each Action Alternative and recommended LPA design option.

3.4.2 Affected Environment

The inventory of public parking determined that none are present in the LODs of each Action Alternative and recommended LPA design option. Parking areas within the LODs are private and associated with existing commercial and office land uses.

3.4.3 Environmental Consequences

3.4.3.1 No Action Alternative

Public parking, either in the form of public on-street or off-street parking, is not present where the No Action Alternative committed projects are planned. Thus, the No Action Alternative will have no impacts to public on-street or off-street parking.

3.4.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

Public parking, either in the form of public on-street or off-street parking, is not present in the LODs for the Action Alternatives and recommended LPA design options. Thus, no long-term operational impacts to public on-street or off-street parking would occur from the Action Alternatives and recommended LPA design options.

Project impacts to privately held parking would be addressed as part of SEPTA's property acquisitions and displacement processes outlined in Section 4.5. As the Project advances, SEPTA would refine the design and LOD with the goals of avoiding or minimizing impacts to private parking and optimizing benefits, including those to privately-held off-street parking.

SHORT-TERM CONSTRUCTION EFFECTS

Public parking, either in the form of public on-street or off-street parking, is not present in the LOD for the Action Alternatives or the recommended LPA design options. No short-term construction impacts to public on-street or off-street parking would occur from the Action Alternatives and recommended LPA design options.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operational - No long-term operational impacts to public on-street or off-street parking would occur; minimization and mitigation strategies are not warranted. For privately held parking, SEPTA will coordinate with affected private property owners and parking operators to avoid or minimize long-term operational impacts to private, off-street parking. Permanent impacts to private, off-street parking facilities by ROW acquisition would be addressed as part of the property acquisitions and displacement processes described in Section 4.5.

Short-Term Construction - No short-term construction impacts on public on-street or off-street parking are anticipated to occur. Minimization and mitigation strategies are not warranted. For privately held parking, SEPTA will coordinate with affected private property owners and parking operators to avoid or minimize short-term construction impacts to private, off-street parking. Construction impacts to private, off-street parking facilities by ROW acquisition would be addressed as part of SEPTA's property acquisitions and displacement processes described in Section 4.5.

3.5 Railroad Facilities and Operations**3.5.1 Methodology**

The sections below describe existing rail services and operations in the transportation study area based on available mapping of such facilities, field observation and communication with operators. The assessment of potential Project impacts on such facilities examined whether and where the LODs of each Action Alternative and recommended LPA design option would cross or use active right-of-way of such corridors.

3.5.2 Affected Environment

No passenger or commuter railroad services are present in the transportation study area. Two active Norfolk Southern (NS) rail freight corridors traverse the transportation study area. The Harrisburg Line runs along the east and north sides of the study area, and in the northern portion of the transportation study area it serves Abrams Yard, a key freight activity center. About 18 trains per day pass through Abrams Yard. The Dale Secondary runs through the southern portion of the transportation study area. Traffic to and from the Dale Secondary is currently limited to one train daily that travels between a steel slab plant in Coatesville and a steel plate rolling mill in Conshohocken. In addition, the transportation study area includes two former rail freight corridors, the former Chester Valley Branch and the former North Abrams Industrial Track.

3.5.3 Environmental Consequences

3.5.3.1 No Action Alternative

Existing railroad operations in the transportation study area are expected to continue into the foreseeable future. No planned freight, passenger, or commuter railroad projects are included in the No Action Alternative. A portion of the former Chester Valley Branch right-of-way is owned by Montgomery County, which is planning an extension of the Chester Valley Trail using the former railroad corridor (Section 3.3.2).

3.5.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

None of the Action Alternatives or recommended LPA design options would directly impact active freight rail operations. Action Alternatives and recommended LPA design options using 1st Avenue would incorporate a small portion of the former North Abrams Industrial Track corridor north of the PA Turnpike. SEPTA is coordinating with NS regarding the use of that portion of their unused corridor.

SHORT-TERM CONSTRUCTION EFFECTS

Construction of any one of the Action Alternatives or recommended LPA design options is not anticipated to impact active freight facilities or operations within the Project LOD, as discussed above. Minimization and mitigation is not warranted.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operational - SEPTA will continue to coordinate with NS regarding proposed use of a portion of their North Abrams Industrial Track corridor.

3.6 Safety, Security and Emergency Services

3.6.1 Methodology

This section qualitatively examines potential impacts of the Action and No Action Alternatives and the recommended LPA design options on transportation system safety and security and local emergency services. It identifies general safety and security considerations related to the Project.

3.6.2 Affected Environment

The existing transportation system in the study area includes design and operational elements that promote safe operation and interaction among the multiple modes that are present. Examples of such elements include roadway intersection signalization, pedestrian walk signals and striped crosswalks. Existing fire, rescue and police services rely on the existing transportation network to provide their services to the Project study area, such as responding to incidents.

3.6.3 Environmental Consequences

3.6.3.1 No Action Alternative

Safety and security for the No Action Alternative will include the existing policies and operational elements that are present in the transportation study area. As No Action Alternative projects are designed and implemented, the sponsors of each project are expected to apply elements that promote safe operations of the new facilities in the context of the transportation study area environment. Existing fire, rescue and police services will continue to operate within the existing roadway network. Growth in transportation study area roadway congestion has the potential to increase response times.

3.6.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

The grade-separated design of the Project would enable the proposed rail transit service to operate on a dedicated guideway without interfering with the at-grade transportation network below it. By separating operations, there is no potential for at-grade crossing conflicts between rail and other modes. Grade-separation also allows SEPTA to use third-rail traction power. Separating the vehicle power source from places where people are, is a critically important safety provision. At-grade rail operations would also require that the rail guideway is fenced to separate people and animals from rail operations.

As described in Section 2.6, TPSS would be placed at approximately one mile intervals within the Project LOD and would be at grade. Design of the TPSS facilities would occur during preliminary and final design for the Project, as a traction power supply study will determine the exact number of required substations. Specific site selection would be made based on the results of a combination of assessments including traction power simulations (based on peak headways, rolling stock, vertical grades, speeds, and other operational factors), available real estate, available power sources, suitability for substation structures, and natural and human environmental impacts. Environmentally sensitive lands, protected lands, historic properties or residential areas are typically not suitable sites. TPSS facilities are typically fenced and screened from view with trees and shrubs. Vehicular access to TPSS facilities is needed for maintenance during rail operations. Locations for the TPSS facilities will be identified and the potential impacts evaluated in the FEIS.

Each Action Alternative and recommended LPA design option would feature safety and security systems and procedures that meet safety requirements that are in effect at the time of Project construction and operation to protect passengers, workers, and adjacent communities. Each of the Action Alternatives and recommended LPA design options would be designed and operated in accordance with SEPTA's rail operations safety and security protocols and procedures for the NHSL, which would be updated to include specific requirements for the Project prior to revenue service. The Project would be designed in accordance with SEPTA's Design Criteria Manual for NHSL.

SHORT-TERM CONSTRUCTION EFFECTS

Each of the Action Alternatives and recommended LPA design options would be constructed in accordance with SEPTA's existing rail operations safety and security protocols and procedures, which would be updated to include specific requirements for the Project prior to construction.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operational - This assessment is based on a conceptual level of design. As the Project advances, SEPTA will examine safety and security needs. SEPTA will evaluate and design appropriate safety elements, modify existing incident management plans, coordinate with emergency response personnel, and develop operational protocols and procedures to be followed.

Short-Term Construction - Regardless of the Action Alternative or recommended LPA design options selected, SEPTA would develop and implement construction protocols and procedures prior to the start of construction with the goal of providing a safe and secure environment in and near the Project construction site. The protocols and procedures would be Project-specific and would focus on worker and public safety, securing work and staging areas including equipment, materials and permanent elements of the Project. Temporary fencing with locking gates around construction staging areas is an example of a typical technique to secure a work area. SEPTA would incorporate its standard worksite safety procedures into the Project-specific plan. SEPTA would also work with Upper Merion Township law enforcement personnel and emergency service providers in developing and implementing its Project safety plan to ensure it is consistent and coordinated with local safety and emergency response procedures. SEPTA's contractor(s) would be required to adopt SEPTA's procedures and protocols, including monitoring and reporting.

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Chapter 4.0 Affected Environment and Potential Consequences

Chapter 4 assesses the potential impacts of the Action Alternatives, the recommended LPA design options and the No Action Alternative upon the built and natural environment. SEPTA's recommended LPA is the PECO/TP-1st Ave. Action Alternative. The No Action Alternative is the future condition of transportation facilities and services in 2040 within the transportation study area if the Project is not implemented. As described in Section 2.2.1, the No Action Alternative projects are listed in the financially constrained element of *Connections 2040 Plan for Greater Philadelphia* (2013 and as amended), the long-range transportation plan of the DVRPC. The No Action Alternative provides the basis against which the Action Alternatives and recommended LPA design options are compared.

Section 4.1 describes the study areas used in this DEIS. Sections 4.2 through 4.16 are each organized as follows:

- Regulatory Context and Methodology - describes the regulatory context and methodologies used to assess the potential benefits and impacts of the Action Alternatives, the recommended LPA design options and the No Action Alternative to each resource.
- Affected Environment - describes the existing conditions in the defined study area for the resource.
- Environmental Consequences - describes the potential long-term and short-term benefits and impacts of the Action Alternatives, the recommended LPA design options and the No Action Alternative on the resource. In cases where the effects of the Action Alternatives and recommended LPA design options would differ from one another, the performance of each alternative and recommended LPA design option is reported separately. If the effects of the Action Alternatives and recommended LPA design options would be similar, a breakdown of performance among each alternative and option is not provided; in this case, the findings are reported as Project effects.
- Minimization, Mitigation and Commitments - describes the work done to avoid or minimize impacts, potential strategies to minimize further or to mitigate Project impacts as design advances and commitments made to mitigate projected impacts.

The following terms are used frequently in this DEIS:

Adverse or negative: An unfavorable condition.

Avoidance: The act of avoiding impacts to, or keeping away from, something or someone.

Minimization: Measures taken to reduce the severity of adverse impacts.

Mitigation: Measures taken to alleviate adverse impacts that remain after minimization.

Sections 4.2 through 4.16 refer to Appendix A, which contains a set of maps showing many of the resources described in this chapter. These sections also refer to technical memoranda that support this DEIS. These memoranda focus on the Action and No Action Alternatives. The recommended LPA design options were developed and assessed subsequent to completion of

the technical memoranda; the findings of the assessment of the recommended LPA design options are documented in this DEIS.

4.1 Study Areas

In each assessment in this chapter, SEPTA applied a study area that is appropriate for the type of environmental resource being evaluated. The following study areas are most commonly used:

- **Transportation study area** – In addition to being used to assess transportation issues in Chapter 3, the transportation study area is used to assess a number of resources such as land use patterns and economic development. It is the geographic area encompassing the King of Prussia area defined by the NHSL to the east, the Schuylkill River to the north, US Route 422 to the west and the Schuylkill Expressway to the south (Figure 1-1.2).
- **Project study area** - The Project study area consists of two parts. In the King of Prussia area, the Project study area is the geographic area within 500 feet on either side of the centerline of each Action Alternative, as well as ½-mile from the center point of all proposed station areas. In Upper Darby, the Project study area is the geographic area within 100 feet on either side of the centerline of the proposed new track at SEPTA's 69th Street Transportation Center. The Project study area in both locations is shown on the maps in Appendix A. The Project study area is useful for examining potential impacts on properties that are in close proximity to the Action Alternatives.
- **Limit of disturbance area (LOD)** - For the assessment of potential direct, physical impacts of the Action Alternatives, either during construction or over the long-term, an LOD was used. The LOD describes the outside edge of the temporary or permanent disturbance areas of each Action Alternative and recommended LPA design option based on the level of engineering completed to date (maps, Appendix A). The LOD is the boundary within which proposed structures and construction activities would occur. As the Project advances, SEPTA would refine the design with the goal of avoiding or minimizing impacts and optimizing benefits. Thus, as the design advances, the LOD would be refined.

4.2 Land Use Patterns and Consistency with Plans

This section assesses the benefits and impacts of the Action Alternatives, the No Action Alternatives and the recommended LPA design options regarding land use patterns. It also reports on the consistency of the alternatives with existing regional and local plans. The 2017 *KOP Rail Land Use and Economic Development Technical Memorandum* provides more detail on these topics.

4.2.1 Regulatory Context and Methodology

NEPA forms the general legal framework for the consideration of impacts to land use issues (40 C.F.R. Parts 1502.15 – 1502.16). In general, land use is regulated by the local county or

municipal government. Counties and municipalities regulate land use and development using tools such as comprehensive plans and municipal development codes/ordinances.

Plans considered in this assessment include:

- DVRPC's long-range, nine-county regional plan entitled *Connections 2040 Plan for Greater Philadelphia* (2013 and as amended), which contains a land use element, which designates King of Prussia as a "Metropolitan Subcenter" in recognition of its significant number of jobs and commercial activity.
- Montgomery County's 2015 plan, *Montco 2040: A Shared Vision*, which includes extending the NHSL to King of Prussia as a priority for improving transportation quality and access for people who live, work and play in the county.
- Upper Merion Township's *2020 Vision Plan*, which includes among its objectives:
 - Encouraging land use patterns that reduce travel through neighborhood development using mixed-use centers.
 - Encouraging development that provides the ridership to support non-highway transportation modes. Associated with this goal, the plan identifies an automated shuttle between the proposed Schuylkill Valley (rail) Line and the Cross County (rail) Line that would be aligned over Goddard Road and Mall Boulevard with an elevated station between the former Court and the Plaza sections of the King of Prussia Mall.
 - Encouraging development patterns where land uses and locations are compatible. Providing incentives to development/redevelopment that support alternative transportation modes, open space, improved community amenities, improved business opportunities and diversified employment centers.
- Upper Merion Township's 2005 *Land Use Plan*, which establishes planning goals, detailed objectives and policies for accomplishing each of the goals. The goals and strategies of the township plan include the following:
 - Encourage mixed-use development
 - Encourage the use of public transportation, including supporting SEPTA in its efforts to expand service in Upper Merion Township, particularly with the proposed Schuylkill Valley Metro, Cross County Metro, Route 100 extension and the frequency of bus service.
 - Create a safe, efficient, and appealing pedestrian and bicycle network.
- Upper Merion Township's 2014 document, *Upper Merion Township Act 209 Land Use Assumption Report*, which provides estimates of potential future development to inform the Township's transportation impact fee program.

- Upper Darby Township's 2004 *Comprehensive Plan*, which identifies many "opportunities for change" in the township, including sustaining and encouraging growth and redevelopment in the 69th Street Transportation Center area, the township's business center.

The year of analysis for the DEIS is 2040. A qualitative assessment of potential benefits and impacts of the No Action and Action Alternatives on existing land use patterns as well as an assessment of the consistency of the alternatives with land use plans was performed using the following methodology:

- Examined the foregoing regional and local plans and qualitatively compared how well each alternative supports each plan.
- Applied the Tier 2 screening estimate of the amount of existing non-residential and office floor space within ½ mile to proposed station areas of each Action Alternative and recommended LPA design option in Upper Merion Township along with the projections of ridership increase and travel time savings presented in Chapter 3 to compare how each alternative would support existing land use patterns and Upper Merion Township's 2005 *Land Use Plan*.
- The following geographic areas were considered in this assessment:
 - King of Prussia: SEPTA examined the potential effects of the proposed Project on both the broader transportation study area and the Project study area.
 - 69th Street Transportation Center: SEPTA examined potential benefits and impacts of the proposed Project in the Project study area and in the vicinity of the 69th Street Transportation Center in Upper Darby.

4.2.2 Affected Environment

4.2.2.1 Existing Condition

Existing land use patterns in the King of Prussia area are largely the result of three key historical events: the post-World War II suburban housing boom that led to significant outmigration from Philadelphia beginning in the 1950's, the opening of the King of Prussia Mall and the development of the Interstate and expressway highway network that converged at the transportation study area. Concentrations of primarily non-residential uses are located along the major highways and near highway interchanges: the King of Prussia Mall and surrounding retail and hospitality uses, the King of Prussia Business Park, the DeKalb Pike (US Route 202) corridor and the Henderson Road corridor. Non-residential uses include retail, office, industrial and service businesses (see Figure 4-2.1).

The King of Prussia Business Park is the largest area of primarily commercial use in the Township and hosts a number of uses of varying intensities. It contains a mix of large sites occupied by individual businesses (such as Valley Forge Casino Resort (VFCR) and Arkema), mid-rise office buildings and business developments (such as Freedom Business Center and Maschellmac Office Complex), and low-rise business parks (such as King of Prussia Business

Center and Continental Plaza). There are also light industrial uses in the King of Prussia Business Park. VFCR consists of a 600-slot casino, 486-room hotel and a convention center complex with 154,000 square feet of meeting/exhibit space. VFCR has approximately 1.1 million visitors each year (KOP-BID, 2016 *Report to the Community*).

Other major employers in the transportation study area include Lockheed Martin, UGI and Universal Health Service.

Large areas of existing single-family residential development are located on either side of US Route 202, extending north toward the Schuylkill River and south toward the Schuylkill Expressway. Several large apartment and condominium complexes are located within this large residential area.

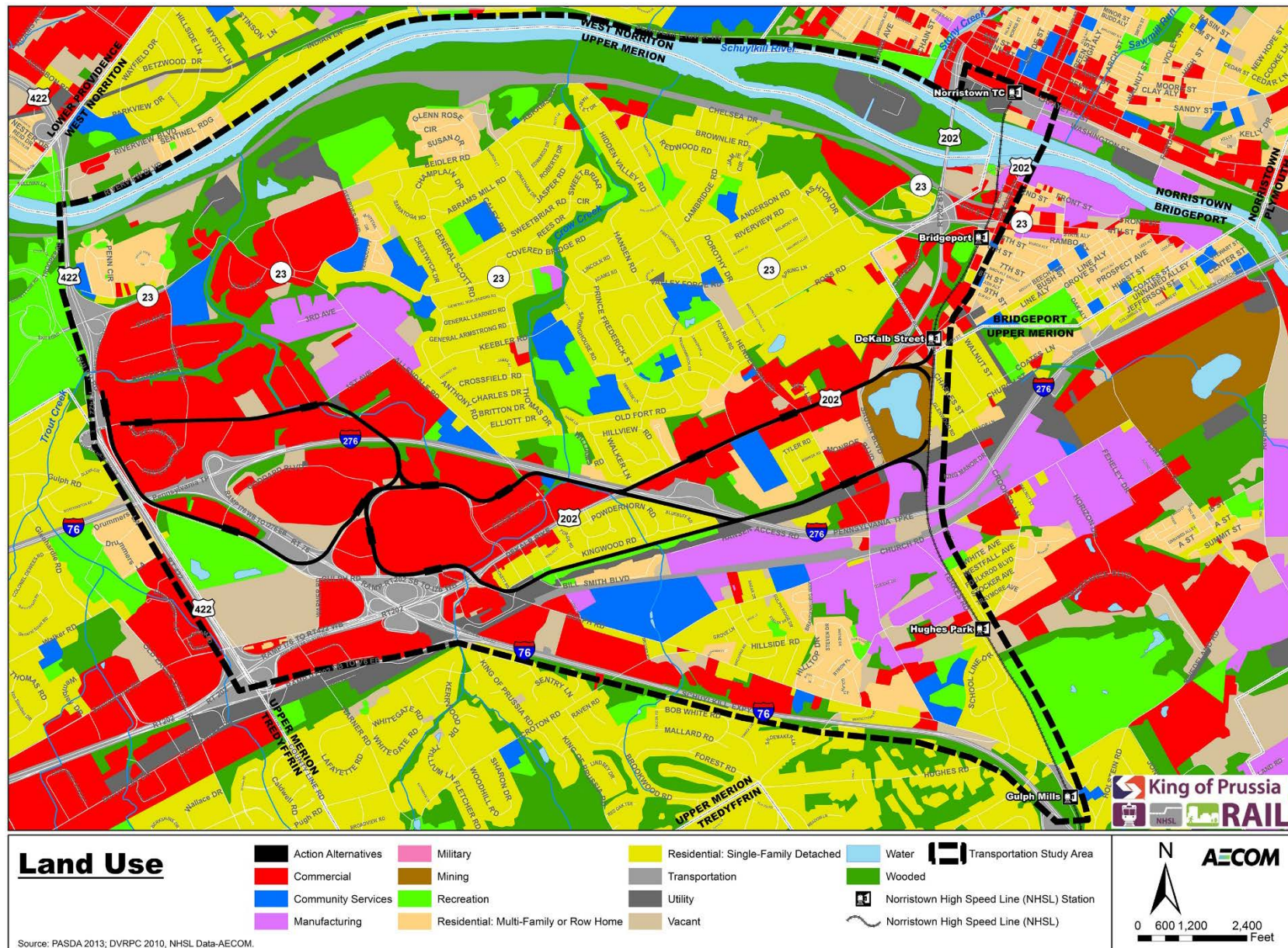
The parking deck was enlarged as part of this expansion. Other recent development activities in the transportation study area demonstrate that growth as well as changes in land use patterns continue to occur. At the Village at Valley Forge, a mixed-use community is being developed on the site of the former Valley Forge Golf Club. To date, the Village at Valley Forge is partially occupied and features a Wegmans grocery store and restaurant and the 134,000 square foot Children's Hospital of Philadelphia (CHOP). Under construction at the site is a 4-story residential building with 363 units; and the Township has approved three other residential projects with over 700 units on the property.

Along the existing NHSL are established communities with land use patterns that are urban or suburban in character depending on location. Residential, business and institutional uses are found adjacent to the NHSL corridor. Existing NHSL stations, in some cases, are supported by nearby surface or structured parking. In Upper Darby Township, the Project study area falls within the boundaries of the 69th Street Transportation Center; existing land uses and patterns within the Project study area are transportation-related. Beyond the boundaries of the 69th Street Transportation Center, the existing development pattern is an urbanized community with a mix of commercial and residential uses.

4.2.2.2 Foreseeable Future Condition

The King of Prussia area is expected to experience continued growth in population and employment through the year 2040. In 2016, DVRPC prepared projections for future employment and population in the region at the county and municipal levels. The municipal-level employment forecasts show that Upper Merion Township's employment will rise from 57,038 (estimated in 2015) to 65,430 in 2040, a 14.7% increase. The absolute increase of 8,292 represents the highest absolute employment growth in that period forecasted for municipalities in Montgomery County. In terms of future population growth, the DVRPC's adopted forecasts project that Upper Merion Township's population will increase from 28,620 from the 2015 Census estimate to 34,003 in 2040, which is an increase of 18.8%, or 0.76% annually.

Figure 4-2.1: Land Uses in the Transportation Study Area



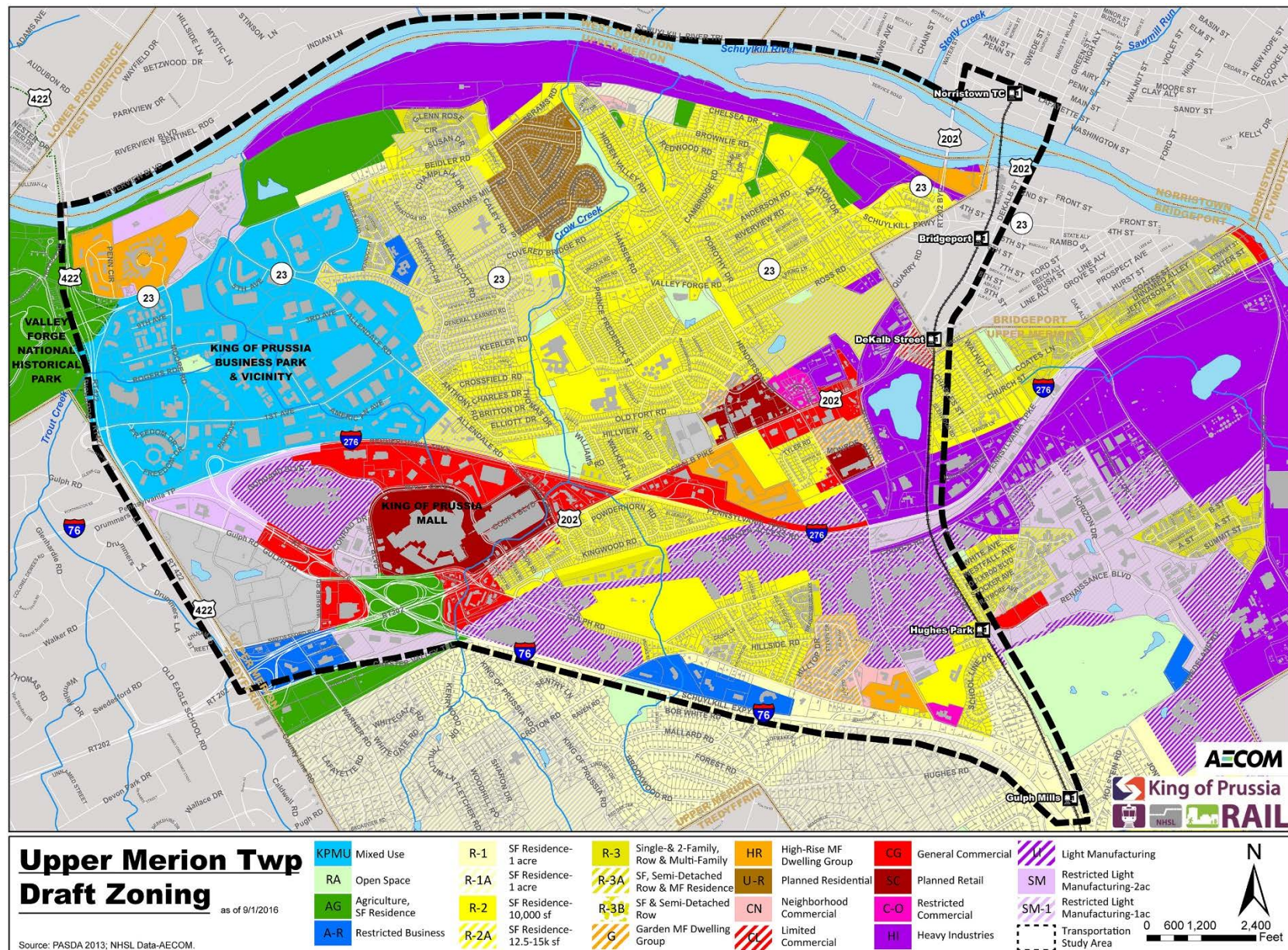
Most of the projected increase in employment and population in Upper Merion Township will occur in the transportation study area, and the bulk of the projected growth and change in land use pattern will be the result of development at the Village at Valley Forge. When the mixed-use community is fully built, it will include up to 1.5 million square feet of office/commercial space, 500 hotel rooms, and 3,000 residential units.

Adopted regional and local plans guide current and future development activities and land use patterns in the transportation study area. Given its desire for economic growth and stability into the future, Upper Merion Township is focusing its attention on opportunities for land use and zoning to optimize the economic benefits of the King of Prussia area. For example and as described in Section 1.2.2, the Township's recent designation of a portion of the King of Prussia Business Park as the King of Prussia Mixed-Use (KPMU) zoning district, shown on the Township's Draft Zoning Map on Figure 4-2.2 and in the maps in Appendix A, allows for a redevelopment pattern in the Business Park that encourages a variety of residential and non-residential uses. The new zoning classification allows multi-family and service retail, permits more compact development, reduces parking requirements, and encourages assembling large parcels for redevelopment. These characteristics encourage development intensity that can support the use of non-highway modes such as public transportation, thereby being consistent with Upper Merion Township's *2020 Vision Plan* and *2005 Land Use Plan*.

Upper Merion Township also amended its subdivision and land development ordinance so that it promotes pedestrian-friendly design, supports alternative transportation modes, and establishes new sustainable design standards. Upper Merion is already seeing interest in residential development/redevelopment inside as well as outside the new KPMU zoning district. The township has approved two residential development projects in the Business Park area, and another residential project has been proposed for the Glasgow Tract near US Route 202 and Henderson Road.

The *Upper Darby Comprehensive Plan* (2004) identifies many "opportunities for change" in the township. These opportunities include the Market Street Gateway, which the Plan labels a "major gateway" for the township; the 69th Street Transportation Center, which the Plan designates as a "transit hub;" and the broader Market Street and 69th Street corridors, which are classified together as an "employment center redevelopment opportunity." The Plan envisions that the 69th Street Transportation Center area will continue to be the township's business center.

Figure 4-2.2: Upper Merion Township Draft Zoning Map



4.2.3 Environmental Consequences

4.2.3.1 No Action Alternative

The No Action Alternative is inconsistent with Upper Merion Township's 2005 *Land Use Plan* and 2020 *Vision Plan* because it does not encourage the use of public transportation and does not support SEPTA in its efforts to expand public transportation in the Township. In the latter regard, the 2005 *Land Use Plan* cites the Route 100 extension, which was the name of the Project prior to the NEPA process.

Short-term land use changes could occur during construction of the No Action Alternative projects, resulting from easements needed for temporary staging areas and construction access. Project sponsors will be responsible for identifying and addressing temporary property needs and impacts on land use and access during design and construction planning.

4.2.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

King of Prussia

Each Action Alternative and recommended LPA design option would support existing and foreseeable future land use patterns and be consistent with the DVRPC, Montgomery County and Upper Merion Township plans because each would improve public transit in the transportation study area. Specifically, each Action Alternative and recommended LPA design option would support DVRPC's designation of the King of Prussia area as a Metropolitan Subcenter, which is defined in *Connections 2040 Plan for Greater Philadelphia* as a focal point for organizing and planning development as well as infrastructure, such as transportation. Each Action Alternative and recommended LPA design option would also support Montgomery County's *Montco 2040* goal of extending NHSL to King of Prussia as a priority for improving transportation quality and access in the King of Prussia area. Each Action Alternative and recommended LPA design option would encourage the use of public transportation, a key goal of Upper Merion Township's 2005 *Land Use Plan*, by providing a new rail transit service that is more frequent and reliable than existing bus service, reduces travel time, and provides direct access to the King of Prussia area (Section 3.1.3.2). For this reason, Upper Merion Township has shown its support for the Project in its Resolution 2011-03 (Appendix B).

Metropolitan Subcenter

A place recognized in DVRPC's *Connections 2040* plan as a focal point for organizing and planning development as well as infrastructure, such as transportation. Typically, a Metropolitan Subcenter provides many amenities that people want, such as walkability, unique architectural character, access to transit, social connections, and a mix of

Each Action Alternative and recommended LPA design option would also help Upper Merion Township encourage land use patterns that are consistent with their 2020 *Vision Plan*. For example, each Action Alternative and recommended LPA design option would provide three proposed station areas in Upper Merion's KPMU zoning district, potentially encouraging development that provides ridership to support a non-highway transportation mode and reduces sprawl.

However, as described below, the Action Alternatives and recommended LPA design options differ in the degree of support of planned land use patterns. The recommended LPA and the PECO/TP-N. Gulph Action Alternative would have the highest ridership because proposed stations would be in areas where the land use patterns would generate the most ridership. In particular, the KPMU zoning district and the Henderson Road area are focal points for relatively high commercial and employment. The PECO-1st Ave. Action Alternative would also serve these areas, but not as effectively because it would capture less ridership at its single station in front of the King of Prussia Mall. The US 202-1st Ave. and US 202-N. Gulph Action Alternatives are least effective because the land use patterns in the proposed station areas along US Route 202 would generate less ridership increase than the Henderson Road station area.

69th Street Transportation Center

Proposed improvements at SEPTA's 69th Street Transportation Center as part of each Action Alternative and recommended LPA design option are similar and would occur within SEPTA property. Each Action Alternative and recommended LPA design option would support existing land use patterns in Upper Darby Township and be consistent with Upper Darby's *Comprehensive Plan* designation of the 69th Street Transportation Center as a transit hub because the Center would continue to serve as a transit hub in the township. As such, each Action Alternative and recommended LPA design option would similarly provide for improved transit access to residents and businesses in Upper Darby to/from King of Prussia.

SHORT-TERM CONSTRUCTION EFFECTS

Short-term land use changes are anticipated during the construction of any Action Alternative or recommended LPA design option, resulting from easements needed for temporary staging areas and construction access. Most construction staging areas would be obtained as temporary construction easements. Staging areas also would provide additional access points to the construction of the guideway, stations and park-and-ride facilities. Temporary construction easements may result in short-term change of access or closures of certain areas of the properties in the easement, or to adjacent properties; where this is the case, alternative access would be provided.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - SEPTA coordinated with Upper Merion Township and Montgomery County during alternatives and DEIS development to identify local land use planning policies and goals, as well as develop and assess the benefits and impacts of the Action Alternatives and recommended LPA design options in the DEIS in relation to those policies and goals. This coordination effort was achieved through meetings with local officials, various Project committees described in Section 7.1.3 and by the participation of these entities in various public outreach activities, also described in Section 7.1.3. As the Project advances, SEPTA will continue to work with Upper Merion Township and Montgomery County to optimize the Project's role in supporting future land use planning.

Short-Term Construction – As the Project advances, SEPTA would develop a construction plan that identifies specific locations of temporary staging areas and construction access points. SEPTA would coordinate with Upper Merion Township, PennDOT, the PA Turnpike Commission and other potentially affected property owners in this activity. To the extent

reasonably feasible, SEPTA would identify such areas within the Project ROW or on vacant or publicly-owned property. SEPTA would work with potentially affected property owners in regard to easement needs and conditions, resulting in formal easement agreements. SEPTA would restore properties affected by a temporary easement to an acceptable pre-construction condition after completion of construction activities, in accordance with individual easement agreements.

4.3 Economic Development

This section assesses the benefits and impacts of the Action Alternatives, the recommended LPA design options and the No Action Alternative regarding economic development activity.

4.3.1 Regulatory Setting and Methodology

NEPA regulations require consideration of the direct effects of a proposed action, as well as the significance of those effects. The term “effects” is defined to include the economic impacts of an action (40 C.F.R. §§ 1502.16; 1508.8).

To assess the economic effects of the Project, SEPTA used qualitative and quantitative data from several source documents including *Connecting KOP*, the Economy League of Greater Philadelphia’s (ELGP) 2015 report on the benefits of the Project, and the 2017 *KOP Rail Land Use and Economic Development Technical Memorandum*. This assessment considers the economic effects of the Project on the transportation study area as well as the Greater Philadelphia region in terms of transit connectivity, capital expenditures, travel time and cost savings (public and personal), and safety and environmental impacts. This assessment also qualitatively considers the economic benefits of the Project to Upper Merion residents, in general, including effects on property values, which is a key concern of residents.

4.3.2 Affected Environment

As described in Chapter 1 and Section 4.2.2 of the DEIS, the King of Prussia area is Montgomery County’s economic hub and the largest employment center, outside of Center City Philadelphia, in the greater Philadelphia region. In contrast to its residential base of 28,620 people, Upper Merion Township has over 59,000 jobs across skill and income levels (DVRPC *Analytical Data Report 023*, 2016). King of Prussia is also a major shopping and tourist destination with 20 million visits to the King of Prussia Mall, 2.12 million visits to Valley Forge National Historical Park and 1.1 million visits to the Valley Forge Casino Resort each year.

Development is continuing in King of Prussia with the Village at Valley Forge and the recent King of Prussia Mall expansion. In addition, the Township continues to receive development proposals and inquiries. Upper Merion Township’s KPMU zoning district designation for the King of Prussia Business Park sets the stage for future redevelopment in that location.

The problems of traffic congestion and limited transportation choices in the transportation study area are concerns of the Township as well as businesses and residents as indicated in comments received during public and agency outreach (DEIS Sections 7.1 and 7.2).

Transportation problems extend beyond matters of access and convenience as they are

forecast by the ELGP to limit the ability of the King of Prussia area to grow and achieve its economic potential (ELGP, 2015).

Transportation constraints will increase the time people spend driving or riding a bus, the number of miles traveled and vehicle maintenance costs (ELGP, 2015). Greater time spent driving or riding a bus means less personal time available for other activities and fewer job options within a reasonable commuting distance. This condition narrows opportunities for economic advancement and would be felt most acutely by people with limited means.

4.3.3 Environmental Consequences

4.3.3.1 No Action Alternative

The projects in the No Action Alternative, listed in Chapter 2 -Table 2-2.2, will generate short-term construction-related economic activity in the transportation study area as well as long-term benefits. In terms of regional economic benefits, some of the No Action Alternative transportation projects could contribute to future economic development. For example, the Lafayette Street extension project will increase access to Norristown, thereby bolstering economic development opportunities in Norristown. Likewise, the expanded Valley Forge interchange of the PA Turnpike will improve access to and help Upper Merion Township in its economic development goals for the King of Prussia Business Park.

In the long-term, the No Action Alternative transportation projects will improve capacity and operations of some regional and local roadways, thereby providing some support to economic development activities. However, reliance on increasingly congested roadways will constrain Upper Merion from fully capitalizing upon the transportation-land use interrelationships built into regional and local plans. Over time, roadway congestion and lengthening travel times are likely to become severe enough to be a disincentive for travel to and within the transportation study area. As this occurs and as described in Section 4.3.3 above, the ability of the King of Prussia area, its businesses and its residents to realize additional economic benefits will be increasingly constrained.

Changes in access to some properties near any of the committed No Action Alternative projects could occur during construction due to temporary roadway and parking area closures and construction work areas. Changes in access to business properties could potentially negatively impact businesses by deterring customers and disrupting deliveries. Project sponsors will be responsible for identifying and addressing temporary changes in access effects on land uses during design and construction planning.

4.3.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

King of Prussia

Because of Upper Merion Township's focus on the King of Prussia Business Park and the area west and north of King of Prussia Mall in general as a target for future development, SEPTA compared the economic growth potential around proposed Project stations along 1st Avenue and N. Gulph Road. Economic growth potential was assessed in two ways: 1) by quantifying the

redevelopment potential of the two areas and 2) by considering the relative ease of implementing new transit-supportive zoning in the two areas. To quantify redevelopment potential, SEPTA calculated the amounts of non-residential land area within ½ mile of the two pairs of proposed stations: Convention Center/N. Gulph (along N. Gulph Road) and 1st & Moore/1st Avenue East (along 1st Avenue).¹ The results of this assessment are that the 1st & Moore/1st Avenue East station pair in the core of the King of Prussia Business Park has approximately 50 percent more developable land (494 acres) within walking distance than the Convention Center/N. Gulph station pair (334 acres). This result indicates that Action Alternatives and recommended LPA design options that would use 1st Avenue would serve an area with approximately 50 percent greater redevelopment potential than those that would use N. Gulph Road.

To assess the relative ease of implementing new transit-supportive zoning, SEPTA qualitatively compared the two station pairs in terms of their proximity to the core of the King of Prussia Business Park and the relative proximity of residential uses. The 1st & Moore/1st Avenue East station pair is at or very near the core of the King of Prussia Business Park while the Convention Center/N. Gulph station pair is comparatively distant from the core of the Business Park. The relative proximity of the 1st & Moore/1st Avenue East station pair to the Business Park and the recent KPMU zoning of the surrounding area make the walking areas around these stations relatively easier for Upper Merion Township to consider new transit-supportive zoning by 2040. Additional factors that make the area around the Convention Center/N. Gulph station pair relatively less easy for Upper Merion Township to consider new transit-supportive zoning are the current redevelopment activity at the Village of Valley Forge and the fact that a portion of that development is residential in nature. These two factors make it less likely that the walking area around these stations would be redeveloped by 2040 and relatively harder for Upper Merion Township to implement new transit-supportive zoning, compared to the older, primarily non-residential character of the core of the Business Park.

In terms of long-term regional economic benefits, each Action Alternative and recommended LPA design option would similarly contribute to future economic development by increasing transit access and transportation options to and within King of Prussia. Thus, each would similarly bolster economic development opportunities as described below and support Upper Merion Township development goals. Each Action Alternative and recommended LPA design option would similarly reduce reliance on increasingly congested roadways and be consistent with County and Township plans.

Having a rail transit option would generate benefits for residents and businesses, as well as the region as a whole, as described below. The ELGP analyses determined that regardless of the Action Alternative or recommended LPA design option selected, the Project would generate local and regional economic benefits of different types, summarized in Table 4-3.1.

¹ The ½-mile radius was used to represent a typical maximum potential walking distance to a transit station. This calculation excluded land area on the opposite side of the following major highways (US Route 422, I-276 and I-76) as it would be unlikely that a person would have walking access across these highways.

Upper Merion residents, in general, would benefit economically by having access to more job opportunities, better salaries, and the stability afforded by the expanded sources of income (ELGP, 2015; values in 2015 dollars):

- \$19.7 to \$22.1 million per year in total tax revenue from construction spending alone
- \$1.1 to \$1.3 billion in local economic activity in the region during Project operations
- Increased travel options, reduced reliance on autos, travel time savings and reduced transportation costs
- Improved access to employment opportunities and consumer goods and services
- Stable or potential increased property values

Table 4-3.1: Local and Regional Economic Benefits of the Project

New Capital Expenditures for Construction
\$1 to \$1.2 billion in Project cost is expected to generate \$1,122.8 to \$1,311.6 million in total construction spending in the region
Less Roadway Congestion
Regional reduction in automobile use by 14.6 to 18.4 million miles per year
Better Access and Connectivity
<ul style="list-style-type: none"> o <u>Regional reduction in travel time for drivers:</u> 1.7 to 2.1 million hours per year, valued at \$36.4 to \$44.5 million o <u>Regional reduction in travel time for transit riders:</u> 104,000 to 217,000 hours per year, valued at \$2.6 to \$4.7 million o <u>Connectivity:</u> fewer number of transfers between transit services (a) o <u>Reliability:</u> separation from roadway traffic would eliminate travel delays caused by congestion
Less Motor Vehicle Air Pollution
Regional reduction in automobile emissions by 5,200 to 5,800 tons of carbon dioxide emissions; overall reduction in annual cost to mitigate for damage caused by vehicular emissions is valued at approximately \$1.5 to \$1.9 million
Growth in Business and Commercial Real Estate
Approximately 310,000 square feet of new non-residential development in King of Prussia would be stimulated by the Project (b)
Job Growth Across Skill Levels
1,200 new employees per year

Notes: Data in this table apply to each Action Alternative and recommended LPA design option. (a) Source: AECOM, 2016; (b) ELGP's assessment includes development potential that induces ridership beyond DVRPC's model and demographic forecasts.

Sources: Economy League of Greater Philadelphia. 2015. *Connecting KOP*. Monetary values are in 2015 dollars; other estimates are for the coming 20 years.

While the foregoing economic benefits are projected for the Upper Merion Township residential population in general, residents adjacent to or near the Action Alternative alignments in the transportation study area have expressed concern about how the proximity of the each Action Alternative could negatively affect their property values. Potential proximity effects such as changes in visual context, shadows, privacy, noise, vibration and safety were also identified by nearby residents (Tables 7-1.1 and 7.1-2). Residents in the Valley Forge Homes neighborhood have indicated that the PA Turnpike North/South Option potentially would have fewer proximity effects on their properties because the alignment would be on the north side of the PA Turnpike,

further from their properties than the recommended LPA and other alternatives that would be aligned on the south side of the PA Turnpike.

69th Street Transportation Center

As indicated by many of the statistics cited above, in addition to local economic benefits, the ELGP found that the Project would generate economic growth and related benefits to the broader Philadelphia region; this effect would be similar among the Action Alternatives and recommended LPA design options. For example, by providing a new rail transit connection in King of Prussia, each Action Alternative and recommended LPA design option would improve job access and increase markets for residents and businesses in Norristown, Upper Darby and other locations along the existing NHSL.

SHORT-TERM CONSTRUCTION EFFECTS

Changes in access to some properties near any of the Action Alternatives or recommended LPA design options could occur during construction due to temporary roadway and parking area closures and construction work areas. Changes in access to business properties could potentially negatively impact businesses by deterring customers and disrupting deliveries.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - As the Project advances, SEPTA would focus on maximizing benefits while avoiding or minimizing Project impacts. For example, SEPTA would use avoidance and minimization techniques described in the DEIS to address causes of potential negative property value effects (such as visual change and noise and vibration impacts) to the extent reasonably feasible. One such technique SEPTA will investigate as a result of discussions with residents in the Valley Forge Homes development, for example, is a wall on the guideway structure to block noise and views of properties from rail vehicles. SEPTA anticipates individual property owner coordination, as well as collaboration through the Project's Community Working Group (Section 7.1.3.6), in this process.

Short-Term Construction - As the Project advances and as part of SEPTA's construction plan described in Section 2.8, SEPTA would identify temporary work areas, access points and haul routes. SEPTA would coordinate with Upper Merion Township, affected businesses and property owners in this activity and would address temporary negative impacts, such as changes in access and property impacts, with specific actions identified in coordination with affected parties. SEPTA's plan would specify actions to minimize or mitigate temporary negative impacts, which could include but may not be limited to the following:

- Project construction in segments to minimize the area of disruption
- Maintain access to businesses during construction
- Maintain or relocate bus stops
- Maintain parking lots
- Provide directional signage
- Provide a construction hotline

4.4 Community Cohesion and Facilities

4.4.1 Regulatory Context and Methodology

NEPA forms the general legal framework for the consideration of potential social benefits and impacts, such as effects on community character, cohesion, community facilities and energy use resulting from transit projects (40 C.F.R. Parts 1502.15 – 1502.16). Energy use is discussed in Section 4.13. Local ordinances regulate parking, noise, building codes, litter, public safety, traffic, zoning and general welfare.

As referenced by FTA, SEPTA used the Federal Highway Administration's (FHWA) 1996 publication, *Community Impact Assessment: A Quick Reference for Transportation*, as a guide to considering potential effects of the proposed Project on community cohesion and facilities.

Cohesion relates to the sense of community within an area and is formed by social interaction and physical connection among people and groups. To comparatively assess the potential benefits and impacts of the Action Alternatives in these topic areas, the following qualitative measures were evaluated:

- Physical barriers: whether and where the alternatives have the potential to create, change or eliminate barriers within a community that physically isolate populations.
- Access: whether and where the alternatives have the potential to create, increase, reduce or eliminate access to communities and community facilities.

Community facilities are the locations that provide services for public benefit, including schools, health care facilities, religious institutions, emergency services facilities, municipal services and buildings, and museums. Community facilities were identified by reviewing data from local agencies and verified by field observation. Effects to community facilities were determined by qualitatively assessing whether and where the alternatives would have the potential to impact community facilities. Section 4.4.2 includes a brief demographic profile of the transportation study area.

A preliminary assessment of potential impacts on community facilities was undertaken by overlaying the conceptual LOD of each Action Alternative and recommended LPA design option on GIS-based parcel mapping provided by Upper Merion Township. The parcel mapping is used for planning purposes only; it is an approximation of property boundaries. As the Project design advances, SEPTA would develop survey-based parcel mapping in order to refine the Project design to avoid or minimize and mitigate community facility impacts.

4.4.2 Affected Environment

The transportation study area is made up of a mix of residents and businesses that collectively identify themselves as the King of Prussia community. At a smaller scale are individual residential and business neighborhoods that give additional identity and sense of community for the people who live and work in King of Prussia. Table 4.4-1 lists residential neighborhoods in the transportation study area where each Action Alternative and recommended LPA design

option is proposed. These neighborhoods afford identity by their name, configuration, common development history and/or social fabric. Other areas serve as business community identifiers, such as the King of Prussia Business Park, King of Prussia Mall, Village at Valley Forge and Henderson Road area. Identity for businesses in these areas is afforded by location, marketing and shared, broad economic interests.

Table 4-4.1: Residential Neighborhoods in the Transportation Study Area

Municipality	Name	Type	Dwelling Units (est.)
Existing Neighborhoods			
Upper Merion/ Bridgeport	King Manor	Single family	unknown
Upper Merion	Merion Station ^(a)	Multi family	22
Upper Merion	Ivy Lane	Single family	9
Upper Merion	Henderson Square	Multi family	159
Upper Merion	Henderson Park	Single family	60
Upper Merion	Prussian Woods	Multi family	119
Upper Merion	251 DeKalb Pike	Multi family	613
Upper Merion	Merion	Single family	unknown
Upper Merion	Brandywine Village	Single family	181
Upper Merion	Valley Forge Homes	Single family	320
Upper Merion	Abrams Run	Multi family	192
Upper Merion	Valley Forge Suites	Multi family	356
Tredyffrin	Glenhardie Condos	Single family	449
Tredyffrin	Glenhardie	Single family	unknown
Planned Neighborhoods			
Upper Merion	Village at Valley Forge	Residential units	3,000
Upper Merion	Glasgow Tract	Multi-family	379

Notes: (a) Under construction; quantities are estimates from various sources. This table does not include additional scattered individual residences.

Source: AECOM, 2016.

The existing roadway network, particularly major corridors such as the PA Turnpike, Schuylkill Expressway, and US Route 202, provide access to King of Prussia in general, but where no designated crossings exist, roadways in the network can form un-crossable barriers between residential and business neighborhoods. Landform variation in the forms of hills, valleys and waterway corridors also forms barriers in some locations. These physical conditions tend to limit direct connections between and among neighborhoods, and necessitate the use of a personal vehicle or bus to afford access and connections.

Table 4-4.2 lists the community facilities in proposed station areas of the Action Alternatives and recommended LPA design options. These facilities serve various purposes including education, religion, government, utilities, emergency services and medical care.

Table 4-4.2: Community Facilities in Proposed Station Areas

Name	Type
Philadelphia Suburban Water - reservoir	Institutional
Lafayette Ambulance	Emergency
Rothman Institute	Medical
St. Augustine's Cemetery	Cemetery
Candlebrook Elementary School	Educational
Upper Merion High School	Educational
Mother of Divine Providence Church	Religious
Mother Teresa Regional Catholic School	Educational
King of Prussia Volunteer Fire Company	Emergency
King of Prussia Medical Center	Medical
9/11 Memorial	Monument
King of Prussia Park and Ride	Institutional
King of Prussia Post Office	Institutional
CHOP Specialty Care & Surgery Center	Medical

Source: AECOM, 2016

The demographic profile of the King of Prussia area is summarized in Table 4-4.3 as reported in the KOP-BID's 2016 *Report to the Community*.

Table 4-4.3: Brief Demographic Profile of King of Prussia

Residential Profile – Upper Merion Township			
Population and Households (a)	Labor Force (a)	Income (a)	Commute to Work Pattern
<ul style="list-style-type: none"> • 28,620 people (a) • 12,027 households • 74.2% White • 17.2% Asian • 4.8% Black • 4.5% Hispanic (b) • 3.8% Other 	<ul style="list-style-type: none"> • 97.8% Employed <ul style="list-style-type: none"> ○ 54.7% Management, Business Science ○ 23.4% Sales ○ 10.4% Service ○ 7.2% Production ○ 4.3% Natural Resources, Construction, Maintenance • 2.8% Unemployed (c) 	<ul style="list-style-type: none"> • \$80,068 median household income • \$98,131 median family income • 49% households earning +100K 	<ul style="list-style-type: none"> • 3,003 work in King of Prussia • 15,077 work outside King of Prussia
Employee and Visitor Profiles – King of Prussia-Valley Forge Area			
Employees	Visitors		
<ul style="list-style-type: none"> • 57,038 (a) employees • 52,694 live outside King of Prussia 	<ul style="list-style-type: none"> • 2.12 million to Valley Forge National Historical Park • 1.1 million to VFCR • 20 million to King of Prussia Mall 		

(a) U.S. Census Bureau, Census 2010 and American Community Survey, 5-year average 2009-2013; numbers are rounded and may not total 100%.

(b) In the U.S. Census, Hispanic is a separate ethnic category from race (in this area including White, Asian, Black, and Other).

(c) U.S. Bureau of Labor Statistics, 2015.

Source: KOP-BID, 2016 *Report to the Community*, unless otherwise noted.

4.4.3 Environmental Consequences

4.4.3.1 No Action Alternative

The No Action Alternative transportation projects that will widen existing roadways within existing rights-of-way are not anticipated to change the sense of community, impact community facilities or change the demographic profile in the transportation study area. The several interchange projects are expected to improve access to the transportation study area in general, but could have impacts on the local community fabric if land acquisition is required. The 1st Avenue Road Diet and Chester Valley Trail Extension projects are expected to locally improve roadway and pedestrian access to and among adjacent neighborhoods and community facilities. Aside from the primarily localized benefits and impacts of these planned projects, the No Action Alternative will not change the factors that define the sense of community and community cohesion in the transportation study area; the No Action Alternative will not create new or reduce existing physical barriers except as may occur locally by the planned projects. The No Action Alternative is not expected to impact community facilities or access to them.

4.4.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

King of Prussia

In each Action Alternative and recommended LPA design option, the elevated guideway would preserve physical access across existing transportation rights-of-way to the extent that it is possible today. By primarily using existing transportation and utility corridors, none of the Action Alternatives or recommended LPA design options would physically split or fragment residential or business communities. As a result, most factors would be preserved that are important to community identity, such as name, history and social aspects for residential communities, and location, marketing and shared economic interest for business communities.

Each Action Alternative and recommended LPA design option has the potential to impact community character in terms of property acquisitions and displacements, visual change and noise (discussed in Sections 4.5, 4.8 and 4.10, respectively). These potential impacts would occur where the guideway would be adjacent to existing residential neighborhoods and, in the case of US 202-1st Ave. and US 202-N. Gulph Action Alternatives, along what Upper Merion Township residents and businesses consider “Main Street.”

In general, the Action Alternatives and recommended LPA design options would benefit the public by providing new rail transit service as a travel option to access community facilities. This benefit would accrue primarily to travelers destined for community facilities within ½-mile of each proposed station area. As summarized in Table 4-4.4, the US 202-1st Ave. or US 202-N. Gulph station areas would provide access to ten community facilities: Rothman Institute, Lafayette Ambulance, St. Augustine’s Cemetery, Candlebrook Elementary School, Upper Merion High School, King of Prussia Volunteer Fire Company and 9/11 Memorial, Mother of Divine Providence Church, Mother Teresa Regional Catholic School, and King of Prussia Medical Center. By this measure, the US 202-1st Ave. and US 202-N. Gulph Action Alternatives would provide the most access benefits. In contrast, seven community facilities are within ½-

mile of PECO/TP-1st Ave. and PECO/TP-N. Gulph station areas and three facilities are within ½-mile of PECO-1st Ave. station areas.

As noted at the beginning of Chapter 4, Table 4-4.4 and other tables in the DEIS that are similarly organized compare quantities for the recommended LPA design options with the recommended LPA quantities. The quantities for the recommended LPA design options are shown as the differences (greater or less than) compared to the recommended LPA. If there is no difference in quantity compared to the recommended LPA, the code “ND” (no difference) is used.

Table 4-4.4: Summary of Potential Community Facility Benefits and Impacts

Factor	No Action Alternative (b)	Action Alternatives (c)						
		PECO-1 st Ave.	PECO/TP-1 st Ave. and its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph	
			PECO/TP-1 st Ave. (recommended LPA)	Design Options Differences Compared to PECO/TP-1 st Ave.				
				PA Turnpike North/South Option				9/11 Memorial Avoidance Option
Number of community facilities accessed	NC	3	7	ND	ND	7	10	10
Number of community facility properties directly impacted (partial property acquisition):	NC	1	3	ND	-1	3	3	3
Philadelphia Suburban Water (Aqua America) reservoir		•	•	•	•	•	•	•
King of Prussia Volunteer Fire Company			•	•	•	•	•	•
9/11 Memorial (on the Fire Company property)			•	•		•	•	•
Number of adjacent community facilities:	NC	1	4	ND	ND	4	5	5
Philadelphia Suburban Water (Aqua America) reservoir	•	•	•	•	•	•	•	•
Rothman Institute			•	•	•	•	•	•
St. Augustine's Cemetery							•	•
King of Prussia Volunteer Fire Company			•	•	•	•	•	•
9/11 Memorial (on the Fire Company property)			•	•	•	•	•	•

Notes: NC = no change from existing condition; ND = no difference compared to the recommended LPA

Regarding benefits and impacts on community facilities, each Action Alternative and recommended LPA design option would preserve access to community facilities in the Project

study area. However, a preliminary assessment of right-of-way needs indicates potential acquisition of land from up to three community facilities adjacent to the proposed alignments. Table 4-4.4 indicates these potential right-of-way impacts. Each Action Alternative and recommended LPA design option may require some land from the property of the Aqua America reservoir, either along US 202 or along the PECO utility corridor. In addition, each Action Alternative and recommended LPA design option, except the PECO-1st Ave. Action Alternative, would be aligned in the Turnpike ROW, passing adjacent to the Volunteer Fire Company and 9/11 Memorial property and potentially requiring land from the property.

Depending on the Action Alternative and recommended LPA design option, each would be aligned adjacent to one to five community facilities (Table 4-4.4). The PECO/1st Ave. Action Alternative would be adjacent to the fewest (one) facilities, while the US 202-1st Ave. and US 202-N. Gulph Action Alternatives would be adjacent to the most (five) facilities. The recommended LPA, the recommended LPA design options and the PECO/TP-N. Gulph Action Alternative would each be adjacent to four facilities. With the exception of the at-grade alignment proposed alongside the reservoir in the PECO corridor, the recommended LPA, the recommended LPA design options and PECO/TP-N. Gulph Alternative would be elevated in relation to the at-grade community facilities, resulting in a visual change and potential noise impacts.

Preliminary examination of the potential benefits and impacts of the Action Alternatives and recommended LPA design options on emergency services access and circulation routes determined that because each Action Alternative and recommended LPA design option would be elevated, routes used by emergency services would not be obstructed.

69th Street Transportation Center

Project-related action at SEPTA's 69th Street Transportation Center would be similar among the Action Alternatives and recommended LPA design options, and it would occur internally to the existing facility and would have no impact on community cohesion or facilities.

SHORT-TERM CONSTRUCTION EFFECTS

Construction of each Action Alternative and recommended LPA design option has the potential to cause temporary changes in access to communities and community facilities near the Project alignment. During construction, access across or along the guideway alignment work area may be detoured. Roadway circulation around proposed station and park-and-ride areas including nearby roadway intersections may change as a result of temporary travel lane reconfigurations, directional re-routing and detours. Such changes could inconvenience personal travel and require temporary re-routing of school bus routes and stops as well as emergency services travel routes.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - As the Project advances for further study, SEPTA would examine ways to refine the Project design to avoid or minimize negative impacts on community cohesion and facilities. SEPTA would continue the dialogue begun with potentially affected neighborhoods to develop minimization and mitigation measures to address negative impacts to the extent reasonably feasible. SEPTA would continue the dialogue with the King of Prussia Volunteer

Fire Company regarding minimization and mitigation measures to address potential impacts to the property and the 9/11 Memorial.

Potential strategies to be examined include design refinement to avoid or reduce direct impacts, noise abatement, and visual treatments. Sections 4.5, 4.8 and 4.10 provide related discussion of potential impacts, minimization and mitigation.

Short-Term Construction – As described in Section 2.8, SEPTA would develop and implement a transportation management plan that includes a temporary traffic management element with such provisions as coordination with affected roadway and community facility operators to identify and plan for changes in access, advance public notice of detours and construction effects on access and roadway circulation, and appropriate signage of alternative access routes. SEPTA would coordinate with affected community and emergency services facilities to develop a plan of best practices to avoid or minimize impacts, such as:

- Project construction in segments to minimize the area of disruption
- Temporary school bus and emergency service route planning
- Temporary alternative access to community facilities

4.5 Property Acquisitions and Displacements

This section describes the potential property acquisitions that could result from the No Action Alternative, the Action Alternatives and the recommended LPA design options. It also describes minimization strategies that SEPTA has taken to eliminate or reduce the need for acquisition, as well as potential mitigation strategies that SEPTA would undertake as the Project advances to offset impacts.

4.5.1 Regulatory Context and Methodology

All activities related to acquisitions and displacements would be conducted in conformance with the Uniform Relocation and Real Property Acquisitions Policies Act of 1970 (42 United States Code [USC] 4601), as amended (the Uniform Act) and Public Law 105-117. These statutes mandate that certain relocation services and payments be made available to eligible residents, businesses and nonprofit organizations displaced as a direct result of projects undertaken by a federal agency or with federal financial assistance. The Uniform Act provides for uniform and equitable treatment for persons displaced from their homes and businesses, and it establishes uniform and equitable land acquisition policies.

Property acquisitions and displacements would also be conducted in conformance with the regulations implementing the following Pennsylvania statutes and Executive Orders: Pennsylvania Act 120, governing conveyance of Commonwealth lands to municipalities; Pennsylvania Act 247, the PA Municipal Planning Code; and Pennsylvania Executive Orders 1993-3 (State Land Use Planning Goals and Objectives) and 1999-1 (land use planning and decision-making).

Relocation assistance for the Project would follow the relevant procedures set forth in FTA Circular 5010.1D, *Grant Management Requirements* (2008), and the process outlined in 49 C.F.R. § 24 *et seq.*, which is the basic regulation governing acquisition and relocation activities on all federal and federally-assisted programs and projects.

Properties to be fully or partially acquired, or which would be subject to an easement, were identified based on the LOD of each Action Alternative and recommended LPA design option, defined in Section 4.1. The estimates of property impacts and displacements were determined by overlaying the LOD of each Action Alternative and recommended LPA design option on aerial-based GIS parcel mapping provided by Upper Merion Township, and counting the number of residential, commercial and other properties intersected by each LOD. A partial acquisition was determined if primary buildings, the majority of the property, and access to the property would be preserved. A full acquisition and displacement was determined if one or more of these elements were intersected. The following types of real estate transactions and impacts are discussed in this section:

Partial Acquisition – purchase of a portion of a property. A partial acquisition could include fee simple (permanent transfer of ownership) or easement acquisitions (see easement definition below).

Full Acquisition – purchase of all land ownership rights of a property. This is also known as a “fee simple” acquisition.

Displacement – Displacement results from converting current residential, commercial or other occupied uses to transportation use. Displacements are measured by tax parcel; where multiple businesses or residences occur on a parcel, the numbers of each were counted.

Easement – A permanent easement may be used to locate infrastructure without completely diminishing property owner use of the land. Examples of permanent easements include stormwater management, drainage channels or storm drains, utilities and grading. A temporary easement may be used to provide for the storage of materials and equipment, access to construction areas, site grading or other construction-related activities.

4.5.2 Affected Environment

Land uses in the transportation study area are a mix of residential and non-residential uses, along with community facilities and parks and open space uses, as described in Section 4.2.2.

4.5.3 Environmental Consequences

4.5.3.1 No Action Alternative

The sponsors of the transportation improvement projects in the No Action Alternative will seek to use or acquire portions of land along existing roadway facilities as needed to implement each planned project; the larger projects may require relocating existing users of the affected properties. Where reasonably feasible, project sponsors would design planned facilities to avoid or minimize property acquisition and displacements by using existing public rights-of-way.

4.5.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

King of Prussia

In developing each Action Alternative and recommended LPA design option, SEPTA strived to use existing linear transportation and utility rights-of-way to minimize the need to acquire private property. By proposing to use these rights-of-way, most land area that SEPTA would need for the Project can be accommodated. Despite SEPTA's goal of using existing transportation and utility corridors as opposed to private land wherever reasonably feasible, a number of potential partial and full property acquisitions would be required to enable SEPTA to make connections between these corridors as well as to provide adequate right-of-way along existing corridors. Table 4-5.1 summarizes SEPTA's preliminary determination of the numbers of potential partial and full property acquisition needs for each Action Alternative based on the current level of planning and conceptual engineering. In this assessment, a full property acquisition is assumed to also be a displacement of the occupant(s). These data are intended to enable comparison among the Action Alternatives and recommended LPA design options of the general order of magnitude of property impacts and are subject to refinement as the Project advances. Final determinations regarding property needs and acquisitions would be made by SEPTA during the final design phase of the Project following the FEIS/Record of Decision.

In Table 4-5.1, the quantities for each Action Alternative are total, counted values. The values shown for each recommended LPA design option are the differences as compared to the values for the recommended LPA, PECO/TP – 1st Ave. For example, while the recommended LPA would potentially require 24 partial residential property acquisitions, the PA Turnpike North/South Option would not require those acquisitions, and is shown as -24. By contrast, the 9/11 Memorial Avoidance Option potentially would require the same number of partial residential property acquisitions (24) as the recommended LPA. Thus, no difference (ND) is indicated compared to the recommended LPA.

The US 202-1st Ave. or US 202-N. Gulph Action Alternatives would potentially require the highest number of full residential property acquisitions (19 each). These potential impacts would occur where the guideway crosses the Merion Station townhome development. The remaining Action Alternatives and the 9/11 Memorial Avoidance Option potentially would require four full residential property acquisitions each. The number of potential full commercial property acquisitions would be the same for each Action Alternative and recommended LPA design option (4 each).

Table 4-5.1: Potential Partial and Full Property Acquisitions

Factor	No Action Alternative (b)	Action Alternatives (c)						
		PECO-1 st Ave.	PECO/TP-1 st Ave. and its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph	
			PECO/TP-1 st Ave. (recommended LPA)	Design Options Differences Compared to PECO/TP-1 st Ave.				
				PA Turnpike North/South Option				9/11 Memorial Avoidance Option
Partial Acquisitions (Number of Parcels)								
Residential	un	59	24	-24	ND	24	2	2
Commercial	un	46	46	ND	+1	30	95	69
Parks	un	2	0	ND	ND	0	0	0
Other (a)	un	13	14	-1	-1	15	7	8
Totals	un	120	84	-25	ND	69	104	79
Full Acquisitions (Number of Parcels)								
Residential	un	4	4	-4	ND	4	19	19
Commercial	un	4	4	ND	ND	4	4	4
Parks	un	1	0	ND	ND	0	0	0
Other (a)	un	3	3	ND	+1	2	2	1
Totals	un	12	11	-4	+1	10	25	24

Notes:

ND = no difference compared to recommended LPA

(a) Other: transportation, utilities;

(b) un = unknown;

(c) Quantities are based on conceptual planning and engineering to date and subject to refinement as design advances

Source: AECOM, 2015.

The PECO-1st Ave. Action Alternative potentially would require the highest number (59) of partial residential property acquisitions. The US 202-1st Ave. or US 202-N. Gulph Action Alternative would potentially require the fewest partial acquisitions of residential properties (2 each), parks (0 each) and other properties (7 and 8, respectively), but the most potential partial impacts to commercial properties (95 and 69, respectively). The recommended LPA and the 9/11 Memorial Avoidance Option would potentially require 24 partial residential property acquisitions each. The PA Turnpike North/South Option would reduce the potential number of partial residential property acquisitions to zero. If both recommended LPA design options were applied to the recommended LPA, the potential number of partial residential property acquisitions would be zero.

Each Action Alternative and recommended LPA design option would cross the right-of-way of the planned Chester Valley Trail Extension; however, no partial property acquisition of trail property would occur because the guideway would be elevated over the trail. The PECO-1st

Ave. Action Alternative would potentially displace Kingwood Road Park. Each Action Alternative and recommended LPA design option that would use 1st Avenue would cross a PECO property containing a substation, potentially causing a displacement of that utility element.

69th Street Transportation Center

No property acquisitions or displacements would occur in the vicinity of the 69th Street Transportation Center as a result of each Action Alternative and recommended LPA design option.

SHORT-TERM CONSTRUCTION EFFECTS

For any Action Alternative, temporary construction easements would be needed for staging and parking areas as well as construction access. SEPTA anticipates that multiple staging areas would be used; some such areas may only be used for part of the construction period. Temporary construction activity in staging areas and construction easements would convert the existing land on which they occur to a temporary construction use; the owner of such lands would temporarily lose the use of that land until construction activity ends. Features on that land, such as buildings and trees, would be removed. Specific construction staging and parking areas as well as construction access points would be identified as the Project advances.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - SEPTA initiated coordination with the PA Turnpike Commission, PECO, PennDOT, Upper Merion Township, VFCR, Norfolk Southern and Simon Property Group regarding the potential to place portions of the Action Alternatives within their properties. Each entity has provided input to SEPTA in locating the proposed Project elements within their jurisdiction. The PA Turnpike Commission, PennDOT and Upper Merion Township desire that the existing travel lane configurations on their roadways be maintained over the long-term. For this reason, SEPTA proposes no change in the number of travel lanes on the PA Turnpike, DeKalb Pike (US Route 202), N. Gulph Road, 1st Avenue and Mall Boulevard. In each case, SEPTA will continue to collaborate with these entities on the location of Project amenities to cause the least impact to existing facility maintenance and operations. Likewise, SEPTA has coordinated and will continue to coordinate with Simon Property Group in regard to the proposed use of part of the King of Prussia Mall property.

SEPTA is coordinating with affected residential communities through neighborhood meetings, backyard visits and a Community Working Group. In Spring 2016, SEPTA began hosting neighborhood meetings and backyard visits with Valley Forge Homes and Brandywine Village residents to understand local concerns with regard to the Project. Table 7-1.2 lists these meetings and SEPTA's actions in response to specific concerns. Residents raised a number of concerns regarding the impacts of the Project, including property acquisitions and displacements, noise, visual and other impacts. In response, SEPTA took a number of actions, including:

- Factored concerns into the Tier 3 analysis and DEIS
- Considered a lower elevation alignment along the south side of the PA Turnpike
- Developed the PA Turnpike North/South Option assessed in the DEIS

- Developed a Community Working Group to focus on local concerns
- Committed to examining ways to avoid or minimize and mitigate residents' concerns to the extent reasonably feasible as the Project advances

As described in Section 7.1.3.6, the purpose of the Community Working Group is to enable an on-going dialogue with the residents of King of Prussia as the Project develops. This forum enables SEPTA to better understand residents' concerns and collaborate with them toward a resolution of concerns as the Project advances.

After an LPA is selected and design refinement begins, SEPTA would coordinate with individual property owners regarding means to minimize and mitigate property acquisitions and displacements. Property acquisition activities would occur in accordance with the Uniform Act as amended and FTA Circular 5010.1D, Grants Management Requirements and State laws that establish the process through which SEPTA may acquire real property through a negotiated purchase or through condemnation.

Short-Term Construction – As the Project design advances, SEPTA would refine the LPA selected as a result of the NEPA process to reduce or eliminate the need for additional right-of-way to the extent reasonably feasible. In this activity, SEPTA would use vacant or publicly owned property where possible, but private property impacts may be unavoidable. As described in Section 4.2.3, SEPTA would work with potentially affected property owners, resulting in formal agreements to temporarily use land. SEPTA would restore properties affected by a Project-related temporary land use, and restore owner access to such properties, at the end of construction in accordance with individual agreements.

4.6 Parks, Recreational Land and Open Space

4.6.1 Regulatory Context and Methodology

Parks, recreation areas and open space in the Project study area are administered by the following entities: the National Park Service (NPS), Montgomery County or Upper Merion Township.

With respect to projects that receive funding from or require approval by an agency of the U.S. Department of Transportation (USDOT), acquisition of lands from certain parks, recreational lands, wildlife and waterfowl refuges, and significant historic sites are given consideration under Section 4(f) of the USDOT Transportation Act. FTA implements these requirements by its regulations set forth in 23 C.F.R. Part 774. A Section 4(f) evaluation is provided in Chapter 5 of the DEIS.

Section 6(f) of the U.S. Land and Water Conservation Fund (LWCF) Act of 1965 (16 USC 4601-4 to 4601-11, et seq.) regulates the use of parklands that were purchased or developed with LWCF funds.

The study area for assessing the impacts on parks, recreational land and open space is the Project study area defined in Section 4.1. The information in this section was provided by the entities listed above as well as from publicly available data sources. Upper Merion Township is

currently updating its *Open Space and Environmental Resource Protection Plan* (last updated in 2007), including evaluating needs and priorities for the foreseeable future. This assessment qualitatively considered the potential for direct benefits and impacts of the Project on current and possible future parks, recreation areas and open space. Service to these resources was determined by counting the number of resources located within ½-mile of proposed station areas for each Action Alternative.

4.6.2 Affected Environment

Seven parks, recreational areas, open spaces and trails are within or adjacent to the Project study area. Each is described below and shown in the maps in Appendix A. No properties within the Project study area are encumbered by monies under the LWCF Act; thus, Section 6(f) of the LWCF Act does not apply.

- Walker Field – This Township-owned park on the north side of the PA Turnpike near Allendale Road covers 25 acres and includes sports fields, play apparatus, a maintenance building, a stream and open space.
- Kingwood Road Park – The Township administers this neighborhood park along Kingwood Road. The facility contains a softball field, basketball courts, shelter, picnic area and play apparatus. The Township leases the park's 2.5 acres from PECO.
- PECO Easement - The Township, in partnership with Montgomery County, entered into an easement agreement with PECO for approximately 14.3 acres of land within the PECO right-of-way west of the PA Turnpike crossing. The easement includes land for Kingwood Road Park (described above). The remainder of the easement is designated by the Township as a view corridor and recreation area.
- Chester Valley Trail Extension - This Montgomery County-administered regional trail currently runs for 13.5 miles in Chester County into the Montgomery County and Upper Merion Township to its current terminus on the west side of South Gulph Road. The County plans a 3.5-mile extension of the trail in 2017/2018. As currently proposed, the trail would extend east from its current terminus at the existing South Gulph Road park-and-ride facility within a County easement along the south side of the PECO utility corridor. At the PA Turnpike, the trail extension would follow Hansen Access Road and then turn north along the former East Penn Railroad right-of-way (now owned by the County), crossing US 202 on its way to Bridgeport.
- Former Burgess Arboretum property - This Township-owned tract is a 4.8-acre parcel on the east side of Moore Road at Trout Creek. It features the Moore-Irwin House (formerly known as the Muhlenberg House). This building has had various uses, including as a township cultural center. At one time, this property also was the location of the Burgess Arboretum.
- Betzwood Park is a 1-acre mini-park/natural area at the interchange of Route 23 (West Valley Forge Road) and US Route 422.

- Valley Forge National Historical Park - Also located in the township in the northwest corner of the transportation study area, Valley Forge National Historical Park is administered by the NPS. The park covers over 3,400 acres, about 1,300 of which are in Upper Merion Township. The park includes historical buildings, recreated encampment structures, memorials, museums and recreation facilities.

4.6.3 Environmental Consequences

4.6.3.1 No Action Alternative

The No Action Alternative transportation projects include two projects that will improve park and related resources: the Chester Valley Trail Extension and the 1st Avenue Road Diet project. Although the latter has a “multi-use trail” component, its function is as a sidewalk extension associated with 1st Avenue; as such, it is not protected by Section 4(f). The sponsors of the other transportation projects in the No Action Alternative will be responsible for assessing the potential impacts of their projects on parks, recreational land, open space and trails and for coordinating with the owners and administrators of those facilities during development of their projects. Given the nature of the No Action Alternative transportation projects, displacement of parks, recreational land, open space and trails is unlikely.

4.6.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

King of Prussia

The Action Alternatives and recommended LPA design options would provide transit access to parks, recreational land, and open space in and near the Project study area. As shown in Table 4-6.1, each Action Alternative and recommended LPA design option would provide new transit access to Betzwood Park, Valley Forge National Historical Park, and the Chester Valley Trail Extension. The PECO-1st Ave. Action Alternative is the only alternative that would not serve Walker Field. However, the PECO-1st Ave., PECO/TP-1st Ave. and US 202-1st Ave. Action Alternatives would serve the most parks (five). In contrast, the PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives would serve the fewest parks (four).

Each Action Alternative and recommended LPA design option has the potential to directly impact park properties as described below:

- PECO-1st Ave. Action Alternative - would directly impact two park properties, involving potential full acquisition and displacement of Kingwood Road Park and the northern portion of the Township’s PECO easement. It would cross over the Chester Valley Trail Extension right-of-way, avoiding a direct impact, but it may have proximity effects involving visual change and noise. As portions of Kingwood Road Park and the Township’s PECO easement could remain during Project operations, the PECO-1st Ave. Action Alternative has the potential for proximity effects related to visual change and noise.
- PECO/TP-1st Ave. (recommended LPA) and PECO/TP-N. Gulph Action Alternatives - would cross over the Chester Valley Trail Extension right-of-way, avoiding a direct impact, but it may have proximity effects involving visual change and noise.

- PA Turnpike North/South Option (for the recommended LPA) – this option would cross over the Chester Valley Trail Extension right-of-way, avoiding a direct impact, but it may have proximity effects involving visual change and noise.
- 9/11 Memorial Avoidance Option (for the recommended LPA) - this option would cross over the Chester Valley Trail Extension right-of-way, avoiding a direct impact, but it may have proximity effects involving visual change and noise.
- US 202-1st Ave. and US 202-N. Gulph Action Alternatives - would cross over the Chester Valley Trail Extension right-of-way crossing of US 202, avoiding a direct impact, but each may have proximity effects involving visual change and noise.

Table 4-6.1: Potential Effects on Parks, Recreational Land, and Open Space

Action Alternative		Walker Field	Kingwood Road Park	PECO Easement	Chester Valley Trail Extension	Former Burgess Arboretum	Betzwood Park	Valley Forge National Historical Park (a)	Totals
Parks Served									
Action Alternatives	PECO-1 st Ave.			●	●	●	●	●	5
	PECO/TP-N. Gulph	●			●		●	●	4
	PECO/TP-1 st Ave. (recommended LPA)	●			●	●	●	●	5
	US 202-N.Gulph	●			●		●	●	4
	US 202-1 st Ave.	●			●	●	●	●	5
Parks Intersected (Impacted or Crossed)									
Action Alternatives	PECO-1 st Ave.		●	●	●				3
	PECO/TP-N. Gulph				●				1
	PECO/TP-1 st Ave. (recommended LPA)				●				1
	US 202-N.Gulph				●				1
	US 202-1 st Ave.				●				1
Proximity to Parks (Potential for Visual and/or Noise Impacts)									
Action Alternatives	PECO-1 st Ave.		●	●	●				3
	PECO/TP-N. Gulph				●				1
	PECO/TP-1 st Ave. (recommended LPA)				●				1
	US 202-N.Gulph				●				1
	US 202-1 st Ave.				●				1

Notes: Serve = A proposed station area is within ½-mile of the property

(a) Connection via bus shuttle service

(b) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would have similar potential benefits and impacts on parks, recreational area and open space to the recommended LPA.

Source: AECOM, 2016.

The potential for the Action Alternatives and recommended LPA design options to have proximity effects on Project study area parks was considered in terms of changes in visual context and noise.

- **Visual** - The proposed elevated guideway would be a new visual element. Where an Action Alternative or recommended LPA design option is aligned in existing transportation rights-of-way, the visual sensitivity is low because of the pre-existing transportation use of the right-of-way (see Section 4.8). As a result, the potential visual change at the crossing of the Chester Valley Trail Extension at US Route 202 (US 202-1st Ave. and US 202-N. Gulph Action Alternatives) and Saulin Boulevard (PECO-1st Ave., PECO/TP-1st Ave., and PECO/TP-N. Gulph Action Alternatives, and the recommended LPA design options) is low. In contrast, the visual sensitivity of the PECO easement and Kingwood Road Park (PECO-1st Ave. Action Alternative) is high because of the context of these facilities in the PECO corridor, a property valued by the public, the Township and the County for its open space views. Each Action Alternative and recommended LPA design option would be sufficiently distant from Valley Forge National Historical Park and separated from the park by US Route 422 and N. Gulph Road that no visual impact is expected to occur.
- **Noise** - Parks and trails adjacent to or crossed by the Action Alternatives and recommended LPA design options would potentially experience a change in noise levels because of their proximity to the Project. Potentially affected parks include the Kingwood Road Park (PECO-1st Ave. Action Alternative) and the Chester Valley Trail Extension (each Action Alternative and recommended LPA design option). At the present time, the Township and County have no active plans for development of the PECO Easement. As such, this preserved land area is not considered noise-sensitive.

69th Street Transportation Center

No parks, recreational areas or open space would be impacted by any of the Action Alternatives or recommended LPA design options in the vicinity of the 69th Street Transportation Center.

SHORT-TERM CONSTRUCTION EFFECTS

Project construction activity has the potential for short-term impacts to the Chester Valley Trail Extension if the trail has to be temporarily closed or re-routed at the point where an Action Alternative crosses the trail. Each Action Alternative and recommended LPA design option has the potential for this temporary effect as a trail crossing would occur whether an Action Alternative or recommended LPA design option is aligned along Saulin Boulevard or US Route 202.

The PECO Easement may be temporarily impacted if the PECO-1st Ave. Action Alternative is selected and a construction access easement is required across the Easement area. Existing fields within the construction easement would be converted to construction access and work area; Upper Merion Township, Montgomery County, and the public would not have access to the easement areas during construction. Access by PECO during construction would be on the terms of the future agreement to be developed between SEPTA and PECO. Construction

activity has the potential for temporary visual and noise benefits and impacts on users of the remaining portion of the PECO Easement and the nearby Chester Valley Trail Extension.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - Upper Merion Township and Montgomery County have expressed concerns regarding the potential direct and proximity effects of the PECO-1st Ave. Action Alternative on Kingwood Road Park, the PECO Easement area and the planned Chester Valley Trail Extension. In addition to the issue of direct impacts, each agency stated the importance of maintaining access to park properties across the proposed guideway in any Action Alternative or recommended LPA design option. In addition, each agency expressed the importance of the visual experience of park and trail users, particularly within the PECO right-of-way, which provides a sense of open space that is uncommon in the King of Prussia area.

Although the PECO-1st Ave. Action Alternative is not the recommended LPA, if it is selected and advanced for further study, SEPTA would coordinate with Upper Merion Township on ways to minimize direct as well as proximity impacts on Kingwood Road Park, the PECO Easement and the Chester Valley Trail Extension. SEPTA would consider guideway alignment modifications to minimize impacts, and mitigation opportunities such as replacement parkland if avoidance is not reasonably feasible. Likewise, SEPTA would coordinate with Montgomery County regarding minimizing proximity effects on the Chester Valley Trail Extension. Strategies to minimize benefits and impacts could include vegetative screening and noise abatement, if warranted. The proposed elevated guideway would provide potential opportunities for access across the PECO-1st Ave. Action Alternative alignment, provided that such access is also permitted by PECO.

Short-Term Construction – As the Project advances, SEPTA would identify the need for temporary use of portions of the PECO Easement and Chester Valley Trail Extension to implement any one of the Action Alternatives or recommended LPA design options. SEPTA would coordinate with Montgomery County (Chester Valley Trail Extension), as well as Upper Merion Township, and PECO (PECO Easement) to develop appropriate easement agreements and minimization and mitigation strategies. For example, in regard to potential temporary impacts to the Chester Valley Trail Extension, SEPTA would coordinate with Montgomery County to identify the need for strategies such as scheduling trail closures with advance public notice, temporary trail re-routing and restoring the trail route at the end of construction. For the PECO Easement, SEPTA would develop and implement the minimization and mitigation strategies to address visual and noise benefits and impacts as described in Sections 4.8.3.2 and 4.10.3.2. For temporary work areas on the Chester Valley Trail Extension as well as the PECO Easement, SEPTA would restore the areas used for Project construction at the end of construction.

4.7 Historic and Archaeological Resources

The assessment of potential Project impacts on historic and archaeological resources examined each Action Alternative and recommended LPA design option. As described below, the focus of Section 106 consultation is on the recommended LPA.

4.7.1 Regulatory Context and Methodology

Recommended LPA

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, (54 USC § 300101 et seq.) requires federal agencies to consider the effects of their project undertakings on any district, site, building, structure or object that is either listed in the National Register of Historic Places (NRHP) or is eligible for listing. As per the NHPA, historic and archaeological resources include above-ground (architectural) and below-ground (archaeological) “districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture” greater than 50 years of age eligible for inclusion in or listed in the NRHP.

Section 106 consultation was initiated with the Pennsylvania Historical and Museum Commission (PHMC), the State Historic Preservation Officer (SHPO), in March 2013. In coordination with PHMC and because a recommended LPA was identified in the DEIS process, FTA and SEPTA are focusing consultation regarding potential effects to historic and archaeological resources on the recommended LPA². At the discretion of the FTA as lead agency, the preferred alternative for a project, after being identified, may be developed to a higher level of detail than other alternatives in order to facilitate the development of mitigation measures or concurrent compliance with other applicable laws if the lead agency determines that the development of such higher level of detail will not prevent the lead agency from making an impartial decision as to whether to accept another alternative that is being considered in the environmental review process. However, as a means of comparing the alternatives, the DEIS also reports the potential for each Action Alternative and recommended LPA design option to impact known historic properties as determined during Tier 3 screening. In addition, an evaluation of the potential for each Action Alternative and recommended LPA design option to impact historic properties was undertaken to meet the requirements of the Section 4(f) evaluation, presented in Chapter 5.

Focusing on the recommended LPA, architectural historians identified areas of potential effects (APEs) for historic architecture and archaeology. PHMC concurred with the APEs on March 7, 2016 (Appendix C). The APEs are documented in the 2016 *Area of Potential Effect Report* and 2016 *Phase 1A Archaeological Survey Report* for the Project; the reports can be obtained from the Project website at www.kingofprussiarail.com. The APE for historic architecture is 500 feet on either side of the centerline of the proposed route of the recommended LPA between the existing NHSL and the western terminus on 1st Avenue. This boundary encompasses proposed infrastructure, including guideway, bridges, stations, park-and-ride facilities, access roads, stormwater management facilities, power substations and signal huts. The APE for archaeology includes all locations where ground disturbance activities are proposed for the recommended LPA in Upper Merion Township and at the 69th Street Transportation Center. The APE for archaeology includes proposed workspaces, the proposed park-and-ride facilities, elevated guideway structure, tracks, stations, permanent right-of-way, and other associated infrastructure. The APEs are documented in the 2016 *Area of Potential Effect Report* and the

² The Section 106 documentation uses the terms “recommended LPA” and “Likely Preferred Alternative” interchangeably to refer to PECO/TP-1st Ave.

2016 *Phase 1A Archaeological Survey Report* for the Project and shown on the maps in Appendix A.

The methodologies for historic architecture and archaeological surveys used background research and field survey, involving:

1. Searches of the PHMC Cultural Resources Geographic Information System (CRGIS) database, PHMC resource files and a review of pertinent primary and secondary source materials at local repositories and online. For example, the *Delaware County Archaeological Resource Inventory and Management Plan, Volume I* was consulted (Berge, et al, 1991). This is the methodology used during Tier 3 screening, prior to identifying the recommended LPA.
2. Reconnaissance-level field surveys to assess the presence of potential historic architectural resources in the APEs.
3. Documenting potentially historic properties using Pennsylvania Historic Resource Survey Forms.
4. Assessing the prehistoric and historic archaeological potential of the APEs (referred to as a Phase 1A survey).

Additional information regarding the historic architecture assessment and archaeological survey may be found in the 2016 *Intensive-Level Survey and Determination of Eligibility Report and the 2016 Phase 1A Archaeological Survey Report*.

FTA and SEPTA invited and engaged Section 106 consulting parties, providing the 2016 *Intensive-Level Survey and Determination of Eligibility Report and the 2016 Phase 1A Archaeological Survey Report* to each party and requesting their participation as well as review and comment on these technical reports. The consulting parties include the following entities:

- Pennsylvania Historical and Museum Commission (m)
- National Park Service, Northeast Region
- Valley Forge National Historical Park
- Montgomery County Planning Commission (m, l)
- Montgomery County Division of Parks, Trails and Historic Sites
- Historical Society of Montgomery County
- The Heritage Conservancy
- Upper Merion Township Planning Commission (m)
- King of Prussia Historical Society
- Chester County Historic Preservation Network
- Chester County Historical Society
- Chester County Planning Commission
- Tredyffrin Historic Preservation Trust
- Tredyffrin Township Historical Commission (m)
- Upper Darby Township
- Upper Darby Historical Society
- Delaware County Planning Department (m)
- Delaware County Historical Society

- Preservation Alliance for Greater Philadelphia
- The Delaware Tribe
- The Delaware Nation (I)
- The Oneida Indian Nation
- The Eastern Shawnee Tribe of Oklahoma
- Stockbridge-Munsee Community of Mohican Indians (I)

As part of reviewing the technical reports, the consulting parties were invited by FTA and SEPTA to attend a meeting for the purpose of providing a Project overview and presenting the findings of the reports. The meeting, held on September 8, 2016 at the Upper Merion Township Building, was attended by the parties noted by “(m)” in the list above. Subsequently, several parties including a tribe that did not attend the meeting, denoted by “(I),” provided written comment. Key themes from the consulting parties’ review of the technical reports regarding historic and archaeological resources are listed below with references to DEIS sections for further information as appropriate:

- PHMC’s statewide historic preservation plan is being updated;
- Need to assess potential for impacts of Project elements on archaeological sites, including stormwater management facilities, power substations and signal huts (Section 2.6);
- Consult the *Delaware County Archaeological Resource Inventory and Management Plan, Volume I* for information on resources in the County;
- Valley Forge National Historical Park should be a consulting party (Section 4.7.1);
- Project would not endanger sites of interest to the Delaware Nation (Appendix C);
- No significant cultural resources concerns from the Stockbridge Munsee Community (Appendix C);
- No additional comments regarding cultural resources from Montgomery County (Appendix C).

FTA and SEPTA have considered the consulting parties’ comments in the DEIS and as part of the Section 106 consultation process. A summary of the consulting party meeting and copies of the comment letters are provided in Appendix C.

Other Action Alternatives and Recommended LPA Design Options

While Section 106 consultation focused on the recommended LPA, the potential impacts of the other Action Alternatives and recommended LPA design options on historic properties and archaeological resources was also investigated. Using the same analytical methodology as for the recommended LPA, architectural historians defined APEs for each Action Alternative and recommended LPA design option, identified listed and potentially eligible properties within each APE and assessed the potential for effects using the same criteria. Archaeologists applied the same methodology as was applied to the recommended LPA APEs to determine the presence of known archaeological sites and assess archaeological sensitivity in the APEs for each other Action Alternative and recommended LPA design option.

4.7.2 Affected Environment

4.7.2.1 Historic Architecture

Recommended LPA

Background research using the PHMC's CRGIS database revealed 14 previously-identified historic architectural resources within the Upper Merion Township and Upper Darby Township APEs. Table 4-7.1 lists the previously identified resources and their locations (the Philadelphia and Western Railway is listed under both Upper Merion and Upper Darby); these resources are also shown on the maps in Appendix A. Of those resources in Table 4-7.1, five have been determined eligible for listing in the NRHP; each is a linear transportation-related resource. Nine resources have been determined by the PHMC to not be eligible for listing in the NRHP. Two resources have been surveyed in the past, but the PHMC had insufficient information to make an eligibility determination (shown as "undetermined" in the table).

One property of note in the Project area (defined in Section 4.1), Valley Forge National Historic Park, is outside the APE and not included in Table 4-7.1. The NPS administers the park and has been an active participant in the Agency Coordination Committee for the Project. Input from the NPS has been integral to developing the Project in a manner that responds to the Project purpose and need without having a negative impact on the park.

As a result of the survey effort, 12 additional properties were identified in the APE for historic potential. However, one property, the Philadelphia and Reading Railroad, was determined to be the same as the Chester Valley Railroad (BHP Key# 140474), which had previously been evaluated and determined not eligible. Of the remaining 11 properties, one property, the American Baptist Churches U.S.A. Mission Center is recommended eligible for the NRHP under Criteria C and A as a landmark example of the work of Philadelphia architect Vincent G. Kling.³ Table 4-7.2 lists each resource surveyed and the eligibility recommendations. The maps in Appendix A show the location of this resource. On September 26, 2016, the PHMC concurred with the determinations in the 2016 *KOP Rail Intensive-Level Survey and Determination of Eligibility Report* (Appendix B).

Other Action Alternatives and Recommended LPA Design Options

Background research identified the same 14 previously identified resources in the APEs as are listed for the recommended LPA in Table 4-7.1. The survey effort identified the same 12 additional properties in the APEs for historic architecture as identified for the recommended LPA and listed in Table 4-7.2.

³ National Register of Historic Places eligibility criteria: (A) property is associated with events that have made a significant contribution to the broad patterns of history; and (C) property embodies distinctive characteristics of a type, period or method of construction, or represents the work of a master, or possesses his artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction.







Table 4-7.1: Previously Identified Historic Architectural Resources in the Project APEs






BHP KEY#	RESOURCE NAME	NRHP STATUS	NRHP STATUS DATE
Upper Merion Township, Montgomery County			
155879	Pennsylvania Turnpike: Delaware River Extension	Eligible	4/7/2005
122695	Pennsylvania Turnpike: Philadelphia Extension	Eligible	10/2/2002
128825	Philadelphia and Western Railway; Norristown High Speed Line	Eligible	6/21/2004
155708	Philadelphia and Reading Railroad (aggregate file)	Undetermined	N/A
097653	Wills Building	Undetermined	N/A
201132	Allendale Corporation	Not Eligible	12/18/2014
140474	Chester Valley Railroad	Not Eligible	3/10/2011
136874	DeKalb Pike Bridge (South of Turnpike)	Not Eligible	3/5/2007
126333	Henderson Park Historic District	Not Eligible	10/30/2003
126329	Holstein House	Not Eligible	10/30/2003
126337	Quick Service Inc.	Not Eligible	10/30/2003
125158	Valley Forge Homes	Not Eligible	6/13/2003
125162	William Carver Farmhouse	Not Eligible	6/13/2003
Upper Darby Township, Delaware County			
128825	Philadelphia and Western Railway; Norristown High Speed Line	Eligible	6/21/2004
105499	Market Street Elevated Railway Historic District	Eligible	8/1/1996
079220	Philadelphia Transit Co. Building	Not Eligible but contributes to BHP Key# 105499 (Market Street Elevated Railway Historic District) and 69th Street Terminal Square Shopping District	1/11/2013

Source: AECOM, 2016. *KOP Rail Intensive-Level Survey and Determination of Eligibility Report*.

Note: BHP Key = A numeric coding system used by PHMC to identify historic properties

Table 4-7.2: Properties Surveyed Within APEs

Resource Name	Address/ Location	Date	NR Status	NR Recommendation	Photo
McCoy Quarry	200 Saulin Boulevard	Ca. 1940	N/A	Not Eligible	
Brandywine Village	N/S of US Route 202, E of PA Turnpike	Ca. 1950	N/A	Not Eligible	
King of Prussia Arms Apartments	519 Williams Road	Ca. 1962	N/A	Not Eligible	
Elwood Powell House	158 Allendale Road	Ca. 1860	N/A	Not Eligible	
Wills Building	206 Allendale Road	Ca. 1945	Undetermined	Not Eligible	
Gatti Morrison Construction Materials	801 1 st Avenue	Ca. 1965	N/A	Not Eligible	

Resource Name	Address/ Location	Date	NR Status	NR Recommendation	Photo
Southern Wine and Spirits of Pennsylvania	460 American Avenue	Ca. 1970	N/A	Not Eligible	
ProMetrics	480 American Avenue	Ca. 1970	N/A	Not Eligible	
Arkema Campus	900 1 st Avenue	Ca. 1960	N/A	Not Eligible	
Devon International Group	1100 1 st Avenue	Ca. 1964	N/A	Not Eligible	
American Baptist Churches USA Mission Center	588-590 N. Gulph Road	Ca. 1962	N/A	Eligible	

Source: AECOM, 2016. *KOP Rail Intensive-Level Survey and Determination of Eligibility Report.*

4.7.2.2 Archaeology

Archaeologists conducted background research and a visual inspection of the APEs in March 2016, using the methodology and information resources identified in Section 4.7.1. The background research determined that no registered archaeological sites are located within the APEs. The APEs have been subjected to extensive twentieth-century development and generally have low sensitivity (potential) for intact prehistoric and historic-period archaeological resources. The archaeologists recommend no further investigation within the APE for archaeology for the recommended LPA. On December 15, 2016, the PA SHPO concurred with the determinations in the 2016 *KOP Rail Phase 1A Archaeological Survey Report* (Appendix C). Background research for the other Action Alternatives and recommended LPA design option APEs also confirms low archaeological sensitivity due to the developed character of each APE; no further investigation of the other Action Alternatives and recommended LPA design options APEs is recommended.

4.7.3 Environmental Consequences

4.7.3.1 No Action Alternative

Two historic properties assessed in the DEIS, Valley Forge National Historic Park and the Pennsylvania Turnpike: Philadelphia Extension may be affected by one or more committed transportation projects to be implemented by 2040, listed in Table 2-2.2. Specifically, projects to replace the US Route 422 bridge and widen the highway, as well as the project to relocate PA 23/Valley Forge Road and N. Gulph Road, are immediately adjacent to the park. Direct benefits and impacts on the park could occur during construction as well as operation of these projects. The plan to widen the PA Turnpike from Morgantown to Valley Forge would occur within an historic portion of the highway, causing changes to the historic resources. All projects in the No Action Alternative may affect other historic resources that are outside the boundaries of this study.

Projects in the No Action Alternative are located in areas examined in this study with moderate potential for archaeological sites. The sponsors of these projects will be responsible for complying with local, state and possibly Federal regulations regarding potential effects on historic and archaeological resources.

4.7.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

The Tier 3 screening identified 10 known historic properties using the methodology described in Section 4.7.1. Table 4-7.3 lists each resource and identifies whether each Action Alternative and recommended LPA design option would potentially, physically impact the resource, and whether each would potentially have an adverse effect on historic properties as defined by Section 106. In this assessment, none of the Action Alternatives or recommended LPA design options would avoid potentially impacting one or more historic properties. However, in each case of a potential impact, the effect would be acquisition of a portion of the land; no demolition or alteration of historic structures would occur. The PECO-1st Ave. and PECO/TP-1st Ave. Action Alternatives, the recommended LPA design options and the US 202-1st Ave. Action

Alternative would potentially impact the fewest historic properties (3 each), while the PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives would potentially impact the most (5 each).

Table 4-7.3: Potential Historic Property Impacts and Adverse Effects

Known Historic Properties	NRHP Status	Action Alternatives				
		PECO-1 st Ave.	PECO/TP-1 st Ave. (recommended LPA)	PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph
Valley Forge National Historical Park	NHL/Listed					
King of Prussia Inn	Listed					
Philadelphia and Western Railway (NHSL) (Key No. 128825)	Eligible	•	•	•	•	•
PA Turnpike: Delaware River Extension (Key No. 155879)	Eligible	•	•	•	•	•
PA Turnpike: Philadelphia Extension (Key No. 122695)	Eligible			•		•
Pennsylvania Railroad: Morrisville Line	Eligible					
Moore-Irwin House (Muhlenberg Headquarters)	Eligible					
General Electric Space Technology Center	Potentially Eligible			•		•
Jonathan Roberts, Jr. House and Cemetery	Potentially Eligible					
American Baptist Churches, USA Mission Center	Potentially Eligible	•	•	•	•	•
Potential Number of Adverse Effects on Historic Properties:		0	0	0	0	0

Source: AECOM, 2015.

Notes: NHL = National Historic Landmark; Listed = property is listed on the NRHP; Eligible = property has been determined eligible for listing on the NRHP; Potentially Eligible = property may be eligible for the NRHP, further evaluation would be required to make a determination.

(a) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would have similar potential historic property impacts and effects to the recommended LPA.

Recommended LPA

Within Section 106 consultation, the potential effects of the recommended LPA on the three historic properties identified in Section 4.7.2.1 as eligible for the NRHP were assessed: Pennsylvania Turnpike: Delaware River Extension; Philadelphia and Western Railway: Norristown High Speed Line; and American Baptist Churches USA Mission Center. To assess the effects of a proposed Project on historic properties, the criteria of adverse effect are applied to each resource studied (36 CFR 800.5(a)). Adverse effects occur when a proposed project undertaking alters, directly or indirectly, any characteristics that make a historic property eligible for the NRHP. Alterations involve diminishing the integrity of location, design, setting, materials,

workmanship, feeling or association of the historic property. Adverse effects from a proposed project take into account reasonably foreseeable effects that occur later in time, are removed from the resource in distance or are cumulative in nature. The results of the effects assessment for the recommended LPA are described below. The PHMC concurred with these findings of effect in its March 16, 2017 letter (Appendix C).

- **Philadelphia and Western Railway: NHSL (No Adverse Effect)** - The Philadelphia and Western Railway: NHSL is eligible under NRHP Criterion A. As part of the recommended LPA, SEPTA would provide service to the transportation study area from 69th Street Transportation Center using rail vehicles on the NHSL. At the 69th Street Transportation Center, SEPTA would widen the north platform and provide an additional track to the north platform to collect and discharge passengers. At the point where trains divert from the NHSL to access King of Prussia, a branching track structure called a wye would be built on the NHSL. The recommended LPA would not negatively impact the element that makes the NHSL historically significant: its regional rail service. The recommended LPA would not diminish the NHSL location, design, setting, materials, workmanship, feeling or association. The recommended LPA would have no adverse effect on the Philadelphia and Western Railway: NHSL.
- **Pennsylvania Turnpike: Delaware River Extension (No Adverse Effect)** - The Pennsylvania Turnpike: Delaware River Extension is eligible under NRHP Criterion A. The recommended LPA would be aligned within a portion of the Turnpike ROW for approximately one mile, an estimated 3 percent of the 32-mile length of the highway property. The recommended LPA would be a new, permanent visual element in the Turnpike ROW; however as a transportation use, the recommended LPA would not be a visual departure from other transportation-related elements of the Turnpike (i.e., the multiple travel lanes). The recommended LPA would not negatively impact the elements that make the Turnpike historically significant: travel lanes, some interchanges and toll plazas, some bridges, culverts and retaining walls; some service plazas; maintenance facilities; and state police stations. The recommended LPA would not diminish the Turnpike's location, design, setting, materials, workmanship, feeling or association.
- **American Baptist Churches, USA Mission Center (No Adverse Effect)** - The American Baptist Churches, USA Mission Center is eligible under NRHP Criterion C. The recommended LPA would be aligned over 1st Avenue along the north side of the Center property. As the Project guideway would be wider than the 1st Avenue ROW, SEPTA would require a sliver of land alongside 1st Avenue (approximately 0.08 acre) from the Center's 23-acre property. The Project would not negatively impact the elements that make the Center historically significant, namely the complex of four buildings and associated landscape elements designed by architect Vincent Kling: northwest lawn, courtyard, parking lots, sidewalks and terraces. The recommended LPA would not diminish the Center's location, design, setting, materials, workmanship, feeling or association. The recommended LPA would have no adverse effect on the American Baptist Churches, USA Mission Center.

Other Action Alternatives and the Recommended LPA Design Options

Tier 3 screening of the other Action Alternatives and the recommended LPA design options determined the potential impacts of each on the historic properties listed in Table 4-7.3. Similar to the recommended LPA, the recommended LPA design options and US 202-1st Ave. Action Alternative potentially would impact portions of the same three properties. The PECO-1st Ave. Action Alternative potentially would impact portions of two properties. The PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives potentially would impact five properties. Descriptions of potential impacts to each property are provided below:

- **Philadelphia and Western Railway: NHSL** – Similar to the recommended LPA, in each Action Alternative and recommended LPA design option SEPTA would provide an additional track to the north platform at the 69th Street Transportation Center to collect and discharge passengers. At the point where trains divert from the NHSL to continue to King of Prussia, a branching track structure called a wye would be built on the NHSL. The proposed location of the wye for the recommended LPA would be the same for the PECO-1st Ave. and PECO/TP-N. Gulph Action Alternatives, and the recommended LPA design options. The proposed location of the wye for the US 202-1st Ave. and US 202-N. Gulph Action Alternatives would be along the NHSL south of Old DeKalb Pike. Each Action Alternative and recommended LPA design option would not negatively impact the element that makes the NHSL historically significant: its regional rail service. Each would not diminish the NHSL location, design, setting, materials, workmanship, feeling or association of the Philadelphia and Western Railway: NHSL.
- **PA Turnpike: Delaware River Extension** – Except for the PECO-1st Ave. Action Alternative, the other Action Alternatives and 9/11 Memorial Avoidance Option would be partly aligned within the PA Turnpike ROW on the south side; the PA Turnpike North/South Option would be aligned on the north side and then shift to the south side. The PECO/TP-N. Gulph Action Alternative and the recommended LPA design options would impact the most property by being aligned within the PA Turnpike ROW from the PECO corridor to west of the US Route 202 overpass. The US 202-1st Ave. and US 202-N. Gulph Action Alternatives would impact less Turnpike property because each would be aligned within the ROW west of the US Route 202 overpass. Each Action Alternative that would use 1st Avenue, and the recommended design options, would also cross the PA Turnpike from south to north in the vicinity of American Way. None of the Action Alternatives or recommended LPA design options would negatively impact the elements that make the Turnpike historically significant: travel lanes, some interchanges and toll plazas, some bridges, culverts and retaining walls; some service plazas; maintenance facilities; and state police stations. The Action Alternatives and recommended LPA design options would not diminish the location, design, setting, materials, workmanship, feeling or association of the PA Turnpike: Delaware River Extension.
- **American Baptist Churches, USA Mission Center** – The PECO-1st Ave. and US 202-1st Ave. Action Alternatives and the recommended LPA design options would require a similar sliver of land from the historic property alongside the edge of 1st Avenue to accommodate the elevated guideway. As with the recommended LPA, no negative impact would occur on the elements that make the property significant. The PECO/TP-N.

Gulph and US 202-N. Gulph Action Alternatives would each require a sliver of land from the edge of the property along N. Gulph to accommodate the proposed guideway. Although the proposed impact area is in a different location of the property, it would be peripheral to the historic elements of the property and would have no substantively negative impact on those elements. For the foregoing reasons, these Action Alternatives and recommended LPA design options would not diminish the location, design, setting, materials, workmanship, feeling or association of the American Baptist Churches, USA Mission Center.

- **General Electric Space Technology Center** – The PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives would potentially impact a sliver of land at the edge of the property along Goddard Road to accommodate the elevated guideway. The proposed impact area is peripheral to the historic elements of the property (buildings and campus setting) and would have no substantive negative impact on those elements. For the foregoing reasons, these Action Alternatives would not diminish the location, design, setting, materials, workmanship, feeling or association of the General Electric Space Technology Center.
- **PA Turnpike: Philadelphia Extension** – The PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives would cross over the PA Turnpike at N. Gulph Road. Crossing the Turnpike would be unlikely to negatively impact the elements that make the Turnpike historically significant as described for the Delaware River Extension above. As a result, these Action Alternatives would not diminish the location, design, setting, materials, workmanship, feeling or association of the PA Turnpike: Philadelphia Extension.

SHORT-TERM CONSTRUCTION EFFECTS

Construction activities to implement any one of the Action Alternatives or recommended LPA design options would occur within the temporary and permanent LODs identified on the maps in Appendix A and assessed in the long-term effects discussion above. No additional direct, physical impacts to historic properties would occur during construction activities. As described in Sections 4.8 and 4.10, Project construction activities have the potential to cause temporary changes in the visual, noise and vibration environments due to the presence of construction materials, equipment operation and other activities required to build the Project. As described in Chapter 3, temporary lane and roadway closures could occur on the PA Turnpike: Delaware River Extension and the PA Turnpike: Philadelphia Extension during construction to build the elevated guideway. In addition, temporary service changes could occur on the Philadelphia and Western Railway: NHSL to build the wye connection in the transportation study area and the new track and platform work at the 69th Street Transportation Center. The duration of these impacts would be limited to the time required to complete each Project element in a manner that protects worker and public safety.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - FTA and SEPTA will continue to consult with the PHMC and other consulting parties under Section 106 as the Project advances. After an LPA is selected, FTA and SEPTA will coordinate with consulting parties to identify minimization strategies in accordance with the requirements and procedures set forth in 36 CFR 800 and complete

Section 106 consultation. SEPTA would undertake additional Section 106 consultation if the potential for an effect on an historic property or archaeological site is identified because of a design refinement.

Short-Term Construction – As the Project design advances, SEPTA would develop and implement a construction plan for the activities, temporary right-of-way and access needs for the construction phase of the Project. Regardless of the Action Alternative or recommended LPA design option that is selected as a result of the NEPA process, SEPTA would undertake additional Section 106 consultation if the potential for an effect on an historic property or archaeological site is identified. An example of a condition under which additional Section 106 consultation would be required includes a change in the area of potential effects or LOD because more land area is identified as needed for temporary construction staging.

SEPTA would address temporary visual, noise and vibration effects by developing and implementing minimization and mitigation strategies, which are discussed in Section 4.8.3.2 and 4.10.3.2.

4.8 Visual and Aesthetic Resources

This section describes the potential effects of the Action Alternatives, recommended LPA design options and No Action Alternative on visual and aesthetic resources.

4.8.1 Regulatory Context and Methodology

NEPA regulations require consideration of the direct effects of a proposed action, as well as the significance of those effects. The term “effects” is defined to include the aesthetic impacts of an action (40 C.F.R. §§ 1502.16; 1508.8).

Potential visual and aesthetic effects of the Project are a key public issue. As FTA does not have visual assessment guidelines, SEPTA used FHWA’s *Visual Impact Assessment for Highway Projects* (FHWA 1988) in this analysis. The visual assessment study area is 500 feet on either side of the Action Alternatives and recommended LPA design options. An inventory was completed to identify the visual environment, character and quality; identify visually sensitive areas; and determine viewers.

The visual environment is the setting of an area, including the resources that affect an observer’s visual experience of an area. Visual character is a composite description of the visual resources, considering the form, scale and diversity of man-made and natural landscape components. Visual quality is the value placed on the visual environment according to viewer observation and preference.

A visually sensitive area is one upon which a human value has been placed for reasons of historic importance, natural beauty or other reasons. Examples of visually sensitive areas in the Project study area are parks and recreational facilities such as Valley Forge National Historical Park and open space.

Viewers are the people who are likely to observe the visual environment. The major groups of viewers who would be affected by the new visual elements of the Action Alternatives have been identified for each visual assessment unit (VAU), which are described below. Such groups might include residents, workers who are employed in the VAU, visitors who come to the area, and transit riders, pedestrians, cyclists and other roadway users who travel in or through the VAU.

To analyze the potential visual effects of the Action Alternatives on the visual environment, as experienced by viewers, seven Project study area VAUs were identified generally based on the cohesiveness of land use and development patterns. The VAUs are defined as follows:

- VAU 1 – PECO west of the PA Turnpike
- VAU 2 – King of Prussia Mall Area
- VAU 3 – 1st Avenue
- VAU 4 – PECO east of PA Turnpike
- VAU 5 – N. Gulph Road
- VAU 6 – US Route 202
- VAU 7 – PA Turnpike

4.8.2 Affected Environment

4.8.2.1 VAU 1 – PECO West of PA Turnpike

The PECO right-of-way west of the PA Turnpike is an open, grassy corridor with pairs of steel latticework towers supporting overhead power wires (see Figure 4-8.1). The right-of-way is flanked by the rear yards of residences and some businesses. As one of the few open areas in the Project study area, the PECO right-of-way is locally valued for the relatively undeveloped views it provides. Viewers in VAU 1 include existing adjacent residents and business employees as well as Kingwood Road Park users. Future viewers will also include users of Upper Merion Township's PECO recreation easement and Montgomery County's Chester Valley Trail extension in the PECO right-of-way. VAU 1 has a high degree of visual sensitivity because of its value as an open area.

Figure 4-8.1: VAU 1 - PECO Right-of-way West of PA Turnpike



Figure 4-8.2: VAU 2 – King of Prussia Mall Area



4.8.2.2 VAU 2 – King of Prussia Mall Area

VAU 2 encompasses the Court, Plaza, and surrounding retail, service and parking facilities within and near King of Prussia Mall and Wills Boulevards and Conrad Drive (see Figure 4-8.2). The visual impression of this developed area is that of a large, concentrated shopping and entertainment destination and supporting roadway network with little green space. Viewers in VAU 2 include shoppers, employees, and roadway users traveling to, from, within and near the King of Prussia Mall area. Given the developed character of this busy area, VAU 2 has a low degree of visual sensitivity.

Figure 4-8.3: VAU 3 – 1st Avenue



4.8.2.3 VAU 3 – 1st Avenue

1st Avenue is the heart of the King of Prussia Business Park; it is a wide four-lane roadway, serving primarily office and light industrial uses (see Figure 4-8.3). Building architecture is varied but generally low-rise and flanked by lawns, landscaping and off-street surface parking. Viewers in this VAU include employees, residents, and roadway users. VAU 3 has a low degree of visual sensitivity due to the developed, primarily business character of the corridor.

Figure 4-8.4: VAU 4 – PECO East of PA Turnpike



VAU 4 – PECO East of PA Turnpike

VAU 4 includes the portion of the PECO right-of-way east of the PA Turnpike to the NHSL (see Figure 4-8.4). The PECO right-of-way is an open, grassy area near the Turnpike and developed near Henderson Road. Adjacent uses include residences and businesses. Viewers in VAU 4 are primarily roadway travelers and business operators. VAU 4 has moderate visual sensitivity due to the open space afforded by the PECO right-of-way.

4.8.2.4 VAU 5 – N. Gulph Road

N. Gulph Road is a multi-lane roadway that is at or slightly below the surrounding terrain for most of its length between Conrad Drive and 1st Avenue (see Figure 4-8.5). This section of N. Gulph Road is flanked primarily by office and hotel uses to the east, and US Route 422 and the Village at Valley Forge to the west. Viewers in VAU 5 include employees and roadway users; future viewers may include residents of the Village at Valley Forge. VAU 5 has low visual sensitivity due to the developed character of the roadway corridor.

Figure 4-8.5: VAU 5 – N. Gulph Road



4.8.2.5 VAU 6 – US Route 202

US Route 202 is a multi-lane highway flanked by businesses and residences. The highway is generally at or slightly below the surrounding terrain (see Figure 4-8.6). Adjacent non-residential properties provide off-street parking facilities and driveway access to the highway. Although a few residences have their access on the highway, most adjacent residences face away from the highway and are accessed by an internal street network. Street trees and landscaping on some adjacent properties provide green space. Viewers in VAU 6 include residents, business employees and roadway users. VAU 6 has moderate visual sensitivity due to the residential character of portions of the corridor.

Figure 4-8.6: VAU 6 – US Route 202



4.8.2.6 VAU 7 - PA Turnpike

VAU 7 is the portion of the PA Turnpike between Allendale Road and the PECO right-of-way (see Figure 4-8.7). The multi-lane PA Turnpike is abutted to the south by the Valley Forge Homes residential neighborhood and to the north by a portion of the Brandywine Village neighborhood, Walker Field, a number of businesses and

Figure 4-8.7: VAU 7 – PA Turnpike



the Turnpike's Valley Forge service plaza. A continuous sound barrier visually buffers the Valley Forge Homes neighborhood. The 9/11 Memorial is adjacent to the south side of the PA Turnpike in VAU 7. Viewers in VAU 7 are PA Turnpike travelers, adjacent residents and visitors to the 9/11 Memorial. VAU 7 has moderate visual sensitivity due to the adjacent residential uses, the 9/11 Memorial and the highway context of the area.

4.8.3 Environmental Consequences

4.8.3.1 No Action Alternative

Although the No Action Alternative transportation projects are largely expansions of existing facilities, each has potential to alter the visual environment in which they are implemented. The larger projects, such as the US Route 422 and PA Turnpike interchanges, have the highest potential to change the localized visual environment by introducing new transportation-focused structures and infrastructure.

4.8.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

King of Prussia

Each Action Alternative and recommended LPA design option would change the visual environment by introducing new visual elements or removing or replacing existing elements. The potential effects within each VAU are described below and summarized in Table 4-8.1.

Table 4-8.1: Summary of Visual Assessment

Visual Assessment	No Action Alternative (b)	Action Alternatives (c)						
		PECO-1 st Ave.	PECO/TP-1 st Ave. and its Design Options		PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph	
			PECO/TP-1 st Ave. (recommended LPA)	Design Option Differences Compared to PECO/TP-1 st Ave.				
				PA Turnpike North/South Option				9/11 Memorial Avoidance Option
Applicable VAU (a):								
	All	1/2/3/4	2/3/4/7	2/3/4/7	2/3/4/7	2/4/5/7	2/3/6/7	2/5/6/7
Potential Visual Effect of Alternative by VAU: (b)								
	N/A	H/L/L/M	L/L/M/M	ND/ND/ND/L	ND/ND/ND/L	L/M/L/M	L/L/L/M	L/L/L/M

Notes: L = low sensitivity; M = moderate sensitivity; H = high sensitivity; N/A = not applicable; ND = no difference compared to the recommended LPA; (a) each applicable VAU is noted in numerical order, separated by slashes (/); (b) the visual sensitivity of each applicable VAU is noted in numerical order, separated by slashes (/).

Source: AECOM, 2016.

VAU 1 – PECO West of PA Turnpike

The PECO-1st Ave. Action Alternative is the only alternative that would potentially change visual characteristics in VAU 1 because the elevated guideway would be aligned in the PECO electric utility corridor west of the PA Turnpike. In the PECO-1st Ave. Action Alternative, the proposed alignment would be along the north edge of the PECO utility corridor, adjacent to a large number of Valley Forge Homes' residences, and near the proposed Chester Valley Trail Extension right-of-way that follows the southern edge of the PECO corridor. The guideway would be elevated on single-column supports for part of the distance along Valley Forge Homes, and on retained fill for the remaining distance (see maps, Appendix A); where elevated, the guideway typically would be approximately 17 feet above the existing ground level.

Views of the PECO right-of-way from adjacent homes to the north would be eliminated by the solid wall along the retained fill section; along the section supported by columns, views under the structure across the PECO right-of-way would be possible. Views of the PECO right-of-way from the south or along the Chester Valley Trail Extension, would remain largely open although the guideway would be a new visual element.

Valley Forge Homes residents adjacent to the PECO corridor and along Bill Smith Boulevard, as well as in the County and Upper Merion Township are concerned about the potential visual change the PECO-1st Ave. Action Alternative would cause to the visual quality of the residential area adjacent to PECO as well as the feeling of open space for users of the planned Chester Valley Trail Extension and PECO recreation easement in the right-of-way. Given the high visual sensitivity of VAU 1 and the potential changes in visual character caused by the PECO-1st Ave. Action Alternative, the potential visual impact of the PECO-1st Ave. Action Alternative in VAU 1 is high (Figure 4-8.8).

Figure 4-8.8: View along PECO Corridor at Valley Forge Homes



VAU 2 – King of Prussia Mall Area

Each Action Alternative and recommended LPA design option would add visual elements in VAU 2. The PECO-1st Ave. Action Alternative would be aligned along the front of the King of Prussia Mall property while the other alternatives would be aligned along Mall Boulevard behind the King of Prussia Mall buildings. Stakeholders and the public indicated a preference for alignments behind the King of Prussia Mall to minimize changes in views of the King of Prussia Mall from US Route 202, a main access point for the King of Prussia Mall. As a result, the PECO-1st Ave. elevated guideway and station in this area would have a potentially greater

visual effect in VAU 2 than the other Action Alternatives and recommended LPA design options. Aligning the other Action Alternatives and recommended LPA design options along Mall Boulevard would add new visual elements (elevated guideway and two station areas) through the King of Prussia Mall area, but because of the low visual sensitivity of the area, the potential visual effect of the Action Alternatives and recommended LPA design options using Mall Boulevard is low.

VAU 3 – 1st Avenue

The PECO-1st Ave. Action Alternative, the recommended LPA, the recommended LPA design options and the US 202-1st Ave. Action Alternative would potentially change visual characteristics in VAU 3 because the elevated guideway and associated station areas and park-and-ride facility would be aligned along 1st Avenue. Action Alternatives using N. Gulph Road would not cause visual changes along 1st Avenue.

Stakeholders indicated a preference for alignments along 1st Avenue to serve the King of Prussia Business Park and to complement the Township's proposed 1st Avenue Road Diet project. Given the low visual sensitivity of the 1st Avenue area, the potential visual effect of the Action Alternatives and recommended LPA design options using 1st Avenue would be low.

VAU 4 – PECO East of PA Turnpike

The PECO-1st Ave. Action Alternative, the recommended LPA, the recommended LPA design options and the PECO/TP-N. Gulph Action Alternative would potentially change visual characteristics in VAU 4 because the elevated guideway would be aligned in the PECO electric utility corridor east of the PA Turnpike. The Henderson Road station area and park-and-ride facility would also be new visual elements in VAU 4. Because of the moderate visual sensitivity of the open space character of VAU 4, the potential visual effect of the Action Alternatives and recommended LPA design options using the PECO electric utility corridor would be moderate.

VAU 5 – N. Gulph Road

The PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives would potentially change visual characteristics in VAU 5 because the elevated guideway, associated station areas and park-and-ride facility would be aligned along N. Gulph Road. Because of the low visual sensitivity of VAU 5, the potential visual effect of the Action Alternatives and recommended LPA design options using N. Gulph Road would be low. Alternatives using 1st Avenue would not cause visual changes along N. Gulph Road.

VAU 6 – US Route 202

Each Action Alternative and recommended LPA design option potentially would change visual characteristics in VAU 6 because the elevated guideway in each would be aligned along US Route 202 (US 202-1st Ave. and US 202-N. Gulph Action Alternatives) or would cross over US Route 202 on an elevated structure (the PECO-1st Ave. Action Alternative, the recommended LPA, the recommended LPA design options, and the PECO/TP-N. Gulph Action Alternative).

Stakeholders and the public indicated a preference for the Project to not use US Route 202 to minimize changes in the character of US Route 202. In the business community, some stakeholders questioned whether an elevated guideway along US Route 202 would cause motorists to have difficulty seeing the driveways and signage of their businesses. They cited access and visibility as especially important to retail businesses, particularly if the specific business provides a product or service possibly involving an impulse purchase. In this context, an impulse purchase is an unplanned event that is a result of a motorist deciding to stop at a business because it is observed from the roadway. Such businesses rely on the ability to be seen by the motoring public.

Each Action Alternative that would use a portion of the PA Turnpike right-of-way (the recommended LPA and its design options, PECO/TP-N. Gulph, US 202-1st Ave. and US 202-N. Gulph) would cross over US Route 202 on an elevated structure. The new structure would cause a visual change at the crossing location. PECO-1st Ave. would cross over US Route 202 on an elevated structure at the Gulph Road intersection. The new structure would cause a visual change at the crossing location.

VAU 7 – PA Turnpike

Each Action Alternative and recommended LPA design option potentially would change visual characteristics in VAU 7 at two locations: 1) where the elevated guideway would be aligned along the PA Turnpike (recommended LPA and recommended LPA design options, as well as the PECO/TP-N. Gulph, US 202-1st Ave. and US 202-N. Gulph Action Alternatives) or would cross over the PA Turnpike on an elevated structure (PECO-1st Ave. Action Alternative); and 2) where the elevated guideway would cross the PA Turnpike to access the King of Prussia Business Park.

In the first location, the elevated guideway would affect viewers along the PA Turnpike, residents adjacent to the PA Turnpike and the 9/11 Memorial, also adjacent to the PA Turnpike. In the recommended LPA, the 9/11 Memorial Avoidance Option and the PECO/TP-N. Gulph Action Alternative, the proposed guideway would be elevated on single-column supports along the south side of the PA Turnpike and the north side of the adjacent Valley Forge Homes development (see maps, Appendix A). Viewers of the proposed guideway would include residents near the PA Turnpike and PA Turnpike travelers. The potential effect to PA Turnpike travelers would be moderate because the elevated guideway structure would be a new visual element adjacent to the travel lanes.

Views from the back yards of residences on the north side of Powderhorn Drive toward the PA Turnpike are generally of the existing highway noise barrier (Figure 4-8.9). In light of the barrier and highway, the visual sensitivity of these residences is moderate. However, because the PA Turnpike noise barrier sits immediately adjacent to the Turnpike travel lanes, the guideway structure would be on the residential side of the noise barrier wall. At this location, the guideway would be approximately 38 to 50 feet above the ground level and would be above the existing noise barrier. Views toward the PA Turnpike from the adjacent residences would include the existing noise barrier and the new guideway above it supported on columns.

Figure 4-8.9: Backyard View toward PA Turnpike at a Property on Powderhorn Drive



Adjacent residents have expressed concerns about the visual impact of the guideway structure on their property given its size and location in relation to their properties. During DEIS development, SEPTA took a number of actions in response to visual impact concerns (Tables 7-1.1 and 7-1.2), including:

- Factored concerns into the Tier 3 analysis and DEIS
- Considered an at-grade alignment option along the south side of the Turnpike
- Assessed an alignment on the north side of the Turnpike (PA Turnpike North/South Option) in the DEIS
- Implemented quarterly neighborhood meetings and a Community Working Group to focus on local concerns
- Committed to examining ways to avoid or minimize and mitigate residents' concerns as the Project advances

Given the concerns of adjacent residents about potential visual change and the moderate visual sensitivity characterization of VAU 7, the potential visual effect of the recommended LPA and recommended LPA design options, the PECO/TP-N. Gulph, US 202-1st Ave. and US 202-N. Gulph Action Alternatives would be moderate.

The PA Turnpike North/South Option would move the recommended LPA alignment from the south side of the Turnpike to the north side of the Turnpike between the PECO corridor and a point to the east of US Route 202. By providing more horizontal distance between the guideway and the Valley Forge Homes residential neighborhood, the potential visual effects of the Project on the community would be reduced. Figures 4-8.10 and 4-8.11 are renderings that simulate the view of the Project from the Powderhorn and Bluebuff Street areas of the Valley Forge Homes community. Each is intended to show the relative scale and visibility of the elevated guideway from Valley Forge Homes' residential properties adjacent to the south side of the PA Turnpike. Figure 4-8.10 shows a view of the recommended LPA structure along the south side of the Turnpike. Figure 4-8.11 shows a view of the PA Turnpike North/South Option structure from the same location. Comparing the two simulations shows the benefit that adding horizontal distance between the residences and the Project would have on reducing the visual impact of the Project on those residences.

The transition of the PA Turnpike North/South Option from the north side of the Turnpike to the south side would place the guideway on the opposite side of the PA Turnpike from Brandywine Village residents. As a result, the potential visual effect of the PA Turnpike North/South Option on adjacent Brandywine Village residential properties in VAU 7 would be low. For PA Turnpike travelers, the potential visual effect of the PA Turnpike North/South Option would be moderate because the visual element would be a new elevated structure adjacent to and transitioning across the travel lanes.

Figure 4-8.10: Rendering of Recommended LPA at Valley Forge Homes



Conceptual rendering of what the recommended LPA could look like along the south side of the PA Turnpike behind residences on Powderhorn Drive in Valley Forge Homes.

Source: McCormick Taylor, Inc. 2016.

Figure 4-8.11: Rendering of PA Turnpike North/South Option at Valley Forge Homes



Conceptual rendering of what the PA Turnpike North/South Option could look like along the north side of the PA Turnpike behind residences on Powderhorn Drive in Valley Forge Homes.

Source: McCormick Taylor Inc., 2016.

The 9/11 Memorial Avoidance Option was developed by SEPTA in response to concerns from the King of Prussia Volunteer Fire Company, the public and Upper Merion Township Supervisors about potential visual impacts of the recommended LPA on the setting of the 9/11 Memorial. As described in Section 2.2.8, the directional focus of the memorial is toward the northwest where the view is of the open sky. The elevated guideway, within the PA Turnpike ROW, would cross that view and change the context of the memorial. In response to these concerns, SEPTA developed the 9/11 Memorial Avoidance Option, which would have the elevated guideway turn off the PA Turnpike ROW east of the memorial and cross the Volunteer Fire Company property (Figure 2-2.13). By making this adjustment, the proposed elevated guideway would be on the opposite side of the memorial from its directional focus, thereby reducing the proximity effect. The potential visual effect of the 9/11 Avoidance Option in VAU 7 is low.

The second location where each Action Alternative and recommended design option would cross the PA Turnpike is west of the King of Prussia Mall. In this area, each Action Alternative would cross from the south side to the north side of the PA Turnpike on an elevated structure to access the King of Prussia Business Park. Action Alternatives using 1st Avenue would cross the PA Turnpike in the vicinity of the Valley Forge Suites Apartments and the Hyatt Place hotel on American Way. Viewers in this portion of VAU 7 would include residents in Valley Forge Suites as well as nearby businesses, and motorists on the PA Turnpike. Action Alternatives using N. Gulph Road would cross the PA Turnpike at N. Gulph Road on the east side of US Route 422. Viewers in this portion of VAU 7 are primarily businesses and motorists on the PA Turnpike, N. Gulph Road and US Route 422. The elevated structure would be a new visual element in each location, resulting in a moderate potential for visual effect along American Way and a low potential for visual effect along N. Gulph Road.

69th Street Transportation Center

Proposed Project-related activity in any Action Alternative or recommended LPA design option would occur internally to SEPTA's 69th Street Transportation Center and would not be visible to adjacent residents or businesses. No visual impact of the proposed Project would occur at the 69th Street Transportation Center.

SHORT-TERM CONSTRUCTION EFFECTS

Project construction activity has the potential to cause temporary changes in visual characteristics in the vicinity of work areas. Construction equipment, staging areas, and materials storage are typical new elements in the visual landscape of a transportation construction project.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - During the alternatives development process described in Chapter 2, SEPTA has worked to address business and resident concerns about the visual impact of the proposed Project. In the cases of residential and business concerns about potential visual impacts, SEPTA responded by developing the contemporary concept design for the guideway structure that is presented in the DEIS. Unlike the large steel structures used to support elevated rail operations in the past, SEPTA is modeling the guideway design on current elevated structure principles that emphasize minimal profile, single central column supports, and

concrete facing materials. These principles, in combination with a typical height of approximately 17 feet from ground level to the bottom of the guideway structure, would enable residents and motorists to see under and beyond the structure. In this way, changes to existing views are minimized and businesses and services remain visible.

As the Project advances, SEPTA would work with affected parties to refine the selected alternative to minimize visual impacts. Where impacts remain, SEPTA would examine means to mitigate visual impacts. Potential strategies could include, but may not be limited to, alignment refinements, visual treatments of the selected LPA elements, and screening.

Short-Term Construction – As described in Section 2.8 and regardless of the Action Alternative or recommended LPA design option selected in the NEPA process, SEPTA would develop and implement a Project construction plan that would specify temporary work and staging areas as well as haul routes, along with associated schedules for these construction elements. As part of the plan, SEPTA would assess the potential for visual impacts during construction and identify means to minimize or mitigate these temporary impacts. Examples of potential mitigation strategies that SEPTA would consider include storage of equipment and materials in designated staging areas only, use of opaque fencing to visually screen staging areas, soil containment to avoid migration of soils onto public roads as required by erosion control regulations, and permanent landscaping or seeding of disturbed areas as soon as construction work is completed.

4.9 Air Quality and Greenhouse Gases

This section describes the current regulations pertaining to the control of air pollutants, the benefits and impact of the alternatives and recommended LPA design options on air quality both within the Project study area and throughout the broader region, and minimization strategies SEPTA would take to eliminate or reduce air quality impacts.

4.9.1 Regulatory Context and Methodology

4.9.1.1 Conformity

Section 176(c) of the Clean Air Act (CAA) as well as the transportation planning provisions of 23 USC § 135 and 49 USC § 5304 require transportation activities that receive federal funding or approval to be consistent with (“conform to”) the air quality goals established by a state air quality implementation plan (SIP). Conformity with the SIP means that transportation activities will not cause new air quality violations, worsen existing violations or delay timely attainment of the National Ambient Air Quality Standards (NAAQS).⁴ The U.S. Environmental Protection Agency (EPA) adopted regulations at 40 CFR 51.390 and Part 93 (referred to as the

⁴ The EPA develops and enforces the regulations related to air quality. In 1970, the federal Clean Air Act established the NAAQS to protect the public health. Six criteria air pollutants have been identified by the EPA as being of concern nationwide: carbon monoxide, sulfur oxides (sulfur dioxide), nitrogen oxides (nitrogen dioxide), ozone, particulate matter with a size of 10 micrometers or less, particulate matter with a size of 2.5 micrometers or less, and lead. In addition to these six criteria air pollutants, the EPA also regulates air toxics. Currently, neither the TCR nor the NEPA regulations require analysis of mobile source air toxics. As a result, an assessment of mobile source air toxics will not be conducted.

Transportation Conformity Rule or TCR) to implement the requirements of Section 176(c) of the CAA. The TCR requirements apply to transportation plans, transportation improvement programs (TIPs), and transportation projects approved, funded or implemented by the FTA. Additionally, the TCR requirements apply in nonattainment and maintenance areas for transportation-related criteria pollutants. Transportation conformity is not required in attainment areas. Table 4-9.1 lists the applicable National and Pennsylvania Ambient Air Quality Standards.

Table 4-9.1: National and Pennsylvania Ambient Air Quality Standards

Pollutant	Standard Type	Averaging Period	Standard Value
Carbon Monoxide (CO)	Primary	8-Hour average	9 ppm (10 mg/m ³)
	Primary	1-Hour average	35 ppm (40 mg/m ³)
Nitrogen Dioxide (NO ₂)	Primary and Secondary	Annual arithmetic mean	53 ppb
	Primary	1-Hour average	100 ppb
Ozone (O ₃)	Primary and Secondary	8-Hour average	0.070 ppm
Sulfur Dioxide (SO ₂)	Secondary	3-Hour average	0.5 ppm (1300 µg/m ³)
	Primary	1-Hour Average	75 ppb (0.075 ppm)
Particulate Matter (PM ₁₀)	Primary and Secondary	24-Hour average	150 µg/m ³
Particulate Matter (PM _{2.5})	Primary	Annual arithmetic mean	12 µg/m ³
	Secondary	Annual arithmetic mean	15 µg/m ³
	Primary	24-Hour average	35 µg/m ³
Lead (Pb)	Primary and Secondary	3-month rolling average	0.15 µg/m ³

Source: 40 CFR 50, National Primary and Secondary Ambient Air Quality Standards.

Montgomery County is currently designated as:

- A *marginal* nonattainment area for O₃.
- A maintenance area for PM_{2.5}.
- An attainment area for all other criteria pollutants.

In accordance with 40 CFR 93.123, the Project would use electric-powered vehicles, and as such would not be a project of concern for air quality. However, because of the County's status as marginal nonattainment for O₃, TCR compliance is applicable to the Project.

Transportation conformity applies to two levels of transportation activity:

- Regional conformity: Demonstration of regional transportation conformity is through the development of a TIP, which is the responsibility of the metropolitan planning

organization (MPO). For the greater Philadelphia region/Delaware Valley (including Montgomery County), the DVRPC is the designated MPO. The current applicable transportation plan and TIP are known as the *2040 Comprehensive Regional Plan* (CRP) and the fiscal year (FY) 2017-2020 TIP, respectively. DVRPC is responsible for demonstrating that the transportation plan and TIP conform to the SIP. The proposed Project is currently included within the conforming 2040 CRP. The proposed Project is not currently included within the TIP. However, the Project is listed in the funded portion of the DVRPC's *Connections 2040 Long-Range Plan*, which means that it was included (as item 2035M) in the air quality conformity modeling that was performed during the PA Act 89 Transportation Funding Plan updates to the Long-Range Plan (DVRPC, 2016 *Transportation Conformity Demonstration*). SEPTA anticipates that the LPA SEPTA selects and adopts through the EIS process will be included within a future revision of the TIP and a regional conformity demonstration will be completed by DVRPC at that time.

- Project-level conformity: For specific transportation projects, the conformity determination must show that the individual project is included in the TIP in order to be consistent with the SIP conformity determination (i.e., to be exempt from a regional emissions analysis and to be in compliance with the NAAQS on a local level). Potential localized emission impacts should be addressed through a hot spot analysis for localized nonattainment or maintenance pollutants (such as PM_{2.5}) to demonstrate that such emissions would be in compliance with the NAAQS.

The potential benefits and impacts to air quality resulting from the Project were evaluated by assessing the likely change in vehicle miles traveled (VMT) within the Project study area. Specifically, the weekday peak hour VMT predicted for vehicle traffic was used as a measuring metric. By comparing the predicted VMT for each Action Alternative and recommended LPA design option with the No Action Alternative, an estimate of the likely change in emissions could be determined. More detail regarding this air quality assessment can be found in the 2017 *Air Quality Technical Memorandum* prepared for the Project. Level of service-based air quality modeling analysis of roadway intersections potentially affected by the Project will be performed after an LPA is selected and will be presented in the FEIS.

Additionally, a PM_{2.5} and PM₁₀ impact analysis was performed based on the guidelines and procedures outlined by the USEPA in *Transportation Conformity Guidance for Quantitative Hot-spot Analyses in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas* (USEPA 2015). To meet statutory requirements, the TCR requires PM hot-spot analyses to be performed for projects of air quality concern located in PM_{2.5} or PM₁₀ nonattainment or maintenance areas. Montgomery County is in a maintenance area for PM_{2.5} and a partial maintenance area for PM₁₀. Consistent with the guideline, forecasted traffic conditions in the study area were evaluated to determine whether the Project is a project with air quality concern that requires a hot-spot analysis for PM_{2.5} and PM₁₀.

The EPA's final rule defines projects of air quality concern that require a PM_{2.5} or PM₁₀ hot-spot analysis in 40 CFR 93.123(b)(1) as:

- New or expanded highway projects that have a significant number of or significant increase in diesel vehicles;
- Projects affecting intersections that are at Level of Service D, E or F with a significant number of diesel vehicles, or those that will change to Level of Service D, E or F because of increased traffic volumes from a significant number of diesel vehicles related to the project;
- New bus and rail terminals and transfer points that have a significant number of diesel vehicles congregating at a single location;
- Expanded bus and rail terminals and transfer points that significantly increase the number of diesel vehicles congregating at a single location; and
- Projects in or affecting locations, areas, or categories of sites which are identified in the PM_{2.5} or PM₁₀ applicable implementation plan or implementation plan submission, as appropriate, as sites of violation or possible violation.

Typical sample projects of air quality concern defined by 40 CFR 93.123(b)(1)(i), (iii) and (iv) include:

- A project on a new highway or expressway that serves a significant volume of diesel truck traffic, such as facilities with greater than a 125,000 annual average daily traffic (AADT) and eight percent or more of such AADT is diesel truck traffic.
- New exit ramps and other highway facility improvements to connect a highway or expressway to a major freight, bus, or intermodal terminal.
- Expansion of an existing highway or other facility that affects a congested intersection (operated at LOS D, E, or F) and has a significant increase in the number of diesel trucks.
- Similar highway projects that involve a significant increase in the number of diesel transit buses and/or diesel trucks.
- A major new bus or intermodal terminal considered to be a "regionally significant project" under 40 CFR 93.1019.
- An existing bus or intermodal terminal that has a large vehicle fleet where the number of diesel buses increases by 50% or more, as measured by bus arrivals.

Under each Action Alternative and recommended LPA design option, and as described in Chapter 3, the overall traffic mix and volume around the affected intersections would remain essentially the same. The number of diesel vehicles traveling through these intersections would not change because of the Project. Moreover, the Project does not fall into any of the above-listed project categories with potential for air quality concern. Therefore, the Project is not a project of air quality concern (POAQC) warranting a hot-spot analysis.

4.9.1.2 Mobile Source Air Toxics (MSATs)

In addition to the criteria pollutants, the CAA also lists 187 air toxics, known as hazardous air pollutants (HAPs). However, unlike the criteria pollutants, ambient air quality standards have not been established by the USEPA for the majority of the air toxics. Among the CAA-identified 187 HAPs, 93 have been identified by the USEPA as mobile source air toxics (MSATs). The following nine MSATs are priority MSATs:

- Acetaldehyde
- Acrolein
- Benzene
- 1,3-butadiene
- Diesel particulate matter plus diesel exhaust organic gases (diesel PM)
- Ethylbenzene
- Formaldehyde
- Naphthalene
- Polycyclic organic matter (POM)

On February 3, 2006, the FHWA and the USEPA issued joint guidance for the assessment of MSATs for highway projects. The FHWA subsequently released updated guidance on air toxic analysis on September 30, 2009, December 6, 2012, and October 18, 2016. The guidance requires analysis of MSATs as part of the environmental analysis for a transportation project. The 2016 update reflects recent regulatory changes, addresses stakeholder requests to broaden the horizon years of emission trends performed with the USEPA Motor Vehicle Emissions Simulator (MOVES) model, and updates stakeholders on the status of scientific research on air toxics. This guidance is being considered in connection with the Project.

FHWA's Interim Guidance (the Guidance) establishes a three-tiered approach to determine the level of MSAT analysis required by a project-level study. According to the Guidance, the category of exempt projects or projects with no meaningful potential MSAT impacts includes:

- Projects qualifying as categorical exclusions;
- Projects exempt under the Clean Air Act conformity rule under 40 CFR 93.126; or
- Other projects with no meaningful impacts on traffic volumes or vehicle mix.

Additionally, the Guidance indicates that for projects with negligible traffic impacts, no MSAT analysis is recommended. It is further noted in the Guidance that "the types of projects categorically excluded under 23 CFR 771.117(d) or exempt from conformity rule under 40 CFR 93.127 do not warrant an automatic exemption from an MSAT analysis, but they usually will have no meaningful impact." Projects in this category do not require either a qualitative or a quantitative analysis for MSATs, although documentation of the project category is required.

As indicated previously, under the Project, and as described in Chapter 3, the overall traffic mix and volume around the affected intersections would remain essentially the same and the number of diesel vehicles traveling through these intersections would not change because of

the Project. Moreover, the Project does not fall into any of the project categories that would have the potential to be an air quality concern. Therefore the Project will not result any meaningful changes in traffic volumes, vehicle mix or any other factor that would cause an increase in MSAT impacts.

Moreover, USEPA regulations for vehicle engines and fuels will cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with the USEPA's MOVES2014 model forecasts a combined reduction of over 90 percent in the total annual emissions rate for the priority MSATs from 2010 to 2050, while vehicle-miles of travel are projected to increase by over 45 percent. This finding was reported in the FHWA's October 12, 2016 document, *Updated Interim Guidance on Mobile Source Air Toxic Analysis in NEPA Documents*.

Since the Project falls into the category of resulting in no meaningful impacts on traffic volumes or vehicle mix, it would not be of air quality concern. Therefore, further qualitative or a quantitative analysis for MSATs is not warranted.

4.9.1.3 Greenhouse Gases

Greenhouse gases such as carbon dioxide (CO₂) are emitted in motor vehicle exhaust and have contributed to climate change and global warming. The transportation sector is a substantial part of the climate change mitigation challenge, accounting for approximately 28% of all annual greenhouse gas emissions in the United States. FTA has responded to the need to reduce greenhouse gas emissions by creating new funding programs to purchase low-carbon emitting vehicles, conducted research on strategies to reduce transit emissions, and developed the Transit Greenhouse Gas Emissions Estimator, a tool that allows agencies to estimate the partial lifecycle greenhouse gas emissions generated from the construction, operations, and maintenance phases of projects. Use of this tool is not mandatory and is not warranted for projects that would have the overall beneficial effect of reducing emissions when considering all Project phases. The evaluation in this section uses the energy assessment in Section 4.13 of the DEIS to determine the warrant for quantifying emissions using FTA's Estimator.

4.9.2 Affected Environment

Measured ambient criteria pollutant concentrations at the closest monitoring stations to the Project study area (Norristown and Philadelphia) show no exceedances of the NAAQS for all criteria pollutants in the last four years, with the exception of ozone for which the Project area was designated as a nonattainment area.

4.9.3 Environmental Consequences

4.9.3.1 No Action Alternative

The weekday peak hour VMT under the No Action Alternative is predicted and summarized in Table 4-9.2. The No Action Alternative would not reduce regional production of greenhouse gases or their criteria pollutants as it would not provide a regional energy benefit: no reduction in automobile use, miles traveled or time spent in roadway congestion. Forecast future traffic analysis indicates growth in congestion, likely causing greenhouse gas emissions and their criteria pollutants to increase over time in the region.

4.9.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

Conformity Determination - Since the Project is located in an ozone nonattainment area and PM_{2.5} maintenance area, according to the TCR, the Project must originate from a conforming TIP and the Project must demonstrate its compliance with the NAAQS on a project level.

The Project is not listed in the current TIP. However it is listed in the regional long range transportation plan (i.e., *Connections 2040 Plan*). Therefore, after an LPA is selected, it would need to be included in the future TIP designed to ensure the implementation of the goals and objectives identified in the long range transportation plan on a regional level.

According to USEPA PM guidance, the Project is not of air quality concern for PM_{2.5}. As such, the Project is not expected to cause or contribute to violations of the PM_{2.5} NAAQS. Therefore, each Action Alternative and recommended LPA design option complies with the conformity requirements on both regional and local levels for ozone and PM_{2.5}.

Mesoscale Impacts— For purposes of providing an alternative comparison of the potential for emissions to change as a result of the Project, regional VMT was selected as an indicator of potential change in mesoscale emissions under each Action Alternative. Each Action Alternative and recommended LPA design option would reduce the amount of time transit riders and automobile drivers spend traveling. The amounts of VMT reduction by 2040 were calculated for the weekday peak hour using DVRPC modeling data. As shown in Table 4-9.2, each Action Alternative would result in a net reduction of peak hour VMT and automobile emissions compared to the No Action Alternative. The reduction would be due to travelers changing mode from automobile to Project service. Due to the peak hour VMT reduction, each Action Alternative and recommended LPA design option would have a positive air quality benefit.

Table 4-9.2: Peak Hour Vehicle Miles Traveled, No Action and Action Alternatives

Proposed Alternative	Weekday Peak Hour VMT			
	No Action Alternative 2040	Action Alternative 2040	Change in VMT	Percentage Change
PECO-1 st Ave	1,575,560	1,568,409	-7,150	-0.45%
PECO/TP-1 st Ave. (recommended LPA) (a)		1,569,076	-6,484	-0.41%
PECO/TP-N. Gulph		1,568,262	-7,298	-0.46%
US 202-1 st Ave		1,568,394	-7,166	-0.45%
US 202-N. Gulph		1,567,614	-7,945	-0.50%

(a) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would each have similar peak hour VMT to the recommended LPA.

Source: VMT data from DVRPC, 2015, Tier 3 model runs.

Change in greenhouse gas emissions - The energy assessment in Section 4.13 indicates that each Action Alternative and recommended LPA design option would provide a benefit by reducing energy use in the region. Reduced automobile use, fewer miles traveled and less time spent in roadway congestion are key Project-factors in this finding. This energy benefit correlates to a reduction in emissions of greenhouse gases. Each Action Alternative and recommended LPA design option would have the overall beneficial effect of reducing greenhouse gas emissions after considering the combined potential impacts of construction, operation and maintenance phases of the Project. Despite the potential for a temporary increase in localized emissions during construction as described below, the reduction in operating emissions in the region due to the Project would result in a net benefit. As a result, calculating Project emissions using FTA's Transit Greenhouse Gas Emissions Estimator is not warranted.

SHORT-TERM CONSTRUCTION EFFECTS

As described in Section 2.8, Project activities during construction would include demolishing existing structures within the permanent and temporary Project rights-of-way, earth-moving (on-site as well as hauling to and from the work area), and installing the elements of the Project. These activities would occur within the LOD described in Section 4.1 and, in the case of haul routes, along the roadways to be designated as such. Each Action Alternative and recommended LPA design option has the potential to cause short-term impacts to air quality from these activities in the areas where the activities occur. Potential air quality impacts from construction of each Action Alternative or recommended LPA design option would be temporary and could include the following impacts:

- Localized increases in emissions concentrations from construction equipment, particularly diesel-powered equipment. Effects could occur in the areas of work activities, access points, and haul routes.
- Increases in motor vehicle emissions associated with potential disruption of traffic operations during construction. Effects could occur if temporary lane closures and detours cause congestion and travel delays.

- Localized dust and airborne particulate matter generated by temporarily exposed soils, earth-moving activities, and equipment operating in unpaved areas. Effects could occur in the area of work activities and access points.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - Level of service-based air quality modeling analysis of roadway intersections potentially affected by the Project will be performed after an LPA is selected and will be presented in the FEIS.

Short-Term Construction – SEPTA’s construction plan, described in Section 2.8, would include an air quality management component. Strategies that SEPTA would consider including in the plan are minimizing construction equipment emissions by proper engine maintenance and code enforcement; dust control measures, such as application of water and calcium chloride to haul roads; providing and using truck wheel wash stands where vehicles enter public/paved streets; minimizing exposure of erosion prone areas; stabilizing exposed soils with grass, geotextile fabric, ground cover, or other finished surface in connection with construction activities; and covering or shielding stockpiled materials from the wind. Air quality control measures and BMPs for the Project would be confirmed during later stages of design when the details of project construction activities have been developed and finalized as part of construction contracts.

4.10 Noise and Vibration

This section describes the existing noise and vibration environment in the Project study area, identifies Project-related noise and vibration levels that would result from the Action Alternatives and recommended LPA design options, describes measures that have been incorporated into the design to reduce Project-related noise and vibration, and discusses potential minimization and mitigation measures to address impacts.

4.10.1 Regulatory Context and Methodology

Although NEPA forms the general legal framework for the consideration of environmental impacts, the potential noise and vibration impacts from the Project were evaluated in accordance with the Federal Transit Administration’s (FTA) *Transit Noise and Vibration Impact Assessment* guidelines. In addition, the CEQ regulations contain requirements for the description of the affected environment and environmental consequences for general resources, including noise and vibration.

4.10.1.1 Noise

Noise is “unwanted sound” and by this definition, the perception of noise is subjective. The loudness, or magnitude, of noise determines its intensity and is measured in decibels (dB) that can range from below 40 dB (e.g., the rustling of leaves) to over 100 dB (e.g., a rock concert). Various sound levels are used to quantify noise from transit sources, including a sound’s loudness, duration and tonal character. For example, the A-weighted decibel (dBA) is commonly used to describe the overall noise level because it more closely matches the human ear’s response to audible frequencies. Since the A-weighted decibel scale is logarithmic, a 10

dBA increase in a noise level is generally perceived as a doubling of loudness, while a 3 dBA increase in a noise level is just barely perceptible to the human ear.

Noise impacts of the Project are a key public issue. Transit noise impacts in the Project study area were assessed using FTA land use categories to describe noise sensitive receptors. The FTA land use categories and required noise metrics are shown in Table 4-10.1.

Table 4-10.1: FTA Land Use Categories and Noise Metrics

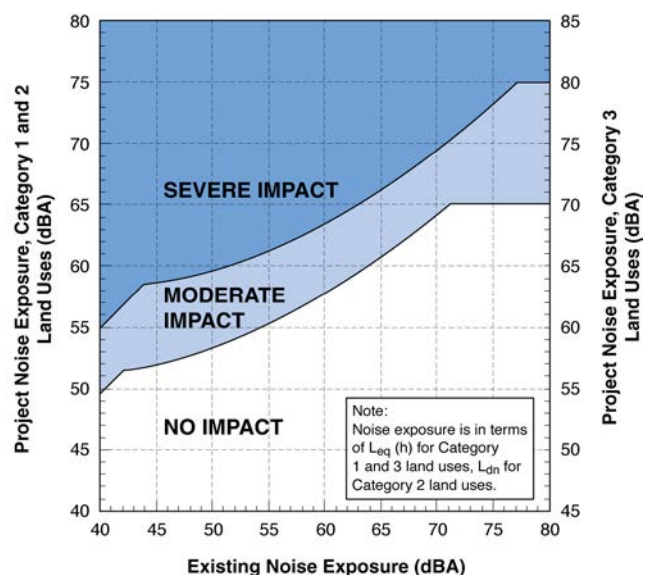
Land Use Category	Noise Metric	Description
1	$L_{eq}(h)$	Tracts of land set aside for serenity and quiet, such as outdoor amphitheaters, concert pavilions and historic landmarks.
2	L_{dn}	Buildings used for sleeping such as residences, hospitals, hotels and other areas where nighttime sensitivity to noise is of utmost importance.
3	$L_{eq}(h)$	Institutional land uses with primarily daytime and evening uses including schools, libraries, churches, museums, cemeteries, historic sites and parks, and certain recreational facilities used for study or meditation.

Notes: L_{dn} describes a receiver's cumulative noise exposure from all events over a full 24 hours, with events between 10:00 p.m. and 7:00 am increased by 10 decibels to account for greater nighttime sensitivity to noise. For other noise sensitive land uses, such as schools and libraries (FTA Land Use Category 3) and outdoor amphitheaters (FTA Land Use Category 1), the average hourly equivalent noise level (or $L_{eq}(h)$) is used to represent the peak operating period. Source: *Transit Noise and Vibration Impact Assessment*. FTA, Washington, DC. May 2006.

As shown in Figure 4-10.1, the FTA noise impact criteria are defined by two curves that allow increasing Project noise levels as existing noise increases up to a point, beyond which impact is determined based on Project noise alone.

The FTA noise criteria are delineated into two categories: *moderate* and *severe* impact (Figure 4-10.1). The *moderate* impact threshold defines areas where the change in noise is noticeable but may not be sufficient to cause a strong, adverse community reaction. The *severe* impact threshold defines the noise limits above which a substantial percentage of the population would be highly annoyed by new noise. The

Figure 4-10.1: FTA Project Noise Impact Criteria



Source: *Transit Noise and Vibration Impact Assessment*. FTA, Washington, DC. May 2006.

level of impact at any specific site can be determined by comparing the predicted future Project noise level to the existing noise level at the site.

The potential for noise impacts in King of Prussia was assessed in accordance with FTA's guidelines specified for a "General Assessment." A General Assessment provides potential impact data that enables a relative comparison among the alternatives. A Detailed Assessment involving noise modeling will be performed after an LPA is selected and the results will be presented in the FEIS.

Along the NHSL corridor, the potential change in train operational noise was qualitatively assessed as well. The assessment examined the proposed change in the number of vehicles operating on the line with the Project. This assessment used the train operational data in LTK's 2015 report, *NHSL Simulation of Existing and Future Operations*.

4.10.1.2 Vibration

The potential for vibration impacts from the Action Alternatives and recommended LPA design options due to train operations in the Project study area was also evaluated in accordance with the FTA guidelines. Ground-borne vibration from vehicle movements is usually the result of uneven interactions between wheels and the road or rail surfaces. Human responses are most accurately described by velocity; thus, vibration velocity level, expressed in decibels (VdB), is used to assess vibration impacts from transit projects.

The FTA vibration criteria for evaluating ground-borne vibration impacts from trains passing by that result in human annoyance are shown in Table 4-10.2. FTA's experience with community response to ground-borne vibration is that frequency of train events is a key factor in human response. Thus, FTA criteria distinguish between *frequent*, *occasional* and *infrequent* events, where the *frequent* events category is defined as more than 70 events per day. To be conservative, the worst case FTA *frequent* criterion was used to assess potential for ground-borne vibration impacts due to the Project.

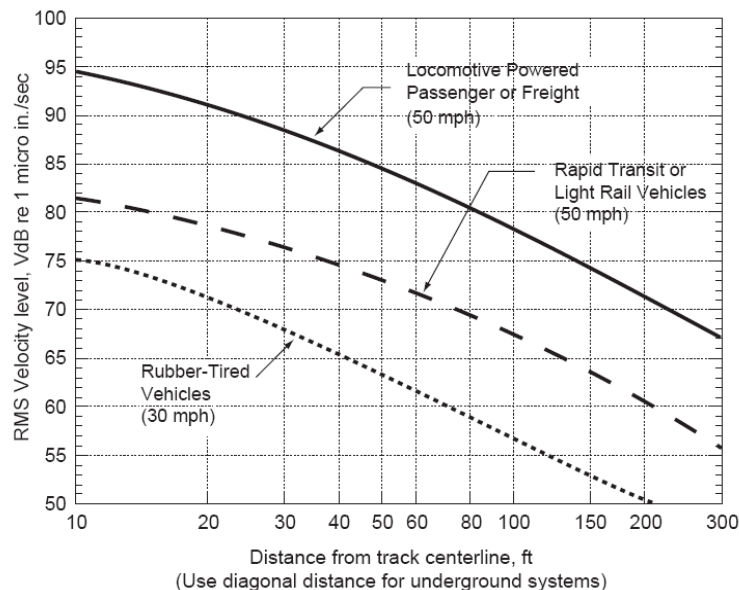
As shown in Table 4-10.2, vibration levels are identified by FTA's land use categories. In general, the vibration threshold of human perceptibility is approximately 65 VdB.

Table 4-10.2: Ground-Borne Vibration Impact Criteria for Annoyance during Operations and Construction

Receptor Land Use		Vibration Levels (VdB)		
Category	Description	Frequent Events	Occasional Events	Infrequent Events
1	Buildings where low vibration is essential for interior operations	65	65	65
2	Residences and buildings where people normally sleep	72	75	80
3	Daytime institutional and office use	75	78	83
Specific Buildings	TV/Recording Studios/Concert Halls	65	65	65
	Auditoriums	72	80	80
	Theaters	72	80	80

Source: *Transit Noise and Vibration Impact Assessment*. FTA. Washington, DC. May 2006.

Figure 4-10.2: FTA Generalized Ground Surface Vibration Curves



Source: *Transit Noise and Vibration Impact Assessment*. FTA, Washington, DC. May 2006.

Potential ground-borne vibration levels from rail vehicles passing by in King of Prussia were predicted using the default ground surface vibration curves in FTA's 2006 guidance manual on *Transit Noise and Vibration Impact Assessment* (Figure 4-10.2). The proposed low speed of the rail vehicles limits the potential for vibration impacts to nearby receptors.

Along the existing NHSL, the potential for vibration impacts was qualitatively assessed. Since the number of trains operating on the existing infrastructure would change but no changes to the existing NHSL guideway itself are proposed, the focus was on comparing the vehicle type and operating characteristics speed.

These factors have the potential to affect vibration.

4.10.1.3 Screening Distances for the Noise and Vibration Assessment

The FTA default screening distances for rail rapid transit of 350 feet for intervening buildings and 700 feet without intervening buildings were used to identify noise-sensitive receptors along the Action Alternative alignments. Over 800 noise- and vibration-sensitive receptors, including over 570 residences, were identified using this approach. As part of the evaluation, the FTA's "General Assessment" guidelines were used to enable a relative comparison of potential noise and vibration impacts among the Action Alternatives and recommended LPA design options at the current, conceptual level of design. The FTA's General Assessment noise and vibration guidelines (including the noise and ground-surface vibration curves) represent a conservative or worst-case evaluation of the potential for impacts.

4.10.1.4 Local Noise Restrictions

Although not binding for federally-funded and federally-significant projects, the Township of Upper Merion's Legislative Code (Article II, Section 107-4.1: Noise) restricts construction noise between 9:00 pm and 7:00 am. SEPTA would work with the Township should any waivers to this local ordinance be required as part of the temporary construction activities.

4.10.2 Affected Environment

Using FTA's typical estimates for noise exposure, the baseline noise levels in the screening distances described in Section 4.10.1.3 were specified using an estimated population density of

1,656-2,359 people per square mile⁵ and a distance of 200-500 feet from arterial roadways.⁶ FTA's assessment procedure translates these factors to a baseline day-night noise level range of 50 to 60 dBA depending on location. This range is a reasonable estimate of baseline noise because it accounts for traffic and other sources that contribute to the noise levels residents and other people in the developed Project study area experience. Although this estimate is a simplification of the actual background noise levels within the screening distances, it is conservative (worst case) and results in a higher number of impacts.

Traffic, including heavy trucks and buses, rarely creates perceptible ground-borne vibration unless vehicles are operating very close to buildings or there are irregularities in the road, such as potholes or expansion joints.

4.10.3 Environmental Consequences

4.10.3.1 No Action Alternative

In the No Action Alternative, projected noise and vibration levels, which are primarily influenced by traffic on King of Prussia Project study area roadways, are anticipated to be essentially the same as in the existing condition. It takes a doubling of traffic volumes and maintenance of existing operating speeds for the noise levels to increase by 3 dBA, the threshold where most listeners detect the change. However, as reported in Chapter 3 of the DEIS, forecast increases in traffic volumes on Project study area roadways are predicted in 2040, resulting in higher congestion levels and lower average travel speeds. These conditions would predict a noise level increase of less than 3 dBA.

Existing SEPTA operations along the NHSL contribute to a high background noise level dominated by SEPTA trains. This finding is based on trains consisting of 1-2 railcars and includes a distribution of operations between the daytime and nighttime periods based on the existing timetables.

Projected vibration levels in the No Action Alternative are expected to be similar to those currently experienced under existing conditions. As a result, there would be no vibration impacts associated with the No Action Alternative.

4.10.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

King of Prussia - Noise

The general screening assessment identified the potential for noise impacts by each Action Alternative and recommended LPA design option. The assessment findings indicate that 150 feet is the maximum distance from the proposed guideway that a noise level from Project operations could extend and have a potential impact on FTA Category 2 land uses (result in a

⁵ Population densities for Montgomery County and King of Prussia are based on information from Census.gov and Pennsylvania.HomeTownLocator.com, respectively.

⁶ In this assessment, proximity to arterial roadways was used as a factor since most residents that could be impacted by the Project are 200 feet or more from busy roadways. These residents are also at least 200 feet from active railroad corridors.

noise level greater than 60 dBA). For FTA Category 3 land uses, which have a different metric than Category 2 land uses ($L_{eq}(h)$ instead of L_{dn} , Table 4-10.1), the maximum distance within which a potential noise impact could occur is less than 10 feet.

In this noise screening and without consideration of noise control measures, the number and potential magnitude of impacts among the alternatives shown in Table 4-10.3, Figures 4-10.3, 4-10.4, 4-10.5, 4-10.6 and 4-10.7 show the potentially impacted properties for each Action Alternative. The potentially affected receptors include both Category 2 and 3 land uses that would be close to the proposed guideway (within 150 feet). In general, the PECO-1st Ave. Action Alternative potentially would have the most noise impacts (69) because a higher number of residences, parks and recreational facilities are near the proposed alignment compared to the other Action Alternatives. The PA Turnpike North/South Option potentially would have the fewest noise impacts because aligning the guideway on the north side of the PA Turnpike would reduce the number of noise impacts to residences (-29) compared to the recommended LPA (33). This difference results in the PA Turnpike North/South Option potentially having the fewest number of noise impacts among the Action Alternatives and recommended LPA design options (4 compared to 31 or more). The 9/11 Memorial Avoidance Option potentially would reduce noise impacts to community facilities (-1) by increasing the distance from the guideway to the 9/11 Memorial. No exceedances of the FTA *severe* impact criteria are predicted to occur.

Table 4-10.3: Predicted Noise Impacts By the Action Alternatives

Action Alternative			Moderate ¹			Severe ¹			Totals		
			FTA Land Use Category								
			1	2	3	1	2	3	1	2	3
Action Alternatives	PECO–1 st Ave.		0	66	3	0	0	0	0	66	3
	Design Options Compared to PECO/TP-1 st Ave.	PECO/TP-1 st Ave. (recommended LPA)	0	33	2	0	0	0	0	33	2
		PA Turnpike North/South Option	ND	-29	ND	ND	ND	ND	ND	-29	ND
		9/11 Memorial Avoidance Option	ND	ND	-1	ND	ND	ND	ND	ND	-1
	PECO/TP–N. Gulph		0	32	2	0	0	0	0	32	2
	US 202–1 st Ave.		0	29	3	0	0	0	0	29	3
	US 202–N. Gulph		0	28	3	0	0	0	0	28	3

ND = no difference compared to recommended LPA; 1 = The number of exceedances of the *moderate* and *severe* impact criteria categories are reported for each of the three FTA land use categories: Category 1 is highly sensitive receptors; Category 2 is residences; and Category 3 is institutional properties.

Source: AECOM, 2017. *KOP Rail Noise and Vibration Technical Memorandum*.

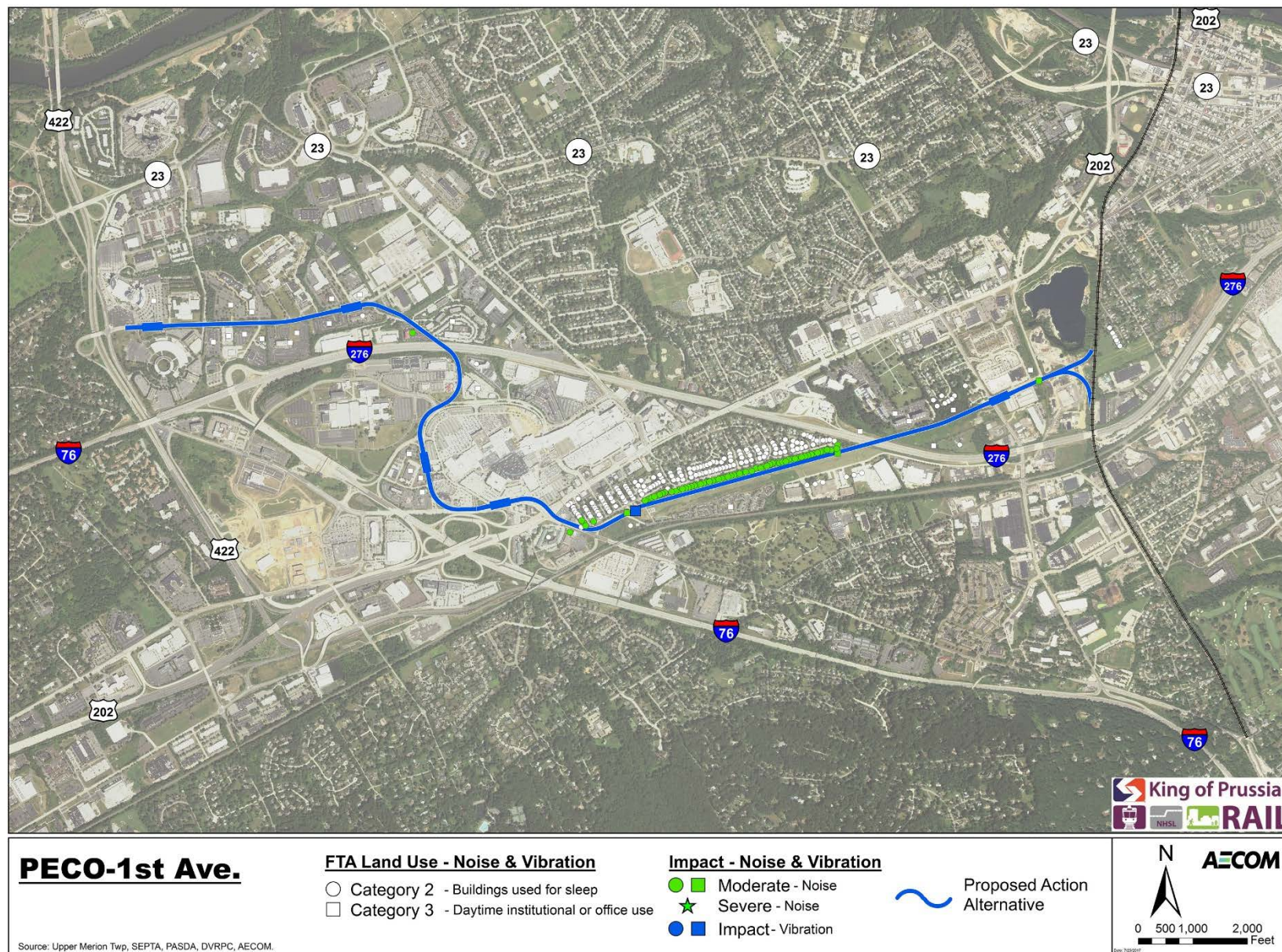
Figure 4-10.3: Predicted Noise and Vibration Impacts under the PECO–1st Ave. Action Alternative

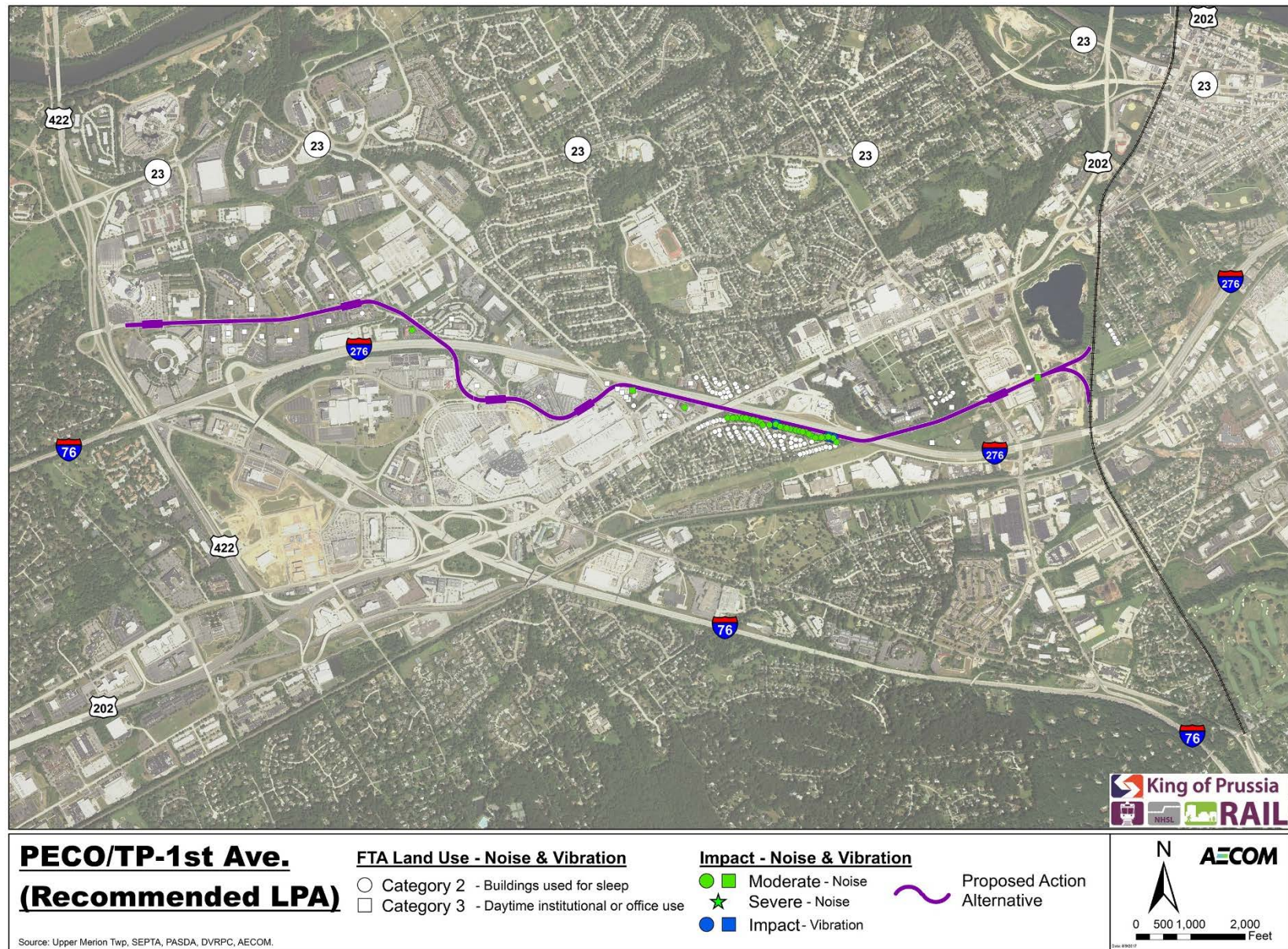
Figure 4-10.4: Predicted Noise and Vibration Impacts under the PECO/TP-1st Ave. Action Alternative

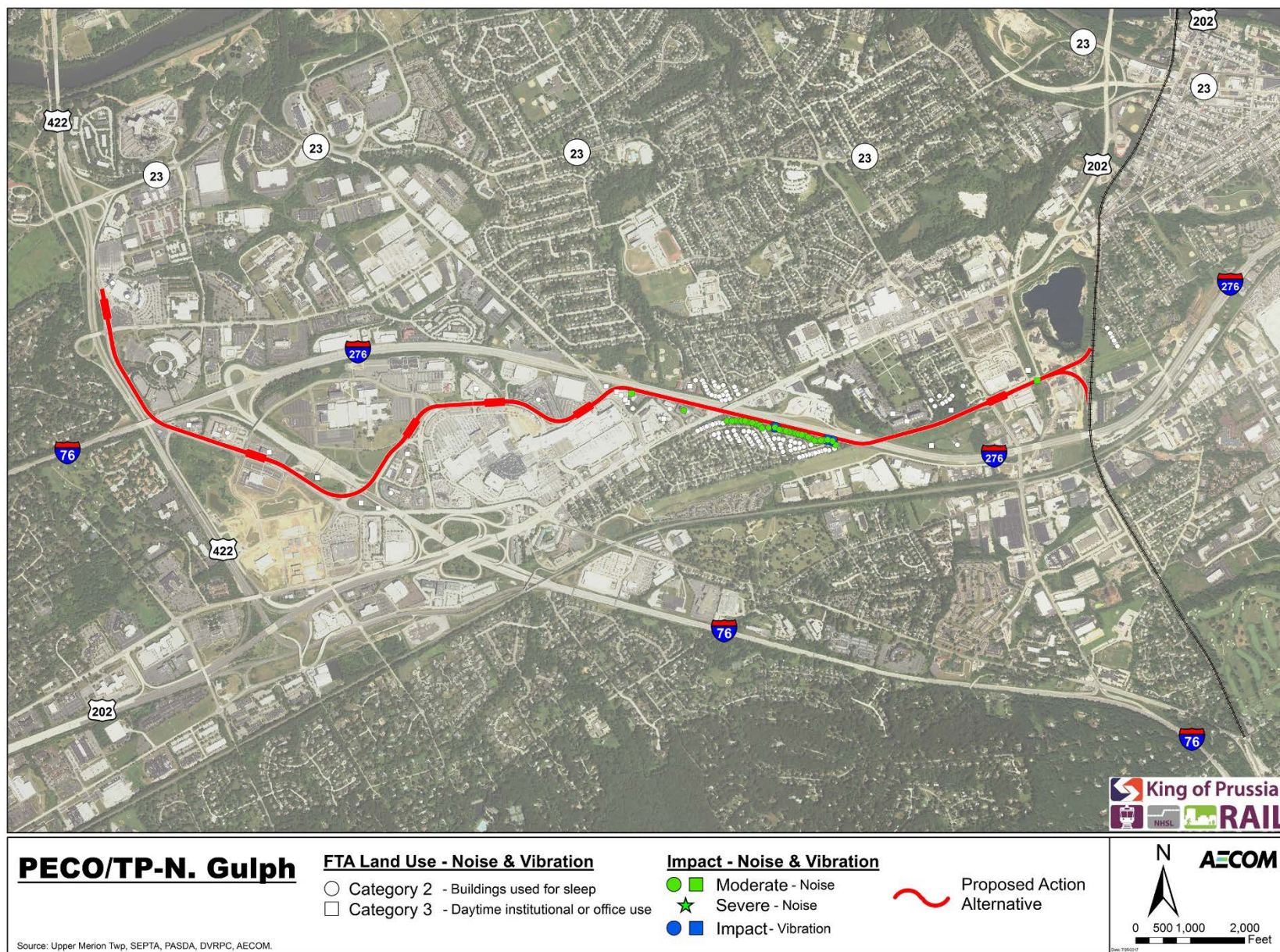
Figure 4-10.5: Predicted Noise and Vibration Impacts under PECO/TP-N. Gulph Action Alternative

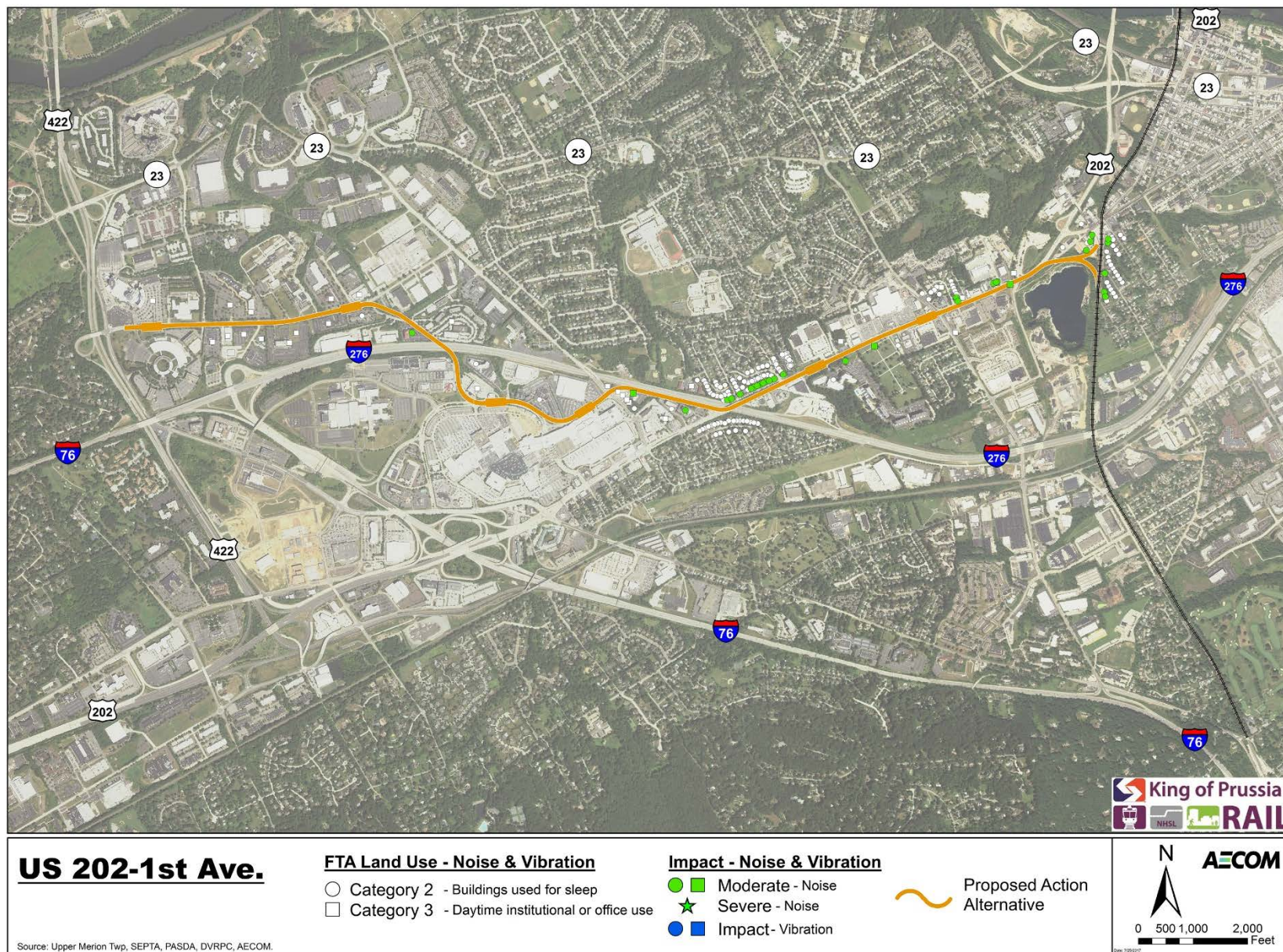
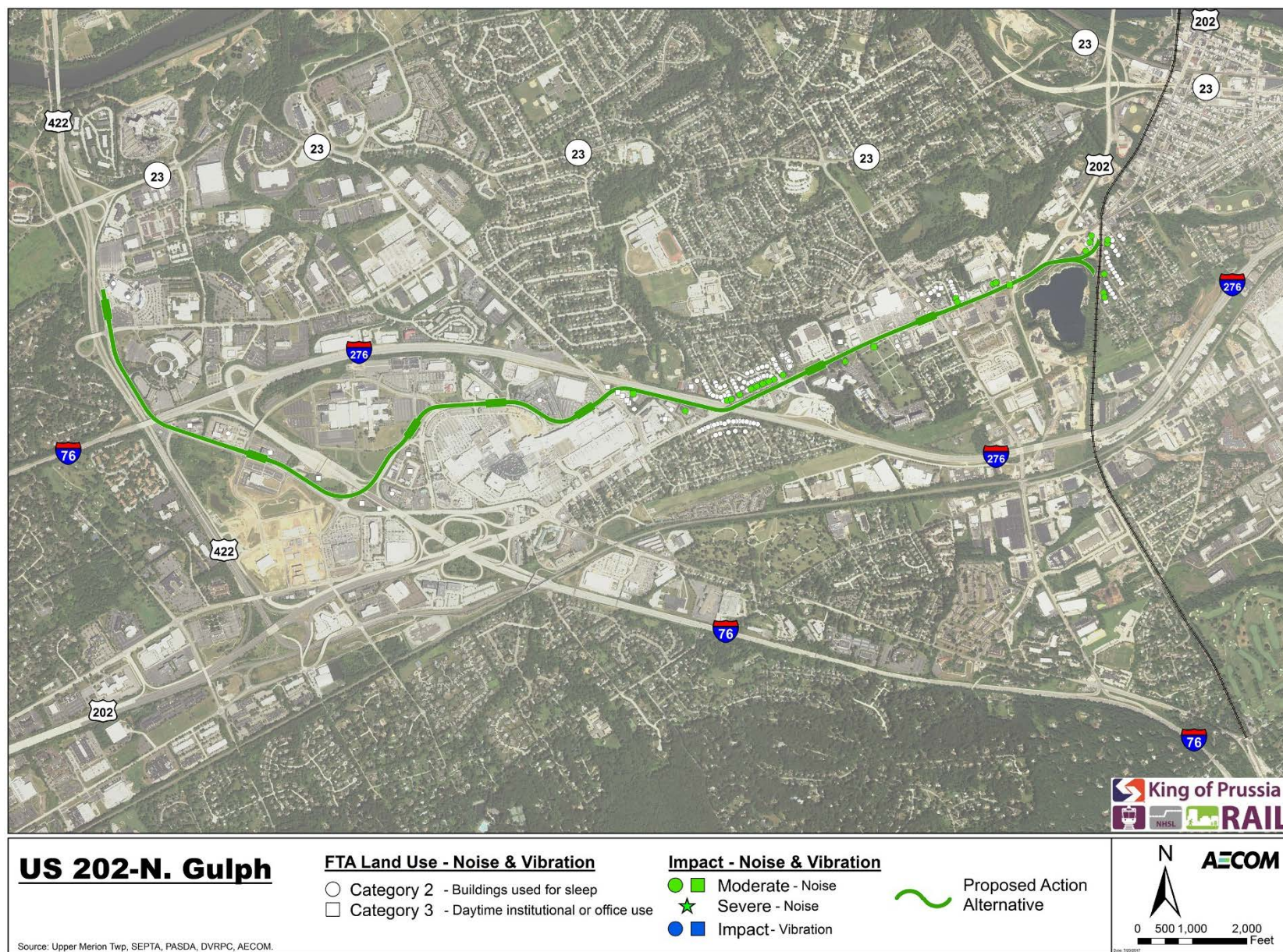
Figure 4-10.6: Predicted Noise and Vibration Impacts under the US 202–1st Ave. Action Alternative

Figure 4-10.7: Predicted Noise and Vibration Impacts under the US 202–N. Gulph Action Alternative

NHSL Corridor - Noise

Existing SEPTA operations along the NHSL contribute to a high background noise level dominated by SEPTA trains. Existing noise and future operational noise impacts for each Action Alternative and recommended LPA design option were estimated by modeling the existing train operations along a straight-line rail segment with representative receptors at nominal distances from the rail corridor. This estimate includes trains consisting of 1-2 railcars and a distribution of operations between the daytime and nighttime periods based on the existing timetables and proposed SEPTA operations simulations with the Project.

Based on the proposed train schedules and train operational data in LTK's 2015 report, *NHSL Simulation of Existing and Future Operations*, rail operations with each Action Alternative and recommended LPA design option would be similar with an increase in train trips and ambient noise levels above the existing condition as shown in Table 4-10.4.

Table 4-10.4: Train Trips by Existing NHSL Segment – Existing Conditions and with the Project

Existing NHSL Rail Segment	Train Trips under Existing Condition	Train Trips with the Project	Percent Increase in Train Trips
Project/NHSL junction to the Norristown Transportation Center	140	256	83%
Project/NHSL junction to the Hughes Park Station	140	304	117%
Bryn Mawr to the 69th Street Transportation Center	236	350	48%

As a result of this assessment, each Action Alternative and recommended LPA design option is predicted to result in an FTA “moderate” increase in overall noise at representative receptors due to SEPTA rail operations on the NHSL. This increase in noise would be highest along the Project/NHSL junction-to-Hughes Park Station segment because of the predicted 117% change in number of trains per day. However, no “severe” noise impacts are expected to occur anywhere along the NHSL corridor including this segment. This conclusion is based on a high-level analysis rather than a detailed assessment of the NHSL corridor itself.

King of Prussia - Vibration

The vibration general screening assessment for the Project identifies the potential for vibration impacts by each Action Alternative and recommended LPA design option. The assessment findings indicate that 65 feet is the maximum distance from the proposed guideway that a vibration level from Project operations could extend and have a potential impact on FTA Category 2 land uses (resulting in “frequent” vibration event activity). For FTA Category 3 land uses, which have a different threshold than Category 2 land uses (Table 4-10.1), the maximum distance within which a potential vibration impact could occur is 45 feet.

In this vibration screening, and without consideration of vibration control measures, the numbers of potential vibration impacts of each Action Alternative and recommended LPA design option are shown in Table 4-10.5. Figures 4-10.3, 4-10.4, 4-10.5, 4-10.6 and 4-10.7 show the potentially impacted properties for each Action Alternative. The US 202-1st Ave. and US 202-N. Gulph Action Alternatives and the PA Turnpike North/South Option potentially would cause no exceedances of the FTA vibration impact criteria. The PA Turnpike North/South Option potentially would have fewer vibration impacts compared to the recommended LPA because aligning the guideway on the north side of the PA Turnpike would reduce the number of impacts to residences (-3) compared to the recommended LPA (3). The PECO-1st Ave. Action Alternative is predicted to have a vibration impact to one institutional receptor (Kingwood Road Park) in the King of Prussia study area because the guideway would cross part of the park property. The PECO/TP-1st Ave. and PECO/TP-N. Gulph Action Alternatives, and the 9/11 Memorial Avoidance Option potentially would each have vibration impacts to three properties.

Table 4-10.5: Predicted Vibration Impacts by the Action Alternatives

Action Alternative				FTA Land-use Category ¹		
				1	2	3
Action Alternatives	PECO–1 st Ave.			0	0	1
	PECO/TP-1 st Ave. and its Design Options	PECO/TP-1 st Ave. (recommended LPA)		0	3	0
		Design Options Compared to PECO/TP-1 st Ave.	PA Turnpike North/South Option	ND	-3	ND
			9/11 Memorial Avoidance Option	ND	ND	ND
	PECO/TP–N. Gulph			0	3	0
	US 202-1 st Ave.			0	0	0
	US 202–N. Gulph			0	0	0

Notes: ND = no difference compared to recommended LPA. The FTA vibration impact criteria used to assess impact reflects the "frequent" event activity level (i.e., more than 70 events per day); 1 = The number of exceedances of the *moderate* and *severe* impact criteria categories are reported for each of the three FTA land use categories: Category 1 is highly sensitive receptors; Category 2 is residences; and Category 3 is institutional properties.

Source: AECOM 2017. *KOP Rail Noise and Vibration Technical Memorandum*.

SHORT-TERM CONSTRUCTION EFFECTS

Noise impacts from temporary construction activities are a function of the noise generated by construction equipment, the proximity of construction to sensitive land uses, and the timing and duration of the noise generating activity. Typically, the various phases of a construction project would generate different levels and types of noise based on the mix of equipment in use at that time. Noise sources typically include but are not limited to the diesel engine, pavement breaking and vehicle back-up alarms.

Construction activities can result in varying degrees of ground vibration, depending on the equipment and methods used. Operation of construction equipment can cause vibration that spreads through the ground and diminishes in strength with distance.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - The potential noise and vibration impacts identified in the general screening assessment indicate that more detailed noise analysis and consideration of minimization and mitigation strategies is warranted. SEPTA will undertake this further analysis during the FEIS, which will focus on the LPA selected after the DEIS public comment period. Detailed analysis typically includes measurements and modeling to characterize existing and future noise and vibration conditions. Where impacts are indicated by detailed analysis, SEPTA will consider noise control strategies that are both feasible and reasonable to address Project-related noise impacts.

For noise control, measures in King of Prussia may include barriers such as guideway walls, particularly on elevated structures that support track, and wheel-rail friction modifiers to eliminate or reduce the severity of wheel squeal. These noise mitigation strategies can reduce and possibly eliminate noise from vehicle operations. Vibration control measures may include resilient track fasteners or other measures that eliminate or reduce vibration transmission from the track to the guideway structure.

Short-Term Construction - SEPTA's construction plan, described in Section 2.8, would include a noise and vibration management component. Measures that SEPTA would consider employing to minimize construction noise fall into two general categories: 1) design considerations; and 2) construction staging or sequencing of operations. Design considerations would include erecting temporary walls or earth berms between the noise source and the sensitive receptor, identifying haul routes that avoid sensitive receptors to the extent reasonably feasible, and locating stationary noise generating equipment at a distance from sensitive receptors. To the extent reasonably feasible, Project construction activities would be planned to avoid prolonged noise generating activities and to minimize construction activities during the most sensitive times of day or night. SEPTA would also consider including contractor provisions such as requiring mufflers to be installed and maintained on diesel equipment and air compressors.

Measures that SEPTA would consider employing to minimize construction vibration include limiting hours of loading and hauling operations, stockpiling excavated materials in station areas during non-haul hours, and using rubber-tired excavation equipment in lieu of tracked equipment.

4.11 Natural Resources

This section describes the natural resources in the Project study area, discusses the potential impacts of the Action Alternatives, the recommended LPA design options and the No Action Alternative on these resources. This section also describes the proposed mitigation measures to mitigate for potential impacts on natural resources. Natural resources include geology, soils, wildlife habitat, threatened and endangered species, waterways, wetlands, sole source aquifers and wellhead protection areas.

4.11.1 Regulatory Context and Methodology

The following statutes and regulations apply to natural resources:

- **Endangered Species Act of 1973** – a federal law regulated by the United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS) to protect federally-listed rare, endangered and threatened species.
- **Migratory Bird Treaty Act** – This federal law makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird or the parts, nests or eggs of such birds except under the terms of a valid permit issued by the USFWS pursuant to federal regulations.
- **Section 404/401 of the Clean Water Act** – a federal law regulated by the U.S. Army Corps of Engineers (USACE) for impacts to streams and the aquatic biota and habitat within them.
- **Federal Executive Orders 11988 and 13690** – These federal orders on floodplain management require federal agencies to avoid to the extent possible the long and short-term adverse impacts on floodplains whenever there is a practicable alternative. The more recent Executive Order 13690 revises the earlier order and provides a new Federal Flood Risk Management Standard. The new standard provides agencies with tools and greater flexibility to address increased risks from sea level rise and flooding events.
- **USDOT Order 5650.2, Floodplain Management and Protection** – a federal order that requires federal agencies to avoid to the extent possible impacts to floodplains, as well as to protect the function of floodplains.
- **The Safe Drinking Water Act** - a federal law that protects drinking water quality and authorizes the Sole Source Aquifer Program, which provides oversight of federally-funded projects in such areas. The relevant portion of this federal law applies to wellhead protection areas and is implemented through state governments. Wellhead protection areas are zones around public water supply wells wherein the land area is regulated to prevent contamination of a public water system.
- **Wild Resource Conservation Act (32 Pennsylvania Statute 5301-5314)** – Chapter 21 pertains to endangered or threatened species and Chapter 45 pertains to the conservation of native wild plants.
- **Dam Safety and Waterway Management Act** – Chapter 105 of the state law regulates activities in floodplains.
- **Erosion and Sediment Control** - Chapter 102 is a state regulation requiring BMPs to minimize the potential for erosion and sedimentation in order to protect water resources.

The Project study area in King of Prussia was considered in the assessment of potential impacts on natural resources. The Project study area at 69th Street Transportation Center was not considered in this assessment as it is a developed area with no natural resources.

The following are brief descriptions of the data sources used in this assessment:

- Federal sources:
 - The National Resources Conservation Service (NRCS) Web Soil Survey;
 - USFWS National Wetland Inventory (NWI) Map;
 - Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM);
 - Sole Source Aquifer Determination for the regional New Jersey Coastal Plain Aquifer System;
- Pennsylvania and other sources:
 - PA Department of Environmental Protection (PADEP) eMapPA database accessed through the PADEP website;
 - PA Geospatial Data Clearinghouse, Pennsylvania Spatial Data Access (PASDA) website;
 - PA Geological Survey (PaGEODE) Interactive Map;
 - PA Department of Conservation and Natural Resources (DCNR) Physiographic Provinces of Pennsylvania map;
 - Sinkholes and Karst-related Features of Montgomery County, Pennsylvania, Open-File Report 93-02, (Kochanov 1993);
 - Earthquake Epicenters in and Near Pennsylvania Map (Faill 2004);
 - PA Natural Heritage Program (PNHP), Pennsylvania Natural Diversity Inventory (PNDI) receipts.

Field reconnaissance of the Project study area was undertaken in 2015 to verify and supplement desktop data sources. A field visit with the US Army Corps of Engineers occurred on September 18, 2015 at which time locations of potential wetlands were investigated. Additional information regarding the natural resources review and assessment may be found in the 2017 *Natural Resources Technical Memorandum* prepared for the Project.

4.11.2 Affected Environment

4.11.2.1 Geology

The Project study area is within portions of the Piedmont Lowland and the Gettysburg-Newark Lowland sections of the Piedmont Province of Pennsylvania, and it is characterized as scattered low hills and ridges. The underlying bedrock formations are composed of sedimentary limestone, dolomite and sandstone rock. The limestone is marked by karst features that are

found in groups primarily in the following general locations: PECO right-of-way, Valley Forge Homes' area and adjacent PA Turnpike, King of Prussia Mall, and the VFCR. Karst formations are characterized by sinkholes, geologic surface depressions, caves and subsurface drainage and are indicators of those places where subsidence is considered to be more likely to occur. However, subsurface karst features can occur where there is no discernible surface expression indicating their location (Kochanov 1993). Sinkholes are a key public issue.

4.11.2.2 Soils

Soils in the Project study area are primarily categorized as deep or moderately deep, well-drained silt loams located on upland areas. Other less well-drained to poorly-drained silty soils are found in low-lying areas along streams and wetlands. Soils designated as prime farmland or farmland of statewide importance are located within the Project study area; however, most of these soils have undergone residential or commercial development, including areas within the PECO utility right-of-way. Although portions of the utility right-of-way contain undisturbed farmland soils, due to the right-of-way's dedicated use, agricultural activities are not permitted. In the existing condition, no agricultural activities occur within the Project study area.

4.11.2.3 Forests and Fields

Due to urban development, contiguous forest cover greater than 10 acres has been eliminated from the Project study area. Small patches of forest remain, generally along stream corridors, property boundaries and rail/roadway rights-of-way. The PECO right-of-way provides successional-field areas. Wildlife in the Project study area typically includes commonly occurring species that tolerate human proximity and can find food and shelter in these fringe areas.

4.11.2.4 Threatened and Endangered Species

SEPTA submitted an online PNDI records request to identify known protected species within the Project study area (see Appendix B). The PNDI is an online screening tool, which identifies federally-listed as well as state-listed species within a project area determined by the user. The results of the PNDI search for the Project indicate that no federally-listed threatened or endangered species are known to occur in the Project study area.

In regard to state-protected species, the PNDI search identified the portion of the Project study area in the vicinity of US Route 202 as being within the range of one State endangered plant species – the southern red oak (*Quercus falcata*). Review of the Pennsylvania Flora Project database of the Morris Arboretum (www.paflora.org) indicates known occurrence of southern red oak at multiple sites in the southeastern portion of Montgomery County, the region where Upper Merion Township and its neighboring municipalities are located. According to the website, the mapped occurrences of the tree in the county are at the northern edge of its known range. This information suggests some probability exists for the southern red oak to occur in the Project study area.

The PNDI also identified the need for SEPTA to coordinate with the PA Fish & Boat Commission as the Project advances in regard to the potential for Project impacts on study area waterways.

4.11.2.5 Waterways

The Project study area is within the drainage area of the Schuylkill River to the north. The main stem of the Schuylkill River at the northern edge of the transportation study area is a designated Pennsylvania Scenic River; no federally designated Wild and Scenic Rivers are within the transportation study area. A Pennsylvania Scenic River is a free-flowing water body that supports water-based recreation, fish and aquatic life as defined by the PA DCNR.

Four waterways drain to the Schuylkill River, crossing the Project study area as each drains northward. From east to west the waterways are: Crow Creek unnamed tributary (UNT) (known also as Abrams Run), Crow Creek, Trout Creek UNT, and Trout Creek (see maps, Appendix A). Each waterway is assumed to be within the USACE's permitting jurisdiction pursuant to Section 404 of the Clean Water Act.

In the Project study area, most natural stream channels have been modified to run in a manmade channel, closed pipe, constructed ditch or other conveyance strategy. While each of these waterways is classified by PADEP as supporting migratory fish, water quality in each is impaired due to urban runoff/storm sewers, water/flow variability, habitat modification/channelization and/or siltation. The 100-year flood hazard area of each waterway as mapped by FEMA is in some cases contained within the channelized area; in other cases, the floodplain extends beyond the channel to neighboring areas.

4.11.2.6 Wetlands

Several freshwater wetlands and potential wetlands were preliminarily identified in the Project study area through field investigations in 2015, review of NWI maps and field observation with the USACE.

There are four locations where wetlands may occur in the Project study area, including:

- Potential historic wetland near intersection bend in Saulin Boulevard – Has been modified to include a concrete drainage structure and serve a stormwater management function.
- Potential wetlands in Crow Creek floodplain near PA Turnpike Eastbound - Includes stormwater drainage ditches associated with PA Turnpike.
- Potential wetlands in the Trout Creek floodplain near an access driveway serving Hyatt House and Toys-R-Us.
- Wetlands at N. Gulph Road, northwest of Village Drive - Appears to receive stormwater runoff from the PA Turnpike Toll Plaza located directly adjacent.

4.11.2.7 Sole Source Aquifers

A sole source aquifer (SSA) is a water-bearing geologic formation that has been designated by the USEPA as the only or principal source of drinking water for an area. An SSA supplies at least 50% of the drinking water consumed in the overlying area. The Project study area overlies a portion of the New Jersey Coastal Plain Sole Source Aquifer according to the Designated Sole Source Aquifers in EPA Region III map and the *Sole Source Aquifer Determination for the New*

Jersey Coastal Plain Aquifer System. This means that the King of Prussia area is part of a large, multi-state geographic area in which stormwater soaks into the ground and supplies the underlying, water-bearing layers. The ability of this recharge activity to occur depends in part on what is covering the ground surface and the characteristics of the soils through which the water must pass. As large parts of the Project study area are developed with pavement and buildings, generally considered impervious surfaces, little water is absorbed into the ground. Thus, the Project study area provides limited recharge to the underlying aquifer.

4.11.2.8 Wellhead Protection Areas

A wellhead protection area is the land area surrounding a potable well or wells that is regulated to prevent contamination of a public, potable water supply. The transportation study area contains five wellhead protection areas associated with public, potable water wells.

4.11.3 Environmental Consequences

This section describes the potential impacts of the Action Alternatives, the recommended LPA design options and the No Action Alternative to natural resources.

4.11.3.1 No Action Alternative

The planned projects in the No Action Alternative have the potential to directly impact natural resources due to land clearing and grading as well as waterway, wetlands and floodplain crossings or encroachments. The sponsors of these projects will be responsible for assessing the potential impacts of the projects on natural resources, and for coordinating with the Township and relevant regulatory agencies during the development of their projects. Each planned project is at some risk for ground subsidence due to the underlying karst geology. Project sponsors will be responsible for managing that risk in the design of each facility.

4.11.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

Geology

Each Action Alternative and recommended LPA design option has a similar risk regarding underlying geologic conditions as each alignment would cross known areas of karst formations; among these are PECO right-of-way, Valley Forge Homes area and adjacent PA Turnpike, King of Prussia Mall and the VFCR. The risk relates to the integrity of the underlying geology to support the Project infrastructure and the potential for sinkhole events.

Soils

Although the use of existing, transportation corridors by each Action Alternative and recommended LPA design option would reduce the potential for disturbing soils not presently covered by impervious pavement or buildings, constructing any of the Action Alternatives or recommended LPA design options would cause some soil excavation and movement. Typically, natural soils allow for water from precipitation to soak into the soil, potentially reaching and replenishing the underlying aquifer. Impervious surfaces, such as pavement or buildings, block stormwater from infiltrating the underlying soil. Soil disturbance can increase the potential for erosion of exposed soils. Covering soils with new impervious surfaces such as pavement

reduces the area of land where water can soak into the soil, potentially reducing the amount of stormwater that can soak into the soil and underlying aquifer. The PECO-1st Ave. Action Alternative would disturb the most amount of soil (12.9 acres). The US 202-1st Ave. Action Alternative would disturb the least amount of soils (3.9 acres). Soil disturbance estimates for the other alternatives are US 202-N. Gulph (4.9 acres), PECO/TP-1st Ave. and the recommended LPA design options (9.8 acres), and PECO/TP-N. Gulph (11.0 acres).

Forests and Fields

Each Action Alternative and recommended LPA design option has the potential to impact forests and fields where the alignments are not in developed areas. As indicated in Table 4-11.1, the PECO/TP-1st Ave. Action Alternative, the PA Turnpike North/South Option and the 9/11 Memorial Avoidance Option would impact the most forested area (5.4, 4.3 and 3.9 acres, respectively), while the US 202-N. Gulph Action Alternative would impact the least forested area (1.1 acres). The recommended LPA design options would have fewer acres of potential impacts to forests than the recommended LPA because less forested area occurs within the LODs of the recommended LPA design options. The PECO-1st Ave. Action Alternative has the potential to impact the most field area (8.0 acres), while neither the US 202-1st Ave. Action Alternative nor the US 202-N. Gulph Action Alternative would impact fields. The recommended LPA and each of its design options potentially would have the same area of impact on fields (3.5 acres) because the guideway alignments are the same where the impacts would occur. Permanent impact to forests and fields means the vegetated areas that the Project would directly impact would be removed and replaced with Project elements. Commonly occurring wildlife using the impacted areas would be displaced and would have to find food and shelter in other forest and field areas.

Table 4-11.1: Potential Forest and Field Impacts

Action Alternatives	Action Alternative		Forest (Acres)	Fields (Acres)	
	PECO-1 st Ave.		2.9	8.0	
	PECO/TP-1 st Ave. and its Design Options	PECO/TP-1 st Ave. (recommended LPA)		5.4	3.5
		Design Options Compared to PECO/TP-1 st Ave.	PA Turnpike North/South Option	-1.1	ND
			9/11 Memorial Avoidance Option	-1.5	ND
	PECO/TP-N. Gulph		3.7	3.5	
	US 202-1 st Ave.		2.8	0.0	
	US 202-N. Gulph		1.1	0.0	

ND = no difference compared to recommended LPA

Source: Malick & Scherer, 2017. *KOP Rail Natural Resources Technical Memorandum*.

Threatened and Endangered Species

No federally-listed threatened or endangered species are identified in the Project study area for each Action Alternative or recommended LPA design option. The US 202-1st Ave. and US 202-N. Gulph Action Alternatives are within the known range of the State endangered southern red oak (*Quercus falcata*), described in Section 4.11.2.4. In that description, the southern red oak has some probability of occurring in the Project study area. The assessment of potential for the US 202-1st Ave. or US 202-N. Gulph Action Alternatives to impact the oak tree, if present, was

undertaken by considering potential impacts on forests in Section 4.11.2.4 and Table 4-11.1 as the tree is a forest dweller. In this assessment, the US 202-1st Ave. and US 202-N. Gulph Action Alternatives have the potential to impact the tree, if it is present, because each has the potential to impact forests (2.8 acres and 1.1 acres, respectively).

A potential impact to the southern red oak could occur if SEPTA ultimately selects either the US 202-1st Ave. or US 202-N. Gulph Action Alternative. An impact would occur if the Project were to directly, physically impact any part of the plant by partial or complete removal of the plant during Project construction, if present. A potential impact could also occur if the Project were to change the habitat of the plant, if present, such as by shading from the elevated guideway structure. The other Action Alternatives and recommended LPA design options are not within a known areas for the southern red oak. As a result, a potential impact on the southern red oak would not occur.

In addition to identifying the southern red oak, the PNDI results identified each Action Alternative as having the potential to affect waterway resources under the jurisdiction of the PA Fish and Boat Commission. Although no specific threatened or endangered species was identified in the PNDI, the need for coordination with the Commission was specified. SEPTA will undertake this coordination activity for the selected LPA during the FEIS when refinement of the conceptual design at waterway crossings will enable an evaluation of potential direct impacts as well as other effects the Commission may require such as drainage, shading or vegetation removal.

Waterways

At each waterway crossing in the Project study area, the guideway in each Action Alternative and recommended LPA design option would be elevated and would span the waterway so as to avoid or minimize impacting the creeks and their floodplains. The elevated guideway would be designed to not constrain water flow or floodplain capacity.

A portion of the Action Alternatives and recommended LPA design options that would use 1st Avenue would cross and then parallel the north side of Trout Creek UNT for a short distance in the vicinity of the American Avenue/1st Avenue intersection. SEPTA proposes that the guideway supports be co-aligned with the right-of-way of the former NS North Abrams Industrial Track outside the waterway channel to minimize the potential for waterway impacts.

To enable access and work area during construction, SEPTA anticipates that trees and vegetation within the footprint of the guideway structure would be removed at the waterway crossings and along the portion of the former NS North Abrams Industrial Track that the guideway would use.

Wetlands

Four of the five Action Alternatives as well as the recommended LPA design options would cross a potential wetland in the Crow Creek drainage area near the PA Turnpike Eastbound:

- PECO/TP-1st Ave. Action Alternative (recommended LPA)
 - PA Turnpike North/South Option

- 9/11 Memorial Avoidance Option
- PECO/TP-N. Gulph Action Alternative
- US 202-1st Ave. Action Alternative
- US 202-N. Gulph Action Alternative

At this location, the elevated guideway of each Action Alternative or recommended LPA design option would span the creek and wetland, overlying approximately 0.05 acre of the wetland. No direct impact or filling is proposed within the wetland area. The PECO-1st Ave. Action Alternative would have no impact on wetlands.

Sole Source Aquifers

The potential for each Action Alternatives and recommended LPA design option to change the amount of stormwater recharging to the underlying New Jersey Coastal Plain Sole Source Aquifer was measured by quantifying the amount of new impervious surfaces proposed in areas that are not covered with pavement and buildings in the existing condition. The PECO-1st Ave. Action Alternative would create the most amount of new impervious surfaces (12.9 acres), while the US 202-1st Ave. and US 202-N. Gulph Action Alternatives would create the least amount of new impervious surfaces (3.9 and 4.9 acres, respectively). The recommended LPA and its design options potentially would have the same amount of new impervious surface area (9.8 acres). Table 4-11.2 compares the estimated amounts of proposed, new impervious surfaces for each of the Action Alternatives and recommended LPA design options. As the Project study area provides limited recharge capability in the existing condition, none of the alternatives is expected to change that capability in the future.

Table 4-11.2: Estimated Change in Impervious Surface Area

Action Alternatives	Action Alternative		Amount of New Impervious Surface Area (acres)	
	PECO-1 st Ave.		12.9	
	PECO/TP-1 ST AVE. AND DESIGN OPTIONS	PECO/TP-1 st Ave. (recommended LPA)		9.8
		Design Options Compared to PECO/TP-1 ST Ave.	PA Turnpike North/South Option	ND
			9/11 Memorial Avoidance Option	ND
		PECO/TP-N. Gulph		11.0
	US 202-1 st Ave.		3.9	
	US 202-N. Gulph		4.9	

Note: ND = no difference compared to the recommended LPA

Source: Malick & Scherer, 2017. *KOP Rail Natural Resources Technical Memorandum*.

Wellhead Protection Areas

None of the Action Alternatives or recommended LPA design options is expected to affect the ability of wellhead protection areas to serve their function.

SHORT-TERM CONSTRUCTION EFFECTS

Excavating, grading, embankment construction and soil stockpiling would be required during the construction of any one of the Action Alternatives or recommended LPA design options. Temporarily exposed soils could result in increased site erosion and sedimentation impacts to nearby water resources. The construction of pier footings and foundations, and possibly other system elements, could require dewatering of excavation sites. The dewatering water could contain suspended sediments and contaminants that could affect receiving waters. Excavation for footings and foundations could encounter potentially problematic subsurface conditions, such as karst formations, requiring specific construction practices. Construction activities also have the potential to cause soil contamination from leaks or spills (Section 4.12.3.2).

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - After selecting an LPA, SEPTA would advance design, taking into special consideration the potential impacts the proposed Project could have on the community and the environment. The following list describes potential strategies that SEPTA would consider to avoid or minimize and mitigate potential impacts on natural resources:

- **Geology** - SEPTA would undertake detailed geotechnical studies to assess and characterize the potential risk, and develop design solutions that take into consideration geologic conditions. In doing so, SEPTA would consult with PECO, PennDOT, the PA Turnpike Commission, Upper Merion Township and other Project study area stakeholders regarding geologic conditions and appropriate design within the rights-of-way that SEPTA would use.

SEPTA would take into special consideration potential impacts that its actions could have due to the underlying karst formation conditions on and near the proposed Project. These considerations would begin during design with the geotechnical studies and agency consultation described above. With this understanding of actual characteristics, SEPTA would refine the alignment and design the structural supports in a manner suitable to these subsurface conditions. As subsurface conditions can be unpredictable, SEPTA would build flexibility and redundancy into the design of the guideway and other structures to minimize potential subsurface problems and impacts.

- **Soils** - During design, SEPTA would undertake soils studies to assess and characterize the capabilities and limitations of soils. These data would be used to develop design solutions that take into consideration soil conditions.
- **Forests and Fields** - SEPTA would consider means to avoid or minimize impacts to existing forests and fields through design refinements as the Project advances.
- **Threatened and Endangered Species** – If the US 202-1st Ave. or US 202-N. Gulph Action Alternative is selected for implementation, SEPTA would consult with the DCNR as indicated in the PNDI. Coordination activities would begin with determining whether and where the southern red oak occurs within the Project study area. In the event the tree is found within the LOD, SEPTA would continue coordinating with state regulators to assess the potential for the Project to affect the species. If an impact is likely, SEPTA

may be required to develop a Critical Habitat/Endangered Species Mitigation Plan (CMP) for the Project. The CMP would include BMPs and mitigation opportunities for the identified species. BMPs typically include but are not limited to the following:

- Contractor training and construction oversight by qualified environmental professionals
- Exclusion fences to mark the limits of allowable construction disturbance and to protect rare species from inadvertent disturbance
- Habitat restoration plan

As indicated by the PNDI, SEPTA will coordinate with the PA Fish and Boat Commission during the FEIS in regard to potential for impacts of the selected LPA to waterways.

- Waterways and Wetlands - SEPTA would consider means to avoid wetland and waterway impacts through design refinements. In that regard, SEPTA will coordinate with the USACE and PADEP, which have jurisdiction over wetlands in the Project study area. SEPTA will obtain appropriate permits and approvals where impacts cannot be avoided. Such permits potentially include a Section 404 nationwide permit authorization for wetlands impacts and a Pennsylvania Programmatic General Permit if waterway impacts cannot be avoided (Section 4.16). The permits and approvals will include environmental protection conditions and potential mitigation measures that SEPTA would be required to implement to address negative impacts.

SEPTA would work to minimize impacts of new stormwater runoff from its structures using stormwater management best management practices (BMPs), which are techniques, non-structural or structural controls, used to manage stormwater runoff. A partial list of commonly used stormwater management BMPs includes the following:

- Rain gardens
- Grassed swales
- Green parking design
- Permeable pavement and pavers
- Rain cisterns
- Riparian buffers
- Sole Source Aquifers - SEPTA would consider means to reduce the amount of new impervious surfaces through design refinements, such as minimizing the dimensions of the guideway, pavement and structures.

Specific measures would be selected by SEPTA in coordination with federal and state regulatory agencies such as the PADEP and USACE as the Project design advances.

Short-Term Construction – As described in Section 2.8, SEPTA would develop and implement a Project-specific construction plan that includes an environmental compliance component with provisions to avoid or minimize potential environmental impacts during construction. Potential

strategies that SEPTA would consider including in the plan include but may not be limited to the following:

- Minimizing the area of ground disturbance required to accomplish construction;
- Preparing and implementing a mitigation readiness plan in the event a subsurface problem is encountered;
- Controlling and directing water runoff away from disturbed construction areas to appropriate collection systems;
- Preparing and implementing state-approved erosion and sediment control plans and applicable stormwater management plan. These plans would identify appropriate BMPs, such as: defining work areas with fencing or other means to avoid disturbance of areas outside the work area; diverting stormwater that originates offsite away from the construction site; minimizing disturbances of wetlands and forests; minimizing the extent and duration of exposed soils by using techniques such as listed below; establishing a bermed construction equipment storage and refueling area; establishing a designated equipment washing/cleaning area that is bermed and includes some measures for the treatment of runoff prior to discharge; establishing an emergency response spill contingency plan to address potential soil and water contamination; and restoring wetlands and floodplains to their pre-existing condition as reasonably feasible and in accordance with applicable permits and approvals.

A partial list of temporary soil stabilization and sediment control BMP includes the following strategies:

- Preservation of existing vegetation
- Hydraulic mulch
- Soil binders
- Geotextiles
- Wood mulching
- Earth dikes, drainage swales, and lined ditches
- Desilting basin
- Sediment traps
- Fiber rolls
- Gravel bag berm
- Street sweeping & vacuuming
- Sandbag barrier
- Avoiding the potential to cause contamination of waterways and wetlands from leaks or spills (Section 4.15.3).

4.12 Contaminated Materials and Hazardous Waste

This section describes the procedures used to search for contaminated materials and hazardous waste within the Project study area. In addition, this section presents the results of a search of local, state and federal databases of known hazardous waste, as well as contaminated or regulated materials sites that may be impacted by the Project. Mitigation measures to minimize impacts are also described.

4.12.1 Regulatory Context and Methodology

Contaminated materials and hazardous waste are substances that, because of their chemical or physical characteristics, are hazardous to humans and living organisms, property and the environment, and are regulated by the USEPA at 40 CFR Part 261. The primary Federal laws are the Resource Conservation and Recovery Act of 1976 (USC 1976) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) (USC 1980).

The assessment is consistent with the American Society for Testing and Materials guideline (ASTM E 1527-13), *Standard Practice for Environmental Site Assessment: Phase I Environmental Site Assessment Process*. The methodology for this assessment used available land use data as well as a review of historical records, including historic topographic maps and aerial photographs, federal and state records for properties with known environmental contamination, and federal and state well records. A field reconnaissance of the Project study area was completed on May 14, 2015 to verify local land-use patterns and identify potential contaminated materials and hazardous waste issues not identified in the review of reports. The presence of contaminated materials and hazardous waste in the affected environment were identified for the Project study area defined in Section 4.1. The potential for each Action Alternative to impact or be affected by contaminated materials and hazardous waste sites was determined by quantifying the number of such sites within the LOD of each alternative and recommended LPA design option. Additional information regarding this investigation may be found in the 2017 *KOP Rail Tier 3 - Contaminated Materials and Hazardous Waste Technical Memorandum* and is available on the Project website at kingofprussiarail.com.

4.12.2 Affected Environment

The commercial and industrial history of King of Prussia contributes to the presence of known contaminated sites, areas of concern (AOCs), within the Project study area. Among the 131 AOC's in the Project study area are sites where regulated activities occur or where incidents have been reported regarding contaminated or hazardous materials: storage tank sites, PADEP-identified Activity and Use Limitations (AUL) sites, Toxic Release Inventory (TRI) sites, environmental complaints and incident sites, wells and National Priorities List (NPL) sites. Two NPL sites are located within the Project study area: the Henderson Road Superfund Site, a former landfill along South Henderson Road south of the PA Turnpike, and a property at 103 Queens Drive. The locations of AOCs, TRI and NPL sites are shown on the maps in Appendix A.

4.12.3 Environmental Consequences

4.12.3.1 No Action Alternative

Projects in the No Action Alternative may have the potential to impact known or previously unidentified contaminated materials and hazardous waste sites where ground disturbance will occur. The sponsors of these projects will be responsible for identifying such sites, evaluating the potential impacts of the sites on the projects, and addressing impacts through remediation or other methods as warranted.

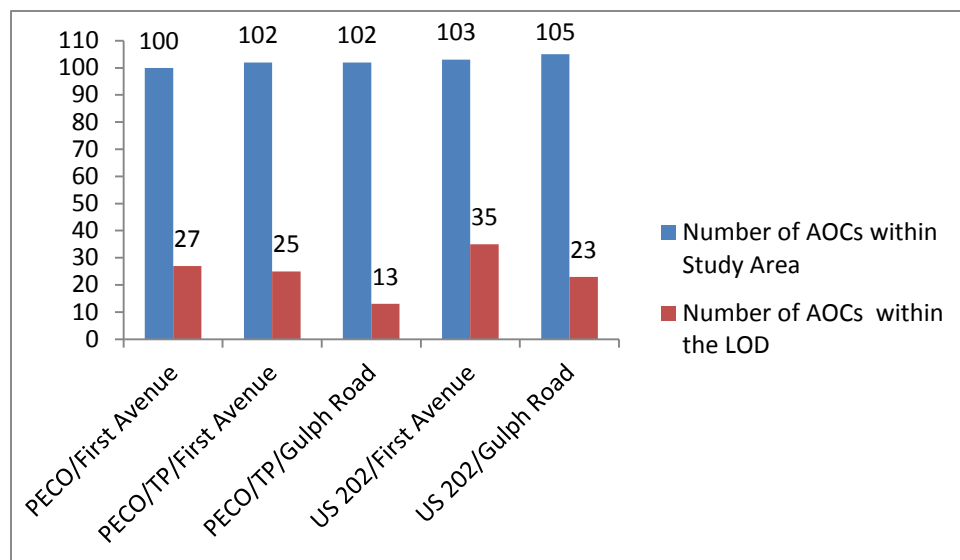
4.12.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

King of Prussia

The number of AOCs for each Action Alternative is shown in Figure 4-12.1; locations of AOCs are shown on the maps in Appendix A. The US 202-1st Ave. Action Alternative LOD has the highest number of AOCs (35) while the PECO/TP-N. Gulph Action Alternative LOD has the fewest (13). The LODs of the PECO-1st Ave., PECO/TP-1st Ave. and US 202-N. Gulph Action Alternatives have 27, 25 and 23 AOCs, respectively. The recommended LPA design options are anticipated to have a similar number of potential areas of concern as the recommended LPA because the alignments are largely similar. A comparative review of the types of AOCs within the Action Alternative LODs indicates that each has a similar potential to encounter or be affected by contaminated or hazardous materials.

Figure 4-12.1: Numbers of Potential Areas of Concern



Note: PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would have similar numbers of potential areas of concern as the recommended LPA.

Source: Malick & Scherer, 2017. *KOP Rail Contaminated Materials and Hazardous Waste Technical Memorandum*.

69th Street Transportation Center

The Project study area at 69th Street Transportation Center contains 13 AOCs; however, none is within the LOD of the Project. As a result, the potential for encountering contaminated or hazardous materials is low.

SHORT-TERM CONSTRUCTION EFFECTS

Due to the developed character of the Project study area, some contaminants are likely to be encountered during construction of any one of the Action Alternatives or recommended LPA design options.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - The management of potential contaminated materials and hazardous waste issues is a matter of identifying the presence or absence of an issue through a Phase II Environmental Site Assessment (ESA), which SEPTA would complete after an LPA is selected and prior to acquiring land for right-of-way. The Phase II ESA would include field sampling and laboratory testing to evaluate the extent and severity of contamination. Where the Project could impact a site with potential contaminated materials and hazardous waste issues, SEPTA would examine means to avoid or minimize and mitigate impacts. Such means can include the following strategies: design refinement, containment of contaminated or hazardous materials, or removal and disposal of such materials. The selection of appropriate strategies would be made in coordination with federal and state regulators to meet applicable laws.

Short-Term Construction - SEPTA would further examine the potential for contaminated materials and hazardous waste as the Project design advances. SEPTA's Project construction plan, described in Section 2.8, would include provisions for worker and community safety as well as addressing known and previously unknown contaminated materials and hazardous waste discovered during construction. Specifically, to protect workers and the community during Project construction, SEPTA would develop and implement site-specific Health and Safety Plans and Materials Management Plans that establish protocols for working in areas where potential or known contaminated materials and hazardous waste exist. If SEPTA proposes to demolish existing structures, an Asbestos Abatement Plan and a Lead-Based Paint Assessment Plan would be developed to document methodologies for surveying, containing and remediating such materials as warranted.

4.13 Utilities and Energy Use

This section describes the existing utilities located within the Project study area, identifies the utility owners, and identifies potential impacts to utilities that would result from the Action Alternatives or recommended LPA design options and the strategies to avoid, minimize, or mitigate these impacts. It also discusses the potential energy impact of the Project.

4.13.1 Regulatory Context and Methodology

Advancing an Action Alternative or recommended LPA design option would require integration with existing utility infrastructure subject to FTA's *Project and Construction Management Guidelines—Appendix C: Utility Agreements* (2003). Policies and procedures addressing utility

adjustment or relocation are based on 23 CFR Part 645, Subparts A and B. As defined in 23 CFR Part 645.207, utilities are considered to furnish essential public and private services, such as electricity, gas, water and steam.

Utility services may be distributed overhead or underground, through electrical transmission lines, high pressure gas lines, treated water and sanitary sewer mains, steam tunnels, buried fiber optic cables, underground and overhead telephone lines and communication systems.

The study area for utilities is the LOD for the Action Alternatives and recommended LPA design options, as described in Section 4.1. SEPTA preliminarily identified existing utilities through a review of utility record drawings, base maps obtained from utility service providers, and field surveys and verification. A qualitative assessment of potential impacts on utilities was performed by examining where utilities occur in relation to each alternative and identifying where potential conflicts with utilities could occur.

Energy use was assessed by examining the effect of VMT each year on fuel consumption. In the document *Connecting KOP* (2015), ELGP calculated cost savings for fuel using DVRPC-generated VMT estimates.

4.13.2 Affected Environment

The study area contains a complex utility infrastructure that connects residences and businesses to essential services. The main types of utility facilities include electric transmission lines, gas mains, telecommunications lines/cables, water mains and sanitary sewer lines. Many utilities are aligned in or along existing transportation and utility corridors including, but not limited to, the PECO right-of-way, the PA Turnpike, US Route 202, Mall Boulevard, 1st Avenue and N. Gulph Road. Table 4-13.1 lists the primary utility service providers in the study area. Existing NHSL rail service uses electrically-powered vehicles.

Table 4-13.1: Utility Providers in the Project Study Area

Service Type	Providers
Cable	Comcast Cable Communications Inc.
Electric	PECO
Fiberoptic	AT&T Atlanta, CenturyLink, Fibertech Networks LLC, Frontier Communications LLC, Level 3 Communications, PennDOT, Verizon Business, Sunesys LLC, Terradex Inc., Windstream and Zayo Bandwidth
Gas	PECO, Sunoco Pipeline LP and Transcontinental Gas Pipeline
Sewer	Upper Merion Township Sewer
Telephone	AT&T Local Services, Verizon Pennsylvania and RCN Telecom Services of Pennsylvania
Water	Aqua Pennsylvania, Pennsylvania American Water and Tredyffrin Township Water
Wireless	AT&T Wireless, Sprint Communications, T-Mobile West Corporation and Verizon Wireless

Source: AECOM, 2016.

4.13.3 Environmental Consequences

4.13.3.1 No Action Alternative

The sponsors of each project in the No Action Alternative have the potential to encounter utilities as they implement the projects. It is the responsibility of each project sponsor to identify potentially affected utilities, determine project impacts and coordinate with utility owners to determine ways to avoid or minimize and mitigate impacts to the extent reasonably feasible.

The projects in the No Action Alternative will improve capacity and operations of some regional and local roadways. However, as a group, the projects will not cause a reduction in VMT. As traffic volumes increase over time, fuel usage will increase as congestion increases in duration and drivers seek alternative routes that add to VMT.

4.13.3.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

King of Prussia

As each Action Alternative and recommended LPA design option would be aligned along one or more existing utility and transportation corridors, potential conflicts with utilities are likely and have been preliminarily identified. In some areas, such as along US Route 202, 1st Avenue and N. Gulph Road, existing overhead wires and roadside pole supports may be in the way of the proposed guideway. In other areas where utilities occur underground in those same corridors, utilities may be in the way of proposed guideway pier foundations or station infrastructure. In these cases, utility conflicts can generally be resolved by relocating utilities in coordination with the utility owner.

The PECO-1st Ave., PECO/TP-1st Ave., each recommended LPA design option and PECO/TP-N. Gulph Action Alternatives would potentially conflict with some of PECO's transmission towers. The potential number of affected towers is 12, eight, and eight, respectively. The US 202-1st Ave. and US 202-N. Gulph Action Alternatives would not conflict with the PECO transmission tower network.

As forecasted by DVRPC and reported by the ELGP in the 2015 report *Connecting KOP*, the Project is expected to reduce automobile use in the region by 14.6 to 18.4 million miles traveled annually. This benefit applies to each Action Alternative and recommended LPA design option. Fewer miles traveled and less time spent in congestion would result in an annual cost savings for fuel of \$2.6 to \$3.2 million regionally. Each Action Alternative and recommended LPA design option would reduce annual bus VMT by 57,000 to 128,000 miles; the recommended LPA would reduce bus VMT by 86,000 miles per year. ELGP reports other savings that relate to energy use that apply to each Action Alternative and recommended LPA design option including a reduction in road and pavement costs by \$350,000 to \$430,000 per year.

Each Action Alternative and recommended LPA design option would be electrically-powered as is the case with the existing NHSL. An increase in the number of vehicles and increase in the miles of the service as a result of any Action Alternative or recommended LPA design option would increase the electrical demand compared to the existing NHSL demand. However, the energy saved by reducing VMT (see Table 4-9.1 in Section 4.9) would be much greater on a per

rider basis than the increased electrical use. As a result, each Action Alternative and recommended LPA design option would have a net benefit by reducing energy use in the region.

69th Street Transportation Center

Due to the developed condition of the Project study area at 69th Street Transportation Center, the potential exists for utilities associated with the Center to be encountered during construction.

SHORT-TERM CONSTRUCTION EFFECTS

Project construction activities have the potential to cause temporary utility disruptions when utilities are encountered, such as during utility relocation.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term Operation - After selection of an LPA, SEPTA would coordinate with utility service providers to determine and verify the location of existing facilities within the study area. At that time, SEPTA would refine the selected alternative with the goal of avoiding or minimizing impacts on utilities, where reasonably feasible, and identify mitigation measures to address remaining impacts.

Short-Term Construction – SEPTA would develop and implement a construction plan with a utilities management component that identifies affected utilities, schedule of work and service disruptions, and utility owner coordination protocols and procedures. All work involving the relocation and protection of utilities would be coordinated with and approved by the utility owner. Planned outages would require notification of the affected utility users.

4.14 Environmental Justice

This section identifies potential environmental justice (EJ) populations in the transportation study area, describes the potential benefits and impacts of the Action Alternatives, the recommended LPA design options and the No Action Alternative, and determines the potential for a disproportionately high and adverse effect of these alternatives on EJ populations (i.e., impacts that could affect disadvantaged populations more than other population groups).

4.14.1 Regulatory Context

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, directs federal agencies to take appropriate and necessary steps to identify and address disproportionately high and adverse environmental effects of federal agency actions on minority and low-income populations. Following is a list of other guidance and procedures that are used in the environmental justice analysis:

- *Environmental Justice Guidance under the National Environmental Policy Act* (CEQ 1997);
- USDOT, 2012 Updated Final Order on Environmental Justice, 5610.2(a); and

- FTA Circular 4703.1 *Environmental Justice Policy Guidance for Federal Transit Administration Recipients* (FTA 2012).

4.14.2 Identifying Potential EJ Populations

The USDOT Order on Environmental Justice (5610.2a) and FTA Circular 4703.1 define minority and low-income populations as follows:

- **Minority Population:** A minority population includes persons who are American Indian or Alaskan Native, Asian American, Native Hawaiian or Other Pacific Islander, Black, or Hispanic or Latino.
- **Low-Income Population:** Any readily identifiable group of low-income persons whose household income is at or below the U.S. Department of Health and Human Services (DHHS) poverty guidelines. For low-income populations, FTA encourages the use of a locally developed threshold, such as that used for FTA's grant program (Public Law 112-141), which defines "low-income individual" to mean "an individual whose family income is at or below 150 percent of the poverty line)."

The FTA Circular encourages the use of regional definitions of environmental justice and locally developed thresholds to help identify potential EJ populations. For this Project, the regional definitions and thresholds were developed by the DVRPC, which serves the Greater Philadelphia region:

The regional technical EJ analysis developed by DVRPC is a people- and place-based approach that locates selected population groups in the region and determines how the regional transportation system and DVRPC's programs, policies, and investments impact these groups. While minority and low-income populations must be investigated, DVRPC expanded its list to additional population groups⁷.

The DVRPC regional thresholds include:

- **Households in Poverty (Regional Threshold > 12.31%):** Household income lower than the appropriate poverty threshold as determined by the *Office of Management and Budget's Statistical Policy Directive No. 14*; adjusted for inflation.
- **Non-Hispanic Minority (Regional Threshold > 27.64%):** Minority populations from the following American Community Survey (ACS) racial categories: Black or African American alone, American Indian and Alaska Native alone, Asian alone, Native Hawaiian and other Pacific Islander alone, some other race alone, and two or more races.
- **Hispanic (Regional Threshold > 8.3%):** Minority population based on Hispanic ethnicity. Hispanics are defined by the US Census as persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.

⁷ Delaware Valley Regional Planning Commission. *Environmental Justice at DVRPC*. <http://www.dvrpc.org/Products/TM15017/>, 2014.

The study area for the EJ analysis is the transportation study area in King of Prussia that is defined in Section 4.1; it includes the census tracts and block groups that fall within 500 feet of the proposed Action Alternative alignments or within ½-mile of the proposed station areas. The Project study area at 69th Street Transportation Center was not included in the assessment as the proposed Project activities would occur within SEPTA's property and would be remote from EJ populations.

Concentrations of disadvantaged populations in the transportation study area were identified through analysis of the 2010 US Census data and 2011-2015 ACS 5-year data at both the county and block group level.

4.14.3 Standards for Evaluating Effects

Potential impacts were determined through review and analysis of the potential impacts of the Action and No Action Alternatives on other resources in the DEIS, including transportation, economic development, community cohesion and facilities, property acquisitions and displacements, visual resources, air quality, noise and vibration, short-term construction benefits and impacts, and indirect and cumulative effects. Potential impacts are summarized here and described in more detail in the respective sections of the DEIS.

4.14.4 Affected Environment

Table 4-14.1 presents the results of the demographic analysis for the transportation study area. This table indicates the percentages of minority population, Hispanic population and households in poverty in each Census block group compared to DVRPC regional thresholds. The following describes these data:

- **Minority** - Non-Hispanic (Figure 4.14.1): Each Census block group in the transportation study area exceeds DVRPC's regional threshold of 27.64% for minority – non-Hispanic. This means that each Action Alternative and recommended LPA design option would be in an area that is more than 27.64% minority – non-Hispanic. The characteristics of the minority population can be better understood by the KOP-BID's *2016 Annual Report to the Community*. It identifies that approximately 26% of the Upper Merion Township/King of Prussia area resident population is non-white and comprised primarily of Asian (17%), Black (5%) and Hispanic (4%) populations (ACS US Census 2011-2015, 5-year estimate).
- **Minority - Hispanic** (Figure 4.14.2): No Census block groups exceed DVRPC's regional threshold of 8.33% for minority - Hispanic within the Project study area. No Action Alternatives or recommended LPA design options would be in an area that is more than 8.33% minority - Hispanic.
- **Households in poverty** (households below 150% of the poverty level) (Figure 4.14.3): Several Census block groups north of US Route 202 and east of Allendale Road exceed the DVRPC's regional low-income threshold of 12.31%. With the exception of the PECO-1st Ave. Action Alternative, each of the other Action Alternatives and recommended LPA design options would cross a block group area with more than 12.31% of households in

poverty. Each Action Alternative would enter the block group area from the east as each alignment turns west off the PA Turnpike. Each alignment would remain in the block group area as each crosses on or near the King of Prussia Volunteer Fire Company property. As each alignment crosses Allendale Road, each would leave the block group area. Examination of land uses in this portion of the block group area indicates that no residential uses occur adjacent to the PA Turnpike or along the Action Alternative alignments. The PECO-1st Ave. Action Alternative would not be in an area with more than 12.31% of households in poverty.

Table 4-14.1: Indicators of EJ Populations by Block Group (2011-2015)

Census Tract	Block Group	% Households In Poverty	% Minority Populations	% Hispanic Populations
205700	4	8.0	34.6	0.0
205700	5	12.6	24.3	20.6
205801	1	10.4	75.6	0.7
205801	2	8.1	39.4	6.0
205805	1	25.2	30.0	4.7
205805	2	5.3	30.7	0.0
205805	3	15.5	37.5	2.8
205806	2	7.6	27.7	4.4
205807	1	10.4	29.7	2.3
205808	1	14.8	1.4	3.1
205808	2	13.1	29.2	0.6
205808	3	14.2	37.1	1.6
205808	4	18.7	7.0	0.0
205809	1	9.4	9.5	2.2
205809	2	8.4	17.1	3.0
205809	3	7.0	25.3	2.1
205903	1	4.6	18.9	1.4
205905	1	1.3	21.2	4.2
205905	2	11.4	34.6	1.8
300101	2	2.5	16.4	1.9
300108	3	6.5	6.5	1.0
DVRPC Regional Threshold		12.31	27.64	8.30

Source: US Census Bureau, ACS Five-year data 2011-2015.

In addition to consulting the DVRPC data, SEPTA identified minority and low-income populations in the Project study area through its public involvement activities. These activities, which are described in Section 4.14.5, helped SEPTA understand that neighborhoods and the business communities in the Project study are diverse, particularly in terms of race. Minority populations are not geographically clustered, but occur in most parts of the study area. By contrast, low-income populations occur in clusters.

4.14.5 Public Involvement

SEPTA has implemented an outreach program that emphasizes meaningful exchange with all members of the community including minority and low-income populations. The engagement of the community began with scoping in 2013. Chapter 7 of the DEIS summarizes the range of public, agency and stakeholder outreach activities that has occurred. A log of outreach activities is provided in Appendix D. SEPTA also monitors its public outreach effectiveness and makes changes in its approach as warranted to better achieve its engagement goals. SEPTA advanced participation of low-income and minority populations in the Project decision-making process through:

- Expanded outreach to all populations to encourage attendance at, and participation in, Project meetings and workshops.
- Varied public meeting times and locations to accommodate working and retiree schedules
- Translation of outreach materials into Spanish
- Flyers hand-delivered to homes in EJ neighborhoods for community meetings with low attendance.
- Signs posted in neighborhoods announcing public meetings
- Direct mailings inviting residents in EJ neighborhoods to public meetings
- Backyard meetings with property owners and neighbors to hear comments and concerns
- Community Working Group established to continue engaging the community as the Project advances (Group is composed of representatives of neighborhoods, community associations, and other interested parties).
- Meetings with city and county agency staff, local elected officials, and community leaders to identify leaders of local communities, particularly those traditionally under-represented in the civic process.

Participating residents have provided important information on community concerns. This information is being and has been used by SEPTA in the design and evaluation of the Action Alternatives and recommended LPA design options. For example, SEPTA selected the recommended LPA in part as a result of the input it received from stakeholders and the public; specifically, the recommended LPA would avoid or reduce the number of potentially affected residences in the Project study area compared to the PECO-1st Ave. Action Alternative, and it would be less impactful during construction since it would not use US Route 202 (Section 4.8.3). SEPTA is also considering the PA Turnpike North/South Option as a result of coordination with potentially affected residents who indicated that placing the guideway on the north side of the Turnpike would reduce potential proximity effects to residents in Valley Forge Homes (Section 4.8.3). Chapter 7 provides details on the public involvement activities that SEPTA already has conducted or is planning.

Figure 4-14.1: Minority, Non-Hispanic Populations - Transportation Study Area

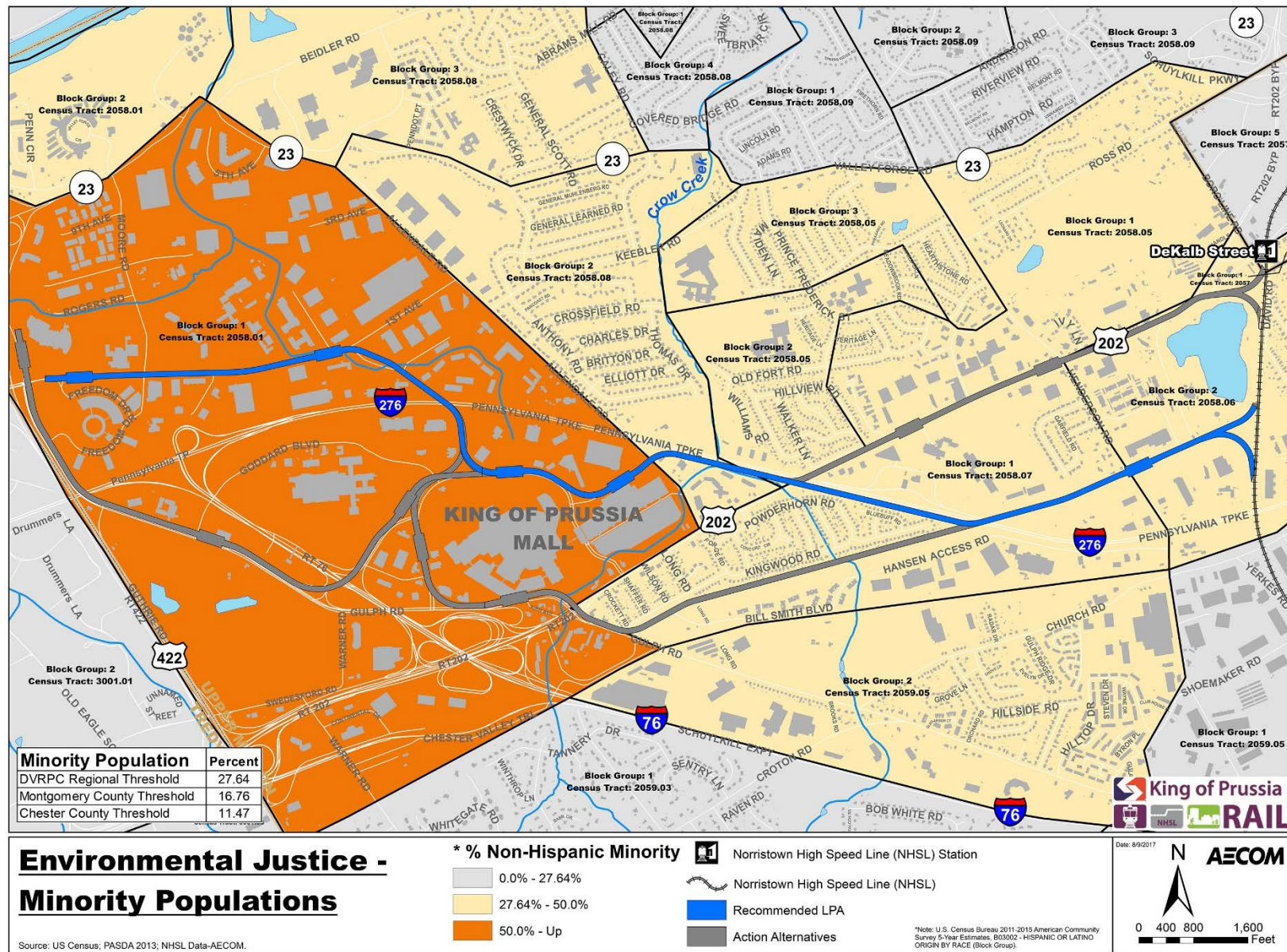


Figure 4.14.2: Minority, Hispanic Populations – Transportation Study Area

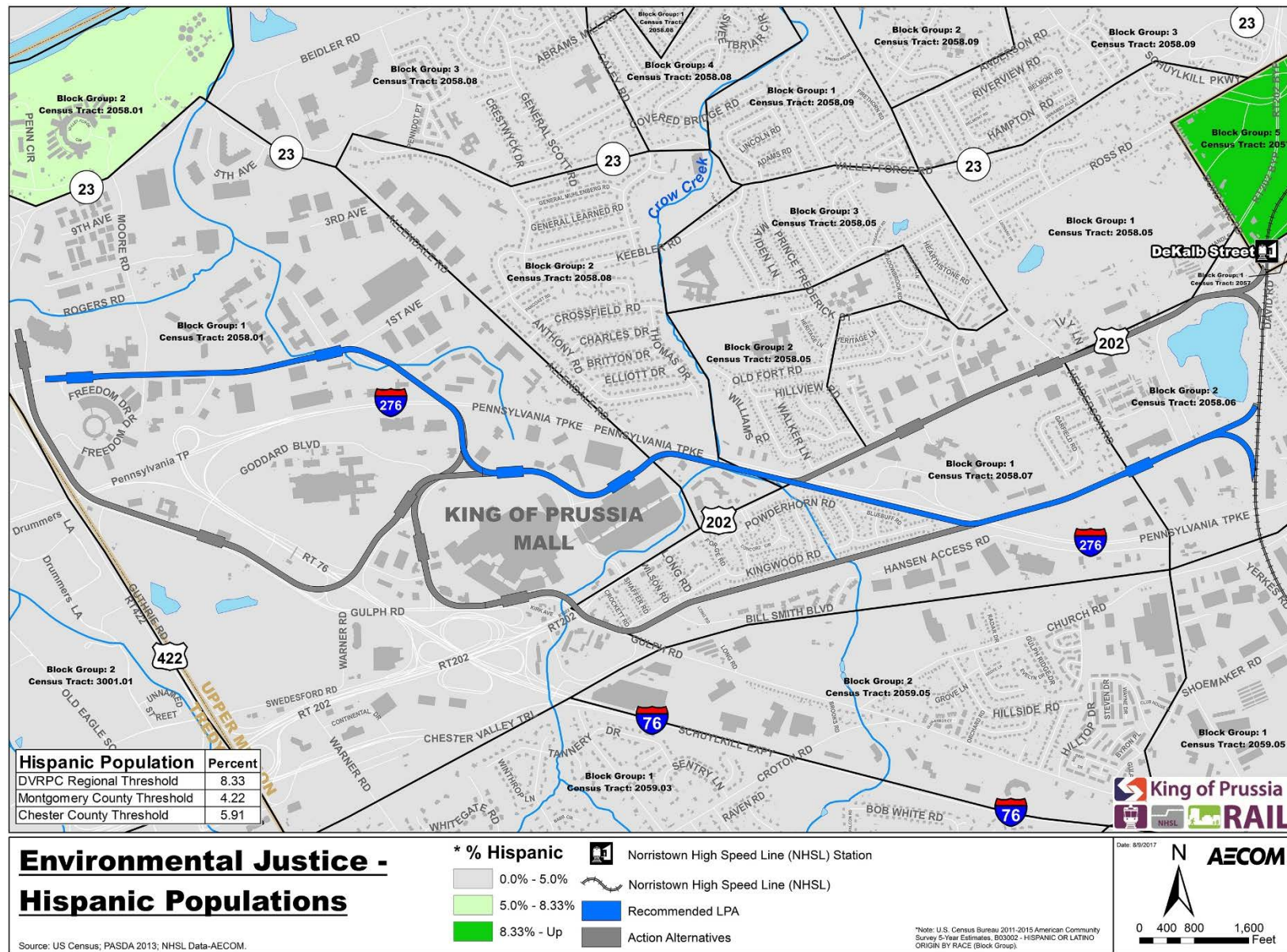
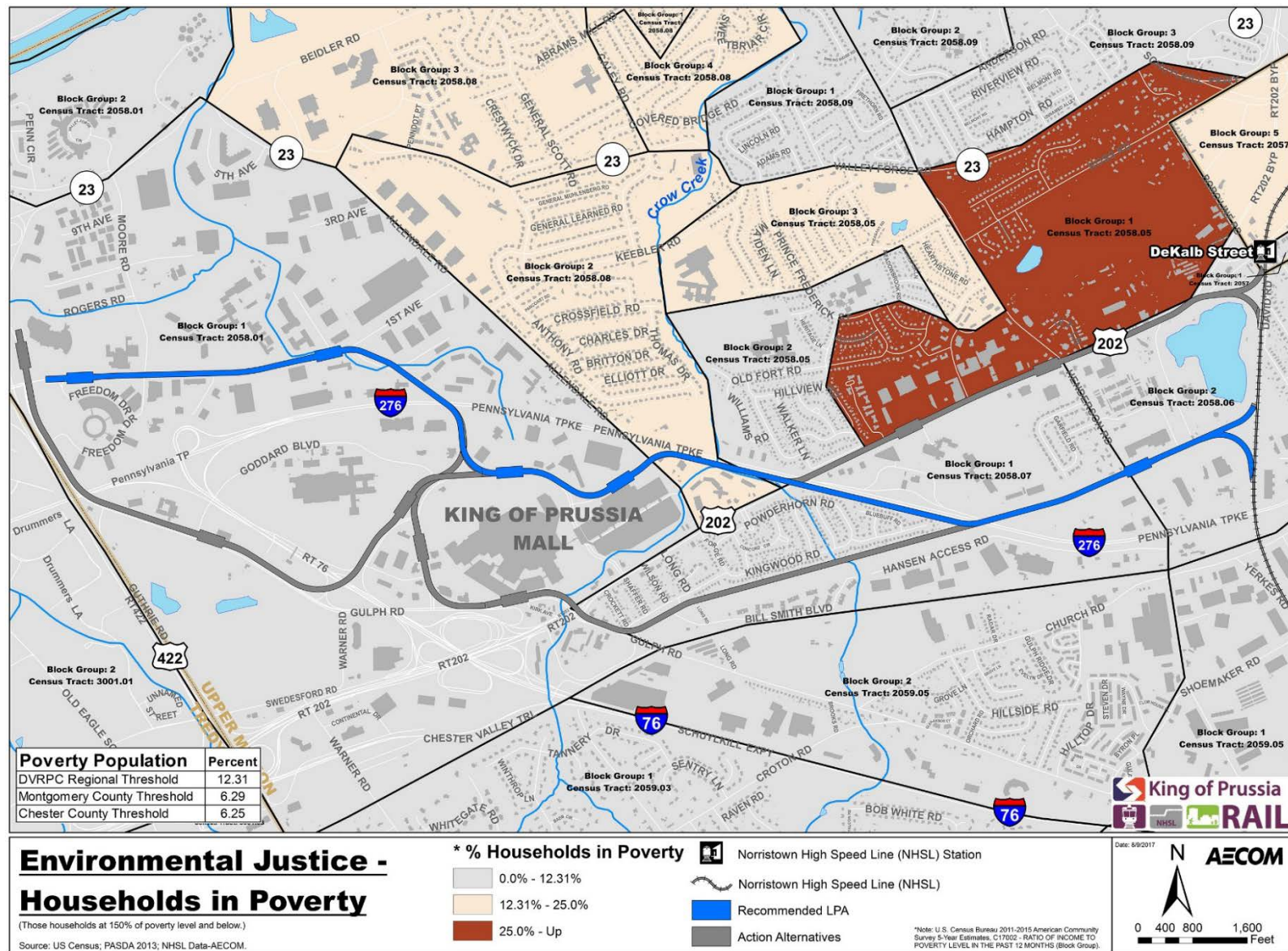


Figure 4.14.3: Households in Poverty – Transportation Study Area



4.14.6 Environmental Consequences

4.14.6.1 No Action Alternative

In the No Action Alternative, existing streets would continue to serve roadway traffic, including personal vehicles and buses. The No Action Alternative would not improve travel times and connections to major destinations within the transportation study area. The No Action Alternative would not contribute to a reduction in VMT and, thus, would not benefit the area by contributing to improved air quality and public health. Because the data in Section 4.14.4 indicates that the transportation study area is comprised of EJ and non-EJ populations, the projects in the No Action Alternative (listed in Table 2-2.2) have the potential to affect EJ and non-EJ populations in the transportation study area during construction and over the long-term.

Table 4-14.2 summarizes the nature of these potential benefits and impacts. As discussed in the DEIS, increasing roadway congestion due to continued reliance on the automobile and the absence of expanded transit service would affect EJ as well as non-EJ populations. However, the burden of long-term constraints to access, connectivity and failure to achieve local land use planning and economic development goals may be greater for minority and/or low-income populations if they depend on transit for access to employment, for example, or if local employment options become constrained because economic development occurs more slowly than planned.

Table 4-14.2: Summary of Potential No Action Alternative Effects

Transportation Systems and Facilities
Increased roadway congestion and travel delays; slower bus service; no expansion of transit service to the transportation study area
Economic Development
Limited, localized benefits; will constrain long-term economic benefits
Community Cohesion and Facilities
Limited, localized impacts on communities; no facilities impacts
Property Acquisitions and Displacements
Potential for localized acquisitions and displacements if additional right-of-way is needed for No Action projects
Visual and Aesthetic Resources
Potential for localized visual impacts
Air Quality and Greenhouse Gases
Increase in VMT by 2040; impact on air quality likely negligible due to future vehicle emission controls
Noise and Vibration
No noise or vibration impacts anticipated
Short-term Construction Effects
Potential localized traffic impacts, soil disturbance, dust, visual, noise and vibration impacts

Source: AECOM, 2016.

4.14.6.2 Action Alternatives

LONG-TERM OPERATIONAL EFFECTS

As described in Section 4.14.4, each Action Alternative and recommended LPA design option would be in an area comprised of EJ and non-EJ populations because the entire transportation study area exceeds the DVRPC threshold for minority population and part of the transportation study area exceeds the DVRPC threshold for low-income population. Consequently, each

Action Alternative and recommended LPA design option has the potential to affect EJ and non-EJ populations.

As described in Chapter 2, the Action Alternatives and recommended LPA design options were developed in an intensive, tiered screening process that included public, agency and stakeholder participation. Table 4-14.3 summarizes key issues and concerns raised through this screening process, and SEPTA's actions and responses to these issues and concerns. For example, SEPTA has been responsive to concerns by the Valley Forge Homes residents to the potential for proximity, noise, visual and other impacts of the Action Alternatives in their neighborhood. SEPTA has and would continue to undertake the following activities with the goal of reducing or potentially eliminating concerns about the Project on the part of transportation study area residents:

- Meet with the neighborhood in regard to their concerns,
- Examine refinements to the recommended LPA in the DEIS, including assessing the PA Turnpike North/South Option in the DEIS, which was specifically developed to reduce proximity effects to the Valley Forge Homes neighborhood, and
- Continue to refine the LPA that is selected after the DEIS public comment period.

Table 4-14.3: Community Concerns and SEPTA Actions and Responses

Community	Key Issue/Concern	SEPTA Action/Response
Valley Forge Homes	<ul style="list-style-type: none"> • Proximity of PECO-1st Ave. alignment to homes • Visual impacts • Privacy impacts • Noise impacts • Property value effects • Sinkhole creation • Safety 	<ul style="list-style-type: none"> • Held multiple backyard meetings • Established Community Working Group to address issues and concerns as Project advances • Recommended alternative other than PECO-1st Ave. • Examined alignments using existing NS corridor or Abrams Yard; alignments determined to be infeasible • Considered at-grade guideway; alignments determined to be infeasible or cause traffic impacts • Examined lower guideway structure height along the PA Turnpike • Assessed a PA Turnpike North/South Option in the DEIS • Committed to examining the utility of parapet wall/barrier on structure to block views of neighborhood and noise
US Route 202	<ul style="list-style-type: none"> • Permanent visual impact to "Main Street" • Impact on business visibility • Substantial traffic disruption during construction 	<ul style="list-style-type: none"> • Recommended an Action Alternative other than US 202-1st Ave. or US 202-N. Gulph in the DEIS • Committed to considering business visibility in the Project study area as design advances • Committed to considering traffic impacts during construction

As described below, each Action Alternative and recommended LPA design option would bring benefits to the transportation study area; EJ as well as non-EJ populations within the transportation study area have the potential to experience these benefits. EJ as well as non-EJ populations within the transportation study area potentially would experience some impacts from the Project, which are described in the DEIS and summarized below, such as visual changes, noise, vibration and direct property impacts as a result of Project right-of-way needs. SEPTA has endeavored to avoid or minimize negative impacts in the development and refinement of the Action Alternatives and recommended LPA design options as summarized below. When avoiding a potential impact is not reasonably feasible, SEPTA is committed to applying minimization or mitigation measures in the Project study area. The sections below discuss long-term operational and short-term construction impacts by resource type as well as minimization and mitigation strategies.

Transportation Systems and Facilities

New rail transit services provided by each Action Alternative and recommended LPA design option would similarly improve transit access and connections for all populations within the transportation study area and along the NHSL for the reasons described in Section 3.1.3. In particular, each Action Alternative and recommended LPA design option would accommodate existing and new transit riders by providing faster, more reliable public transit service to and within the transportation study area. These improvements would benefit low-income and minority populations locally and in the region.

Economic Development

As described in Section 4.3, each Action Alternative and recommended LPA design option would support Upper Merion Township and Montgomery County future land use and development goals by means of the transportation benefits each would provide. Residents would have better access to transit within the transportation study area, with more transit connections to key destinations in the transportation study area as well as along the NHSL and to Philadelphia. Transportation study area businesses would also benefit from having improved transit access (new rail transit service, more frequent transit service, and more connections) for the workers and customers from within or outside the transportation study area. As described in Section 4.3.3.2, and reported by ELGP in 2015, Upper Merion Township residents, in general, would benefit economically by having access to more job opportunities, better salaries and the stability afforded by the expanded sources of income. These benefits would apply to all area residents and businesses, including EJ populations.

However, potential proximity effects such as changes in visual context, shadows, privacy, noise, vibration and safety were identified by SEPTA in coordination with residents in the Valley Forge Homes neighborhood (Tables 7-1.1 and 7.1-2). In response, SEPTA took two actions: identified the recommended LPA, which potentially would impact fewer residences in the neighborhood than the PECO-1st Ave. Action Alternative; and developed the PA Turnpike North/South Option, which potentially would have fewer proximity effects on the properties because the alignment would be on the north side of the PA Turnpike, farther from their properties than the recommended LPA and other alternatives that would be aligned on the south side of the PA Turnpike. In each case, SEPTA worked with potentially affected residents to understand their

concerns and used their input to identify a less impactful recommended LPA and to develop a design option to address concerns.

Community Cohesion and Facilities

In each Action Alternative and recommended LPA design option, the elevated guideway would preserve physical access across existing transportation rights-of-way to the extent that it is possible today. By primarily using existing transportation and utility corridors, none of the Action Alternatives or recommended LPA design options would create a new physical split or cause fragmenting of existing residential, EJ or non-EJ, or business communities. As a result, most factors would be preserved that are important to community identity, such as name, history and social aspects for residential communities, and location, marketing and shared economic interest for business communities.

SEPTA has worked to address potential impacts of each Action Alternative on community character in terms of minimizing property acquisitions and displacements, visual change and noise impacts (Sections 4.4, 4.8 and 4.10, respectively). The ability to minimize such impacts varies among the Action Alternatives. For example, SEPTA identified the recommended LPA as opposed to the US 202-1st Ave. or US 202-N. Gulph Action Alternatives to avoid negative impacts along US Route 202, which Upper Merion Township residents and businesses consider the “Main Street.” In another example, the PA Turnpike North/South Option would reduce the potential proximity impacts of the recommended LPA on the Valley Forge Homes neighborhood by moving the proposed guideway to the north side of the Turnpike, thereby increasing the distance between the guideway and the residents (Section 4.5.3).

Regarding potential impacts on community facilities, each Action Alternative and recommended LPA design option would preserve access to community facilities in the transportation study area. Partial property acquisitions and proximity effects to community facilities, described in Section 4.4.3.2, would affect EJ as well as non-EJ populations in the transportation study area because the affected community facilities serve all persons.

SEPTA will continue the dialogue begun with potentially affected neighborhoods to develop minimization and mitigation measures to address negative impacts to the extent reasonably feasible. Sections 4.5, 4.8 and 4.10 provide related discussion of potential impacts, minimization and mitigation.

Property Acquisitions and Displacements

As described in Section 4.5, SEPTA would require additional right-of-way for each Action Alternative and recommended LPA design option despite using existing transportation and utility corridors to the extent reasonably feasible. The preliminary estimate of right-of-way needs indicates that the Project potentially would affect properties where concentrations of EJ as well as non-EJ populations exist. This finding is based on the data in Section 4.14.4 that show minority populations greater than DVRPC’s regional threshold occur in each Census block group in the transportation study area. An example of a direct property impact would be the US 202-1st Ave or US 202-N. Gulph Action Alternative that potentially would require approximately 19 full residential property acquisitions because each would cross the Merion Station development. SEPTA identified the PECO/TP-1st Ave. Action Alternative as the recommended

LPA in part because it potentially would require fewer full residential property acquisitions than the PECO-1st Ave., US 202-1st Ave. and US 202-N. Gulph Action Alternatives.

Further investigation of potential property needs and acquisitions would be made by SEPTA as the Project advances and in conjunction with design refinement. In this process, SEPTA would coordinate with individual property owners. All activities related to acquisitions and displacements would be conducted by SEPTA in conformance with the Uniform Act and Public Law 105-117.

Visual and Aesthetic Resources

Each Action Alternative has the potential to cause a visual change in the vicinity of existing residences where EJ as well as non-EJ populations live, and businesses as described in Sections 4.8.3, 4.14.6.4 and 4.14.6.5. Also as indicated in those discussions, SEPTA identified potential solutions to specific visual impact concerns in part by identifying the recommended LPA and considering the PA Turnpike North/South Option in the DEIS. Further investigation of potential visual impacts would be made by SEPTA as the Project advances and in conjunction with design refinement. At that time, further examination would be made as to the extent to which such impacts could be avoided or mitigated. In this process, SEPTA would coordinate with affected parties to identify potential solutions to address visual impacts, such as alignment refinements, visual treatments of the Project elements and screening.

Air Quality and Greenhouse Gases

As described in Section 4.9, implementation of any one of the Action Alternatives or recommended LPA design options would decrease automobile emissions due to a reduction in VMT. No long-term impacts to air quality in the transportation study area are anticipated to occur. Each Action Alternative and recommended LPA design option would comply with Federal conformity requirements.

Noise and Vibration

The noise and vibration assessments for the Action Alternatives and recommended LPA design options identified potential impacts, affecting some residents, EJ as well as non-EJ populations, or institutional properties adjacent to proposed alignments (Section 4.10). The potential noise and vibration impacts identified in the screening indicate that more detailed noise analysis and consideration of minimization and mitigation strategies is warranted for the Action Alternative or recommended LPA design option that is selected after the DEIS public comment period. SEPTA would undertake this further analysis after selection of an LPA and additional design to determine whether impacts potentially would occur. SEPTA would consider the need for, feasibility and reasonableness of the potential noise and vibration control measures.

Indirect and Cumulative Effects

As described in Section 6.2, while each Action Alternative and recommended LPA design option would not be the sole or primary driver of change, each would support Upper Merion Township's and Montgomery County's future economic development plans and goals. The potential effects of development and redevelopment could include positive as well as negative impacts, such as changes in housing values and affordable housing opportunities, increased employment opportunities, greater availability of consumer goods and services, changes to business

revenues and operations and changes in neighborhood character (such as noise). These potential indirect and cumulative effects could be felt by EJ as well as non-EJ populations in the transportation study area, but could be felt more acutely by low-income populations that are inherently financially-constrained and more sensitive than non-EJ populations to such changes.

When an LPA is selected by SEPTA, further examination would take place to identify the potential for the Project to contribute to indirect and cumulative effects on EJ populations in the transportation study area, and would identify minimization strategies, as appropriate and reasonably feasible.

SHORT-TERM CONSTRUCTION EFFECTS

Construction of any Action Alternative or recommended LPA design option would generate a number of temporary environmental, transportation and community impacts within the transportation study area as described in the DEIS. As the Project study area is a mix of EJ and non-EJ populations, these potential impacts could be experienced by both populations. Construction activities typically generate discernible levels of dust, erosion, noise, vibration, and vehicle emissions. Associated impacts include temporary adjustments to vehicular and pedestrian traffic patterns and access, temporary loss or relocation of parking, temporary interruptions in utility services and temporary visual impacts.

MINIMIZATION, MITIGATION AND COMMITMENTS

Long-Term and Short-Term Effects - As demonstrated in the foregoing subsections and summarized in Table 4-14.3, SEPTA has and would continue to examine means to minimize impacts to the human and natural environment through design and coordination with stakeholders and the public as described throughout the DEIS. In addition, SEPTA has identified potential mitigation strategies in the DEIS to offset short- and long-term impacts of each Action Alternative and recommended LPA design option. After an LPA is selected and the Project advances, SEPTA would identify and apply appropriate mitigation measures in EJ and non-EJ communities as warranted.

The long-term operational and short-term construction minimization and mitigation strategies and commitments identified in the DEIS and summarized in Table ES-9 to address potential impacts to the transportation, natural and human environments would apply equally to all populations. For example, SEPTA's construction protocols and procedures would provide for maintenance of access, safety and control of construction activities and potential impacts to the public as a whole. Permanent impacts on natural resources, stormwater runoff and water quality would be managed to benefit all persons through state regulatory design and permit processes to which the Project is subject. A key minimization strategy would be SEPTA's coordination with affected parties, stakeholders and the public as the Project advances. Mitigation measures, where warranted and reasonably feasible, would be identified after an LPA is selected for further study in the FEIS.

4.14.7 Potential for Disproportionately High and Adverse Effects on EJ Populations

A disproportionately high and adverse effect on minority and low-income populations is defined as an adverse effect that:

- Is predominantly borne by a minority population and/or a low-income population, or
- Will be suffered by the minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect that will be suffered by the non-minority population and/or non-low-income population.

Determinations of whether a project will have disproportionately high and adverse effects must take into consideration “mitigation and enhancements measures that will be taken and all offsetting benefits to the affected minority and low-income populations...” (USDOT Order, Section 8.b).

FTA has examined the process that SEPTA has taken to identify and engage with potentially affected property owners to identify and refine the Action Alternatives to minimize potential impacts on EJ as well as non-EJ populations. FTA has considered the data indicating where in the transportation study area concentrations of EJ populations exist and the relationship of those concentrations to the proposed Action Alternatives and recommended LPA design options. FTA has also considered the potential benefits and impacts of the Action Alternatives and recommended LPA design options that are described in the DEIS and summarized in Section 4.14.6.

In consideration of these factors and findings, FTA has determined that while each Action Alternative and recommended LPA design option potentially would have benefits as well as impacts, those benefits and impacts would be experienced by EJ as well as by non-EJ populations. None of the benefits or impacts would be predominantly borne by a minority and/or low-income population, and none of the potential impacts on EJ populations would be more severe or greater in magnitude than the potential impacts on non-EJ populations. As a result FTA has determined that each Action Alternative and recommended LPA design option would not have a disproportionately high and adverse effect upon EJ populations.

Further investigation of potential benefits and impacts of the Project on EJ populations would be assessed by SEPTA as the Project advances and in conjunction with design refinement. At that time, further examination would be made as to whether EJ populations would be impacted and the extent to which such impacts could be avoided or mitigated.

4.15 Irreversible and Irretrievable Commitment of Resources

Pursuant to NEPA regulations (40 CFR 1502.16), FTA and SEPTA assessed the irreversible and irretrievable commitment of resources associated with implementing each Action Alternative, recommended LPA design option and the No Action Alternative. An irreversible and irretrievable commitment of resources results in the permanent loss of a resource for future uses (or alternative purposes) as the resources cannot be replaced or recovered. In addition, in

accordance with NEPA requirements, FTA and SEPTA identified the relationship between local short-term uses of the human and natural environment and the maintenance and enhancement of long-term productivity (42 USC 4332). This section and Chapter 8 compare the short-term uses of the environment (that is, impacts during construction) with long-term benefits over the operational lifetime of the No Action Alternative, the Action Alternatives and the recommended LPA design options.

4.15.1 No Action Alternative

Each project in the No Action Alternative would require the commitment of natural, human and monetary resources. While some resources could be recovered within a relatively short period of time, other resources would be committed irreversibly and irretrievably. The sponsors of each project will be responsible for assessing the relationships between the short-term use of human and natural resources and the long-term benefits that each No Action Alternative project is intended to provide.

4.15.2 Action Alternatives

Construction of any one of the Action Alternatives or recommended LPA design options would require the commitment of natural, human and monetary resources. While some resources could be recovered within a relatively short period of time, other resources would be committed irreversibly and irretrievably. As each Action Alternative would be largely constructed within existing transportation and utility rights-of-way, potential impacts on natural resources have been minimized, as described in Chapter 4.11 of the DEIS. Construction materials such as steel, fossil fuels, energy, concrete and aggregate would be irretrievably expended during grading and construction of the guideway and related facilities.

In some Project study area locations, short-term construction-related impacts of each Action Alternative and recommended LPA design option, as discussed in Section 4.14, would include easements for staging areas and construction access and temporary interruptions to vehicular and pedestrian traffic. Additionally, short-term visual impacts, localized airborne dust and emissions, elevated noise and vibration levels, utility interruptions and temporary disturbances to soils also are anticipated in some locations during the construction of each Action Alternative and recommended LPA design option. As noted in previous sections of this chapter, SEPTA is working during the planning and design stages to avoid or minimize impacts to resources. SEPTA is continuing these efforts by integrating public involvement with design development (Chapter 7). In considering the trade-offs, FTA has determined that the short-term use of human and natural resources would contribute to the long-term benefits that each Action Alternative and recommended LPA design option is intended to provide, as described in the DEIS.

Construction of each Action Alternative and recommended LPA design option would require a one-time financial expense of federal, state and local funds and potentially contributions from private sources. Although the initial capital cost for each Action Alternative and recommended LPA design option would be irretrievably committed and unavailable for other projects, the Project would benefit local and regional economies with positive employment, earnings and output effects. As estimated by the Economy League of Greater Philadelphia in its 2015

Connecting KOP report, the Project is expected to bring 900-1,500 permanent jobs per year to King of Prussia, or 17,000 to 29,000 new employees over 20 years. This estimate applies to each Action Alternative and recommended LPA design option. This new employment would result in a \$79.1 million to \$132.6 million in earnings each year, totaling \$1.6 billion to \$2.7 billion in labor income over 20 years. Each Action Alternative and recommended LPA design option is also expected to stimulate development in King of Prussia, adding \$540 million to \$946 million to the assessed value of real estate over 20 years, and new annual property tax revenues of \$12.8 million to \$22.4 million annually.

4.16 Environmental Permits

Implementing any one of the Action Alternatives or recommended LPA design options would require disturbing land to the extent that a PADEP Chapter 102 National Pollutant Discharge Elimination System (NPDES) Permit would be required to protect waterways from soil erosion and sediment migration during construction. Regarding waterways, each Action Alternative and recommended LPA design option may also require a Pennsylvania State Programmatic General Permit (PASPGP-4), which provides both Federal USACE Section 404 nationwide permit authorization and State general permit authorization where the guideway crosses existing waterways.

As the Project advances, SEPTA would examine ways to avoid or minimize impacts to regulated natural resources, and would obtain permits and approvals, as appropriate. The Environmental Compliance Plan component of SEPTA's Project construction plan, described in Section 2.8, would identify and direct SEPTA and contractor activities during construction to ensure protection of the natural environment as required by the applicable permits.

Chapter 5.0 Draft Section 4(f) Evaluation

This Draft Section 4(f) Evaluation has been prepared to comply with Section 4(f) of the US Department of Transportation (USDOT) Act of 1966 (49 USC 303), hereinafter referred to as “Section 4(f),” and its implementing regulations codified at 23 CFR Part 774. Additional guidance was obtained from Federal Highway Administration (FHWA) Technical Advisory T6640.8A (FHWA 1987b) and the revised FHWA Section 4(f) Policy Paper (FHWA 2012).

The Draft Section 4(f) Evaluation identifies properties that are protected by Section 4(f) and evaluates the potential use of these properties by the Action Alternatives, including the recommended LPA and its design options. This Section 4(f) Evaluation is a draft document subject to review and finalization during the NEPA process for the Project and as set forth by the regulations of Section 4(f).

FTA and SEPTA will use the information presented in this Draft Section 4(f) Evaluation along with the findings of the DEIS process to identify and select an LPA. FTA’s Final EIS (FEIS) will examine the selected LPA; a Final Section 4(f) Evaluation will be part of the FEIS/Record of Decision (ROD) document. FTA will make its Section 4(f) determination as part of its FEIS/ROD. The public comment period for the Draft Section 4(f) Evaluation is equal in duration to and concurrent with the comment period for the DEIS.

5.1 Supporting Project Information

DEIS Chapter 1 describes the purpose and need for the Project. DEIS Chapter 2 explains the screening and evaluation process undertaken to develop alternatives to date and includes detailed descriptions of the recommended LPA, the other Action Alternatives and the recommended LPA design options.

5.2 Methodology

Section 4(f) of the US Department of Transportation Act of 1966, 49 USC 303(c) is a federal law that protects publicly owned parks, recreation areas, wildlife and/or waterfowl refuges, as well as significant historic sites, whether publicly or privately owned, from use in transportation projects unless there is no feasible and prudent alternative to meet the Project purpose and need. Section 4(f) requirements apply to all transportation projects that require funding or other approvals by the USDOT. As a USDOT agency, FTA must comply with Section 4(f). FTA’s Section 4(f) regulations are codified in 23 CFR Part 774.

FTA cannot approve a transportation project that uses a Section 4(f) property, as defined in 23 CFR 774.17, unless FTA determines that:

- There is no feasible and prudent avoidance alternative, as defined in 23 CFR 774.17, to the use of land from the Section 4(f) property, and the action includes all possible planning, as defined in 23 CFR 774.14, to minimize harm to the property resulting from such use (23 CFR 774.3(a)); or

- The use of the Section 4(f) property, including any measure(s) to minimize harm (such as any avoidance, minimization, mitigation, or enhancement measures) committed to by the applicant would have a *de minimis* impact, as defined in 23 CFR 774.17, on the property (23 CFR 774.3(b)).

The evaluation included the following steps, described in this chapter:

- Identification of Section 4(f) properties
- Definition of Section 4(f) uses
- Individual Section 4(f) evaluation
- *De minimis* impact analysis
- Avoidance analysis
- All planning to minimize harm

5.2.1 Identification of Section 4(f) Properties

SEPTA reviewed existing mapping, conducted field investigations/site reconnaissance, searched property records and consulted with officials with jurisdiction to identify the properties protected by Section 4(f) within the Project study area. The Project study area, defined in DEIS Section 4.1, consists of two parts. In the King of Prussia area, the Project study area is the geographic area within 500 feet on either side of the centerline of each Action Alternative and recommended LPA design option, as well as ½-mile from the center point of all proposed station areas. In Upper Darby, the Project study area is the geographic area within 100 feet on either side of the centerline of the proposed new track at SEPTA's 69th Street Transportation Center. The Project study area in both locations is shown on the maps in Appendix A.

Public ownership of parks was verified through coordination with the officials with jurisdiction over those properties, specifically Upper Merion Township and Montgomery County. As discussed in DEIS Section 4.7, Areas of Potential Effects (APE) around the Action Alternatives were defined in consultation with the Pennsylvania Historical and Museum Commission (PHMC), which is the State Historic Preservation Office in Pennsylvania (SHPO).¹ Properties known to be historic or determined to potentially be historic were identified according to the regulations governing Section 106 of the National Historic Preservation Act of 1966 (36 CFR 800). At this stage, formal determinations of eligibility and effect under Section 106 have been made (Section 4.7.3).

¹ It is important to recognize the difference between Section 4(f) use of historic properties and Project effects to historic properties under Section 106 of the National Historic Preservation Act, which are discussed in Section 4.7 of the DEIS. Section 4(f) and Section 106 are similar in that they both mandate consideration of historic properties in the planning of a federal undertaking. Section 4(f) applies to the actual use or occupancy of a historic site, while Section 106 involves an assessment of adverse effects of an action on historic properties. The Section 106 process is integral to the Section 4(f) process when historic properties are involved. Conversely, the Section 4(f) process is not integral to the Section 106 process.

5.2.2 Definition of Section 4(f) Uses

After identifying the Section 4(f) properties in the Project study area, FTA determined whether and to what extent the recommended LPA would use each property. The type of Section 4(f) use was then determined according to the Section 4(f) use definitions below.

- **Permanent Use**—Pursuant to 23 CFR 774.17, a permanent use occurs when land from a Section 4(f) property is permanently incorporated into a transportation project. This may occur as a result of partial or full acquisition of the Section 4(f) property, permanent easements or temporary easements that exceed regulatory limits.
- **Constructive Use**—As defined in 23 CFR 774.15(a), a constructive use occurs when a transportation project does not incorporate land from a Section 4(f) property, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a property for protection under Section 4(f) are substantially impaired. The DEIS assessment of the potential for proximity effects of the Action Alternatives is used by FTA to determine whether a constructive use of properties protected by Section 4(f) would occur.

5.2.3 Temporary Occupancy Exception

As defined in 23 CFR 774.13(d), a temporary occupancy exception occurs when there is a temporary use of land that is not “adverse in terms of the statute’s preservation purpose” as determined by the criteria in 23 CFR 774.13(d):

- Duration of occupancy must be temporary; i.e., less than the time needed for construction of the project, and there can be no change in ownership of the land.
- The scope of work must be minor; i.e., both the nature and magnitude of the changes to the Section 4(f) property are minimal.
- There can be no anticipated permanent adverse physical impacts, nor can there be interference with the activities, features, or attributes of the property, on either a temporary or permanent basis.
- The land being used must be fully restored; i.e., the property must be returned to a condition which is at least as good as that which existed prior to the project.
- Written concurrence must be obtained from the officials with jurisdiction, documenting agreement with the above conditions. If the officials with jurisdiction do not agree with a temporary occupancy exception determination, an analysis of use must be conducted. If concurrence is obtained from the officials with jurisdiction over the properties, a final determination will be made by FTA in the Final Section 4(f) Evaluation, which will be included in the Record of Decision.

If the criteria in 23 CFR 774.13(d) are met, the “temporary occupancy exception” applies in which there is no “use” of the Section 4(f) property. If the criteria in 23 CFR 774.13(d) are not met, the use is evaluated as permanent (Section 5.2.2).

5.2.4 Individual Section 4(f) Evaluation

The term “individual Section 4(f) evaluation” is used in this chapter to refer to the process of assessing avoidance alternatives, determining the alternative with the least overall harm and

considering all possible planning to minimize harm for each property. This analysis is required for all uses of a Section 4(f) property except in the case of a *de minimis* impact determination. The steps in this analysis are described below; parenthetical references are to the clauses in the cited regulation.

- **Analyze Avoidance Alternatives** - In this step, FTA considers alternatives that completely avoid the use of a Section 4(f) property. The avoidance analysis applies the Section 4(f) feasible and prudent criteria (23 CFR 774.17(2) and (3)). An alternative is not feasible if it cannot be built as a matter of sound engineering judgment (2). An avoidance alternative is not considered prudent (3) if: (i) it compromises the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need; (ii) it results in unacceptable safety or operational problems; (iii) after reasonable mitigation, it still causes: (A) severe social, economic, or environmental impacts; (B) severe disruption to established communities; (C) severe disproportionate impacts to minority or low income populations; or (D) severe impacts to environmental resources protected under other Federal statutes; (iv) it results in additional construction, maintenance, or operational costs of an extraordinary magnitude; (v) it causes other unique problems or unusual factors; or (vi) it involves multiple factors as described above in paragraphs (3)(i) through (3)(v) of this definition, that while individually minor, cumulatively cause unique problems or impacts of extraordinary magnitude.
- **Determine Alternative with Least Overall Harm** - If no feasible and prudent alternative is identified that would avoid using a Section 4(f) property, FTA determines the alternative that would cause the least overall harm to the Section 4(f) property using the following factors (23 CFR 774.3(c)1): (1) the ability to mitigate adverse impacts to each Section 4(f) property; (2) the relative severity of the remaining harm after mitigation; (3) the relative significance of each Section 4(f) property; (4) the views of the officials with jurisdiction over each property; (5) the degree to which each alternative meets the project purpose and need; (6) the magnitude of adverse effects to resources not protected by Section 4(f); and (7) substantial cost differences among the alternatives.
- **Consider All Possible Planning to Minimize Harm** - Upon determining that there are no feasible and prudent alternatives to avoid a Section 4(f) property, FTA considers and incorporates all possible planning to minimize the impacts of the Proposed Action. All possible planning, as defined in 23 CFR 774.17, means that all reasonable measures identified in the Section 4(f) evaluation to minimize harm or mitigate for adverse impacts and effects must be included in the project.
- **Coordinate with Officials with Jurisdiction** - FTA is coordinating with the officials with jurisdiction over each of the protected properties and will seek their concurrence before a determination is made in the Final Section 4(f) Evaluation.

5.2.5 *De minimis*

A determination of *de minimis* impact can be made only if the Project will not adversely affect the features, attributes or activities that make the Section 4(f) property significant. The specific requirements for a *de minimis* impact determination are different for historic sites and for public parklands, recreational areas, and wildlife and waterfowl refuges. Per Section 4(f) regulations,

evaluations of avoidance alternatives and selection of an alternative having the least overall harm are not required if a *de minimis* impact determination is made.

If the officials with jurisdiction do not agree with a *de minimis* impact determination, an analysis of avoidance alternatives must be conducted. If the analysis concludes that there is no feasible and prudent alternative to use of the Section 4(f) property, FTA may only approve the alternative that causes the least overall harm. A least overall harm analysis is conducted to determine which alternative may proceed. A *de minimis* impact determination is inappropriate where a project results in a constructive use (23 CFR 774.3(b) and 23 CFR 774.17).

5.2.5.1 Historic Properties

As defined in 23 CFR 774.5 and 774.17, a *de minimis* impact determination is made for an historic site if FTA makes a determination of “No Adverse Effect” or “No Historic Properties Affected” through consultation under Section 106 of the National Historic Preservation Act (NHPA), and the SHPO concurs with that determination.

5.2.5.2 Parks, Recreation Areas and Refuges

A *de minimis* impact on a public parkland, recreational area, and/or wildlife and waterfowl refuge is defined as that which does not “adversely affect the features, attributes or activities qualifying the property for protection under Section 4(f)” as defined in 23 CFR 774.17(5)(2). This determination can be made only with the concurrence of the officials with jurisdiction, and can be made only after an opportunity for public review and comment on the preliminary determination.

5.2.6 Supporting Project Information

DEIS Sections 1.1, 1.2 and 1.5 describe the purpose and need for the Project, provide Project context, and summarize Project history, respectively. DEIS Section 2.1 explains the screening and evaluation process undertaken to develop alternatives to date and DEIS Section 2.2 provides detailed descriptions of the recommended LPA, the other Action Alternatives and the recommended LPA design options.

5.3 Identification and Assessment of Use of Section 4(f) Properties

This Section 4(f) Evaluation identifies and assesses three public parks and/or recreational areas and nine historic properties that are afforded protection by Section 4(f). The parks and recreational areas were identified during the DEIS and Section 4(f) Evaluation. They are also discussed in Section 4.5 of this DEIS. No wildlife or waterfowl refuges are within the Project study area. Each historic property was determined eligible for listing in the National Register of Historic Places (NRHP) (23 CFR § 774.17) during the Section 106 consultation for the Project, previously determined eligible for listing by others or already listed on the NRHP. Section 106 consultation is described in Section 4.6 and summarized in Section 5.7 of this Section 4(f) Evaluation. Additional information on historic properties is provided in the 2016 *KOP Rail Intensive-Level Survey and Eligibility Report* and 2017 *KOP Rail Determination of Effects Report*. Table 5-3.1 lists the Section 4(f) properties in the Project study area that are evaluated in this chapter. The maps in Appendix A depict the locations of these properties.

The following subsections describe, from east to west, the public parks, recreational areas and historic properties that are located within the Project study area. This description is followed by an assessment of potential use by the Action Alternatives, including the recommended LPA and its design options. Table 5-3.2 summarizes the results of the assessment of potential use of Section 4(f) properties by each Action Alternative.

After an LPA is selected and advanced to the FEIS, more detailed noise, vibration and visual effects analysis will be undertaken, including identification of minimization and mitigation measures to address Project-related impacts. The Final Section 4(f) Evaluation will further examine the potential for constructive use of Section 4(f) properties by the selected LPA considering the result of those investigative activities.

5.3.1 Chester Valley Trail Extension

The regional Chester Valley Trail runs for 13.5 miles in Chester County into Montgomery County and Upper Merion Township to its current terminus on the west side of South Gulph Road. Montgomery County administers this paved, multi-use thoroughfare in the township. On April 27, 2011, Montgomery County entered into a “Trail Use/Railbanking Agreement” with East Penn Railroad LLC by which the County acquired approximately two miles of the Philadelphia and Chester Valley Railroad, Chester Valley Secondary in the Town of Bridgeport and Upper Merion Township. On August 30, 2011, the property transaction was recorded in a Quit Claim Deed for the same property. The Agreement includes a reactivation clause enabling East Penn Railroad LLC to reactivate rail service on the property.

The County plans to extend the Chester Valley Trail eastward from its current terminus along the south side of the Township/County’s PECO Easement on the PECO utility corridor to the PA Turnpike. Before the PA Turnpike, the proposed trail will transition to follow along Hansen Access Road eastward until joining the County-acquired former East Penn Railroad LLC railroad corridor. The trail will turn north using the former railway corridor, which continues north across US Route 202 toward Bridgeport (Figure 5-3.1). Trail construction is planned for 2017/2018.

Figure 5-3.1: Chester Valley Trail Extension ROW across US Route 202



Table 5-3.1: Section 4(f) Properties Evaluated

Prop #	Property Name	Classification	Address/Location	Official(s) with Jurisdiction	Features/Attributes
1	Chester Valley Trail Extension	Planned multi-use trail	Aligned along former Philadelphia and Reading Railroad corridor; crosses under Recommended LPA at Saulin Blvd, Upper Merion Township	Montgomery County	Planned multi-use trail; Montgomery County owns former Philadelphia and Reading Railroad corridor
2	PA Turnpike Delaware River Extension	Historic highway (NRHP-eligible)	Crosses King of Prussia from NHSL west to the PA Turnpike's King of Prussia Interchange; recommended LPA aligned within Turnpike right-of-way (ROW) between PECO and Allendale Road; recommended LPA crosses between King of Prussia Mall and American Avenue; Montgomery, Delaware and Bucks Counties	PA Turnpike Commission	Multi-lane regional interstate highway; vegetated ROW outside travel lanes; noise barriers
3	PECO Easement	Recreational area	Northern portion of PECO utility corridor west of PA Turnpike	Upper Merion Township and Montgomery County	Open space view and passive recreation
4	Kingwood Road Park	Park	PECO utility corridor along Kingwood Road	Upper Merion Township	Active use park with softball field, basketball courts, shelter, picnic area, and play apparatus
5	King of Prussia Inn	Historic structure (NRHP-listed, Criterion C)	Bill Smith Blvd, south of US Route 202; south of and outside recommended LPA APE	SHPO	Architecturally significant as an early roadside inn dating to the 18 th Century; site of political gatherings during the American Revolution and function as a public house
6	Pennsylvania Railroad: Morrisville Line	Historic structure (NRHP-eligible, Criteria A and C)	East-west line roughly parallel to and south of the PECO utility corridor from the NHSL to US Route 422; outside the recommended LPA APE	SHPO	Significant for engineering and as an early example of Pennsylvania Railroad's use of low-grade and cut-off lines for freight traffic to bypass congestion and separate passenger and freight lines

Prop #	Property Name	Classification	Address/Location	Official(s) with Jurisdiction	Features/Attributes
7	Pennsylvania Turnpike: Philadelphia Extension	Historic structure (NRHP-eligible, Criterion A)	Extends west from the King of Prussia Interchange; property is outside recommended LPA APE	SHPO	Significant for its association with the post-World War II toll-road movement, a transformative initiative that resulted in an interstate system of limited-access tolled highways
8	General Electric Space Technology Center	Historic structure (NRHP-eligible, Criteria A and C)	230 Mall Boulevard, Upper Merion Township; west of the King of Prussia Mall	SHPO	Significant for its architecture and contribution to science and technology
9	American Baptist Churches, USA Mission Center	Historic structure (NRHP-eligible, Criteria A and C)	Southeast corner of 1 st Avenue/N. Gulph Road intersection; south of proposed recommended LPA guideway, 1 st & Moore station, and park-and-ride facility, Upper Merion Township	SHPO	Architecturally significant building complex (4 buildings) and campus landscape features
10	Valley Forge National Historical Park and Valley Forge National Historic Landmark	Historic property (NHRP-listed and NHL)	West of US Route 422; outside recommended LPA APE	SHPO	Nationally significant American Revolution site, associated with Baron von Steuben; historic buildings, structures, landscapes, objects, archaeological sites and natural resources
11	Philadelphia and Western Railway (NHSL)	Historic railroad corridor (NRHP-eligible)	Existing NHSL between 69 th Street Transportation center in Upper Darby and Norristown Transportation Center; Montgomery and Delaware Counties	SHPO	Existing, linear railroad corridor
12	Philadelphia Transit Co. Building (69 th Street Transportation Center)	Contributing element to two NRHP-eligible historic districts; not individually NRHP-eligible	Southern terminus of NHSL, Market and 69 th Streets, Upper Darby Township	SHPO	Existing, operating rail and bus terminal building and yards

Table 5-3.2: Potential Use of Section 4(f) Properties by Each Action Alternative

Property Name	Overall Property Size	Action Alternative						
		PECO-1 st Ave.	Recommended LPA and its Design Options			PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph
			PECO/TP-1 st Ave. (recommended LPA)	PA Turnpike North/South Option	9/11 Memorial Avoidance Option			
Permanent Impacts								
Chester Valley Trail Extension	3.5 miles	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
PA Turnpike Delaware River Extension	32 miles	1 ac/<1%	5.8 ac, approx 1 mile/3%	6.2 ac, approx 1 mile/3%	5.2 ac, approx 1 linear mile/3%	5.4 ac, approx 1 mile/3%	2.8 ac, approx 0.5 mile/2%	2.4 ac, approx 0.5 mile/2%
PECO Easement	14.3 acres	4.6 ac/32%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
Kingwood Road Park	2.5 acres	0.5 ac/20%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
King of Prussia Inn	Building	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
Pennsylvania Railroad: Morrisville Line	59 miles	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
Pennsylvania Turnpike: Philadelphia Extension	104 miles	0/0%	0/0%	0/0%	0/0%	0.7 ac, approx 0.5 mile/<1%	0/0%	0.7 ac, approx 0.5 mile /<1%
General Electric Space Technology Center	121 acres	0/0%	0/0%	0/0%	0/0%	0.02/0.02%	0/0%	0.02/0.02%
American Baptist Churches, USA Mission Center	23 acres	0.02 ac/0.1%	0.02 ac/0.1%	0.02 ac/0.1%	0.0 ac2/0.1%	0.1 ac/0.4%	0.02 ac/0.1%	0.1 ac/0.4%
Valley Forge National Historical Park	3,465 acres	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
Philadelphia and Western Railway (NHSL)	13.4 miles	<1 mile/<7%	<1 mile/<7%	<1 mile/<7%	<1 mile/<7%	<1 mile/<7%	<1 mile/<7%	<1 mile/<7%
Philadelphia Transit Co. Building (69 th Street Transportation Center)	Building	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
Temporary Impacts								
Chester Valley Trail Extension	3.5 miles	0.6 ac, <0.02 mile /<0.5%	0.6 ac, <0.02 mile /<0.5%	0.6 ac, <0.02 mile /<0.5%	0.6 ac, <0.02 mile /<0.5%	0.6 ac, <0.02 mile /<0.5%	0.2 ac, <0.01 mile /<0.3%	0.2 ac, <0.01 mile /<0.3%
PA Turnpike Delaware River Extension	32 linear miles	0.5 ac, approx 0.5 mile/<1%	1.8 ac, approx 1 mile/1%	2.5 ac, approx 1 mile/1%	1.7 ac, approx 1 mile/1%	1.6 ac, approx 1 mile/1%	1 ac, approx 0.5 mile/<1%	0.8 ac, approx 0.5 mile/<1%
PECO Easement	14.3 acres	1.3 ac/9%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
Kingwood Road Park	2.5 acres	0.2 ac/9%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
King of Prussia Inn	Building	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
Pennsylvania Railroad: Morrisville Line	59 miles	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
Pennsylvania Turnpike: Philadelphia Extension	104 miles	0/0%	0/0%	0/0%	0/0%	0.4 mile/0.4%	0/0%	0.4 mile/0.4%
General Electric Space Technology Center	121 acres	0/0%	0/0%	0/0%	0/0%	0.1 ac/0.1%	0/0%	0.1 ac/0.1%
American Baptist Churches, USA Mission Center	23 acres	0.1 ac/0.3%	0.1 ac/0.3%	0.1 ac/0.3%	0.1 ac/0.3%	0.3 ac/1.3%	0.1 ac/0.3%	0.3 ac/1.3%
Valley Forge National Historical Park	3,465 acres	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%
Philadelphia and Western Railway (NHSL)	13.4 miles	<1 mile/<7%	<1 mile/<7%	<1 mile/<7%	<1 mile/<7%	<1 mile/<7%	<1 mile/<7%	<1 mile/<7%
Philadelphia Transit Co. Building (69 th Street Transportation Center)	Building	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%	0/0%

Notes:
Pink shading = Permanent use, not *de minimis*;
Gray shading = Permanent Use, *de minimis*;
Blue shading = temporary occupancy exception, no use.
No constructive uses would occur.
Source: AECOM, 2017.

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Preliminary Findings, Chester Valley Trail Extension:

No Permanent Use. Each Action Alternative and recommended LPA design option would cross the County's right-of-way for the Chester Valley Trail Extension (former Philadelphia and Reading Railroad corridor) either at Saulin Boulevard or US Route 202 (maps in Appendix A). At each location, the proposed trail would be at grade with the existing roadway. The elevated guideway of each Action Alternative and recommended LPA design option would cross over the proposed at-grade trail alignment. Vertical clearance over the trail would be approximately 17 feet. Guideway support columns would be designed to not impact the trail or its right-of-way (ROW), thereby not requiring permanent incorporation of land from the trail ROW and avoiding impact to the trail. A preliminary finding of no use is made for the Chester Valley Trail Extension because none of the Action Alternatives or recommended LPA design options would permanently incorporate land from the Chester Valley Trail Extension.

Temporary Occupancy Exception, No Use. Each Action Alternative and recommended LPA design option potentially would temporarily occupy Chester Valley Trail Extension land to provide construction work area and access. Specifically, SEPTA would temporarily occupy a strip of land alongside the existing roadway ROW at the trail crossing (approximately 0.6 acre (<0.5% of the property) at Saulin Boulevard or 0.2 acre (<0.3% of the property) at US Route 202. A preliminary finding of temporary occupancy exception is made because each Action Alternative and recommended LPA design option potentially would achieve all five criteria for such a finding:

- 1) Because the trail crossing is a relatively small work area compared to the overall length of the Project, the duration required to construct the portion of each Action Alternative and recommended LPA design option at the trail crossing would be less than overall three-year Project construction duration. No change in land ownership would occur.
- 2) The scope of the Project construction work at the trail crossing would be minor in nature and magnitude (<0.5% of the property) in comparison to the 3.5-mile length of the overall trail property. SEPTA would temporarily occupy land within the trail right-of-way at the Project crossing to enable access by construction workers and equipment to the elevated guideway structure overhead. The trail would be temporarily closed at the work location during construction. The land areas SEPTA temporarily uses would be designated as construction work areas; work areas would be secured to protect the safety of construction workers and the public. Other parts of the trail would not be impacted and would remain open to trail users.
- 3) No permanent, adverse physical impact to the trail would occur as a result of construction activity. As other portions of the trail would remain open to trail users, and as SEPTA would restore the part of the property and trail it temporarily disturbs at the end of its construction activity, no permanent or temporary interference with the activities, features or attributes of the trail would occur.
- 4) SEPTA would fully restore the land that is temporarily used, including the trail itself.

- 5) SEPTA has had initial, general discussions with Montgomery County about the Project crossing over the proposed Chester Valley Trail Extension during development and evaluation of the Action Alternatives. FTA and SEPTA will continue to coordinate with Montgomery County in regard to proposed temporary occupancy of the Chester Valley Trail Extension as required by the fifth criterion prior to FTA making a final determination in the Final Section 4(f) Evaluation.

5.3.2 PA Turnpike: Delaware River Extension

The Delaware River Extension of the PA Turnpike was built in 1954 and extended the PA Turnpike from the Valley Forge interchange to the Delaware River (Figure 5-3.2). The PA Turnpike: Delaware River Extension crosses the Project study area in a generally east-west direction, passing behind the King of Prussia Mall. The property consists of a multi-lane highway and related infrastructure. The PA Turnpike: Delaware River Extension is part of the Pennsylvania Turnpike Main Line Historic District, whose period of significance is 1938 through 1956. The Turnpike and its extensions were determined eligible for the NRHP in 2005 under Criterion A for association with the post-World War II toll-road movement, and as one of the last elements in a regional system of high-speed, limited-access superhighways connecting northeastern and north-central states with Chicago. Key contributing elements to the District are features associated with the engineering standards used in the original construction: travel lanes (originally two in each direction); interchanges and toll plazas; tunnels; abandoned sections; bridges, culverts and retaining walls; service plazas; maintenance facilities; and state police stations.

Preliminary Findings, PA Turnpike: Delaware River Extension:

Permanent Use, de minimis. Each Action Alternative and recommended LPA design option would permanently use a portion of the PA Turnpike: Delaware River Extension as described below and shown in Table 5-3.2, Figures 5-3.3 and 5-3.4, and the maps in Appendix A:

- PECO-1st Ave. Action Alternative: elevated guideway crossing (approximate impact - 1 acre)
- Recommended LPA: elevated guideway along and within south side of property; recommended LPA would also cross the property on elevated structure near the PECO corridor and behind the King of Prussia Mall (approximate impact - 1 mile, 5.8 acres)
 - PA Turnpike North/South Option: elevated guideway alignment along and within north and south sides of property with crossing near DeKalb Pike; the recommended LPA design option would also cross the property on elevated structure near the

Figure 5-3.2: PA Turnpike: Delaware River Extension



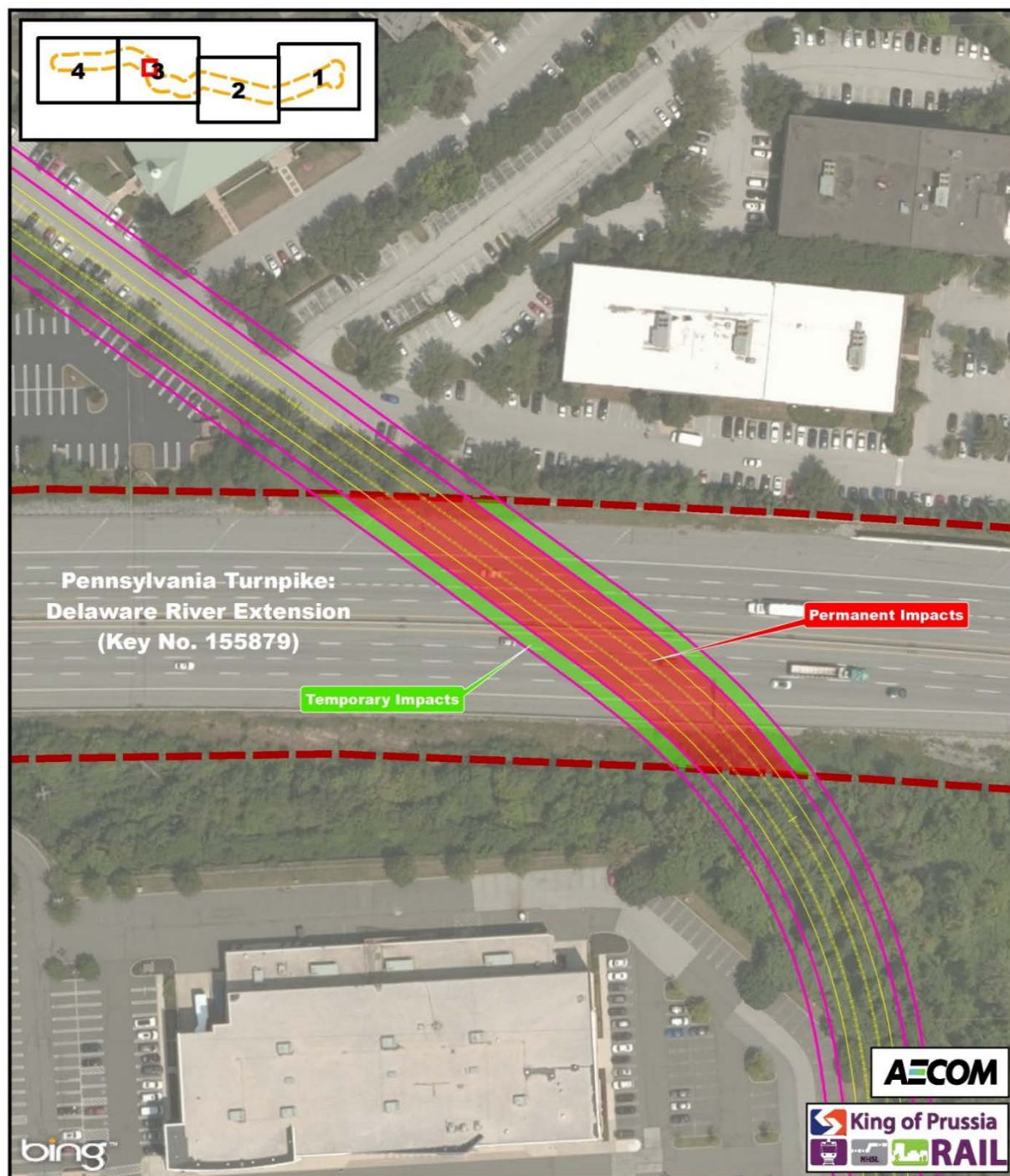
PECO corridor and behind the King of Prussia Mall (approximate impact - 1 mile, 6.2 acres)

- 9/11 Memorial Avoidance Option: elevated guideway along and within south side of property; the recommended LPA design option would also cross the property on elevated structure near the PECO corridor and behind the King of Prussia Mall (approximate impact - 1 mile, 5.2 acres)
- PECO/TP-N. Gulph Action Alternative: elevated guideway alignment along and within south side of property; the Action Alternative would also cross the property on elevated structure at US Route 202 (approximate impact - 1 mile, 5.4 acres)
- US 202-1st Ave. Action Alternative: elevated guideway alignment along and within south side of property; the Action Alternative would also cross the property on elevated structure at US Route 202 and behind the King of Prussia Mall (approximate impact – 1/2 mile, 2.8 acres)
- US 202-N. Gulph Action Alternative: elevated guideway alignment along and within south side of property; the Action Alternative would also cross the property on elevated structure at US Route 202 (approximate impact – 1/2 mile, 2.4 acres)

The ROW of the PA Turnpike: Delaware River Extension is vegetated outside the paved roadway area; the guideway supports would be placed in these vegetated areas so as not to impact existing highway travel lanes. In the case of the PA Turnpike North/South Option, supporting structures would be placed in the median at the crossing as well as outside the paved roadway area. A preliminary finding of a permanent, *de minimis* impact is made for each Action Alternative and recommended LPA design option based on the following criteria:

- 1) A Section 106 determination of no adverse effect on the PA Turnpike: Delaware River Extension was made by FTA for the recommended LPA; the SHPO concurred with this determination on March 16, 2017 (Appendix C). A no adverse effect determination under Section 106 enables a *de minimis* determination to be made under Section 4(f) because it means that the recommended LPA would have no adverse impact on the features, attributes or activities that qualify the PA Turnpike: Delaware River Extension for protection by Section 4(f).
- 2) The impacts of the other Action Alternatives and recommended LPA design options would be similar in nature and magnitude to those of the recommended LPA; specifically, each would provide an alignment along the vegetated edge of the property (north or south side) and/or would cross the property on elevated structure in the same general area. No permanent impacts to the contributing elements of the PA Turnpike: Delaware River Extension would occur. Because of the similar impacts, and because each Action Alternative and recommended LPA design option would not alter the historic integrity of the travel lanes or the ability of the property to convey its significance in transportation history (related to location, design, setting, materials, workmanship, feeling and association), a no adverse effect finding under Section 106 for the PA Turnpike: Delaware River Extension would be likely.

Figure 5-3.3: Proposed Use of PA Turnpike: Delaware River Extension, Area 1 of 2

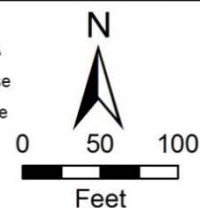
**Recommended LPA:****PECO/TP-1st Ave.****Pennsylvania Turnpike: Delaware River Extension (Key No. 155879)****Impact Type**

- Permanent Use
- Temporary Use

4(f) Resource

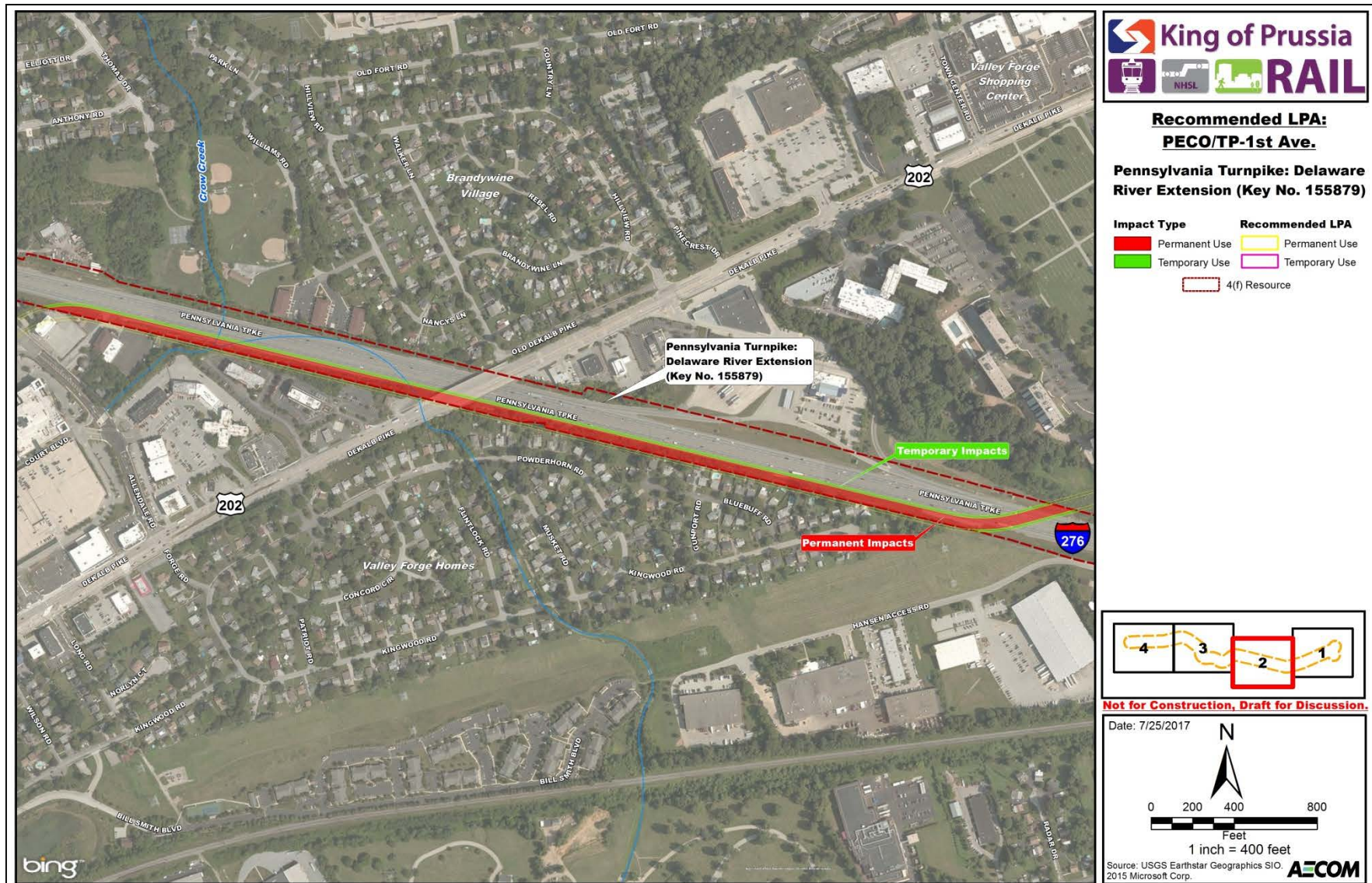
Recommended LPA

- Permanent Use
- Temporary Use



Source: USGS Earthstar Geographics SIO. 2015 Microsoft Corp. Date: 7/25/2017

Figure 5-3.4: Proposed Use of PA Turnpike: Delaware River Extension, Area 2 of 2



If an Action Alternative or recommended LPA design option is selected, FTA would coordinate with the SHPO to make a determination of effect under Section 106 on the PA Turnpike: Delaware River Extension. A *de minimis* impact finding for an Action Alternative or recommended LPA design option would mean that it would have no adverse impact on the features, attributes or activities that qualify the PA Turnpike: Delaware River Extension for protection by Section 4(f).

Temporary Occupancy Exception, No Use. Each Action Alternative and recommended LPA design option potentially would temporarily occupy PA Turnpike: Delaware River Extension land to provide construction work area and access. Specifically, SEPTA would temporarily occupy a strip of land alongside the permanent ROW that the proposed guideway would occupy within the Turnpike property as listed in Table 5-3.2 and described below:

- PECO-1st Ave. Action Alternative: 0.5 acre, <1% of property
- Recommended LPA: 1.8 acres, 1% of property
 - PA Turnpike North/South Option: 2.5 acres, 1% of property
 - 9/11 Memorial Avoidance Option: 1.7 acres, 1% of property
- PECO/TP-N. Gulph Action Alternative: 1.6 acres, 1% of property
- US 202-1st Ave. Action Alternative: 1 acre, <1% of property
- US 202-N. Gulph Action Alternative: 0.8 acre, <1% of property

A preliminary finding of temporary occupancy exception is made because each Action Alternative and recommended LPA design option potentially would achieve all five criteria for such a finding:

- 1) Because the portion of the Project in the PA Turnpike property is relatively small compared to the overall length of the Project, the duration required to construct the portion of each Action Alternative and recommended LPA design option along and across the PA Turnpike: Delaware River Extension would be less than the overall three-year Project construction duration. No change in land ownership would occur.
- 2) The scope of Project construction on the PA Turnpike: Delaware River Extension would be minor in nature and magnitude (<1% of the property) in comparison to the overall length of the historic site (32 miles). SEPTA would temporarily occupy PA Turnpike land to enable access by construction workers and equipment to the guideway work area. For worker and public safety, temporary lane closures on the PA Turnpike may be required for certain activities that occur near travel lanes, such as installing support columns for the guideway structure in the highway median. In these cases, some travel lanes would remain open to traffic. Lifting the overhead guideway sections into place at locations where the Action Alternatives cross the PA Turnpike would require the PA Turnpike to be closed for limited periods of time to protect worker and public safety. Roadway closure times and durations would be determined in coordination with the PA Turnpike Commission and would occur during late night hours to minimize disruption of PA Turnpike operations. The land area SEPTA temporarily uses would be a designated

construction work area and secured to protect the safety of construction workers and the public.

- 3) No permanent, adverse physical impact to the PA Turnpike: Delaware River Extension would occur as a result of construction activity. As the highway would remain open during construction and operation, and because SEPTA would restore the part of the property it disturbs at the end of its construction activity, no permanent or temporary interference with the activities, features or attributes of the property would occur.
- 4) SEPTA would fully restore the portions of the PA Turnpike: Delaware River Extension that are temporarily used, enabling the PA Turnpike Commission to re-open temporarily closed travel lanes.
- 5) FTA and SEPTA will continue to coordinate with the PA Turnpike Commission in regard to the proposed temporary occupancy of the PA Turnpike: Delaware River Extension as required by the fifth criterion prior to FTA making a final determination in the Final Section 4(f) Evaluation.

5.3.3 PECO Easement

On December 1, 2011, Upper Merion Township entered into an easement agreement with PECO; this easement grants to Upper Merion Township the “perpetual, exclusive right” to use approximately 14.3 acres of land within the PECO utility corridor west of the PA Turnpike crossing for “active and passive recreation (including the establishment of athletic fields), parking lots, a bicycle-pedestrian trail, and open space” (Figure 5-3.5). Within the PECO Easement is another easement for the Township’s Kingwood Road Park (described in Section 5.3.4 below). With the exception of Kingwood Road Park, which is developed with recreational amenities, the remainder of the PECO Easement is undeveloped by the Township. The Township’s existing plan is to retain the PECO Easement as open space.

Figure 5-3.5: PECO Easement



Preliminary Findings, PECO Easement:

No Permanent Use. The recommended LPA and its design options, the PECO/TP-N. Gulph, US 202-1st Ave. and US 202-N. Gulph Action Alternatives would be approximately 400 to 1,000 feet from the PECO Easement (maps, Appendix A). A preliminary finding of no permanent use is made for the PECO Easement because each Action Alternative and the recommended LPA design options would not permanently incorporate land from the PECO Easement.

Permanent Use, Not *de minimis*. The PECO-1st Ave. Action Alternative would be aligned within the PECO Easement, resulting in permanent use of approximately 4.6 acres (32 percent of the property) along the length of the property. SEPTA would temporarily occupy an approximately 1.3-acre strip of land (9% of property) alongside the permanent ROW that the proposed guideway would occupy within the PECO Easement. The PECO-1st Ave. Action Alternative would reduce the size of the view corridor and recreation area that is provided by the PECO Easement. This change has the potential to negatively impact the features, attributes or activities that qualify the PECO Easement for protection by Section 4(f). For this reason, a preliminary finding of permanent use is made for the PECO Easement. FTA and SEPTA will continue to coordinate with Upper Merion Township and Montgomery County regarding potential use of the PECO Easement property if the PECO-1st Ave. Action Alternative is advanced for further study.

No Temporary Occupancy. The recommended LPA and its design options, the PECO/TP-N. Gulph, US 202-1st Ave. and US 202-N. Gulph Action Alternatives would not temporarily occupy the PECO Easement because Project construction would not be staged on the property.

No Constructive Use. Action Alternatives that would not permanently use or temporarily occupy the PECO Easement were assessed for potential constructive use of the property, specifically, noise, vibration and visual effects. Each Action Alternative is approximately 400 feet or more from the PECO Easement as listed below:

- Recommended LPA: 400 feet with line of sight
 - PA Turnpike North/South Option: 400 feet with line of sight
 - 9/11 Memorial Avoidance Option: 400 feet with line of sight
- PECO/TP-N. Gulph Action Alternative: 400 feet with line of sight
- US 202-1st Ave. Action Alternative: 1,000 feet, line of sight blocked by development
- US 202-N. Gulph Action Alternative: 1,000 feet, line of sight blocked by development

The noise and vibration assessment described in DEIS Section 4.10 identified no potential for impacts to the PECO Easement. Action Alternatives 1,000 feet or more from the PECO Easement would not be visible from the property because of intervening buildings. The elevated guideway of the Action Alternatives approximately 400 feet from the property would be visible alongside and above the PA Turnpike. Existing visual elements that would remain visible with any one of these Action Alternatives in place include the high rise condominium complex known as 251 DeKalb on the north side of the Turnpike behind the proposed guideway, the Valley Forge Homes development alongside the PECO Easement, the electrical towers and wires within the PECO corridor, and the land within the PECO corridor. In this primarily developed land use context, the visual effect of the Action Alternatives aligned along the PA Turnpike would not impair the activities, features or attributes of the PECO Easement and would not cause proximity impacts that are so severe that the protected activities, features or attributes that qualify the PECO Easement for protection under Section 4(f) would be substantially impaired. No constructive use of the PECO Easement would occur.

5.3.4 Kingwood Road Park

Kingwood Road Park is a portion of the land transferred to Upper Merion Township from PECO by easement agreement that is described in Section 5.3.3 above. The Township developed and administers this neighborhood park along Kingwood Road. Kingwood Road Park contains a softball field, basketball courts, shelter, picnic area, and play apparatus (Figure 5-3.6). The Township leases the park's 2.5 acres from PECO through the PECO Easement described in Section 5.3.3 above.

Figure 5-3.6: Kingwood Road Park



Preliminary Findings, Kingwood Road Park:

No Permanent Use. The recommended LPA and its design options, the PECO/TP-N. Gulph, US 202-1st Ave. and US 202-N. Gulph Action Alternatives are approximately 1,800 feet from Kingwood Road Park. A preliminary finding of no permanent use is made for the Kingwood Road Park because each of these Action Alternatives and the recommended LPA design options would not permanently incorporate land from the Kingwood Road Park.

Permanent Use, Not *de minimis*. A portion of the PECO-1st Ave. Action Alternative would be aligned within Kingwood Road Park, resulting in permanent use of approximately 0.5 acres (20 percent of the property) that would bisect the property. In addition, the PECO-1st Ave. Action Alternative would temporarily occupy 0.2 acre (9 percent) of the property for construction work and access. The PECO-1st Ave. Action Alternative would directly impact some of the recreational facilities in the park, such as play equipment and ballfields. This change has the potential to negatively impact the features, attributes or activities that qualify Kingwood Road Park for protection by Section 4(f). For this reason, a preliminary finding of permanent use is made for Kingwood Road Park. SEPTA has initiated discussions with Upper Merion Township and Montgomery County regarding the PECO-1st Ave. Action Alternative crossing Kingwood Road Park. FTA and SEPTA will continue to coordinate with Upper Merion Township regarding potential use of the Kingwood Road Park property if the PECO-1st Ave. Action Alternative is advanced for further study.

No Temporary Occupancy. The recommended LPA and its design options, the PECO/TP-N. Gulph, US 202-1st Ave. and US 202-N. Gulph Action Alternatives would not temporarily occupy Kingwood Road Park because Project construction would not be staged on the property.

No Constructive Use. The noise and vibration assessment described in DEIS Section 4.10 identified no potential for impacts to the Kingwood Road Park by the recommended LPA and its design options, the PECO/TP-N. Gulph, US 202-1st Ave. and US 202-N. Gulph Action Alternatives. These Action Alternatives would not be visible from Kingwood Road Park because of distance, terrain and development. No constructive use of Kingwood Road Park would occur.

5.3.5 King of Prussia Inn

The King of Prussia Inn was listed in the NRHP on December 23, 1975 (Figure 5-3.7). Dating to the first quarter of the 18th Century, the King of Prussia Inn is significant as the site of political gatherings during the time of the American Revolution as well as its function as a public house and community center over several centuries. The building is significant under Criterion C for architecture as an example of an early roadside inn. The building was moved from its original location along US Route 202 on August 21, 2000 to its current site on Bill Smith Blvd. to make way for the widening of US Route 202.

Despite no longer retaining integrity of location, setting or association, it remains listed on the NRHP for its architectural significance.

Figure 5-3.7: King of Prussia Inn



Preliminary Findings, King of Prussia Inn:

No Permanent Use. The King of Prussia Inn is 250 to 1,800 feet from the Action Alternatives and recommended LPA design options. A preliminary finding of no permanent use is made for the King of Prussia Inn because each Action Alternative and recommended LPA design option would not permanently incorporate land from the King of Prussia Inn.

No Temporary Occupancy. Each Action Alternative and recommended LPA design option would not temporarily occupy the King of Prussia Inn because construction would not be staged on the property.

No Constructive Use. Each of the Action Alternatives and recommended LPA design options was assessed for potential constructive use of the King of Prussia Inn, specifically, noise, vibration and visual effects. Each Action Alternative is approximately 250 feet or more from the King of Prussia Inn as listed below:

- Recommended LPA and its design options, the PECO/TP-N. Gulph, US 202-1st Ave., and US 202-N. Gulph Action Alternatives: 1,800 feet, line of sight blocked by development
- PECO-1st Ave. Action Alternative: 250 feet within line of sight

The noise and vibration assessment described in DEIS Section 4.10 identified no potential for impacts to the King of Prussia Inn. Action Alternatives approximately 1,800 feet from the King of Prussia Inn would not be visible from the property because of intervening buildings. The elevated guideway of the PECO-1st Ave. Action Alternative would be visible crossing Kingwood Road Park from the King of Prussia Inn. Existing visual elements that would remain visible include the Kingwood Road Park ballfields south of the guideway, the electrical towers, wires, substation and land within the PECO corridor and the Valley Forge Homes development

alongside the PECO corridor. In this primarily developed land use context, the visual effect of the PECO-1st Ave. Action Alternative guideway aligned along the north side of the PECO corridor would not impair the activities, features or attributes of the King of Prussia Inn building; and it would not cause proximity impacts that are so severe that the protected activities, features or attributes that qualify the King of Prussia Inn for protection under Section 4(f) would be substantially impaired. No constructive use of the King of Prussia Inn would occur.

5.3.6 Pennsylvania Railroad: Morrisville Line

The Pennsylvania Railroad: Morrisville Line runs from Thorndale to Morrisville through Chester, Montgomery and Bucks Counties; in the study area, the Line is an east-west corridor that is approximately parallel to and south of the PECO utility corridor, Bill Smith Boulevard and Hansen Access Road. The Line was determined eligible for listing in the NRHP on November 6, 2009 (Figure 5-3.8). Previously, the Chester County portion was determined eligible on September 24, 1992 and the Montgomery County and Bucks County portions were determined eligible on September 14, 1993. The line is significant under Criterion A for its association with transportation history “as one of the earliest examples of the Pennsylvania Railroad’s use of low-grade lines and cut-off lines for freight traffic to bypass congested areas and to separate the passenger and freight lines for increased efficiency” (Amisson and Dluzak 2010:38). It is also significant under Criterion C for engineering as an early low-grade line in the Pennsylvania Railroad network. Its period of significance is ca. 1889-1957.

Figure 5-3.8: Pennsylvania Railroad: Morrisville Line (Across N. Gulph Road)



Preliminary Findings, Pennsylvania Railroad: Morrisville Line:

No Permanent Use. The Pennsylvania Railroad: Morrisville Line is 350 to 1,800 feet from the Action Alternatives and the recommended LPA design options. A preliminary finding of no permanent use is made for the Pennsylvania Railroad: Morrisville Line because each Action Alternative and recommended LPA design option would not permanently incorporate land from the Pennsylvania Railroad: Morrisville Line.

No Temporary Occupancy. Each Action Alternative and recommended LPA design option would not temporarily occupy the Pennsylvania Railroad: Morrisville Line because Project construction would not be staged on the property.

No Constructive Use. Each of the Action Alternatives and recommended LPA design options was assessed for potential constructive use of the Pennsylvania Railroad: Morrisville Line, specifically, noise, vibration and visual effects. Each Action Alternative is approximately 350 feet or more from the Pennsylvania Railroad: Morrisville Line as listed below:

- Recommended LPA and its design options, Action Alternative PECO/TP-N. Gulph, US 202-1st Ave., and US 202-N. Gulph Action Alternatives: 1,800 feet, line of sight blocked by development
- PECO-1st Ave. Action Alternative: 350 feet with potential line of sight

The noise and vibration assessment described in DEIS Section 4.10 identified no potential for impacts to the Pennsylvania Railroad: Morrisville Line. Action Alternatives approximately 1,800 feet from the Pennsylvania Railroad: Morrisville Line would not be visible from the property because of intervening buildings. The elevated guideway of the PECO-1st Ave. Action Alternative potentially would be visible from the Pennsylvania Railroad: Morrisville Line. Existing visual elements that would be part of the viewshed from the Line include adjacent wooded area and the electrical towers and wires within the PECO corridor. In this context, the visual effect of the PECO-1st Ave. Action Alternative guideway aligned along the north side of the PECO corridor would not impair the activities, features or attributes of the Pennsylvania Railroad: Morrisville Line; and it would not cause proximity impacts that are so severe that the protected activities, features or attributes that qualify the Pennsylvania Railroad: Morrisville Line for protection under Section 4(f) would be substantially impaired. No constructive use of the Pennsylvania Railroad: Morrisville Line would occur.

5.3.7 Pennsylvania Turnpike: Philadelphia Extension

The Pennsylvania Turnpike: Philadelphia Extension was determined eligible for listing in the NRHP on October 25, 2002 (Figure 5-3.9 and maps, Appendix A). The Philadelphia Extension of the Pennsylvania Turnpike extends from Carlisle to Valley Forge and was constructed between 1948 and 1950. It connected the original Turnpike main line to the Valley Forge/Philadelphia area; this connection was later enhanced by construction of the Turnpike's Delaware River Extension to the Delaware River (1954), and the Schuylkill Expressway into Philadelphia. It is significant under Criterion A in the area of transportation history for its association with the post-World War II toll-road movement, a short-lived but transformative initiative that resulted in an interstate system of limited-access tolled highways.

Figure 5-3.9: Pennsylvania Turnpike Philadelphia Extension



Preliminary Findings, Pennsylvania Turnpike: Philadelphia Extension:

No Permanent Use. The PECO-1st Ave. Action Alternative, the recommended LPA and each of its design options, and the US 202-1st Ave. Action Alternative would be approximately 1,400 feet from the Pennsylvania Turnpike: Philadelphia Extension. A preliminary finding of no permanent use is made for the Pennsylvania Turnpike: Philadelphia Extension because each Action

Alternative and the recommended LPA design option would not permanently incorporate land from the Pennsylvania Turnpike: Philadelphia Extension.

Permanent Use, *de minimis*. The proposed elevated guideways of the PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives would cross over the Pennsylvania Turnpike: Philadelphia Extension near N. Gulph Road, resulting in approximately 0.7 acres of permanent use of the property. At this location, support columns for the elevated guideway may be placed within the property boundaries. A preliminary finding of a permanent, *de minimis* impact is made for each of these Action Alternatives based on the following criterion:

- 1) The impacts of the PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives would cross the property in a perpendicular orientation on an elevated structure. No permanent impact would occur to the contributing elements of the PA Turnpike: Philadelphia Extension, i.e., the travel lanes. The size and orientation of the crossing structure would be similar to that which is proposed in the recommended LPA, but it would be positioned approximately one mile to the west along the PA Turnpike alignment. The PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives would not alter the historic integrity of the property (related to location, design, setting, materials, workmanship, feeling and association) or the ability of the property to convey its significance in transportation history. For these reasons, a no adverse effect finding under Section 106 for the PA Turnpike: Philadelphia Extension would be likely.

If one of these Action Alternatives is advanced for further study, FTA would coordinate with the SHPO to make a formal determination of effect under Section 106. A *de minimis* impact finding for the PECO/TP-N. Gulph or US 202-N. Gulph Action Alternative would mean that it would have no adverse impact on the features, attributes or activities that qualify the PA Turnpike: Philadelphia Extension for protection by Section 4(f).

No Temporary Occupancy. The PECO-1st Ave. Action Alternative, the recommended LPA and each design option and the US 202-1st Ave. Action Alternative would not temporarily occupy the Pennsylvania Turnpike: Philadelphia Extension because Project construction would not be staged on the property.

Temporary Occupancy Exception, No Use. The proposed elevated guideways of PECO/TP-N. Gulph and US 202-N. Gulph would cross over the Pennsylvania Turnpike: Philadelphia Extension. Each Action Alternative potentially would temporarily occupy Pennsylvania Turnpike: Philadelphia Extension land to provide construction work area and access. Specifically, SEPTA would temporarily occupy a strip of land alongside the permanent ROW at the proposed guideway crossing of the property as described below and listed in Table 5-3.2:

- PECO/TP-N. Gulph: 0.4 acre, 0.4% of property
- US 202-N. Gulph: 0.4 acre, 0.4% of property

A preliminary finding of temporary occupancy exception is made because each of these Action Alternatives potentially would achieve all five criteria for such a finding:

- 1) Because the portion of the Project on the PA Turnpike property is a relatively small compared to the overall length of the Project, the duration required to construct the portions of the PECO/TP-N. Gulph or US 202-N. Gulph Action Alternative across the Pennsylvania Turnpike: Philadelphia Extension would be less than overall three-year Project construction duration. No change in land ownership would occur.
- 2) The scope of Project construction on the Pennsylvania Turnpike: Philadelphia Extension would be minor in nature and magnitude (0.4% of the property) in comparison to the overall length of the historic site (104 miles) and because an elevated structure over the property is proposed. SEPTA would temporarily occupy PA Turnpike land to enable access by construction workers and equipment to the elevated guideway structure overhead. Although temporary lane closures would be required, the highway would remain in operation at the work location. The land area SEPTA temporarily uses would be a designated construction work area and secured to protect the safety of construction workers and the public.
- 3) No permanent, adverse physical impacts to the Pennsylvania Turnpike: Philadelphia Extension would occur as a result of construction activity. As the highway would remain open during construction and operation, and as SEPTA would restore the part of the property it disturbs at the end of its construction activity, no permanent or temporary interference with the activities, features or attributes of the Pennsylvania Turnpike: Philadelphia Extension would occur.
- 4) SEPTA would fully restore the portion of the Pennsylvania Turnpike: Philadelphia Extension that is temporarily used, enabling the PA Turnpike Commission to re-open all temporarily closed travel lanes.
- 5) FTA and SEPTA will continue to coordinate with PA Turnpike Commission in regard to proposed temporary occupancy of the Pennsylvania Turnpike: Philadelphia Extension as required by the fifth criterion prior to FTA making a determination in the Final Section 4(f) Evaluation.

No Constructive Use. Each of the Action Alternatives and recommended LPA design options that would use 1st Avenue was assessed for potential constructive use of the Pennsylvania Turnpike: Philadelphia Extension, specifically, noise, vibration and visual effects. Each Action Alternative is approximately 1,400 feet or more from the Pennsylvania Turnpike: Philadelphia Extension with the line of sight from the highway blocked by terrain and intervening development. The noise and vibration assessment described in DEIS Section 4.10 identified no potential for impacts to the Pennsylvania Turnpike: Philadelphia Extension. In this context, no constructive use of the Pennsylvania Turnpike: Philadelphia Extension would occur.

5.3.8 General Electric Space Technology Center

The General Electric Space Technology Center is located at 230 Mall Boulevard in Upper Merion Township and is situated west of the King of Prussia Mall (Figure 5.3-10). The Modernist complex of low-rise buildings, designed by architect Vincent Kling, was constructed in 1961 as a research laboratory that focused on space and missile technology. When built, it was the largest privately-owned facility dedicated to space research and development. Since 1995, the facility has been owned and operated by Lockheed Martin and remains in active use. Inspection of historic aerials and a brief site visit of accessible portions of the secured property indicate that the campus has undergone relatively few changes since its construction: demolition of several buildings, conveyance of Goddard Avenue parking area to nearby retail uses, and window replacement in the main building. Overall, the campus remains relatively intact and retains integrity. The physical condition combined with the site's potential to be significant for its contribution to science and technology, make the General Electric Space Technology Center potentially eligible for listing in the NRHP.

Figure 5-3.10: General Electric Space Technology Center



Preliminary Findings, General Electric Space Technology Center:

No Permanent Use. The PECO-1st Ave. Action Alternative, the recommended LPA and its design options, and the US 202-1st Ave. Action Alternative would be approximately 1,400 feet from the General Electric Space Technology Center. A preliminary finding of no permanent use is made for the General Electric Space Technology Center because each of these Action Alternatives and the recommended LPA design options would not permanently incorporate land from the General Electric Space Technology Center.

Permanent Use, *de minimis*. The proposed elevated guideways of PECO/TP-N. Gulph and US 202-N. Gulph would be aligned on Mall Boulevard adjacent to the General Electric Space Technology Center property. Additional land would be required along Mall Boulevard to accommodate the ROW required for these Action Alternatives. The additional land would be approximately 0.02 acres (0.02 percent of the property) in the form of permanent use of a land sliver along the edge of Mall Boulevard. A preliminary finding of a permanent, *de minimis* impact is made for these Action Alternatives based on the following criterion:

- 1) The impacts of the PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives would be at the outside edge of the property where it abuts Mall Boulevard. The relatively small size of the proposed impact area (0.02 acres) compared to the remaining size of the property (121 acres) would not reduce the campus-like setting of the General Electric Space Technology Center that is part of its significance as an historic site. No impact to buildings or the configuration of existing structures and campus would occur. The

PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives would not alter the historic integrity of the property (related to location, design, setting, materials, workmanship, feeling and association) or the ability of the property to convey its significance. For these reasons, a no adverse effect finding under Section 106 for the General Electric Space Technology Center would be likely.

If one of these Action Alternatives is selected, FTA would coordinate with the SHPO to make a determination of effect under Section 106 on the General Electric Space Technology Center. A *de minimis* impact finding would mean that the Action Alternative would have no adverse impact on the features, attributes or activities that qualify the General Electric Space Technology Center for protection by Section 4(f).

Temporary Occupancy Exception, No Use. PECO/TP-N. Gulph and US 202-N. Gulph would temporarily occupy a strip of land from the General Electric Space Technology Center to provide construction work area and access. Specifically, the strip of land would be alongside the permanent ROW, paralleling Mall Boulevard. Approximate amounts of land required are described below and listed in Table 5-3.2:

- PECO/TP-N. Gulph: 0.1 acre, 0.1% of property
- US 202-N. Gulph: 0.1 acre, 0.1% of property

A preliminary finding of temporary occupancy exception is made because each of these Action Alternatives potentially would achieve all five criteria for such a finding:

- 1) Because the Project work area on the property is relatively small compared to the overall length of the Project, the duration required to construct the portion of PECO/TP-N. Gulph or US 202-N. Gulph Action Alternative on the General Electric Space Technology Center property would be less than overall three-year Project construction duration. No change in land ownership would occur.
- 2) The scope of Project construction on the General Electric Space Technology Center would be minor in nature and magnitude (0.1% of the property) in comparison to the overall size of the historic site (121 acres) and the location of the proposed work alongside Mall Boulevard. SEPTA would temporarily occupy the land to enable access by construction workers and equipment to the elevated guideway structure overhead. All construction work would occur in the lawn area adjacent to Mall Boulevard; no physical impact to the Center's buildings or landscaped setting would occur. The land area SEPTA temporarily uses would be a designated construction work area and secured to protect the safety of construction workers and the public.
- 3) No permanent, adverse physical impact to the General Electric Space Technology Center would occur as a result of construction activity. As the Center's buildings and campus setting would not be impacted by either alternative and as SEPTA would restore the part of the property it temporarily disturbs at the end of its construction activity, no permanent or temporary interference with the activities, features or attributes of the property would occur.

- 4) SEPTA would fully restore the portion of the General Electric Space Technology Center that is temporarily used, enabling the land to continue to function as lawn.
- 5) FTA and SEPTA will continue to coordinate with the SHPO in regard to proposed temporary occupancy of the General Electric Space Technology Center as required by the fifth criterion prior to FTA making a determination in the Final Section 4(f) Evaluation.

No Constructive Use. Each of the Action Alternatives and recommended LPA design options that would use 1st Avenue was assessed for potential constructive use of the General Electric Space Technology Center, specifically, noise, vibration and visual effects. The PECO-1st Ave. Action Alternative would be aligned on Mall Boulevard, adjacent to the Center, while each of the remaining Action Alternatives is approximately 1,400 feet or more from the General Electric Space Technology Center with the line of sight from the Center blocked by terrain and intervening development. The noise and vibration assessment described in DEIS Section 4.10 identified no potential for impacts to the General Electric Space Technology Center. Existing visual elements that would be part of the viewshed from the General Electric Space Technology Center include adjacent commercial development associated with the King of Prussia Mall. In this context, the visual effect of the PECO-1st Ave. Action Alternative guideway aligned along Mall Boulevard would not impair the activities, features or attributes of the General Electric Space Technology Center; and it would not cause proximity impacts that are so severe that the protected activities, features or attributes that qualify the General Electric Space Technology Center for protection under Section 4(f) would be substantially impaired. In this context, no constructive use of the General Electric Space Technology Center would occur.

5.3.9 American Baptist Churches, USA Mission Center

The American Baptist Convention built its headquarters building on the property at the southeast corner of 1st Avenue and N. Gulph Road in 1962 (Figure 5-3.11). The architect for the project was Vincent Kling, whose circular plan for the national headquarters office building was inspired by the Baptist tenet of centrality, unity and single focus. Kling combined form with glass, stone and concrete materials, incorporating arcades, towers, and other treatments to add interest to the white exterior. The American Baptist Churches, USA Mission Center is eligible under Criterion C for its architectural distinction, an example of a Modernist office building complex. The elements that contribute to the significance of the property include the complex of four buildings and the associated original landscape elements: northwest lawn, courtyard, parking lots, sidewalks and terraces.

Figure 5-3.11: American Baptist Churches, USA Mission Center



Preliminary Findings, American Baptist Churches, USA Mission Center:

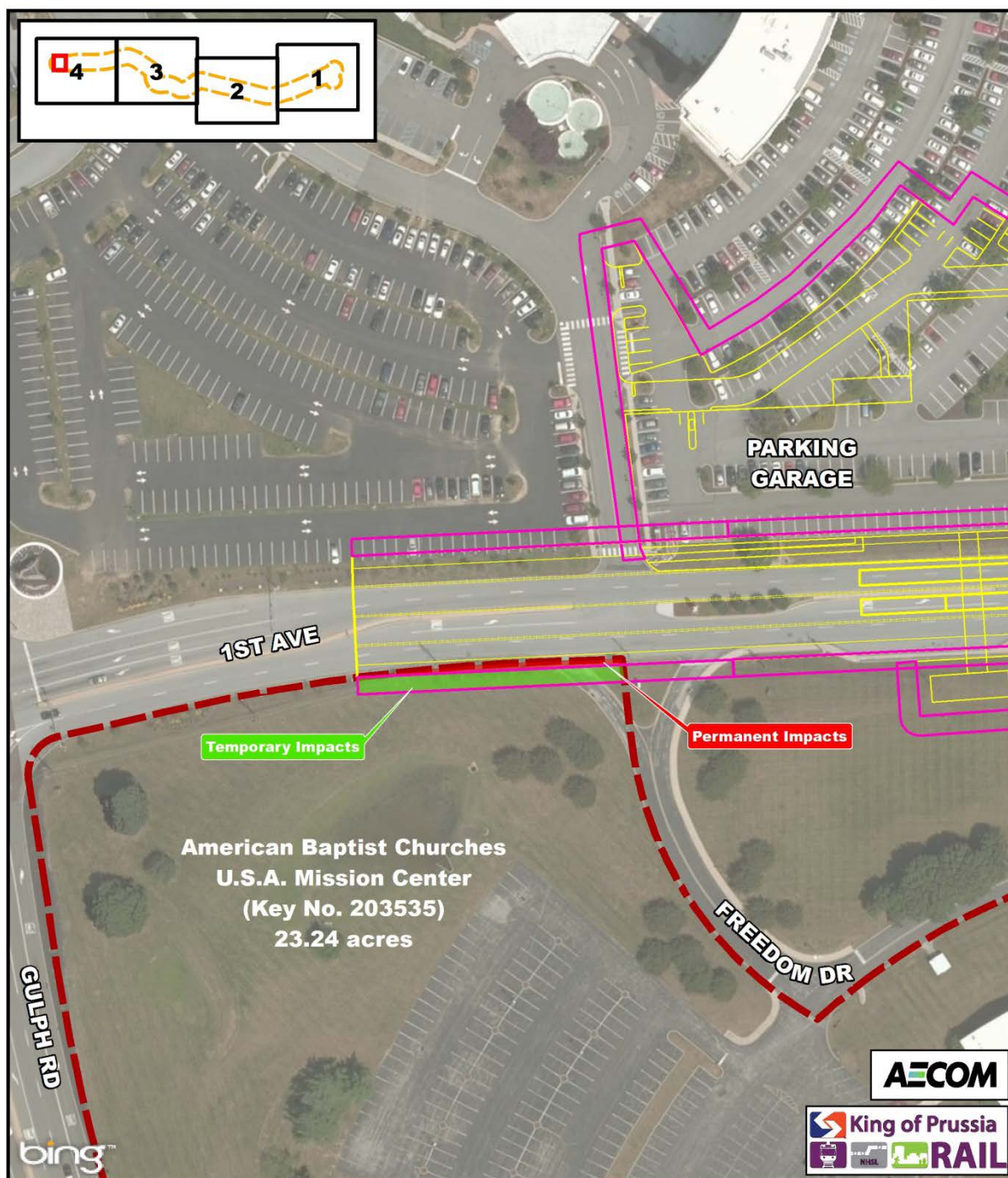
Permanent Use, *de minimis*. Each Action Alternative and recommended LPA design option would permanently use a portion of the American Baptist Churches, USA Mission Center as described below and shown in Table 5-3.2, Figure 5-3.12, and the maps in Appendix A:

- PECO-1st Ave. Action Alternative: land sliver in lawn area adjacent to 1st Avenue (approximate impact – 0.02 acre, 0.1 percent of property)
- Recommended LPA: land sliver in lawn area adjacent to 1st Avenue (approximate impact - 0.02 acre, 0.1 percent of property)
 - PA Turnpike North/South Option: land sliver in lawn area adjacent to 1st Avenue (approximate impact - 0.02 acre, 0.1 percent of property)
 - 9/11 Memorial Avoidance Option: land sliver in lawn area adjacent to 1st Avenue (approximate impact - 0.02 acre, 0.1 percent of property)
- PECO/TP-N. Gulph Action Alternative: land sliver in lawn area adjacent to N. Gulph Road (approximate impact - 0.1 acre, 0.4 percent of property)
- US 202-1st Ave. Action Alternative: land sliver in lawn area adjacent to 1st Avenue (approximate impact – 0.02 acre, 0.1 percent of property)
- US 202-N. Gulph Action Alternative: land sliver in lawn area adjacent to N. Gulph Road (approximate impact – 0.1 acre, 0.4 percent of property)

A preliminary finding of a permanent, *de minimis* impact is made for each of these Action Alternatives based on the following criteria:

- 1) A Section 106 determination of no adverse effect on the American Baptist Churches, USA Mission Center was made by FTA for the recommended LPA; the SHPO concurred with this determination on March 16, 2017 (Appendix C). A no adverse effect determination under Section 106 enables a *de minimis* determination under Section 4(f) because it means that the recommended LPA would have no adverse impact on the features, attributes or activities that qualify the American Baptist Churches, USA Mission Center for protection by Section 4(f).
- 2) The impacts of each other Action Alternative and recommended LPA design option would be at a similar location to that of the recommended LPA; at the outside edge of the property where it abuts either 1st Avenue or N. Gulph Road. The relatively small size of the proposed impact area (up to 0.1 acre) compared to the remaining size of the property (23 acres) would not reduce the campus-like setting of the American Baptist Churches, USA Mission Center that is part of its significance as an historic site. No impact to buildings or the configuration of existing structures and adjacent landscaping would occur. Each Action Alternative and recommended LPA design option would not alter the historic integrity of the property or the ability of the property to convey its significance. For these reasons, a no adverse effect finding under Section 106 for the American Baptist Churches, USA Mission Center would be likely.

Figure 5-3.12: Proposed Use of American Baptist Churches, USA Mission Center

**Recommended LPA:****PECO/TP-1st Ave.****4(f) Impacts - American Baptist Churches
U.S.A. Mission Center (Key No. 203535)**

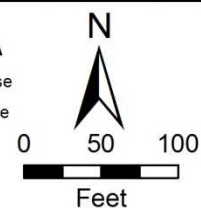
Source: USGS Earthstar Geographics SIO. 2015 Microsoft Corp. Date: 7/25/2017

Impact Type

- Permanent Use
- Temporary Use

 4(f) Resource**Recommended LPA**

- Permanent Use
- Temporary Use



If one of these Action Alternatives is selected, FTA would coordinate with the SHPO to make a determination of effect under Section 106 on the American Baptist Churches, USA Mission Center. A *de minimis* impact finding would mean that the alternative would have no adverse impact on the features, attributes or activities that qualify the American Baptist Churches, USA Mission Center for protection by Section 4(f).

Temporary Occupancy Exception, No Use. Each Action Alternative and recommended LPA design option would temporarily occupy a strip of land adjacent to the proposed permanent use area on the American Baptist Churches, USA Mission Center property. Approximate acreages of land to be temporarily occupied to provide construction access and work area are described below and shown in Table 5-3.2, Figure 5-3.12 and the maps in Appendix A:

- PECO-1st Ave. Action Alternative: land sliver in lawn area adjacent to 1st Avenue (approximate impact – 0.1 acre, 0.3 percent of property)
- Recommended LPA: land sliver in lawn area adjacent to 1st Avenue (approximate impact - 0.1 acre, 0.3 percent of property)
 - PA Turnpike North/South Option: land sliver in lawn area adjacent to 1st Avenue (approximate impact - 0.1 acre, 0.3 percent of property)
 - 9/11 Memorial Avoidance Option: land sliver in lawn area adjacent to 1st Avenue (approximate impact - 0.1 acre, 0.3 percent of property)
- PECO/TP-N. Gulph Action Alternative: land sliver in lawn area adjacent to N. Gulph Road (approximate impact - 0.3 acre, 1.3 percent of property)
- US 202-1st Ave. Action Alternative: land sliver in lawn area adjacent to 1st Avenue (approximate impact – 0.1 acre, 0.3 percent of property)
- US 202-N. Gulph Action Alternative: land sliver in lawn area adjacent to N. Gulph Road (approximate impact – 0.3 acre, 1.3 percent of property)
- A preliminary finding of temporary occupancy exception is made because each of the Action Alternatives potentially would achieve all five criteria for such a finding:
 - 1) Because the Project work area on the property is relatively small compared to the overall length of the Project, the duration required to construct the portion of each Action Alternative or recommended LPA design option on the American Baptist Churches, USA Mission Center property would be less than overall three-year Project construction duration. No change in land ownership would occur.
 - 2) The scope of Project construction on the American Baptist Churches, USA Mission Center would be minor in nature and magnitude (0.3% of the property) in comparison to the overall size of the historic site (23 acres) and the location of the proposed work alongside either 1st Avenue or N. Gulph Road depending on the alternative. SEPTA would temporarily occupy the land to enable access by construction workers and equipment to the elevated guideway structure along 1st Avenue or N. Gulph Road depending on the alternative. All construction work would occur in the lawn area adjacent to 1st Avenue or N. Gulph Road; no physical impact to the Center's buildings would occur. The land area SEPTA temporarily

uses would be a designated construction work area and secured to protect the safety of construction workers and the public.

- 3) No permanent, adverse physical impact to the American Baptist Churches, USA Mission Center would occur as a result of construction activity. As SEPTA would restore the part of the property it temporarily disturbs at the end of its construction activity, no permanent or temporary interference with the activities, features or attributes of the property would occur.
- 4) SEPTA would fully restore the portion of the American Baptist Churches, USA Mission Center that is temporarily used, enabling the land to continue to function as lawn.
- 5) FTA and SEPTA will continue to coordinate with the SHPO in regard to proposed temporary occupancy of the American Baptist Churches, USA Mission Center as required by the fifth criterion prior to FTA making a final determination in the Final Section 4(f) Evaluation.

5.3.10 Valley Forge National Historical Park

Valley Forge National Historical Park was listed in the NRHP on July 4, 1976 (Figure 5-3.13). This 3,465-acre parcel is home to cultural resources that date from the time of the American Revolution, including remains of forts and earthworks, an artillery park, Washington's headquarters house, quarters of other top officers and the Grand Parade Ground where Baron Friedrich von Steuben rebuilt the army and where news of the French alliance was announced on May 6, 1778. The park is historically significant under Criterion A as the site of the third winter encampment (1777-78) of the Continental Army under General George Washington and is also significant under Criterion B for its association with Baron von Steuben. The Park is administered by the National Park Service. The boundary includes Valley Forge National Historic Landmark, designated on January 20, 1961, and has a smaller overall boundary than the Valley Forge National Historical Park. The five areas of significance noted in the NRHP nomination are: the Revolution, the beginnings of the American Army, sculpture and monuments, industry, architecture (19th and 20th century) and ruins. Collectively, the Valley Forge National Historical Park and Valley Forge National Historic Landmark form a nationally significant resource that includes historic buildings, structures, landscapes, objects, archaeological sites and natural resources.

Figure 5-3.13: Valley Forge National Historical Park



Varnum's Quarters in Valley Forge National Historical Park

Preliminary Findings, Valley Forge National Historical Park and Valley Forge National Historic Landmark:

No Permanent Use. Each Action Alternative and recommended LPA design option would be approximately 350 to 800 feet from the Valley Forge National Historical Park and Valley Forge National Historic Landmark. A preliminary finding of no permanent use is made for the Valley Forge National Historical Park and Valley Forge National Historic Landmark because none of the Action Alternatives or recommended LPA design options would permanently incorporate land from the Park and Landmark.

No Temporary Occupancy. Each Action Alternative and recommended LPA design option would not temporarily occupy the Valley Forge National Historical Park and Valley Forge National Historic Landmark because Project construction would not be staged on the property.

No Constructive Use. Each of the Action Alternatives and recommended LPA design options was assessed for potential constructive use of the Valley Forge National Historical Park and Valley Forge National Historic Landmark, specifically, noise, vibration and visual effects. Each Action Alternative and recommended LPA design option is approximately 350 feet or more from the Park and Landmark as listed below:

- The PECO-1st Ave. Action Alternative, recommended LPA and its design options, and US 202-1st Ave. Action Alternatives: 800 feet, line of sight is blocked by terrain, vegetation and roadway infrastructure
- The PECO-TP-N. Gulph and US 202-N. Gulph Action Alternatives: 350 feet, line of sight is blocked by terrain, vegetation and roadway infrastructure

The noise and vibration assessment described in DEIS Section 4.10 identified no potential impacts to the Park and Landmark. Existing visual elements that are part of the viewshed from the Park and Landmark include tree growth along Richards and N. Gulph Roads, terrain and the roadways, bridge and interchange ramp infrastructure of US Route 422 and PA Route 23 . These visual elements tend to block views of the Project area from the Park and Landmark. In this context, none of the Action Alternatives or the recommended LPA design options would impair the activities, features or attributes of the Park and Landmark; and none would cause proximity impacts that are so severe that the protected activities, features or attributes that qualify the Park and Landmark for protection under Section 4(f) would be substantially impaired. No constructive use of the Valley Forge National Historical Park and Valley Forge National Historic Landmark would occur.

5.3.11 Philadelphia and Western Railway (NHSL)

The Philadelphia and Western Railway extends from the 69th Street Transportation Center in Upper Darby to the Norristown Transportation Center, crossing Delaware and Montgomery Counties (Figure 5-3.14). The railway was constructed as an interurban passenger line ca. 1907. On June 21, 2004, the rail line was determined eligible for listing on the NRHP under Criterion A for its association with development of early twentieth century interurban transportation in Pennsylvania. SEPTA operates the NHSL on the railway corridor. The railway is characterized by two main line tracks in most locations, embankment or structured guideway in some locations, stations, terminal buildings, maintenance facility, vehicles and other infrastructure. In a 2008 evaluation of the rail line for another project (bridges over Ardmore Avenue and Cobbs Creek), the rail line was found not eligible under Criterion C because it “does not embody the distinctive characteristics of a type, period, or method of construction; it is not representative work of a master; nor does it possess high artistic values; and it does not represent a significant or distinguishable entity.” Separate discussion of 69th Street Transportation Center is provided under the Philadelphia Transit Co. Building resource in Section 5.3.12.

Figure 5-3.14: Philadelphia and Western Railway/Norristown High Speed Line



Permanent Use, *de minimis*. Each Action Alternative and recommended LPA design option would operate N5 vehicles within the property on the Philadelphia and Western Railway/Norristown High Speed Line. Each Action Alternative and recommended LPA design option would include providing a wye connection to the NHSL between existing Hughes Park and DeKalb Street Stations, involving an impact to the NHSL of approximately one acre. Each Action Alternative and recommended LPA design option would also include widening the existing north platform at 69th Street Transportation Center and providing a new track along the north side of the widened platform; approximately 500 linear feet of impact. In addition, SEPTA would make signal system upgrades along the Line to accommodate the Project in any Action Alternative.

Preliminary Findings, Philadelphia and Western Railway/Norristown High Speed Line:

A preliminary finding of a permanent, *de minimis* impact is made for each Action Alternative and recommended LPA design option based on the following criteria:

- 1) A Section 106 determination of no adverse effect on the Philadelphia and Western Railway/Norristown High Speed Line was made by FTA for the recommended LPA; the SHPO concurred with this determination on March 16, 2017 (Appendix C). A no adverse effect determination under Section 106 enables a *de minimis* determination under

Section 4(f) because it means that the recommended LPA would have no adverse impact on the features, attributes or activities that qualify the Philadelphia and Western Railway/Norristown High Speed Line for protection by Section 4(f).

- 2) The impacts of each other Action Alternative or recommended LPA design option would be at a similar location and of a similar magnitude to that of the recommended LPA: a wye connection on the main line and new track and platform facilities at the 69th Street Transportation Center. The relatively small size of the proposed impact area (less than one mile) compared to the remaining size of the property (13 miles) would not alter the rail transportation use of the Philadelphia and Western Railway/Norristown High Speed Line that is its significance as an historic site. Each Action Alternative and recommended LPA design option would not alter the historic integrity of the property (related to location, design, setting, materials, workmanship, feeling and association) or the ability of the property to convey its significance. For these reasons, a no adverse effect finding under Section 106 for the Philadelphia and Western Railway/Norristown High Speed Line would be likely.

If one of these Action Alternatives is selected, FTA would coordinate with the SHPO to make a determination of effect under Section 106 on the Philadelphia and Western Railway/Norristown High Speed Line. A *de minimis* impact finding would mean that the alternative would have no adverse impact on the features, attributes or activities that qualify the Philadelphia and Western Railway/Norristown High Speed Line for protection by Section 4(f).

Temporary Occupancy Exception, No Use. Each Action Alternative and recommended LPA design option would temporarily occupy approximately one mile of the Philadelphia and Western Railway/Norristown High Speed Line to provide the wye connection as well as the platform and track improvements as described above. A preliminary finding of temporary occupancy exception is made because each of the Action Alternatives and recommended LPA design options potentially would achieve all five criteria for such a finding:

- 1) Because the Project work areas on the property are relatively small compared to the overall length of the Project, the duration required to construct the portion of each Action Alternative or recommended LPA design option on the Philadelphia and Western Railway/Norristown High Speed Line property would be less than overall three-year Project construction duration. No change in land ownership would occur.
- 2) The scope of Project construction on the Philadelphia and Western Railway/Norristown High Speed Line would be minor in nature and magnitude (1 mile) in comparison to the overall size of the historic site (13 miles) and the locations of the proposed work. SEPTA would temporarily occupy the land to enable access by construction workers and equipment to the proposed wye connection area and the track and platform areas at the 69th Street Transportation Center. The land areas SEPTA temporarily uses would be designated construction work areas and secured to protect the safety of construction workers and the public.

- 3) No permanent, adverse physical impact to the Philadelphia and Western Railway/Norristown High Speed Line would occur as a result of construction activity. As other portions of the Line would remain operational during construction, and as SEPTA would restore the part of the property it temporarily disturbs at the end of its construction activity, no permanent or temporary interference with the activities, features or attributes of the property would occur.
- 4) SEPTA would fully restore the portions of the Philadelphia and Western Railway/Norristown High Speed Line that are temporarily impacted by Project construction, enabling the land to continue to function as a transportation facility.
- 5) FTA and SEPTA will continue to coordinate with the SHPO in regard to proposed temporary occupancy of the Philadelphia and Western Railway/Norristown High Speed Line as required by the fifth criterion prior to FTA making a final determination in the Final Section 4(f) Evaluation.

No Constructive Use. Each of the Action Alternatives and recommended LPA design options was assessed for potential constructive use of the Philadelphia and Western Railway/Norristown High Speed Line, specifically, noise, vibration and visual effects. Each Action Alternative and recommended LPA design option would operate N5 vehicles on the NHSL. The operation of additional N5 vehicles on the Philadelphia and Western Railway/Norristown High Speed Line would not cause noise, vibration or visual impacts to the property that would impair the activities, features or attributes of the property; and none would cause proximity impacts that are so severe that the protected activities, features or attributes that qualify the Philadelphia and Western Railway/Norristown High Speed Line for protection under Section 4(f) would be substantially impaired. No constructive use of the Philadelphia and Western Railway/Norristown High Speed Line would occur.

5.3.12 Philadelphia Transit Co. Building (69th Street Transportation Center)

The Philadelphia Transit Co. Building in Upper Darby Township is a component of the 69th Street Transportation Center. The property is the portion of the station building that is closest to Market Street. The rear portion of the station building where the train platforms are located is newer construction and is not part of the historic property. The Philadelphia Transit Co. Building is not individually eligible for the NRHP, but is a contributing resource for two NRHP-eligible historic districts: the Market Street Elevated Railway Historic District and 69th Street Terminal Square Shopping District. Figure 5-3.15 depicts the Market Street façade of the building. The Philadelphia Transit Co. Building is not within the boundaries of either district. The Market Street Elevated Railway

Figure 5-3.15: Philadelphia Transit Co. Building (69th Street Transportation Center)



Historic District is not contiguous to the Project area and lies some distance east within Philadelphia's city line, and the 69th Street Terminal Square Shopping District lies south of Market Street/West Chester Pike, outside the immediate Project area. The district is not within or adjacent to the APE of any Action Alternative or recommended LPA design option in Upper Darby Township.

Preliminary Findings, Philadelphia Transit Co. Building:

No Permanent Use. Each of the Action Alternatives and recommended LPA design options would make improvements and provide additional rail transit service to 69th Street Transportation Center as described in DEIS Chapter 2. Specifically, SEPTA would expand an existing platform with associated track in the non-historic part of the station and operate additional train service on those tracks. The proposed work would not change the historic use, appearance or function of the historic portion of the building. The proposed action would be well inside 69th Street Transportation Center property and surrounded by existing rail, trolley, and bus service infrastructure; the proposed work area would not be visible to or from the historic districts, and no permanent incorporation of land from the districts would occur (maps, Appendix A).

A preliminary finding of no use is made for the Philadelphia Transit Co. Building, provided that the SHPO, the officials with jurisdiction, determine that the Action Alternatives and recommended LPA design options would have no adverse impact on the qualities of the historic portion of the building that contribute to the two NRHP-eligible historic districts. As such, each Action Alternative and recommended LPA design option would not impact the features, attributes, or activities that qualify the Philadelphia Transit Co. Building for protection by Section 4(f). FTA and SEPTA will continue to coordinate with the SHPO regarding the Philadelphia Transit Co. Building.

No Temporary Occupancy. Each Action Alternative and recommended LPA design option would not temporarily occupy the Philadelphia Transit Co. Building or the historic districts because Project construction would not be staged on the properties.

No Constructive Use. Each of the Action Alternatives and recommended LPA design options was assessed for potential constructive use of the Philadelphia Transit Co. Building and the historic districts, specifically, noise, vibration and visual effects. Each Action Alternative and recommended LPA design option would make improvements and provide additional rail transit service to 69th Street Transportation Center as described in DEIS Chapter 2. As an existing transit service resource, the Philadelphia Transit Co. Building and districts would not experience noise, vibration or visual impacts from the Action Alternatives or the recommended LPA design options that would impair the activities, features or attributes of the property; and no proximity impacts would occur that are so severe that the protected activities, features or attributes that qualify the Philadelphia Transit Co. Building and the historic districts for protection under Section 4(f) would be substantially impaired. No constructive use of the Philadelphia Transit Co. Building or the historic districts would occur.

5.4 Avoidance Alternatives Analysis

As the recommended LPA, each Action Alternative and each recommended LPA design option would potentially use at least one property that is protected by Section 4(f). FTA completed an analysis of avoidance alternatives as required by 23 CFR § 774.3(c). In this analysis, FTA identified avoidance alternatives that would eliminate use of Section 4(f) resources and applied feasible and prudent criteria to those alternatives. Feasible and prudent avoidance alternatives are those that would avoid using any Section 4(f) property and would not cause other problems of a magnitude that would substantially outweigh the importance of protecting the Section 4(f) property (23 CFR § 774.17). Alternatives evaluated in the avoidance analysis include the No Action Alternative and the other types of alternatives as identified in FHWA's *Section 4(f) Policy Paper*:

- **Location Alternatives** – A location alternative refers to the rerouting of the entire Project along a different alignment. Examples of location alternatives are the four other Action Alternatives and the recommended LPA design options assessed in the DEIS.
- **Alternative Actions** – An alternative action involves actions that do not require construction or that consist of a different transit mode.
- **Alignment Shifts** – An alignment shift is the rerouting of a portion of the Project to a different alignment to avoid the use of a specific property.
- **Design Changes** – A design change is a modification of the proposed design in a manner that would avoid impacts.

5.4.1 Avoidance Alternative Feasibility and Prudence Standards

Definitions of feasible and prudent alternatives under 23 CFR § 774.17 note that an alternative that would use any Section 4(f) property is not an avoidance alternative. An alternative is determined feasible if it could be built as a matter of sound engineering judgment. Under 23 CFR § 774.17, factors are defined for determining alternatives to be not prudent. An alternative would not be prudent for any of the following reasons:

- **Factor 1** – It would compromise the project to a degree that it is unreasonable to proceed with the project in light of its stated purpose and need.
- **Factor 2** – It would result in unacceptable safety or operational problems.
- **Factor 3** – After reasonable mitigation, it would still cause one or more of the following:
 - Severe social, economic, or environmental impacts
 - Severe disruption to established communities
 - Severe, disproportionate impacts on low-income or minority populations
 - Severe impacts on environmental properties protected under other federal statutes
- **Factor 4** – It would result in additional construction, maintenance, or operational costs of an extraordinary magnitude.
- **Factor 5** – It would cause other unique problems or unusual factors.

- **Factor 6** – It would involve multiple factors in one through five above, that while individually minor, could cumulatively cause unique problems or impacts of extraordinary magnitude.

The following narrative evaluates the No Action Alternative and other potential location alternatives, alternative actions, alignment shifts, and design changes using these feasible and prudent factors. The results of the evaluation are as follows:

- The No Action Alternative is not a feasible and prudent avoidance alternative because it would not achieve the Project purpose and need (Factor 1) (Section 5.4.2);
- None of the location and alternative actions described in Sections 5.4.3 and 5.4.4 is a feasible and prudent avoidance alternative for the reasons described in those sections (Factors 1 through 6); and
- None of the Action Alternatives and recommended LPA design options is a feasible and prudent avoidance alternative because each would use one or more Section 4(f) properties as described in Section 5.4.5. For these reasons, no feasible and prudent avoidance alternative exists (23 CFR § 774(a)(1)).

5.4.2 Avoidance Alternative #1: No Action Alternative

The No Action Alternative assumes no improvements to the transportation system in the Project study area through 2040, other than those contained in the financially-constrained element of *Connections 2040 Plan for Greater Philadelphia*, the long-range transportation plan of the DVRPC. DEIS Table 2-2.2 lists the transportation projects in the No Action Alternative, which include several roadway improvement projects and a trail extension. No transit improvement projects are included in the No Action Alternative.

The No Action Alternative would avoid the use of Section 4(f) properties by making no alterations to the existing infrastructure; however, it is not a feasible and prudent avoidance alternative under Factor 1. Specifically, the No Action Alternative would compromise the Project to a degree that it is unreasonable to proceed with the Project in light of its stated Purpose and Need. The Project Purpose is to provide faster, more reliable public transit service to the King of Prussia area that:

- Offers improved transit connections to the area from communities along the existing Norristown High Speed Line, Norristown, and Philadelphia;
- Improves connectivity between defined key destinations within the King of Prussia area; and
- Better serves existing transit riders and accommodates new transit patrons.

As described in DEIS Table 8-2.1, the No Action Alternative would not achieve the Project's Purpose and Need as it will not extend faster, more reliable transit service to the King of Prussia/Valley Forge area. As no transit improvements are planned, the No Action Alternative would not improve transit connections to and within the King of Prussia area; would not improve

connectivity between defined key destinations in the King of Prussia area; and would not better serve existing transit riders and accommodate new riders.

5.4.3 Location Alternatives

Use existing railroad corridors – During the alternatives development process, described in Section 2.1.2, SEPTA examined the feasibility of using existing study area freight railroad corridors, either by sharing track with freight operators or using a portion of railroad ROW. Potential alignments using portions of Norfolk Southern (NS) track ROW to the south of the PECO utility corridor as well as a northerly route through Abrams Yard near the Schuylkill River were considered. However, SEPTA's outreach to NS about possibly using their rail ROW indicated that NS is not interested in sharing corridors with SEPTA's Project. As a result, FTA determined that while use of the NS corridors may be potentially feasible, it is not prudent (Factor 5). Moreover, the Abrams Yard alignment was determined to be remote from the key destinations – King of Prussia Mall, King of Prussia Business Park and Valley Forge National Historical Park – and other Project study area destinations described in Section 1.2.1, requiring circuitous routing to serve these destinations.

Use existing roadway corridors – Also during the alternatives development process, SEPTA examined the potential to align the Project within existing study area roadways. Potential use of existing roadway corridors was considered early in the project development process (Tier 1 screening) when a long list of many potential alignments was examined by SEPTA for feasibility and reasonableness. DEIS Chapter 2.1.3 summarizes the findings of that screening process, which eliminated potential alignments that either could not be built as a practical matter (infeasible) or had one or more other circumstances that made continued consideration of an alignment not reasonable or prudent (Factors 1-6).

As a result of this location alternatives analysis, no feasible and prudent avoidance alternative involving the use of existing railroad or roadway corridors exists (23 CFR § 774.3(a)(1)).

5.4.4 Alternative Actions

Upgrade existing facilities – The Project study area is currently served by the following existing facilities as described in Section 3.1.2:

- **SEPTA Bus:** Six SEPTA bus routes (92, 99, 123, 124, 125 and 139) currently serve the King of Prussia/Valley Forge area. Each route serves the King of Prussia Transportation Center, a transit center located near the JC Penney store at the King of Prussia Mall, and most serve other stops in the area.
- **Existing NHSL:** SEPTA's NHSL operates between the 69th Street Transportation Center in Upper Darby and the Norristown Transportation Center, serving the Main Line area in Delaware and Montgomery Counties. The NHSL provides local, express and Hughes Park Express service on a frequent schedule with service from approximately 4:30 AM to 2:30 AM.
- **Regional Rail:** Connections to SEPTA's regional rail system are available at the Norristown Transportation Center via the Manayunk/Norristown Line, a regional rail line

providing service between Norristown and Center City Philadelphia and to SEPTA bus routes.

- **Connecting Shuttle Services:** The Greater Valley Forge Transportation Management Association manages the Upper Merion Rambler, which is a local circulator. The King of Prussia Business Improvement District manages The Connector service, which links the Business Park with the Norristown Transportation Center and Wayne Regional Rail station.

Expansion of existing transit services within and near the Project study area, while potentially feasible, does not address the problems regarding travel time delays due to traffic congestion, transfers from the NHSL to bus service to reach key study area destinations, and limited bus service capacity to accommodate future forecast ridership (Section 3.1.3.1). In the existing condition as well as the future without the Project, increased travel would add to roadway congestion, which is contrary to the Project purpose and need. In summary, while upgrading existing bus facilities is potentially feasible, it is not prudent; doing so would not achieve the Project purpose and need (Factor 1).

Alternative modes – Early in Project planning, potential alternative modes considered included bus and light rail as these are commuter-oriented transit modes that could potentially serve a similar function to extension of NHSL service. Bus service as described in Section 3.1.3.1, while potentially feasible, would not achieve the Project purpose and need because it would not address travel time delays due to traffic congestion and transfers from the NHSL to bus service to reach key destinations (Factor 1). A connecting light rail transit service from the NHSL to the study area would have the same problem as bus service in terms of requiring a transfer from the NHSL. As the proposed NHSL extension would provide similar service on a fixed guideway to a light rail mode but without the transfer, light rail was not considered a prudent alternative (Factor 1).

As a result of this alternative actions analysis, no feasible and prudent avoidance alternative exists that involves upgrades to existing facilities and use of alternative modes (23 CFR § 774.3(a)(1)).

5.4.5 Alignment Shifts and Design Changes

FTA and SEPTA considered the other Action Alternatives and recommended LPA design options in this analysis given that portions of each alternative would use different alignments than the recommended LPA. However, each Action Alternative and recommended LPA design option would use at least one Section 4(f) property, namely the Philadelphia and Western Railway (NHSL). A physical connection to the existing NHSL track infrastructure must be made to extend the existing service to the study area. Providing an additional track at the 69th Street Transportation Center and widening the station platform at that location are needed to enable the trains from the study area to stop at the Center. It is not feasible to make connections to the existing NHSL service at any point along the corridor without also using part of the Philadelphia and Western Railway (NHSL) property. Because each of the Action Alternatives and recommended LPA design options would use one or more Section 4(f) properties, no feasible and prudent avoidance alternative exists in the form of an alignment shift or design change (23 CFR § 774.3(a)(1)).

5.5 Least Overall Harm Analysis

In accordance with 23 CFR 774.3(2)(c), if a Section 4(f) analysis determines that there is no feasible and prudent avoidance alternative, FTA may approve only the alternative that causes the least overall harm in light of the preservation purpose of Section 4(f). In the avoidance analysis (Section 5.4), FTA determined that none of the Action Alternatives and recommended LPA design options is a feasible and prudent avoidance alternative. As a result, FTA evaluated each Action Alternative and recommended LPA design option to select the alternative with the least overall harm.

FTA's least overall harm analysis complies with the methodology outlined in 23 CFR § 774.3(c)(1)). The Section 4(f) regulations require a balancing of the following seven factors when determining which alternative would cause the least overall harm:

- Ability to mitigate adverse impacts on each Section 4(f) property (including any measures that would result in benefits for the property)
- Relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection
- Relative significance of each Section 4(f) property
- Views of the officials with jurisdiction over each Section 4(f) property
- Degree to which each alternative meets the purpose and need for the project
- After reasonable mitigation, the magnitude of any adverse impacts on properties not protected by Section 4(f)
- Substantial differences in costs among the alternatives

FTA applied each of the seven key factors to the Action Alternatives and recommended LPA design options as outlined below. Table 5-5.1 provides a summary of this evaluation; Table 5-3.2 supports Table 5-5.1 by summarizing the properties used by each Action Alternative and recommended LPA design option, followed by an interpretive discussion.

Factor 1 – Ability to mitigate adverse impacts on each Section 4(f) property

The ability to mitigate impacts on Section 4(f) properties was measured by considering the types of proposed uses each Action Alternative and recommended LPA design option would have and making a relative comparison among the alternatives and options. The types of uses were determined to be similar among each Action Alternative and recommended LPA design option except for PECO-1st Ave.; i.e., in the case of each impacted property, the use would be a small portion of land at the edge of the property. PECO-1st Ave. is unique among the Action Alternatives and recommended LPA design options in having additional impacts to two

protected park properties: PECO Easement and Kingwood Road Park. The PECO-1st Ave. alignment would cross each park property, potentially impacting the ability to use each property for its intended recreational function. Because potential impacts of the recommended LPA and its design options are similar to or less than those of the other Action Alternatives, none of the other Action Alternatives would have more ability than the recommended LPA and each recommended LPA design option to mitigate adverse impacts to Section 4(f) properties. Mitigation measures would be identified in coordination with the officials with jurisdiction, with the goal of retaining the features, attributes or activities that qualify each property for protection by Section 4(f).

Factor 2 – Relative severity of the remaining harm, after mitigation

The number of potentially impacted properties varies from two to five, depending on the alternative considered (Tables 5-3.2 and 5-5.1). The recommended LPA, US 202-1st Ave. and the recommended LPA design options would potentially use the fewest Section 4(f) properties (2 each). PECO-1st Ave. would potentially use the most properties (5), while PECO/TP-N. Gulph and US 202-N. Gulph would potentially use four properties. Given that the number and extent of the potential impacts of the recommended LPA on protected properties would be equal to or less than those of the other Action Alternatives and recommended LPA design options, the relative severity of remaining harm to Section 4(f)-protected properties would be equal to or less than that of the other Action Alternatives and recommended LPA design options.

Factor 3 – Relative significance of each Section 4(f) property

FTA considers each Section 4(f) property to be equally significant in this evaluation; none of the properties has been determined through this evaluation or through coordination with officials with jurisdiction to be of different value.

Factor 4 – Views of the officials with jurisdiction over each Section 4(f) property

Upper Merion Township and Montgomery County have indicated concerns about the potential loss or reduction in park facilities on the PECO Easement and Kingwood Road Park properties if PECO-1st Ave. were to be advanced. SEPTA identified the recommended LPA, not PECO-1st Ave., in part because the recommended LPA would avoid impacting these park properties.

The official with jurisdiction over the historic Section 4(f) properties in this least harm analysis is the PHMC. PHMC concurred on the Section 106 no adverse effect determination for the recommended LPA on March 16, 2017. Although a Section 106 effect finding and PHMC concurrence were not sought for the other Action Alternatives and recommended LPA design options, each would similarly affect portions of land at the edges of the same historic properties as the recommended LPA. In addition, and unlike the recommended LPA, PECO-1st Ave., PECO/TP-N. Gulph and US 202-N. Gulph would each require land from one to two additional historic properties (Table 5-5.1). As the potential impact on each additional historic property would be minor in size and located at the edges of the properties, it is reasonable to consider a Section 106 no adverse effect finding to be likely for each property if consultation were pursued.

Factor 5 – Degree to which each alternative meets the purpose and need for the project

Each of the Action Alternatives and recommended LPA design options achieves the Project purpose and need, although some differences in degree have been identified as described in DEIS Section 8.2 and summarized in Table 8-2.1. The recommended LPA and each recommended LPA design option best achieve the Project purpose and need, with the combination of the most travel time savings, highest ridership increase, high mode shift rate, most transit parking capacity, and most access to jobs, parks and community facilities. PECO-1st Ave. is less strong in travel time savings, ridership increase, mode shift rate, access to jobs, and least effective among the Action Alternatives in community facility access. PECO/TP-N. Gulph is similar to the recommended LPA but also less strong in travel time savings, and access to jobs and parks. US 202-1st Ave. is similar to the recommended LPA but also less strong in travel time savings, ridership increase, providing transit parking, and access to jobs. US 202-N. Gulph is similar to the recommended LPA but also less strong in travel time savings, ridership increase, and access to jobs and parks.

Factor 6 – The magnitude of adverse impacts on properties not protected by Section 4(f)

Other factors, which are not Section 4(f)-related, distinguish among the Action Alternatives and recommended LPA design options, including development potential, support for public and stakeholder preferences, partial and full property acquisitions, visual impacts, wetlands and habitat impacts, soil disturbance, number of PECO tower conflicts, and reduction in bus VMT (Table 5-5.1). DEIS Table 8-4.1 provides more detail on benefits and impacts of the Action Alternatives and recommended LPA design options.

Comparing the performance of these factors among the Action Alternatives and design options indicates that none would have the fewest impacts in all natural and built environment areas. The Action Alternatives and recommended LPA design options would perform equally well in transportation and safety effects, and land use and economic development, number of potential full commercial property acquisitions, potential impacts to historic properties, air quality and cost. Therefore, these categories and factors are not included in the comparative summaries for each alternative below.

- PECO-1st Ave. – Least community facility impacts, high partial residential and park property acquisitions; no impacts to wetlands, forest or potential threatened and endangered species habitats; high soil disturbance; high number of PECO tower conflicts; and least reduction in bus VMT. PECO-1st Ave. would use the PECO corridor west of the PA Turnpike and would be aligned in front of the King of Prussia Mall; these are alignments that are not favored by key stakeholders and political leaders because of visual and park impacts (Section 8.3.2).
- PECO/TP-N. Gulph – Fewest partial commercial acquisitions. PECO/TP-N. Gulph would have fewer Project stations within the KPMU zoning district and would not use 1st Avenue; these are alignments that are not favored by key stakeholders and political leaders because of visual and park impacts, as well as less service to the King of Prussia Business Park and Upper Merion Township KPMU zoning district (Section 8.3.2). PECO-N. Gulph is not a least well performing alternative for any other factor.

- US 202-1st Ave. – Least partial residential property acquisitions; least soil disturbance and amount of forest impacts; and least potential PECO tower conflicts. US 202-1st Ave. would provide the least energy savings and less reduction in VMT. US 202-1st Ave. has the potential to impact threatened and endangered species habitat in the US Route 202 area. US 202-1st Ave. would use US Route 202, an alignment that is not favored by key stakeholders and political leaders because of visual and traffic impacts (Section 8.3.2).
- US 202-N. Gulph - Least partial residential acquisitions and full parks acquisitions; least soil disturbance; no PECO tower conflicts; and most reduction in bus VMT. US 202-N. Gulph would have the most partial commercial acquisitions; most full residential acquisitions; less reduction in VMT. US 202-N. Gulph has the potential to impact threatened and endangered species habitat in the US Route 202 area. US 202-N. Gulph would use US Route 202 and would not use 1st Avenue; these are alignments that are not favored by key stakeholders and political leaders because of visual and traffic impacts as well as less service to the King of Prussia Business Park and Upper Merion Township KPMU zoning district (Section 8.3.2).
- PA Turnpike North/South Option – Less potential for proximity effects (visual and noise) to residential properties compared to the recommended LPA; other benefits and impacts of the recommended LPA apply
- 9/11 Memorial Avoidance Option – Less potential for proximity effects on the 9/11 Memorial compared to the recommended LPA; relocation of the King of Prussia Volunteer Fire Company would be required; other benefits and impacts of the recommended LPA apply

Factor 7 – Substantial differences in costs among the alternatives

A preliminary estimate of costs of the Action Alternatives indicates similar capital as well as operations and maintenance costs among the Action Alternatives and design options (DEIS Section 8.6.2).

Least Harm Alternative Selection

The least overall harm assessment examined the Action Alternatives and design options evaluated in the DEIS and determined that the recommended LPA and each recommended LPA design option would have the least overall harm to Section 4(f) properties for the following reasons:

Table 5-5.1: Least Harm Analysis Summary

Alternatives	Section 4(f) Least Overall Harm Criteria (23 CFR 774.3(C)(1))						
	Impact Mitigation ¹	Remaining Severity ²	Property Significance ³	Officials' Views ⁴	Purpose and Need ⁵	Impact Magnitude ⁶	Cost Difference ⁷
PECO/TP-1 st Ave. (recommended LPA)	Same ability as other Action Alternatives and design options except PECO-1 st Ave.	2 properties; <i>de minimis</i> impacts	Equal significance	PHMC Section 106 concurrence on no adverse effect for each property	Best achieves each element	Least number of partial and full residential acquisitions (24 and 4, respectively), least number of parks impacted or crossed (0 and 1, respectively), and visual impacts; same as some other Action Alternatives in: community facility impacts (3), air quality benefits, potential noise impacts, wetlands impacts (0.05 acres) and areas of contamination concern (25); no impact on threatened and endangered species; and most forest impacts (5.4 acres). Would not use US Route 202, would be behind the King of Prussia Mall and would use 1 st Ave; these are alignments that are favored by key stakeholders and political leaders because of less visual and traffic impacts, as well as providing service to the King of Prussia Business Park and the Upper Merion Township KPMU zoning district (Section 8.3.2).	Action Alternatives similar
PECO-1 st Ave.	Less ability than other Action Alternatives and design options	2 properties permanent impacts; 3 properties; potential <i>de minimis</i> impacts	Equal significance	Township and County concerns for park property impacts; PHMC Section 106 concurrence not sought; potential impacts on same properties as recommended LPA would be similar; potential impact on additional property minor; likely no adverse effect for each property	Similar to recommended LPA but less strong in travel time savings, ridership increase, mode shift and access to jobs; least well performing on community facility access	Least number of community facilities potentially impacted (1); higher than most in number of partial residential (59) and parks (2) acquisitions, proximity impacts to parks including parks crossed (1), high visual impacts, relatively high amount of soil disturbance (12.9 acres), fields impacts (2.9 acres), and number of potential PECO transmission tower conflicts (12); more potential areas of contaminated materials and hazardous materials concern (27) and less energy savings (16 million vehicle miles annually); compared with the recommended LPA, fewer impacts on forests (2.9 acres) and no potential to impact threatened and endangered species. Would use the PECO corridor west of the PA Turnpike and would be aligned in front of the King of Prussia Mall; these are alignments that are not favored by key stakeholders and political leaders because of visual and park impacts.	Action Alternatives similar
PECO/TP-N. Gulph	Same ability as other Action Alternatives and design options except PECO-1 st Ave.	4 properties; potential <i>de minimis</i> impacts	Equal significance	PHMC Section 106 concurrence not sought; potential impacts on same properties as recommended LPA would be similar; potential impact on additional 2 properties minor; likely no adverse effect for each property	Similar to recommended LPA; but less strong on travel time savings, access to jobs and parks	Least number of potential partial commercial acquisitions (30) and fewest areas of contaminated materials concern (13); not a least well performing alternative for any factor; and no impact on threatened and endangered species. Would have fewer Project stations within the KPMU zoning district and would not use 1 st Avenue; these are alignments that are not favored by key stakeholders and political leaders because of visual and park impacts, as well as less service to the King of Prussia Business Park and the Upper Merion Township KPMU zoning district.	Action Alternatives similar
US 202-1 st Ave.	Same ability as other Action Alternatives and design options except PECO-1 st Ave.	2 properties; potential <i>de minimis</i> impacts	Equal significance	PHMC Section 106 concurrence not sought; potential impacts on same properties as recommended LPA would be similar; likely no adverse effect for each property	Similar to recommended LPA but less strong in travel time savings, ridership increase, parking, access to jobs	Fewer partial residential property acquisitions (2); less soil disturbance (3.9 acres), less impacts to forest (2.8 acres) and fields (0); least number of potential PECO tower conflicts (0); and more energy savings in bus VMT (128 thousand miles annually). Potential for impacts to threatened and endangered species habitat; more potential visual and noise impacts on community facilities (5); more partial commercial property acquisitions (95) and full residential acquisitions (19); and less reduction in automobile VMT (16.1 million miles annually). US 202-1 st Ave. would use US Route 202, an alignment that is not favored by key stakeholders and political leaders because of visual and traffic impacts (Section 8.3.2).	Action Alternatives similar

Alternatives	Section 4(f) Least Overall Harm Criteria (23 CFR 774.3(C)(1))						
	Impact Mitigation ¹	Remaining Severity ²	Property Significance ³	Officials' Views ⁴	Purpose and Need ⁵	Impact Magnitude ⁶	Cost Difference ⁷
US 202-N. Gulph	Same ability as other Action Alternatives and design options except PECO-1 st Ave.	4 properties; potential <i>de minimis</i> impacts	Equal significance	PHMC Section 106 concurrence not sought; potential impacts on same properties as recommended LPA would be similar; potential impact on additional 2 properties minor; likely no adverse effect for each property	Similar to recommended LPA; but less strong on travel time savings, ridership increase, access to jobs and parks	Fewer partial residential acquisitions (2); less soil disturbance (4.9 acres), forest (1.1 acres), fields affected (0), and number of PECO tower conflicts (0); more reduction in bus VMT (128 thousand annual miles). Potential to impact threatened and endangered species habitat. Higher visual and noise impacts (5), more partial commercial acquisitions (69), and less reduction in automobile VMT (14.6 thousand annual miles). US 202-N. Gulph would use US Route 202 and would not use 1 st Avenue; these are alignments that are not favored by key stakeholders and political leaders because of visual and traffic impacts as well as less service to the King of Prussia Business Park and the Upper Merion Township KPMU zoning district (Section 8.3.2).	Action Alternatives similar
PA Turnpike North/South Option	Same ability as other Action Alternatives and design options except PECO-1 st Ave.	2 properties, potential <i>de minimis</i> impacts	Equal significance	Similar potential impacts on same properties as recommended LPA; PHMC Section 106 concurrence not sought	Similar to recommended LPA	Fewer full or partial residential acquisitions; and fewer visual and forest (4.3 acres) impacts. No impact on threatened and endangered species habitat. Other relative benefits and impacts are similar to the recommended LPA.	Action Alternatives similar
9/11 Memorial Avoidance Option	Same ability as other Action Alternatives and design options except PECO-1 st Ave.	2 properties, potential <i>de minimis</i> impacts	Equal significance	Similar potential impacts on same properties as recommended LPA; PHMC Section 106 concurrence not sought	Similar to recommended LPA	Fewer partial and full residential acquisitions (24 and 4, respectively); least number of parks impacted or crossed (0 and 1, respectively); and fewer visual impacts and potential number of PECO utility tower conflicts. No impact on threatened and endangered species habitat. Other relative benefits and impacts are similar to the recommended LPA.	Action Alternatives similar

¹ The ability to mitigate adverse impacts to each Section 4(f) property (including any measures that result in benefits to the property)

² The relative severity of the remaining harm, after mitigation, to the protected activities, attributes, or features that qualify each Section 4(f) property for protection (see Table 5-3.1 for property identification).

³ The relative significance of each Section 4(f) property

⁴ The views of the official(s) with jurisdiction over each Section 4(f) property

⁵ The degree to which each alternative meets the purpose and need for the project

⁶ After reasonable mitigation, the magnitude of any adverse impacts to properties not protected by Section 4(f)

⁷ Substantial differences in costs among the alternatives (\$ billions, DEIS)

The recommended LPA and each recommended LPA design option would impact the least number of Section 4(f) properties (2) compared with the other Action Alternatives, a factor shared with US 202-1st Ave. All other Action Alternatives would use a higher number of Section 4(f) properties: four to five. Because potential impacts of the recommended LPA and recommended LPA design options are similar to or less than those of the other Action Alternatives, none of the other Action Alternatives would have more ability than the recommended LPA and each recommended LPA design option to mitigate adverse impacts to Section 4(f) properties. Mitigation measures would be identified in coordination with the officials with jurisdiction, with the goal of retaining the features, attributes or activities that qualify each property for protection by Section 4(f).

While the recommended LPA, the recommended LPA design options, and US 202-1st Ave. would impact the same number of Section 4(f) properties and the severity of the remaining harm of Section 4(f) properties would be similar, the Action Alternatives and recommended LPA design options differ in other aspects. Compared to the other Action Alternatives, the recommended LPA and recommended LPA design options would better achieve the Project purpose and need in terms of providing more travel time savings, higher ridership increase, more parking for transit users, and access to more Project study area jobs. The recommended LPA and the recommended LPA design options would also better achieve each factor that is most important to key stakeholders and political leaders, especially avoiding an alignment along US Route 202, using 1st Avenue, avoiding the PECO utility corridor west of the PA Turnpike and being aligned behind the King of Prussia Mall. The PA Turnpike North/South Option would reduce proximity effects (noise, vibration and visual effects) on residents better than the recommended LPA or the other Action Alternatives. The 9/11 Memorial Avoidance Option would avoid proximity impacts to the 9/11 Memorial better than all but the PECO-1st Ave. Action Alternative. While the recommended LPA and the recommended LPA design options would have the most forest impacts, each generally would have the same or fewer other natural and built environment impacts compared to the other Action Alternatives.

5.6 All Possible Planning to Minimize Harm

All possible planning means that all reasonable measures to minimize harm or mitigate for adverse impacts and effects are included in a project (23 CFR § 774.17). As the recommended LPA would use portions of three historic properties as described in Section 5.3, the measures are those that serve to preserve the historic activities, features, or attributes of the properties as agreed to by FTA and the PHMC in consultation under Section 106 of the NHPA (36 CFR § 800). In the cases of the historic properties, FTA is making a preliminary determination of *de minimis* impact on each property after considering the measures the minimize harm that were applied to the recommended LPA (see Minimization and Mitigation Measures below) and after undertaking the required coordination for historic sites (23 CFR § 774.5(b)(1)). Specifically, FTA received concurrence from the PHMC on a “no adverse effect” determination under Section 106 on March 16, 2017, and consulted with the Section 106 consulting parties in the section 106 process as summarized below and documented in more detail in DEIS Section 4.7.1.

Consulting Parties Coordination

FTA and SEPTA invited and engaged Section 106 consulting parties in reviewing reports determining the eligibility of the historic properties for the National Register of Historic Places and assessing the effects of the recommended LPA on those properties. As part of reviewing the technical reports, the consulting parties were invited by FTA and SEPTA to attend a meeting on September 8, 2016 for the purpose of providing a Project overview, presenting the findings of the reports, and obtaining comments. Several parties provided verbal and written comments during consultation; however, none of the comments pertained to the three properties. A summary of the consulting party meeting and copies of the comment letters are provided in DEIS Appendix C.

Minimization and Mitigation Measures

Throughout alternatives and DEIS development, FTA applied the following strategies to minimize or mitigate impacts to Section 4(f) properties;

- Coordinating with officials with jurisdiction, including the County, Township, the SHPO and others to identify Section 4(f) properties early in alternatives development, determine plans for the properties by officials with jurisdiction and discuss the potential for Project impacts on those properties;
- Seeking input from stakeholders and the public regarding the effects of the Action Alternatives and recommended LPA design options on Section 4(f) properties and other properties;
- Using existing transportation and utility corridors as much as reasonably feasible to keep additional right-of-way needs to a minimum;
- Using elevated guideway to minimize the physical impact of the Project on Section 4(f) properties to the extent reasonably feasible; and;
- Avoiding or reducing impacts to Section 4(f) properties using design refinements.

A *de minimis* impact determination under 23 CFR § 774.3(b) “subsumes the requirement for all possible planning to minimize harm by reducing the impacts on the Section 4(f) properties to a *de minimis* level.” However, the determinations in this Draft Section 4(f) Evaluation are preliminary. Following publication of the DEIS and the DEIS public comment period, SEPTA will select an LPA. At that time, FTA and SEPTA will continue coordinating with officials with jurisdiction regarding potential impacts to Section 4(f) properties. Where *de minimis* impact findings are preliminary, coordination will focus on:

- Identifying appropriate and reasonable minimization and mitigation strategies to achieve those findings, and
- Receiving the concurrence of the officials with jurisdiction prior to FTA making a determination in a Final Section 4(f) Evaluation.

5.7 Coordination

FTA and SEPTA initiated coordination with the officials with jurisdiction over the Section 4(f) properties described in this chapter during development and evaluation of the Action Alternatives and recommended LPA design options during preparation of the DEIS. Specifically, SEPTA has coordinated regularly with Montgomery County and Upper Merion Township since NEPA scoping in 2013, with each entity serving as a core stakeholder on Project committees (Chapter 7). In addition, SEPTA met with the County Planning Commission and Upper Merion Township Planning staff in April 2014 to discuss the Project as well as existing and future parkland, open space and trail facilities and plans. Regarding historic properties, FTA initiated consultation with the SHPO under Section 106 of the NHPA in 2013. Since that time, the SHPO reviewed and concurred with the Project area of potential effects for the recommended LPA on March 7, 2016, concurred on eligibility of properties within the APE for listing in the NRHP on September 26, 2016, and concurred on the effects of the Action Alternatives and recommended LPA design options on historic properties (Appendix C).

As the Project advances to the FEIS phase, FTA will continue coordinating with officials with jurisdiction regarding potential impacts to protected Section 4(f) properties and mitigation as warranted. This coordination activity will enable FTA to make determinations of use as required to satisfy the requirements of Section 4(f) in the Final Section 4(f) Evaluation.

Chapter 6.0 Indirect and Cumulative Effects

6.1 Introduction and Methodology

This chapter identifies and describes the potential indirect (secondary) and cumulative effects of implementing any one of the Action Alternatives or recommended LPA design options.

Indirect effects are defined as “effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems” (40 CFR 1508.8(b)).

Cumulative effects are defined as the “impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7). Cumulative effects include the direct and indirect impacts of a project together with the past, present, and reasonably foreseeable future actions of others.

This assessment is in accordance with the NEPA and Council on Environmental Quality (CEQ) regulations and is consistent with the CEQ’s 1997 *Considering Cumulative Effects under the National Environmental Policy Act*. The assessment follows the basic steps identified in the CEQ guidance:

- Identify resources of interest
- Establish geographic and temporal boundaries
- Determine past, present, and reasonably foreseeable future projects to be assessed as part of the indirect and cumulative effects analyses
- Assess indirect and cumulative effects to resources of interest within the defined geographic and temporal boundaries

This indirect effects assessment focuses on the station areas as the stations are where access to the Project service would be provided. The ability to access the proposed transit service directly relates to whether indirect development could occur because of the Project. The cumulative effects assessment examines the potential for the entirety or any part of the Action Alternatives or recommended LPA design options, including station areas, the guideway or other associated facilities, because the Action Alternatives or recommended LPA design options in combination with other activities can result in cumulative effects on the natural and human environment. When the potential effects of each Action Alternative and recommended LPA design options are similar, the discussion in this chapter covers all Action Alternatives and recommended LPA design options by referring to the Project in general. Where effects differ

among the Action Alternatives and recommended LPA design options, specific discussion of each is provided.

The primary data sources included demographic data and projections, land use/land cover data, local land use plans, and information on planned development projects. The analysis employed a combination of methodologies to assess indirect and cumulative effects. These techniques included trend analysis and mapping analysis to assess patterns of past, existing and future land use and the effects of development on resources of interest.

6.1.1 Resources of Interest

Resources selected for analysis are those that would be affected directly by the Action Alternatives or recommended LPA design options, those that would be affected by potential Project-related indirect development associated with the station areas and those that are particularly susceptible to effects from other foreseeable projects over time that, in aggregate, result in a cumulative effect. Transportation is presented in this analysis in terms of the role it plays in affecting other resources. The resources assessed in the indirect and cumulative effects analysis are the following:

- Transportation Systems and Facilities
- Human Environment
 - Community Facilities
 - Parks, Recreational Land and Open Space
 - Historic and Archaeological Resources
 - Visual and Aesthetic Resources
 - Air Quality
 - Noise
 - Vibration
 - Energy
 - Environmental Justice
- Natural Environment

Resources that are not assessed in this indirect and cumulative effects analysis are those, such as hazardous materials, which would not be affected indirectly by the Action Alternatives or recommended LPA design options and are not particularly susceptible to cumulative effects from other foreseeable projects.

6.1.2 Geographic Study Areas

In general, indirect impacts of the Action Alternatives or recommended LPA design options would be localized on and around the station areas because potential indirect effects typically occur in close proximity to the parts of a transit project where access is provided to the transit service. In this context, the indirect effects study area for the Action Alternatives and

recommended LPA design options is defined by geographic areas one-half mile around each station area. One-half mile is the generally accepted maximum distance that transit patrons would walk to a transit service, based on an average walking speed between 2 and 3 miles per hour and a 10-minute time period. This “walkshed” standard encompasses an area of about 500 acres. Figure 6-1.1 shows the indirect effects study area as a composite of the one-half mile distances around the station areas of all Action Alternatives and recommended LPA design options.

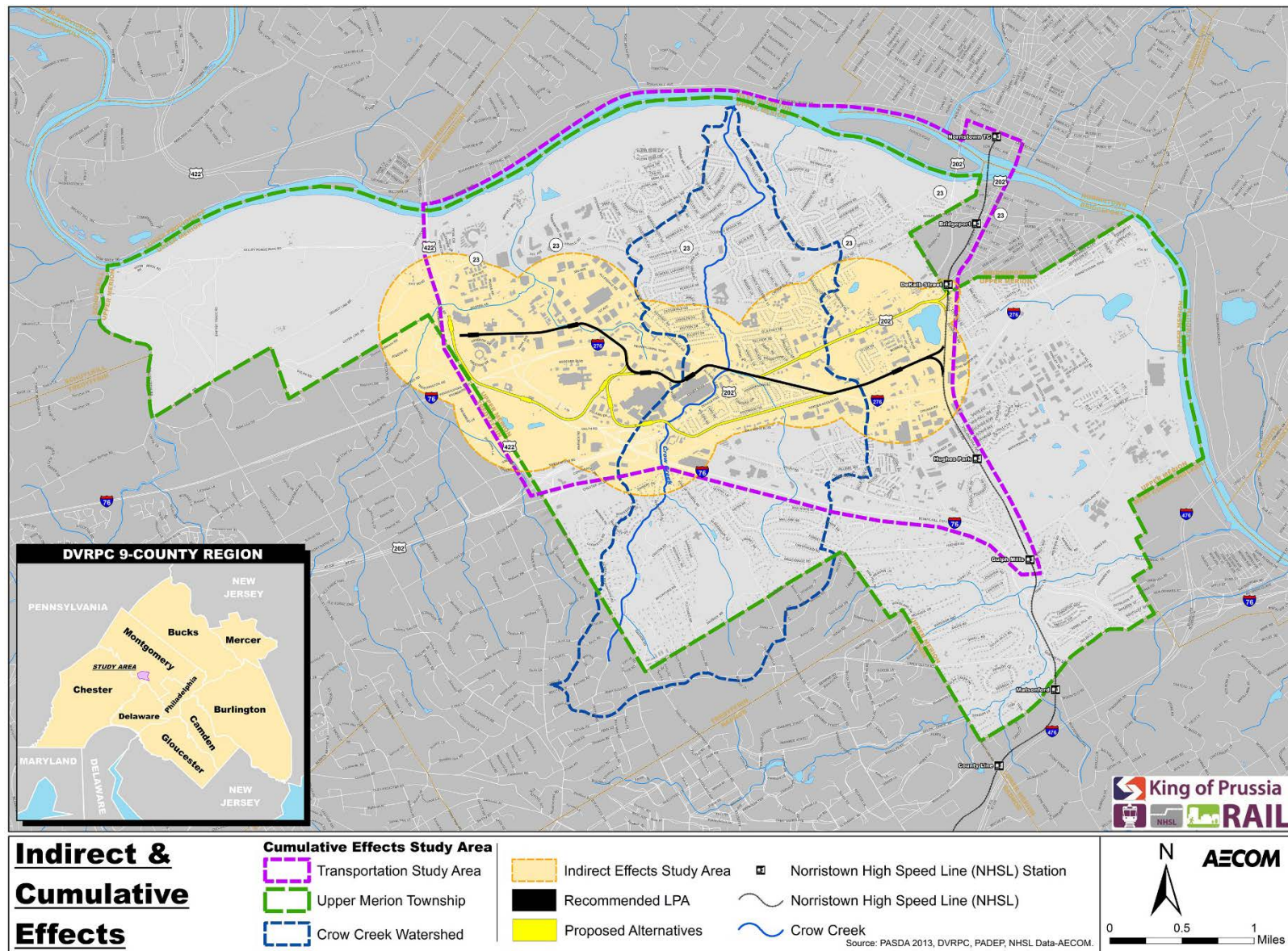
The cumulative effects study area differs from the indirect effects study area because it encompasses resources that are potentially affected by multiple projects considered in aggregate. For example, the effect of multiple projects on community facilities such as parks should be examined at the municipal level to determine the effect of all projects on the inventory and availability of such facilities to Township residents. In this assessment and as shown in Figure 6-1.1, three cumulative effects study areas have been defined to appropriately assess the resources of interest:

- Upper Merion Township boundary - The municipal boundary contains the transportation study area and Project study areas within which the following resources are analyzed in the DEIS: transportation, historic and archaeological resources, visual impacts, noise and vibration impacts and environmental justice.
- Watershed boundary – Crow Creek is the drainage area within which four of the Action Alternatives would potentially impact wetlands near the creek’s crossing under I-276. Examining the potential impacts of the Project and other projects on the wetlands in the watershed is helpful in evaluating the potential for cumulative change or loss of wetlands functions in that watershed.
- DVRPC’s nine-county region¹ - DVRPC as the source for data on vehicle trips in the Greater Philadelphia region, NHSL ridership and transit boardings in the NHSL service area, provides context for air quality and energy use as measured by change in VMT.

6.1.3 Temporal Boundaries

The timeframes for the cumulative effects analysis range from the 1950’s in the past to 2040 in the future. The 1950’s coincides with the beginning of the post-World War II suburban housing boom that led to significant outmigration from Philadelphia, suburban development including the King of Prussia Mall, and the convergence of the PA Turnpike, Schuylkill Expressway, US Route 422, and US Route 202 at King of Prussia (Section 4.7). Present actions are those defined to occur through 2020, as 2020 is the latest year that county-level capital improvement project and budget information is available. Future actions (after 2020) are those that can reasonably be anticipated based on DVRPC long-range planning documents.

¹ DVRPC’s nine-county region includes the counties of Bucks, Chester, Delaware, Montgomery and Philadelphia in PA as well as Burlington, Camden, Gloucester and Mercer Counties in NJ.

Figure 6-1.1: Indirect and Cumulative Effects Study Areas

6.1.4 Past, Present, and Reasonably Foreseeable Future Projects

Following the end of World War II in 1945, the trend of suburbanization accelerated nationwide. While outlying areas remained generally more rural in nature, suburban development in King of Prussia began to increase. Initially, transportation access constraints limited growth, but significant efforts by federal and state agencies began to improve regional mobility. With better transportation access, residential development increased and will continue to increase as evidenced by the population data in Section 4.2.2.

6.1.4.1 Land Development Projects

Due to the already developed nature of most land in King of Prussia, the primary type of development activity occurring today is redevelopment of lands previously converted to human uses. The redevelopment activity at the Village at Valley Forge is an example of redevelopment in the transportation study area. In the case of the Village, the former use of the land was a golf course.

Upper Merion Township identifies planned development projects in meeting memoranda and other resources on their website. Table 6-1.1 lists these projects, which include land development and redevelopment projects, most of which are within the transportation study area. If the planned development is near a proposed Project station, the name of the station is indicated. Many of the projects are at the Village at Valley Forge, which would be served by the N. Gulph Station in the PECO/TP-N. Gulph or US 202-N. Gulph Action Alternatives. Notably, six of the planned projects are not located near a proposed Project station. If each of these projects is implemented, the stock of residential and non-residential development in Upper Merion Township, particularly in the transportation study area, will increase.

It is important to understand that actual development may not occur at the densities proposed by current plans. In addition to the possibility that the plans may be revised, future development may be limited by various factors including market conditions, developer preferences, environmental permitting issues, and infrastructure availability. Future development may also be greater than forecasted depending on the same factors.

Table 6-1.1: Planned Development Projects in Upper Merion Township

Applicant	Proposed Development	Proximity to Project Station	Board of Supervisors Approval Date
401 N. Gulph Road Realen Valley Forge Greenes Associates	132-townhome development at the Village of Valley Forge	N. Gulph	9/17/15
401 N. Gulph Road Realen Valley Forge Greenes Associates	339-unit multifamily residential building at the Village of Valley Forge	N. Gulph	7/16/15
751 Vandenberg Road Mirabella Investment Properties, L.P.	311-unit multifamily residential units, 1,500 SF retail space in the King of Prussia Mixed Use District	No	9/17/15
Next Door Bar and Grill Village at Valley Forge	10,818 SF free standing restaurant	N. Gulph	11/12/15
Restaurant Pad King of Prussia Mall	8,400 SF restaurant pad, north side of the King of Prussia Mall, south of Mall Boulevard	Court or Mall Blvd North	11/12/15
Bozutto Development	232-unit multifamily residential building on the VR-3 site at Village at Valley Forge	N. Gulph	12/3/15
611 W DeKalb Pike DKF11, LLC	Consolidate 611 W DeKalb and 107 Forge, demolish structures, construct 18,000 SF retail building	No	1/14/2016
AVE King of Prussia	276-unit multi-family building at the Village at Valley Forge	N. Gulph	1/14/2016
2901 Renaissance Boulevard	300-unit multi-family residential building	No	Under review
GSK Building 400	Demolish existing warehouse buildings, construct 60,650 SF warehouse	No	7/21/2016
Conlin Copy Center	6,469 SF building addition and truck dock	1 st & Moore	9/22/2016
750 Moore Road	248-unit apartment building	No	9/22/2016
VR5 Hanover	339 residential units at Village at Valley Forge	N. Gulph	12/1/2016
Mancill Mill Final	112-unit hotel; preliminary development approval	No	Under review
Doubletree Hotel	Retail development along US Route 202	DeKalb Plaza	Conceptual plan, no formal application
Woodspring Suites 651 Park Ave.	4-story hotel	1 st & Moore	Reviewed at workshop meeting in Nov. 2016

Source: Upper Merion Township website, accessed December 2016.

6.1.4.2 Transportation Projects

The following are major transportation projects that contributed to the changes in land use patterns and resource context in the King of Prussia area of Upper Merion Township since World War II. The confluence of these several transportation projects increased the accessibility of the King of Prussia-Valley Forge area to Philadelphia as well as locations to the west:

- US Route 202 – Consisting of various older roads between Bangor, Maine and State Road, Delaware, US Route 202 was officially and uniformly numbered by the American Association of State Highway Transportation Officials (AASHTO) in 1934.
- I-276, Pennsylvania Turnpike – Although parts of the Pennsylvania Turnpike were initiated in the 1930's, it was not until 1950 that the Turnpike was extended east as far as Valley Forge. In 1954, the Turnpike was extended from Valley Forge to the Delaware River, completing its cross-state route.
- I-76 (Schuylkill Expressway) – Completed in 1949, the “Schuylkill” connects the King of Prussia-Valley Forge area with Philadelphia in a north-to-south orientation. It was originally planned to tie into the east end of the Pennsylvania Turnpike at Valley Forge before the extension to the Delaware River was built.
- US Route 422 – Comprised of two segments in Ohio and PA, and originally made up of older roads, US Route 422 is a spur route of US Route 22. The eastern spur extends from Hershey to Valley Forge. Reconstruction of the US Route 422 eastern spur to a multi-lane highway in the 2000's was spurred by increases in traffic volumes.
- Norristown High Speed Line – The NHSL began rail service in 1907 as the Philadelphia and Western Railway. At the time it ran from 69th Street in Upper Darby to Strafford. It was extended to Norristown in the 1930's. SEPTA began service on the line in 1969.

Table 6-1.2 lists planned transportation projects in Upper Merion Township as reported in the DVRPC's adopted *FY2017 Transportation Improvement Plan* for Pennsylvania. This table includes planned projects in the DEIS transportation study area as well as planned projects in other areas of Upper Merion Township. With the exception of the County's planned Chester Valley Trail Extension, each project is a road-based project intended to increase capacity, resolve operational constraints or address maintenance issues.

Table 6-1.2: Planned Transportation Projects in Upper Merion Township

Project	Type	Description
Transportation Study Area		
New US Route 422 Bridge crossing over Schuylkill River	Highway	New 4-lane bridge westbound; replace bridge eastbound.
Widen US Route 422 from US Route 202 to PA 363	Highway	Widen this 2-mile segment from 4 lanes to 6.
Full interchange at US Route 422 and PA 363	Highway	Complete to a full interchange, with movements in both directions.
PA Turnpike widening from Morgantown exit to Valley Forge	Highway	Widen to 6 lanes throughout.
Lafayette Street extension and new Turnpike exit in Norristown	Highway	Construction on extension underway. Construction on Turnpike exit could start in 2018.
1 st Avenue Streetscape and Multi-use Trail (known also as the 1 st Avenue Road Diet project)	Multimodal	Funded through statewide TAP program. Road Diet, streetscaping and multi-use trail along the length of 1 st Avenue to enhance multi-modal access.
Relocate PA 23/Valley Forge Road and N. Gulph Road	Highway	Move roadway 300 feet east of current entrance with Valley Forge National Historical Park to improve operations and reduce traffic impacts at the entrance to the Park, and create a new Gateway entrance.
Widen Henderson Road and South Gulph Road	Highway	Widen South Gulph Road from Crooked Lane to I-76 intersection at Gulph Mills, and widen Henderson Road from South Gulph Road to Shoemaker Road.
Chester Valley Trail Extension	Multimodal	Extend the Chester Valley Trail to connect with the Schuylkill River Trail in Norristown, a 3.5 mile extension.
Elsewhere in Upper Merion Township		
Replace Church Road bridge over NHSL	Highway	Address bridge conditions
PA 320 rehabilitation	Highway	Address roadway conditions at Hanging Rock
Reconstruct portion of Valley Forge Road	Highway	Address roadway conditions between Moore Road and Geerdes Boulevard

Source: DVRPC, FY2017 Transportation Improvement Plan for Pennsylvania (FY2017-2020), adopted on July 28, 2016.

6.2 Indirect Effects Assessment

It is reasonable to expect that the new transit access provided by any one of the Action Alternatives or recommended LPA design options would enhance and encourage development and redevelopment near station areas in terms of timing, scale of planned projects, or geographical extent because of the connections, convenience and reliability the new service would provide. The Project would be available to transport a customer and population base for

future development in the King of Prussia and Upper Darby areas. The Project would provide additional transportation capacity as an alternative to travel on existing, congested roadways.

The potential for development to occur around proposed station areas as a result of any one of the Action Alternatives or recommended LPA design options was assessed by examining the Upper Merion Township zoning ordinance for transit-supportive provisions, including allowable density, provisions for pedestrians and parking policies. Several zoning classifications allow greater development intensity, such as KPMU, SC-Shopping Center, C-O-Commercial Office and LI-Light Industry, compared to other zoning designations. Using GIS analysis, the amount of square footage of higher intensity development allowable within a ½-mile radius of each proposed station area was calculated. Table 6-2.1 reports the results of this assessment. Land within ½ mile of proposed station areas in the King of Prussia Business Park and the King of Prussia Mall area has the potential for more square feet of higher density/intensity development compared to land around other proposed stations. In particular, the 1st & Moore, 1st Ave. East and Mall Blvd West station areas have the largest areas of higher intensity zoning within a ½ mile radius (19.4, 18.6 and 18.8 million square feet, respectively). In contrast, the DeKalb Plaza and Court stations have the smallest areas of higher intensity zoning within ½ mile radius (5.1 and 9.6 million square feet, respectively).

In addition to zoning implications for future redevelopment, planned and recent projects within ½ mile of proposed stations areas may also be an indicator of future redevelopment potential. For example, the 1st & Moore, 1st Ave East and Convention Center station areas are within or near limits of Upper Merion Township's 1st Avenue Road Diet project. In addition, each is near the American Baptist Churches property on the south side of 1st Avenue and the Devon property at 1100 1st Avenue, which are identified as having potential for future redevelopment.

In their 2015 report, *Understanding the Economic Impacts of SEPTA's Proposed King of Prussia Rail Project*, the Economy League of Greater Philadelphia notes that growth in resident and worker populations, caused by the Project as well as redevelopment spurred by Upper Merion Township actions, would potentially change the types of business sectors, income levels, and the commute to work pattern, as well as increase the numbers of visitors to the transportation study area. Thus, future development with any one of the Action Alternatives or recommended LPA design options could be greater than with the No Action Alternative, resulting in economic benefits and potential indirect effects on the human and natural environment.

As described in Sections 4.3.3.2 and 8.4.2, the Action Alternatives and recommended LPA design options would differ from one another in the extent of future redevelopment potential each would have. Those with station areas along 1st Avenue would have higher future redevelopment potential than those with station areas along N. Gulph because the 1st Avenue area is centrally located in the King of Prussia Business Park and the KPMU zoning district. Specifically, the recommended LPA, each recommended LPA design option, the PECO-1st Ave. and US 202-1st Ave. Action Alternatives have station areas along 1st Avenue, resulting in higher future redevelopment potential than the PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives.

Table 6-2.1: Areas of Potential Higher Intensity Zoning Within ½ Mile of Proposed Station Areas

Station Areas	Existing and Potential Land Use (Zoning as of 9/2016)	Land Area Zoned for Higher Intensity Development Within ½ Mile of Station Areas (SF millions)				
		PECO-1st Ave.	PECO/TP-1st Ave. (recommended LPA)	PECO/TP-N. Gulph	US 202-1st Ave.	US 202-N. Gulph
Convention Center (park-and-ride)	Office/hotel/light industry (KPMU)	-	-	11.3	-	11.3
Court (kiss-and-ride)	Office/hotel/light industry (Shopping Center/Commercial)	-	9.6	9.6	9.6	9.6
DeKalb & Henderson (kiss-and-ride)	Retail/office/hotel/village residential (Commercial/Village Residential)	-	-	-	12.4	12.4
DeKalb Plaza (kiss-and-ride)	Retail/office/hotel/village residential (Shopping Center/Commercial/Residential)	-	-	-	5.1	5.1
1st & Moore (park-and-ride)	Office/hotel/light industry (KPMU)	19.4	19.4	-	19.4	-
1st Avenue East (kiss-and-ride)	Office/hotel/light industry (KPMU)	18.6	18.6	-	18.6	-
Henderson Road (park-and-ride)	Office/hotel/light industry/ village residential (Heavy Industrial/Commercial/ Residential)	10.3	10.3	10.3	-	-
Mall Blvd North (kiss-and-ride)	Office/hotel/light industry (Shopping Center/Commercial)	-	13.7	13.7	13.7	13.7
Mall Blvd West (kiss-and-ride)	Office/hotel/light industry (Shopping Center/Limited Industrial/Commercial)	-	-	18.8	-	18.8
North Gulph (kiss-and-ride)	Office/hotel/light industry (Commercial/Court approved master plan development)	-	-	16.7	-	16.7
Plaza (kiss-and-ride)	Office/hotel/light industry (Shopping Center/Commercial)	12.9	-	-	-	-
Plaza West (kiss-and-ride)	Office/hotel/light industry (Shopping Center/Limited Industrial/Suburban Metropolitan)	16.4	-	-	-	-

Notes: “-” indicates station areas would not be provided by a particular Action Alternative.

Source: AECOM, 2016.

6.2.1 Human environment

While not the sole or primary driver of change, the Project would contribute to social and economic forces that transform the indirect effects study area over time. The effects of development and redevelopment could include changes in housing values and affordable housing opportunities, increased employment opportunities, greater availability of consumer goods and services, changes to business revenues and operations, changes in neighborhood character (such as noise and visual change), and changes in demand for community facilities and parks. These potential impacts could be felt most acutely by environmental justice populations in this indirect effects study area because environmental justice populations tend to be more sensitive than non-environmental justice populations to changes in housing values

(rents), changes in their business revenues and operations, and the availability of employment and public transportation.

Studies of the effect of transit on property values using sales data typically have indicated increases in residential real estate values in close proximity to stations, with a reduced influence beyond a one-half mile radius². This premium depends on several factors, including the design of the station, the level of ridership, local real estate market conditions, neighborhood characteristics, and adjacent land uses. These economic effects can be both a benefit and a burden. While the Project may help communities achieve positive economic growth, the diversity and the economic needs of the entire community must be considered. During evaluation of the Action Alternatives and recommended LPA design options, SEPTA has been engaged with Project study area residents to understand their concerns. SEPTA will continue working with the Township regarding the effects of land use changes on residents.

Planned development and redevelopment projects have the potential to threaten historic and archaeological sites and may increase demands on community facilities.

6.2.2 Natural environment

Indirect impacts on the natural environment from additional development could occur, such as increased energy use, stormwater runoff and water quality impacts resulting from impervious surfaces.

6.3 Cumulative Effects Assessment

Past and present land use patterns in the cumulative effects study area tend to be suburban in character within Montgomery County, but more rural and agricultural in the western extent of the Schuylkill River drainage area. Foreseeable future development and infrastructure projects are programmed by their sponsors to occur independently of the Project, though as described in Section 6.2 above, each of the Action Alternatives and recommended LPA design options may have a catalytic effect on the pace, scale and geographic extent of development within King of Prussia. This effect has the potential to contribute incrementally to the overall human and natural environment effects of all past, present, and reasonably foreseeable actions in the cumulative effects study area. Specifically, population and employment growth in the cumulative effects study area, supported by township and county planning and zoning actions, in conjunction with each Action Alternative or recommended LPA design option, is expected to have the following consequences:

6.3.1 Transportation Systems and Facilities

Increased local travel demand, traffic congestion, and demand for transit services are anticipated to occur. Past and present transportation projects have formed a network of local and regional roadways designed to connect King of Prussia as a focal point of activity with the Greater Philadelphia area and areas west of King of Prussia using road-based transportation

² "Public Transportation Boosts Property Values" in *Transportation: A Toolkit for Realtors* 2nd Edition, National Association of Realtors, 2012, updated 2014
<http://www.realtor.org/articles/public-transportation-boosts-property-values>

such as bus and automobile. Future projects, other than the proposed Project, will primarily serve to address congestion and constraints in the existing roadway network. Each Action Alternative or recommended LPA design option would help to satisfy the demand for transit access to and from King of Prussia and would transfer some demand from private vehicles to transit service. Among the Action Alternatives, as described in Section 3.1.3.2, the recommended LPA and the PECO/TP-N. Gulph Action Alternative would provide the highest ridership increase (9,500 average weekday riders each) compared with the PECO-1st Ave. (8,500 average weekday riders), US 202-1st Ave. and US 202-N. Gulph Action Alternatives (7,500 average weekday riders each).

As described in Section 3.1.3.2 the factors affecting ridership increase are the number and locations of proposed stations, the relative length of each Action Alternative, the types and densities of planned development, and the locations of other stations. Each of these factors also contributes to the differences in forecasted ridership increases between the Action Alternatives.

Also as described in Section 3.1.3.2, each Action Alternative would affect average weekday transit boardings on other transit services in the NHSL service area, including connecting transit services. For example, the Project would increase transit boardings not only on the SEPTA NHSL but also on the SEPTA Market-Frankford Line, which connects the NHSL at 69th Street Transportation Center to Center City Philadelphia. Transit boarding increases are also expected on the SEPTA Frontier Bus division as well as SEPTA 101 and 102 Trolleys as a result of the Project. Each Action Alternative would decrease transit boardings on the SEPTA Victory Bus division and Regional Rail services. These changes potentially could result in adjustments being made to affected transit services in the long-term.

The potential construction impacts of the US 202-1st Ave. or US 202-N. Gulph Action Alternatives were identified by the public and Township as a concern. Specifically, the problems of access and roadway congestion that occurred during reconstruction of the US Route 202 overpass of the PA Turnpike were impactful to the King of Prussia community. Although none of the Action Alternatives being considered in the DEIS would cause the same type of disruption the overpass project caused in terms of US Route 202 closure at the bridge, some construction impacts would occur. Among the Action Alternatives and recommended LPA design options, the US 202-1st Ave. or US 202-N. Gulph Action Alternatives would potentially contribute the largest share of cumulative effects because the guideway would be aligned along and within the US Route 202 ROW. The PECO/TP-1st Ave. Action Alternative, the recommended LPA design options or the PECO/TP-N. Gulph Action Alternative would cross over US Route 202 at the PA Turnpike. The PECO-1st Ave. Action Alternative would cross over US Route 202 at the Gulph Road intersection. These Action Alternatives and recommended LPA design options would have considerably less potential for cumulative construction phase impacts on US Route 202.

The Project and the PA Turnpike interchange project at Lafayette Street in Norristown are in geographically distinct areas approximately three miles apart and do not overlap. However, each project could potentially affect travelers on the PA Turnpike if the construction phases of each project are underway concurrently. Specifically, the proximity of the two projects would warrant coordination between SEPTA and the Turnpike Commission in terms of signage and construction area motorist alerts.

6.3.2 Community Facilities

Increased pressure on public infrastructure and services would occur as a result of the Project. County and local land use plans and regulations serve to direct future growth and limit excessive pressure on public facilities and services. The large number and scale of planned projects listed in Table 6.1-1 could place additional demands on community facilities, a factor Upper Merion Township must take into consideration as they review development applications. As the Project is included in county and local plans, its demands on infrastructure in the context of other planned projects is incremental and would be accounted for in future infrastructure planning, such as safety.

6.3.3 Parks, Recreational Land and Open Space

Increased demand and capacity pressure on public parks and recreation facilities in the region would occur as a result of the Project. Due to limited land availability and funding for acquisitions, future park improvements by the township, county and National Park Service are geared toward investing in and encouraging the use of already protected land to meet recreational demands. Given the large amount of planned land development in the Township, which will increase the residential population of the Township and demand on parks, a long-term decrease in the ratio of park and recreation land area to population could result. To offset this decrease, the Township and County may have to allocate funding to increase the number and size of parks, recreational land and open space in the transportation study area. The Action Alternatives would provide access to some parks and, depending on the Action Alternative or recommended LPA design options, could impact park land and facilities. However, the impact of the Project on parks, recreational land and open space as described in Section 4.6.3 would be incremental in the context of other planned projects.

6.3.4 Historic and Archaeological Resources

A cumulative effect on known historic properties potentially would occur as a result of the Project. Among the planned projects, improvements to US Route 422 and PA 23 have the potential to cumulatively affect the adjacent Valley Forge National Historical Park through direct physical impacts or visual changes. None of the Action Alternatives or recommended LPA design options would contribute to these potential cumulative effects on VFNHP as none would directly impact the Park or cause visual changes that would affect the Park.

The PECO/TP-N. Gulph or US 202-N. Gulph Action Alternatives in conjunction with the PA Turnpike widening project from Valley Forge to Morgantown have the potential to cumulatively affect the historic PA Turnpike: Philadelphia Extension corridor. Ground disturbance at the N. Gulph Road location where these two projects intersect has the potential to cumulatively affect archaeological resources if present. If one of these Action Alternatives is selected, Section 106 consultation for the Project will consider the potential cumulative project effects prior to FTA making a formal determination of effect.

The remaining Action Alternatives, including the recommended LPA and recommended LPA design options, would not contribute to cumulative effects on historic resources as none of the historic resources identified and described in Section 4.7 would be adversely impacted.

6.3.5 Visual and Aesthetic Resources

The assessment of potential cumulative visual and aesthetic impacts focused on the Project in combination with the other planned projects within the viewshed of the Project, such as the 1st Avenue Road Diet and Chester Valley Trail Extension. The proposed Chester Valley Trail Extension will be a ground level multi-use path that is unlikely to create a visual change in the Project study area. However, the Action Alternatives and recommended LPA design options that would use 1st Avenue, namely the recommended LPA, each recommended LPA design options, the PECO-1st Ave. or US 202-1st Ave. Action Alternatives, in conjunction with Upper Merion Township's 1st Avenue Road Diet project would cumulatively change the visual appearance of 1st Avenue between the VFCR and American Avenue. As described in Section 4.8.3.2, each of these Action Alternatives would be a new visual element in the 1st Avenue corridor. The Township would reconfigure travel lanes on 1st Avenue, adding a center median with streetscaping and sidewalks alongside the roadway. The combination of the two projects would change the wide, multi-lane roadway appearance of 1st Avenue to a multi-featured transportation corridor with the roadway and sidewalks at ground level and the elevated Project guideway and stations overhead.

6.3.6 Air Quality

Air quality characteristics in Upper Merion Township are influenced primarily by emissions from road-based transportation as well as regional power generation. Forecasted future land development will potentially increase VMT and emissions from road-based vehicles and power generation over time. While planned roadway capacity improvement projects will help to accommodate VMT growth, congestion and road-based vehicle emissions will likely increase. As indicated in Section 4.9.3.2, each Action Alternative would reduce growth in VMT by diverting some travelers to rail transit. By reducing VMT, the Project would have a positive net benefit on air quality. Among the Action Alternatives, the extent of VMT reduction would differ as a function of several factors, particularly the location of proposed station areas and the provision of one or two park-and-ride facilities. The recommended LPA and the PECO/TP-N. Gulph Action Alternative would provide the most reduction in automobile VMT per year (17.5 and 18.4 million miles). The PECO-1st Ave and US 202-1st Ave. Action Alternatives would provide slightly less annual VMT reduction (16.1 million miles each), and the US 202-N. Gulph Action Alternative would provide the least annual VMT reduction (14.6 million miles). Thus in a cumulative effects context, each Action Alternative would provide an incremental air quality benefit.

6.3.7 Noise and vibration

The assessment of potential cumulative noise and vibration impacts focused on each Action Alternative and recommended LPA design option in combination with the other planned projects within 150 feet of the Project, the distance within which a potential noise impact from the Project could potentially occur (Section 4.10.3.2). The geographic area within which potential vibration impacts could occur is smaller, 65 feet as reported in Section 4.10.3.2, and is within the larger noise impact area. Within these distances are two planned transportation projects: the 1st Avenue Road Diet and the Chester Valley Trail Extension. The proposed Chester Valley Trail Extension will be a ground level multi-use path that is unlikely to contribute to a cumulative noise or vibration change. However, the Action Alternatives and each recommended LPA

design options that would use 1st Avenue and the Township's 1st Avenue Road Diet project could cumulatively change noise levels along 1st Avenue between the VFCD and American Avenue. Action Alternatives that do not use 1st Avenue would not contribute to cumulative changes in noise. As described in Section 4.10.3.2, no potential for direct vibration impacts is expected to occur with each Action Alternative and recommended LPA design options, except the PECO-1st Ave. Action Alternative. Consequently, no cumulative effect would occur with these alternatives. No cumulative vibration impact is anticipated to occur with the PECO-1st Ave. Action Alternative as no other projects are close enough to Kingwood Road Park to cause the potential for a vibration impact.

Concurrent construction activities could occur if the Township's 1st Avenue Road Diet project and an Action Alternative or recommended LPA design options using 1st Avenue is selected (the recommended LPA, each recommended LPA design options, PECO-1st Ave. or US 202-1st Ave.). Similarly, a construction phase cumulative noise or vibration impact could occur if the County's Chester Valley Trail Extension is built at the same time as any one of the Action Alternatives. The combined construction noise and vibration impacts would occur along the PECO corridor, if the PECO-1st Ave. Action Alternative were selected, or at the point where the trail crosses US Route 202 (with the US 202-1st Ave. or US 202-N. Gulph) or Saulin Boulevard (with the recommended LPA, PECO-1st Ave. or PECO/TP-N. Gulph). As SEPTA develops the construction plan for the Project, it will consider the relationship of the activities with that of other project sponsors and work to avoid or minimize temporary, cumulative effects including noise and vibration.

6.3.8 Natural environment

Past and present development in the cumulative effects study area has impacted natural resources by converting forests, undeveloped land, and water resources including wetlands to manmade uses. Examples of impacts of past and present development impacts on the natural environment include the placement of Crow Creek in an underground pipe under the King of Prussia Mall property and conversion of portions of previously pervious soils on the Village at Valley Forge property to impervious building and pavement cover. Most land area within the Crow Creek watershed between the Schuylkill River and the edge of Tredyffrin Township has been converted to residential or non-residential development. These conditions have reduced the area of natural floodplains and ecosystems that manage flooding, support good water quality and sustain natural productivity.

Examining the Crow Creek watershed indicates that several planned land development and transportation projects will occur aside from the Project: Restaurant Pad at King of Prussia Mall, 611 West DeKalb Pike redevelopment, Doubletree Hotel retail development along US Route 202, the Chester Valley Trail Extension, and reconstruction of the portion of Valley Forge Road between Moore Road and Geerdes Boulevard. Each of these projects, as well as any one of the Action Alternatives or recommended LPA design options would primarily redevelop already developed land. For example, development of the restaurant pad site at the King of Prussia Mall would replace a paved area with a building. In another example, reconstruction of Valley Forge Road would occur along the existing roadway corridor. Although some cumulative reduction in Crow Creek natural areas (wetlands, for example) could occur with implementation of all planned projects, the impact of any one project, including the Project, would be incremental.

Potential impacts on natural resources including wetlands are governed by federal, state, and local laws and regulations, which are intended to guide development to prevent or minimize degradation or loss of natural resources on which human health and welfare depend.

As described in Sections 4.11, each Action Alternative or recommended LPA design option would potentially affect natural resources, including forests, adding new impervious surfaces and affecting wetlands. For example, each Action Alternative and recommended LPA design option would add impervious pavement surface at proposed park-and ride facility sites. The cumulative effect of the Project and other projects is the continuation of the suburbanization process begun in 1945. The role of each Action Alternative and recommended LPA design option is incremental in the larger context of past, present and reasonably foreseeable development effects. As the Project design advances and in consultation with regulatory agencies, SEPTA will examine ways to avoid or minimize natural environment impacts and will mitigate Project-related impacts as required by federal and state laws.

6.3.9 Energy Use

Suburbanization of the study area and its attendant increase in housing since the end of World War II has increased energy needs to power and heat buildings, fuel automobiles and buses, and provide communications, to name a few types of energy use. Currently committed transportation projects, other than the Project and the Chester Valley Trail Extension, are focused on accommodating existing and future road-based travel. Growth in the number of automobiles and other road-based vehicles will increase demand for fuel. Foreseeable development, such as the Village at Valley Forge will incur greater energy demands than those experienced today. As indicated above for air quality, the Project would reduce VMT despite all other planned transportation projects being implemented. Thus, the Project would have a positive net benefit on reducing energy consumption.

6.3.10 Environmental Justice (EJ)

Past, present and reasonably foreseeable projects considered individually or cumulatively, could have benefits and/or impacts on all Project study area populations as described in the DEIS, such as increasing or decreasing affordable housing opportunities, changing employment opportunities, affecting business operations, changing neighborhood character, changing the availability of consumer goods and services, and changing natural resources. As reported in Section 4.14.7, FTA has determined that while each Action Alternative and recommended LPA design option potentially would have benefits as well as impacts, those benefits and impacts would be experienced by EJ as well as by non-EJ populations. None of the benefits or impacts would be predominantly borne by a minority and/or low-income population, and none of the potential impacts on EJ populations would be more severe or greater in magnitude than the potential impacts on non-EJ populations. As a result FTA has determined that each Action Alternative and recommended LPA design option would not have a disproportionately high and adverse effect upon EJ populations.

Chapter 7.0 Public Outreach and Agency Coordination

From the initiation of Project planning prior to scoping, public and agency involvement has been a key element in planning the Project. This section describes the outreach and coordination activities undertaken by SEPTA and how input from that process has been used to shape the Project and enable decision-making.

7.1 Public Outreach

Public outreach is an essential component of the alternatives development and NEPA process as it establishes and maintains a collaborative decision-making process that engages the public and stakeholders in the development of the Project's purpose and need, the development and evaluation of alternatives and selection of an LPA. The objectives of public outreach are:

- Inform and educate the public and stakeholders about the Project;
- Provide opportunities for meaningful input and dialogue throughout the alternatives development and NEPA processes;
- Understand community values in order to better develop alternatives; and
- Foster productive public relations.



Project public outreach activity.

Source: McCormick Taylor, 2016.

7.1.1 Approach

SEPTA developed a *KOP Rail Public Involvement Plan* (PIP) in 2013 that outlines outreach activities and communication methods to be used throughout the NEPA process. The PIP is appended to SEPTA's 2014 *KOP Rail Draft Scoping Meeting Technical Memorandum*, which is available on the Project website, www.kingofprussiarail.com. As the alternatives development and evaluation process advanced, SEPTA enhanced outreach activities when appropriate in response to communication needs and decision-making milestones.

7.1.2 Public Outreach Communication Methods

SEPTA applied traditional as well as non-traditional methods in public outreach activities. Since the Notice of Intent, SEPTA has maintained a mailing list of people interested in the Project, with an open invitation to be included on the mailing list. SEPTA uses multiple means of communication to share project information with the public and obtain public input:

- **Project Website** - A stand-alone Project website communicates Project activities and enables users to receive timely information regarding Project activities. The website –

www.kingofprussiarail.com – is based on four key Project themes: Connectivity, Development, Access and Efficiency. Major content categories include a description of the Project background, alternatives analysis, environmental studies, public involvement, news and information, market analysis, links and other resources, and contact information. Project themes and online content are supported by graphics, tables and figures, as well as interactive links to advance the level of public involvement. Printed materials are also posted in electronic format for download. For example, SEPTA maintains “virtual meeting” capability by uploading materials from public meetings on the Project website.

- **Hardcopy Mail** – SEPTA mailed newsletters and meeting notifications to each Project study area address.
- **Email** – SEPTA responds to questions posed to the info@kingofprussiarail.com address. SEPTA also uses email to provide project updates, meeting announcements and other Project communications.
- **Flyers** – SEPTA put Project meeting notification flyers on its transit vehicles and at stations.
- **Third Party** – SEPTA coordinates with Upper Merion Township regarding posting Project meeting notices at the Township Hall and in their weekly e-newsletter. Additionally, SEPTA coordinates with the KOP-BID and major King of Prussia office buildings to post and/or email meeting announcements to tenants. SEPTA also coordinates with the KOP-BID to post meeting announcements on shuttle buses. SEPTA coordinates with GVFTMA to gain contacts of organizations (e.g., chambers of commerce) that would be willing to email meeting announcements to contact lists.
- **Social Media** - SEPTA’s Project-specific Facebook page (#KOPRail) for the public to obtain information about the Project. News alerts and meeting announcements are pushed to social media followers on a Project-specific Twitter account: www.twitter.com/KOPRail. Additionally, the hashtag #KOPRail has been used to connect people who are talking about the Project.
- **Newsletters** - In addition to online Project news and information, the public can sign up to receive Project updates through regular newsletter releases at key Project milestones. E-blasts are sent to those who request to be added to the Project database. Copies of newsletters are also provided to key stakeholders to distribute.
- **Press Releases** - SEPTA uses press releases at key milestones to alert the public of important Project decisions. Local and regional newspapers used include *Norristown Times Herald*, *Main Line Times*, *King of Prussia Courier*, *Delaware County Times* and the *Philadelphia Inquirer*.
- **Meetings and Information Sessions** – As described in Sections 7.1.3 and 7.2, SEPTA provides direct engagement with agencies, stakeholders and the public, enabling information about the Project to be shared and comments and questions from attendees

to be received. SEPTA selects venues in and near the transportation study area that provide access for persons with disabilities and are accessible by bus routes that serve the transportation study area, by bus or rail transit in Norristown, or by provision of a SEPTA shuttle during meeting times.

In its public communications, SEPTA has accommodated limited English-proficient individuals in several ways. Meeting announcements are posted in English and in Spanish, and language translators are offered, if requested, at public meetings. Included in meeting announcements is the following paragraph: “SEPTA is committed to compliance with the nondiscrimination requirements of applicable civil rights statutes, executive orders, regulations and policies. The meeting locations are accessible to persons with disabilities. With advance notification, accommodations may be provided for those with special needs related to language, sight, or hearing. If you have a request for a special need, or desire additional information, please contact planning team representative Emily Watts at McCormick Taylor, Inc., 2001 Market Street, 10th Floor, Philadelphia, PA 19103, or call (215) 592-4200.” At the scoping meetings, for example, a sign language interpreter was present. The website also has a multi-lingual web tool.

SEPTA monitored the effectiveness of its activities and adjusted the methods to increase public participation. For example, SEPTA expanded its public notification approach to include not only property owners but also residents in multi-family units. By supplementing traditional techniques, SEPTA was able to notify and achieve involvement from more residents and other members of the public, including current transit riders.

7.1.3 Summary of Public Outreach Activities

Public outreach activities to date have included pre-scoping, scoping, stakeholder committees, meetings with jurisdictional owners, elected officials briefings, and meetings and workshops with residents. These activities and the entities involved are described in the following subsections. A public outreach log, provided in Appendix D, summarizes the details of SEPTA’s activities to engage the public.

7.1.3.1 Pre-scoping and Scoping

Prior to initiating the NEPA process, SEPTA undertook pre-scoping activities that consisted of technical work to support scoping. Technical work activities included developing a three-tiered alternatives screening and evaluation process, as well as applying the first (Tier 1) screening step to evaluate a long list of alternatives. Details regarding the screening process are provided in Chapter 2.

NEPA scoping was initiated with publication of the NOI on June 27, 2013 and continued through the tiered alternatives screening process described in Chapter 2. Public and agency scoping meetings were held on July 16, 2013. The scoping process is documented in the 2014 *Draft Scoping Meeting Technical Memorandum* for the Project. Scoping is required under NEPA regulations and guidelines. It is an early and open process for determining the scope of issues to be addressed and for identifying significant issues related to a proposed action. Scoping offers the opportunity for the public and government agencies to review information on the Project and provide comments with the intent of establishing the scope and content of the DEIS.

SEPTA received 79 comments from commenters (public and agency) during the 45-day scoping comment period. Of these comments, more than one-third of them were about Purpose and Need (34%) followed closely by Alternatives at 30%. Affected Environment generated 10% of comments, Study Area 8%, Costs and Funding 6%, and Public and Agency Involvement represented 4% of the total. Outside of Scope comments were 8%. Project-related themes heard included:

- Support and non-support of increased transit services to King of Prussia/Valley Forge area;
- Minimize transfers;
- Support and non-support for Regional Rail extensions;
- Visual and habitat impacts along PECO ROW;
- Effect on water supply;
- Property impacts/proximity to residences; and
- Cost/tax effect.

7.1.3.2 Steering Committee

The Project's Steering Committee (SC) offers guidance and direction regarding overall Project activities, including the direction of the public involvement program. The SC comprises representatives from SEPTA, the Montgomery County Planning Commission, the Delaware County Planning Department, the Greater Valley Forge TMA (GVFTMA), Upper Merion Township and the DVRPC. The SC provided input at nine meetings with SEPTA during alternatives development and evaluation, including the following key themes:

- Importance of serving key destinations and businesses
- Importance of rail transit service to recently rezoned mixed-use area
- Number and locations of stations and park-and-ride facilities
- Elevated versus at-grade guideway
- Importance of US Route 202 as Upper Merion Township's "Main Street"
- Sensitivity of Upper Merion and public to construction and traffic disruptions along US Route 202
- Coordination with jurisdictional owners
- Role of the Project in supporting Upper Merion's economic development planning
- The Project role in County planning
- Safety
- Ridership modeling
- Screening process methodology
- Cost

7.1.3.3 Technical Advisory Committee

The Project's Technical Advisory Committee (TAC) serves as both a sounding board and resource for the Project, providing an informed review of technical analyses, design guidance

and operational strategies. Primary membership includes representatives from FTA, SEPTA, PennDOT District 6, PECO, the Pennsylvania Turnpike Commission, Montgomery County Planning Commission, Delaware County Planning Department, Norfolk Southern, FHWA, DVRPC and Upper Merion Township. The committee provided input at five meetings with SEPTA during alternatives development and evaluation, including the following key themes:

- Integration of the Project and 1st Avenue Road Diet project
- Number and locations of stations and park-and-ride facilities
- Alternative alignment routes
- Consideration of noise and visual impacts
- Approach to neighborhood coordination
- Effect of mixed use rezoning on residential population
- Connection to Valley Forge National Historical Park (VFNHP)
- Future plans of jurisdictional owners
- Screening methodology

7.1.3.4 Stakeholder Advisory Committee

The Project's Stakeholder Advisory Committee provides a forum to communicate and discuss local issues and ideas important to the development of the DEIS. Primary membership includes major property owners and employers in the study area, including Simon Properties (owner of the King of Prussia Mall), Chambers of Commerce, KOP-BID, VFNHP, Montgomery County Planning Commission and the Delaware County Planning Department. The committee provided input at six meetings with SEPTA during alternatives development and evaluation, including the following key themes:

- Need for sufficient parking for park-and-ride access at terminal stations
- Travel times should be as quick as possible
- Preference for alternatives that go behind the Mall
- Number and locations of stations and park-and-ride facilities
- Alignment routes
- Guideway structure dimensions
- Property impacts
- Access to other destinations such as the Towers
- Costs of alternatives and funding
- Public impacts

7.1.3.5 Core Stakeholder Group

A core group of stakeholders regularly meet with SEPTA at decision points and milestones. Attendees at these meetings include the KOP-BID, GVFTMA, Upper Merion Township and Montgomery County, the entities that lead the land use and transportation planning decision-making process in the transportation study area. The Core Stakeholders provided input at

several meetings with SEPTA regarding the Tier 2 screening matrix during its development and application and the evaluation SEPTA conducted.

Key themes provided by the group include:

- Cost
- Ability of the alternatives to serve commercial and office areas
- Importance of providing access to jobs, large employer access
- Alignment behind the Mall preserves Mall visibility
- Screening should consider visual impacts, temporary access impacts and support for TOD
- Serve areas with redevelopment/development potential
- Ease of adopting new transit supportive zoning
- Tourism access
- Bicycle/pedestrian access
- Visual impacts
- Need for broad acceptance by key stakeholders/political leaders
- Need for County support
- Resident needs and concerns
- Construction impacts, including traffic and property access
- Potential for future extension
- Number and locations of stations

In addition, as described in Section 8.3.2, SEPTA met with the Core Stakeholders group to help SEPTA identify a recommended LPA for the DEIS. In a series of two work sessions on August 18, 2015 and September 16, 2015, the group considered the preliminary technical analysis results for the Action Alternatives (Table 8-4.1), public and stakeholder input regarding the potential benefits and impacts of the alternatives, and the factors the Core Stakeholders group identified as most important to decision-making.

7.1.3.6 Community Working Group

SEPTA also established a Community Working Group (CWG), an advisory body made up of representatives of the various Project study area neighborhoods and residential areas as well as members from Upper Merion Township Planning Commission. Upper Merion Township Supervisors are aware of the meetings and are encouraged to attend as their schedules allow in an ex officio fashion. Currently there are 10 resident members and two members from Upper Merion Township's Planning Commission. The purpose of the CWG is to work with SEPTA during the EIS process and as the Project advances to communicate and resolve issues related to the Project. Focused meetings with the CWG include SEPTA updates of Project progress, in depth discussion of issues and concerns, and consideration of minimization and mitigation strategies.

Some of the issues the CWG is focused on include visual impacts and property impacts. To date, CWG meeting topics have included the federal DEIS process, ridership data and modeling, safety and crime. SEPTA asks guest speakers to attend and present information in topics in which they are experts. For example, Chris Puchalsky, Ph. D., formerly from DVRPC, presented information on ridership data and modeling. Upper Merion Township's Chief of Police, Thomas Nolan and Captain Charles Lawson from SEPTA's Transit Police presented on crime and safety. The CWG will continue to meet to discuss topics suggested by the members.

7.1.3.7 Public Meetings and Workshops

SEPTA has hosted meetings and workshops with the public at key milestones during the alternatives development and evaluation process. The purposes of these meetings were to convey information about the Project to the public and seek public input. For persons not able to attend public meetings, SEPTA uploads meeting materials to the Project website in the form of "virtual meetings." In addition, videos of public meetings are made available on Upper Merion's public access channel (UMGA-TV) and at <https://www.youtube.com/user/KOPRail>. The input SEPTA received from the public has been factored into alternatives development and decision-making.

Project public outreach activity, 2016.

Source: McCormick Taylor, 2016.



Additionally, SEPTA hosted less formal public information sessions at stations along the current NHSL and at other key locations. The goal of these public information sessions is to offer the public an additional opportunity to learn about the Project and provide input.

Table 7-1.1 summarizes the public meetings, workshops and information sessions for the Project to date, including locations, meeting objectives, key comment themes, and actions SEPTA has taken as a result of the input it received. SEPTA has made a conscientious effort to hold meetings at locations within the Project study area as well as at locations currently connected to the NHSL, such as in Norristown and Upper Darby. SEPTA has actively considered the public input it has received. For example, in response to on-going public concerns about the potential visual effect of the Project in the study area, SEPTA focused on conceptually designing the facility with minimum required dimensions, such as single-column supports. It has also shown examples of what the structure might look like using a number of visualization tools, including photos of similar projects as well as still and animated visualizations. Another example of an action SEPTA took in response to public input was

examining the potential for at-grade alternatives, described in Chapter 2. As a third example, SEPTA is examining the potential to shift a portion of the recommended LPA alignment to the north side of the PA Turnpike (PA Turnpike North/South Option) in response to Valley Forge Homes residents' concerns about potential Project-related impacts on their neighborhood and properties.

SEPTA has also hosted meetings with specific groups within the King of Prussia/Valley Forge area to understand local concerns with regard to the Project. Table 7-1.2 lists these meetings with other interested parties and SEPTA's actions in response to specific concerns.

Table 7-1.1: Summary of Public Meetings and Workshops

Public Meetings and Workshops			Key Comment Themes	SEPTA Response Actions
Date & Location	Types	Objective		
Week of 1/29/2013 (actual meetings 1/29 at Valley Forge National Historical Park, 1/30 at Villanova University, 1/31 at Montgomery County Planning Commission)	Public (pre-scoping)	Project introduction	<ul style="list-style-type: none"> • Transit solution to congestion needed • Visual impacts • Noise and vibration impacts • Multi-modal access and connections • Various alignment routes suggested 	<ul style="list-style-type: none"> • SEPTA examined suggested alignment routes considering purpose and need during Tier 1 screening (Section 2.1.2) • Potential transportation, visual, noise and vibration impacts of the Action Alternatives are assessed in the DEIS (Chapters 3 and 4)
7/16/2013 at the Radisson Hotel – Valley Forge	Scoping meeting	Formal scoping for EIS; long list of alternatives; Tier 1 screening process and results presented	<ul style="list-style-type: none"> • Urbanizing effect • Visual impacts • Noise and vibration impacts • Shadows from elevated structures • Traffic impacts including construction • Multi-modal access and connections • Benefits for impacted residents 	<ul style="list-style-type: none"> • Potential changes to land use patterns, size of elevated structure, multi-modal access and connections and benefits of the Action Alternatives are assessed in the DEIS (Chapters 3 and 4) • SEPTA evaluated potential for at-grade segments during screening (Section 2.1.3)
1/30/2014 at the Radisson Hotel – Valley Forge	Public; elected officials briefing	At-grade alternatives introduced; scoping comments summary; examples of existing elevated and at-grade rail operations	<ul style="list-style-type: none"> • Alignment routes suggested • Property impacts • Importance of Mall and 1st Avenue Stations • Importance of serving VFNHP • Need for multi-modal station access/parking • Visual impacts • Safety • Project cost and funding 	<ul style="list-style-type: none"> • SEPTA retained initially feasible at-grade segments in Action Alternatives (Section 2.1.3) • DVRPC's ridership analysis focused on King of Prussia Mall and 1st Avenue areas (Section 3.1.3.2) • Each DEIS Action Alternative would serve VFNHP (Section 3.1.3.2) • SEPTA's station concepts address multi-modal access; park-and-ride facilities address parking (Section 2.3)

Public Meetings and Workshops			Key Comment Themes	SEPTA Response Actions
Date & Location	Types	Objective		
				<ul style="list-style-type: none"> • Potential for property impacts and visual impacts assessed in DEIS (Sections 4.5 and 4.8); DEIS also assesses safety (Section 3.6) and reports preliminary project costs and potential funding sources (Section 8.6.2)
Week of 11/17/2014 (actual meetings 11/17 at the Radisson Hotel – Valley Forge, 11/19 at Norristown Municipal Building; 11/21 for Mall tenants/employees in King of Prussia Mall's Community Room)	Public; Mall tenant/employee; elected officials briefing	Tier 2 Screening; Retained Alternatives	<ul style="list-style-type: none"> • Primarily support Project • Need to serve key destinations • Need for multi-modal station access/parking • Visual impacts • Property impacts along PECO-1st Ave. • Funding sources • Sinkhole conditions 	<ul style="list-style-type: none"> • Each Action Alternative would serve key destinations (Section 3.1.3.2) • Potential for property impacts, visual impacts and sinkhole conditions assessed in DEIS (Sections 4.5, 4.8 and 4.11); DEIS also identifies potential funding sources (Section 8.6.2) • Proposed park-and-ride facilities address parking (Section 2.3)
3/16/2015 at the Radisson Hotel – Valley Forge and 3/25/2015 at the DoubleTree Hotel Valley Forge	Public meetings and workshops; elected officials briefing	Tier 2 screening results; five Build Alternatives for Tier 3	<ul style="list-style-type: none"> • Alignments behind the King of Prussia Mall preferred • Parking at western terminus station a good idea • Visual and noise impacts • Need for multi-modal station access/parking • No benefits for impacted residents • Economic and property value effects • High construction and visual impacts of alternatives using US Route 202 • High residential impacts of PECO-1st Ave. • Alternatives using 1st Avenue complement the planned Road Diet project • Safety 	<ul style="list-style-type: none"> • Action Alternatives aligned behind the King of Prussia Mall assessed in the DEIS (Section 2.2) • Proposed Convention Center park-and-ride facility retained for each Action Alternative (Section 2.3) • SEPTA's station concepts address multi-modal access (Section 2.3) • Potential for safety, economic, property value, visual, noise, and construction impacts are assessed in DEIS (Chapters 3 and 4)

Public Meetings and Workshops			Key Comment Themes	SEPTA Response Actions
Date & Location	Types	Objective		
Week of 3/7/2016 (actual meetings 3/7 at the Radisson Hotel – Valley Forge, 3/9 at Norristown Municipal Building, 3/15 at the DoubleTree Hotel Valley Forge)	Public meetings; elected officials briefing;	Tier 3 screening; recommended LPA; LPA in DEIS	<ul style="list-style-type: none"> • Visual and noise impacts • Project cost and funding • Economic effects • Safety • Parking and multi-modal access to stations • Property impacts 	<ul style="list-style-type: none"> • PA Turnpike North/South Option is assessed in the DEIS to reduce potential visual, noise, economic and property impacts (Section 2.2) • A PA Turnpike At-Grade South Side Option was considered during screening but eliminated due to potentially complex construction and maintenance issues (Section 4.8.3.2) • Potential for safety, economic, property, visual, and noise impacts are assessed in the DEIS (Sections 3.6, 4.3, 4.5, 4.8, and 4.10) • SEPTA's station concepts address multi-modal access (Section 2.3)
Week of 3/7/2016 Public information sessions (actual meetings 3/10 at Dilworth Park in Center City Philadelphia and King of Prussia Mall Transportation Center, 3/12 at King of Prussia Mall at the Court and King of Prussia Mall the Plaza, 3/17 at 69th Street Transportation Center and Norristown Transportation Center)	Public information sessions	Tier 3 screening; recommended LPA; LPA in DEIS	<ul style="list-style-type: none"> • Visual and noise impacts • Project cost and funding • Economic effects • Safety • Parking and multi-modal access to stations • Property impacts • Need for current transit users 	<ul style="list-style-type: none"> • PA Turnpike North/South Option is assessed in the DEIS to reduce potential visual, noise, economic and property impacts (Section 2.2) • Potential for safety, economic, property, visual, and noise impacts are assessed in the DEIS (Sections 3.6, 4.3, 4.5, 4.8, and 4.10); Project cost and funding addressed in DEIS (Section 8.6.2) • SEPTA's station concepts address multi-modal access; proposed park-and-ride facilities address parking (Section 2.3)

Table 7-1.2: Summary of Other Interested Parties Meetings

Interested Parties Meetings			Key Comment Themes	SEPTA Response Actions
Date	Types	Objective		
Week of 12/10/2012 (actual meetings 12/10, 12/12, 12/14)	Stakeholder Interviews	To develop clear understandings of local issues, concerns, goals and strategies	<ul style="list-style-type: none"> • The King of Prussia area: has great auto access but is auto dependent; experiences cut-through traffic in residential areas off US Route 202; suffers from unpredictable bus travel times due to traffic; needs improved access to the region's talent pool; lacks an identity • The Project is viewed positively by improving mobility options • During planning, the Project should provide pedestrian amenities at and around stations; be designed so as to reduce curves to increase rail travel speed; not create conflicts with vehicle traffic 	<ul style="list-style-type: none"> • Reliability and access included in Project purpose and need (Chapter 1) • Station concepts include pedestrian access elements (Section 2.3) • Elevated guideway in each Action Alternative eliminates most potential Project impacts on traffic (Section 3.2.3.2)
10/29/2014	Local business outreach	To inform the business community (owners, managers and employees) about the Project and to collect feedback.	<ul style="list-style-type: none"> • A rail line in King of Prussia would be beneficial to the area • Parking concerns • Supportive of the Project 	<ul style="list-style-type: none"> • Park-and-ride facilities are included in DEIS Action Alternatives (Section 2.3)
3/14/2016	Valley Forge Homes' residents	Listen to concerns	<ul style="list-style-type: none"> • Residents' concerned they are not being heard during the outreach process • Effect on residents' homes and surrounding area • No residential benefits • Concerns regarding the Project decision-making process 	<ul style="list-style-type: none"> • SEPTA established regular neighborhood meetings with Valley Forge Homes and Brandywine Village (Section 7.1.3.7) • SEPTA established Community Working Group to engage Project-wide residents (Section 7.1.3.6) • PA Turnpike North/South Option is assessed in the DEIS to reduce residential impacts (Section 2.2 and Chapter 4) • DEIS explains Project decision-making process and public role (Chapters 7 and 8)

Interested Parties Meetings			Key Comment Themes	SEPTA Response Actions
Date	Types	Objective		
5/12 and 5/14/2016	Valley Forge Homes backyard visits	Listen to concerns	<ul style="list-style-type: none"> • Visual, privacy impacts • Noise and vibration impacts • Property impacts • Drainage • Sinkholes • Property value effects • No benefits for impacted residents 	<ul style="list-style-type: none"> • PA Turnpike North/South Option is assessed in the DEIS to reduce visual, privacy, noise, vibration and property impacts (Chapters 2 and 4) • DEIS assesses potential drainage and sinkhole impacts (Section 4.11) • A PA Turnpike At-Grade South Side Option was considered during screening but eliminated due to potentially complex construction and maintenance issues (Section 4.8.3.2)
6/21/2016	Valley Forge Homes' residents	Present initial concepts for north side of PA Turnpike alignment and lower elevation south side alignment; listen to concerns	<ul style="list-style-type: none"> • Visual impacts • Project impacts on population and demand on water treatment infrastructure • No benefit for impacted residents; benefits businesses only • Noise impacts, including from alignment on north side of PA Turnpike • Vibration and flooding impacts • Crime not an issue • Use trolley connection in Delaware County • North side of Turnpike alignment preferred • Project would not relieve congestion • Park-and-ride facilities would limit parking conflicts at King of Prussia Mall • Support Project 	<ul style="list-style-type: none"> • PA Turnpike North/South Option assessed in DEIS to reduce visual, noise, vibration, and safety impacts (Chapters 2, 3 and 4) • DEIS assesses potential population, drainage, flooding and sinkhole impacts (Sections 4.3 and 4.11; Chapter 6) • A PA Turnpike At-Grade South Side Option was considered during screening but eliminated due to potentially complex construction and maintenance issues (Section 4.8.3.2)

Interested Parties Meetings			Key Comment Themes	SEPTA Response Actions
Date	Types	Objective		
6/29/2016	Brandywine Village residents	Share updates on Project; listen to concerns	<ul style="list-style-type: none"> • Prefer bus service and NHSL station improvements • Use existing freight rail and nature trail corridors (Abrams Yard, NS) • Alignment under US Route 202 instead of elevated • Potable water impacts • No benefits for impacted residents • Noise, vibration, crime, property value and tax impacts • Property acquisitions • Sinkholes and drainage impacts • Emergency services impacts 	<ul style="list-style-type: none"> • DEIS documents other potential alignments considered (Section 2.1) • DEIS assesses potential for safety, property value, economic, noise, vibration and water resources impacts (Sections 3.6, 4.3, 4.10 and 4.11); DEIS assesses sinkholes and potential drainage and emergency services impacts (Sections 4.11 and 3.6)
10/4 and 10/11/2016	Valley Forge Homes and Brandywine Village residents	Share updates on Project; present renderings of the recommended LPA, PA Turnpike North/South Option, and at-grade option; listen to concerns	<ul style="list-style-type: none"> • Concerns about impacts to the 9/11 Memorial • Increased need for public safety services • Easements and taking of resident property • Disruption to a stable neighborhood during construction with heavy equipment and contractor vehicles • Vibration impacts • Increase in crime • Impact of additional traffic to casino • Noise and lights during construction • Visual impacts • Several residents felt the PA Turnpike North/South elevated Option is the best option • Concerns about traveling through 69th Street Transportation Center • Suggested adding a visual barrier on the guideway to offer privacy to residents 	<ul style="list-style-type: none"> • DEIS includes 9/11 Memorial Avoidance Option (Section 2.2) • DEIS assesses potential for safety, property, construction, vibration, traffic, noise and visual impacts (Chapters 3 and 4) • PA Turnpike North-South Option is assessed in the DEIS (Section 2.2)

Interested Parties Meetings			Key Comment Themes	SEPTA Response Actions
Date	Types	Objective		
2/16/2017	King of Prussia Volunteer Fire Company and Upper Merion Township Board of Supervisors member Bill Jenaway	Present 9/11 Memorial Avoidance Options	<ul style="list-style-type: none">• Company to consider the potential to relocate firehouse and 9/11 Memorial	<ul style="list-style-type: none">• DEIS assesses 9/11 Memorial Avoidance Option (Sections 2.2.8 and 4.8.3.2)

7.1.3.1 Meetings with Jurisdictional Owners

Jurisdictional owners are those transportation, utility and major commercial facility entities in the study area: PECO, PennDOT, the PA Turnpike Commission and Simon Property Group. SEPTA initiated coordination with these jurisdictional owners at the start of the Project and has met periodically with them during the alternatives development and evaluation process. Each jurisdictional owner has specific concerns for the continued operation of their facilities, such as existing and future development planning, mandatory design standards, and safety and access issues which have helped to shape SEPTA's evaluation process and, ultimately, their decision to advance the recommended LPA.

7.2 Agency Coordination

7.2.1 Approach

SEPTA developed a 2013 *KOP Rail Agency Coordination Plan* (ACP) that outlines outreach activities and communication methods to be used throughout the NEPA process. The ACP is appended to SEPTA's 2014 *KOP Rail Draft Scoping Meeting Technical Memorandum*, which is available on the Project website, www.kingofprussiarail.com. The plan specifies communication with relevant agencies on a periodic basis with the goals of awareness and involvement in the alternatives development and decision-making processes. These activities began with scoping and are ongoing. SEPTA developed and manages a master list of participating agencies, described within the following subsections, which it uses throughout the agency coordination process.

7.2.2 Summary of Agency Coordination Activities

7.2.2.1 Cooperating and Participating Agencies

SEPTA invited applicable federal, state, regional and local agencies to be involved in the EIS process by becoming participating agencies, defined as agencies with an interest in the Project. Table 7-2.1 lists the participating agencies for the Project. SEPTA works to keep these entities informed of Project activities and involved in the alternatives development and evaluation process, by means of an agency coordination committee, in addition to the other committees described in Section 4.1.3, and other consultation processes such as Section 106 of the National Historic Preservation Act of 1966 (NHPA), as amended. Within the list of participating agencies, SEPTA invited several to be cooperating agencies: FHWA, USEPA and USACE. A cooperating agency commits to FTA's NEPA process so that it can use FTA's EIS to meet its NEPA responsibilities. For example, in the case of the Project requiring future environmental permitting by the USACE, that agency considered committing to being a cooperating agency so that it could use FTA's EIS to satisfy its own NEPA requirements. Through SEPTA's coordination with FHWA, USEPA and USACE, each agency determined that they would not act as a cooperating agency at this time, but each reserves the right to accept the invitation in the future, if warranted.

Table 7-2.1: List of Participating Agencies for the Project

Federal Agencies
Federal Highway Administration (potential Cooperating Agency)
Federal Railroad Administration
National Park Service, Northeast Region
Natural Resource Conservation Service
United States Environmental Protection Agency Region III (potential Cooperating Agency)
United States Army Corps of Engineers (potential Cooperating Agency)
United States Fish & Wildlife Service (potential Cooperating Agency)
U.S. Department of Housing and Urban Development, Regional Office of Environment
U.S. Department of the Interior, Office of Environmental Policy & Compliance
U.S. Geological Survey, Environmental Affairs Program
State Agencies
Pennsylvania Department of Environmental Protection
Pennsylvania Department of Transportation, District 6
Pennsylvania Fish and Boat Commission
Pennsylvania Game Commission
Pennsylvania Historical and Museum Commission
Pennsylvania Turnpike Commission
County Agencies
Delaware County Planning Department
Montgomery County Department of Economic and Workforce Development
Montgomery County Division of Parks, Trails and Historic Sites
Montgomery County Assets and Infrastructure Department
Montgomery County Planning Commission
Municipal Agencies
Bridgeport Borough
Lower Merion Township
Municipality of Norristown
Philadelphia City Planning Commission
Radnor Township
Tredyffrin Township
Upper Darby Township
Upper Merion Township
Upper Merion Department of Planning and Development
Upper Merion Department of Public Works
Recognized Native American Tribes
The Delaware Tribe
The Delaware Nation
The Eastern Shawnee Tribe of Oklahoma
The Oneida Indian Nation
Stockbridge-Munsee Community of Mohican Indians

7.2.2.2 Scoping

During Project scoping, six agencies provided comments: Montgomery County Planning Commission; Pennsylvania Turnpike Commission; USEPA, Region III; United States Coast Guard, 5th District, Bridge Branch; PHMC and VFNHP. The key themes of these comments, with the responsible entity noted in parentheses, were:

- Support the Project purpose and need (Montgomery County)
- Non-support for alternatives using N. Gulph Road, as there is limited opportunity for intensification of transit supportive land uses (Montgomery County)
- Concern for use of PA Turnpike ROW (PA Turnpike Commission)
- DEIS content guidance (USEPA)
- Project is outside jurisdiction; declined participation (US Coast Guard)
- Section 106 consultation regarding historic resources is advised (PHMC)
- Project would benefit VFNHP (VFNHP)
- Include VFNHP in assessment (VFNHP)
- Consider stop in proximity to VFNHP (VFNHP)

7.2.2.3 Agency Coordination Committee

SEPTA established an Agency Coordination Committee (ACC) whose responsibility is to review technical methodologies used in the DEIS, the alternatives analysis process, and assist in decision-making regarding the Locally Preferred Alternative. Primary membership in the committee includes representatives from FTA, SEPTA, FHWA, PennDOT District 6, Federal Railroad Administration, PHMC, USEPA, PADEP, USACE, US Coast Guard, National Park Service, US Fish and Wildlife Service and VFNHP. Key themes and guidance from coordination with the committee include:

- NEPA procedures
- Planned transportation projects
- Section 106 of the NHPA procedures
- Executive Order 12898 Environmental Justice guidance
- Indirect and cumulative effects guidance
- PA regulatory guidance on activities in and near waterways
- Section 404 of the Clean Water Act guidance
- Section 9 of the Rivers and Harbors Act of 1899 guidance
- General Bridges Act of 1946 guidance
- US Department of the Interior, National Park Service Management Policies guidance
- Endangered Species Act guidance
- VFNHP access goals

7.2.2.4 Field Tours

SEPTA offered a tour of the study area for any agency interested in such a review. FTA and USACE accepted the invitation and visited the study area on March 3, 2015. The USACE visited the study area again on September 18, 2015, investigating streams and wetlands.

7.2.2.5 Section 106 Consultation

As described in DEIS Section 4.7.1, the NHPA, protects historic and archaeological resources including above-ground (architectural) and below-ground (archaeological) “districts, sites, buildings, structures, and objects significant in American history, architecture, archaeology, engineering, and culture” greater than fifty years of age and eligible for inclusion in or listed in the National Register of Historic Places (NRHP). In accordance with Section 106 of the NHPA, FTA initiated consultation with the PHMC in March 2013. Through consultation, historic and archaeological resources were identified and the potential effects of the recommended LPA upon these resources were evaluated. FTA and SEPTA are also engaged with other consulting parties, such as Native American tribes, in this evaluation process. Specifically, FTA and SEPTA met with the consulting parties on September 8, 2016 to discuss protected resources in the Project area. Key Project-related themes from the consulting parties are listed below with references to DEIS sections for further information as appropriate:

- Need to assess potential for impacts of Project elements on archaeological sites, including stormwater management facilities, power substations and signal huts (Section 2.6);
- Consult the *Delaware County Archaeological Resource Inventory and Management Plan, Volume I* for information on resources in the County;
- Is Valley Forge National Historical Park a consulting party? (Section 4.7.1);
- Project would not endanger sites of interest to the Delaware Nation (Appendix C);
- No significant cultural resources concerns from the Stockbridge Munsee Community (Appendix C);
- No additional comments regarding cultural resources from Montgomery County (Appendix C).

FTA and SEPTA have considered the consulting parties’ comments in the DEIS and as part of the Section 106 consultation process. Documentation of Section 106 consultation activities including PHMC concurrence on eligibility and potential effects is provided in Appendix C. When an LPA is selected after publication of the DEIS and completion of the public comment period, FTA and SEPTA will complete consultation.

7.2.3 Summary of Key Agency Themes and SEPTA Actions

Table 7-2.2 summarizes the agency correspondence, coordination, meetings and field tours undertaken for the Project to date, including key comment themes, and actions SEPTA has taken as a result of the agency input it received. SEPTA has actively considered the agency input it has received, particularly in regard to comparing the alternatives as to ability to avoid or

minimize impacts, identifying potential strategies to minimize or mitigate negative impacts, assessing future permitability, complying with applicable assessment methodologies, and documenting results. For example, input from the USACE during field tours and ACC meetings informed SEPTA's evaluation of potential Project impacts on wetlands and waterways. This coordination revealed differences in the location and extent of resources compared with available historic mapping.

Table 7-2.2: Summary of Agency Comments and SEPTA Actions

Agency Coordination, Meetings and Field Tours			Key Comment Themes	SEPTA Response Actions
Date	Types	Objective		
3/27/13	ACC meeting	Purpose and need, Project background, screening process, initial alternatives	<ul style="list-style-type: none"> •USACE tabled cooperating agency invitation •FTA's LPA does not have to be the USACE's least environmentally damaging yet practicable alternative •PHMC interested in consulting parties list for Section 106 consultation; USACE suggested additional consulting party coordination to meet USACE's Section 106 process •Potential need to document Project compliance with Section 404(b)(1) guidelines in DEIS •Alternatives development and screening process •Composition of ACC •Impacts on NHSL and 69th Street Transportation Center facilities •Cost as a factor in screening 	<ul style="list-style-type: none"> •USACE retained as participating agency (Section 7.2.2.1) •USACE comment regarding identifying the least environmentally damaging yet practicable alternative, and documenting compliance with Section 404(b)(1) is tabled pending USACE decision to be a cooperating agency; •Consulting parties list provided to and approved by PHMC (Appendix C)
8/14/13	USEPA letter	Scoping	<ul style="list-style-type: none"> •Recommendations regarding studies and analyses to be included in the EIS 	<ul style="list-style-type: none"> •DEIS responds to recommendation regarding purpose and need (Chapter 1), natural and human environment impacts including air quality (conformity), community, noise, visual, traffic, hazardous materials, environmental justice, indirect and cumulative effects (Chapters 3, 4 and 6), and agency coordination (Chapter 7)
8/14/13	PHMC call	Scoping	<ul style="list-style-type: none"> •Approach to Section 106 consultation 	<ul style="list-style-type: none"> •Section 106 consultation activities respond to PHMC's recommendations to initiate consultation, identify and engage consulting parties, assess eligibility of properties, and assess

Agency Coordination, Meetings and Field Tours			Key Comment Themes	SEPTA Response Actions
Date	Types	Objective		
				Project effects on historic properties (Section 4.7)
2/21/14	ACC meeting	Scoping summary	<ul style="list-style-type: none"> •Need for USACE permits •Desire for USACE field tour •Public input on at-grade versus elevated guideway 	<ul style="list-style-type: none"> •USACE field tour date occurred on 9/18/15 •DEIS Action Alternatives avoid or minimize impacts to waters of the US and wetlands (Section 4.11)
10/20/14	ACC meeting	Preliminary Alternatives	<ul style="list-style-type: none"> •Status of environmental justice outreach •At-grade alternatives status •Consider local pedestrian access plan •Pedestrian/bicycle access to VFNHP provided by station near VFCR 	<ul style="list-style-type: none"> •Outreach methodology described in documented in Section 7.1; activities described in Section 4.14 and outreach log in Appendix D) •Coordinated with USEPA Environmental Justice Coordinator •Station concepts address pedestrian access in general (Section 2.3) and access to VFNHP (Section 4.6.3.2)
3/5/15	ACC meeting	Build Alternatives	<ul style="list-style-type: none"> •No input 	<ul style="list-style-type: none"> •No new action
9/18/15	USACE Field tour	Regulatory	<ul style="list-style-type: none"> •USACE regulates direct impacts to waters of US; shading and tree removal are only regulated if a direct impact also occurs •PADEP regulates impacts to waterways and wetlands •Viewed 7 stream and potential wetlands locations 	<ul style="list-style-type: none"> •DEIS Action Alternatives avoid or minimize impacts to waters of the US and wetlands (Section 4.11). Reviewed PADEP regulations regarding waterway and wetlands impacts (Section 4.16) •Documented USACE jurisdictional areas for on-going planning (Section 4.11)
12/30/15	PHMC call	Section 106 consultation	<ul style="list-style-type: none"> •Discussion of approach and schedule 	<ul style="list-style-type: none"> •On-going consultation
2/2/2016	ACC meeting	recommended LPA	<ul style="list-style-type: none"> •In DEIS, acknowledge project's indirect economic effects, role of County and Township in economic development, and partnership of these entities with SEPTA in New Starts planning for the Project •Water resources permitting for Project later in design could warrant evaluation of alternatives 	<ul style="list-style-type: none"> •Economic effects are discussed in Section 4.3.3.2 and Chapter 6 •Water resources permitting is discussed in Section 4.16 •Each resource section in the DEIS includes a methodology and results by alternative. Chapter 8 compares the results among the alternatives

Agency Coordination, Meetings and Field Tours			Key Comment Themes	SEPTA Response Actions
Date	Types	Objective		
			<ul style="list-style-type: none"> •DEIS should document resource evaluation methodologies and compare results among alternatives 	
10/25/2016	ACC meeting	March 2016 public meeting outcomes, design options, DEIS publication	<ul style="list-style-type: none"> •Water resources should be avoided; unavoidable impacts should be minimized and/or mitigated to satisfy applicable federal and state regulations •Share Section 106 consultation record with USACE 	<ul style="list-style-type: none"> •PA Turnpike North-South Option and 9/11 Memorial Avoidance Option carried into DEIS (Section 2.2) •Elevated structure concept spans waterways to avoid most impacts; potential for small wetland impact to be examined as design is refined after DEIS (Section 4.11) •USACE copied on Section 106 consultation memoranda
3/3/16	PHMC call	Section 106 consultation	<ul style="list-style-type: none"> •PHMC to concur on area of potential effects •Coordination on properties to be surveyed 	<ul style="list-style-type: none"> •PHMC concurred on eligibility and effects determinations (Section 4.7)
9/8/16	Section 106 Consulting Parties meeting	Section 106 consultation	<ul style="list-style-type: none"> •Assess potential for impacts of Project elements on archaeological sites, including stormwater management facilities, power substations and signal huts; •Consult the <i>Delaware County Archaeological Resource Inventory and Management Plan, Volume I</i> for information on resources in the County; •Is Valley Forge National Historical Park a consulting party; •Project would not endanger sites of interest to the Delaware Nation; •No significant cultural resources concerns from the Stockbridge Munsee Community; •No additional comments regarding cultural resources from Montgomery County. 	<ul style="list-style-type: none"> •PHMC concurred on effects assessment for archaeology (Section 4.7) •Consulted the <i>Delaware County Archaeological Resource Inventory and Management Plan, Volume I</i> for information on resources in the County (Section 4.7) •Valley Forge National Historical Park is a consulting party (Section 4.7) •Consulting party documentation in DEIS (Appendix C).
12/8/2016	PHMC call	Section 106 consultation	<ul style="list-style-type: none"> •Additional information required for McCoy quarry property if formal concurrence from the PA SHPO is wanted for DEIS purposes 	<ul style="list-style-type: none"> •PHMC concurred on eligibility determination for McCoy quarry property (Section 4.7 and Appendix C)

7.3 Role of Input in Recommended LPA Selection

In the NEPA process to date, SEPTA has held over 100 public meetings, including pre-scoping and scoping meetings, public information sessions, public meetings and public workshops, committee meetings (steering, technical advisory, stakeholder advisory, and agency coordination committees), agency coordination meetings, elected officials' briefings, public hearings, community working group meetings, neighborhood meetings and backyard visits. The culmination of this program is a recommended LPA and two design options that reflect the community's input.

SEPTA received over 3,100 comments in this process from stakeholders, agencies and the public. Opinions included support or opposition to all or parts of the Project and the Action Alternatives. Comment themes pertained primarily to the purpose and need, the Action and No Action Alternatives, the potential impacts of the Project on the natural and human environment (particularly in regard to proximity noise and visual impacts, safety, economic development and parking), study area geographical coverage, costs and funding, and public outreach.

As SEPTA considered not only the Tier 3 technical screening results, but also the input received from agencies, stakeholders and the public, the possibility of identifying a recommended LPA became apparent. PECO/TP-1st Ave. was the best performer in terms of avoiding or minimizing impacts while responding to the most agency, stakeholder, and public issues and concerns. DEIS Chapter 8 provides more explanation in this regard.

Prior to making its decision, SEPTA, in coordination with FTA, examined all agency, stakeholder, and public input received up to and including the March 2016 public meeting and questionnaire. The focus of the March 2016 meeting and questionnaire was specifically to obtain public input on the recommended LPA. The March 2016 *Public Meeting Summary* and 2016 *Survey Reports* describe each event and the public input received. Among that input, SEPTA identified and responded to comments specifically related to the selection of the recommended LPA (Appendix D).

Key themes among those comments are summarized in Table 7-3.1. Of the alternatives presented in the DEIS, the recommended LPA has the most support. Other alternatives that would use the US Route 202 corridor or the PECO corridor west of the Turnpike have little public support. Despite these findings, the recommended LPA has opposition, primarily from residents in King of Prussia who live adjacent to or near the proposed alignment in the vicinity of the PA Turnpike. SEPTA acknowledges these concerns and is responding in three initial ways:



Project public outreach activity.
Source: McCormick Taylor, 2016.

- Examining design and alignment refinements to reduce or eliminate impacts;
- Visiting affected residents (backyard visits) to view the Project context and listen to their concerns; and
- Facilitating a Community Working Group to focus on concerns as the Project advances.

SEPTA anticipates that public concerns about the recommended LPA cannot be resolved completely at the current conceptual level of design. For this reason, SEPTA's initial responses and commitments will become active parts of the agency's program for advancing the Project if the recommended LPA is adopted. SEPTA is committed to these activities to improve the fit of the Project in the King of Prussia/Valley Forge area.

Table 7-3.1: Summary of Key Decision-making Comment Themes and SEPTA Actions

2013 to 2016 Key Comment Themes	SEPTA Response Actions
<ul style="list-style-type: none"> • Alternatives using US Route 202 would have intolerable construction impacts and would negatively change King of Prussia's "Main Street" • PECO-1st Ave. would impact the most residents • Alternatives using PECO/TP would impact some residences • Alternatives using 1st Avenue would serve more businesses than Alternatives using N. Gulph Road; using 1st Avenue would better support township economic development planning • Route behind the Mall is preferred 	<ul style="list-style-type: none"> • The five Action Alternatives are assessed in the DEIS. SEPTA identified the recommended LPA, in part, because of majority public non-support for using US Route 202 or PECO
2016 - Key Comment Themes	SEPTA Response Actions
<ul style="list-style-type: none"> • Alternatives using PECO/TP would impact residences • PECO-1st Ave. residential property impacts are unacceptable • Support recommended LPA except for need to address residential property impacts • Alternatives using US Route 202 would have the most full residential property acquisitions • A station on US Route 202 would be useful to some residents • Transit along N. Gulph Road is needed to address future congestion on that road • Should use freight alignment along Schuylkill River to avoid impacts and save money • Prefer regional rail expansion • Prefer no action alternative; Project is not needed • Potential residential property impacts and vibration impacts to residential foundations from alternatives using PECO/TP • Residential property construction impact concerns with PECO/TP alternatives; area is prone to sinkholes. • Concerns with privacy • Concerns with noise • Potential for decreased residential property values with PECO/TP alternatives • Impacts to the 9/11 Memorial 	<ul style="list-style-type: none"> • SEPTA is examining ways to reduce or eliminate residential impacts along the PA Turnpike portion of the recommended LPA. It is examining refinements to the proposed alignment height as well as the potential to move the alignment away from residences • SEPTA went on backyard visits with potentially affected residents to hear their concerns and see where they worried about visual impacts (Section 4.1.3.7) • SEPTA also established a community working group to focus on concerns as the Project advances (Section 4.1.3.6) • SEPTA did not select an alternative along PECO ROW west of the Turnpike because of the high number of potential residential impacts SEPTA did not select an alternative along US Route 202 because of non-support from residents and Upper Merion Township (described further in Chapter 8) and because of the high number of full residential property acquisitions • SEPTA considered an alignment along the Schuylkill River during Tier 1 screening; it was determined infeasible to co-align the Project with active freight services; it is also remote from defined key destinations and would require an additional transfer • SEPTA determined that regional rail service and the No Action Alternative would not address the Project purpose and need • SEPTA identified three design options along the recommended LPA: a PA Turnpike North/South Option, an at-grade option along the south side of the PA Turnpike, and a 9/11 Memorial Avoidance Option. Each was presented at a series of neighborhood meetings.

2016 Public Questionnaire – Key Themes	SEPTA Response Actions
<ul style="list-style-type: none">•Project supporters (49%) and non-supporters (51%) are fairly evenly divided•Majority of Project supporters (89%) also support the recommended LPA•Majority of Project non-supporters (88%) do not favor recommended LPA; opposition is largely concentrated in the single King of Prussia zip code where direct Project impacts would occur•Key concerns are negative impacts on residents:<ul style="list-style-type: none">•Traffic•Property values•Noise•Visual•Project cost and funding	<ul style="list-style-type: none">•SEPTA acknowledges the ongoing concerns of potentially affected residents in the King of Prussia zip code and continues to work toward reducing or eliminating residential impacts along the PA Turnpike portion of the recommended LPA. The agency is examining refinements to the proposed alignment height as well as the potential to move the alignment away from residences•In the DEIS, SEPTA assessed and reported potential negative impacts of the Project in each key area of concern. This assessment acknowledges that, in its design and public outreach activities, SEPTA will continue examining ways to eliminate or reduce impacts as the Project advances•SEPTA did not select an alternative along US Route 202 because of non-support from residents and Upper Merion Township (described further in Chapter 8)

7.4 Next Steps

As described in the DEIS Abstract, publication of the DEIS is followed by a 45-day public review and comment period. SEPTA, in coordination with FTA, will hold a public hearing on the DEIS during the comment period, which will provide an opportunity to agencies, stakeholders and the public to provide comments on the DEIS. After the public comment period ends and FTA and SEPTA consider the DEIS comments, SEPTA may choose to select a Locally Preferred Alternative (LPA). The LPA will be the subject of a combined FEIS/Record of Decision (ROD); in the FEIS/ROD, will FTA and SEPTA will document and respond to DEIS comments. After completion of the environmental process, SEPTA will consider officially adopting a Project alternative for implementation.

As on-going two-way communication is critical to the success of the Project, SEPTA will continue its program of agency, stakeholder and public coordination described in this chapter as the Project advances.

Chapter 8.0 Evaluation of Alternatives

8.1 Introduction

Chapter 8 provides an evaluation of the No Action and Action Alternatives, including the recommended LPA and its design options. Each recommended LPA design option would reduce specific impacts of the recommended LPA by modifying a portion of the recommended LPA alignment. The remainder of the recommended LPA would be unchanged. Either or both design options could be applied to the recommended LPA as a minimization strategy. Descriptions of each alternative and recommended LPA design option are in Chapter 2.

The evaluation focuses on information presented in the preceding chapters of the DEIS that distinguishes the alternatives and recommended LPA design options from each other; this information is most relevant for assessing the benefits, costs, and environmental consequences of the alternatives and recommended LPA design options against the purpose and need for the proposed Project. The results are intended to inform the identification of an environmentally preferable alternative under NEPA.

Tables 8-2.1 and 8-4.1 summarize the results of the quantitative and qualitative analyses for each alternative and recommended LPA design option. Each table is organized to compare quantities for the recommended LPA design options with the recommended LPA quantities. The quantities for the recommended LPA design options are shown as the differences (greater or less than) compared to the recommended LPA. If there is no difference in quantity compared to the recommended LPA, the code “ND” (no difference) is used.

8.2 Effectiveness in Meeting the Purpose and Need

As presented in Chapter 1, the purpose of the Project is to provide faster, more reliable public transit service to the King of Prussia area that:

- Offers improved transit connections to the area from communities along the existing Norristown High Speed Line, Norristown and Philadelphia;
- Improves connectivity between defined key destinations within the King of Prussia area; and
- Better serves existing transit riders and accommodates new transit patrons.

The following discussions analyze the effectiveness of the No Action and Action Alternatives in achieving the intended purpose for the Project. Table 8-2.1 lists the factors used in this analysis.

The results of this analysis, which are summarized in Section 8.4.2, indicate that while each Action Alternative would provide faster, more reliable public transit service to, from and within the transportation study area, performance varies among the alternatives for the following factors: travel time savings, ridership increase, rate of mode shift, parking capacity, and access to jobs, parks, and community facilities. The recommended LPA would perform as well as or

better than the other Action Alternatives in these factors by providing the most transit travel time savings for existing bus riders (217,000 travel hours annually) and close to the highest travel time savings for existing automobile travelers who shift to using the Project (2.0 million hours annually), the highest ridership increase (increase of 9,500 average weekday riders on the NHSL), increase in transit parking capacity (1,470 spaces), access to jobs (15 million square feet), number of parks served (5) and access to community facilities (7). SEPTA selected the recommended LPA for the combination of these factors, comparatively fewer natural and social environment impacts compared to the other Action Alternatives, and achievement of factors related to broad acceptance by key stakeholders and political leaders: ease of implementing new zoning, avoiding US Route 202 and using 1st Avenue; Section 8.4.2 summarizes the performance of the Action Alternatives in regard to these factors.

8.2.1 The Need for Faster, More Reliable Public Transit Service to the Area

As described in Section 1.2.5, existing bus and shuttle services are the only transit options for access to the King of Prussia Mall and other destinations in the transportation study area. Existing bus and shuttle riders are subject to the same delays from roadway congestion as motorists in their own vehicles. The key destinations of the King of Prussia Mall, the King of Prussia Business Park and the Valley Forge National Historical Park are underserved by the existing bus and shuttle services.

No Action Alternative

The No Action Alternative will not provide faster, more reliable public transit service to, from or within the transportation study area. As reported in Sections 3.1.3.1 and 3.2.3.1, existing roadway-based transit service problems related to on-time performance, reliability and travel times will be worse by 2040 as traffic congestion and delays increase as a consequence of foreseeable growth and development.

Action Alternatives

Each Action Alternative¹ would provide faster, more reliable public transit service, with varying degrees of effectiveness. As described in Sections 2.7 and 3.1.3.2, each Action Alternative would provide a faster transit ride with more frequent service and less wait time than traveling by bus. For example, service from 69th Street Transportation Center would be every 10 minutes during peak periods and every 20 minutes at all other operating times. This planned service rate contrasts with existing bus service, which has peak period frequencies of 25-30 minutes (routes 99, 123, 124 and 125) and 60 minutes (routes 92 and 139). In some cases, such as for future travel from 69th Street Transportation Center to King of Prussia Mall, the Project would eliminate the existing average 10 minute wait time for the transfer to bus.

In addition for future travel, the Project would eliminate the need for existing and new transit riders to experience low on-time performance rates of bus service, which are below SEPTA's standard of 80%. By operating on its own rail corridor and not in mixed traffic on roadways, each

¹ Ridership forecasting, in terms of linked transit trips and transit boardings, travel time and mode shift modeling analyses were not completed for the recommended LPA design options. However, the PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would perform similarly to the recommended LPA.

Action Alternative would eliminate the extra travel time experienced by existing bus service operating on congested roadways, such as on the Schuylkill Expressway, as well as the unpredictability of travel time because of variable travel conditions on roadways.

Annual average 2040 transit travel time savings with the Project varies by Action Alternative as shown in Table 3-1.9 and its discussion in Section 3.1.3.2. Travel time savings was calculated by ELGP according to DVRPC's year 2040 ridership projections. Specifically, travel time savings was first calculated on a daily basis by factoring the total number of forecasted daily passenger trips; then an annualization factor was applied to the daily figure, representing the average number of travel days per year, to arrive at annual travel time savings. As shown in Table 8-2.1, the recommended LPA (PECO/TP-1st Ave.) is the most effective in achieving this Project need with 217,000 transit travel hours saved per year compared to the No Action Alternative. Performance of the recommended LPA design options would be similar to the recommended LPA. PECO-1st Ave. is the second most effective at 186,000 transit hours saved per year. The least effective is the US 202-N.Gulph Action Alternative with 104,000 transit hours saved per year compared with the No Action Alternative. Transit travel time savings by the remaining Action Alternatives fall in between the second and least effective Action Alternatives.

Annual average 2040 travel time savings would also benefit existing automobile travelers who switch to the Project. As shown in Table 8-2.1, each Action Alternative would reduce automobile passenger travel time by 1.7 to 2.1 million hours per year depending on the Action Alternative. The factors affecting travel time are the number and location of station stops in the transportation study area, provision for park-and-ride facilities, the length of each Action Alternative and the type of service offered by a particular train. The PECO/TP-N. Gulph Action Alternative and the recommended LPA would provide the most reduction in hours per year at 2.1 and 2 million hours saved annually, respectively. The US 202 Action Alternatives and PECO-1st Avenue are the second and third ranked performers, at 1.8, 1.7 and 1.4 million hours saved annually, respectively.

8.2.2 The Need for Improved Transit Connections To, From and Within the King of Prussia-Valley Forge Area

Existing NHSL riders must transfer to bus service to reach the key destinations within the transportation study area (Section 1.4.2). For example, existing NHSL riders from Philadelphia to destinations within the transportation study area must use three different transit services to make the trip (SEPTA's Market-Frankford Line, the NHSL, and then bus). Existing SEPTA bus services provide connections between some destinations in the transportation study area, but not all key and other destinations are served by transit (Section 3.1.2.1).

Table 8-2.1: Performance of Alternatives – Purpose and Need

Factors		No Action Alternative	Action Alternatives				
			PECO-1 st Ave.	PECO/TP-1 st Ave. (recommended LPA) (c)	PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph
Purpose and Need							
S	Increases average weekday NHSL ridership by 2040(a) (Section 3.1.3)	0	+8,500	+9,500	+9,500	+7,500	+7,500
S	Average weekday transit boardings at Project stations (a) (Section 3.1.3)	0	4,952	5,297	5,376	4,192	4,106
	Reduces peak period transit travel time per trip (b) (Section 3.1.3)	0	-26 minutes to King of Prussia Mall from Center City Philadelphia (total travel time: 53 minutes) -23 minutes to King of Prussia Mall from Norristown Transportation Center (total travel time: 15 minutes) -9 minutes to King of Prussia Mall from 69th Street Transportation Center (total travel time: 35 minutes) -38 minutes to King of Prussia Business Park from Center City Philadelphia (total travel time: 59 minutes) -23 minutes to King of Prussia Business Park from Norristown Transportation Center (total travel time: 21 minutes) -12 minutes to King of Prussia Business Park from 69th Street Transportation Center (total travel time: 41 minutes) -27 minutes to Center City Philadelphia from King of Prussia (total travel time: 48 minutes) (b)				
	Reduces transit travel time by shift to the Project (thousands of annual trip hours)(b) (Section 3.1.3)	0	186	217	182	153	104
	Reduces automobile travel time by shift to the Project (millions of annual trip hours)(b) (Section 3.1.3)	0	1.7	2.0	2.1	1.8	1.7
	Serves defined key destinations (King of Prussia Mall, King of Prussia Business Park and Valley Forge National Historical Park) as well as other destinations (Section 2.2)	Requires bus routes to serve the 3 key destinations	Yes	Yes	Yes	Yes	Yes
S	Increases percent of transit trips in transportation study area (a) (Section 3.1.3)	0	+1.3%	+1.5%	+1.5%	+1.4%	+1.3%
	Changes the number of auto-based trips per day in the DVRPC region in 2040 (Section 3.1.3)	0	-5,614	-6,342	-6,123	-5,343	-5,106

Factors		No Action Alternative	Action Alternatives				
			PECO-1 st Ave.	PECO/TP-1 st Ave. (recommended LPA) (c)	PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph
	Changes the number of park-and-ride trips per day in the DVRPC region in 2040 (Section 3.1.3)	0	+2,670	+2,827	+2,831	+1,592	+1,580
	Changes the number of walk-to-transit trips per day in the DVRPC region in 2040 (Section 3.1.3)	0	+2,943	+3,514	+3,792	+3,750	+3,526
	Increases transit parking capacity in Project study area (Section 2.3)	No	Yes	Yes	Yes	Yes	Yes
	Connects to bus and shuttle services, changes to bus and shuttle services are likely (Section 3.1.3)	No	Yes	Yes	Yes	Yes	Yes
S	Connects to bicycle and pedestrian network; accommodation at proposed stations (Section 3.3.3)	No	Yes	Yes	Yes	Yes	Yes
S	Accesses study area jobs (non-residential square feet (millions) within ½-mile of proposed station areas) (Section 8.2.2)	No change	14.9	15.0	14.2	14.5	13.7
	Accesses community facilities (number of facilities within ½ mile of proposed station areas) (Section 4.6.3)	No change	3	7	7	10	10
	Accesses parks (number of parks within ½ mile of proposed station areas) (Section 4.6.3)	No change	5	5	4	5	4
S	Number of proposed station areas within Upper Merion Township's Mixed Use (KPMU) zoning district (Section 4.2.3)	0	2	2	1	2	1

Notes: Green shading indicates key public concerns; S = key stakeholder issue; (a) DVRPC Tier 3 Forecast, Run Dates 4/3/15 and 6/2/15, rounded to the nearest 500. (b) ELGP, 2015, *Understanding the Impacts of SEPTA's Proposed King of Prussia Rail Project*.

(c) PA Turnpike North/South Option and 9/11 Memorial Avoidance Option would have similar performance to the recommended LPA.

Source: AECOM, 2016.

8.2.2.1 No Action Alternative

The No Action Alternative will not improve transit connections to and within the transportation study area. As described in Section 1.4.2, of the six existing bus routes, three serve only the King of Prussia Mall and not the other two key transportation study area destinations (King of Prussia Business Park and Valley Forge National Historical Park). Two of the six routes serve the US Route 202 area and one serves the Henderson Road area. Thus, depending on the bus route, riders must transfer among the bus routes access destinations. One or more transfers from rail to bus, or among bus routes adds travel time and adds inconvenience to transit system use. Rail riders will continue to travel outside the transportation study area to NHSL or Regional Rail line stations; no increase in study area parking capacity for transit users is planned with the No Action Alternative.

The No Action Alternative will not change existing connections between transit, bicycle and pedestrian networks in the transportation study area; the No Action Alternative will not change existing access to transportation study area jobs, community facilities or parks.

8.2.2.2 Action Alternatives

Each Action Alternative and recommended LPA design option would improve transit connections to and within the transportation study area. As described in Section 3.1.3.2, each Action Alternative and recommended LPA design option would connect to the three key transportation study area destinations (King of Prussia Mall, King of Prussia Business Park and Valley Forge National Historical Park) as well as other destinations.

Regarding other factors reported in Table 8-2.1, Project stations and park-and-ride facilities in the transportation study area would improve the ability of residents and other travelers to walk to stations or park at a rail transit facility in the transportation study area as opposed to traveling to access rail transit. Each Action Alternative and recommended LPA design option would perform similarly in providing connections to the bicycle and pedestrian network in the transportation study area and for accommodating bicyclists and pedestrians at proposed stations.

Each Action Alternative and recommended LPA design option would provide the same number of stations in Upper Merion Township's KPMU zoning district.

Differences in the performance of the Action Alternatives and the recommended LPA design options are due to the number and location of proposed station areas within one-half mile of



Conceptual rendering of what the recommended LPA could look like at the King of Prussia Mall.

Source: Bergmann Associates, PC, 2016.

jobs, community facilities and parks. For example, as shown in Table 8-2.1, the recommended LPA and the recommended LPA design options would provide access to the most jobs and parks, but the Action Alternatives using US Route 202 (US 202-1st Ave. and US 202-N. Gulph) would provide access to the highest number of community facilities. However, the recommended LPA is also a good performer in community facilities access.

Implementing any one of the Action Alternatives or recommended LPA design options would result in changes to existing bus and shuttle services in the transportation study area. As described in Section 3.1.3.2, bus and shuttle service routes and destinations would be modified to eliminate service redundancies with the Project and to complement Project service. For example, bus stops on some routes would be modified to serve proposed Project station areas.

8.2.3 The Need to Better Serve Existing Transit Patrons and Accommodate New Patrons

Despite the limitations of the six existing bus routes and an increasingly congested roadway network, the market for improved transit service as an alternative to travel by personal automobile to, from and within the transportation study area has grown in recent years as described in Section 3.1.3.2. DVRPC's Project ridership and mode shift projections indicate a future market exists for the Project:

- Average weekday ridership: 7,500 to 9,500 increase in ridership on the NHSL by 2040 depending on the Action Alternative (Table 8-2.1);
- Average weekday boardings: 10 to 13 percent increase by 2040 in transportation study area depending on the Action Alternative (Table 3-1.6 and Section 3.1.3.2); and
- Mode shift: 1.3-1.5 percent shift from automobile-based trips to transit by 2040 depending on the Action Alternative (Section 3.1.3.2).

8.2.3.1 No Action Alternative

The No Action Alternative will not better serve existing transit patrons or accommodate new patrons. Forecasted growth and foreseeable development in the transportation study area through 2040, as described in Sections 1.2.7 and 1.4.3, will place more demands on the transportation system than it can accommodate. Those demands for transit are demonstrated by the DVRPC's study area forecasted transit boardings prepared for the Project (Section 3.1.3.2). Despite the limitations of the six existing bus routes and an increasingly congested roadway network, the market for improved transit service as an alternative to travel by personal automobile to, from and within the transportation study area will continue to grow as described in Section 3.1.3.2. Adding buses to the transit system serving the transportation study area to meet future demand is not a viable solution as it is not possible to overcome the existing roadway congestion problem (Section 2.1.1).

8.2.3.2 Action Alternatives

Each Action Alternative and recommended LPA design option would better serve existing transit patrons and accommodate new patrons. As described in Sections 8.2.1 and 8.2.2, each Action Alternative and recommended LPA design option would provide direct rail transit service to the

transportation study area and eliminate existing problems associated with traveling by existing bus services. Existing transit patrons would be able to use the Project to travel to the transportation study area without having to transfer to bus. Bus riders would be able to switch to rail travel for a faster, more reliable ride.

Each Action Alternative and recommended LPA design option would also provide additional transit service capacity beyond what SEPTA can accommodate today despite rationalizing bus services. As described in Section 2.7, for example, service from the 69th Street Transportation Center would be every 10 minutes during peak periods and every 20 minutes at all other operating times. This planned service level contrasts with existing bus service that has peak period frequencies of 25-30 minutes (routes 99, 123, 124 and 125) and 60 minutes (routes 92 and 139). More frequent transit service means more transit service capacity than in the existing or 2040 No Action condition.

Regarding growth in average weekday ridership on the NHSL by 2040, the recommended LPA, and the PECO/TP-N. Gulph Action Alternative would have the highest ridership increase (9,500 average weekday trip increase²) because of the number and location of proposed stations with park-and-ride facilities in relation to trip-generating land uses. The provision for stations at the King of Prussia Mall, Business Park and particularly the Henderson Road area is responsible for the highest ridership increase among the Action Alternatives. The PECO-1st Ave. Action Alternative would have slightly less ridership increase (8,500 trips) because of the single station at the front of the King of Prussia Mall. Despite having the highest number of station areas, Action Alternatives with the lowest increase in ridership are the US 202-1st Ave. and US 202-N. Gulph Action Alternatives; this is because the developed commercial US Route 202 corridor does not provide the opportunity for land of sufficient size to accommodate a park-and-ride facility at a proposed station area (Section 2.3).

Regarding average weekday boardings (number of times a person enters a transit vehicle for a trip) with the Project in the transportation study area, the DVRPC model results indicate that the recommended LPA, and the PECO/TP-N. Gulph Action Alternative would generate the highest number of boardings (approximately 5,300). This is the result of the location of proposed stations at King of Prussia Mall, the King of Prussia Business Park and Henderson Road area and because of the provision of park-and-ride facilities in the King of Prussia Business Park and Henderson Road areas. The PECO-1st Ave. Action Alternative would generate fewer boardings (approximately 4,900) because of the single King of Prussia Mall station area. The US 202-1st Ave. and US 202-N. Gulph Action Alternatives would generate the fewest average weekday boardings (approximately 4,100) because of the absence of a park-and-ride facility at the eastern endpoint of the Action Alternatives and ridership forecasts for the US Route 202 stations that are relatively lower than the ridership forecasts at the Henderson Road station area.

² Ridership, boarding, and mode shift forecasts have not been prepared for the recommended LPA design options. Since the recommended LPA design options involve relocating only a small portion of the guideway, the recommended LPA with either the PA Turnpike North/South Option and/or the 9/11 Memorial Avoidance Option is expected to have similar ridership, boarding, and mode shift forecasts as that forecasted for the recommended LPA. If one or both recommended LPA design options advance along with the recommended LPA, SEPTA will have the forecasts prepared.

Mode shift analysis results indicate that the Project would attract new riders (up to 1.5 percent) that switch from automobile-based travel. Each Action Alternative would reduce auto-based trips and increase the number of trips using park-and-ride facilities and walking to transit stations. Among the alternatives, the recommended LPA would provide the most reduction in automobile-based trips per day (6,342) because of the locations of Project stations. The PECO/TP-N. Gulph Action Alternative and the recommended LPA would provide the most increase in park-and-ride trips (2,831 and 2,827, respectively). The US 202-1st Ave. Action Alternative would provide the most increase in walking trips to transit (3,750) because of the locations of Project stations along the commercial area of US Route 202.

8.3 Considering Benefits and Impacts

In considering the Action Alternatives, the recommended LPA design options and the No Action Alternative, SEPTA is considering potential benefits and impacts of each on the transportation, built and natural environments, which are reported in the DEIS. In addition to considering the technical data developed during the DEIS process, SEPTA's is also considering public, stakeholder and agency input. A summary of public, stakeholder and agency input is provided in this section.

8.3.1 Public Input

As described in Chapter 7, public engagement has been important to the alternatives development and evaluation process. Study area residents and other members of the public have shown support as well as non-support for the Project. Supporters cite the following benefits of new transit service in their community and to the region: supports existing and future economic growth in terms of access to jobs, shopping, tourism, development and long-term economic well-being; potentially increases property values; provides alternative transportation that is reliable, convenient, senior-friendly, and accessible; increases accessibility to destinations within and outside the King of Prussia/Valley Forge area, particularly Philadelphia; reduces roadway congestion; reduces personal transportation costs; and provides additional parking for transit users.

Non-supporters are concerned about Project costs and funding, emphasizing the need to focus public expenditures on other basic infrastructure improvement priorities. Non-supporters feel the Project would not benefit them; the Project does not reflect the needs of the people who live in the area, it would create negative impacts to residents; and current bus services need to be better used. Other key issues heard from study area residents include:

- Noise and vibration impacts to residential properties
- Residential impacts and property values
- Visual and residential privacy impacts
- Property acquisitions and potential displacements
- Parking at stations and park-and-ride facilities
- Potential for sinkholes
- Safety

- Traffic during construction
- Changes in bus routes

SEPTA considered all public input during alternatives development and the DEIS, and it has worked to address community concerns through alignment and infrastructure refinement to avoid or minimize impacts and provide local benefits. Key issues and concerns expressed by the public are indicated by green shading in Tables 8-2.1 and 8-4.1 as well as in the text by “(P).” As the Project advances, SEPTA will continue to work with the community to address issues related to design to avoid or minimize and mitigate negative impacts to the extent reasonably feasible. For example, SEPTA will further consider the minimization and mitigation strategies identified in the DEIS as ways to reduce or eliminate the potential for property acquisitions, noise and visual impacts.

8.3.2 Agency and Stakeholder Input

As described in Chapter 7, and because of the many challenges to providing new rail transit infrastructure in a developed area, FTA and SEPTA engaged with local officials, regulatory agencies, and certain designated “key” stakeholders during alternatives development and the DEIS. In this study, the key stakeholders are Upper Merion Township; the KOP-BID; Montgomery County; the GVFTMA; the DVRPC; the Pennsylvania Turnpike Commission; PennDOT; Simon Properties, owners of the King of Prussia Mall; PECO; and Norfolk Southern. FTA and SEPTA understand that public, agency, and stakeholder input and support are essential to achieving a Project that balances the need for improved transit service within the King of Prussia/Valley Forge area while addressing as many community concerns and issues as is reasonably feasible.

Through agency and stakeholder participation, SEPTA shared Project information and obtained input and comments that are valuable to the alternatives screening and evaluation process. For example, through its Agency Coordinating Committee, SEPTA received input from the US Army Corps of Engineers and Pennsylvania Historical and Museum Commission that protect Waters of the US and historic properties, respectively, through federal laws and regulations that are applicable to the Project. Input from these and other regulatory entities has helped SEPTA evaluate the potential for the No Action Alternative, the Action Alternatives and the recommended LPA design options to impact parks, air quality, threatened and endangered species, wetlands, waterways, historic properties and archaeological sites. Section 8.4.2 indicates how each Action Alternative and recommended LPA design option performs in regard to potential impacts on these resources.

At the point when SEPTA completed technical analysis of the Action Alternatives, the agency met with a group of “Core” stakeholders to help SEPTA identify the most important factors for determining a recommended LPA for the DEIS. The Core Stakeholders are entities that lead land use planning and transportation decision-making processes in the transportation study area, including Upper Merion Township, the KOP-BID, Montgomery County Planning Commission, the DVRPC, and the GVFTMA. In a series of two work sessions on August 18, 2015 and September 16, 2015, the group considered the technical analysis results for the Action Alternatives, public and stakeholder input regarding the potential benefits and impacts of the alternatives, and other factors the Core Stakeholders group identified during the sessions.

The following list includes the other factors the group determined should be taken into consideration when identifying a recommended LPA:

- Redevelopment/development potential
- Ease of developing and adopting new transit-supportive zoning
- Access to jobs, number of jobs in station areas
- Large employer access
- Private sector potential (contributions)
- Tourism access (VFNHP and King of Prussia Mall)
- Access to pedestrian facilities, trails
- Changing visual character of a corridor/gateway
- Broad acceptance by key stakeholders/political leaders
- Residents' preferences vs. others (non-residents)
- Construction impacts in terms of traffic and access to property
- Possible future extension opportunity
- Number of stations or station potential

With these three categories of information (technical data, public input and other factors), the Core Stakeholders group identified the factors they feel are most important and should guide the decision on a recommended LPA. To arrive at these factors, the group used an interactive process by which each entity in the group selected and prioritized the factors they think are most important for decision-making. Then the results of the entities were combined into a group result with the factors having the most importance to the entire group prioritized. With the combined list in hand, the group then examined the list and determined that it accurately represents what the group feels are the most important factors in determining a recommended LPA (indicated by an "S" code in Section 8-4.2):

- Redevelopment potential and ease of implementing new transit-supportive zoning (number of station areas within KPMU zoning district)
- Access to jobs (number of jobs in station areas)
- Number of full acquisitions – residential
- Potential for visual impacts
- Number of project trips (ridership)
- Capital costs
- O&M costs

On-going agency and stakeholder coordination resulted in additional considerations to help SEPTA distinguish among the alternatives and contribute to selecting the recommended LPA (also indicated by an "S" code in Section 8-4.2):

- Core Stakeholders identified the degree to which an Action Alternative would support economic development and site-specific redevelopment/development potential as being important to realizing future land use and development planning goals.
- Core Stakeholders identified the importance of the Project in providing access to land within the Project study area with relative ease of implementing new transit-supportive zoning.

- Limited support comes from Upper Merion Township Board of Supervisors and the public for the US Route 202 alternatives because of concerns regarding short-term construction impacts to traffic and utilities and long-term visual impacts to US Route 202 as “Main Street.”
- While PECO is willing to consider an alignment along the north side of its right-of-way, the PECO-1st Ave. Action Alternative has limited support from Core Stakeholders and the public because of visual impacts on adjacent residences and the direct impact to Kingwood Road Park.
- Core Stakeholders favor the PECO/TP-1st Ave. Action Alternative as it 1) best serves the Business Park area, 2) provides two station areas in Upper Merion’s KPMU zoning district, and 3) would be compatible with the multi-modal vision for 1st Avenue, which is an entryway to the Business Park.
- Simon Properties and KOP-BID favor an alignment behind the King of Prussia Mall.
- PA Turnpike Commission is willing to consider an alignment along and within its right-of-way.

8.4 Comparative Analysis

In this section, the Action Alternatives, the recommended LPA design options and the No Action Alternative are compared with each other using the categories and factors considered in the DEIS: purpose and need (Section 8.2), key public concerns (Section 8.3.1), agency and stakeholder factors including factors governed by federal laws and regulations such as wetlands (Section 8.3.2), and technical factors (this section). Supporting documentation for the findings described in this section are provided in other sections of the DEIS. For example, Chapters 2 and 3 explain how and why the Action Alternatives and recommended LPA design options differ in abilities to provide station areas and park-and-ride facilities, and increase transit ridership, respectively.

Public and Stakeholder Input

The following coding is provided in Table 8-4.1 to indicate public and stakeholder input:

P: key public concerns (text)
S: most important factors identified by Core Stakeholders
A: important factors identified by agencies

Table 8-4.1 summarizes the results of the quantitative and qualitative analyses for each alternative. “P&N” in the code column indicates the factor relates to the Project purpose and need. A “P” in the code column indicates key public concerns; factors coded with an “S” are the most important factors identified by the Core Stakeholders; and factors coded “A” are important factors identified by agencies.

Table 8-4.1 is organized to compare quantities for the recommended LPA design options with the recommended LPA quantities. The quantities for the recommended LPA design options are shown as the differences (greater or less than) compared to the recommended LPA. If there is no difference in quantity compared to the recommended LPA, the code “ND” (no difference) is used.

The results in this table show that for some factors such as “Reduces peak period transit travel time per trip,” the Action Alternatives and recommended LPA design options would perform similarly, while for others, such as “Number of parks served,” they would perform differently. How well each alternative would perform compared to the others varies from factor to factor. No single alternative would perform best or worst in all categories and factors. For this reason, a closer look at the results is needed to determine which alternative best balances Project benefits and impacts.

8.4.1 No Action Alternative

As described in Section 8.2, the No Action Alternative will not achieve the Project purpose and need. It is the worst performer in the category “broad acceptance by key stakeholder and political leaders” and generally performs poorly among other factors. The No Action Alternative will not change transit services currently in the transportation study area. As a result, it will not increase transit access to study area jobs, community facilities, or Upper Merion Township’s KPMU zoning district in the King of Prussia Business Park (S). In addition, the No Action Alternative will not support the Core Stakeholders’ preference for rail transit service along 1st Avenue or Simon Properties’ and the KOP-BID’s preferences for providing a rail transit station at the King of Prussia Mall (S). While the No Action Alternative supports the Upper Merion Board of Supervisors’ and the public’s preferences to not use US Route 202 as well as supports Core Stakeholders’ and the public’s preference by not using the PECO right-of-way west of the PA Turnpike (S, P), these benefits are outweighed by the negative factors.

The No Action Alternative will not increase transit ridership (S, P) or reduce transit travel time, and it will not increase transit parking capacity in the transportation study area (P). The No Action Alternative will increase annual O&M costs for bus transit services in 2040 to \$13.3 million (S, P).

In regard to other factors, the No Action Alternative will only be partly consistent with local and regional plans and partly support economic development (S, P) because transit service improvements are not part of the No Action Alternative. The No Action Alternative will have low to no visual impacts (S, P) as a result of planned transportation projects, but it will not reduce VMT or benefit air quality (S). The No Action Alternative may have localized noise impacts (S, P) near planned transportation project work areas, and it will not reduce fuel costs incurred by the traveling public or road and pavement costs.

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Table 8-4.1: Summary of Benefits and Impacts

Resource	Codes	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives						
				PECO- 1 ST Ave.	Recommended LPA and its Design Options			PECO/TP-N. Gulph	US 202-1 ST Ave.	US 202-N. Gulph
					PECO/TP-1 st Ave.	PA Turnpike North/South Option	9/11 Memorial Avoidance Option			
Transportation and Safety Effects (Chapter 3)	P&N	▪ Serves defined key destinations (King of Prussia Mall, King of Prussia Business Park and Valley Forge National Historical Park) as well as other destinations (Section 3.1.3)	Requires bus routes to serve the 3 key destinations	Yes	Yes	ND	ND	Yes	Yes	Yes
	P&N, P, S	▪ Increases average weekday transit ridership on the NHSL by 2040 (Section 3.1.3)	0	+8,500	+9,500	ND	ND	+9,500	+7,500	+7,500
	P&N, P, S	▪ Average weekday transit boardings at Project stations in 2040 (Section 3.1.3)	0	4,952	5,297	ND	ND	5,376	4,192	4,106
	P&N	▪ Reduces peak period transit travel time per trip (Section 3.1.3)	0 minutes	-26 minutes to King of Prussia Mall from Center City Philadelphia (total travel time: 53 minutes) -23 minutes to King of Prussia Mall from Norristown Transportation Center (total travel time: 15 minutes) -9 minutes to King of Prussia Mall from 69th Street Transportation Center (total travel time: 35 minutes) -38 minutes to King of Prussia Business Park from Center City Philadelphia (total travel time: 59 minutes) -23 minutes to King of Prussia Business Park from Norristown Transportation Center (total travel time: 21 minutes) -12 minutes to King of Prussia Business Park from 69th Street Transportation Center (total travel time: 41 minutes) -27 minutes to Center City Philadelphia from King of Prussia (total travel time: 48 minutes)						
		▪ Uses dedicated guideway in Project study area (travel time reliability factor) (Section 3.1.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes
	P&N	▪ Reduces transit travel time by shift to the Project (thousands of hours saved annually) (Section 3.1.3)	0	-186	-217	ND	ND	-182	-153	-104
	P&N	▪ Reduces automobile travel time by shift to the Project (millions of hours saved annually) (Section 3.1.3)	0	-1.7	-2.0	ND	ND	-2.1	-1.8	-1.7
	P&N, P, S	▪ Increases percent of transit trips in transportation study area compared to No Action in 2040 (Section 3.1.3)	0 (2040 No Action transit share is 2.3%)	+1.3%	+1.5%	ND	ND	+1.5%	+1.4%	+1.3%
	P&N	▪ Changes the number of auto-based trips per day in DVRPC region in 2040 (Section 3.1.3)	0	-5,614	-6,342	ND	ND	-6,123	-5,343	-5,106
	P&N	▪ Changes the number of park-and-ride trips per day in DVRPC region in 2040 (Section 3.1.3)	0	+2,670	+2,827	ND	ND	+2,831	+1,592	+1,580
	P&N	▪ Changes the number of walk-to-transit trips per day in DVRPC region in 2040 (Section 3.1.3)	0	+2,943	+3,514	ND	ND	+3,792	+3,750	+3,526
		▪ Number of trains per peak hour in transportation study area on 2040 (Section 2.7)	0	6 - King of Prussia to 69th Street Transportation Center 3 - King of Prussia to Norristown Transportation Center						
		▪ Frequency of rail transit service in transportation study area in 2040 (minutes) (Section 3.1.3)	No rail transit service	10 minutes, peak period 20 minutes, non-peak periods						
	P&N, P	▪ Increases transit parking capacity in transportation study area (Section 2.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes

Resource	Codes	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives						
				PECO- 1 ST Ave.	Recommended LPA and its Design Options			PECO/TP-N. Gulph	US 202-1 ST Ave.	US 202-N. Gulph
					PECO/TP-1 ST Ave.	PA Turnpike North/South Option	9/11 Memorial Avoidance Option			
	P&N	▪ Connects to bus and shuttle services; changes to bus and shuttle services are likely (Section 3.1.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes
		▪ Maintains or improves most key roadway intersection levels of service in 2040 with mitigation (Section 3.2.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes
	P&N	▪ Connects to bicycle and pedestrian network, accommodation at proposed stations (Section 3.3.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes
		▪ Non-residential property acquisitions could impact parking (Section 3.4.3)	No	Yes	Yes	ND	ND	Yes	Yes	Yes
		▪ Avoids impacts to active freight and heavy rail corridors (Section 3.5.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes
	P	▪ Safety is considered in conceptual design (Section 3.6.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes
Land Use Patterns and Consistency with Plans (Section 4.2)		▪ Consistent with Township and County land use plans (Section 4.2.3)	Partly	Yes	Yes	ND	ND	Yes	Yes	Yes
	P&N, S	▪ Accesses study area jobs (non-residential square feet (millions) within ½ mile of proposed station areas) (Section 8.2.2)	No change	14.9	15.0	ND	ND	14.2	14.5	13.7
	P&N	▪ Accesses community facilities (number of facilities within ½ mile of proposed station areas) (Section 4.4.3)	No change	3	7	ND	ND	7	10	10
		▪ Potential for construction easements to temporarily change land use, access and parking on affected properties (Section 4.2.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes
	P&N, S	▪ Number of proposed station areas within Upper Merion Township’s Mixed Use (KPMU) zoning district (Section 4.2.3)	0	2	2	ND	ND	1	2	1
	P	▪ Potential to affect private property values as a result of direct or proximity effects (Section 4.3.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes
		▪ Potential for temporary changes in access to businesses during construction (Section 4.3.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes
Community Cohesion and Facilities (Section 4.4)		▪ Avoids splitting or fragmenting residential or business communities (Section 4.4.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes
		▪ Preserves access across existing transportation and utility rights-of-way (Section 4.4.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes
	P	▪ Number of community facility properties directly impacted (Section 4.4.3)	Unknown	1	3	ND	-1	3	3	3
	P	▪ Number of adjacent community facilities (potential for proximity visual and noise impacts) (Section 4.4.3)	Unknown	1	4	ND	ND	5	5	4

Resource	Codes	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives						
				PECO- 1 st Ave.	Recommended LPA and its Design Options			PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph
					PECO/TP-1 st Ave.	PA Turnpike North/South Option	9/11 Memorial Avoidance Option			
Property Acquisitions and Displacements (Section 4.5)	P	▪ Number of potential partial property (parcel) acquisitions (Section 4.5.3)	Unknown	59 Residential 46 Commercial 15 Other 120 Total	24 Residential 46 Commercial 14 Other 84 Total	-24 Residential ND Commercial -1 Other -25 Total	ND Residential +1 Commercial -1 Other ND Total	24 Residential 30 Commercial 15 Other 69 Total	2 Residential 95 Commercial 7 Other 104 Total	2 Residential 69 Commercial 8 Other 79 Total
	P, S	▪ Number of potential full property (parcel) acquisitions (Section 4.5.3)	Unknown	4 Residential 4 Commercial 4 Other 12 Total	4 Residential 4 Commercial 3 Other 11 Total	-4 Residential ND Commercial ND Other -4 Total	ND Residential ND Commercial +1 Other +1 Total	4 Residential 4 Commercial 2 Other 10 Total	19 Residential 4 Commercial 2 Other 25 Total	19 Residential 4 Commercial 1 Other 24 Total
Parks, Recreational Land, and Open Space (Section 4.6) Historic and Archeological Resources (Section 4.7)	S	▪ Potential number of parks directly impacted or crossed (Section 4.6.3)	Unknown	2 impacts - Kingwood Road Park, PECO Easement; 1 crossed: Chester Valley Trail Extension	0 impacts; 1 crossed: Chester Valley Trail Extension	ND	ND	0 impacts; 1 crossed: Chester Valley Trail Extension	0 impacts; 1 crossed: Chester Valley Trail Extension	0 impacts; 1 crossed: Chester Valley Trail Extension
	P&N	▪ Accesses parks (number of parks within ½ mile of proposed station areas) (Section 4.6.3)	0	5	5	ND	ND	4	5	4
	S	▪ Potential for proximity effects on parks (number and names of potentially affected parks) (Section 4.6.3)	Unknown	2 - Kingwood Road Park, PECO Easement	1 - Chester Valley Trail Extension	ND	ND	1 - Chester Valley Trail Extension	1 - Chester Valley Trail Extension	1 - Chester Valley Trail Extension
		▪ Potential number and names of historic property impacts (Section 4.7.3)	Unknown	3 - Philadelphia and Western Railway (NHSL); PA Turnpike: Delaware River Extension; American Baptist Churches, USA Mission Center	3 - Philadelphia and Western Railway (NHSL); PA Turnpike: Delaware River Extension; American Baptist Churches, USA Mission Center	ND	ND	5 - Philadelphia and Western Railway (NHSL); PA Turnpike: Delaware River Extension; PA Turnpike: Philadelphia Extension; GE Space Technology Center; American Baptist Churches, USA Mission Center	3 - Philadelphia and Western Railway (NHSL); PA Turnpike: Delaware River Extension; American Baptist Churches, USA Mission Center	5 - Philadelphia and Western Railway (NHSL); PA Turnpike: Delaware River Extension; PA Turnpike: Philadelphia Extension; GE Space Technology Center; American Baptist Churches, USA Mission Center
	S	▪ Adverse effects on historic properties as defined by Section 106? (Section 4.7.3)	Unknown	No	No	ND	ND	No	No	No
		▪ Potential for archaeological sites in the Project study area is low? (Section 4.7.3)	Unknown	Yes	Yes	ND	ND	Yes	Yes	Yes

Resource	Codes	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives						
				PECO- 1 ST Ave.	Recommended LPA and its Design Options			PECO/TP-N. Gulph	US 202-1 ST Ave.	US 202-N. Gulph
					PECO/TP-1 st Ave.	PA Turnpike North/South Option	9/11 Memorial Avoidance Option			
	P, S	▪ Potential for visual impacts? (Section 4.8.3)	Yes	Yes	Yes.	Yes, but potential impacts on residences is reduced by alignment shift	Yes, but potential impacts on 9/11 Memorial is reduced by alignment shift	Yes	Yes	Yes
Air Quality (Section 4.9)	S	▪ Benefits air quality due to reduced weekday peak vehicle miles traveled in 2040 (Section 4.9.3)	No	-7,150 (-0.45%)	-6,484 (-0.41%)	ND	ND	-7,298 (-0.46%)	-7,166 (-0.45%)	-7,945 (-0.50%)
Noise and Vibration (Section 4.10)	P, S	▪ Potential number of noise impacts (Category 2 = where people sleep such as residences; Category 3 = daytime institutional or office use) (Section 4.10.3)	Unknown	66 Category 2 3 Category 3	33 Category 2 2 Category 3	-29 Category 2 ND Category 3	ND Category 2 -1 Category 3	32 Category 2 2 Category 3	29 Category 2 3 Category 3	28 Category 2 3 Category 3
	P, S	▪ Potential number of vibration impacts (Category 2 = where people sleep such as residences; Category 3 = daytime institutional or office use) (Section 4.10.3)	Unknown	0 Category 2 1 Category 3	3 Category 2 0 Category 3	-3 Category 2 ND Category 3	ND Category 2 ND Category 3	3 Category 2 0 Category 3	0 Category 2 0 Category 3	0 Category 2 0 Category 3
Natural Resources (Section 4.11)	P	▪ Potential risk regarding underlying geologic conditions (Section 4.11.3)	Yes	Yes – similar to other Action Alternatives	Yes – similar to other Action Alternatives	ND	ND	Yes – similar to other Action Alternatives	Yes – similar to other Action Alternatives	Yes – similar to other Action Alternatives
		▪ Amount of potential soil disturbance and change in amount of impervious surfaces (acres) (Section 4.11.3)	Unknown	12.9	9.8	ND	ND	11.0	3.9	4.9
	S	▪ Amount of potential forest disturbance (potential for impact to a State-endangered plant (*)) (Section 4.11.3)	Unknown	2.9	5.4	-1.1	-1.5	3.7	2.8*	1.1*
		▪ Amount of potential field disturbance (acres) (Section 4.11.3)	Unknown	8.0	3.5	ND	ND	3.5	0.0	0.0
	A	▪ Amount of waterways and floodplains potentially affected (acres) (Section 4.11.3)	Unknown	0	0	ND	ND	0	0	0
	A, S	▪ Amount of potential wetlands disturbance (acres) (Section 4.11.3)	Unknown	0.05	0.05	ND	ND	0.05	0.05	0.05
Contaminated Materials and Hazardous Waste (Section 4.12)		▪ Number of areas of contaminated materials concern within the proposed limits of disturbance (Section 4.12.3)	Unknown	27	25	ND	ND	13	35	23

Resource	Codes	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives						
				PECO- 1 st Ave.	Recommended LPA and its Design Options			PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph
					PECO/TP-1 st Ave.	PA Turnpike North/South Option	9/11 Memorial Avoidance Option			
Utilities and Energy Use (Section 4.13)		▪ Number of potential conflicts with PECO transmission towers (Section 4.13.3)	0	12	8	ND	ND	8	0	0
		▪ Reduces annual automobile vehicle miles traveled (million miles) (Section 4.13.3)	Increase in VMT likely	-16.1	-17.5	ND	ND	-18.4	-16.1	-14.6
		▪ Reduces annual bus vehicle miles traveled (thousands of miles) (Section 4.13.3)	0	-57	-86	ND	ND	-82	-128	-128
		▪ Annual cost savings for motor vehicle fuel (Section 4.13.3)	Increase in cost likely	Similar to recommended LPA	-\$2.6 to -\$3.2 million	ND	ND	Similar to recommended LPA	Similar to recommended LPA	Similar to recommended LPA
		▪ Annual reduction in road and pavement maintenance costs (2015\$) (Section 4.13.3)	Increase in cost likely	Similar to recommended LPA	\$350,000 to \$430,000	ND	ND	Similar to recommended LPA	Similar to recommended LPA	Similar to recommended LPA
Environmental Justice (Section 4.14)		▪ Disproportionately high and adverse effects on environmental justice populations? (Section 4.14.3)	Unknown	No	No	ND	ND	No	No	No
Irreversible and Irretrievable Commitment of Resources (Section 4.15)		▪ Permanent commitment of natural, material and financial resources? (Section 4.15.3)	Yes	Yes	Yes	ND	ND	Yes	Yes	Yes
		▪ Permanent, positive employment, earnings and output effects to King of Prussia (Section 4.15.2)	Unknown	900 to 1,500 new jobs annually 17,000 to 29,000 new employees over 20 years \$79.1 million to \$132.6 million in earnings annually \$1.6 to \$2.7 billion in labor income over 20 years \$540 million to \$946 million to assessed values of real estate over 20 years \$12.8 million to \$22.4 million in new property tax revenues annually						
Draft Section 4(f) Evaluation (Chapter 5)		▪ Number of protected properties potentially permanently used (Section 5.3)	Unknown	5	3	ND	ND	5	3	5
Indirect and Cumulative Impacts (Chapter 6)		▪ Potential for indirect and cumulative effects (Chapter 6)	Yes	▪ Enhances and encourages development and redevelopment processes near station areas Incremental cumulative effects						

Resource	Codes	Factor	No Action Alternative	Benefits and Impacts of Action Alternatives						
				PECO- 1 st Ave.	Recommended LPA and its Design Options			PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph
					PECO/TP-1 st Ave.	PA Turnpike North/South Option	9/11 Memorial Avoidance Option			
Preliminary Cost Estimates (Chapter 8)	P	▪ Preliminary capital cost estimate for Project (\$ billions) (Section 8.6.2)	\$0	\$1.17	\$1.08	ND	ND	\$1.19	\$1.02	\$1.12
	P	▪ Preliminary annual NHSL operations and maintenance cost estimate (\$ millions) (Section 8.6.2)	\$13.3	+\$9.7	+\$9.6	ND	ND	+\$9.7	+\$9.8	+\$9.8
	P	▪ Preliminary annual operations and maintenance cost estimate – net growth (rail and bus) (\$ millions) (Section 8.6.2)	\$0.5	\$5.1	\$4.9	ND	ND	\$4.9	\$4.9	\$5.2
Broad Acceptance by Key Stakeholders and Political Leaders (Chapter 8)	P, S	▪ Supports Upper Merion Supervisors and public preferences to not use US Route 202? (Section 8.4)	Yes	Yes	Yes	ND	ND	Yes	No	No
	P, S	▪ Supports Core Stakeholders and public preferences to not use PECO west of PA Turnpike? (Section 8.4)	Yes	No	Yes	ND	ND	Yes	Yes	Yes
	S	▪ Supports Core Stakeholders preferences to use 1 st Avenue? (Section 8.4)	No	Yes	Yes	ND	ND	No	Yes	No
	S	▪ Supports Simon Properties/KOP-BID preference to be aligned behind the King of Prussia Mall? (Section 8.4)	No	No	Yes	ND	ND	Yes	Yes	Yes
	S	▪ PA Turnpike is willing to consider an alignment in their ROW? (Section 8.4)	Not applicable	Yes	Yes	ND	ND	Yes	Yes	Yes

Notes: ND = no difference compared to the recommended LPA; P&N = Factor relates to the Project purpose and need; P = Factor identified as important by the public; S = Factor identified as important by stakeholders; A = Factor identified as important by agencies
(a) Source: Economy League of Greater Philadelphia; (b) Values in 2014 dollars; (c) Cost estimates would be developed in the FEIS for the recommended LPA design options if one or both is selected for further study.

8.4.2 Action Alternatives

This section presents a summary of performance for Action Alternative and recommended LPA design option. Following the summary is a more detailed description of performance organized by factor.

The performance of the recommended LPA, the other Action Alternatives and the recommended LPA design options varies depending on the specific factor considered. None of the alternatives would perform the best in all factors. Thus, there is a need to look more closely at the data, particularly at those data where the alternatives would perform differently. In addition, there is a need to look at the performance of the alternatives in terms of other considerations that were made during the alternatives evaluation and DEIS process. These other considerations are primarily qualitative and were applied by SEPTA as a complement to the quantitative data. They include the following:

- Safety
- Land Use
- Community Cohesion
- Broad Acceptance by Key Stakeholders and Political Leaders
 - Supports economic development and site-specific redevelopment/development potential
 - Ease of implementing new transit-supportive zoning
 - Preference to not use US Route 202
 - Preference to not use the PECO corridor west of the PA Turnpike
 - Preference to use 1st Avenue
 - Preference to be aligned behind the King of Prussia Mall
 - Opinions of transportation facility owners (PA Turnpike Commission, PennDOT, Upper Merion Township, Montgomery County), PECO and Simon Property Group (King of Prussia Mall)

Summary of findings by Action Alternative – The performance of each Action Alternative and recommended LPA design option in regard to the categories and factors presented in Table 8-4.1 is summarized below. The Action Alternatives and recommended LPA design options would perform equally well in transportation and safety effects, and land use and economic development, number of potential full commercial property acquisitions, potential impacts to historic properties, air quality and cost. Therefore, these categories and factors are not included in the summaries below.

- **PECO-1st Ave. Action Alternative**

Purpose and need: The PECO-1st Ave. Action Alternative would perform as well as the recommended LPA in increasing transit parking capacity (P), access to jobs (S) and number of parks served. It would perform less well than the recommended LPA in travel

time savings (186 thousand annual travel hours) and ridership increase (increase of 8,500 average weekday riders on the NHSL) (S, P) because of the relatively long length of the alignment and a combination of proposed station locations in areas that would draw fewer riders. It would be the least well performing among the Action Alternatives in the number of community facilities accessed (3) because fewer community facilities are within station areas compared to other Action Alternatives.

Other factors (natural and built environment): The PECO-1st Ave. Action Alternative would perform better than the other Action Alternatives in the least number of community facilities potentially impacted (1) (P) (Section 4.4.3). It would perform less well than the other Action Alternatives in the relatively high number of partial residential (59) (S, P) and parks (2) acquisitions, proximity impacts to parks including parks crossed (1) (S), high visual impacts (S, P), relatively high amount of soil disturbance (12.9 acres), fields impacts (2.9 acres), and number of potential PECO transmission tower conflicts (12). The PECO-1st Ave. Action Alternative would have more potential areas of contaminated materials and hazardous materials concern (27) and less energy savings (16 million vehicle miles annually) than other Action Alternatives. Compared with the recommended LPA, the PECO-1st Ave. Action Alternative would have fewer impacts on forests (2.9 acres) (S) because less forested area occurs along the proposed alignment. PECO-1st Ave. would have no potential to impact the State-endangered plant. However, compared with the recommended LPA, the PECO-1st Ave. Action Alternative potentially would impact more properties protected by Section 4(f) (5).

Broad acceptance by key stakeholders and political leaders: The PECO-1st Ave. Action Alternative would perform as well as the recommended LPA in redevelopment potential (S) (Section 4.3.3.2) and ease of implementing new zoning (S) as measured by the number of Project stations within the KPMU zoning district (Section 8.4.2), avoiding use of US Route 202 (S, P) and using 1st Avenue (S) (Section 8.3.2). It would be the least well performing among the Action Alternatives because it would use the PECO corridor west of the PA Turnpike (S, P) and would be aligned in front of the King of Prussia Mall (S) (Section 8.3.2).

- **PECO/TP-1st Ave. Action Alternative (recommended LPA)**

Purpose and need: The recommended LPA would perform better than the other Action Alternatives in the combination of the following factors: travel time savings (217 thousand annual travel hours), ridership increase (increase of 9,500 average weekday riders on the NHSL) (S, P), increase in transit parking capacity (P), access to jobs (15 million square feet) (S) and number of parks served (5) because of the relatively short length of the proposed alignment, a combination of station locations that would capture the highest combination of resident and worker riders among the Action Alternatives, and provision of two park-and-ride facilities (Table 8-4.1). In regard to number of community facilities accessed (7), the recommended LPA would perform better than the PECO-1st Ave. Action Alternative, but less well than the US 202-1st Ave. and US 202-N. Gulph Action Alternatives because more community facilities are along or near US Route 202 (Section 4.4.3).

Other factors (natural and built environment): As summarized in Table 8-4.1, the recommended LPA would perform better than some Action Alternatives in: the number of partial and full residential acquisitions (24 and 4, respectively) (S, P), least numbers of parks impacted or crossed (0 and 1, respectively) (S), and visual impacts (S, P). It would perform as well as some other Action Alternatives in: community facility impacts (3) (P), air quality benefits (S), potential noise impacts (S, P) wetlands impacts (0.05 acres) (S) and areas of contamination concern (25). Compared with the PECO-1st Ave., PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives, the recommended LPA potentially would impact fewer properties protected by Section 4(f) (3). The recommended LPA would have no impact on the State-endangered plant. The recommended LPA would perform least well among the Action Alternatives in the amount of forest impacts (5.4 acres) (S).

Broad acceptance by key stakeholders and political leaders: The recommended LPA would be a best performer among the Action Alternatives in the combination of the following factors: number of Project stations within the KPMU zoning district (S), avoiding use of US Route 202 (S, P), avoiding use of PECO west of the PA Turnpike (S, P), using 1st Avenue (S), and being aligned behind the King of Prussia Mall (S). It would perform the same or better than the other Action Alternatives in each factor in this category.

- **PA Turnpike North/South Option (for recommended LPA)**

Purpose and need: As summarized in Table 8-4.1, the PA Turnpike North/South Option is anticipated to perform similarly to the recommended LPA in the combination of the following factors: travel time savings, and ridership increase (S, P). Similar to the recommended LPA, it would increase transit parking capacity (P), access to jobs (15 million square feet) (S) and number of parks served (5) because of the relatively short length of the proposed alignment, a combination of station locations that would capture the highest combination of resident and worker riders among the Action Alternatives and the 9/11 Memorial Avoidance Option, and provision of two park-and-ride facilities. In regard to number of community facilities accessed (7), the PA Turnpike North/South Option would perform better than the PECO-1st Ave. Action Alternative, but less well than the US 202-1st Ave. and US 202-N. Gulph Action Alternatives because more community facilities are within US Route 202 station areas.

Other factors (natural and built environment): The PA Turnpike North/South Option is anticipated to perform better than the other Action Alternatives and the 9/11 Memorial Avoidance Option in potentially requiring no full or partial residential acquisitions. It would perform similarly to the recommended LPA in the number of partial and full commercial acquisitions (46 and 4, respectively) (S, P), least number of parks impacted or crossed (0 and 1, respectively) (S), number of potential PECO utility tower conflicts, and potential impacts to properties protected by Section 4(f) (3). The PA Turnpike North/South Option would have less visual impacts compared with the recommended LPA (S, P). It

performs as well as some other Action Alternatives in: community facility impacts (3) (P), air quality benefits (S), potential noise impacts (S, P) and wetlands impacts (0.05 acres) (S). Compared to the recommended LPA, the PA Turnpike North/South Option would potentially impact less forest (4.3 acres) (S). However, it potentially would impact more area of these resources than the PECO-1st Ave., US 202-1st Ave. and US 202-N. Gulph Action Alternatives (S), and the 9/11 Memorial Avoidance Option. The PA Turnpike North/South Option would have no impact on the State-endangered plant.

Broad acceptance by key stakeholders and political leaders: Also similar to the recommended LPA, the PA Turnpike North/South Option would be a best performer among the Action Alternatives in the combination of the following factors: number of Project stations in the KPMU zoning district (S) because it would be aligned along 1st Avenue rather than N. Gulph Road where Upper Merion Township is focusing its land use and planning efforts for future redevelopment, avoiding use of US Route 202 (S, P), avoiding use of PECO west of the PA Turnpike (S, P), using 1st Avenue (S), and being aligned behind the King of Prussia Mall (S). It would perform the same or better than the other Action Alternatives in each factor in this category.

- **9/11 Memorial Avoidance Option (for recommended LPA)**

Purpose and need: As summarized in Table 8-4.1, the 9/11 Memorial Avoidance Option is anticipated to perform similarly to the recommended LPA and better than the other Action Alternatives in the combination of the following factors: travel time savings and ridership increase (S, P). Similar to the recommended LPA, it would increase in transit parking capacity (P), access to jobs (15 million square feet) (S) and number of parks served (5) because of the relatively short length of the proposed alignment, a combination of station locations that would capture the highest combination of resident and worker riders among the Action Alternatives, and provision of two park-and-ride facilities. In regard to number of community facilities accessed (7), and similar to the recommended LPA, the 9/11 Memorial Avoidance Option would perform better than the PECO-1st Ave. Action Alternative, but less well than the US 202-1st Ave. and US 202-N. Gulph Action Alternatives because more community facilities are within US Route 202 station areas (Section 4.4.3).

Other factors (natural and built environment): Similar to the recommended LPA and as summarized in Table 8-4.1, the 9/11 Memorial Avoidance Option would perform better than some Action Alternatives in: the number of partial and full residential acquisitions (24 and 4, respectively) (S, P), least number of parks impacted or crossed (0 and 1, respectively) (S), visual impacts (S, P) and potential number of PECO utility tower conflicts. It performs as well as some other Action Alternatives in: community facility impacts (3) (P), air quality benefits (S), potential noise impacts (S, P) and wetlands impacts (0.05 acres) (S). The 9/11 Memorial Avoidance Option would potentially impact less forest than the

recommended LPA (3.9 acres) and the PA Turnpike North/South Option, but more than the PECO-1st Ave., US 202-1st Ave. and US 202-N. Gulph Action Alternatives (S). Compared with the recommended LPA, the 9/11 Memorial Avoidance Option potentially would impact the same number of properties protected by Section 4(f) (3). The 9/11 Memorial Avoidance Option would have no impact on the State-endangered plant.

Broad acceptance by key stakeholders and political leaders: Also similar to the recommended LPA, the 9/11 Memorial Avoidance Option would be a better performer among the Action Alternatives in the combination of the following factors: number of Project stations in the KPMU zoning district (S) because it would be aligned along 1st Avenue rather than N. Gulph Road where Upper Merion Township is focusing its land use and planning efforts for future redevelopment, avoiding use of US Route 202 (S, P), avoiding use of PECO west of the PA Turnpike (S, P), using 1st Avenue (S), and being aligned behind the King of Prussia Mall (S). It would perform the same or better than the other Action Alternatives and the PA Turnpike North/South Option in each factor in this category.

- **PECO/TP-N. Gulph Action Alternative**

Purpose and need: As summarized in Table 8-4.1, The PECO/TP-N. Gulph Action Alternative would perform as well as the recommended LPA in ridership increase (increase of 9,500 average weekday trips on the NHSL) (S, P), increase in transit parking capacity (P) and number of community facilities accessed (7). It would perform less well than the recommended LPA in travel time savings (182 thousand annual travel hours), access to jobs (14.2 million square feet) (S) and number of parks served (4) because the proposed alignment is slightly longer and fewer job-generating uses and parks occur within the PECO and N. Gulph station areas.

Other factors (natural and built environment): The PECO/TP-N. Gulph would perform better than the recommended LPA in the least number of potential partial commercial acquisitions (30) and fewest areas of contaminated materials concern (13). It would perform as well as the recommended LPA in the number of partial residential acquisitions (24) (S, P), number of full residential acquisitions (4) (S, P), number of full park acquisitions (0), visual impacts (S, P), fields impacted (3.5 acres), wetlands affected (0.05 acres) (S) and number of potential PECO tower conflicts (8) (Table 8-4.1). The PECO/TP-N. Gulph Action Alternative would not be a least well performing alternative for any factor or category. Compared with the other Action Alternatives and recommended LPA design options, the PECO/TP-N. Gulph Action Alternative would have more or less impacts on resources than the other Action Alternatives on community facilities (3) (P), partial property acquisitions (S, P), full property acquisitions (S, P), natural resources (S), number of PECO transmission tower conflicts (8), and energy savings in terms of bus miles (82 thousand miles annually) (Table 8-4.1). Compared with the recommended LPA, the PECO/TP-N. Gulph Action Alternative potentially would

impact more properties protected by Section 4(f) (5). The PECO/TP-N. Gulph Action Alternative would have no impact on the State-endangered plant.

Broad acceptance by stakeholders and political leaders: The PECO/TP-N. Gulph Action Alternative would perform as well as the recommended LPA in avoiding use of US Route 202 (S, P), avoiding the PECO corridor west of the PA Turnpike (S, P) and being aligned behind the King of Prussia Mall (S). It would perform less well than the recommended LPA in the number of Project stations within the KPMU zoning district (S) because it would be aligned along N. Gulph Road rather than 1st Avenue where Upper Merion Township is focusing its land use and planning efforts for future redevelopment. The PECO/TP-N. Gulph Action Alternative would be the least well performing alternative among the Action Alternatives and recommended LPA design options because it would not use 1st Avenue (S).

- **US 202-1st Ave. Action Alternative**

Purpose and need: The US 202-1st Ave. Action Alternative would perform better than the recommended LPA in access to community facilities (10) because more facilities are located within Project station areas on US Route 202. It would perform as well as the recommended LPA in number of parks served (5). It would perform less well than the recommended LPA and recommended LPA design options in travel time savings (153 thousand annual travel hours), ridership increase (increase of 7,500 average weekday riders on the NHSL) (S, P), increase in transit parking capacity (P) and access to jobs (14.5 million square feet) (S) because despite the relatively higher number of stations, a relatively lower number of jobs are within proposed station areas, and only one park-and-ride facility can be provided.

Other factors (natural and built environment): The US 202-1st Ave. Action Alternative would perform better than the recommended LPA in number of potential partial residential property acquisitions (2) (S, P), amount of soil disturbance (3.9 acres), amount of forest and potential threatened and endangered species habitat impacts (2.8 acres) (S), amount of fields affected (0), least number of potential PECO tower conflicts (0) and energy savings in bus VMT (128 thousand miles annually). It would perform as well as the recommended LPA in the number of community facilities impacted (3) (P), number of parks impacted or crossed (0 and 1, respectively), visual impacts (S, P), wetlands impacts (0.05 acres) (S), potential areas of contaminated materials concern (35) and impacts to properties protected by Section 4(f) (3). The US 202-1st Ave. Action Alternative would perform least well in potential visual and noise impacts on community facilities (5) (P), number of partial commercial property acquisitions (95), and number of full residential acquisitions (19) (S, P). It would also perform less well than the recommended LPA and recommended LPA design options in reduction in automobile VMT (16.1 million miles annually).

Broad acceptance by key stakeholders and political leaders: The US 202-1st Ave. Action Alternative would perform as well as the recommended LPA in the number of Project stations within the KPMU zoning district (S), avoiding the PECO corridor west of the PA Turnpike (S, P), using 1st Avenue (S), and being aligned behind the King of Prussia Mall

(S). It would be a least well performing Action Alternative because it would use US Route 202 (S, P).

- **US 202-N. Gulph Action Alternative**

Purpose and need: The US 202-N. Gulph Action Alternative would perform better than the recommended LPA in access to community facilities (10) because more facilities are within Project Station areas along US Route 202. It would perform less well than the recommended LPA and recommended LPA design options in travel time savings (104 thousand travel hours annually), ridership increase (increase of 7,500 average weekday trips on the NHSL) (S, P), increase in transit parking capacity (P), access to jobs (13.7 million square feet) (S) and number of parks served (4) because despite having a high number of station areas, the relatively longer length of the proposed alignment, the ability to provide only one park-and-ride facility and relatively fewer jobs and parks in station areas impact the performance of this alternative.

Other factors (natural and built environment): As The US 202-N. Gulph Action Alternative would be primarily aligned in existing roadways, it would perform better than the recommended LPA in potential partial residential acquisitions (2) (S, P), amount of soil disturbance (4.9 acres), amount of forest and potential threatened and endangered species habitat impacts (1.1 acres) (S), fields affected (0), number of PECO tower conflicts (0) and reduction in bus VMT (128 thousand annual miles). It performs as well as the recommended LPA in community facilities impacts (3) (P), number of parks impacted or crossed (0 and 1, respectively), visual impacts (S, P), wetlands impacts (0.05 acres) (S), and potential areas of contaminated materials concern (23). As land uses along the portions of US Route 202 and N. Gulph Road that would be used by the US 202-N. Gulph Action Alternative are primarily commercial and because the alignment would be longer than that of the recommended LPA, the US 202-N. Gulph Action Alternative would perform less well than the recommended LPA and recommended LPA design options in higher visual and noise impacts on adjacent community facilities (5) (P), a greater number of partial commercial acquisitions (69), and less reduction in automobile VMT (14.6 thousand annual miles). Compared with the recommended LPA, the US 202-N. Gulph Action Alternative potentially would impact more properties protected by Section 4(f) (5).

Broad acceptance by key stakeholders and political leaders: The US 202-N. Gulph Action Alternative would perform as well as the recommended LPA in the number of Project stations in the KPMU zoning district (S), avoiding the PECO corridor west of the PA Turnpike (S, P), and being aligned behind the King of Prussia Mall (S). It would perform less well than the recommended LPA and recommended LPA design options in ease of implementing new zoning (S) because it would not be aligned along 1st Avenue. The US 202-N. Gulph Action Alternative would be a least well performing Action Alternative because it would use US Route 202 (S, P) and would not use 1st Avenue (P).

Purpose and need – While each Action Alternative would provide faster, more reliable public transit service to, from and within the transportation study area, the recommended LPA is the best performer, providing the most transit travel time savings (217,000 travel hours annually)

and close to the highest travel time savings for existing automobile travelers who shift to using the Project (2.0 million hours annually). In 2040 as shown in Table 3-1.9 and described in Section 3.1.3.2, each Action Alternative would reduce travel times:

- The transit travel time savings for trips to the King of Prussia Mall from Center City, Norristown Transportation Center and 69th Street Transit Center in Upper Darby would be approximately 26, 23 and 9 minutes, respectively. Travel times among the Action Alternatives would vary as indicated in Table 3-1.9. For existing transit travelers, the shift to using the recommended LPA would save the most travel time (217,000 hours per year); the next highest annual travel time saver (186,000 hours per year) for transit riders would be the PECO-1st Ave. Action Alternative followed by the US 202-1st Ave. Action Alternative (156,000 hours annually). The Action Alternative having the lowest annual travel time savings (104,000 hours per year) for transit riders would be the US 202-N. Gulph Action Alternative.
- For existing automobile drivers, the shift to using the recommended LPA or the PECO/TP-N. Gulph Action Alternative would save the most travel time (2.0 or 2.1 million hours annually) for travel to and from the transportation study area. The next highest annual travel time saver (1.8 million hours annually) would be the US 202-1st Ave. Action Alternative. The Action Alternatives having the lowest annual travel time savings (1.7 million hours annually) would be the PECO-1st Ave. or US 202-N. Gulph Action Alternatives.

The recommended LPA and the PECO/TP-N. Gulph Action Alternative would provide the highest ridership increase (increase of 9,500 average weekday trips on the NHSL and approximately 5,300 boardings in the transportation study area) (S, P). Each would attract higher ridership than the other Action Alternatives because the proposed alignments would enable stations to be placed in areas that draw the most transit riders: Henderson Road, the King of Prussia Mall and the King of Prussia Business Park. Ridership increase would also be higher because two park-and-ride facilities would be provided at the alignment end points, thereby providing the highest increase in transit parking capacity (P) in the transportation study area for residents and others who cannot walk or bike to rail transit stations. This benefit relates to residents and travelers currently having to drive to search for parking at stations along existing rail transit lines where existing facilities are often at capacity.

By comparison, the PECO/1st Ave. Action Alternative would attract less ridership increase (increase of 8,500 average weekday trips on the NHSL and 4,952 boardings in the transportation study area), and the US 202 Alternatives would attract the least ridership increase (increase of 7,500 average weekday trips on the NHSL and approximately 4,100 boardings in the transportation study area). In the US 202 Action Alternatives, DVRPC's ridership modeling indicates that fewer riders would be drawn to destinations where stations are proposed along US Route 202 compared with the draw to station areas of the better performing alternatives. Also, the single park-and-ride facility provision in the US 202 Action Alternatives (Section 2.3) contributes to less ridership increase.

DVRPC's 2040 mode shift analysis, discussed in Section 3.1.3.2, complements the ridership increase data. The analysis forecasted changes in the numbers of trips by automobile, by transit

using a park-and-ride facility, and transit trips by walking to a transit station. In this analysis, a trip is defined as travel from one point to another; a trip-end is the end point of a trip (origin or destination). Although each Action Alternative would reduce auto-based trips and increase the number of trips using park-and-rides and walking to transit stations, differences in the rate of mode shift were identified: approximately 1.5 percent for the recommended LPA and the PECO/TP N. Gulph Action Alternative; 1.4 percent for the US 202-1st Ave. Action Alternative; and 1.3 percent for the PECO-1st Ave. and US 202-N. Gulph Action Alternatives. These mode shift rates may seem small, but each Action Alternative would increase the transit mode share by 57 to 65 percent compared to the No Action Alternative, with the recommended LPA and the PECO/TP-N. Gulph Action Alternative having the highest rates of increase.

Each Action Alternative and recommended LPA design option would improve transit connections to bus services and bicycle and pedestrian networks; each would provide the same number of stations in Upper Merion's KPMU zoning district (S). Where alternatives' performance differs, the recommended LPA and the PECO-1st Ave. Action Alternative would provide access to the most jobs (S). Alternatives that would use 1st Avenue, including the recommended LPA and the recommended LPA design options, also would provide access to the most parks, while the US 202-1st Ave. and US 202-N. Gulph Action Alternatives would provide access to the most community facilities.

The recommended LPA, the recommended LPA design options and the PECO-1st Ave. Action Alternative would be the best performers compared to the other alternatives in terms of stations located in areas having the highest square footage of non-residential land uses, most access to jobs (S) and highest support for economic development (S). The PECO/TP-N. Gulph and US 202-1st Ave. Action Alternatives would be less well performing for access to jobs because less square footage of non-residential land uses occurs in the N. Gulph Road and US 202 station areas. The US 202-N. Gulph Action Alternative is the least well performing Action Alternative for access to jobs because of the relatively low square footage of non-residential uses around proposed station areas.

Transportation and Safety Effects – Each Action Alternative and recommended LPA design option would perform similarly in safety planning (P) (Section 3.6.3), maintaining or improving key roadway intersection levels of service with Project mitigation near Project park-and-ride facilities (Section 3.2.3), providing connections to the pedestrian and bicycle network (S), and avoiding impacts to active freight and heavy rail lines (Section 3.5.3).

Land use and economic development – Each Action Alternative and recommended LPA design option would perform similarly in consistency with broad land use planning, local and regional plans, and supporting economic development (S) (Sections 4.2.3 and 4.3.3).

Community Facilities - Each Action Alternative and recommended LPA design option would perform similarly by avoiding splitting or fragmenting residential or business communities and preserving access across existing transportation and utility rights-of-way (Section 4.4.3). The PECO-1st Ave. Action Alternative would have the fewest number of potential direct impacts (one impact) on community facilities compared with the other Action Alternatives (two to three each) (P). The number of adjacent community facilities potentially affected by Project noise and visual change is highest for the US 202-1st Ave. and US 202-N. Gulph Action Alternatives (5 each) and

lowest with the PECO-1st Ave. Action Alternative (1) (P). The recommended LPA and the recommended LPA design options would potentially have visual and noise impacts on four community facilities.

Property acquisition and displacements – As described in Section 4.5.3, the PA Turnpike North/South Option would potentially require no full residential property acquisitions (0), if implemented without the 9/11 Memorial Avoidance Option. The PECO-1st Ave. Action Alternative, the recommended LPA, the recommended LPA design options and the PECO/TP-N. Gulph Action Alternative would potentially require four full residential property acquisitions (S, P) because less additional ROW would be needed compared to the ROW needs for the US 202-1st Ave. and US 202-N. Gulph Action Alternatives (19 each). Potential full acquisitions of commercial properties are similar among the Action Alternatives and the recommended LPA design options (four each). Only the PECO-1st Ave. Action Alternative would have a potential full acquisition of a park (Kingwood Road Park).

The number of potential partial residential property impacts is highest for the PECO-1st Ave. Action Alternative (59) and lowest for the US 202-1st Ave. and US 202-N. Gulph Action Alternatives (2 each) (P). Partial commercial property acquisitions would be highest for the US 202-1st Ave. and US 202-N. Gulph Action Alternatives (95 and 69, respectively) and lowest for the PECO/TP-N. Gulph Action Alternative (30). The PECO-1st Ave. Action Alternative would directly impact or cross the most parks (2 and 1, respectively), while the other Action Alternatives including the recommended LPA and the recommended LPA design options would have fewer (1 each).

Parks, recreational land and open space – Each Action Alternative and recommended LPA design option, except the PECO-1st Ave. Action Alternative, would cross one park property (the Chester Valley Trail Extension) (S) (4.6.3), while the PECO-1st Ave. Action Alternative potentially would impact two additional park properties (Kingwood Road Park and PECO Easement).

Historic and Archaeological Resources – As described in Section 4.7.3, each Action Alternative and recommended LPA design option would have no adverse impact on historic properties (P). The potential to encounter archaeological sites in the transportation study area is similarly low among each Action Alternative and recommended LPA design option.

Visual and aesthetic resources – As described in Section 4.8.3, Action Alternatives and recommended LPA design options other than the PECO-1st Ave. Action Alternative, including the recommended LPA, would have potential for visual impacts because of the number of adjacent residential properties and the developed character of the corridor (S, P). The PECO-1st Ave. Action Alternative has the potential for visual impacts on more residences (S, P) because it would be aligned adjacent to more residential properties (59) than the other Action Alternatives and would change the open space character of the PECO corridor.

Air Quality – Each Action Alternative, including the recommended LPA and the recommended LPA design options, would benefit air quality as a result of reducing annual VMT (S) (Section 4.9.3).

Noise and Vibration – Each Action Alternative and recommended LPA design option has the potential to cause noise and vibration impacts in the transportation study area (S, P) (Section 4.10.3). Mitigation to minimize or eliminate potential noise and vibration impacts is warranted.

Natural resources – As described in Section 4.11.3, the US 202-1st Ave. and US 202-N. Gulph Action Alternatives would have the least amount of soil disturbance (3.9 and 4.9 acres, respectively) because each would use the most amount of already developed roadway corridor. PECO-1st Avenue would cause the most soil disturbance (12.9 acres) and most amount of impact on fields (8.0 acres). The recommended LPA and the PA Turnpike North/South Option would potentially have the most forest impacts (5.4 and 4.3 acres each). For this reason, it also would have the potential for the most impacts on threatened and endangered species habitat while the US 202-1st Ave. and US 202-N. Gulph Action Alternatives would have the least potential (2.8 and 1.1 acres, respectively) (S). Each Action Alternative and recommended LPA design option would have similar potential impacts to wetlands (0.05 acre). None of the Action Alternatives or recommended LPA design options would directly impact waterways and floodplains as the concept design of the proposed elevated guideway would span these natural features (S).

Hazardous and Contaminated Materials - The US 202-1st Ave. Action Alternative would have the potential to encounter the highest number of potential areas of contaminated and hazardous materials concerns (35) while the PECO/TP-N. Gulph Action Alternative would have the least potential (13) (Section 4.12.3). The recommended LPA, the recommended LPA design options, the PECO-1st Ave. and US 202-N. Gulph Action Alternatives potentially would have fewer potential areas of contaminated materials concern (25, 25, 27 and 23, respectively).

Utilities - The US 202-1st Ave. and US 202-N. Gulph Action Alternatives would avoid potential conflicts with PECO utility towers. The PECO-1st Ave. Action Alternative would have the highest potential for conflicts with PECO towers (12) because more of the alignment is in the PECO corridor than any other alternative (Section 4.13.3). The recommended LPA, the recommended LPA design options and the PECO/TP-N. Gulph Action Alternative would have fewer potential conflicts with PECO towers (8).³

Energy Use - The recommended LPA, the recommended LPA design options and the PECO/TP-N. Gulph Action Alternative would reduce the most automobile VMT per year (17.5 to 18.4 million miles annually) while the US 202/N. Gulph Action Alternative would reduce the least VMT (14.6 million miles annually) (Section 4.13.3). However, the US 202-1st Ave. and US 202-N. Gulph Action Alternatives would reduce the most bus VMT per year (128 thousand miles) compared to the PECO-1st Ave. Action Alternative which would reduce the least bus VMT (57 thousand miles). Potential savings in fuel costs for automobile use and road and pavement maintenance costs are similar among the Action Alternatives and recommended LPA design options.

³ SEPTA recognizes the likelihood for utilities to be present along transportation corridors the Action Alternatives would use, such as US Route 202, PA Turnpike, 1st Avenue and N. Gulph Road. As the Project advances, SEPTA will identify and evaluate potential Project effects on all utilities in coordination with utility owners.

Broad Acceptance by Key Stakeholders and Political Leaders – As described in Section 4.3.3.2 and quantified by the factor “number of station areas within Upper Merion Township’s Mixed-Use KPMU zoning district,” each Action Alternative and recommended LPA design option would encourage redevelopment potential (S, P) in the transportation study area. However, 48 percent more re-developable land is within ½ mile of the 1st & Moore and 1st Avenue East stations (approximately 494 acres) compared to stations on N. Gulph Road (approximately 334 acres). The recommended LPA and its design options, the PECO-1st Ave. and US 202-1st Ave. Action Alternatives would serve the 1st Avenue area with the highest area of redevelopment potential, while the PECO/TP-N. Gulph and US 202-N. Gulph Action Alternatives would serve the N. Gulph Road area which has less redevelopment potential.

Alternatives that would not use N. Gulph Road, including the recommended LPA and the recommended LPA design options, would perform best in providing access to the King of Prussia Business Park, the area that the Township views as potentially being easier to implement new transit-supportive zoning than other areas (S). The 1st Avenue area and other areas within the KPMU zoning district will be relatively easier areas for the Township to implement transit-supportive zoning compared to other areas, such as along N. Gulph Road, because of the existing KPMU designation for mixed use development in the Business Park. The KPMU zoning designation of the 1st Avenue corridor and the King of Prussia Business Park indicates that these are areas that Upper Merion Township is focusing on for future economic development and redevelopment. The recommended LPA, the recommended LPA design options and other Action Alternatives that would use 1st Avenue would support Upper Merion’s goals by providing rail transit access to that portion of the study area having a relatively higher potential for redevelopment and ease of new transit-supportive zoning compared to Action Alternatives that would use N. Gulph Road.

As described in Section 8.3.2, Action Alternatives that would not use US Route 202, including the recommended LPA and the recommended LPA design options, would support stakeholder and public preferences to not use US Route 202 (S, P). Only the PECO-1st Ave. Action Alternative does not support stakeholders’ preference to use a corridor other than the PECO corridor west of the PA Turnpike (S, P); the PECO-1st Ave. Action Alternative also is the only Action Alternative that does not support stakeholders’ preference to be aligned behind the King of Prussia Mall (S). Action Alternatives that would use 1st Avenue, including the recommended LPA and the recommended LPA design options, support stakeholders’ preference to use 1st Avenue (S). Each Action Alternative, including the recommended LPA and the recommended LPA design options, would cross or use a portion of the PA Turnpike’s ROW (S).

Upper Merion Township supports SEPTA’s study to provide new rail transit service to the transportation study area as well as SEPTA’s process for planning the Project. The Township’s support is documented by the 2011 Resolution (Appendix B) and is backed by its *2020 Vision Plan* and *2005 Land Use Plan*, which describe a future that includes growth in use of public transportation service as integral to reducing roadway congestion and achieving future economic development benefits for people who live and work in the area. The KOP-BID echoes Upper Merion’s support with a focus on revitalizing the Business Park and other commercial areas in a manner that can be served by rail transit. Montgomery County and DVRPC show support for the Project in their plans: *Montco 2040: A Shared Vision* and *Connections 2040*:

Plan for Greater Philadelphia, respectively. Providing new rail transit service also helps to achieve the mission of the GVFTMA in their pursuit of transportation demand management.

8.5 Environmentally Preferred Alternative

The CEQ requires a NEPA document to specify the alternative that is considered to be environmentally preferable (Section 1505.2(b)). CEQ defines an environmentally preferable alternative as the alternative that will cause the least damage to the natural and built environment. Since it is rare in an alternatives evaluation that one alternative will exhibit only benefits and no impacts, identifying an environmentally preferable alternative typically involves considering the trade-offs between benefits and impacts.

In this DEIS, the alternatives evaluation considered how responsive each alternative is to the Project purpose and need, as well as what benefits and impacts each alternative potentially would have on the natural and built environment. Input from the public, agencies and stakeholders provided considerable insight into this evaluation process. Earlier sections of this chapter summarize the results of the alternatives evaluation.

8.5.1 No Action Alternative

Looking first at the purpose and need analysis in Section 8.2, evaluation of the Action and No Action Alternatives determined that each Action Alternative achieves the purpose and need, but the No Action Alternative will not be effective. As a result, the No Action Alternative will not be a reasonable course of action to address the transit deficiencies in the transportation study area. Without a new transit investment, transportation problems in the study area will worsen by 2040 with lengthening travel times, growth in VMT, on-going connectivity limitations with regard to job and destination access, and continued reliance on the automobile by most travelers. The No Action Alternative will negatively impact economic development potential over time by only supporting the traditional automobile components of Township and County comprehensive and land use plans. The No Action Alternative will not support the foreseeable future-oriented plan components that encourage transit-supportive zoning and redevelopment that requires multi-modal investment.

As described in Section 8.6.2, a comparatively large annual operations and maintenance costs for bus and rail transit services (\$13.3 million) will occur in the No Action Alternative without any improvement in transit service to and within the transportation study area. In addition, growth in VMT, roadway congestion and travel delays will result in no air quality benefit for people living and working in the transportation study area.

8.5.2 Action Alternatives

As described in Section 8.2 and shown in Table 8-4.1, each Action Alternative and recommended LPA design option would achieve the Project purpose and need, with some differences in degree of effectiveness. Each Action Alternative and recommended LPA design option would have potential beneficial as well as negative effects on the natural and built environment. Selection of an environmentally preferable alternative involves considering the trade-offs between benefits and impacts. Because of the varying levels of benefits and impacts among the Action Alternatives and recommended LPA design options described in this chapter,

FTA and SEPTA considered the input received from the public, agencies and stakeholders as a means of determining the factors that are most important for decision-making (Sections 8.3.1 and 8.3.2). The following summarizes the key DEIS findings that support identification of an environmentally preferred alternative:

- Purpose and need: Among the Action Alternatives, the recommended LPA would best achieve the Project purpose and need, performing better than or equal to the other Action Alternatives in all factors that are most important to the public and stakeholders: travel time savings, ridership increase, increase in transit parking capacity, station areas in the KPMU zoning district, and access to jobs, community facilities and parks. The other Action Alternatives would perform less well in regard to some of these most important factors.
- Other factors (natural and built environment): The recommended LPA and the recommended LPA design options would perform better than some Action Alternatives in having the least number of partial and full residential acquisitions, least park impacts, and least visual impacts. Each would perform as well as some other Action Alternatives in: safety, supporting economic development, community facility impacts, historic and archaeological resources impacts, air quality benefits, potential noise impacts and wetlands impacts. The recommended LPA and the recommended LPA design options would perform least well among the Action Alternatives in potentially having the most forest and threatened and endangered species habitat impacts. By comparison, the PECO/TP-N. Gulph Action Alternative would perform similarly to the recommended LPA and the recommended LPA design options in the most important natural and built environment factors. The other Action Alternatives would perform less well than the recommended LPA and the recommended LPA design options in more than one most important factor, such as requiring more partial or full property acquisitions.
- Broad acceptance by key stakeholders and political leaders: Likewise, the recommended LPA and the recommended LPA design options would be the best performers in achieving each of the most important factors in this category: number of Project stations within the KPMU zoning district, cost, avoiding US Route 202, using 1st Avenue, avoiding PECO west of the PA Turnpike, and being aligned behind the King of Prussia Mall. The other Action Alternatives would perform less well in regard to some of these most important factors.

Upon consideration of the trade-offs in benefits and impacts among the Action Alternatives and recommended LPA design options, FTA and SEPTA identified the recommended LPA as the environmentally preferable alternative for the Project. It best achieves the purpose and need by performing as well as or better than the other Action Alternatives in each factor. Likewise, it would best achieve the most important factors for broad acceptance by key stakeholders and political leaders. The recommended LPA also would perform as well as or better than the other Action Alternatives in each of the most important natural and built environment factors, except forest and potential threatened and endangered species habitat impacts. Minimization or elimination of these potential impacts will be considered in subsequent engineering and design efforts as well as on-going coordination with the respective agencies.

One or both recommended LPA design options could be applied to the recommended LPA to reduce some of the impacts. For example, the PA Turnpike North/South Option would reduce full residential property acquisitions, eliminate partial residential property acquisitions, and reduce visual impacts on residences. The 9/11 Memorial Avoidance Option would reduce visual impacts on the 9/11 Memorial.



Conceptual rendering of what the recommended LPA could look like along 1st Avenue.

Source: Bergmann Associates, PC, 2016.

FTA and SEPTA recognize that public concerns remain and the recommended LPA has the potential for negative impacts as described in this DEIS: visual and noise impacts, property acquisitions and displacements, and natural resources impacts including forest and potential threatened and endangered species habitat impacts. The estimates of potential impacts in the DEIS are preliminary and based on the conceptual level of design undertaken by SEPTA to date. As the Project design advances, SEPTA is committed to refining the design of the locally preferred alternative with the goal of avoiding or minimizing impacts. This process will be undertaken in coordination with agencies, stakeholders and the public, and will include developing mitigation as warranted and reasonably feasible.

8.6 Next Steps

8.6.1 DEIS and Public Comment Period

The DEIS will be distributed to appropriate local, regional, state, and federal agencies as well as to the general public for a minimum 45-day review and comment period. Public comment on the DEIS will be considered and addressed in the combined FEIS/ROD. A public hearing will be held during the 45-day review period as well. Key agencies, stakeholders and the public have been and will continue to be involved in the Project throughout design and construction through public and agency meetings, and other coordination methods.

8.6.2 Preliminary Project Costs and Funding

8.6.2.1 Preliminary Project Costs

Although costs were not used in the comparative assessment of the Action Alternatives, SEPTA developed preliminary capital costs as well as operations and maintenance costs (O&M) for each Action Alternative⁴ (Table 8-6.1). FTA standard methods of cost estimating were used,

⁴ Cost estimates have not been prepared for the recommended LPA design options. If one or both recommended LPA design options advance along with the recommended LPA, SEPTA will have cost estimates prepared.

including cost categories, a 30 percent contingency, and cost for additional vehicles. The Action Alternatives are preliminarily estimated to cost \$1.0 to \$1.2 billion (2015 dollars) depending on the alternative. The estimates assume existing state of the art construction technology would be used as well as other standard procurement, productivity and construction conditions, such as typical Montgomery County weather conditions. A three percent future annual escalation was assumed.

For the purposes of the O&M estimates in Table 8-6.1, year 2014 dollars were used, escalating from actual SEPTA 2012 operating costs for rail and bus. These estimates factored in total rail and bus costs because SEPTA expects changes to bus services in the transportation study area with the Project in operation. Bus service changes are expected to reduce SEPTA's total future bus operating costs. Specifically, SEPTA's total rail O&M cost would increase by approximately \$10 million for each Action Alternative, but total annual bus O&M cost savings would be reduced to approximately \$5 million. This change would result in an overall annual net O&M cost increase for SEPTA to operate bus and rail services with the Project of approximately \$5 million. More detail on this O&M cost analysis can be found in the 2015 *Operating & Maintenance Cost Model Results for KOP Rail*, prepared by LTK Engineering Services.

Table 8-6.1: Preliminary Capital and O&M Costs

Categories and Factors		No Action Alternative	Action Alternatives				
			PECO-1 st Ave.	PECO/TP-1 st Ave. (recommended LPA)	PECO/TP-N. Gulph	US 202-1 st Ave.	US 202-N. Gulph
S	Preliminary Capital Cost for Project (\$ billions) (a)	\$0	\$1.17	\$1.08	\$1.19	\$1.02	\$1.12
S	Preliminary Annual NHSL O&M Cost (\$ millions) (b)	\$13.3	+\$9.7	+\$9.6	+\$9.7	+\$9.8	+\$9.8
S	Preliminary Annual O&M Net Growth (rail and bus) (\$ millions) (b)	\$0.5	\$5.1	\$4.9	\$4.9	\$4.9	\$5.2

Notes: Green shading indicates key public concerns; S = key stakeholder issue; un = unknown; (a) source: Economy League of Greater Philadelphia; (b) Values in 2014 dollars.

Source: LTK, 2016, Operating and Maintenance Cost Model Results.

8.6.2.2 Project Funding

SEPTA'S CAPITAL PROGRAM FUNDING

SEPTA is the nation's sixth-largest public transit agency and the primary public transit provider in the greater Philadelphia region. SEPTA was created by the Pennsylvania state legislature in 1964 and is an instrumentality of the Commonwealth of Pennsylvania. SEPTA's multimodal network serves a 2,200 square-mile region with a population exceeding four million people.

SEPTA's FY2017 capital budget is approximately \$550 million with a total twelve-year program of \$7.3 billion. The funding comes 60% from the Commonwealth of Pennsylvania, 38% through federal grants, and 2% through local contributions. Funds are allocated to projects that will advance strategic objectives, bring assets to a state of good repair, meet SEPTA's financial obligations, and implement system improvements to enhance transit service.

Pennsylvania's Act 89 of 2013 provided a comprehensive transportation funding solution for the Commonwealth of Pennsylvania. The funding is indexed to inflation and has no legislative expiration. New revenues for transportation were generated through uncapping the Oil Company Franchise Tax (OCFT), adjusting various fees for inflation, and surcharges on traffic tickets. The Fixing America's Surface Transportation (FAST) Act, the existing five-year federal transportation funding authorization, has also provided greater confidence about levels of federal funding. This long-term, dedicated funding source is allowing SEPTA to address its state-of-good-repair backlog through the "Rebuilding for the Future" initiative.

CAPITAL FUNDING STRATEGY

Building large-scale transit projects typically requires transit agencies to combine multiple funding types (e.g. grants and loans) and sources (federal, state, regional, local and/or private), and it appears likely that this Project will require the same. SEPTA is planning to pursue Project funding through the FTA's Capital Investment Grant program (also known as "New Starts") and will consider other federal support as available. The remainder of Project funding must come from non-federal sources—state, regional, local and other sources.

FEDERAL FUNDING SOURCES

SEPTA will apply to FTA's "New Starts program", which is a discretionary, multi-year program authorized by the U.S. Congress to fund major transit capital investments. Applicants must complete a series of steps working with FTA and meet certain eligibility requirements. Projects are then rated and competitively recommended for funding. Successful applicants can expect to receive approximately half of the project cost through this program.

The U.S. Department of Transportation also offers other, smaller grant programs which may serve to fund smaller aspects of the project, and financing tools which can be used to leverage state, regional and local sources of funding.

STATE, REGIONAL AND LOCAL FUNDING SOURCES

State, regional and local partners have been fundamentally important to the Project planning process and they will be essential in helping SEPTA develop a funding plan. SEPTA regularly works with the State and five Southeastern Pennsylvania counties during its annual Capital and Operating budget processes; together, they have a long history of working to meet the Region's transportation needs.

The remaining Project cost that would not be covered by FTA's New Starts grant will require a combination of State, regional and local funding sources. Looking forward and in advance of developing the Project's required twenty-year financial plan over the next few years, SEPTA will

continue to work with area stakeholders on defining a set of funding sources. SEPTA expects to discuss traditional methods of funding new transportation projects, more directed user fees, land value capture, as well as right-of-way contributions.

PRIVATE FUNDING SOURCES

Attracting private sources of funding from commercial entities that benefit from the Project will be an important aspect of funding. Transportation investments can have benefits to commercial property in and around proposed station areas; SEPTA expects to pursue contributions in and around Project station areas.

LOOKING AHEAD

A number of milestones must be met by SEPTA and its partners to move the Project forward and comply with the “New Starts” program. During the Project Development phase of “New Starts,” a two-year process which will run concurrently with the FEIS/ROD, SEPTA and its partners will develop a twenty-year financial plan that will document the commitment of 30% of the non-“New Starts” funds. The financial plan and commitment of funds are a necessary milestone for entrance into the “New Starts” Engineering phase. To leave the Engineering phase and receive a Full Funding Grant Agreement, FTA's commitment to provide multi-year Federal funds, SEPTA will need to update the twenty-year financial plan and show the commitment of all the non-“New Starts” funds.

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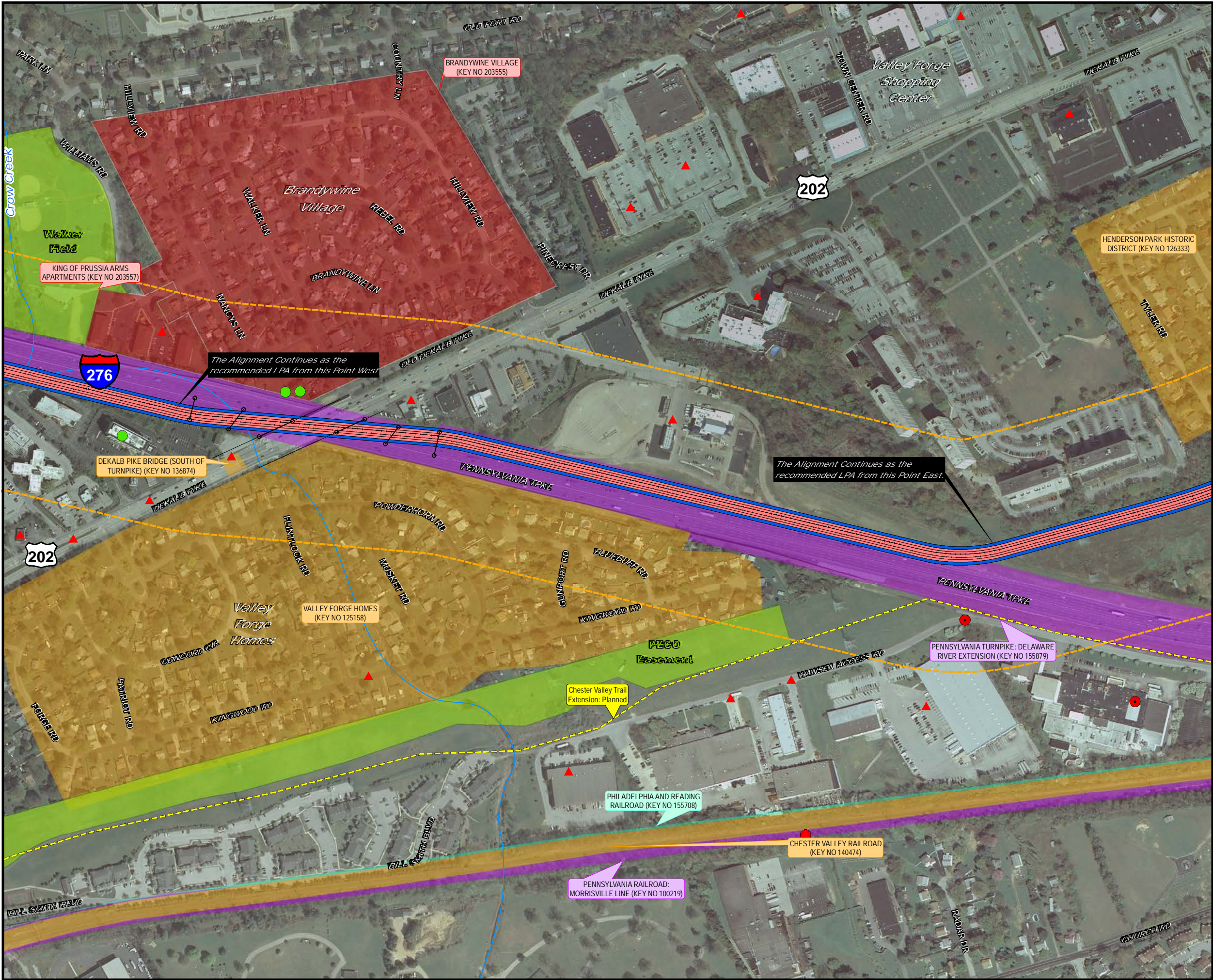
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*A*ppendix A Maps

- PECO-1st Ave. Action Alternative
- PECO/TP-1st Ave. Action Alternative (recommended LPA)
 - PA Turnpike North/South Option
 - 9/11 Memorial Avoidance Option
- PECO/TP-N. Gulph Action Alternative
- US 202-1st Ave. Action Alternative
- US 202-N. Gulph Action Alternative
- 69th Street Transportation Center



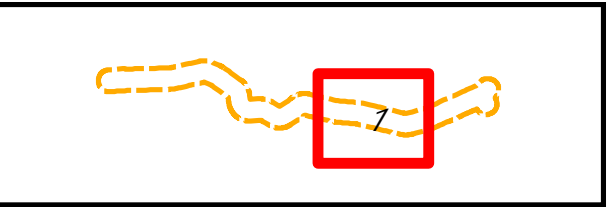
PA Turnpike
North/South Option
Sheet: 1 of 1

- Chester Valley Trail**
- Existing (solid yellow line)
 - Proposed (dashed yellow line)
 - Parks, Recreational Land & Open Space (green)
 - King of Prussia Mixed Use Zoning (orange)
 - Waterway (blue wavy line)

- Historic Architectural Resources**
- | Previously Identified | Evaluated & Recommended |
|--------------------------|-------------------------|
| Listed/Eligible (purple) | Not Eligible (red) |
| Not Eligible (orange) | Eligible (blue) |
| Undetermined (cyan) | |

- Impact - Noise & Vibration Hazmat Sites**
- Moderate - Noise (green circle)
 - Severe - Noise (green star)
 - Impact - Vibration (blue circle)
 - Hazmat Site (red triangle)
 - NPL Site (red square)
 - TRI Site (red circle)

- Category 2 Category 3
- | Temporary | Permanent | Right-of-Way |
|-----------|------------|------------------|
| Blue box | Red box | Aerial Structure |
| Blue box | Yellow box | At-Grade |
| Blue box | Brown box | Retained Fill |
| Blue box | Grey box | Platform |
- Station Name (blue box with 'A' icon) Study Area (dashed orange line)
- Station Layout (grey box)



Date: 4/25/2017

N

0 200 400 800

Feet

1 inch = 400 feet

Source: PASDA, PennDOT, AECOM.

AECOM

Alternative:
69th Street Transportation
Center

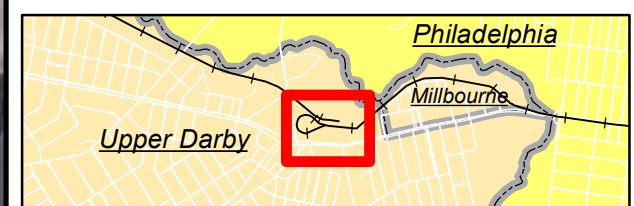
Sheet: 1 of 1

Historic Architectural Resources


Previously Identified

Listed/Eligible Not Eligible

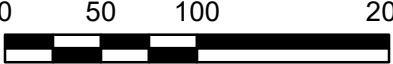
- Existing Facilities
- Proposed Work
- Proposed Guideway
- Proposed Temporary Limit of Disturbance
- 1 Station Name
- Study Area



Date: 4/19/2017
AECOM



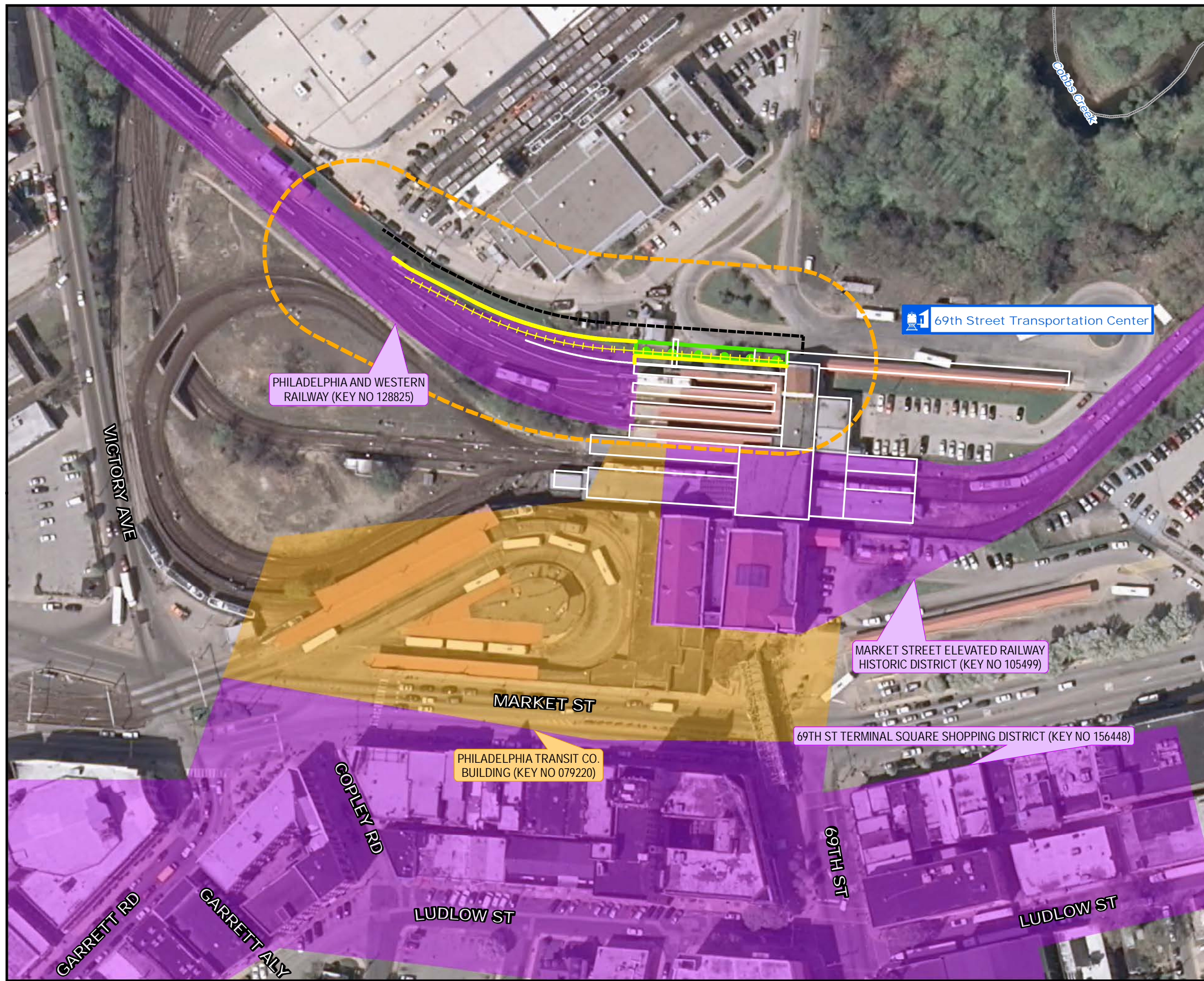
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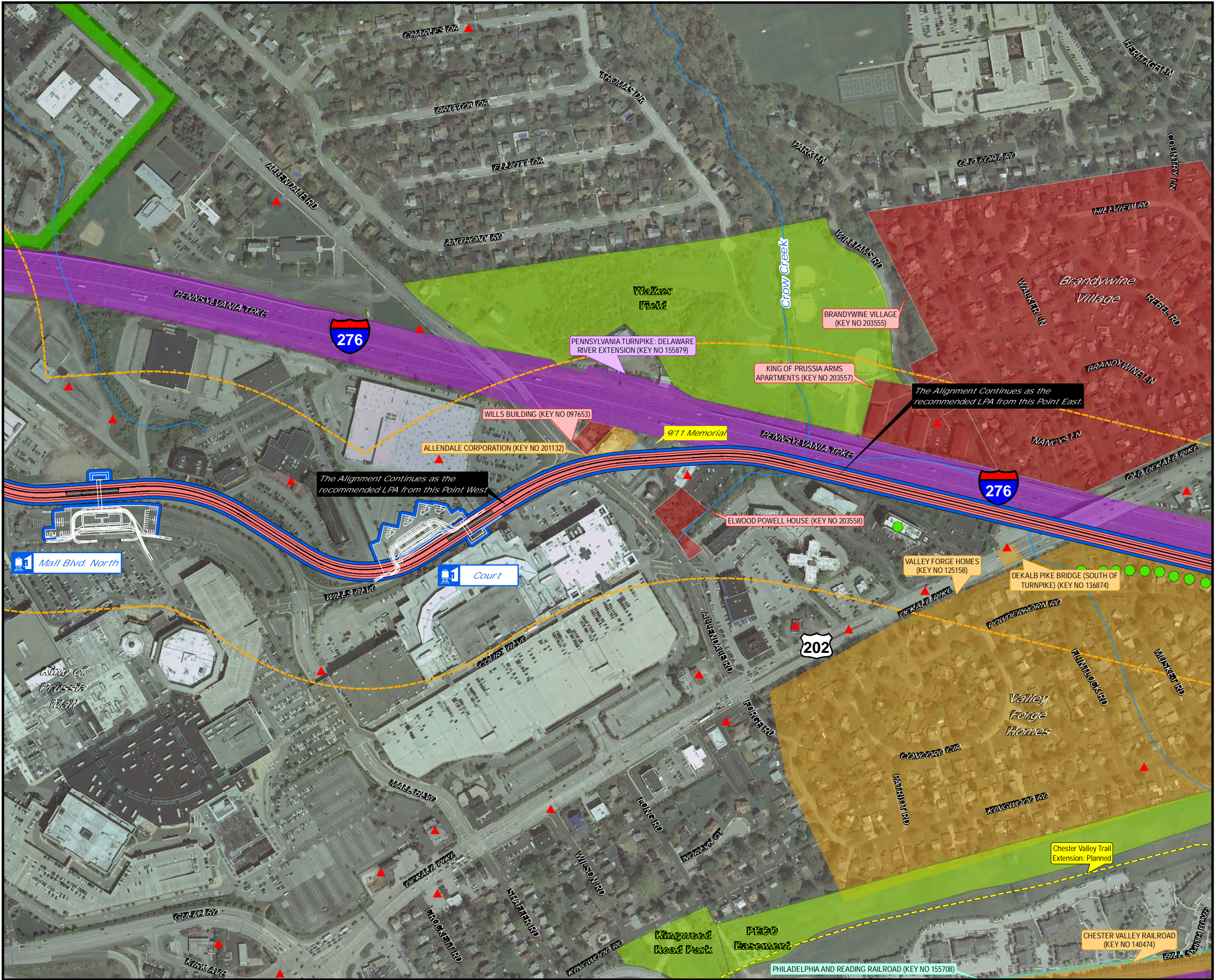


0 50 100 200
Feet

1 inch = 100 feet

Source: PASDA, PennDOT, AECOM.





9/11 Memorial Avoidance

Option

Sheet: 1 of 1

Chester Valley Trail

- Existing Proposed
- Parks, Recreational Land & Open Space
- King of Prussia Mixed Use Zoning
- Waterway

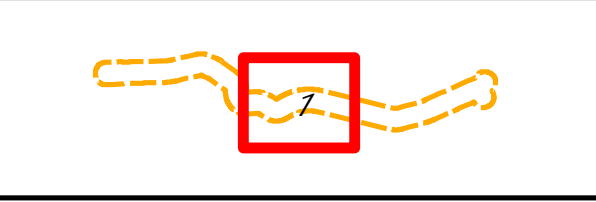
Historic Architectural Resources

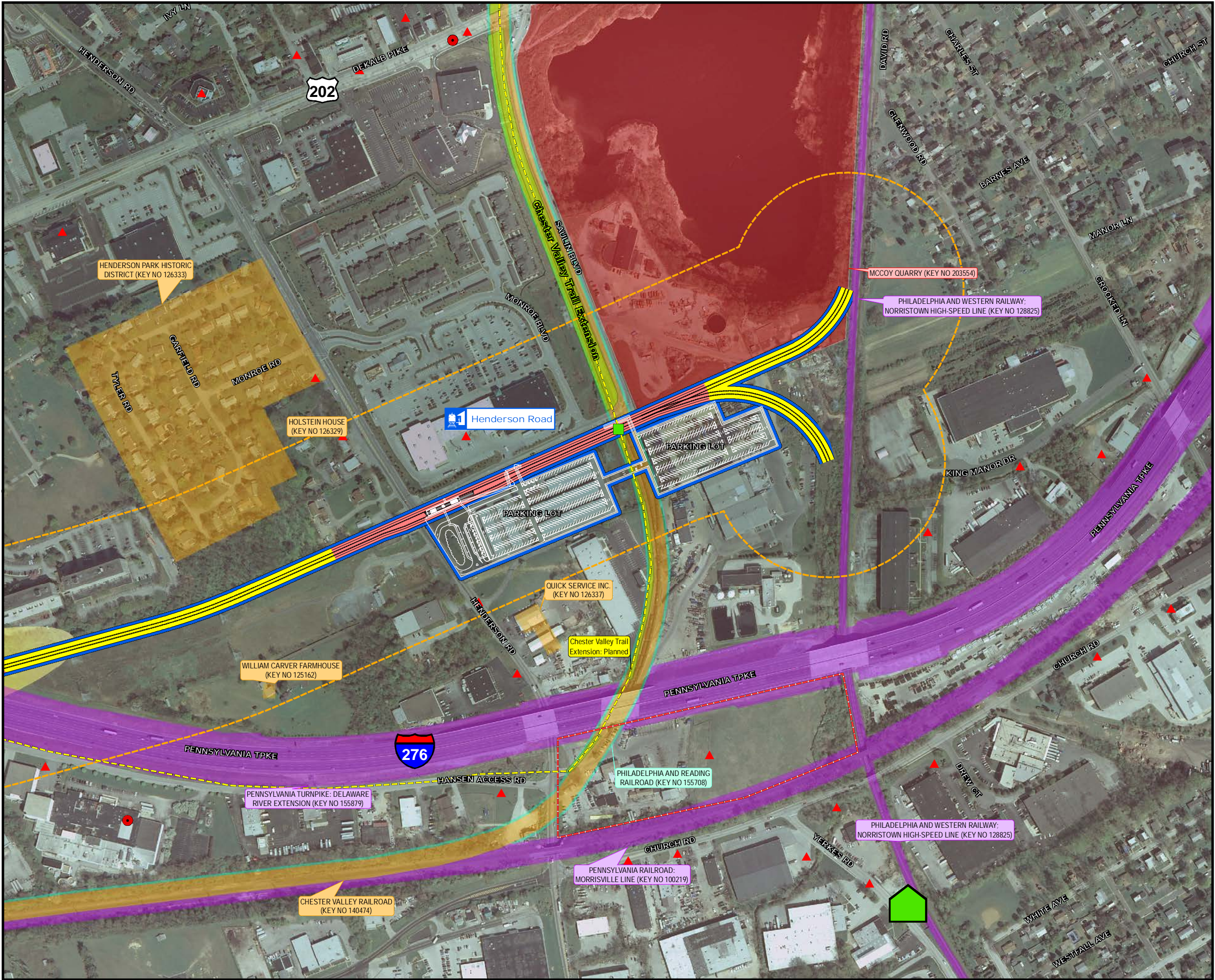
- | Previously Identified | Evaluated & Recommended |
|-----------------------|-------------------------|
| Listed/Eligible | Not Eligible |
| Not Eligible | Eligible |
| Undetermined | |

Impact - Noise & Vibration Hazmat Sites

- | Category | Category |
|--------------------|-------------|
| Moderate - Noise | Hazmat Site |
| Severe - Noise | NPL Site |
| Impact - Vibration | TRI Site |

- | Temporary | Permanent | Right-of-Way |
|----------------|------------------|--------------|
| | Aerial Structure | |
| | At-Grade | |
| | Retained Fill | |
| | Platform | |
| Station Name | Study Area | |
| Station Layout | | |





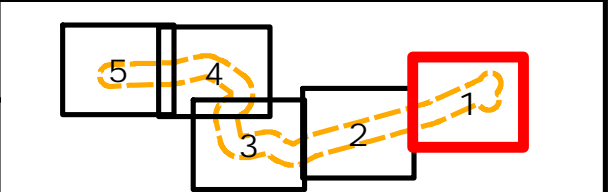
Alternative:
PECO-1st Ave.
Sheet: 1 of 5

- Chester Valley Trail**
- Existing (solid yellow line)
 - Proposed (dashed yellow line)
 - Parks, Recreational Land & Open Space (light green)
 - King of Prussia Mixed Use Zoning (green outline)

- Historic Architectural Resources**
- | Previously Identified | Evaluated & Recommended |
|--------------------------|-------------------------|
| Listed/Eligible (purple) | Not Eligible (red) |
| Not Eligible (orange) | Eligible (blue) |
| Undetermined (cyan) | |

- Impact - Noise & Vibration**
- Moderate - Noise (green circle)
 - Severe - Noise (green star)
 - Impact - Vibration (blue circle)
- Hazmat Sites**
- Hazmat Site (red triangle)
 - NPL Site (red square)
 - TRI Site (red circle)

- Category 2** **Category 3**
- | Temporary | Permanent | Right-of-Way |
|-----------|------------|------------------|
| Blue box | Red box | Aerial Structure |
| Blue box | Yellow box | At-Grade |
| Blue box | Brown box | Retained Fill |
| Blue box | Grey box | Platform |
- Station Layout (grey rectangle), Study Area (dashed orange line), Potential TPSS Zone (yellow circle), Existing TPSS (green pentagon)



Date: 8/17/2017

N

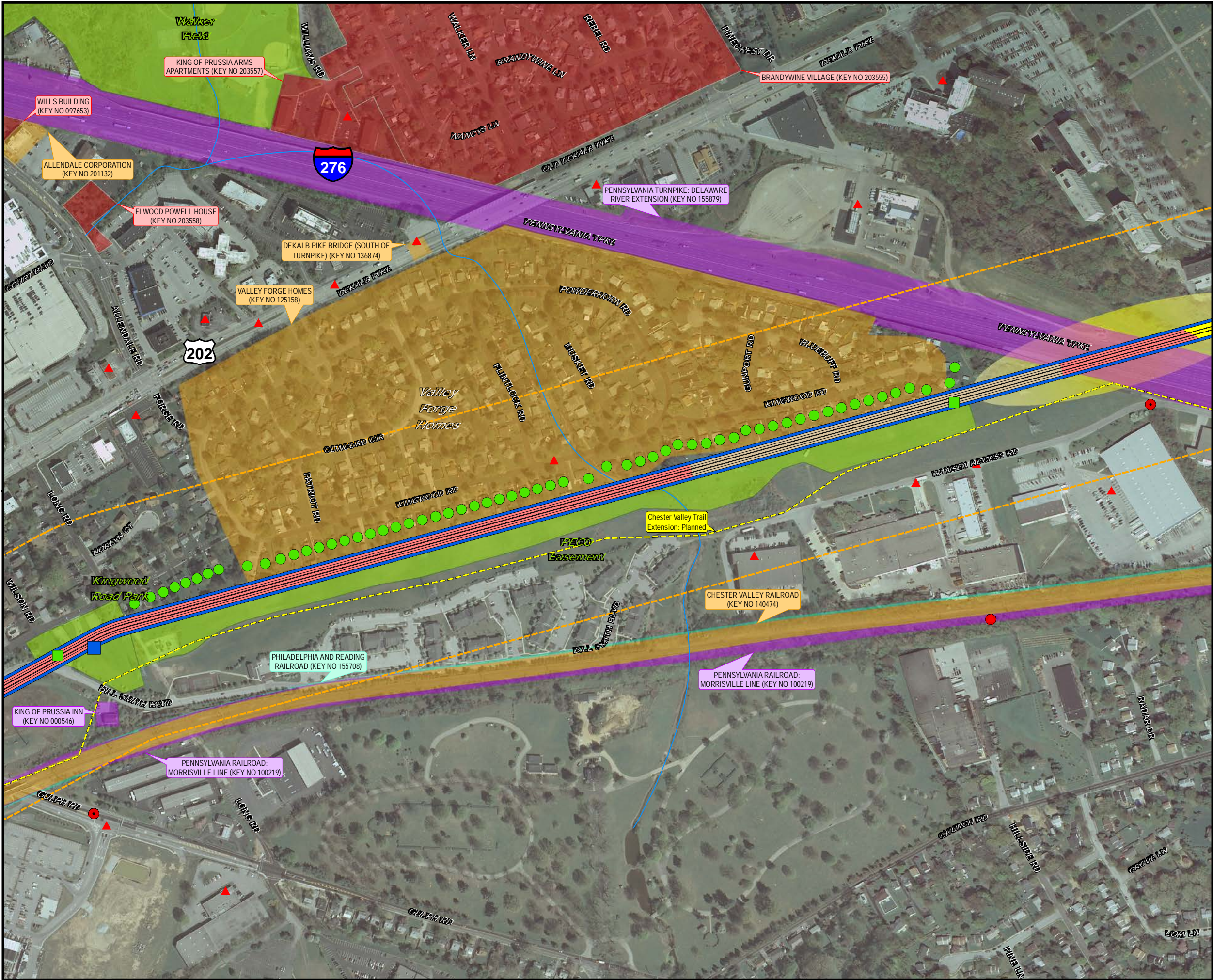
0 200 400 800

Feet

1 inch = 400 feet

Source: PASDA, PennDOT, AECOM.

AECOM



Alternative:
PECO-1st Ave.
Sheet: 2 of 5

Chester Valley Trail
Existing Proposed
Parks, Recreational Land & Open Space
King of Prussia Mixed Use Zoning
Waterway

Historic Architectural Resources

Previously Identified	Evaluated & Recommended
Listed/Eligible	Not Eligible
Not Eligible	Eligible
Undetermined	

Impact - Noise & Vibration
Moderate - Noise
Severe - Noise
Impact - Vibration

Hazmat Sites
Hazmat Site
NPL Site
TRI Site

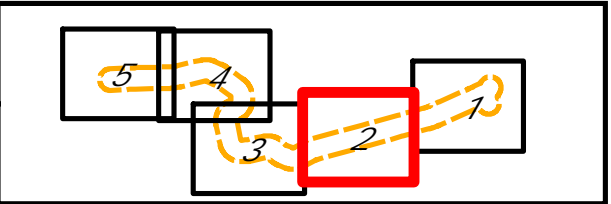
Category 2

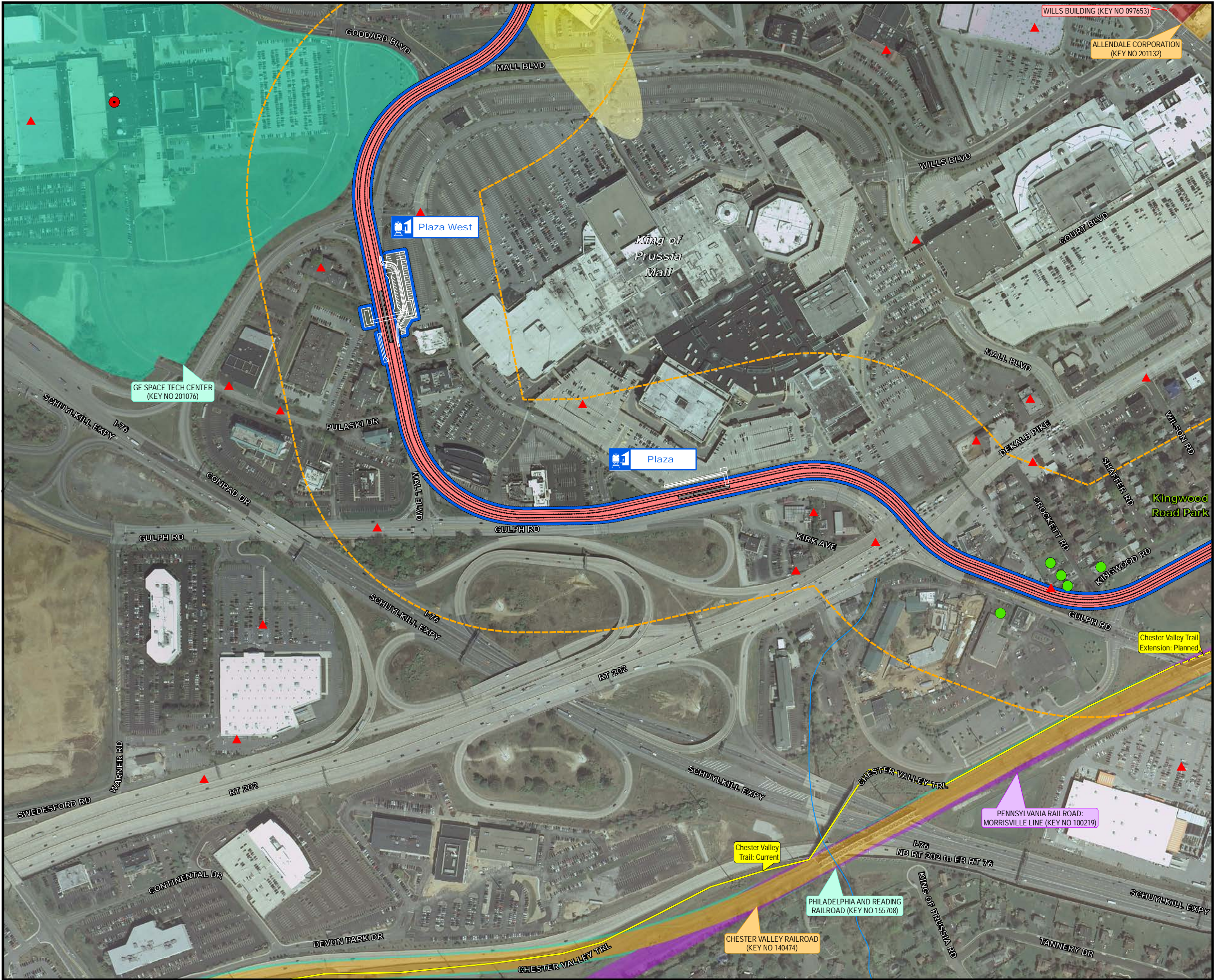
Category 3

Temporary	Permanent	Right-of-Way
	Aerial Structure	
	At-Grade	
	Retained Fill	
	Platform	

Station Layout Study Area

Potential TPSS Zone Existing TPSS

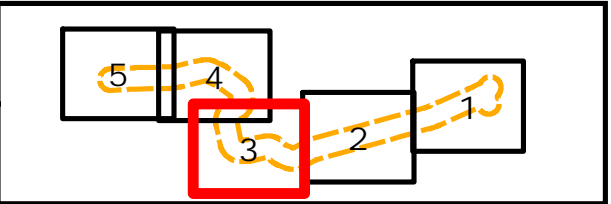




Alternative:
PECO-1st Ave.
Sheet: 3 of 5

- Chester Valley Trail**
- Existing (solid yellow line)
 - Proposed (dashed yellow line)
 - Parks, Recreational Land & Open Space (light green)
 - King of Prussia Mixed Use Zoning (green outline)
 - Waterway (blue line)
- Historic Architectural Resources**
- | Previously Identified | Evaluated & Recommended |
|--------------------------|-------------------------|
| Listed/Eligible (purple) | Not Eligible (red) |
| Not Eligible (orange) | Eligible (blue) |
| Undetermined (cyan) | |
- Impact - Noise & Vibration**
- Moderate - Noise (green circle)
 - Severe - Noise (green star)
 - Impact - Vibration (blue circle)
- Hazmat Sites**
- Hazmat Site (red triangle)
 - NPL Site (red square)
 - TRI Site (red circle)

- Category 2 Category 3
- | Temporary | Permanent | Right-of-Way |
|-----------|------------|------------------|
| Blue box | Red box | Aerial Structure |
| Blue box | Yellow box | At-Grade |
| Blue box | Brown box | Retained Fill |
| Blue box | Grey box | Platform |
- Station Layout (grey rectangle)
- Study Area (dashed orange line)
- Potential TPSS Zone (yellow circle)
- Existing TPSS (green pentagon)



Date: 8/17/2017

N

0 200 400 800

Feet

1 inch = 400 feet

Source: PASDA, PennDOT, AECOM.

Alternative:
PECO-1st Ave.
Sheet: 4 of 5

Chester Valley Trail

Existing Proposed

Parks, Recreational Land & Open Space

King of Prussia Mixed Use Zoning

Waterway

Historic Architectural Resources

Previously Identified	Evaluated & Recommended
Listed/Eligible	Not Eligible
Not Eligible	Eligible
Undetermined	

Impact - Noise & Vibration Hazmat Sites

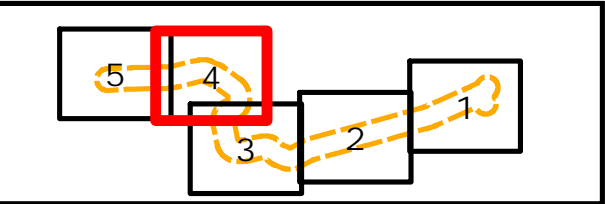
Moderate - Noise	Hazmat Site
Severe - Noise	NPL Site
Impact - Vibration	TRI Site

Category 2 Category 3

Temporary	Permanent	Right-of-Way
	Aerial Structure	
	At-Grade	
	Retained Fill	
	Platform	

Station Layout Study Area

Potential TPSS Zone Existing TPSS



Date: 8/17/2017

N

0 200 400 800

Feet

1 inch = 400 feet

Source: PASDA, PennDOT, AECOM.

AECOM





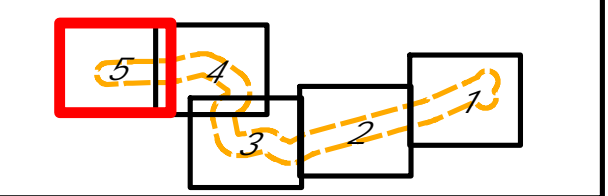
Alternative:
PECO-1st Ave.
Sheet: 5 of 5

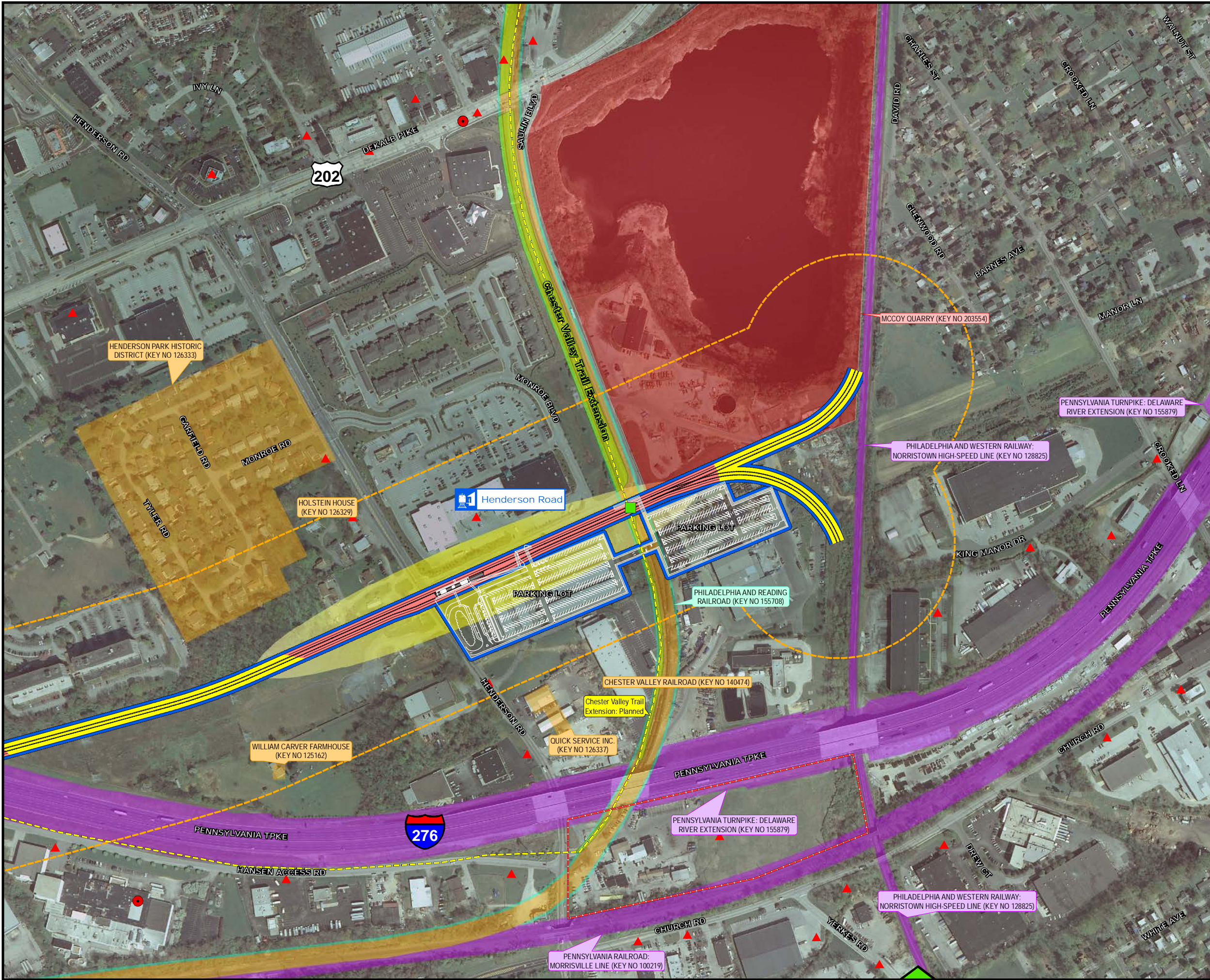
- Chester Valley Trail**
- Existing (solid yellow line)
 - Proposed (dashed yellow line)
 - Parks, Recreational Land & Open Space (light green)
 - King of Prussia Mixed Use Zoning (green outline)

- Historic Architectural Resources**
- | Previously Identified | Evaluated & Recommended |
|--------------------------|-------------------------|
| Listed/Eligible (purple) | Not Eligible (red) |
| Not Eligible (orange) | Eligible (blue) |
| Undetermined (cyan) | |

- Impact - Noise & Vibration Hazmat Sites**
- | Category 2 | Category 3 |
|----------------------------------|----------------------------|
| Moderate - Noise (green circle) | Hazmat Site (red triangle) |
| Severe - Noise (green star) | NPL Site (red square) |
| Impact - Vibration (blue circle) | TRI Site (red circle) |

- Station Layout**
- | Temporary | Permanent | Right-of-Way |
|----------------|------------------|------------------|
| Blue rectangle | Red rectangle | Aerial Structure |
| Blue rectangle | Yellow rectangle | At-Grade |
| Blue rectangle | Brown rectangle | Retained Fill |
| Blue rectangle | Grey rectangle | Platform |
- Study Area**
- Station Layout (grey outline)
 - Study Area (dashed orange line)
 - Potential TPSS Zone (yellow circle)
 - Existing TPSS (green outline)



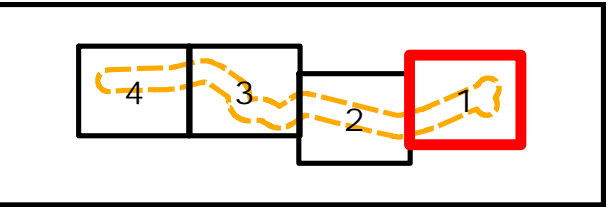


Recommended LPA:
PECO/TP-1st Ave.

Sheet: 1 of 4

- Chester Valley Trail**
- Existing
 - Proposed
 - Parks, Recreational Land & Open Space
 - King of Prussia Mixed Use Zoning
 - Waterway
- Historic Architectural Resources**
- | Previously Identified | Evaluated & Recommended |
|-----------------------|-------------------------|
| Listed/Eligible | Not Eligible |
| Not Eligible | Eligible |
| Undetermined | |
- Impact - Noise & Vibration**
- Moderate - Noise
 - Severe - Noise
 - Impact - Vibration
- Hazmat Sites**
- Hazmat Site
 - NPL Site
 - TRI Site

- Category 2 Category 3
- | Temporary | Permanent | Right-of-Way |
|-----------|------------------|--------------|
| | Aerial Structure | |
| | At-Grade | |
| | Retained Fill | |
| | Platform | |
- Station Layout Study Area Potential TPSS Zone Existing TPSS



Date: 8/17/2017

N

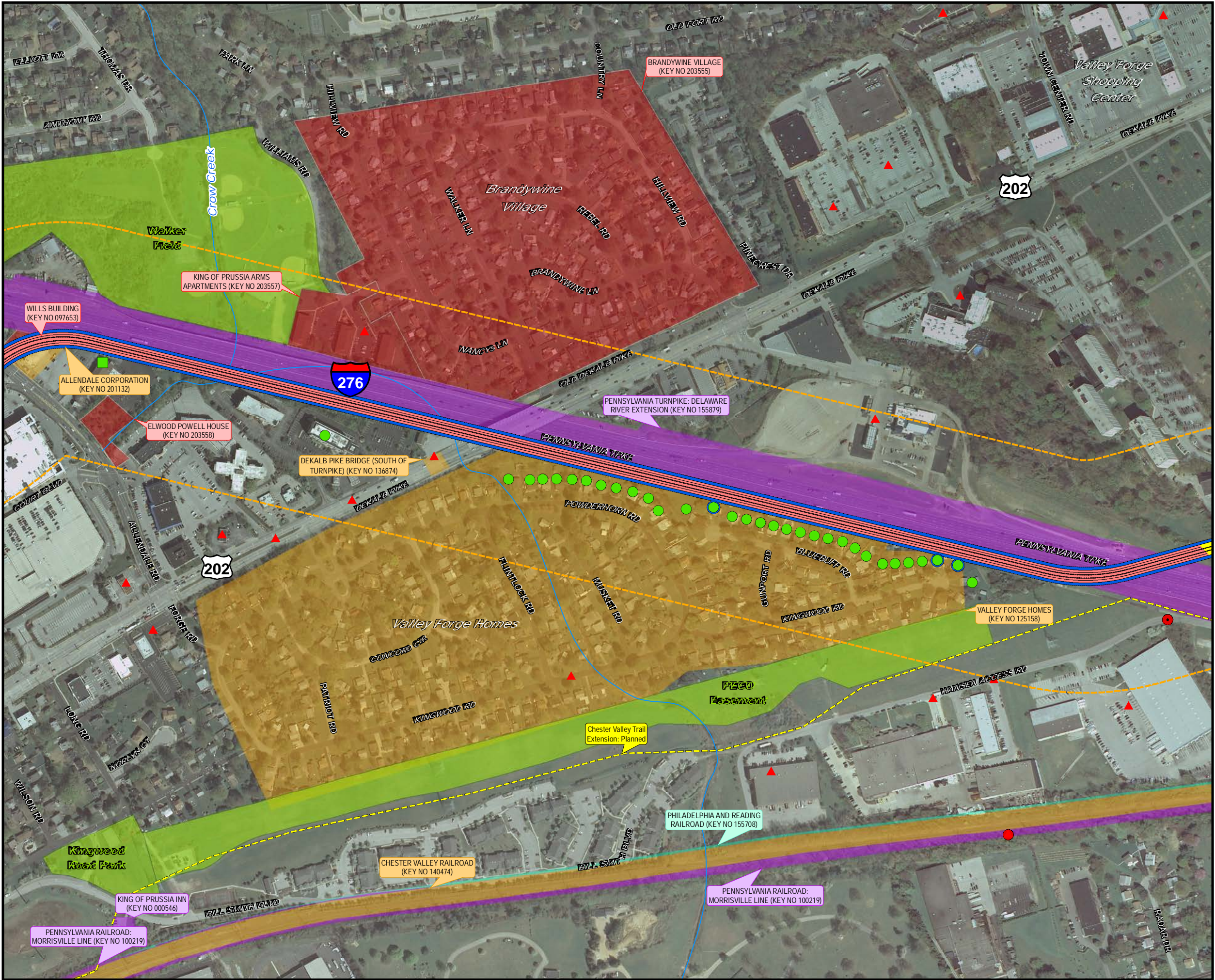
0 200 400 800

Feet

1 inch = 400 feet

Source: PASDA, PennDOT, AECOM.

AECOM



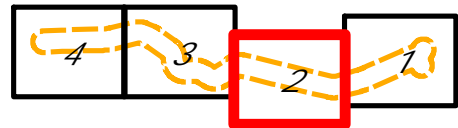
Recommended LPA:
PECO/TP-1st Ave.
Sheet: 2 of 4

- Chester Valley Trail**
- Existing (solid yellow line)
 - Proposed (dashed yellow line)
 - Parks, Recreational Land & Open Space (green fill)
 - King of Prussia Mixed Use Zoning (green outline)
 - Waterway (blue line)

- Historic Architectural Resources**
- | Previously Identified | Evaluated & Recommended |
|-------------------------------|-------------------------|
| Listed/Eligible (purple fill) | Not Eligible (red fill) |
| Not Eligible (orange fill) | Eligible (blue fill) |
| Undetermined (cyan fill) | |

- Impact - Noise & Vibration**
- Moderate - Noise (green circle)
 - Severe - Noise (green star)
 - Impact - Vibration (blue circle)
- Hazmat Sites**
- Hazmat Site (red triangle)
 - NPL Site (red square)
 - TRI Site (red circle)

- Station Layout**
- Temporary (blue fill)
 - Permanent (red fill)
 - Right-of-Way (yellow fill)
 - Aerial Structure (red fill)
 - At-Grade (yellow fill)
 - Retained Fill (brown fill)
 - Platform (grey fill)
- Study Area**
- Study Area (dashed orange line)
 - Potential TPSS Zone (yellow fill)
 - Existing TPSS (green triangle)



Date: 8/17/2017

N

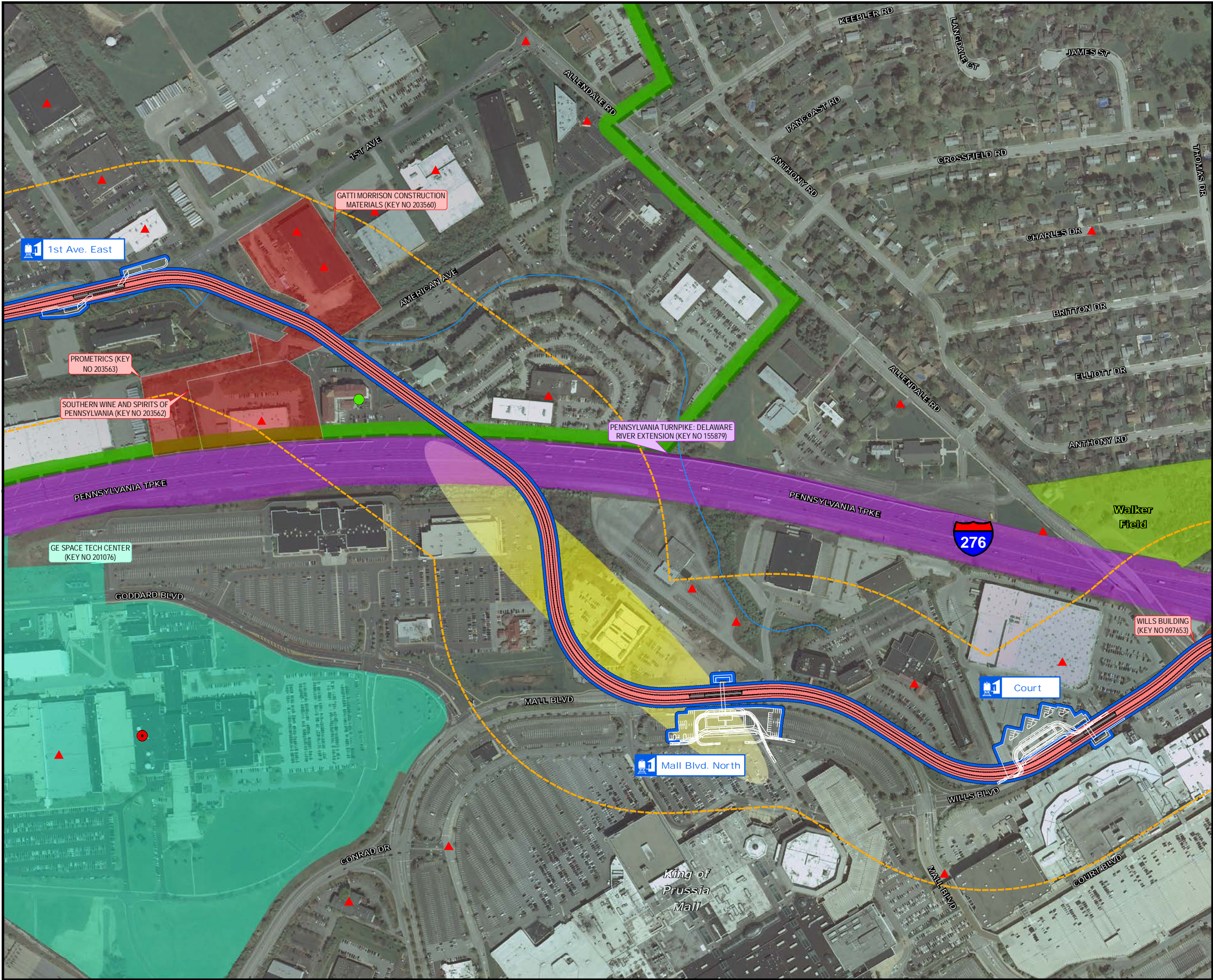
0 200 400 800

Feet

1 inch = 400 feet

Source: PASDA, PennDOT, AECOM.

AECOM



Recommended LPA:
PECO/TP-1st Ave.

Sheet: 3 of 4

Chester Valley Trail

- Existing (solid yellow line) Proposed (dashed yellow line)
- Parks, Recreational Land & Open Space (light green fill)
- King of Prussia Mixed Use Zoning (green outline)
- Waterway (blue line)

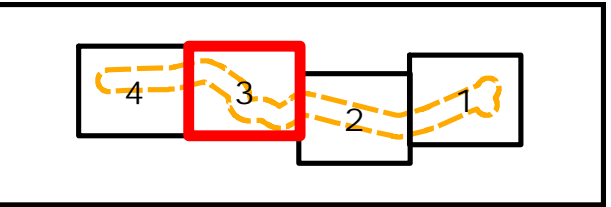
Historic Architectural Resources

Previously Identified	Evaluated & Recommended
Listed/Eligible (purple fill)	Not Eligible (red fill)
Not Eligible (orange fill)	Eligible (blue fill)
Undetermined (cyan fill)	

Impact - Noise & Vibration Hazmat Sites

- Moderate - Noise (green circle)
- Severe - Noise (green star)
- Impact - Vibration (blue circle)
- Hazmat Site (red triangle)
- NPL Site (red square)
- TRI Site (red circle)

Category 2	Category 3
Temporary (blue fill)	Permanent (red fill)
	Right-of-Way (yellow fill)
	Aerial Structure (red fill)
	At-Grade (yellow fill)
	Retained Fill (tan fill)
	Platform (grey fill)
Station Layout (grey outline)	Study Area (dashed orange line)
Potential TPSS Zone (yellow fill)	Existing TPSS (green triangle)



Date: 8/17/2017

N

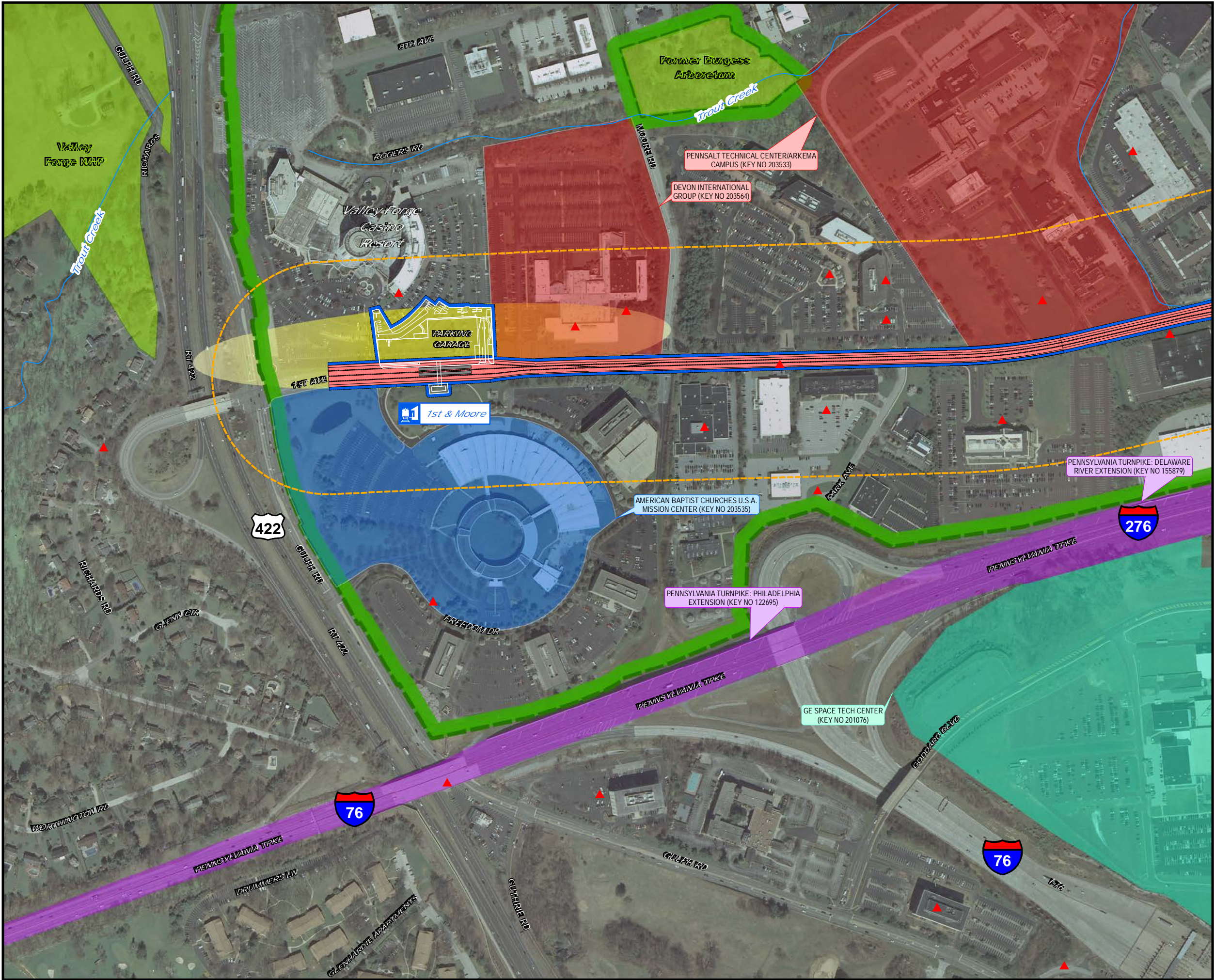
0 200 400 800

Feet

1 inch = 400 feet

Source: PASDA, PennDOT, AECOM.

AECOM



Recommended LPA:
PECO/TP-1st Ave.
Sheet: 4 of 4

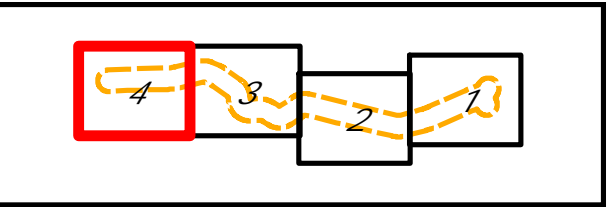
Chester Valley Trail
Existing Proposed
Parks, Recreational Land & Open Space
King of Prussia Mixed Use Zoning
Waterway

Historic Architectural Resources
Previously Identified Evaluated & Recommended
Listed/Eligible Not Eligible
Not Eligible Eligible
Undetermined

Impact - Noise & Vibration Hazmat Sites
Moderate - Noise Severe - Noise Impact - Vibration
Hazmat Site NPL Site TRI Site

Temporary	Permanent	Right-of-Way
	Aerial Structure	
	At-Grade	
	Retained Fill	
	Platform	

Station Layout	Study Area
Potential TPSS Zone	Existing TPSS





Alternative:
PECO/TP-N. Gulph
Sheet: 1 of 4

Chester Valley Trail

Existing Proposed

Parks, Recreational Land & Open Space

King of Prussia Mixed Use Zoning

Waterway

Historic Architectural Resources

Previously Identified	Evaluated & Recommended
Listed/Eligible	Not Eligible
Not Eligible	Eligible
Undetermined	

Impact - Noise & Vibration **Hazmat Sites**

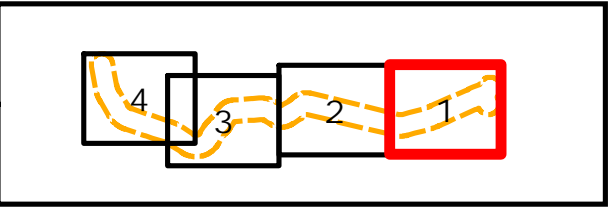
Moderate - Noise	Hazmat Site
Severe - Noise	NPL Site
Impact - Vibration	TRI Site

Category 2 Category 3

Temporary	Permanent	Right-of-Way
	Aerial Structure	
	At-Grade	
	Retained Fill	
	Platform	

Station Layout Study Area

Potential TPSS Zone Existing TPSS



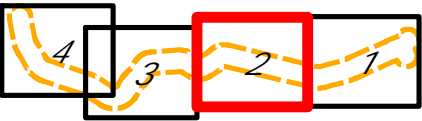
Alternative:
PECO/TP-N. Gulph
Sheet: 2 of 4

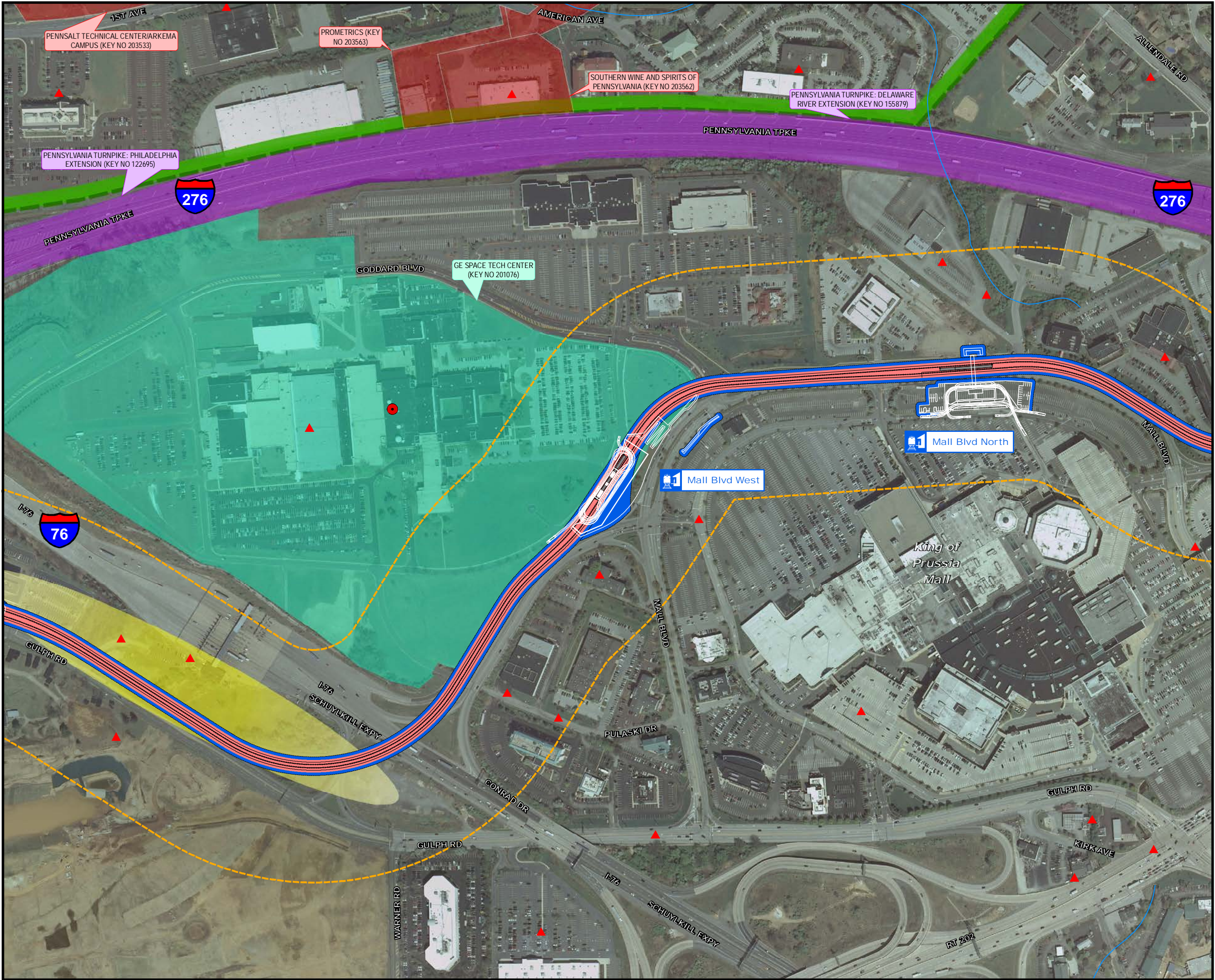
Chester Valley Trail
Existing Proposed
Parks, Recreational Land & Open Space
King of Prussia Mixed Use Zoning

Waterway
Historic Architectural Resources
Previously Identified **Evaluated & Recommended**
Listed/Eligible Not Eligible
Not Eligible Eligible
Undetermined

Impact - Noise & Vibration **Hazmat Sites**
Moderate - Noise Severe - Noise
Impact - Vibration
Hazmat Site
NPL Site
TRI Site

Category 2 Category 3
Temporary Permanent Right-of-Way
Aerial Structure
At-Grade
Retained Fill
Platform
Station Layout Study Area
Potential TPSS Zone Existing TPSS





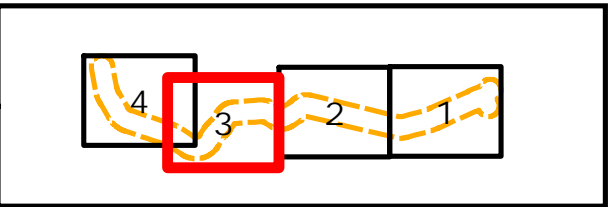
Alternative:
PECO/TP-N. Gulph
Sheet: 3 of 4

- Chester Valley Trail**
- Existing (solid yellow line)
 - Proposed (dashed yellow line)
 - Parks, Recreational Land & Open Space (green shading)
 - King of Prussia Mixed Use Zoning (green outline)

- Historic Architectural Resources**
- | Previously Identified | Evaluated & Recommended |
|--------------------------|-------------------------|
| Listed/Eligible (purple) | Not Eligible (red) |
| Not Eligible (orange) | Eligible (blue) |
| Undetermined (cyan) | |

- Impact - Noise & Vibration**
- Moderate - Noise (green circle)
 - Severe - Noise (green star)
 - Impact - Vibration (blue circle)
- Hazmat Sites**
- Hazmat Site (red triangle)
 - NPL Site (red square)
 - TRI Site (red circle)

- Station Layout**
- | Category | Category |
|-----------------------|------------------------|
| Temporary (blue) | Permanent (red) |
| Right-of-Way (yellow) | Aerial Structure (red) |
| | At-Grade (yellow) |
| | Retained Fill (tan) |
| | Platform (grey) |
- Other Features**
- Station Layout (grey outline)
 - Potential TPSS Zone (yellow shading)
 - Study Area (dashed orange line)
 - Existing TPSS (green outline)



Date: 8/17/2017

N

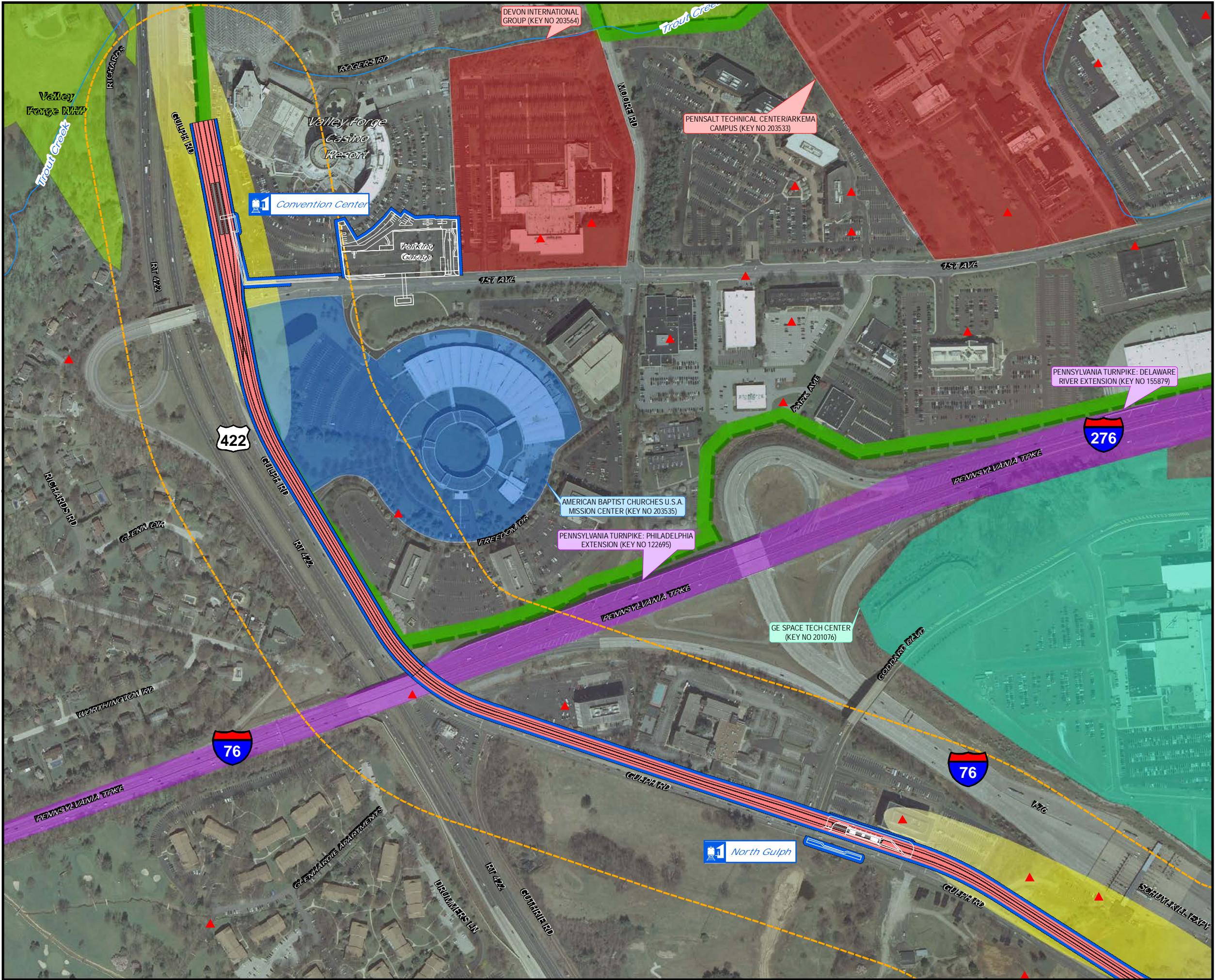
0 200 400 800

Feet

1 inch = 400 feet

Source: PASDA, PennDOT, AECOM.

AECOM



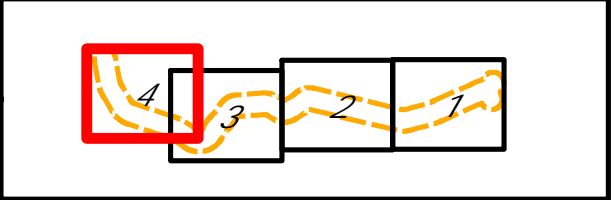
Alternative:
PECO/TP-N. Gulph
Sheet: 4 of 4

- Chester Valley Trail**
- Existing (Yellow line)
 - Proposed (Orange line)
 - Parks, Recreational Land & Open Space (Green)
 - King of Prussia Mixed Use Zoning (Blue)
 - Waterway (Blue line)

- Historic Architectural Resources**
- | Previously Identified | Evaluated & Recommended |
|--------------------------|-------------------------|
| Listed/Eligible (Purple) | Not Eligible (Red) |
| Not Eligible (Orange) | Eligible (Blue) |
| Undetermined (Cyan) | |

- Impact - Noise & Vibration**
- Moderate - Noise (Green circle)
 - Severe - Noise (Blue star)
 - Impact - Vibration (Blue circle)
- Hazmat Sites**
- Hazmat Site (Red triangle)
 - NPL Site (Red square)
 - TRI Site (Red circle)

- Station Layout**
- | Temporary | Permanent | Right-of-Way |
|----------------|------------------|------------------|
| Blue rectangle | Red rectangle | Aerial Structure |
| Blue rectangle | Yellow rectangle | At-Grade |
| Blue rectangle | Brown rectangle | Retained Fill |
| Blue rectangle | Grey rectangle | Platform |
- Other Features**
- Station Layout (Blue rectangle)
 - Potential TPSS Zone (Yellow circle)
 - Study Area (Orange dashed line)
 - Existing TPSS (Green line)





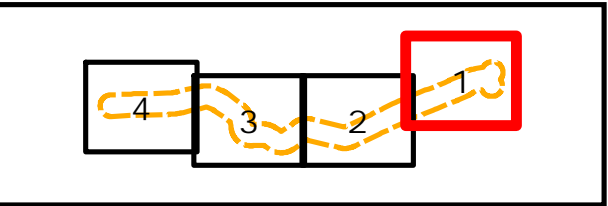
Alternative:
US 202-1st Ave.
Sheet: 1 of 4

- Chester Valley Trail**
- Existing (solid yellow line)
 - Proposed (dashed yellow line)
 - Parks, Recreational Land & Open Space (light green)
 - King of Prussia Mixed Use Zoning (green outline)

- Waterway (blue line)
- Historic Architectural Resources**
- | Previously Identified | Evaluated & Recommended |
|--------------------------|-------------------------|
| Listed/Eligible (purple) | Not Eligible (red) |
| Not Eligible (orange) | Eligible (blue) |
| Undetermined (cyan) | |

- Impact - Noise & Vibration**
- Moderate - Noise (green circle)
 - Severe - Noise (green star)
 - Impact - Vibration (blue circle)
- Hazmat Sites**
- Hazmat Site (red triangle)
 - NPL Site (red square)
 - TRI Site (red circle)

- Category 2 Category 3
- | Temporary | Permanent | Right-of-Way |
|------------|----------------------------------|--------------|
| Blue box | Aerial Structure (pink) | |
| Blue box | At-Grade (yellow) | |
| Blue box | Retained Fill (tan) | |
| Blue box | Platform (grey) | |
| Grey box | Station Layout (blue outline) | |
| Yellow box | Potential TPSS Zone (yellow) | |
| | Study Area (dashed orange line) | |
| | Existing TPSS (green house icon) | |



Date: 8/17/2017

N

0 200 400 800

Feet

1 inch = 400 feet

Source: PASDA, PennDOT, AECOM.

Chester Valley Trail
Existing
Proposed
Parks, Recreational Land & Open Space
King of Prussia Mixed Use Zoning
Waterway

Historic Architectural Resources

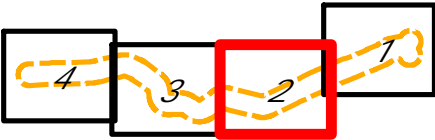
Previously Identified	Evaluated & Recommended
Listed/Eligible	Not Eligible
Not Eligible	Eligible
Undetermined	

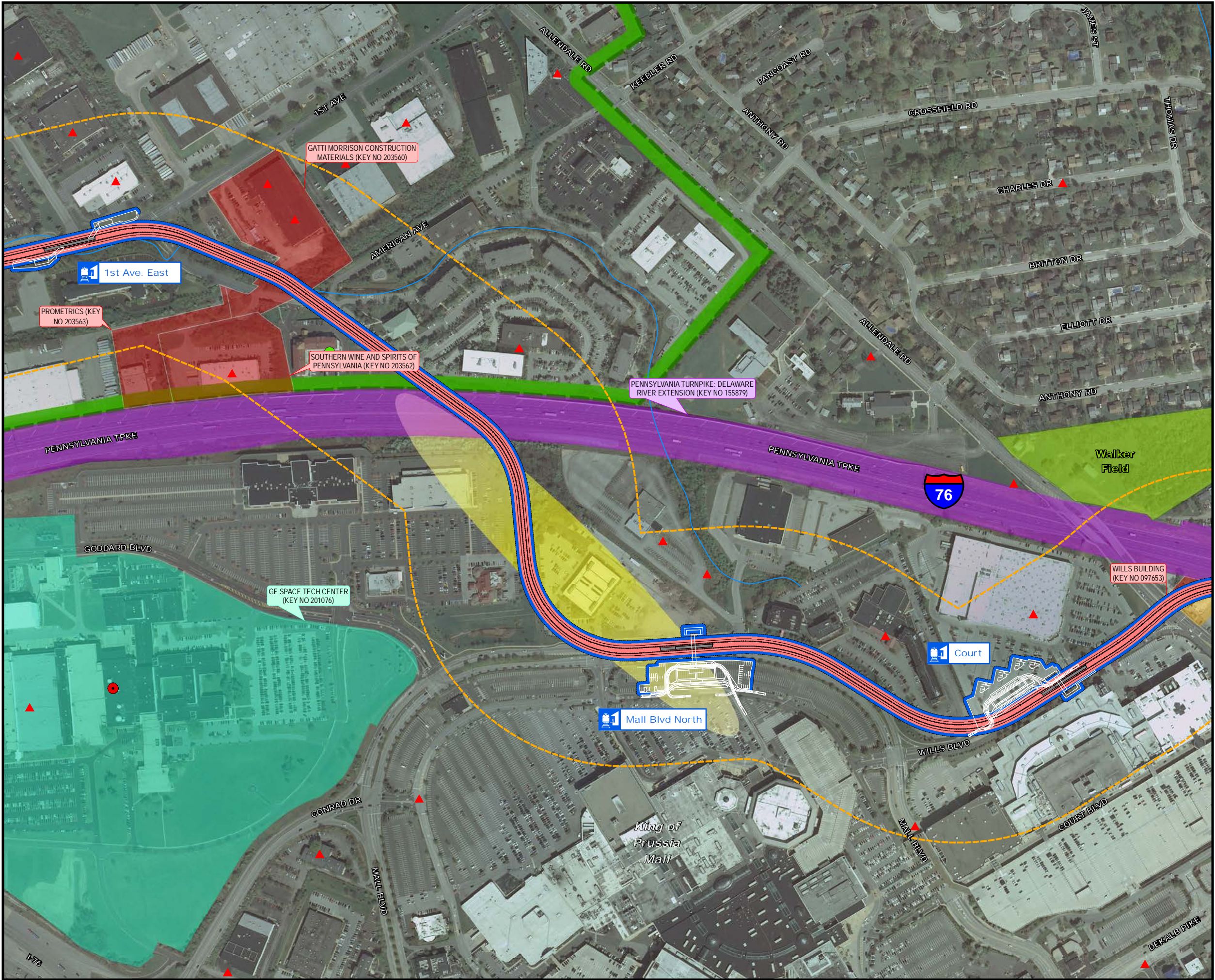
Impact - Noise & Vibration
Moderate - Noise
Severe - Noise
Impact - Vibration

Hazmat Sites
Hazmat Site
NPL Site
TRI Site

Temporary	Permanent	Right-of-Way
	Aerial Structure	
	At-Grade	
	Retained Fill	
	Platform	

Station Layout
Study Area
Potential TPSS Zone
Existing TPSS





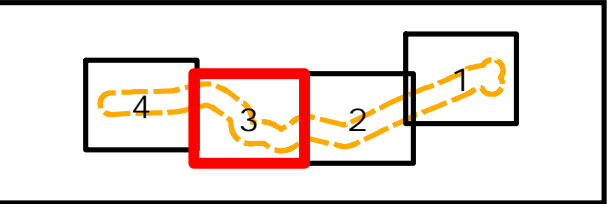
Alternative:
US 202-1st Ave.
Sheet: 3 of 4

- Chester Valley Trail**
- Existing (solid yellow line)
 - Proposed (dashed yellow line)
 - Parks, Recreational Land & Open Space (light green fill)
 - King of Prussia Mixed Use Zoning (green outline)
 - Waterway (blue line)

- Historic Architectural Resources**
- | Previously Identified | Evaluated & Recommended |
|-------------------------------|-------------------------|
| Listed/Eligible (purple fill) | Not Eligible (red fill) |
| Not Eligible (orange fill) | Eligible (blue fill) |
| Undetermined (cyan fill) | |

- Impact - Noise & Vibration Hazmat Sites**
- Moderate - Noise (green circle)
 - Severe - Noise (green star)
 - Impact - Vibration (blue circle)
 - Hazmat Site (red triangle)
 - NPL Site (red square)
 - TRI Site (red circle)

- | Temporary | Permanent | Right-of-Way |
|-----------|-------------|------------------|
| Blue fill | Red fill | Aerial Structure |
| Blue fill | Yellow fill | At-Grade |
| Blue fill | Brown fill | Retained Fill |
| Blue fill | Grey fill | Platform |
- Station Layout (grey outline)
- Study Area (dashed orange line)
- Potential TPSS Zone (yellow fill)
- Existing TPSS (green outline)



Date: 8/17/2017

N

0 200 400 800

Feet

1 inch = 400 feet

Source: PASDA, PennDOT, AECOM.

Chester Valley Trail

Existing Proposed

Parks, Recreational Land & Open Space

King of Prussia Mixed Use Zoning

Waterway

Historic Architectural Resources

Previously Identified	Evaluated & Recommended
Listed/Eligible	Not Eligible
Not Eligible	Eligible
Undetermined	

Impact - Noise & Vibration Hazmat Sites

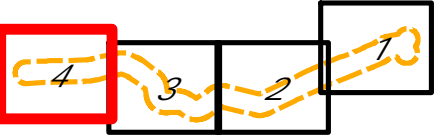
Moderate - Noise	Hazmat Site
Severe - Noise	NPL Site
Impact - Vibration	TRI Site

Category 2 Category 3

Temporary	Permanent	Right-of-Way
	Aerial Structure	
	At-Grade	
	Retained Fill	
	Platform	

Station Layout Study Area

Potential TPSS Zone Existing TPSS





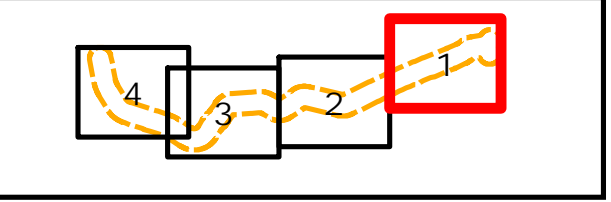
Alternative:
US 202-N. Gulph
Sheet: 1 of 4

- Chester Valley Trail**
- Existing
 - Proposed
 - Parks, Recreational Land & Open Space
 - King of Prussia Mixed Use Zoning
 - Waterway

- Historic Architectural Resources**
- | Previously Identified | Evaluated & Recommended |
|-----------------------|-------------------------|
| Listed/Eligible | Not Eligible |
| Not Eligible | Eligible |
| Undetermined | |

- Impact - Noise & Vibration**
- Moderate - Noise
 - Severe - Noise
 - Impact - Vibration
- Hazmat Sites**
- Hazmat Site
 - NPL Site
 - TRI Site

- | Temporary | Permanent | Right-of-Way |
|---------------------|------------------|---------------|
| | Aerial Structure | |
| | At-Grade | |
| | Retained Fill | |
| | Platform | |
| Station Layout | | Study Area |
| Potential TPSS Zone | | Existing TPSS |



Date: 8/17/2017

N

0 200 400 800

Feet

1 inch = 400 feet

Source: PASDA, PennDOT, AECOM.

AECOM



Alternative:
US 202-N. Gulph
Sheet: 2 of 4

Chester Valley Trail

Existing Proposed

Parks, Recreational Land & Open Space

King of Prussia Mixed Use Zoning

Waterway

Historic Architectural Resources

Previously Identified	Evaluated & Recommended
Listed/Eligible	Not Eligible
Not Eligible	Eligible
Undetermined	

Impact - Noise & Vibration Hazmat Sites

Moderate - Noise	Hazmat Site
Severe - Noise	NPL Site
Impact - Vibration	TRI Site

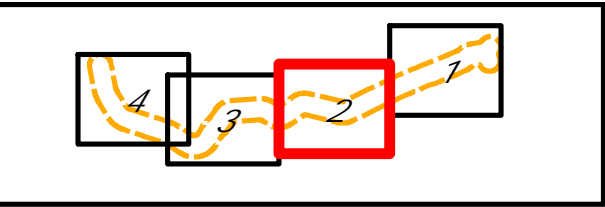
Category 2 Category 3

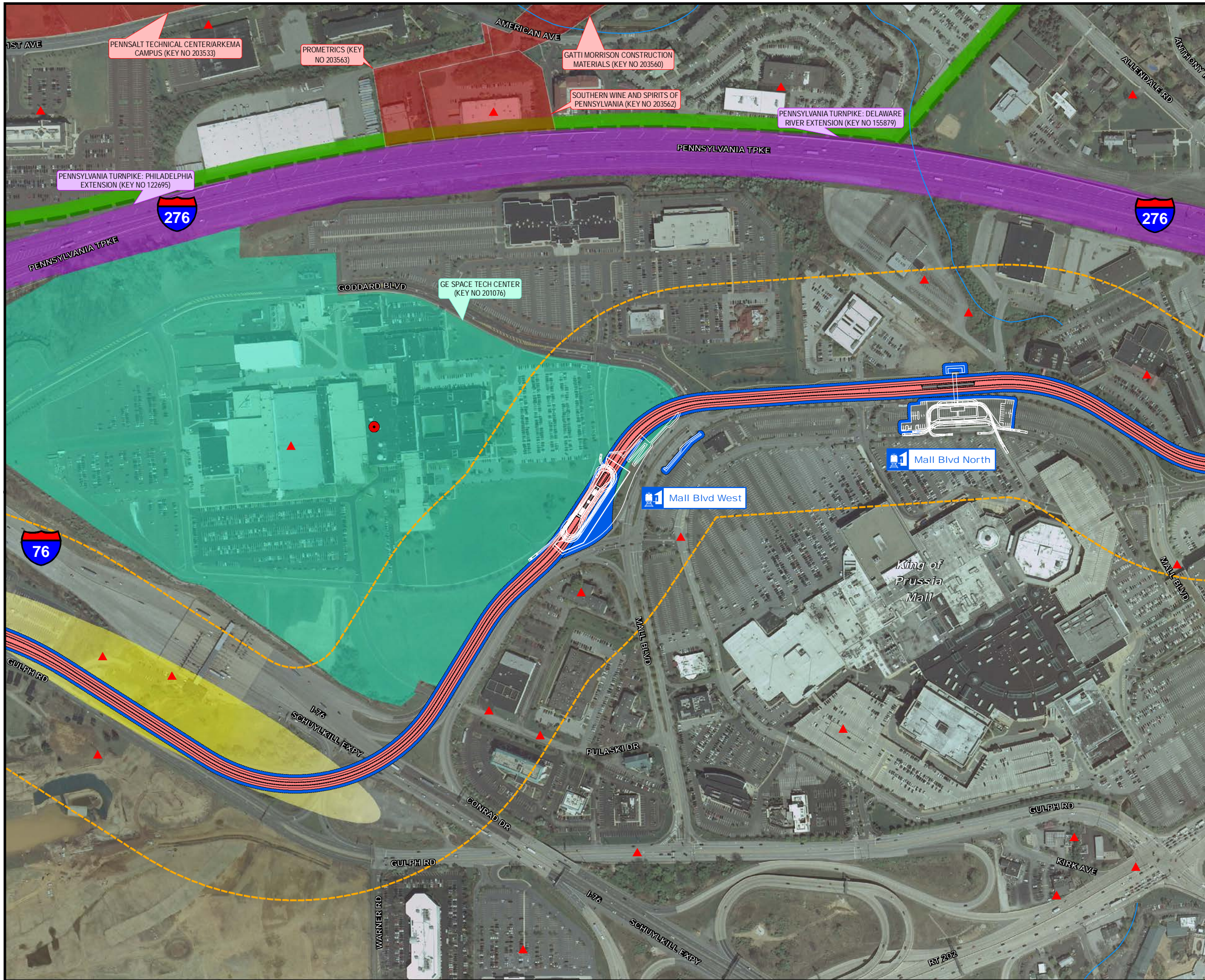
Temporary Permanent Right-of-Way

	Aerial Structure
	At-Grade
	Retained Fill
	Platform

Station Layout Study Area

Potential TPSS Zone Existing TPSS





Alternative:
US 202-N. Gulph
Sheet: 3 of 4

Chester Valley Trail

Existing Proposed
Parks, Recreational Land & Open Space

King of Prussia Mixed Use Zoning

Waterway

Historic Architectural Resources

Previously Identified

Listed/Eligible

Not Eligible

Undetermined

Evaluated & Recommended

Not Eligible

Eligible

Impact - Noise & Vibration Hazmat Sites

Moderate - Noise Hazmat Site

Severe - Noise NPL Site

Impact - Vibration TRI Site

Category 2 Category 3

Temporary Permanent Right-of-Way

Aerial Structure

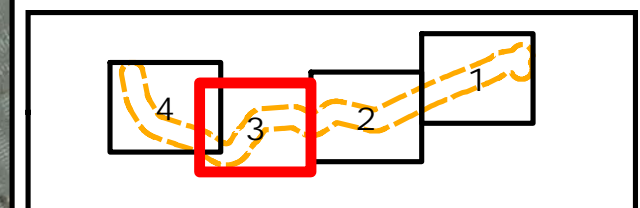
At-Grade

Retained Fill

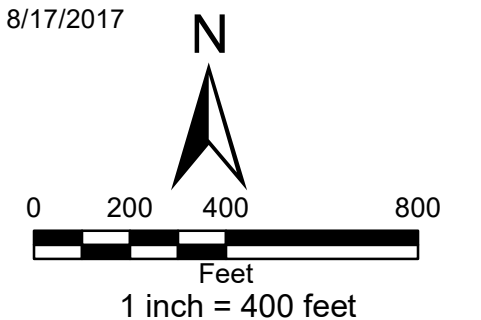
Platform

Station Layout Study Area

Potential TPSS Zone Existing TPSS



Date: 8/17/2017



Source: PASDA, PennDOT, AECOM.

AECOM



Alternative:
US 202-N. Gulph
Sheet: 4 of 4

Chester Valley Trail
Existing Proposed
Parks, Recreational Land & Open Space
King of Prussia Mixed Use Zoning
Waterway

Historic Architectural Resources

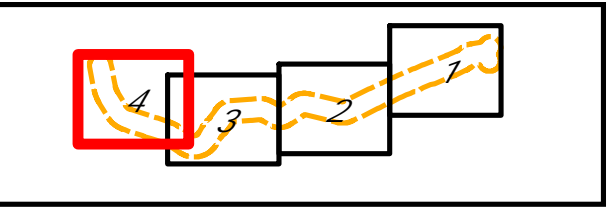
Previously Identified	Evaluated & Recommended
Listed/Eligible	Not Eligible
Not Eligible	Eligible
Undetermined	

Impact - Noise & Vibration
Moderate - Noise
Severe - Noise
Impact - Vibration

Hazmat Sites
Hazmat Site
NPL Site
TRI Site

Temporary	Permanent	Right-of-Way
	Aerial Structure	
	At-Grade	
	Retained Fill	
	Platform	

Station Layout	Study Area
Potential TPSS Zone	Existing TPSS



***A*ppendix B Agency Correspondence**

- FTA Notice of Intent, June 27, 2013
- Upper Merion Township Resolution of Support
- Montgomery County Commissioners Scoping Letter, August 13, 2013
- USEPA Scoping Letter, August 14, 2013
- NPS Scoping Letter, August 13, 2013
- PA Turnpike Commission Scoping Letter, August 12, 2013
- PNDI Search Results, May 26, 2015

Form Numbers: SF-269, SF-270, SF-272, SF-424, SF-3881, FAA Form 9550-5.

Type of Review: Renewal of an information collection.

Background: This program implements OMB Circular A-110, Public Law 101-508, Section 9205 and 9208 and Public Law 101-604, Section 107(d). Information is required from grantees for the purpose of grant administration and review in accordance with applicable OMB circulars. The information is collected through a solicitation that has been published by the FAA. Prospective grantees respond to the solicitation using a proposal format outlined in the solicitation in adherence to applicable FAA directives, statutes, and OMB circulars.

Respondents: Approximately 100 grantees.

Frequency: Information is collected on occasion.

Estimated Average Burden per Response: 6.5 hours.

Estimated Total Annual Burden: 650 hours.

ADDRESSES: Send comments to the FAA at the following address: Ms. Kathy DePaepe, Room 126B, Federal Aviation Administration, AES-200, 6500 S. MacArthur Blvd., Oklahoma City, OK 73169.

Public Comments Invited: You are asked to comment on any aspect of this information collection, including (a) Whether the proposed collection of information is necessary for FAA's performance; (b) the accuracy of the estimated burden; (c) ways for FAA to enhance the quality, utility and clarity of the information collection; and (d) ways that the burden could be minimized without reducing the quality of the collected information. The agency will summarize and/or include your comments in the request for OMB's clearance of this information collection.

Issued in Washington, DC on June 20, 2013.

Albert R. Spence,

FAA Assistant Information Collection Clearance Officer, IT Enterprises Business Services Division, AES-200.

[FR Doc. 2013-15323 Filed 6-26-13; 8:45 am]

BILLING CODE 4910-13-P

DEPARTMENT OF TRANSPORTATION

Federal Transit Administration

Intent To Prepare an Environmental Impact Statement for Increased Transit Service to King of Prussia, PA

AGENCY: Federal Transit Administration (FTA), DOT.

ACTION: Notice of Intent (NOI) to prepare an Environmental Impact Statement and Section 4(f) Evaluation.

SUMMARY: The FTA and the Southeastern Pennsylvania Transportation Authority (SEPTA) are planning to prepare an Environmental Impact Statement (EIS) and Section 4(f) Evaluation for increased transit service to King of Prussia, PA. The EIS will be prepared in accordance with regulations implementing the National Environmental Policy Act (NEPA), as well as FTA's regulations and guidance for implementing NEPA (40 CFR 1501.2 through 8 and 23 CFR 771.111). FTA is issuing this notice to solicit public and agency input regarding the scope of the EIS and to advise the public and agencies that outreach activities conducted by SEPTA and its representatives will be considered in the preparation of the EIS. SEPTA is undertaking this Draft EIS under current FTA regulations and guidance. SEPTA has indicated that it intends to seek FTA New Starts funding.

DATES: An Agency Scoping Meeting will be held on Tuesday, July 16, 2013 at 10:00 a.m., at the Radisson Hotel at the Valley Forge Casino Resort, South Ballroom, 1160 First Avenue, King of Prussia, PA, 19406. Persons should enter the hotel entrance to reach the South Ballroom. Representatives from federal, state, regional, tribal, and local agencies that may have an interest in the project will be invited to serve as either participating or cooperating agencies. A Public Scoping Meeting will be held on Tuesday, July 16, 2013 from 4:00 to 8:00 p.m. at the Radisson Hotel at the Valley Forge Casino Resort, 1160 First Avenue, King of Prussia, PA, 19406. Persons should enter the hotel entrance to reach the South Ballroom. An informational presentation explaining the proposed project will be held at 6:00 p.m. All persons are invited to provide oral comments on the scope of the EIS throughout the Scoping Meeting. Individuals wishing to speak are required to register as they sign in. Anyone needing special assistance should contact Mr. John Mullen, Outreach Coordinator at (215) 592-4200 or via email at info@kingofprussiarail.com, in advance

of the meeting. Spanish and sign language interpreters will be available at the Public Scoping Meeting.

Written comments on the scope of the EIS, including the project's purpose and need, the alternatives to be considered, and the impacts to be evaluated should be sent on or before August 14, 2013 via mail, fax or email to: Mr. Sheldon Fialkoff, Project Manager, AECOM, 1700 Market Street, Suite 1600, Philadelphia, PA 19103, 215-735-0883 (fax), Shelly.Fialkoff@aecom.com.

Written comments regarding the scope of the EIS can also be made via the project's Web site at www.kingofprussiarail.com on or before August 14, 2013.

FOR FURTHER INFORMATION CONTACT: Mr. Tony Cho, Community Planner, Federal Transit Administration, 1760 Market Street, Suite 500, Philadelphia, PA 19103, (215) 656-7250; or Mr. Byron Comati, Project Director, SEPTA, 1234 Market Street, 9th Floor, Philadelphia, PA 19107, (215) 580-3781. Additional project information and scoping materials will be available at the meetings and on the project Web site (<http://www.kingofprussiarail.com>).

SUPPLEMENTARY INFORMATION:

Scoping

FTA and SEPTA will undertake a scoping process that will allow the public and interested agencies to comment on the scope of the environmental review process. Scoping is the process of determining the scope, focus, and content of an EIS. NEPA scoping has specific objectives, identifying the significant issues that will be examined in detail during the EIS, while simultaneously limiting consideration and development of issues that are not truly significant. FTA and SEPTA invite all interested individuals and organizations, public agencies, and Native American tribes to comment on the scope of the Draft EIS. To facilitate public and agency comment, a Draft Scoping Document will be prepared for review and will be available at the meeting. Included in this document will be draft descriptions of the purpose and need for the project; the alternatives proposed; the impacts to be assessed; early alternatives that are currently not being considered; and the public outreach and agency coordination process.

Description of Study Area and Proposed Project

The Norristown High Speed Line (NHSL) currently provides passenger rail service between the 69th Street Transportation Center (in Upper Darby)

and the Norristown Transportation Center (in the Municipality of Norristown), serving the Main Line area in Delaware and Montgomery Counties, Pennsylvania. At the 69th Street Transportation Center, connections can be made to Center City Philadelphia via SEPTA's Market-Frankford Line, SEPTA's Route 101 and 102 Trolleys, and 18 SEPTA bus routes. Besides service to Norristown, Upper Darby and on to Philadelphia, the NHSL serves a number of important origins and destinations along its line such as Haverford College, Bryn Mawr College, Villanova University, Eastern University, Cabrini College, Rosemont College, as well as Bryn Mawr Hospital.

Even though the NHSL passes through Upper Merion Township, which includes the King of Prussia area, the rail line runs about two to three miles east of many major activity centers in the area, including the King of Prussia Mall. Reaching the King of Prussia area from the NHSL currently requires a transfer to bus service. Six SEPTA bus routes serve the area and ridership has been increasing over the past several years. The area is at the confluence of several major highways; the Pennsylvania Turnpike, I-76 (Schuylkill Expressway), Route 422, and Route 202. These highways suffer from growing congestion and delays; bus travel on these roadways is subject to the same congestion and delays.

In addition to the King of Prussia Mall, the study area encompasses other major destinations that are focal points of employment density, residential density, and/or trip attractions. The study area is bounded roughly by the Schuylkill River, Route 422, I-76 (Schuylkill Expressway) and the existing NHSL. The study area has a large amount of commercial activity, including business, hotel and light industrial warehouse uses and is home to employers such as Lockheed Martin, GSI and Arkema. Additionally, the study area contains the Valley Forge Convention Center and Casino Resort and Valley Forge National Historical Park, which are regional destinations.

Project Background

The concept of providing improved transit access to the King of Prussia and Valley Forge areas dates back many years. A deficiency in rail transit services to the study area has been identified in various forms for more than 20 years in regional transportation studies and in Upper Merion Township's adopted Land Use Plan. In 2003, SEPTA completed the Route 100 Extension Draft Alternatives Analysis (AA). This study, conducted in

accordance with FTA guidelines, identified a full range of alternatives, screened alternatives and evaluated the feasibility and costs of alternatives to extend the NHSL to the study area. The study identified and evaluated four different alignments between the NHSL and the King of Prussia Mall, and it identified a feasible alignment beyond the mall. The study was coordinated with other studies then occurring for SEPTA's proposed Cross-County Metro and Schuylkill Valley Metro services. Copies of these previous studies are available at SEPTA, 1234 Market Street, 9th Floor, Philadelphia, PA 19107, (215) 580-7919 or (215) 580-3781.

Purpose of and Need for the Proposed Project

The purpose of the proposed project is to provide a faster, more reliable public transit service that offers improved transit connections to the King of Prussia/Valley Forge area from communities along the existing Norristown High Speed Line, Norristown and Philadelphia; improve connectivity between major destinations within the King of Prussia/Valley Forge area; better serve existing transit riders; and accommodate new transit patrons. The project need stems from deficiencies of current transit services in terms of long travel times, delays due to roadway congestion, required transfers leading to two or more seat trips, and destinations underserved, or currently not served, by public transit. These needs are strengthened by growing travel demands in the King of Prussia and Valley Forge areas generated by existing and future economic development opportunities.

Proposed Alternatives

The Draft EIS will evaluate various alternative transit alignments to make the connection between the NHSL and destinations in King of Prussia. The preliminary list of alternatives to be considered in the Draft EIS will include the following No Build Alternative and various Build Alternatives:

- *No Build Alternative:* Represents future conditions in the EIS analysis year of 2040 without the proposed project. The No Build Alternative includes the existing transit and transportation system in the region plus all projects in the region's fiscally constrained long range transportation plan. The No Build Alternative is included in the Draft EIS as a means of comparing and evaluating the impacts and benefits of the Build Alternatives.
- *Build Alternatives:* The Build Alternatives are based on an initial feasibility analysis. Build Alternatives

will include alternative transit alignments, station locations, and design configurations that could meet the project's purpose and need. The range of Build Alternatives will include those reasonable alternatives uncovered during public scoping and are to be the outcome of a tiered screening and alternatives definition process that will primarily use existing transportation or utility rights of way. These rights of way include elevated rail service along a PECO energy alignment, alignments along Route 202 and Interstate 276, as well as alignments along inactive freight rail tracks and other public streets north of the King of Prussia Mall. The full range of alternatives will be subjected to this tiered screening and alternatives definition process in order to arrive at the subset of the most reasonable Build Alternatives that will undergo detailed study and evaluation within the DEIS.

- No bus alternatives on existing travel lanes will be studied in the DEIS because SEPTA already provides 6 different bus routes to the King of Prussia/Valley Forge areas, including express bus service from Center City Philadelphia. Given the study area's extensive road congestion, additional bus service is not a feasible alternative. Bus riders are subject to the same congestion delays as motorists, as buses share the roadway travel lanes. In particular, increased or improved bus service is not feasible on I-76, the primary highway corridor from Center City Philadelphia, because of high levels of congestion and limitations of the terrain do not allow for additional lane capacity. For example, two of the current SEPTA bus routes, which run the longest distance on I-76, have the lowest cumulative on-time performance in the entire SEPTA bus system.

Probable Effects

FTA and SEPTA will evaluate project-specific direct, indirect, and cumulative effects to the existing physical, social, economic, and environmental setting in which the Build Alternatives could be located. The permanent, long-term effects to the region could include effects to traffic and transportation, land use and socio-economics, visual character and aesthetics, noise and vibration, historical and archaeological resources, community impacts, and natural resources. Temporary impacts during construction of the project could include effects to transportation patterns, air quality, noise and vibration, natural resources, and contaminated and hazardous materials. The analysis will be undertaken in conformity with all Federal environmental laws, regulations, and

executive orders applicable to the proposed project during the environmental review process to the maximum extent practicable. These requirements include, but are not limited to NEPA, Council on Environmental Quality regulations, FTA guidance and relevant environmental guidelines, Section 106 of the National Historic Preservation Act, Section 4(f) of the Department of Transportation Act, Executive Order 12898 regarding minority and low-income populations, Executive Order 11990 regarding the protection of wetlands, the Clean Water Act, the Endangered Species Act of 1973, and the Clean Air Act of 1970, along with other applicable Federal and State regulations. Opportunities for comment on the potential effects will be provided to the public and agencies, and comments received will be considered in the development of the final scope and content of the EIS.

Public and Agency Involvement Procedures

The regulations implementing NEPA and FTA guidance call for public involvement in the EIS process. In accordance with these regulations and guidance, FTA/SEPTA will:

(1) Extend an invitation to other Federal and non-Federal agencies and Native American Tribes that may have an interest in the proposed project to become participating agencies (any interested agency that does not receive an invitation can notify any of the contact persons listed earlier in this NOI);

(2) Provide opportunity for involvement by participating agencies and the public to help define the purpose and need for the proposed project, as well as the range of alternatives for consideration in the EIS; and

(3) Establish a plan for coordinating public and agency participation in, and comment on, the environmental review process.

Input on a Public Involvement Plan and Agency Coordination Plan will be solicited at the scoping meeting and on the Web site. The documents will outline public and agency involvement for the project. Once completed, these documents will be available on the project Web site or through written request.

The Paperwork Reduction Act

The Paperwork Reduction Act seeks, in part, to minimize the cost to the taxpayer of the creation, collection, maintenance, use, dissemination, and disposition of information. Consistent with this goal and with principles of

economy and efficiency in government, it is FTA policy to limit, insofar as possible, distribution of complete printed sets of NEPA documents. Accordingly, unless a specific request for a complete printed set of the NEPA document is received before the document is printed, FTA and its grant applicants will distribute only electronic copies of the NEPA document. A complete printed set of the environmental document will be available for review at the grant applicant's offices and elsewhere; an electronic copy of the complete environmental document will be available on the grant applicant's project Web site, <http://www.kingofprussiarail.com>.

Summary/Next Steps

With the publication of this NOI, the scoping process and the public comment period for the project begins, allowing the public to offer input on the scope of the EIS until August 14, 2013. Public comments will be received through those methods explained earlier in this NOI and will be incorporated into a Final Scoping Document. This document will detail the scope of the EIS and the potential environmental effects that will be considered during the study period. After the completion of the Draft EIS, another public comment period will allow for input on the Draft EIS, and these comments will be incorporated into the Final EIS report prior to publication.

Issued on: June 21, 2013.

Reginald B. Lovelace,

Deputy Regional Administrator, FTA Region 3.

[FR Doc. 2013-15411 Filed 6-26-13; 8:45 am]

BILLING CODE P

DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. DOT-NHTSA-2013-0028]

Request for Comments on a New Information Collection

ACTION: Notice and request for comments.

SUMMARY: In compliance with the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*), this notice announces that the Information Collection Request (ICR) abstracted below is being forwarded to the Office of Management and Budget (OMB) for review and comments. A **Federal Register** Notice with a 60-day comment period soliciting comments on the

following information collection was published on April 9, 2013 (78 FR 21189).

DATES: Comments must be submitted on or before July 29, 2013.

FOR FURTHER INFORMATION CONTACT: Mr. Patrick Hallan, (202) 366-9146, NHTSA, U.S. Department of Transportation, 1200 New Jersey Avenue SE., Washington, DC 20590.

SUPPLEMENTARY INFORMATION:

Title: 49 CFR 571.116, Motor Vehicle Brake Fluids.

OMB Control Number: 2127-0521.

Type of Request: New Information Collection.

Abstract: Federal Motor Vehicle Safety Standard No. 116, *Motor Vehicle Brake Fluids*, specifies performance and design requirements for motor vehicle brake fluids and hydraulic system mineral oils. Section 5.2.2 of the standard specifies labeling requirements for manufacturers and packagers of brake fluids as well as packagers of hydraulic system mineral oils. The label on a container of motor vehicle brake fluid or hydraulic system mineral oil is permanently attached, clearly states the contents of the container, and includes a DOT symbol indicating that the contents of the container meet the requirements of FMVSS No. 116. The label is necessary to help ensure that these fluids are used for their intended purpose only and the containers are properly disposed of when empty. Improper use, storage, or disposal of these fluids could represent a significant safety hazard for the operators of vehicles or equipment in which they are used and for the environment.

Affected Public: Business or other for profit organizations.

Number of Respondents: 200.

Number of Responses: 70,000,000.

Total Annual Burden Hours: 7,000.

Frequency of Collection: N/A.

ADDRESSES: Send comments regarding the burden estimate, including suggestions for reducing the burden, to the Office of Management and Budget, Attention: Desk Officer for the Office of the Secretary of Transportation, 725 17th Street NW., Washington, DC 20503, Attention NHTSA Desk Officer or to the Docket Management System, Docket Number NHTSA-2013-0028 at <http://www.regulations.gov/>.

Comments are invited on: Whether the proposed collection of information is necessary for the proper performance of the functions of the Department, including whether the information will have practical utility; the accuracy of the Department's estimate of the burden of the proposed information collection; ways to enhance the quality, utility and

RESOLUTION 2011-03

WHEREAS the SEPTA Norristown High-Speed Line Extension is consistent with the core principles of promoting community vitality and economic prosperity included in Upper Merion Township's Mission Statement.

WHEREAS the "Transportation Alternatives" portion of Upper Merion Township's *Vision 2020 Plan* calls on the township to "explore different modes, including new technologies, to focus on moving people and goods rather than just vehicles for optimum transportation effectiveness".

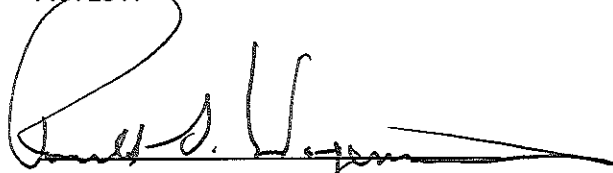
WHEREAS the SEPTA Norristown High-Speed Line Extension will improve the quality of life for residents of Upper Merion Township by reducing traffic congestion and improving access to the King of Prussia Mall, King of Prussia Business Park, Villanova University, Bryn Mawr, Ardmore, and the 69th Street Terminal.

WHEREAS a direct transit connection to the King of Prussia Mall and King of Prussia Business Park will greatly benefit the residents of the Greater Philadelphia region by improving access to employment opportunities and commercial centers, in addition to reducing traffic congestion.

WHEREAS the American Public Transportation Association has documented that for every \$1 invested in public transit, \$4 is generated in economic returns, offering the opportunity for tremendous private sector investment, as well as accompanying economic development and jobs, in the King of Prussia marketplace upon completion of the Norristown High-Speed Line Extension.

NOW THEREFORE BE IT RESOLVED THAT Upper Merion Township expresses our support for the Norristown High-Speed Line Extension and urges SEPTA to advance this project to implementation.

ATTEST.



RONALD G. WAGENMANN
TOWNSHIP MANAGER/
SECRETARY-TREASURER

UPPER MERION TOWNSHIP
BOARD OF SUPERVISORS



EDWARD MCBRIDE
CHAIRMAN

**MONTGOMERY COUNTY
BOARD OF COMMISSIONERS**

JOSHUA D. SHAPIRO, CHAIR

LESLIE S. RICHARDS, VICE CHAIR

BRUCE L. CASTOR, JR., COMMISSIONER



**MONTGOMERY COUNTY
PLANNING COMMISSION**

MONTGOMERY COUNTY COURTHOUSE • PO Box 311
NORRISTOWN, PA 19404-0311
610-278-3722

FAX: 610-278-3941 • TDD: 610-631-1211
WWW.MONTCOPA.ORG

JODY L. HOLTON, AICP
EXECUTIVE DIRECTOR

August 6, 2013

Mr. Byron Comati, Director
Strategic Planning and Analysis
Finance Division – 9th Floor
1234 Market Street
Philadelphia, PA 19107-3780

Dear Byron:

As part of the formal process for the preparation of the Final Scoping Document to detail the scope of the environmental impact statement for the King of Prussia rail project, the Montgomery County Planning Commission offers the following comments:

1. We support the purpose and need for the proposed project.
2. We support the Tier 1 Alternatives though we suggest that they be modified to eliminate the North Gulph Road corridor portion of each one. There is limited opportunity in the corridor for intensification of transit supportive land uses with the proximity of the I-76 Schuylkill Expressway, the Turnpike interchange and the US-422 Expressway affecting virtually the entire corridor. By eliminating these alignments now, it will simplify the modeling and focus the analysis to alignments north of the mall with the greatest potential to effect changes in King of Prussia.

The County looks forward to working with SEPTA to craft this potentially transformative project.

Sincerely,

Jody L. Holton, AICP
Executive Director

c: Leslie Richards, SEPTA Board Member
Ken Lawrence, SEPTA Board Member



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
1650 Arch Street
Philadelphia, Pennsylvania 19103-2029**

AUG 14 2013

Mr. Tony Cho
U. S. Department of Transportation
Federal Transit Administration
1760 Market Street
Suite 500
Philadelphia, PA 19103

Re: Environmental Impact Statement Scoping for Increased Transit Service to King Of Prussia, PA

Dear Mr. Cho:

The U.S. Environmental Protection Agency (EPA) has reviewed the materials provided at the July 16, 2013 Agency Scoping Meeting and the additional information on the project website regarding the Environmental Impact Statement (EIS) being prepared for the King of Prussia Rail Project in King of Prussia, PA. As limited information is available, we are able to provide only some general recommendations at this time.

Information regarding the purpose and need, alternatives analyzed, avoidance and minimization of resources, and cumulative effects for the proposed project should be included in the EIS. The EIS should include a clear and robust justification of the underlying purpose and need for the proposed action. The purpose and need statement is important because it helps explain why the proposed action is being undertaken and what objectives the project intends to achieve. The purpose of the proposed action is typically the specific objective of the activity. The need should explain the underlying problem for why the project is necessary. Alternatives analysis should include the suite of other activities or solutions that were considered and the rationale for not carrying these alternatives forward for detailed study.

The document should describe potential impacts to the natural and human environment. Existing resources should be identified and EPA encourages that adverse impacts to natural resources, especially wetlands and other aquatic resources, be avoided and minimized wherever possible. EPA suggests coordinating with other appropriate federal, state and local resource agencies on possible impacts to wetlands, streams, historic and/or rare, threatened and endangered species.

An evaluation of air quality and community impacts, including noise, light and possible traffic impacts, should be included in the document. Potential air impacts and general

conformity should be included in the EIS. The EIS should also include an analysis of any hazardous sites or materials, and the status of any ongoing or past remediation efforts in the project area.

Environmental justice (EJ) should also be evaluated, including the identification of potential communities of concern, and meaningful and timely community involvement, public outreach, and access to information. Consideration should also be given to all potential impacts to at-risk populations, as well as consideration to sensitive subpopulations, possibly including elderly, children and others.

As the project is developed it is hoped that there will be additional information provided with respect to Environmental Justice. There should be a conscientious effort to assure that outreach and communication to populations of Environmental Justice concern are adequate, appropriate, and timely. Comprehensive assessments should be conducted to identify and define areas of potential Environmental Justice concern. A variety of means should be used to assure that at risk communities are appropriately engaged. Assessment should also consider benefits to the community as well as the potential for adverse impacts. Areas of potential adverse impact should be identified and mitigation measures identified as appropriate.

EPA strongly encourages a thorough cumulative impact analysis for past, present and reasonably foreseeable projects occurring in the project areas. The document should address potential indirect and cumulative effects in the project areas, and analysis may aid in the identification of resources that are likely to be adversely affected by multiple projects, and sensitive resources that could require additional measures. It is suggested that a secondary and cumulative effects analysis begin with defining the geographic and temporal limits of the study; this is generally broader than the study area of the project.

Thank you for coordinating with EPA on this project. We look forward to working with you on this project as more information becomes available. If you have any questions and would like to discuss our comments, the staff contact for this project is Ms. Barbara Okorn; she can be reached at 215-814-3330.

Sincerely,



Barbara Rudnick
NEPA Team Leader
Office of Environmental Programs



IN REPLY REFER TO:

United States Department of the Interior

NATIONAL PARK SERVICE
Valley Forge National Historical Park
1400 North Outer Line Drive
King of Prussia, PA 19406-1009

L7621 (VAFO-P)

August 15, 2013

Mr. Sheldon Fialkoff
Project Manager
AECOM
1700 Market Street, Suite 1600
Philadelphia, PA 19103

Dear Mr. Fialkoff:

Thank you for the opportunity to provide comments on the scope of the proposed Environmental Impact Statement and Section 4(f) Evaluation for Increased Transit Service to King of Prussia, Pennsylvania. In preparing these comments, I attended both the Stakeholders' Advisory Committee meeting on June 18 and also the Agency Coordination Committee on July 20 and reviewed the documents you provided.

Draft Purpose and Need Statement, July 2, 2013

Valley Forge NHP receives over 1.4 million visitors per year, with a majority being regional residents. The park is visited both for its historic significance and also for its outstanding open space and recreational values, including serving as a nexus of extensive current and planned bicycle trails. We believe that reliable rail service that reached a point close to the park would be very attractive to the large urban population near the park, including persons who do not own personal vehicles, persons who are daunted by the well known congestion on the highways that surround the park, and bicyclists who would use the train as part of a larger trip. Out-of-town visitors staying in Philadelphia or in the numerous hotels on Route 202 and on North Gulph Road in King of Prussia also would benefit from reliable train service that brought them to the park entrance.

For these reasons, we recommend that to strengthen the case that the Purpose and Need must make that you include the park more prominently in the places where destinations are noted, for example in sections 1.1, 1.2, 1.4.1, 1.4.5, and 1.5.1.

Alternatives

We ask that you consider an additional alternative for a loop that would connect the various branch alternatives now proposed for either North Gulph Road or Maschellmac Creek. Although such a loop will add expense to the project, it would add value to the investment that must be made in the trunk portion of the project and also to the utility of the transit service as a whole.

We ask that as the planning proceeds to the point at which station stops are proposed, that the North Gulph branch alternatives include a station stop near the point where the road passes under

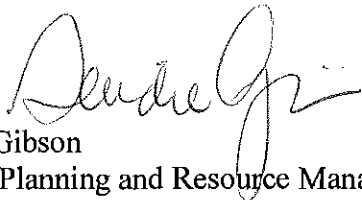
the Route 422 overpass. This is the best point for pedestrians and bicyclists to access the park, and it also would serve the Valley Forge Convention Center and Casino. The park would work with Upper Merion Township on a trail connection.

A station stop on Route 23 would be less useful. Current plans for the reconstruction of the Route 422/23 interchange do not include pedestrian or bicycle access that would allow visitors to safely cross into the park.

Impacts

Given the appropriately conceptual information presented to date, we foresee no adverse impact to park natural or cultural resources. We foresee highly positive impacts for park visitors from the North Gulph alternatives. While bicycling visitors would benefit from the Maschellmac alternatives, we do not believe that these alternatives would serve or benefit pedestrian visitors to the park. We ask that these beneficial impacts be considered in the EIS.

Sincerely,

A handwritten signature in cursive script, appearing to read "Deirdre Gibson", written in dark ink.

Deirdre Gibson
Chief of Planning and Resource Management

cc: Mary Morrison, NPS Northeast Regional Office



Pennsylvania Turnpike Commission

America's First Superhighway

www.paturnpike.com

Engineering Department
P. O. Box 67676 • Harrisburg, PA 17106-7676
Phone 717-939-9551 • Fax 717-986-8742
[http: www.paturnpike.com](http://www.paturnpike.com)

August 12, 2013

Mr. Byron S. Cornati
Director of Strategic Planning
Southeastern Pennsylvania Transportation Authority
1234 Market Street, 9th Floor
Philadelphia, PA 17107-3780

Dear Mr. Cornati:

The Pennsylvania Turnpike Commission appreciates the opportunity to comment on your Draft Environmental Impact Study for the Norristown High Speed Line Extension. We have reviewed the materials that you provided and it appears that all alternatives either cross over the Turnpike or run parallel to the Turnpike in Turnpike right-of-way.

We would prefer to avoid permanent facilities to be located in our right-of-way because our constantly increasing needs, such as adding safety features, increasing capacity, improving stormwater management facilities and adding intelligent transportation systems. Perhaps an option that would be acceptable would be to cross the Turnpike next to the Rt. 202 bridge, matching the span of the median pier of the Rt. 202 bridge and having the abutments outside of our right-of-way.

We would be happy to meet with you and your team at any time in the future to discuss your project.

Sincerely,

Bradley J. Heigel, P.E.
Chief Engineer

BJH/mas

cc: Mark P. Compton
Craig R. Shuey
Gary L. Graham
Jeffrey C. Davis
Donald L. Steele

1. PROJECT INFORMATION

Project Name: **King of Prussia Rail - Alternative: PECO-1st Ave.**

Date of Review: **8/10/2017 03:27:14 PM**

Project Category: **Transportation, Railroads (track, bridge, roadway crossing – new, maintenance, removal)**

Project Area: **41.24 acres**

County(s): **Montgomery**

Township/Municipality(s): **BRIDGEPORT; UPPER MERION**

ZIP Code: **19406**

Quadrangle Name(s): **NORRISTOWN; VALLEY FORGE**

Watersheds HUC 8: **Schuylkill**

Watersheds HUC 12: **Mingo Creek-Schuylkill River; Plymouth Creek-Schuylkill River**

Decimal Degrees: **40.084262, -75.384990**

Degrees Minutes Seconds: **40° 5' 3.3426" N, 75° 23' 5.9650" W**

This is a draft receipt for information only. It has not been submitted to jurisdictional agencies for review.

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

King of Prussia Rail - Alternative: PECO-1st Ave.

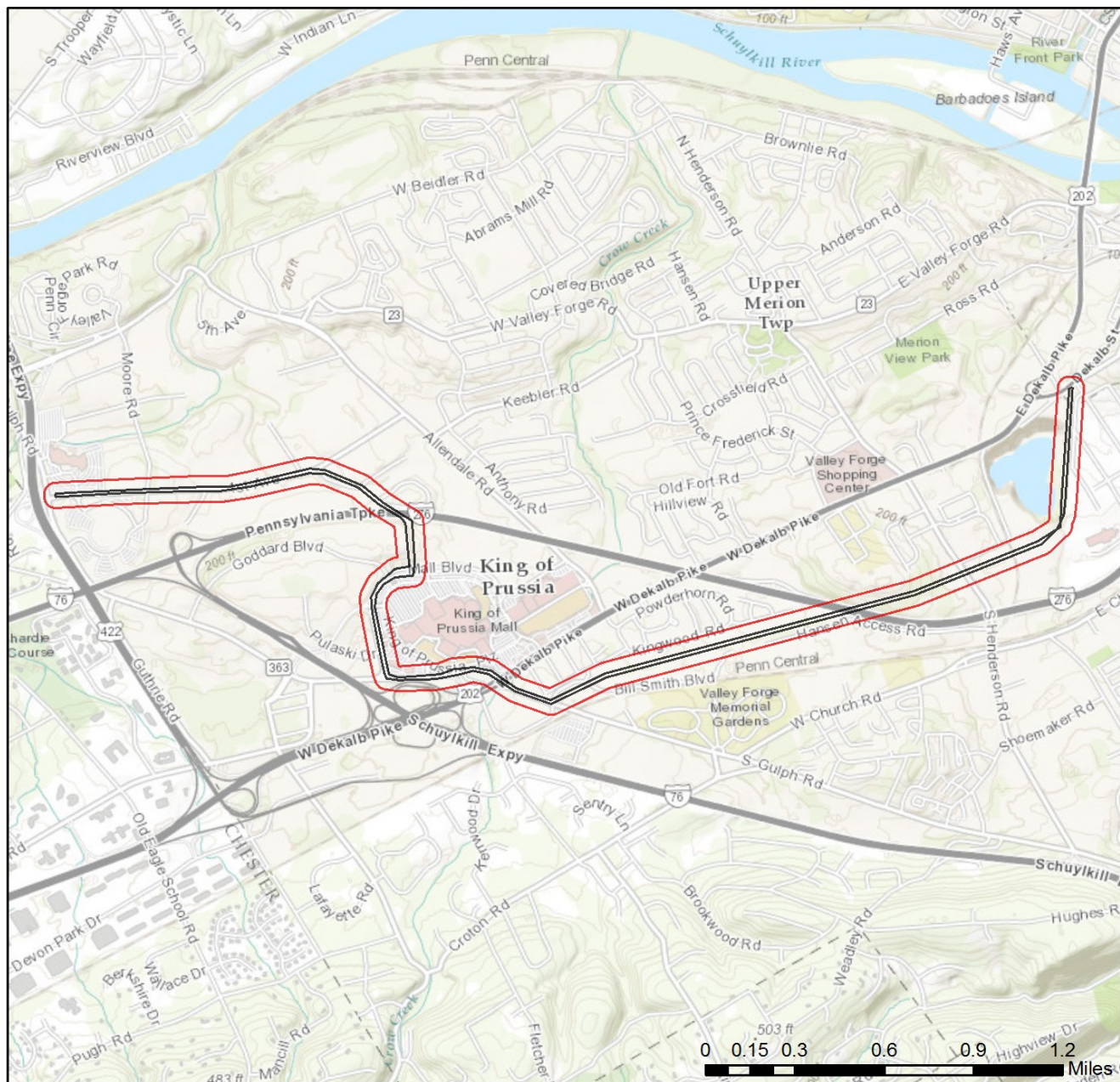


- ☐ Project Boundary
- ☐ Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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RESPONSE TO QUESTION(S) ASKED

Q1: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).

Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q2: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats?

Your answer is: Unknown

Q3: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?

Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Sensitive Species**		Threatened

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

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***Note:** U.S.Fish and Wildlife Service requires applicants to mail project materials to the USFWS PA field office (see AGENCY CONTACT INFORMATION). USFWS will not accept project materials submitted electronically (by upload or email).

Check-list of Minimum Materials to be submitted:

____ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

____ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

____ **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

____ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

____ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.



1. PROJECT INFORMATION

Project Name: **king of Prussia Rail - Alternative: PECO/TP-1st Ave.**

Date of Review: **8/10/2017 03:28:03 PM**

Project Category: **Transportation, Railroads (track, bridge, roadway crossing – new, maintenance, removal)**

Project Area: **41.25 acres**

County(s): **Montgomery**

Township/Municipality(s): **BRIDGEPORT; UPPER MERION**

ZIP Code: **19405; 19406**

Quadrangle Name(s): **NORRISTOWN; VALLEY FORGE**

Watersheds HUC 8: **Schuylkill**

Watersheds HUC 12: **Mingo Creek-Schuylkill River; Plymouth Creek-Schuylkill River**

Decimal Degrees: **40.091116, -75.384305**

Degrees Minutes Seconds: **40° 5' 28.192" N, 75° 23' 3.4974" W**

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king of Prussia Rail - Alternative: PECO/TP-1st Ave.

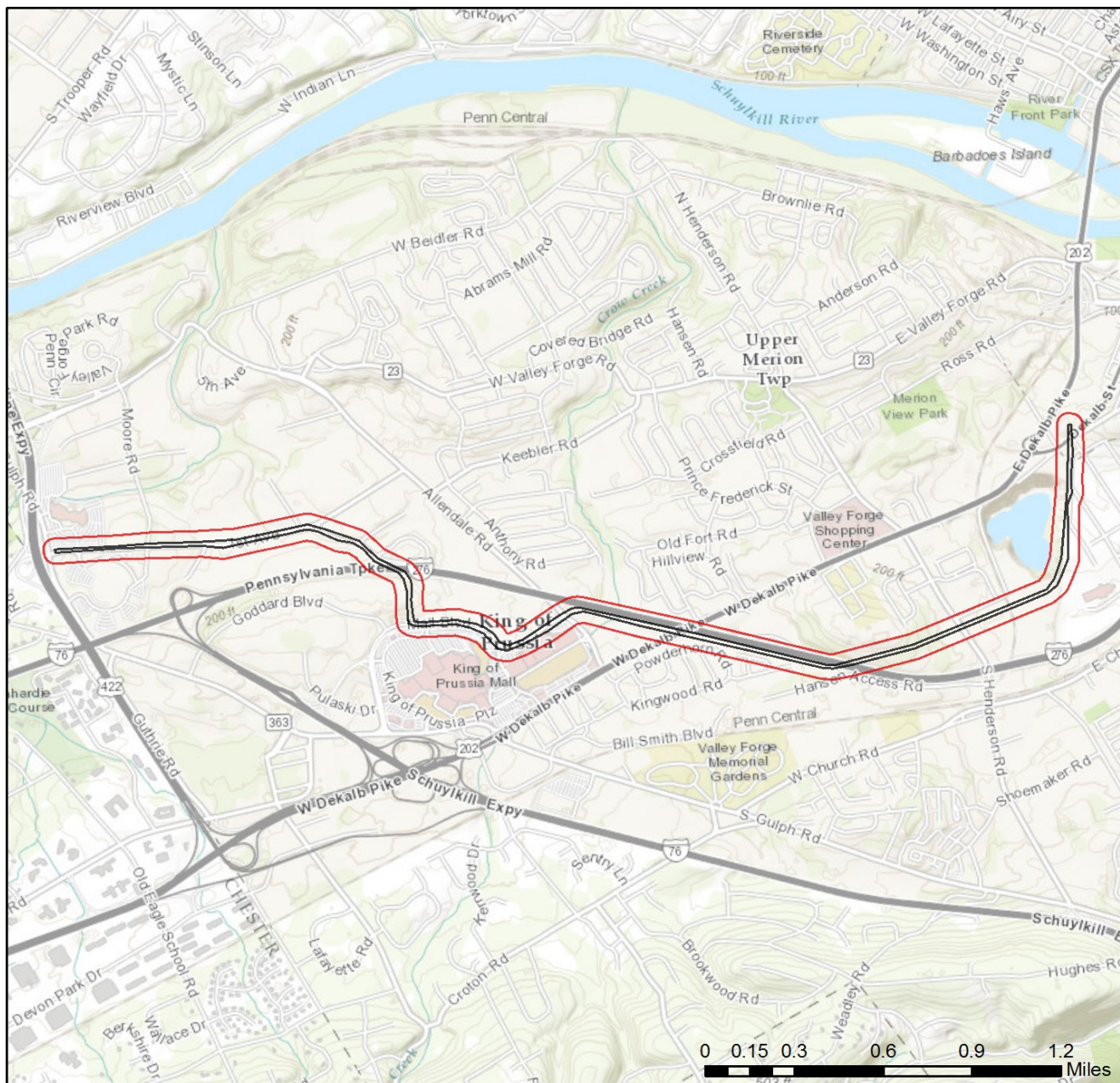


- ☐ Project Boundary
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Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



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RESPONSE TO QUESTION(S) ASKED

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PA Game Commission

RESPONSE:

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PA Department of Conservation and Natural Resources

RESPONSE:

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PA Fish and Boat Commission

RESPONSE:

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Scientific Name	Common Name	Current Status
Sensitive Species**		Threatened

U.S. Fish and Wildlife Service

RESPONSE:

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1. PROJECT INFORMATION

Project Name: **king of Prussia Rail - Alternative: PECO/TP-N. Gulph**

Date of Review: **8/10/2017 03:29:02 PM**

Project Category: **Transportation, Railroads (track, bridge, roadway crossing – new, maintenance, removal)**

Project Area: **18.83 acres**

County(s): **Montgomery**

Township/Municipality(s): **BRIDGEPORT; UPPER MERION**

ZIP Code: **19405; 19406**

Quadrangle Name(s): **NORRISTOWN; VALLEY FORGE**

Watersheds HUC 8: **Schuylkill**

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Decimal Degrees: **40.091048, -75.384591**

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king of Prussia Rail - Alternative: PECO/TP-N. Gulph

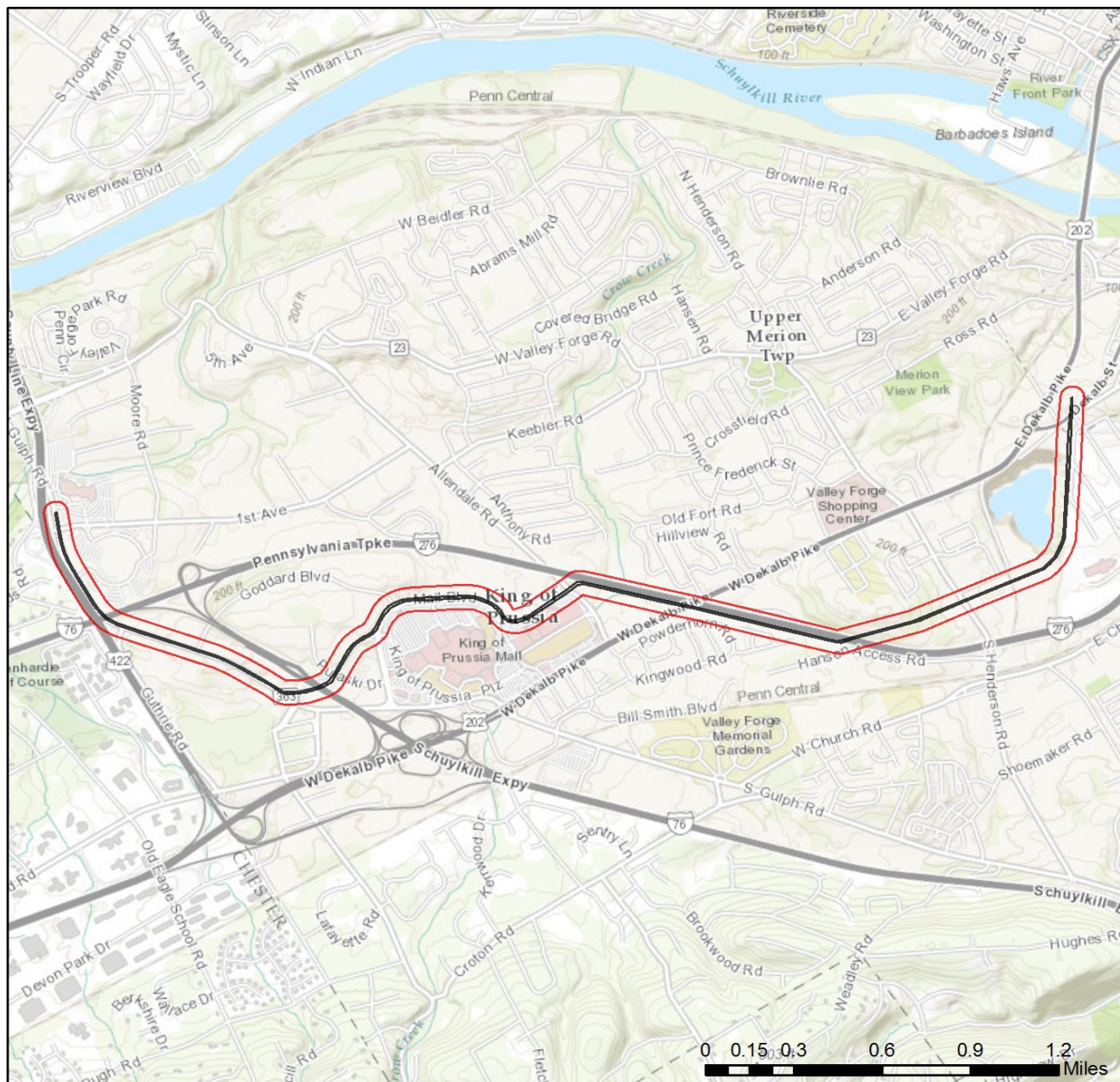


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- ☐ Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
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1. PROJECT INFORMATION

Project Name: **King of Prussia Rail - Alternative: US 202- 1st Ave.**

Date of Review: **8/10/2017 03:31:02 PM**

Project Category: **Transportation, Railroads (track, bridge, roadway crossing – new, maintenance, removal)**

Project Area: **7.31 acres**

County(s): **Montgomery**

Township/Municipality(s): **BRIDGEPORT; UPPER MERION**

ZIP Code: **19405; 19406**

Quadrangle Name(s): **NORRISTOWN; VALLEY FORGE**

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Watersheds HUC 12: **Mingo Creek-Schuylkill River; Plymouth Creek-Schuylkill River**

Decimal Degrees: **40.095983, -75.400403**

Degrees Minutes Seconds: **40° 5' 45.5382" N, 75° 24' 1.4515" W**

This is a draft receipt for information only. It has not been submitted to jurisdictional agencies for review.

2. SEARCH RESULTS

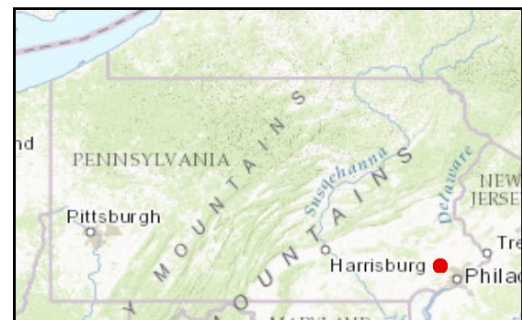
Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

King of Prussia Rail - Alternative: US 202- 1st Ave.

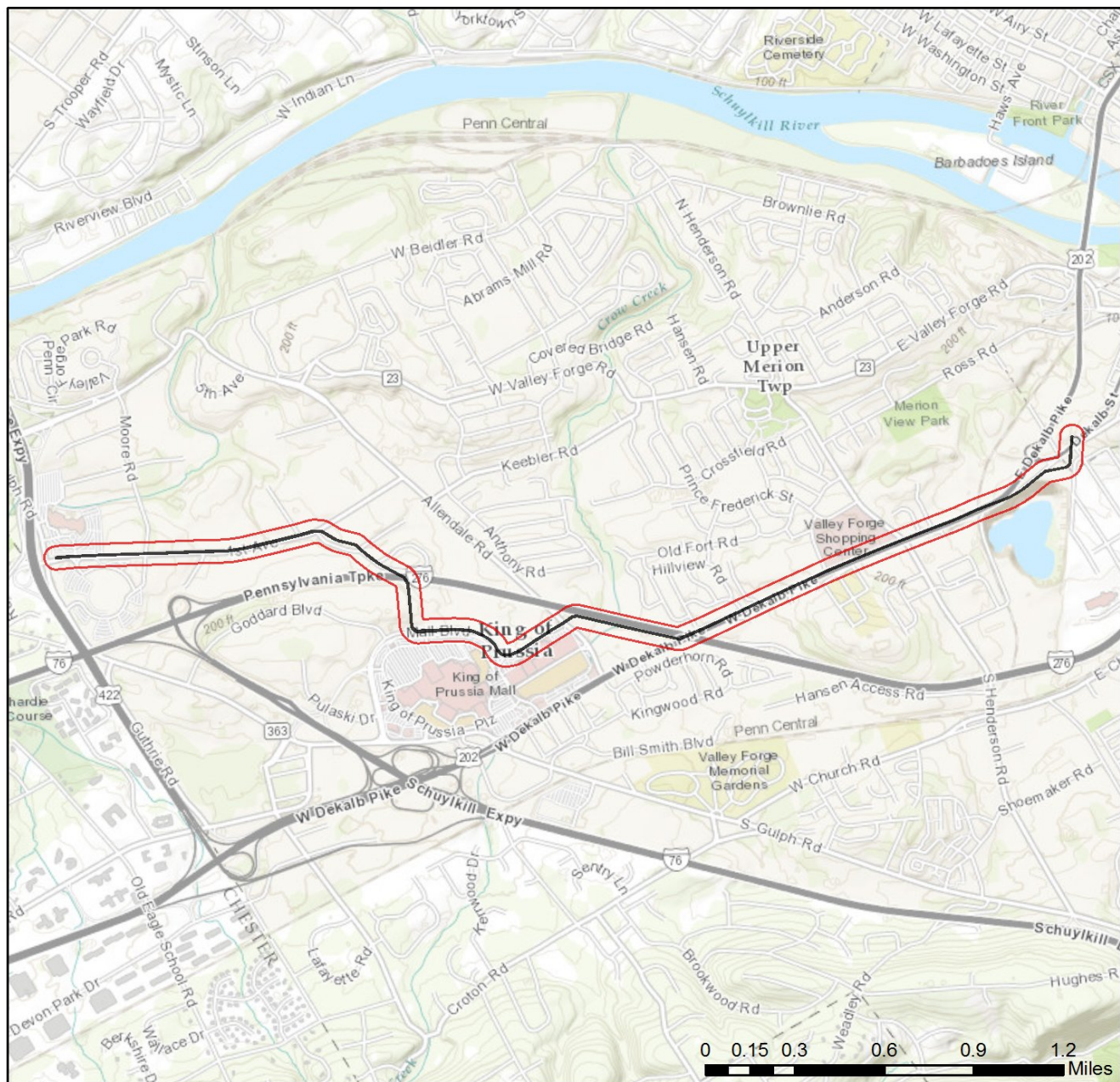


- ☐ Project Boundary
- ☐ Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user

King of Prussia Rail - Alternative: US 202- 1st Ave.



- Project Boundary
- Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community



RESPONSE TO QUESTION(S) ASKED

Q1: Will the entire project area (including any discharge), plus a 300 feet buffer around the project area, all occur in or on an existing building, parking lot, driveway, road, road shoulder, street, runway, paved area, railroad bed, maintained (periodically mown) lawn, crop agriculture field or maintained orchard?

Your answer is: No

Q2: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).

Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q3: Aquatic habitat (stream, river, lake, pond, etc.) is located on or adjacent to the subject property and project activities (including discharge) may occur within 300 feet of these habitats?

Your answer is: Unknown

Q4: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?

Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

DCNR Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below. After desktop review, if a botanical survey is required by DCNR, we recommend the DCNR Botanical Survey Protocols, available here: http://www.gis.dcnr.state.pa.us/hgis-er/PNDI_DCNR.aspx.)

Scientific Name	Common Name	Current Status	Proposed Status	Survey Window
Quercus falcata	Southern Red Oak	Endangered	Endangered	Flowers April - May; leaves distinctive

PA Fish and Boat Commission

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

PFBC Species: (Note: The Pennsylvania Conservation Explorer tool is a primary screening tool, and a desktop review may reveal more or fewer species than what is listed below.)

Scientific Name	Common Name	Current Status
Sensitive Species**		Threatened

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

* Special Concern Species or Resource - Plant or animal species classified as rare, tentatively undetermined or candidate as well as other taxa of conservation concern, significant natural communities, special concern populations (plants or animals) and unique geologic features.

** Sensitive Species - Species identified by the jurisdictional agency as collectible, having economic value, or being susceptible to decline as a result of visitation.

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION).

***Note:** U.S.Fish and Wildlife Service requires applicants to mail project materials to the USFWS PA field office (see AGENCY CONTACT INFORMATION). USFWS will not accept project materials submitted electronically (by upload or email).

Check-list of Minimum Materials to be submitted:

____ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

____ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

____ **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

____ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

____ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.



5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.



1. PROJECT INFORMATION

Project Name: **King of Prussia Rail - Alternative: US 202-N. Gulph**

Date of Review: **8/10/2017 03:30:03 PM**

Project Category: **Transportation, Railroads (track, bridge, roadway crossing – new, maintenance, removal)**

Project Area: **16.05 acres**

County(s): **Montgomery**

Township/Municipality(s): **BRIDGEPORT; UPPER MERION**

ZIP Code: **19405; 19406**

Quadrangle Name(s): **NORRISTOWN; VALLEY FORGE**

Watersheds HUC 8: **Schuylkill**

Watersheds HUC 12: **Mingo Creek-Schuylkill River; Plymouth Creek-Schuylkill River**

Decimal Degrees: **40.090988, -75.384571**

Degrees Minutes Seconds: **40° 5' 27.5572" N, 75° 23' 4.4573" W**

This is a draft receipt for information only. It has not been submitted to jurisdictional agencies for review.

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
PA Fish and Boat Commission	Potential Impact	FURTHER REVIEW IS REQUIRED, See Agency Response
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

King of Prussia Rail - Alternative: US 202-N. Gulph

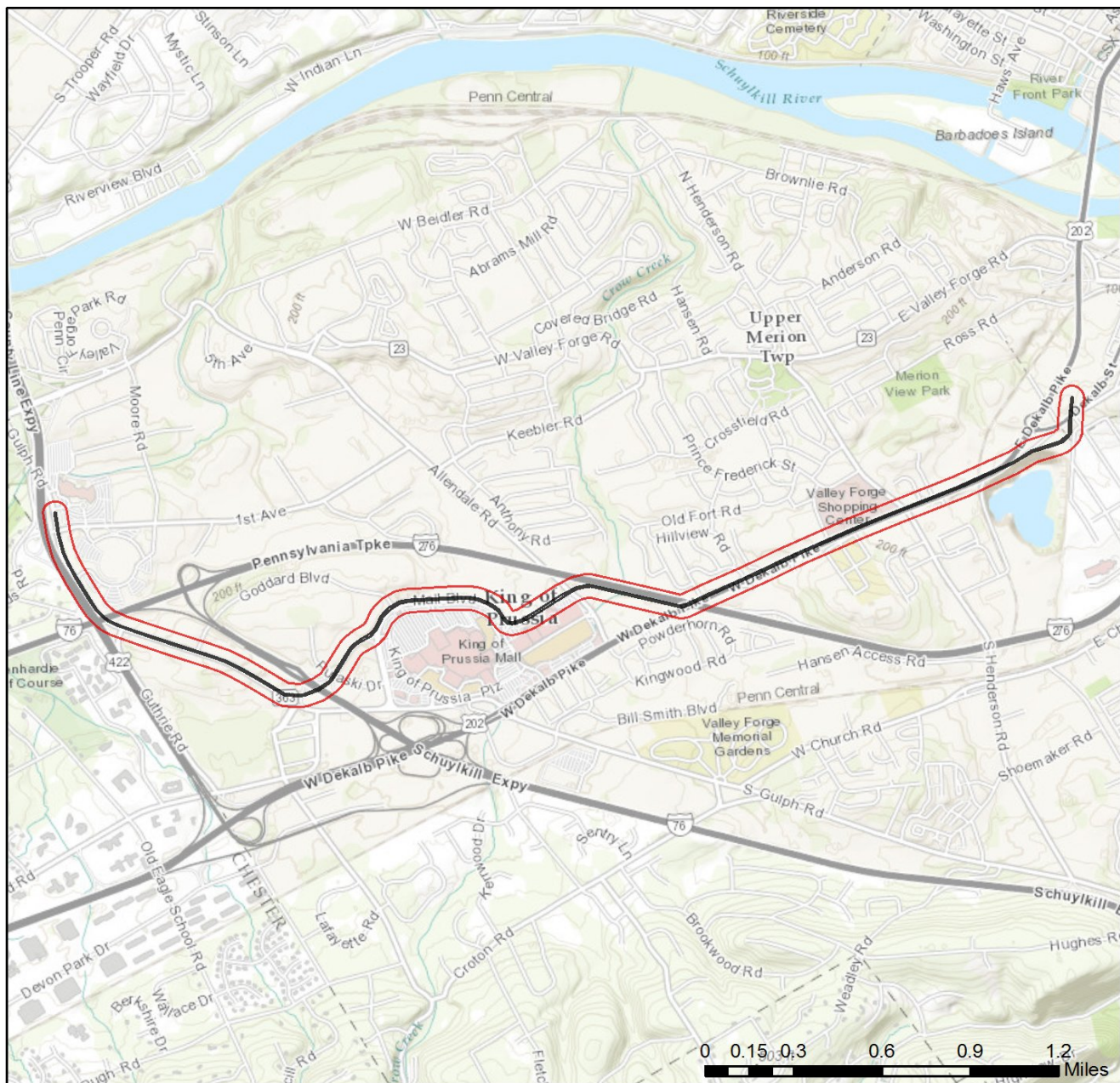


- ☐ Project Boundary
- ☐ Buffered Project Boundary



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user

King of Prussia Rail - Alternative: US 202-N. Gulph



- Project Boundary
- Buffered Project Boundary

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RESPONSE TO QUESTION(S) ASKED

Q1: Will the entire project area (including any discharge), plus a 300 feet buffer around the project area, all occur in or on an existing building, parking lot, driveway, road, road shoulder, street, runway, paved area, railroad bed, maintained (periodically mown) lawn, crop agriculture field or maintained orchard?

Your answer is: No

Q2: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).

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3. AGENCY COMMENTS

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PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

Further review of this project is necessary to resolve the potential impact(s). Please send project information to this agency for review (see WHAT TO SEND).

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Scientific Name	Common Name	Current Status	Proposed Status	Survey Window
Quercus falcata	Southern Red Oak	Endangered	Endangered	Flowers April - May; leaves distinctive

PA Fish and Boat Commission

RESPONSE:

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Scientific Name	Common Name	Current Status
Sensitive Species**		Threatened

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

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The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.



1. PROJECT INFORMATION

Project Name: **King of Prussia Rail - 69th Street Terminal**
Date of Review: **8/10/2017 03:48:03 PM**
Project Category: **Transportation, Structures and Bridges, Other**
Project Area: **0.41 acres**
County(s): **Delaware**
Township/Municipality(s): **UPPER DARBY**
ZIP Code: **19082**
Quadrangle Name(s): **LANSDOWNE**
Watersheds HUC 8: **Lower Delaware**
Watersheds HUC 12: **Cobbs Creek**
Decimal Degrees: **39.962924, -75.259771**
Degrees Minutes Seconds: **39° 57' 46.5279" N, 75° 15' 35.1745" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

King of Prussia Rail - 69th Street Terminal

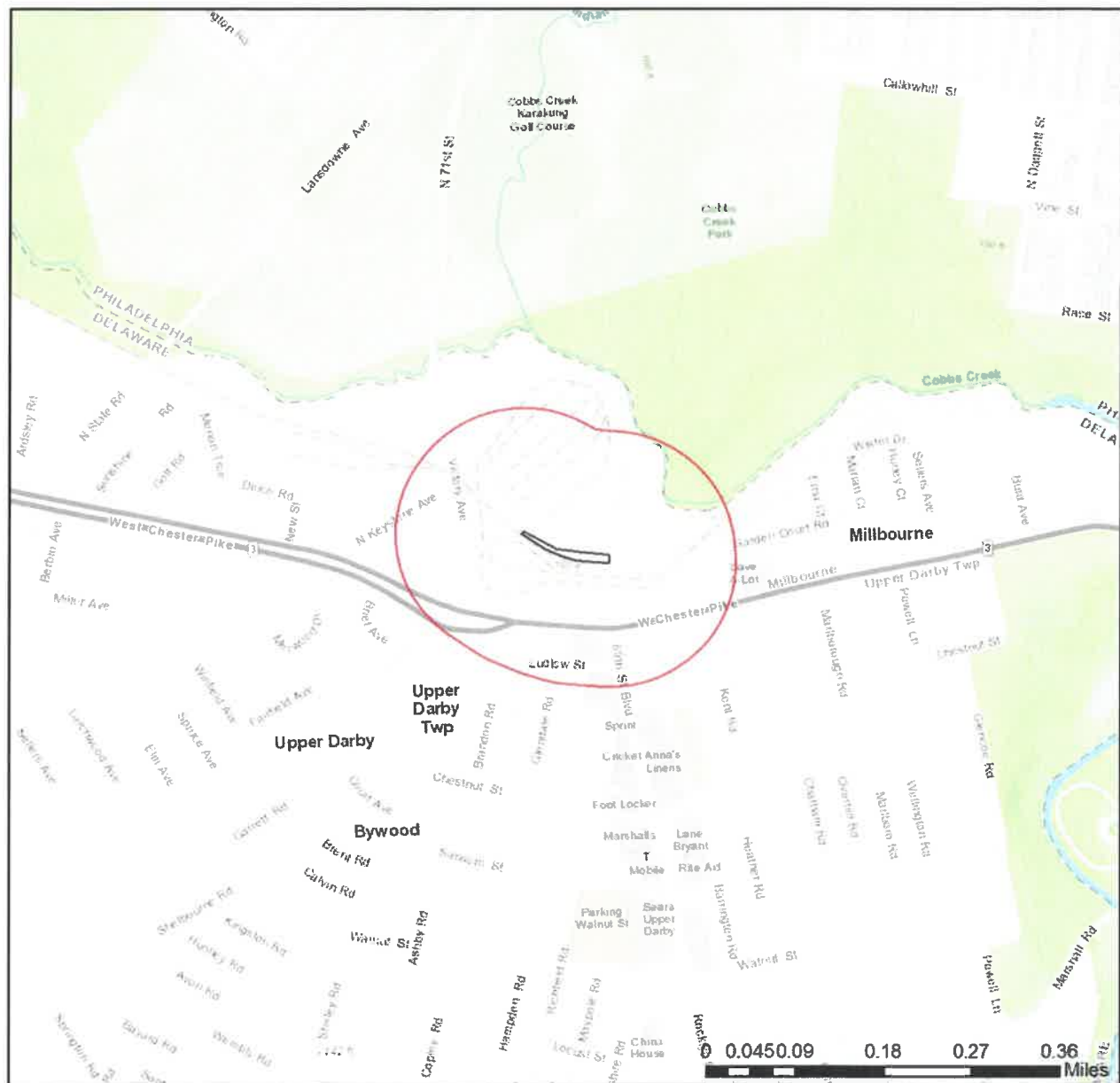


- ☐ Project Boundary
- ☐ Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
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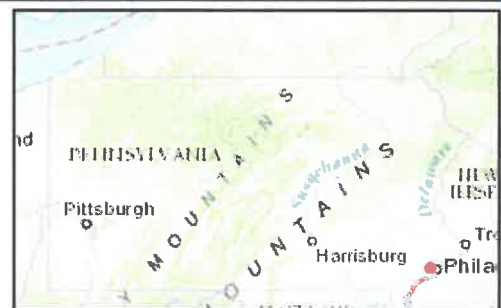


King of Prussia Rail - 69th Street Terminal



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Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

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PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

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6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources

Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service

Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
NO Faxes Please

PA Fish and Boat Commission

Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission

Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: John L. Boyce
Company/Business Name: Malcik & Scherer, P.C.
Address: Perryville III Corporate Center, 53 Frontage Road, Suite 260
City, State, Zip: Hampton, NJ 08827
Phone: (908) 537-1326 Fax: (908) 537-1398
Email: Jboyce@malickandscherer.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.


applicant/project proponent signature

8/16/2017
date

***A*ppendix C Section 106 Correspondence**

- Section 106 Initiation Package (Review Form, Attachment and Figure 1)
- PHMC's Section 106 Initiation letter, April 4, 2013
- FTA/SEPTA/PHMC coordination call memo, December 30, 2015
- FTA/SEPTA/PHMC coordination call memo, March 3, 2016
- PHMC's Area of Potential Effects letter, March 7, 2016
- Section 106 Consulting Parties Meeting memorandum, September 8, 2016
- PHMC's Eligibility Concurrence letter on historic structures, September 26, 2016
- Stockbridge Munsee Community email, September 27, 2016
- Montgomery County letter, September 28, 2016
- Delaware Nation letter, October 19, 2016
- FTA/SEPTA/PHMC coordination call memo, December 8, 2016
- PHMC's Concurrence letter on archaeology, December 15, 2016
- PHMC's Concurrence Letter on Historic Structures Effects, March 16, 2017



PROJECT REVIEW FORM

Request to Initiate SHPO Consultation on State and Federal Undertakings

SHPO USE ONLY

DATE RECEIVED:

ER NUMBER:

REV: 5/2012

SECTION A: GENERAL PROJECT INFORMATION

Is this a new submittal? YES NO OR This is additional information for ER Number:

Project Name _____ County _____

Project Address _____

City/State/ Zip _____ Municipality _____

SECTION B: PRIMARY CONTACT INFORMATION

Name _____ Phone _____

Company _____ Fax _____

Street/P.O. Box _____ Email _____

City/State/Zip _____

SECTION C: PROJECT DESCRIPTION

This project is located on: Federal property State property Municipal property Private property
(check all that apply)

List all Federal and State agencies and programs (funding, permits, licenses) involved in this project	Agency Type	Agency/Program/Permit Name	Project/Permit/Tracking Number (if applicable)

Proposed Work – Attach project description, scope of work, site plans, and/or drawings

Project includes (check all that apply): Construction Demolition Rehabilitation Disposition

Total acres of project area: _____ Total acres of earth disturbance: _____

Are there any buildings or structures within the project area? Yes No Approximate age: _____

This project involves properties listed in or eligible for listing in the National Register of Historic Places, or designated as historic by a local government	Yes	No	Unsure	Name of historic property or historic districts

Please print and mail completed form and all attachments to:

PHMC
State Historic Preservation Office
400 North St.
Commonwealth Keystone Building, 2nd Floor
Harrisburg, PA 17120-0093

Attachments – Please include the following information with this form

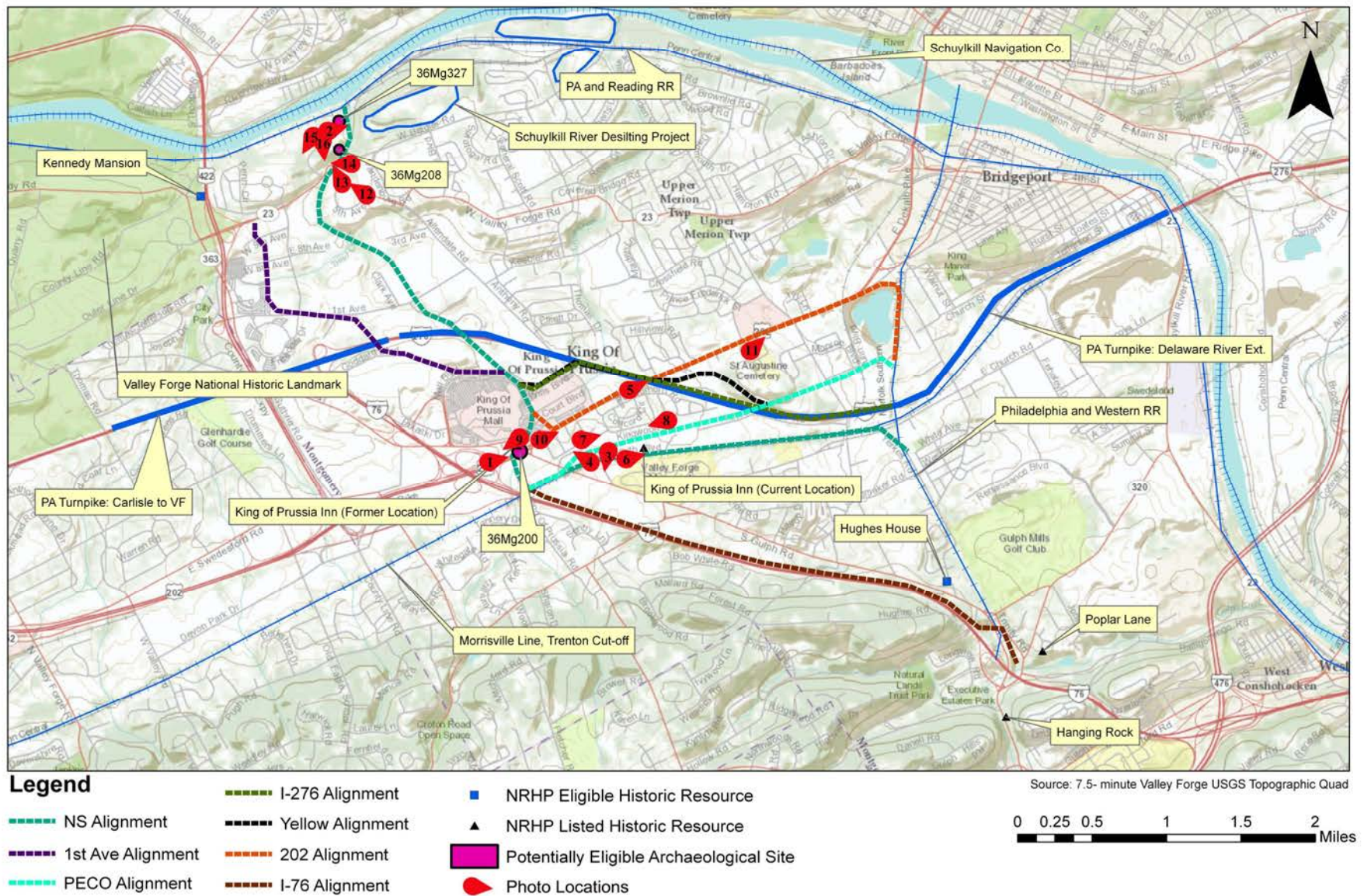
- Map** – 7.5' USGS quad showing project boundary and Area of Potential Effect
- Description/Scope** – Describe the project, including any ground disturbance and previous land use
- Site Plans/Drawings** – Indicate the location and age, if known, of all buildings in the project area
- Photographs** – Attach prints or digital photographs showing the project site, including images of all buildings and structures keyed to a site plan

SHPO DETERMINATION (SHPO USE ONLY)

SHPO REVIEWER:

- | | |
|--|---|
| <input type="checkbox"/> There are NO HISTORIC PROPERTIES in the Area of Potential Effect | <input type="checkbox"/> The project will have NO ADVERSE EFFECTS WITH CONDITIONS (see attached) |
| <input type="checkbox"/> The project will have NO EFFECT on historic properties | <input type="checkbox"/> SHPO REQUESTS ADDITIONAL INFORMATION (see attached) |
| <input type="checkbox"/> The project will have NO ADVERSE EFFECTS on historic properties: | |

Figure 1: Project Location Map Showing NRHP Listed and Eligible Resources and Photo Locations



Project Description/Scope

The current project scope involves preparing an Alternatives Analysis/Draft Environmental Impact Statement (AA/DEIS) for the development of an extension of the existing Norristown High Speed Line Extension (NHSL) to the King of Prussia area in Montgomery County, PA. Planning for the project is in its infancy and detailed plans, and information on a preferred alignment is not available at this time. The Pennsylvania Historical and Museum Commission (PHMC) will be invited to be part of an agency committee for the project and will be provided with plans and more detailed information on impacts when these items are available. The purpose of submitting this form at such an early stage in the project is to initiate consultation with the PHMC early in the project's development and to elicit feedback on any agency concerns.

A major focus of the AA/DEIS will be to identify alternative alignments that are realistic and feasible given the development and infrastructure that exist in King of Prussia today. Before an alignment is chosen, the viability of these alternatives will be evaluated according to environmental constraints, the level of stakeholder support for these alternatives, and the likelihood of attracting public and private funding. Construction impacts will include (but are not limited to) new station construction, additional tracking within the existing rail corridors, signage and signaling installation, and improvements to the existing portions of the NHSL to support increased rail traffic resulting from the new branch line.

National Register of Historic Places (NRHP) Listed or Eligible Resources in the Project Vicinity

Table 1: Potentially Eligible NRHP Archaeological Sites Identified Within 250-ft of the Norristown HSL Project

Site #	Site Name	Site Type	Temporal Period	NR Eligibility
36Mg0200	King of Prussia Inn	Inn	Eighteenth and Nineteenth Century	*Considered Eligible by Submitter
36MG0208	Trout Run #4	Open Precontact Site, Unknown Function	Unknown Precontact	*Considered Eligible by Submitter
36MG0327	Site Trout Run 7	Open Precontact Site, Unknown Function	Unknown Precontact	*Considered Eligible by Submitter

*Source: PHMC CRGIS

Table 2: NRHP Listed and Eligible Historic Architectural Resources Identified Near the Norristown HSL Project

Resource Name	Resource Type	Construction Date	NRHP Status	Note
Kennedy Mansion	Building	1852	Eligible	-
Valley Forge National Historic Landmark	District	1778	Listed	-

SEPTA Norristown High Speed Line Extension
PHMC Project Review Form
September 26, 2012

Pennsylvania Turnpike: Philadelphia [Eastern] Extension (Carlisle to Valley Forge)	Structure	1950, 1948	Eligible	-
Pennsylvania Turnpike: Delaware River Extension	District	1954, 1952	Eligible	-
King of Prussia Inn	Building	1719	Listed	-
Schuylkill River Desilting Project	Structure	1947, 1951	Eligible	-
Schuylkill Navigation Company Canal (Port Carbon to Philadelphia)	District	1925, 1816 Alterations/Additions C. 1845	Eligible	-
Reading Railroad: Main Line (Philadelphia to Port Carbon)	District	1842, 1835, Alterations/Additions 1933	Eligible	-
Pennsylvania Railroad: Morrisville Line; Trenton Cut- Off	District	1892, 1889 Alterations/Additions C. 1904, C. 1915	Eligible	Montgomery and Bucks county portions determined eligible in 1993
Philadelphia and Western Railway (Upper Darby to Norristown); Norristown High- Speed 100 Line (Upper Darby to Norristown)	District	1912 Alterations/Additions C. 1989, C. 2003	Eligible	-
Hughes, John, House	Building	1740, 1803	Eligible	-
Poplar Lane	Building	1758	Listed	-
Hanging Rock	Site	1917 – 1924	Listed	-

*Source: PHMC CRGIS



Commonwealth of Pennsylvania
Pennsylvania Historical and Museum Commission
Bureau for Historic Preservation
Commonwealth Keystone Building, 2nd Floor
400 North Street
Harrisburg, PA 17120-0093
www.phmc.state.pa.us

4 April 2013

Alan Tabachnick
AECOM
516 E State Street
Trenton NJ 08609

Re: ER 2013-1006-091-A
Norristown High Speed Line Extension
Upper Merion Township, Montgomery County

Dear Mr. Tabachnick:

Thank you for submitting information concerning the above referenced project. The Bureau for Historic Preservation (the State Historic Preservation Office) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 *et seq.* (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

Thank you for the project initiation package, including the mapping of the initial project area and National Register listed and eligible resources located within the vicinity, as well as the opportunity to participate in the Agency Advisory Committee Meeting on March 27, 2013.

We request review of a copy of the list of organizations and individuals that you plan to invite to participate in the Section 106 consultation process as consulting parties as well as additional information on your plan for tribal consultation. Since the project area contains a National Historic Landmark, you will need to include the appropriate representatives from the National Park Service in the Section 106 consultation process.

As the project alternatives are refined, we anticipate the receipt of more detailed information on the identification of historic properties and measures to avoid or minimize effects. To assist you in your identification of known historic and archaeological resources, the Bureau for Historic Preservation (PHMC-BHP) maintains records of National Register listed and eligible resources as well as archaeological surveys (P.A.S.S. files). Information on many of these resources is available on our web based Cultural Resources Geographic Information System (CRGIS) <http://crgis.state.pa.us>. Additional information is available in the survey reports and files of the PHMC-BHP's research room. Please consult the unpublished reports and files to determine what is known in the project area and whether or not the previous survey information may require an update.



Pennsylvania Historical & Museum Commission

Tom Corbett, Governor • Andrew E. Masich, Chairman • James M. Vaughan, Executive Director

A Tabachnick
ER 2013-1006-091-A
4 April 2013
Page 2 of 2

In addition, a comparison of historic (available at pennpilot.psu.edu) and current aerial mapping would be useful for identifying changes to the landscape over time as well as additional resources within the project vicinity that meet the National Register 50-year-age consideration.

We also welcome the opportunity for a site visit to identify 50-year-old resources not previously assessed for National Register eligibility and further assess the potential effects of the various alignments on National Register listed and eligible resources.

If you need further information regarding archaeological resources, please contact Mark Shaffer at (717) 783-9900. If you need further information concerning historic structures, please contact Barbara Frederick at (717) 772-0921.

Sincerely,



Douglas C. McLearen, Chief
Division of Archaeology & Protection

DCM/bcf

**King of Prussia Rail
Norristown High Speed Line AA / DEIS
Pennsylvania Historical and Museum Commission
Conference Call Summary**

Date: December 30, 2015
Time: 2:00 PM
Location: Conference Call

Participants

Liz Smith	SEPTA
Fritz Ohrenschall	SEPTA
Emma Diehl	PHMC
Leslie Roche	AECOM
Kate Farnham	AECOM
Shelly Fialkoff	AECOM
Larry Berkowitz	AECOM

Synopsis

- Liz provided a brief project summary, stating that the original plan discussed with PHMC early in 2015 had been to complete a Draft Environmental Impact Statement (DEIS) without identifying a Locally Preferred Alternative (LPA). An LPA would be selected after completion of the DEIS and after the DEIS public comment period so that these activities could inform the selection. However, as a result of considerable outreach and coordination with stakeholders and the public, as well as detailed analysis of the alternatives, SEPTA was able to identify a preliminary recommended LPA in Fall 2015. Thus, and in keeping with current Federal Transit Administration (FTA) policies for streamlining and their strong support for identifying an LPA in a DEIS, SEPTA has decided to report its preliminary recommended LPA in the DEIS.
- Leslie explained that with SEPTA's original plan, Section 106 consultation was initiated almost a year ago with the intent not to pursue formal consultation in the absence of an identified LPA. However, in light of SEPTA's change in course for the DEIS, it has decided to pursue formal consultation with a single focus on the preliminary recommended LPA, to be known in Section 106 consultation as the "Likely Preferred Alternative." This approach was recommended to SEPTA by the FTA.
- Emma stated that the change to formal consultation is consistent with Section 106 regulations, guidance and practice when a preferred alternative is known. PHMC is agreeable to this change.
- Leslie then spoke about existing and planned Section 106 documents:
 - Initial Assessment Report - This report for historic architecture and archaeology was prepared in draft form prior to SEPTA identifying a preliminary recommended LPA. This document and informal consultation under Section 106 were determined, in coordination with PHMC, to be appropriate to support the original DEIS approach. The Assessment evaluates the five Build Alternatives retained for study in the DEIS and uses a single "study area" geography surrounding these alternatives as a potential impact area. The Assessment identifies properties that are listed in or eligible for listing in the National Register of Historic Places, as well as properties that have potential eligibility. Using the professional judgment of architectural historians, the document assesses the likelihood that each unlisted property is eligible in their current state and the likely effect of each alternative on each property. As to archaeology, the Assessment identifies known sites and the relative potential for the study area to contain intact archaeological resources. As an informal document, the Assessment does not have the detailed forms and other documentation required for formal consultation.

Given SEPTA's change in approach to the DEIS, the intent is to use the Initial Assessment as a supporting document to the DEIS. However, Emma suggested that the report also be a supporting document to the future Section 106 Effects Report to forestall potential issues that could arise in a future adverse effect determination. The Assessment, in conjunction with the DEIS, would provide cultural resources documentation about the other alternatives considered, and importantly, the

rationale for SEPTA's choice of Likely Preferred Alternative. Leslie noted that cultural resources were considered among the factors in identifying an LPA in the studies leading to the DEIS.

- Area of Potential Effect Report – With the anticipated shift to formal Section 106 consultation, this report is in preparation. It and all subsequent Section 106 documents will focus on the Likely Preferred Alternative and will not examine other alternatives. The APE Report includes a list of consulting parties, which was requested in PHMC's letter in response to the Section 106 Initiation Package for the project.
- Report Schedule - Leslie provided the following Section 106 schedule items:
 - APE Report – due to PHMC January 6, 2016
 - Eligibility Report – March 17, 2016
 - Effects Report – April 7, 2016
- Emma stated that PHMC's review duration for the APE Report would be approximately 30 days. Given that SEPTA will be moving forward with the eligibility analyses during that review cycle, Emma offered PHMC's availability 10 days to two weeks in to coordinate regarding the details of the eligibility analysis and consulting party interactions. To assist with that forthcoming coordination, Emma supported Leslie's offer to provide information from the Initial Assessment Report about the listed, eligible and potentially eligible resources already identified in the study area.
- Emma indicated PHMC's willingness to coordinate as the project advances, and for SEPTA and the team to reach out by phone or email as needed. She noted that a memo of this meeting would be sufficient documentation of SEPTA's change to formal consultation and PHMC's support of it.

Action Items

- SEPTA and team to finalize the Initial Assessment Report for use as a supporting document to the DEIS and Section 106 Effects Report.
- SEPTA and FTA will finalize and deliver the APE Report to PHMC on January 6, 2016.
- SEPTA and team will schedule a coordination discussion with PHMC during the week of January 18, 2016. This discussion will focus on approaches to eligibility analysis and consulting party coordination. SEPTA and team will provide resource information from the Initial Assessment Report to PHMC prior to this coordination discussion.

**King of Prussia Rail
Norristown High Speed Line AA / DEIS
Section 106 Coordination Conference Call/Webinar
Summary**

Date: March 3, 2016
Time: 1:30 PM
Location: Conference Call/Webinar

Participants

Emma Diehl	PHMC
Tony Cho	FTA
Dan Koenig	FTA
Fritz Ohrenschall	SEPTA
Kate Farnham	AECOM
Leslie Roche	AECOM

Summary of Discussion

- Area of Potential Effects (APE) Report – Historic Architecture
 - Emma Diehl stated that she has reviewed the APE Report for the project and agrees with the APE boundary for historic architecture. She will shortly prepare a concurrence letter to FTA Region 3.
- Resources for Survey
 - Kate Farnham reviewed the 12 properties within the APE that appear to warrant survey. The following approach for each property was agreed among attendees to be appropriate (numbering coincides with resources list provided to attendees):
 1. Quarry property – abbreviated Historic Resource Survey Form (HRSF)
 2. Philadelphia and Reading Railroad – AECOM to review the file of the Chester Valley Railroad to see if the Philadelphia and Reading Railroad has been previously surveyed. If it has and was found to be a contributing element in that file, then further study for KOP Rail is not necessary. If it is clear that the Philadelphia and Reading was not evaluated in that file, then a full HRSF for the section of the Railroad within the APE would be required.
 3. Brandywine Village District – Full HRSF. AECOM will research the park. If it was part of the original subdivision for Brandywine Village, the park will be included in the form.
 4. King of Prussia Arms Apartments – Abbreviated HRSF is adequate provided the property has no association with public housing.
 5. Allendale Road Farmhouse – Abbreviated HRSF
 6. Wills Building - Abbreviated HRSF
 7. Gatti & Morrison Building - Abbreviated HRSF
 8. Southern W&S of PA - Abbreviated HRSF
 9. ProMetrics - Abbreviated HRSF
 10. Arkema Campus – Full HRSF. If property access is not possible Emma advised that using historical aerials as well as observation from publicly accessible properties would be adequate. AECOM is to also review other Arkema campuses and assess the significance of this one within their overall operation.
 11. Devon International - Abbreviated HRSF

12. American Baptist Mission Center – Full HRSF

- At Kate's request, Emma indicated she would look for an example context narrative for an office park that PHMC feels we could use as a model.
- Archaeology Phase 1A Survey – Leslie noted that the survey is underway with the limit of disturbance (LOD) serving as the archaeology APE. AECOM expects to submit the Phase 1A Survey Report and architectural survey forms at the same time. AECOM will advise attendees when to expect those documents.



Pennsylvania State Historic Preservation Office

PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

March 7, 2016

Ms. Terry Garcia Crews
ATT: Tony Cho
FTA, Region III
1760 Market Street, Suite 500
Philadelphia, PA 19103-4124

RE: ER 2013-1006-091-I; FTA: King of Prussia Rail Project; Upper Merion Township, Montgomery County; APE Report

Dear Ms. Garcia Crews,

Thank you for submitting information concerning the above referenced project. The Pennsylvania State Historic Preservation Office (PA SHPO) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act (NHPA) of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

Archaeological Resources

The information you provided indicates a Phase IA archaeological survey will be completed for the Likely Preferred Alternative. Please provide a copy of the Phase IA report to our office for review and comment.

Above Ground Resources

Thank you for providing an Area of Potential Effects (APE) Report for the above-referenced project. Based on the information received as well as discussed in our March 3, 2016 conference call, we concur with the proposed APE and survey methodology for above ground resources. Please be sure to consult relevant guidelines and appropriate historic contexts for completion of the full HRSFs. In addition, please include historic and current aerial comparisons as appropriate in addition to the required attachments (USGS, photographs, site plans).

As captured in the March 3, 2016 meeting minutes, the following properties will be surveyed:

- Quarry Property – abbreviated Historic Resource Survey Form (HRSF)
- Philadelphia & Reading Railroad – contingent upon additional research into previous finding regarding the Chester Valley Railroad
- Brandywine Village District –full HRSF
- King of Prussia Arms Apartments – abbreviated HRSF (provided that apartment complex has no association with public housing)
- Allendale Road Farmhouse – abbreviated HRSF
- Wills Building – abbreviated HRSF
- Gatti & Morisson Building - abbreviated HRSF
- Southern W&S of PA - abbreviated HRSF
- ProMetrics - abbreviated HRSF

- Arkema Campus – full HRSF
- Devon International – abbreviated HRSF
- American Baptist Mission Center – full HRSF

Please be sure to consult relevant guidelines for completion of all forms (available from our website) and appropriate historic contexts for completion of the full HRSFs. In addition, please include historic and current aerial comparisons as appropriate in addition to the required attachments (USGS, photographs, site plans) for each of the full HRSFs.

For questions concerning archaeological resources, please contact Mark Shaffer at mshaffer@pa.gov or (717) 783-9900. For questions concerning above ground resources, please contact Emma Diehl at emdiehl@pa.gov or (717) 787.9121.

Sincerely,

A handwritten signature in black ink, appearing to read "D. McLearn", with a long horizontal flourish extending to the right.

Douglas C. McLearn, Chief
Division of Archaeology and Protection

C: Tony Cho, FTA
Liz Smith, SEPTA
Leslie Roche, AECOM
Kate Farnham, AECOM



U.S. Department
of Transportation
**Federal Transit
Administration**

REGION III
Delaware, District of
Columbia, Maryland,
Pennsylvania, Virginia,
West Virginia

1760 Market Street
Suite 500
Philadelphia, PA 19103-4124
215-656-7100
215-656-7260 (fax)

August 24, 2016

Andrea L. MacDonald
Director & Deputy State Historic Preservation Officer
Pennsylvania Historical and Museum Commission (PHMC)
PA State Historic Preservation Office
400 North Street, Second Floor
Harrisburg, PA 17120

Section 106 Consultation for the King of Prussia Rail Project, Upper Merion Township, Montgomery County, Pennsylvania (ER 2013-1006-091-A)

Dear Ms. McDonald:

As you are aware, the Federal Transit Administration (FTA) in cooperation with the Southeastern Pennsylvania Transportation Authority (SEPTA) has formally initiated and is continuing Section 106 consultation for the for the King of Prussia (KOP) Rail Project (project). This letter includes two reports: the *Intensive-Level Survey and Determination of Eligibility Report*, which identifies and assesses architectural resources in the Area of Potential Effects (APE) and the *Phase 1A Archaeological Survey Report*, which identifies and assesses the presence of and potential for archaeological resources in the APE. FTA formally requests PHMC review and concurrence with the eligibility determinations and recommendations (see **Enclosures 1 and 2**).

On August 8, 2016, SEPTA sent a "save-the-date" invitation to the invited Consulting Parties (see **Enclosure 3**) formally inviting them to participate in the Section 106 process and to attend the September 8, 2016 Consulting Party meeting at 10:30 am at Upper Merion Township Hall, 175 West Valley Forge Road in Upper Merion, PA. The purpose of the meeting is to discuss the findings of the enclosed reports with the invited Consulting Parties and to obtain input for the Section 106 process. The meeting will include a presentation of the project, a review of the resources identified in the enclosed reports, and a briefing on next steps under Section 106.

If you have any further questions, please contact Mr. Tim Lidiak, Community Planner, at (215) 656-7084.

Sincerely,

Daniel Koenig
Environmental Protection Specialist

cc: Emma Diehl, PHMC
Mark Shaffer, PHMC

Enclosures:

- Enclosure 1: Intensive Level Survey Determination of Eligibility Report
- Enclosure 2: Phase 1a Archaeological Survey Report
- Enclosure 3: Invited Consulting Parties

Enclosure 3

Invited Consulting Parties

- Pennsylvania Historical and Museum Commission
- National Park Service, Northeast Region
- Valley Forge National Historical Park
- Montgomery County Planning Commission
- Montgomery County Division of Parks, Trails and Historic Sites
- Historical Society of Montgomery County
- The Heritage Conservancy
- Upper Merion Township Planning Commission
- King of Prussia Historical Society
- Chester County Historic Preservation Network
- Chester County Historical Society
- Chester County Planning Commission
- Tredyffrin Historic Preservation Trust
- Tredyffrin Township Historical Commission
- Upper Darby Township
- Upper Darby Historical Society
- Delaware County Planning Department
- Delaware County Historical Society
- Preservation Alliance for Greater Philadelphia
- The Delaware Tribe
- The Delaware Nation
- The Oneida Indian Nation
- The Eastern Shawnee Tribe of Oklahoma
- Stockbridge-Munsee Community of Mohican Indians

**King of Prussia Rail
Norristown High Speed Line AA / DEIS
Section 106 Consulting Parties Meeting 1
Summary**

Date: September 8, 2016
Time: 10:30 AM
Location: Upper Merion Township Building

Participants

Kate Farnham	AECOM
Marge Quinn	AECOM
Leslie Roche	AECOM
Jesse Walker	AECOM
Beverlee Barnes	Delaware County
Dan Koenig	FTA
Tim Lidiak	FTA
Janet Arcuicci	Montgomery County
Emma Diehl	PHMC
Mark Shaffer	PHMC
Fritz Ohrenschall	SEPTA
Liz Smith	SEPTA
Stephen Burso	Tredyffrin Township
Erin McPherson	Tredyffrin Township
Jaque Camp	Upper Merion Township
Rob Loeper	Upper Merion Township

Summary of Meeting

- Introductions and sign-in sheet – Liz Smith opened the meeting with a round of introductions and sign-in sheet circulation.
- Project Overview
 - Liz outlined the meeting goals:
 - To inform attendees about the project and its relationship to cultural resources protected by Section 106; and
 - To gain feedback and input from consulting parties regarding study area cultural resources.
 - Liz then provided background on the project origins, schedule, planning process, alternatives development and screening, and the recommended locally preferred alternative (LPA).
- Section 106
 - Leslie Roche continued the meeting by describing the Section 106 process under the National Historic Preservation Act, the role of the Section 106 process to inform the NEPA DEIS process, FTA's role as lead agency, the PHMC's role as the State Historic Preservation Office, and the role of the consulting and interested parties.
 - Dan Koenig explained that as the lead agency, FTA is co-managing the project with SEPTA. It is early in the Section 106 process, which allows for dialog with the consulting parties as the project advances. Dan further explained that the format of engagement with the consulting parties is flexible. Thus, while today's session is a meeting, future interaction could be by phone or webinar if desired. Emma Diehl indicated that the PHMC is flexible in regard to the format for future consulting party meetings for the project, such as conference call.

- Kate Farnham continued the meeting by explaining the area of potential effect (APE) for historic architectural (above-ground) properties and the methodology for identifying such properties. Dan explained that FTA and SEPTA consulted with PHMC regarding the APEs for architectural history and archaeology, and PHMC concurred with the proposed APE boundaries earlier this year.
- Kate then reviewed the properties evaluated for historic potential. She noted that initially properties 50 years old or older were identified for examination as potential historic properties because the Section 106 guidelines for assessment suggest that benchmark. Dan added that 50 years was determined to be a realistic benchmark for the project considering SEPTA's timely project implementation schedule. Fifty years equates to above-ground resources built in 1970-1971. Previous architectural survey work had been done in the APE and three previously identified properties were determined eligible for listing in the National Register of Historic Places. As part of this study, AECOM also identified and surveyed 10 new properties, of which one (the American Baptist Churches USA Mission Center) was recommended eligible for listing on the National Register of Historic Places.

Properties are eligible for the National Register of Historic Places because they achieve specific criteria for eligibility outlined by the Section 106 regulations. The four eligible/recommended-eligible properties include:

1. Pennsylvania Turnpike: Delaware River Extension
2. Philadelphia and Western Railway: Norristown High Speed Line
3. Market Street Elevated Railway Historic District
4. American Baptist Churches USA Mission Center

In addition, the APE includes the Philadelphia Transit Company Building. The oldest portion of this building is not eligible but contributes to two eligible historic districts (Market Street Elevated Railway Historic District and 69th Street Terminal Square Shopping District).

- Jesse Walker continued the meeting by explaining the survey for potential below-ground (archaeological) resources, the survey methodology and results. Because of extensive development and land re-contouring in the APE, the survey results indicate low sensitivity for archaeological resources; no further archaeological work is recommended within the APE.
- Leslie concluded the Section 106 presentation portion of the meeting with next steps, explaining that the AECOM team is preparing a draft Section 106 effects report. Dan noted that the DEIS would contain the eligibility report findings and PHMC concurrence, but if the effects report is not finalized by the time the DEIS is published, the DEIS will contain preliminary findings of effect. Leslie then asked for comments from consulting parties and described how comments could be provided. It was agreed with the consulting parties to provide written comments by October 1.
- Next steps - Liz outlined next steps for the Section 106 and NEPA processes.
- Question and comment period:
 - Emma Diehl stated that PHMC is in the process of updating their statewide historic preservation plan. Meetings are occurring across the state during this process, providing the opportunity for input from interested people and organizations. She offered that those interested could participate by signing up for PHMC's blog, accessible via www.phmc.pa.gov.
 - Mark Shaffer asked whether ancillary infrastructure to the project such as stormwater management facilities and utility relocations were accounted for in the APE for archaeology?

SEPTA and the AECOM team responded that at the current level of concept design, approximately 3 percent, areas for ancillary facilities are preliminarily accommodated. Mark responded that Phase 1A archaeological survey would be required if the APE were to increase to accommodate project-related facilities. Dan noted that future survey and consultation could occur, citing the future identification of specific locations and design of piers and stations.

- Dan encouraged the consulting parties to review the survey reports for above-ground and below-ground resources and provide comments in a timely manner. Consulting party input will be shared with PHMC.
- Beverlee Barnes noted that Delaware County's architectural inventory report from 1991, prepared by CHRS, is available at the County and at PHMC in hard copy.
- Stephen Burso asked about project funding. Liz responded that SEPTA is in the process of identifying potential funding sources, of which federal funding would be a part. She noted that SEPTA expects many non-Federal funding sources will make up the match. Dan noted that SEPTA is undertaking NEPA and Section 106 as required steps toward qualifying for FTA's Capital Investment Grant program.
- Attendees asked for the slide presentation from this meeting and the address and deadline for providing comments. Liz responded that the PowerPoint presentation would be shared by email with the contact information for providing comments. Leslie showed the comment slide indicating the ways to provide comments.
- Jaque Camp asked about the potential to locate a station near the project crossing of U.S. Route 202, citing nearby apartment complexes within walking distance. Liz responded that engineering challenges make citing a station at that location not practicable. She indicated that a potential pedestrian connection from 251 DeKalb could be made to the Henderson Road station. Also, the apartment owner near Allendale likes the pedestrian access to the proposed Mall station.
- Jaque asked whether there is a warrant for two stations at the Mall now that the two parts of the Mall are connected? Liz responded that SEPTA has discussed this same question with Simon Properties, the mall owner. The western station is warranted as it would also serve Lockheed-Martin. She also cited the long-term mall development plan around the second station.
- Dan asked if there is potential for future infill stations in the project corridor? Liz responded yes.
- Stephen asked several questions:
 - How will the elevated stations be accessed? Liz responded that where stations span streets, elevators and stairs would be provided on both sides of the streets. This provision would eliminate the need for at-grade street crossing.
 - What will be the visual effect to the Tredyffrin area of the terminal station at 1st Avenue, considering the elevated structure and pedestrian bridge? Liz responded that SEPTA is preparing and will share a 3D rendering that will depict the appearance of the terminal station in the context of surrounding development.
 - Is Valley Forge National Historical Park a consulting party? Liz responded affirmatively, saying the park has been involved in the project from the beginning of the current study.
 - Trout Creek runs under the casino property in a 12- to 18-foot diameter culvert. Rob Loeper added that the stream is located behind the casino buildings.



Pennsylvania State Historic Preservation Office

PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

September 26, 2016

Mr. Dan Koenig
FTA
1760 Market Street, Suite 500
Philadelphia, PA 19103-4124

RE: ER 2013-1006-091-L; FTA: King of Prussia Rail Project; Upper Merion Township,
Montgomery County; Intensive-Level Survey Forms

Dear Mr. Koenig,

Thank you for submitting information concerning the above referenced project. The Pennsylvania State Historic Preservation Office (PA SHPO) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

Above Ground Resources

We offer the following comments in response to the intensive-level historic resource survey.

Eligible

Based on the information received and available within our files, we concur with the findings of the agency that the following property is **Eligible** for listing in the National Register of Historic Places:

- **National Offices of the American Baptist Church (588-590 N. Gulph Road)** – This property is Eligible for listing in the National Register of Historic Places under Criterion C in the area of Architecture, for the year 1962, the date of construction, for its exemplification of mid-century Modern architecture designed by notable architect Vincent Kling. The proposed boundary includes the current tax parcel, as indicated in the submission.

Not Eligible

We concur with the findings of the agency that the following properties are **Not Eligible** for listing in the National Register of Historic Places, due to a lack of integrity and/or significance:

- Brandywine Village
- King of Prussia Arms Apartments
- Elwood Powell House
- Wills Building (Key No. 097653)
- Gatti Morrison Construction Materials
- Southern Wine and Spirits of Pennsylvania

- ProMetrics
- Pensalt Technological Center (Arkema Campus)
- Devon International Group

No Additional Information Due to Potential for Effect

We concur with the scope and level of effort utilized to identify historic properties for this project, appropriate pursuant to 36 CFR Part 800.4, on the following properties as individual resources; however, if the proposed project route changes or if the agency anticipates direct effects to the following property, additional information in the form of a Historic Resource Survey Form may be required (upon consultation with our office):

- McCoy Quarry

For questions and/or future consultation regarding this review, please contact Emma Diehl at emdiehl@pa.gov or (717) 787-9121.

Sincerely,



Douglas C. McLearn, Chief
Division of Archaeology and Protection

From: Bonney Hartley [<mailto:Bonney.Hartley@mohican-nsn.gov>]
Sent: Tuesday, September 27, 2016 12:10 PM
To: Koenig, Daniel (FTA)
Cc: leslie.roche@aecom.com; Diehl, Emma (emdiehl@pa.gov); Shaffer, Mark (PHMC) (mshaffer@pa.gov); Smith, Elizabeth A (EASmith@septa.org)
Subject: RE: Section 106 Consultation - King of Prussia Project

Dear Dan:

On behalf of Stockbridge Munsee Community I confirm that we do not have significant cultural resource concerns with the King of Prussia Rail Project as proposed based on the archeological reports provided. Should the project alternative and APE change, we request continued consultation. If not, no further information is needed.

Best,
Bonney

Bonney Hartley

Tribal Historic Preservation Officer
Stockbridge-Munsee Mohican Tribal Historic Preservation
New York Office
65 1st Street
Troy, NY 12180

(518) 244-3164

Bonney.Hartley@mohican-nsn.gov
www.mohican-nsn.gov

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BOARD OF COMMISSIONERS**

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**MONTGOMERY COUNTY
PLANNING COMMISSION**

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610-278-3722

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JODY L. HOLTON, AICP
EXECUTIVE DIRECTOR

September 28, 2016

Leslie E. Roche, AICP
AECOM
510 Carnegie Center
Princeton, NJ 08540

Re: Section 106 Process for the King of Prussia
Regional Rail Project

Dear Ms. Roche:

Thank you for the consultation opportunity regarding the historic resources and the King of Prussia Rail project. We have reviewed the historic resources identified during the Section 106 process. We do not have any additional comments on either the previously identified or the newly identified resources for the project.

Should you have any further questions regarding this, please contact me at 610-278-3756 or jholton1@montcopa.org.

Sincerely,

Jody L. Holton, AICP, Executive Director
Montgomery County Planning Commission



The Delaware Nation

NAGPRA/106 Department

31064 State Highway 281
Anadarko, OK 73005
Phone (405)247-2448 Fax (405) 247-8905

NAGPRA	ext. 1182
Museum/106	ext. 1181
Library	ext. 1196
Director	ext. 1180

19 October 2016

To Whom It May Concern:

The Delaware Nation Cultural Preservation Department received correspondence regarding the following referenced project(s).

Section 106 Consultation for the King of Prussia Rail Project, Upper Merion Township, Montgomery County, Pennsylvania (ER 2013-1006-091-A).

Our office is committed to protecting tribal heritage, culture and religion with particular concern for archaeological sites potentially containing burials and associated funerary objects.

The Lenape people occupied the area indicated in your letter during, or prior to, European contact until their eventual removal to our present locations. According to our files, the location of the proposed project does not endanger cultural or religious sites of interest to the Delaware Nation. **Please continue with the project as planned** keeping in mind during construction should an archaeological site or artifacts inadvertently be uncovered, all construction and ground disturbing activities should immediately be halted until the appropriate state agencies, as well as this office, are notified (within 24 hours), and a proper archaeological assessment can be made.

Please note the Delaware Nation, the Delaware Tribe of Indians, and the Stockbridge Munsee Band of Mohican Indians are the only Federally Recognized Delaware/Lenape entities in the United States and consultation must be made only with designated staff of these three tribes. We appreciate your cooperation in contacting the Delaware Nation Cultural Preservation Office to conduct proper Section 106 consultation. Should you have any questions, feel free to contact our offices at 405/247-8903 or by email: nalligood@delawarenation.com, or jross@delawarenation.com.

Nekole Alligood
NAGPRA/106 Director
The Delaware Nation
31064 State Highway 281
Anadarko, OK 73005

**King of Prussia Rail
Norristown High Speed Line AA / DEIS
Section 106 Coordination Conference Call/Webinar
Summary**

Date: December 8, 2016
Time: 10:30 AM
Location: Conference Call/Webinar

Participants

Emma Diehl	PHMC
Dan Koenig	FTA
Fritz Ohrenschall	SEPTA
Kate Farnham	AECOM
Leslie Roche	AECOM

Summary of Discussion

- **McCoy Quarry property – PHMC September 26, 2016 letter interpretation**
 - Emma Diehl stated that PHMC staff review of the Historic Resources Survey Short Form (HRSF-S) for the property determined that more information about the property would be needed before formal concurrence on eligibility could be provided by PHMC. Specifically, staff felt that more information about the history and character of the property would be needed.
- **Property Research to Date**
 - Kate Farnham presented information about the property, including some additional information that was obtained since the HRSF-S was completed:
 - The property was an active limestone quarry at one time, not one of the blue marble quarries known to occur in the area. It is one of several such quarries in the area. Today, the quarry is filled with water; it was converted to a reservoir ca. 1970 and quarrying no longer occurs at the site. Visual inspection indicates the owner, which operates an active quarry a few miles away, uses the site for equipment and materials storage. Three extant buildings north of the driveway/parking area date from the period when the property was used as a quarry. The buildings and features south of the truck parking area postdate 1970 and reflect later use as a reservoir. The property adjoins a modern trash-transfer/recycling facility to the south.
 - The property contains several buildings that are identified in the HRSF-S. Extant building pads and debris suggest the location of other buildings that have been demolished. No existing buildings, or evidence of former buildings, are present within the proposed limits of disturbance (LOD) of the recommended LPA.
 - Within the LOD of the recommended LPA, modern-day human disturbance is evident by the presence of materials and vehicle storage.
 - In response to Emma's question about the results of historic aerial map research to date, Kate indicated that no structures are mapped in the LOD portion of the property. In addition, structures shown on mapping on nearby properties along Saulin Boulevard were farms and not related to the quarry operation; development of these properties since the aerials has eliminated most of these structures. Housing along the original trajectory of Route 202 to the north may have been used by quarry workers, but most of this has been demolished by realignment of the roadway.

- **Form of Additional Information**

- Emma provided the following guidance for submitting additional information, explaining two approaches that could be taken to satisfy Section 106. She noted that either approach would yield a “no effect” opinion from PHMC. In either approach, setting would not be a character-defining feature of the quarry property.
 - Option 1: Formal concurrence on eligibility – Provide the equivalent of a Historic Resource Survey Long Form (HRSF-L). This could be accomplished by either providing the completed form itself or by providing an addendum to the HRSF-S. Emma itemized the materials PHMC would want to see in either format:
 - Historic aerial research – to assess historic use and appearance of the property, and to evaluate the current level of integrity of the property
 - Brief summary of known historical information on the property, as well as sources consulted during research
 - Interview owner if possible to help place the quarry in the context of quarrying in the region, identify any other historic trends it might be associated with, and ascertain historic and existing activities at the site, purpose of activities, and unique activities or features
 - Better photographs of buildings and locations within the property, and, if the historic aerial review reveals the property has integrity, architectural research for extant buildings with integrity
 - Option 2: No formal concurrence on eligibility – Assume the property is eligible for purposes of the project without providing additional documentation.

- **Satisfying Section 4(f)**

- Dan Koenig explained that the two options for providing additional information would result in different approaches to Section 4(f):
 - In Option 1, formal concurrence with a no effect finding
 - In Option 2, assumed eligibility with a no effect finding would require a *de minimis* use determination with PHMC agreement to the determination as an official with jurisdiction over the historic property. Emma noted that PHMC’s letter of no effect would support their agreement under Section 4(f).



Pennsylvania State Historic Preservation Office

PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

December 15, 2016

Mr. Dan Koenig
FTA
1760 Market Street, Suite 500
Philadelphia, PA 19103-4124

RE: ER 2013-1006-091-L: FTA – King of Prussia Rail Project, Upper Merion Township,
Montgomery County – Phase IA Archaeological Survey Report

Dear Mr. Koenig:

Thank you for providing information concerning the above referenced project. The Pennsylvania State Historic Preservation Office (PA SHPO) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources. Our comments are as follows:

Archaeological Resources

Based on the results of this investigation, we agree with the recommendation that no further archaeological investigation is necessary within the APE-Archaeology.

If you have any questions or comments concerning our review, please contact Mark Shaffer at (717) 783-9900 or MShaffer@pa.gov.

Sincerely,

Douglas C. McLearn, Chief
Division of Archaeology and Protection



U.S. Department
of Transportation
**Federal Transit
Administration**

REGION III
Delaware, District of
Columbia, Maryland,
Pennsylvania, Virginia,
West Virginia

1760 Market Street
Suite 500
Philadelphia, PA 19103-4124
215-656-7100
215-656-7260 (fax)

February 13, 2017

Mr. Douglas C. McLearen
Chief, Division of Archaeology & Historic Protection
Pennsylvania Historical and Museum Commission
Commonwealth Keystone Building
400 North Street
Harrisburg, PA 17120

Re: Section 106 Consultation for the King of Prussia Rail Extension Project, Upper Merion Township, Montgomery County, Pennsylvania (ER 2013-1006-091-A)

Dear Mr. McLearen:

The Southeastern Pennsylvania Transportation Authority (SEPTA), in cooperation with the Federal Transit Administration (FTA), is continuing Section 106 consultation for the above-referenced project. As a Federal undertaking, the project is subject to Section 106 of the National Historic Preservation Act of 1966, as amended, and the associated implementing regulations, 36 CFR Part 800.

The Pennsylvania Historical and Museum Commission's (PHMC) letter of September 26, 2016 addressed eligibility of historic properties within the Project's delineated area of potential effect (APE) and requested additional information for one historic resource, the McCoy Quarry property. Enclosed you will find the *Section 106 Determination of Effects Report*, which identifies and assesses the potential effects of the project on resources listed on or eligible for listing on the National Register of Historic Places and the *Historic Resources Survey Form* for the McCoy Quarry property. The additional information on the McCoy Quarry property addresses the request from your September 26, 2016 letter.

Consulting parties are being provided copies of this letter and enclosures electronically for a concurrent 15-day review. FTA is requesting any comments on the enclosed reports from consulting parties within 15 days of receipt of this electronic letter and enclosures.

Hardcopies of the enclosures will be provided to PHMC. Please contact Mr. Timothy Lidiak, Community Planner, at (215) 656-7084 or by email at timothy.lidiak@dot.gov with any comments or inquiries on the Project.

Sincerely,

Daniel Koenig
Environmental Protection Specialist

Enclosures:
Section 106 Determination of Effects Report
Historic Resources Survey Form

cc: Emma Diehl, PHMC
Mark Shaffer, PHMC
Mike Caldwell, NPS – Northeast Region
Deirdre Gibson, Valley Forge National Historical Park
Frank Luther, King of Prussia Historical Society
Barry Rauhauser, Historic Society of Montgomery County
David Clifford, Montgomery County Division of Parks, Trails, and Historic Sites
Jody Holton, Montgomery County Planning Commission
Jacuelin Camp, Upper Merion Planning Commission
Rob Loeper, Upper Merion Planning Commission
Thomas Judge, Upper Darby Township
John Miller, Chester County Historic Preservation Network
Beth Lindsay, Chester County Historic Society
Matt Forester, Tredyffrin Township Historical Commission
Patty Benson, Tredyffrin Historic Preservation Trust
Thomas Shaffer, Delaware County Planning Department

Roche, Leslie

From: Koenig, Daniel (FTA) <daniel.koenig@dot.gov>
Sent: Tuesday, February 21, 2017 9:30 AM
To: Miller
Cc: Diehl, Emma (emdiehl@pa.gov); Lidiak, Timothy (FTA); Shaffer, Mark (PHMC) (mshaffer@pa.gov); Roche, Leslie; Smith, Elizabeth A (EASmith@septa.org); Quinn, Margaret; Ohrenschall, Frederick A (FOhrenschall@septa.org)
Subject: RE: Section 106 for the King of Prussia Rail Extension Project

Mr. Miller,

Thank you for the feedback and review. I'm cc'ing PHMC and SEPTA for their awareness of your comment.

-Dan

From: Miller [<mailto:jonrobjam@verizon.net>]
Sent: Sunday, February 19, 2017 1:01 PM
To: Koenig, Daniel (FTA)
Subject: Re: Section 106 for the King of Prussia Rail Extension Project

Mr. Koenig:
The Chester County Historic Preservation Network has "No Comment."
John Miller
President of the CCHPN

From: [Koenig, Daniel \(FTA\)](#)
Sent: Monday, February 13, 2017 3:57 PM
To: dmcclare@pa.gov
Cc: [Zubrzycki, Kathleen \(FTA\)](#) ; [Tarone, Tony \(FTA\)](#) ; [Lidiak, Timothy \(FTA\)](#) ; leslie.roche@aec.com ; <mailto:emdiehl@pa.gov> ; <mailto:mshaffer@pa.gov> ; mike.caldwell@nps.gov ; deirdre.gibson@nps.gov ; info@kophistory.org ; dcliff@montcopa.org ; jholton1@montcopa.org ; jcamp@wrt-design.com ; rloeper@umt-township.org ; tjudge@upperdarby.org ; jonrobjam@verizon.net ; blindsay@chestercohistorical.org ; tredyffrin@tredyffrin.org ; info@tredyffrinhistory.org ; info@tredyffrinhistory.org
Subject: Section 106 for the King of Prussia Rail Extension Project

Dear Mr. McLearn and Consulting Parties,

The Federal Transit Administration (FTA) is providing the attached letter and below enclosures via hyperlink for a 15-day review under Section 106 of the National Historic Preservation Act for the above-referenced project. The below link is only active for 7 days so please contact myself if you need a refreshed hyperlink or wish to receive a hardcopy of the enclosed materials. FTA is requesting consulting party comment on the materials in the below link within 15-days of this email notification. After any potential comments from consulting parties are considered, FTA will seek PHMC's concurrence on effect under Section 106 for the project.

Updated Effects Report and Quarry Form Addendum

This file will be available for download until **2/20/2017**

[Download all files \(.zip\)](#)

Please contact me with any questions. Thanks.

-Dan

Daniel Koenig
Environmental Protection Specialist
Federal Transit Administration
1990 K Street, NW | Suite 510
Washington, DC 20006
202.219.3528 (o) | 202.219.3545 (f)



Pennsylvania State Historic Preservation Office

PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

March 16, 2017

Mr. Daniel Koenig
Environmental Protection Specialist
FTA, Region III
1760 Market Street, Suite 500
Philadelphia, PA 19103

RE: ER 2013-1006-091-O; FTA: King of Prussia Rail Extension Project; Upper Merion Township, Montgomery County; Determination of Effects Report

Dear Mr. Koenig,

Thank you for submitting information concerning the above referenced project. The Pennsylvania State Historic Preservation Office (PA SHPO) reviews projects in accordance with state and federal laws. Section 106 of the National Historic Preservation Act of 1966, and the implementing regulations (36 CFR Part 800) of the Advisory Council on Historic Preservation, is the primary federal legislation. The Environmental Rights amendment, Article 1, Section 27 of the Pennsylvania Constitution and the Pennsylvania History Code, 37 Pa. Cons. Stat. Section 500 et seq. (1988) is the primary state legislation. These laws include consideration of the project's potential effects on both historic and archaeological resources.

Determination of Eligibility- McCoy Quarry (Key No. 203554)

Based on the information received and available within our files, it is the opinion of the State Historic Preservation Officer that the **McCoy Quarry (Key No. 203554)** is **Not Eligible** for listing in the National Register of Historic Places due to a lack of integrity.

Determination of Effects

Based on the information received, we concur with the findings of the agency that the proposed project will have **No Adverse Effect** on the Pennsylvania Turnpike: Delaware River Extension (Key No. 155879); the American Baptist Churches USA Mission Center (Key No. 203535); and the Philadelphia and Western Railway: Norristown High Speed Line (Key No. 128825). We concur with the findings of the agency that the proposed project will have **No Effect** on the Market Street Elevated Railway Historic District (Key No. 105499) and the 69th Street Terminal Square Shopping District (Key No. 156448)

If you need further information concerning this review and/or project plans should change, please contact Emma Diehl at emdiehl@pa.gov or (717) 787-9121.

Sincerely,

Douglas C. McLearn, Chief
Division of Archaeology and Protection

***A*ppendix D – Public Outreach and Agency Coordination**

- Public Coordination Plan
- Agency Coordination Plan
- March 2016 Public Meeting Summary – Recommended LPA
- Public Outreach Log



**Increased Transit Service to King of Prussia, PA
PUBLIC INVOLVEMENT PLAN**

***Prepared for:
Southeastern Pennsylvania Transportation
Authority (SEPTA)***



Prepared by:
AECOM Technical Services, Inc.
Philadelphia, PA
Version (0): July 2013

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1. Overview

In fall 2012 SEPTA initiated the King of Prussia Rail Project to explore alternatives to extend the Norristown High Speed Line (NHSL) to the King of Prussia area. Public involvement is an important and necessary element of this project to ensure that the proposed extension will meet both personal and business needs. To effectively structure the necessary communication between SEPTA and local interests for this project, SEPTA has developed a public involvement program in order to ensure all public, agency and project meets are met, and to achieve a productive and acceptable outcome for all involved.

For the King of Prussia Rail Project, the Public Involvement Plan (PIP) serves as an essential component to the project development process to provide clear and useful direction for SEPTA, the public and key stakeholders. The Plan establishes and maintains a collaborative decision-making process designed to engage public officials, residents, business owners, and other stakeholders in the development of the project's purpose and need, general scope of the environmental studies and design activities. The basic objectives of the Plan are as follows:

- Inform and educate agency representatives, key stakeholders and citizens about the project;
- Provide opportunities for meaningful input and dialog throughout the project development process;
- Understand community values in order to better develop alternatives and solutions; and
- Foster improved public relations.

Outreach activities are initiated early in the project development process, and continue through the completion of the Draft Environmental Impact Statement (DEIS). Activities for the Plan are designed to identify, document and, where possible, address public comments and concerns, including:

- Alternatives development and refinement;
- Station area designs and integration into surrounding communities;
- Planning and construction time and costs;
- Affects to and benefits for transit users, residents, and local businesses; and
- Ongoing service and safety.

Specific tasks related to the PIP and corresponding outreach activities are outlined below.

2. Elected Officials Coordination

SEPTA's PIP is designed to ensure elected officials at the federal, state, county and municipal level receive regular communication and coordination throughout the project development process. Public Meeting announcements, communication materials and media coordination activities are provided to elected officials, and elected officials are kept informed of the project

schedule and key milestones through regular communications and coordination efforts. SEPTA will meet individually with elected officials as requested and warranted throughout the project.

3. Project Committees

SEPTA has assembled four (4) project committees to assist the Project Team during the development of the King of Prussia Rail Project. Each committee brings unique perspectives and expertise to the table, and committee members are encouraged to participate in regular project discussions, help vet issues and concerns, and work with Project Team members to promote a consistent message to both their constituents and the community.

- **Steering Committee**

The project Steering Committee (SC) offers guidance and direction regarding overall project activities, including the direction of the public involvement process. Committee members are also involved in providing feedback to the Project Team on project management and administration activities. The Steering Committee is comprised of representatives from the Federal Transit Administration (FTA), SEPTA, the Montgomery County Planning Commission, the Delaware County Planning Department, the Greater Valley Forge TMA (GVF), Upper Merion Township and the Delaware Valley Regional Planning Commission (DVRPC). The Steering Committee will hold regular meetings throughout the project development process.

Number of meetings scheduled: 12

Target audience: FTA and SEPTA management, County and municipal representatives, local transportation management association, and metropolitan planning organization.

- **Stakeholder Advisory Committee**

The Stakeholder Advisory Committee (SAC) provides the project team a forum to communicate and discuss local issues and ideas important for the success of the project. Primary membership includes major property owners and employers in the study area, including the King of Prussia Mall, chambers of commerce, King of Prussia Business Improvement District, Greater Philadelphia Chamber of Commerce, Valley Forge National Historical Park, and the Delaware County Planning Commission.

Number of meetings scheduled: 8

Target audience: Property owners, business and non-profit organization leaders, chambers of commerce and other civic organizations.

- **Technical Advisory Committee**

The Technical Advisory Committee (TAC) serves as both a sounding board and resource for the Project Team, providing an informed review of technical analyses, proposed designs, alternatives analysis and operation strategies. Primary membership includes representatives from FTA, SEPTA, PennDOT District 6, PECO, the Pennsylvania Turnpike Commission, Montgomery County Planning Commission, Delaware County Planning

Department, Norfolk Southern, Federal Highway Administration (FHWA), DVRPC, and Upper Merion Township.

Number of meetings scheduled: 6

Target audience: Transportation agencies and organizations, utilities, and planning commissions.

- **Agency Coordination Committee**

The Agency Coordination Committee (ACC) works with the Project Team to review findings from the EIS, alternatives and the locally preferred alternative. Primary membership includes representatives from FTA, SEPTA, FHWA, PennDOT District 6, Federal Railroad Administration, Pennsylvania Historical Museum Commission, US Environmental Protection Agency, Pennsylvania Department of Environmental Protection, US Army Corps of Engineers, National Park Service, US Fish and Wildlife Service and Valley Forge National Historical Park.

Number of meetings scheduled: 8

Target audience: Environmental resource agencies, transit and transportation agencies.

4. Stakeholder Coordination Activities

In addition to regular committee meetings, SEPTA has also programmed separate small-group and individual discussions with key stakeholders early in the project development process. These meetings are designed to provide a forum for more detailed discussions of stakeholder needs and interests, the meetings enable the Project Team to explore specific issues and concerns across a range of disciplines that are important to the success of this project.

- **Stakeholder Interviews**

The first set of stakeholder meetings are organized as individual interviews and small group discussions in an informal, facilitated setting. This format allows for a more detailed assessment of both local and regional issues and concerns, a review of the project Purpose and Need, discussion and analysis of proposed alternatives, and the gathering of local insights and suggested methodologies for the success of future public outreach activities.

The stakeholder interviews will involve members of the Steering and Stakeholder Advisory Committee, including large employers and institutions in the study area and the wider region. Held over a period of two to three days, meetings are scheduled to occur at the beginning of each hour between 8 a.m. and 5 p.m. to ensure maximum participation as well as encourage open and frank discussions. Input received as these meetings will assist in the analysis of alternatives and the refinement of the PIP. Stakeholder interviews were held from December 10 - December 14, 2012 at Upper Merion Township.

Number of meetings scheduled: Multiple, over two to three days.

Target audience: SC and SAC members, major employers and institutions

5. Public Meetings

SEPTA has programmed several Public Meetings in order to provide a forum for Project Team members to personally engage with all residents. The meetings will be timed to occur at key milestones during the project development process, while adhering to the public involvement requirements as stipulated by the National Environmental Policy Act (NEPA).

■ Public Meetings #1

The first round of Public Meetings will occur during the early scoping phase prior to the initiation of NEPA and is intended to introduce the project to the public and solicit their early feedback. The meetings will be held over three consecutive days at different locations around the study area to encourage wide-spread participation, and each meeting will consist of the same materials, displays and presentation format. The meetings will be held at central locations, and publicized through the project website, direct mail, e-mail, and through local meetings to encourage public attendance and participation. The first Public Meeting was held on January 29, 30 and 31, 2013 at the Valley Forge National Historical Park, Villanova University, and the Montgomery County Planning Commission, respectively.

■ Public Scoping Meeting

A formal Public Scoping Meeting will occur during the NEPA Scoping phase of the project. The meeting is intended to summarize the scope of the project and all upcoming coordination activities, and introduce preliminary alternatives to the public. The Public Scoping Meeting will solicit their feedback on purpose and need, the alternatives to be considered, and local impacts to be evaluated. The meeting will set the stage for future alternatives development activities. The meeting will be held at a central location, and publicized through the project website, direct mail, e-mail, and through local meetings to encourage public attendance and participation. Testimony received during this meeting and concurrent 45-day comment period will become part of the project's official record, and recorded in a Scoping Summary Report. The Public Scoping Meeting/Open House is scheduled for July 16, 2013 at the Radisson Hotel at Valley Forge. The comment period is June 27, 2013 through August 14, 2013.

■ Public Meetings #2

A Public Meeting will be held to further refine proposed alternatives, as well as provide an analysis of progress reports. Three meetings held over consecutive days will be held at central locations, and publicized through the project website, direct mail, e-mail, and through local meetings to encourage public attendance and participation. The meetings will also include break-out sessions for the public to engage in more detailed discussions of issues and concerns with the Project Team. These Public Meetings are scheduled for spring 2014.

■ Public Meetings #3

A Public Meeting will occur toward the end of the project development process just prior to the completion of the Draft Environmental Impact Statement (DEIS). Two meetings will

held over consecutive days will be held at a central location, and publicized through the project website, direct mail, e-mail, and through local meetings to encourage public attendance and participation. The meetings will follow a similar format to the second Public Meeting, and provide additional opportunities for the public to provide input on the project. These Public Meetings are scheduled to take place in summer 2014.

▪ **Public Hearings**

The final meeting will be held following the release of the DEIS, and will be organized a formal Public Hearing. A Public Hearing will be scheduled at a key location in the project area, and will provide the public and stakeholders an opportunity to offer official testimony regarding the DEIS report. Testimony received during this meeting and concurrent 45-day comment period will become part of the project's official record, and recorded in a Comments and Response document. A Public Hearing is scheduled for fall 2014.

Number of meetings scheduled: 10, with early scoping meetings (3 meetings), a Public Scoping Meeting (1 meeting), two rounds of Public Meetings (5 meetings total), and one (1) Public Hearing

Target audience: All residents, stakeholders, officials.

6. Project Theme

SEPTA has established a project theme in order to create consistency and public recognition for the overall public involvement program and associated materials. The theme includes a project logo, and design features and color elements from the logo are incorporated into all print material templates, presentations and the project website. The project theme will be utilized throughout the project development process to create consistency in the appearance of the message and foster long-term public familiarity with the project.

Project Theme elements: Logo, Newsletter/Fact Sheet template, website template, presentation template, displays and meeting handouts template.

7. Project Website and Social Media Strategies

A stand-alone project website communicates project activities and enables users to receive timely information regarding project activities. The website – www.kingofprussiarail.com – is based on four key project themes: Connectivity, Development, Access and Efficiency. Major content categories include a description of the project background, alternatives analysis, environmental studies, public involvement, news and information, market analysis, links and other resources, and contact information. Project themes and online content are supported by graphics, tables and figures, as well as interactive links to advance the level of public involvement.

News alerts and meeting announcements are pushed to social media followers on a project-specific Twitter account: @KOPRail.

Website updates will be made on an ongoing basis to ensure the latest project news and information is available to the public at all times. Printed materials will be posted in electronic format for download, and other project information, including public meetings video feed, meeting displays and project summaries will be posted once available. In addition, news organizations and media outlets will be able to retrieve press releases and graphics for use in broadcasts and print materials.

Website address: www.kingofprussiarail.com

Twitter address: www.twitter.com/@KOPRail

8. Project Fact Sheet and Newsletters

In addition to online project news and information, interested citizens can receive project updates through an initial project Fact Sheet and regular newsletter releases at key project milestones. The project Fact Sheet will serve as a summary resource of the project, with newsletters released at key milestones during the project development process.

- **Fact Sheet**

The Fact Sheet will be released early in project development, and will provide an overview of the project development process, description of the proposed project, and information on the various committees and public involvement activities. Occasional updates to the Fact Sheet will occur as needed as project activities progress. Copies of the Fact Sheet will be provided to members of the Steering Committee, Stakeholder Advisory Committee and the public during the first round of scoping Public Meetings.

- **Newsletter # 1**

The first newsletter will be released to coincide with the Public Scoping Meeting. The newsletter will describe the project Purpose and Need, list of alternatives under consideration, and provide an overview of future meetings.

- **Newsletter #2**

The second newsletter will be released between the second and third Public Meeting. The newsletter will detail the refinement of alternatives, coordination activities to date and next steps in the project development process.

- **Newsletter #3**

The third and final newsletter will be released just prior to the Public Hearing. This newsletter will summarize project activities to date, including the most recent findings from the alternatives analysis, environmental studies and coordination activities.

The project Fact Sheet and newsletters will be available in both print and electronic formats, and distributed to all committee members, key stakeholders and the public.

9. Environmental Justice

The PIP also includes consideration of Environmental Justice (EJ) communities to ensure opportunities are provided to all stakeholders regardless of age, race, native language or income. SEPTA has identified organizations and key community leaders who represent underserved or potentially-vulnerable populations that will receive targeted communications regarding project activities. EJ organizations will be included in the distribution of project materials and meeting notices. To ensure a large cross-section of EJ populations are engaged, the effort will bilingual materials, utilize interpreters, translators, and other resources to make project information accessible to all audiences.

Target audience: Elderly, low-income, minority, and non-English-speaking populations.

10. Media Relations

The Media Relations component of the PIP provides reporters and editorial boards timely and accurate project news and information. Coordination consists of the dissemination of press kits, electronic news blasts, meetings with local editorial boards, and monitoring of news articles and reports regarding the project.

Media kits are available for all major news outlets, including TV, radio and newspapers. Project Team members are also available for interviews regarding project activities.

Target media organizations: WHYY, KYW radio & TV, WPVI-TV, WCAU, WHYY-TV, WTXF-TV, WUVP-TV, WWSI-TV, WXPB, WYBE-TV, The Philadelphia Inquirer, Philadelphia Daily News, and others, as appropriate.

11. Regional Public Opinion Poll

SEPTA has programmed a Regional Public Opinion Poll to occur during the development and vetting of project alternatives. The poll will be administered online, and during coordination meetings with stakeholders and the public to obtain feedback regarding the project. Specific questions will be used to solicit feedback on project scoping, purpose and need, alternatives development, environmental studies and market analysis. Feedback received from the public opinion poll will be used to refine the alternatives and project additional direction to the Project Team.

Public Opinion Poll format: Administered online and during project coordination meetings.

Target audience: Residents, stakeholders, officials and EJ community leaders/organizations.

12. Visualizations

A 3D spatial model will be developed to illustrate retained alternatives and the locally preferred alternative for the King of Prussia Rail Project. The 3D-GIS based model will allow the Project Team members, SEPTA, stakeholders and the public to review and present existing and proposed alignments within an interactive 3D environment. This model will be an important method for helping the public and other stakeholders understand and visualize the project from various locations in the project area and from various viewpoints.



**Increased Transit Service to King of Prussia, PA
DRAFT AGENCY COORDINATION PLAN**

***Prepared for:
Southeastern Pennsylvania Transportation
Authority (SEPTA)***



Prepared by:
AECOM Technical Services, Inc.
Philadelphia, PA
Version (0): July 2013

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1. Agency Identification

The Agency Coordination Plan (ACP) identifies federal, state and local agencies that may have jurisdiction by law, special expertise or other interest in the environmental review process and its outcomes. The Southeastern Pennsylvania Transportation Authority (SEPTA) will involve these agencies in the environmental study process.

1.2 Lead Agencies

Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) requires the identification of Lead, Cooperating and Participating Agencies in the development of an Environmental Impact Study (EIS).¹ For the Increased Transit Service to King of Prussia, PA project, the lead agencies include the Federal Transit Administration (FTA) with SEPTA. Under SAFETEA-LU, lead agencies must perform the functions that they have traditionally performed in preparing an EIS in accordance with 23 Code of Federal Regulations (CFR) 771 and 40 CFR parts 1500-1508. In addition, the lead agencies must identify and involve cooperating and participating agencies, develop a coordination plan, provide opportunities for public and agency involvement in defining the purpose and need and determining the range of alternatives; and collaborate with agencies in determining methodologies and the level of detail for the analysis of the Environmental Impact Statement (EIS) alternatives. In addition, lead agencies must provide increased oversight in managing the process and resolving issues. This last requirement is reinforced in the recently enacted federal legislation entitled “Moving Ahead for Progress in the 21st Century” (MAP-21).

1.3 Cooperating Agencies

According to Council of Environmental Quality (CEQ) regulations, (40 CFR 1508.5), a cooperating agency is any federal agency, other than a lead agency, that has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposed project or project alternative. A state or local agency of similar qualifications or, when the effects are on lands of tribal interest, a Native American tribe may, by agreement with the lead agencies, also become a cooperating agency.

A distinguishing feature of a cooperating agency is that the CEQ regulations, (40 CFR 1501.6), permit a cooperating agency to “assume on request of the lead agency responsibility for developing information and preparing environmental analyses including portions of the EIS concerning which the cooperating agency has special expertise.” An additional distinction is that, pursuant to 40 CFR 1506.3, “a cooperating agency may adopt, without re-circulating, the EIS of a lead agency when, after an independent review of the EIS, the cooperating agency concludes that its comments and suggestions have been satisfied.” This provision is particularly

¹ MAP-21, the Moving Ahead for Progress in the 21st Century Act, was signed into law on July 6, 2012. It is intended, in part, to streamline transportation project development and builds on foregoing programs such as those implemented as a result of SAFETEA-LU. As the FTA is currently developing implementing procedures and guidance for complying with MAP-21, it has advised SEPTA to proceed under SAFETEA-LU and other current regulations and procedures until such time as the MAP-21 implementing procedures and guidance are available. At that time, the FTA will advise SEPTA if and how MAP-21 would alter this Agency Coordination Plan; SEPTA would amend this Plan as needed.

important to permitting agencies, such as the U.S. Army Corps of Engineers who, as a cooperating agency, routinely adopts U.S. Department of Transportation environmental documents.

Table 1 lists the cooperating agencies in the environmental review process for the Increased Transit Service to King of Prussia, PA: Alternatives Analysis (AA)/Draft Environmental Impact Statement (DEIS) Project along with their associated roles and responsibilities. Attachment 1 lists the agencies and contact information.

Table 1: Cooperating Agencies

Agency	Responsibilities
Federal Highway Administration (FHWA)	Provide comments on: Purpose and need Range of alternatives The Public Involvement and Agency Coordination Plan Methodologies Level of detail for analysis of alternatives Identification of issues that could substantially delay or prevent granting of permit/approval Opportunities for collaboration Mitigation
U.S. Army Corps of Engineers (USACE), Department of the Army	Same as FHWA Potential to adopt the EIS and coordinate public outreach when possible
U.S. Environmental Protection Agency (EPA)	Same as FHWA Approval of projects within sole source aquifers Federal review of the Section 404/10 Corps Permit Process
U.S. Fish and Wildlife Service (USFWS)	Same as FHWA Determination of potential project effects on federally listed threatened and endangered species
U.S. Coast Guard	Same as FHWA Determination of potential project effects on navigable water of the U.S.

1.4 Participating Agencies

Participating agencies are those with an interest in the project. The standard for participating agency status is more encompassing than the standard for cooperating agency status described above. Therefore, cooperating agencies are, by definition, participating agencies, but not all participating agencies are cooperating agencies. The lead agencies should consider the distinctions noted below in deciding whether to invite an agency to serve as a cooperating agency or only as a participating agency.

The roles and responsibilities of cooperating and participating agencies are similar, but cooperating agencies have a higher degree of authority, responsibility and involvement in the environmental review process. In general, participating agencies are responsible for

commenting on the environmental documentation produced as part of the project. This includes:

- Purpose and need
- Range of alternatives
- The Public Involvement and Agency Coordination (PIAC) Plan
- Methodologies
- Level of detail for analysis of alternatives
- Identification of issues that could substantially delay or prevent granting of permit/approval
- Opportunities for collaboration
- Mitigation

The participating agencies identified for the Increased Transit Service to King of Prussia, PA project are as follows:

1.4.1 Federal

- Federal Transit Administration
- Federal Highway Administration
- Federal Railroad Administration
- Natural Resource Conservation Service
- U.S. Army Corps of Engineers
- U.S. Coast Guard
- U.S. Department of Housing and Urban Development (HUD), Regional Office of Environment
- U.S. Department of the Interior, National Park Service
- U.S. Department of the Interior, Office of Environmental Policy & Compliance
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Geological Survey, Environmental Affairs Program

1.4.2 State

- Pennsylvania Department of Environmental Protection (PADEP)
- Pennsylvania Department of Transportation (PennDOT)
- Pennsylvania Fish and Boat Commission
- Pennsylvania Game Commission

- Pennsylvania Historical and Museum Commission (PHMC)
- Pennsylvania Turnpike Commission

1.4.3 Montgomery County

- Montgomery County Department of Economic and Workforce Development
- Montgomery County Department of Housing and Community Development
- Montgomery County Department of Planning
- Montgomery County Division of Parks, Trails and Historic Sites

1.4.4 Delaware County

- Delaware County Planning Department

1.4.5 Chester County

- Chester County Planning Commission

1.4.6 Regional

- Delaware Valley Regional Planning Commission (DVRPC)
- Greater Valley Forge Transportation Management Association (GVFTMA)

1.4.7 Upper Merion Township

- Upper Merion Department of Planning and Development
- Upper Merion Department of Public Works

1.4.8 Municipality of Norristown

1.4.9 Bridgeport Borough

1.4.10 City of Philadelphia

- Philadelphia City Planning Commission

1.4.11 Lower Merion Township

1.4.12 Radnor Township

1.4.13 Tredyffrin Township

1.4.14 Upper Darby Township

1.4.15 Native American Tribes

- The Delaware Tribe
- The Delaware Nation
- The Oneida Indian Nation
- The Eastern Shawnee Tribe of Oklahoma
- Stockbridge-Munsee Community of Mohican Indians

2. Coordination Points, Responsibilities, and Project Schedule

SAFETEA-LU establishes milestones within the environmental review process for involvement and review opportunities. **Table 2** summarizes the key coordination points between the lead agencies, cooperating agencies, participating agencies and the public including which agency is responsible for activities during that coordination point. Estimated dates are included for informational and resource planning purposes.

Table 2: NEPA Agency Coordination Action Plan

Coordination Point	Initiation Date	Originating Agency	Receiving Agency	Activity	Anticipated Completion
Notice of Intent to prepare EIS	6/27/13	SEPTA/FTA	Participating and cooperating agencies	Review NOI published in Federal Register	8/14/13
NEPA Scoping process, including meetings	6/27/13	SEPTA/FTA	Participating and cooperating agencies	Attend Scoping meetings; provide input and comments on the Scoping Booklet, Draft Purpose and Need, potential alternatives, and Coordination Plan.	8/14/13
Identification of participating and cooperating agencies	8/27/12	SEPTA/FTA	Participating and cooperating agencies	Consider invitation letter; agencies have 30 days to accept and identify a contact person or decline in writing	8/29/13
Public and Agency Coordination Plan including schedule	8/27/12	SEPTA/FTA	Participating and cooperating agencies	Review and comment on Coordination Plan; Plan subject to update based on comments	8/29/13
Draft Purpose and Need	9/24/12	SEPTA/FTA	Participating and cooperating agencies	Provide input and comments during Scoping process and Committee coordination meetings	9/18/13
Range of alternatives (long list)	10/15/12	SEPTA	Participating and cooperating agencies	Provide input and comments during Scoping process, Committee coordination and Public Workshops	9/18/13
Alternatives Analysis	2/25/12	SEPTA	Permitting, participating and cooperating agencies	Provide input during Committee coordination	3/3/14
Draft EIS development	8/14/13	SEPTA/FTA	N/A	Provide input regarding project during Committee coordination	3/3/14
DEIS Circulation and Public Comment Period, including Public Hearing	5/14/14	SEPTA/FTA	Participating and cooperating agencies	Review DEIS, attend Public Hearing, provide input and comment	6/25/14
Identify Locally Preferred Alternative (LPA)	7/9/14	SEPTA/FTA	Participating and cooperating agencies	Hear announcement of LPA	8/6/14

3. Agency Coordination Committee

In parallel with, and in support of the NEPA process, SEPTA is establishing an Agency Coordination Committee (ACC). The ACC will be made up of federal and state agencies who, by federal or state regulatory law, have jurisdiction in the project area. In similar fashion to the Stakeholder Advisory Committee (see Public Involvement Plan), the ACC will meet regularly to discuss and resolve specific project-related regulatory issues. The ACC agencies are a subset of

the larger NEPA cooperating/participating agency group. The ACC will be comprised of the following agencies:

3.1 Federal

- Federal Transit Administration
- Federal Highway Administration
- U.S. Army Corps of Engineers
- U.S. Coast Guard
- U.S. Department of the Interior, National Park Service, Valley Forge National Historical Park
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service

3.2 State

- Pennsylvania Department of Environmental Protection
- Pennsylvania Department of Transportation
- Pennsylvania Historical and Museum Commission



**NORRISTOWN HIGH SPEED LINE EXTENSION STUDY
DRAFT ENVIRONMENTAL IMPACT STATEMENT (DEIS)**

**King of Prussia Rail Project
Elected Officials Briefing and Public Meetings Summary**

This report presents a summary of the King of Prussia Rail March 2016 Public Meetings and associated public outreach activities and feedback received. The tables below present the dates, times, and locations of the March 2016 public meetings and public information sessions.

	Meeting 1	Meeting 2	Meeting 3
Dates:	Monday, March 7, 2016	Wednesday, March 9, 2016	Tuesday, March 15, 2016
Times:	1 p.m. – 3 p.m. (Elected Officials Briefing) 4 p.m. – 8 p.m. (Open House) 6 p.m. (Presentation)	4 p.m. – 8 p.m. (Open House) 6 p.m. (Presentation)	2 p.m. – 8 p.m. (Open House) 3 p.m. and 6 p.m. (Presentations)
Locations:	Radisson Hotel – Valley Forge Grand Ballroom 1160 1 st Avenue King of Prussia, PA 19406	Norristown Municipal Building 235 E Airy Street Norristown, PA 19401	DoubleTree Hotel – King of Prussia Grand Ballroom 301 West Dekalb Pike King of Prussia, PA 19406

	Public Information Sessions 1 & 2	Public Information Sessions 3 & 4	Public Information Sessions 5 & 6
Dates:	Thursday, March 10, 2016	Saturday, March 12, 2016	Thursday, March 17, 2016
Times:	4 – 7 p.m.	1 – 4 p.m.	4 – 7 p.m.
Locations:	City Hall, SEPTA Concourse King of Prussia Transit Center	King of Prussia Mall at the Court King of Prussia Mall at the Plaza	69 th Street Transportation Center Norristown Transportation Center

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Public Meetings Summary

Over 475 residents, stakeholders and elected officials attended public meetings for the King of Prussia Rail Project on March 7, 9 and 15, 2016. The meetings took place as an open house format with display boards and presentation followed by a question and answer session.

Additionally, Public Information Sessions occurred on March 10, 12 and 17, 2016 at key locations along the current Norristown High Speed Line (NHSL) corridor and within the project area during peak traffic times. At each Public Information Session, three project team members manned select display boards; handed out newsletters with surveys, key fact handouts, project benefits handouts, and comment cards; and answered questions from members of the public that stopped by the displays. A comment card box was available to anyone who wanted to leave a comment or survey.

Photographs and attendees lists from the public meetings and public information sessions are provided in Appendices A and B, respectively.

Purpose of Meetings

The purpose of the meetings was to provide officials, stakeholders and the public an overview of recent activities and announce the Recommended Locally Preferred Alternative (Recommended LPA). The specific goals of the meetings were to:

- (1) **Announce and describe** the Recommended LPA
- (2) **Explain the analysis and rationale for the Recommended LPA**
- (3) **Obtain feedback** from the public on the Recommended LPA, station locations, etc.
- (4) **Identify** key Recommended LPA issues for additional design/analysis going forward

- (5) **Share** the results of the “Connecting KOP - The Benefits of SEPTA’s King of Prussia Rail Project” report prepared by the Economy League of Philadelphia/Econsult Solutions
- (6) **Explain the DEIS process and schedule** going forward

These meetings provided an opportunity to obtain feedback from the public to document their concerns and issues on the Recommended LPA and the analysis completed.

Stations, Handouts & Displays

Meeting attendees were invited to visit a series of stations to learn more about the project, collect handouts, and view display boards. The stations were organized as follows.

Station 1 – Sign-in

- Sign-in sheets
- Handouts: newsletter, fact sheet, comment card, project benefits sheet
- Media kit: press release, newsletter, fact sheet announcement, comment card, project benefits sheet, SEPTA project manager business card
- Outreach innovations table
- 1. Welcome Board
- 2. Direction Signs
- 3. Where do you live? Where do you work?

Station 2 – Project Background

- 4. Project Location and Purpose
- 5. Fast Facts (Existing NHSL) and Current Bus Service
- 6. Project Steps / Timeline

Station 3 – Alternatives Development

- 7. Tier 3 Screening Categories
- 8. Build Alternatives
- 9. March 2015 Public Workshops
- 10. Priority Decision Making Factors
- 11. Alternative Performance
- 12. Recommended Locally Preferred Alternative
- 13. Draft Environmental Impact Statement (Draft EIS)
- 14. Recommended LPA Renderings and Examples

Station 4 – Next Steps and Comments

- 15. How to Stay Involved
- 16. Images of 3D Renderings

Station 5 – Economy League of Greater Philadelphia

- Handouts: Understanding the Benefits of King of Prussia Rail (full report and executive summary)

Public Comments Summary

Members of the public could provide comments on the King of Prussia Rail Project through a number of different mediums. Comments from the question and answer sessions, comment cards and comments received online have been organized by categories using themes (listed below) similar to those used in the scoping document. This next section of the report summarizes those mediums and the comments and responses to those comments received. A copy of the Summary of Comments by Themes document is included as Appendix C.

Purpose and Need

- Supports increased transit services to King of Prussia
- Not supportive of transit services to King of Prussia
- Other

Alternatives

- Design Considerations
- Operations and services
- Support Recommended LPA
- Not supportive of Recommended LPA
- Decision-making
- Planning and studies

Affected environment

- Environmental impacts
- Parking
- Safety and security
- Noise and visual impacts
- Economic Development
- Community
- Other impacts

Study area

- Geographical coverage

Costs and funding

- Sources of funding
- Costs concerns or questions

KOP Rail Elected Officials and Public Meetings Summary
March 2016

Public agency involvement

- Public meeting content
- Public comment
- Public outreach

Outside of scope

- Maintenance of current SEPTA Rail Station
- Other possible projects

Questionnaire Summary

In conjunction with these meetings, almost 28,000 questionnaires were mailed inside a newsletter to postal addresses in all of Upper Merion Township, within a mile from the existing NHSL trunk line, to multifamily housing developments, as well as to elected and local officials, key stakeholders and environmental justice (EJ) groups identified for this study. Recipients had the option of completing the paper questionnaire and mailing it in to the project team, or completing it online. This report summarizes those survey results and is based on 930 completed questionnaires submitted online by April 1, 2016 or postmarked by April 8, 2016.

Key Findings:

- Overall, respondents were evenly split in terms of support for the KOP Rail Project (No - 51%; Yes - 49%), opposition to the project was more prevalent in the King of Prussia zip code (19406). Only 42% of respondents from this zip code support the project, while 71% of respondents from other zip codes support it.
- Overall, responses were evenly divided on the question, “Is the Recommended LPA the best performing alternative?” (No - 51%; Yes - 49%). However, when we examine these Recommended LPA responses relative to support for the project overall, we see that a majority of those who do not support the project also do not feel the Recommended LPA is the best option. Conversely, among those who do support the project, a majority are in favor of the Recommended LPA.
- Similarly, when asked “Would you be willing to try transit?” 64% of all respondents answered “Yes” or “Maybe.” However, among those who do not support KOP Rail, 72% said they would not be willing to try transit. Of those who do support the project, almost all (97%) answered “Yes” or “Maybe” to the transit question.
- 71% of respondents had not attended other public meetings for this project. However, those who did not support KOP Rail were twice as likely (41% vs. 18%) to have attended a previous public meeting.
- The top concerns among respondents were safety/security issues and negative impacts on residential and environmental areas.

Summary of Twitter Use

Twitter has been used as a method of communication through the KOP Rail project process. It was used to communicate with the public in the time period leading up to the public meetings, during the meetings, as well as afterward. During the time period where comments and surveys were being accepted, @KOPRail tweeted 18 times with information on the dates, times and locations of the public meetings and the online survey. The responses expressed both support and opposition to the project.

KOP Rail Elected Officials and Public Meetings Summary
March 2016

Project partners also tweeted information about the public meetings, information sessions, and newspaper articles.

The handle @KOPRail and the hashtag #KOPRail were monitored. Below are examples of tweets received.

@InternetVince Mar 1

[@KOPRail](#) I AM SO HAPPY THIS IS REALLY HAPPENING!!

@NoKOPRail Mar 7

[@KOPRail](#) [@Vernon Odom](#) [@6abc](#) Please get BOTH sides of the story! [#NoKOPRail](#)! Our supporters will be at EVERY MEETING

@RideECO Mar 7

Tonight: 1st public mtg to provide input on [@KOPRail](#) Project. <http://ow.ly/YSTJr> [@SEPTAPHILLY](#) [#KOPRail](#)

@KOPBID Mar 8

Next [@KOPRail](#) Public Meetings scheduled for March 9 & 15. Details >> <http://ow.ly/ZcMVm> [@SEPTA](#) [@GVFTMA](#) [#Rail](#) [#Transit](#)

@jasmlaughlin Mar 8

[@SicTransitPhila](#) [@KOPRail](#) response among a very small number of residents with an agenda was very negative. But that's who showed up.

@Bri963 Mar 10

[@jasmlaughlin](#) [@SicTransitPhila](#) [@KOPRail](#) [@NoKOPRail](#) forgot to mention about the the vibration that would affect to homes. Engineers quoted

@NoKOPRail Mar 10

[@Bri963](#) [@jasmlaughlin](#) [@SicTransitPhila](#) [@KOPRail](#) I love how the argument is "They already live next to a highway" makes it ok.

@ConnectKOP Mar 16

[@SEPTA](#) to host another Public Information Session for [@KOPRail](#) project March 17, 4-7 PM. Details >>
<http://ow.ly/ZuERk>

@NoKOPRail Mar 18

Did you know? Less than 1% of KOP Residents Support [#KOPRail](#)! [#NoKOPRail](#)

@ConnectKOP Apr 1

Do you support the [@KOPRail](#)? Endorse it formally and easily online!
<http://www.connectkop.com/endorse> [@GVFTMA](#) [#SupportKOPRail](#) [#PublicTransit](#)

Conclusion

SEPTA and its project team received a wide variety of comments during the Public Meetings and Public Information Sessions, online and via mail. The project team will use the comments heard from the public and explore options to mitigate concerns expressed by the public.

Report prepared by:

McCormick Taylor, Inc.

Emily Watts
Communications Coordinator

Appendix A: Public Meeting Attendee Lists

KOP Rail Elected Officials and Public Meetings Summary
March 2016

Project Team	
Byron Comati	SEPTA
Liz Smith	SEPTA
Fritz Ohrenschall	SEPTA
Mark Cassel	SEPTA
Joe Connolly	SEPTA
Rochelle Culbreath	SEPTA
Heather Redfern	SEPTA
Robert Selzer	SEPTA
John Calnan	SEPTA
Meghan Babcock	SEPTA
Leslie Roche	AECOM
Margaret Quinn	AECOM
Jim Hess	AECOM
Larry Berkowitz	AECOM
Sam Pickard	AECOM
Krista Guerrieri	AECOM
Christopher Salvatico	AECOM
James Palmer	AECOM
Shelly Fialkoff	AECOM
Bert Cossaboon	McCormick Taylor
Adam Dall	McCormick Taylor
Emily Watts	McCormick Taylor
John Mullen	McCormick Taylor
Lennox Hyman	McCormick Taylor
Katie Carver	McCormick Taylor
Shannon Donohoe	McCormick Taylor
Morgan Barlow	Portfolio Associates
Nafiya Robinson	Portfolio Associates
Sita Ng	Portfolio Associates
Terence Milstead	Portfolio Associates
Wayne Forte	Portfolio Associates
Ron Harper	Portfolio Associates

KOP Rail Elected Officials and Public Meetings Summary
March 2016

<u>Elected Officials briefing – March 7, 2016 (19 attendees)</u>		
Name	Organization / Address	Email
Bill Deguffoy	Chester Co. Planning Commission	wdeguffoy@chesco.org
Bill Jenaway	Upper Merion Township	wjenaway@umtoenship.org
Greg Waks	Upper Merion Township	gwaks@vmtownship.org
Matthew Edmond	Montgomery Co. Planning Commission	medmond@montcopa.org
Carole Kenney	Supervisor, UM Township	ckenney@vmtownship.org
Val Arkoosh	Montgomery Co. Commissioner	varkoosh@montcopa.org
Tom Kohler	Rep., Tim Briggs	tkohler@pahouse.org
John Munera	Senator Rafferty	jmunera@pasen.gov
Dave Kraynik	Upper Merion Township	dkraynik@vmtownship.org
Sean Dempsey	PA House of Representatives	sdempsey@pahouserep.com
Sean Moir	Tredyffrin Township	moirs@comcast.net
Colleen Eckman	PA House of Representatives	ceckman@pahousegop.com
Mila Hayes	State Rep., Matt Bradford	mhayes@pahouse.net
Anthony W. Luker	Congressman Boyle	anthony.luker@mail.house.gov
Joe Gale	County Commissioner	joe@montcopa.org
Matthew Suplicki	Montgomery County	msuplicki@montcopa.org
Phil Innamorato	Office of Senator Pat Toomey	philip_innamorato@toomey.senate.gov
Kurt Imhof	Office of Senator Bob Casey	kurt.imhof@casey.senate.gov

Radisson – March 7, 2016 (219 attendees)

Norristown Municipal Building – March 9, 2016 (58 attendees)

DoubleTree Valley Forge – March 15, 2016, 3 p.m. (27 attendees)

DoubleTree Valley Forge – March 15, 2016, 6 p.m. (95 attendees)

Appendix B: Meeting Photographs

Meeting Photographs – March 7, Radisson Valley Forge



Meeting Photographs – March 9, 2016 Norristown Municipal Building



Meeting Photographs – March 15, 2016 DoubleTree Philadelphia-Valley Forge



Public Information Session Photographs – March 10, 2016 City Hall, SEPTA Concourse



Appendix C: Summary of Public Comments by Theme

Purpose and Need: Public Comments and Questions		
Theme	Representative comments and questions	Response
Supports increased transit services to King of Prussia	You need more transit in King of Prussia in order to keep it from becoming obsolete. Eventually you will be spending more on highway improvements. This area will be becomes less and less attractive without transit in the future.	These comments support the need for transit improvements to King of Prussia/Valley Forge. The majority of these comments agreed that an extension to the NHSL to serve King of Prussia/Valley Forge is critical to sustaining the economic vitality and improving the livability of the area.
	I strongly support this project. I live in Delaware County and travel to King of Prussia frequently.	
	The 125 is standing room only.	
	In its current incarnation KOP is a nightmare to access because of congestion and an undesirable area to live, work, or play. Rail will be one way to help get employees to the mall and business parks and make the area more attractive and sustainable for future generations.	
	I support the extension of the NHSL to King of Prussia proper. I ride the NHSL every day to work, and find it one of the more reliable and easy to use portions of the septa system. I avoid the horrendous experience of tackling 76, and have the opportunity to relax and read or listen to music on my way to and from work. I work for the government and benefit from DOT funds, but even without, the cost of a pass is substantially lower than gas and parking costs would be. The lots at stations throughout the line are full to capacity every day, demonstrating the popularity and need for increased public transport options from the suburbs to the city. This would also allow for a better public transportation to King of Prussia's jewel-Valley Forge NHP, which lacks good reliable public transportation access for locals and tourists alike. Increased access to public transportation is important for income equality and development. The fears from the extension of this line are frequently little more than very thinly veiled racism. Public transportation is progressive. Public transportation is egalitarian. Public transportation is important to access and increase. I support the KOP rail project.	
Not supportive of increased transit services to King of Prussia	There is no benefit to KOP residents. Stop wasting tax payer money, including federal taxes!	The King of Prussia Rail project Purpose & Need statement identifies the deficiencies in the existing transportation system and the transportation needs arising from these deficiencies. Work on the project so far indicates that an extension of the Norristown High Speed Line can address these transportation system deficiencies in a cost-effective manner. The project still has a significant amount of design and engineering work to undergo before it is evaluated by the FTA to complete for national funding.
	People don’t use public transportation in KOP	
	This project is the biggest waste of money that I have ever heard proposed.	
	Just look at SEPTA’s other rail systems and what they look like: nothing but rust and graffiti and disrepair and eyesores. SEPTA is not Disney. This rail system will look like West Philadelphia in 4 years and because it is elevated it will be an eyesore for all to see. When the project stops being self-sustaining (if it ever is) other riders will be forced to pay for it with increased fees. The eventual deconstruction and removal of this boondoggle will also cost millions.	
	The amount of potential riders does not justify such a system or expense. Not even close.	
	I would like to state that I am against the construction of this extension. There are many negatives that would affect the integrity of this area for residents: Lack of parking, eminent domain, noise, loss of visual aesthetics, loss allocation of local emergency resources, possible over-population of the area, additional local congestion. Please try to reach out to the community about this issue, perhaps have news channels do a story about it to encourage local attendance at meetings.	

Other	Please explain the genesis of the project. Where did it come from, SEPTA? Or did the county specifically push for it? We want to find the ideal project that satisfies everyone but it doesn’t feel like it’s there yet. A lot of people, residents, feel that this will only help the businesses, the mall, etc. What benefit is it to residents? We already have a great tax base. I would like more information on who really wants the project. Where does the push come from?	<p>The KOP Rail project and its predecessor projects have been an integral part of the regional transportation plan for several decades. The regional transportation plan, called the Long Range Transportation Plan (LRTP) is required by USDOT regulations and is developed and managed by the Delaware Valley Regional Planning Commission (DVRPC) and its planning partners including PennDOT, county governments, transit agencies and others. The LRTP is updated every five years and includes a capital spending plan for all Federally funded transportation investments in the nine county Philadelphia region. Many state and local government officials, diverse stakeholders, and the public provide input into this planning process. Recognized needs for the project included the growing traffic congestion on I-76 and U.S. 202, rapid growth of King of Prussia as an employment and shopping center, and the need for mobility options.</p> <p>Several decades ago, a major rail project called the Schuylkill Valley METRO was studied to connect communities in the Schuylkill Valley to Philadelphia. The Schuylkill Valley METRO project included rail service to King of Prussia because of the high number of jobs and, in turn, the high ridership projected in King of Prussia. Federal “earmark” funds were approved by Congress and a Draft EIS was prepared. High construction costs, operational issues and other problems rendered the project, as conceived, to be impractical. Subsequently, several studies were conducted to reduce the project impacts and costs while refocusing on the greatest mobility needs in the region. The KOP Rail project was advanced as an extension of the Norristown High Speed Line (NHSL) with service to Norristown and 69th Street. This new, reduced rail concept was then placed on the LRTP and programmed for further evaluation and development through the formal National Environmental Policy Act (NEPA) process. The Draft EIS now being developed is the result of this planning effort.</p>
	I DO NOT SUPPORT THIS RAIL EXTENSION. I would be in favor of extending the Regional Rail Line into King of Prussia. This area needs a 1-seat ride into Center City.	<p>Extensions of regional rail service, including the Cross County Metro, have been studied at the Draft EIS level in the past and have failed to meet federal New Starts evaluation criteria.</p> <p>Additionally, serving activity centers in the King of Prussia/Valley Forge area, including the mall and other activity centers is the purpose of this project. It requires rail service that spans the course on an entire day. It is balanced and offers nearly equivalent service for inbound (towards Philadelphia) and outbound travel (towards Norristown) to serve both markets. The current headways of 10 to 12 minutes on the Norristown High Speed Line (NHSL) cannot be replicated on the Regional Rail line as due to operating characteristics, fleet parameters and train volume constraints of the SEPTA network north of Temple University. Although the NHSL offers such service, Regional Rail service does not, as it is primarily oriented in the morning to provide service from outlying areas in to Center City Philadelphia and in the afternoons and evenings from Center City Philadelphia to outlying areas.</p>
	How are you going to alleviate gridlock?	Despite major investments in highway and interchange capacity in and around King of Prussia, traffic volumes continue to grow and peak hour congestion is a common experience for commuters. In addition to TDM (travel demand management) options to reduce peak travel, the most promising solutions to provide reliable and predictable travel times will come from non-auto modes of transportation.
Alternatives: Public Comments and Questions		
Theme	Representative comments and questions	Response
Design Considerations	Run the train along the northern side of the Pennsylvania Turnpike, not right next to my house. Why is the train not running down the middle of the Turnpike?	The alignment of the Recommended Locally Preferred Alternative is proposed on the south side of the Pennsylvania Turnpike right-of-way between the PECO right-of-way and Allendale Road. At the March 2016 public meetings, residents of Upper Merion Township voiced concerns regarding the possible impacts to private property. In response, SEPTA is exploring the feasibility of altering the alignment in the Pennsylvania Turnpike right-of-way to reduce impacts to properties. Various options will be examined as part of this process. SEPTA will meet with those affected residents to update them about any potential changes and mitigations that can lessen any type of impact to their properties.
	You compared DC Metro and JFK – where do they connect? Are they busy areas? Main issue for me is the transfer at 69th.	<p>The Washington Metro Silver Line extension extends existing Metro service from East Falls Church in the Virginia suburbs of Washington, D.C. and provides service directly into Downtown D.C. for connections to other Metro services. Many areas of Downtown D.C. including Dupont Circle, Union Station, or the Zoo still require transfers.</p> <p>AirTrain JFK connects to the New York City Subway system at Howard Beach and Jamaica, both in Queens. Passenger can transfer to New York City Subway lines at either station and to the Long Island Railroad at Jamaica.</p>
		The Market-Frankford Line and the Norristown High Speed Line are both frequent and reliable and are located very close to each other within the 69th St. Transportation Center. The transfer between them will be quick and convenient.
	What is the height and width of the structure? I don’t think it will fit. Concerned with visual impacts.	In terms of height, the bottom of the guideway structure must be at least 17 feet above roadways. There will be places where the guideway structure height will be higher than that, due to the generally hilly nature of the King of Prussia area and, for example, where the rail guideway crosses U.S. Route 202 over the Pennsylvania Turnpike. In terms of width, the minimum guideway width will be 34 feet, to accommodate two tracks. The structure will be wider in station areas to accommodate platforms and other related amenities. Visual impacts will be assessed and reported in the Draft EIS, along with possible strategies identified to reduce and mitigate impacts.
	Please include N. Gulph Road. 1st Avenue will redevelop. N. Gulph Road will be a parking lot when developed fully. This will mitigate this growth.	The KOP Rail project aims to mitigate the growth of traffic congestion on study area roadways and improve the accessibility of transit in the study area. The 1st Avenue Branch was chosen over the N. Gulph Branch because of its higher redevelopment potential and its access to existing and future jobs. The project envisions bus and shuttle service in the area that will be able to connect areas of the township not directly served by the extension.

Operations and Service	From Norristown to 69th Street, cars are full. If you’re running at capacity now how can you run more trains?	<p>Operations modeling done for the KOP Rail project shows that more rail vehicles will be necessary to operate ten minute peak service from 69th Street Transportation Center and twenty minute peak service from Norristown Transportation Center. These additional vehicles have been included in SEPTA’s capital cost estimate for the project.</p> <p>The existing Norristown High Speed Line (NHSL) tracks will be able to accommodate service to and from King of Prussia. SEPTA has performed operations modeling for the proposed service to confirm that there is enough capacity on the existing line. Improvements to the signal system, or to the track itself, are expected to take place within the existing footprint and not require any new track segments.</p>
	When will we hear about changes in bus routes?	<p>SEPTA has begun the initial process of evaluating bus route changes in conjunction with the KOP Rail project. A “Bus and Shuttle Improvement Plan” was created to lay out how we expect to improve connections to an extended Norristown High Speed Line (NHSL) and as an input for ridership modeling.</p> <p>This planning effort will not lead to any service changes until the extension is open. As with all major service changes, SEPTA will announce and seek input on any proposed bus changes related to the KOP Rail project. This input will be solicited as SEPTA gets further into the design phase of the project.</p>
	How long does the NHSL run?	The KOP Rail project is only in the planning phase. No future schedule has been finalized. Currently the earliest Norristown High Speed Line (NHSL) trains leave 69th Street Transportation Center at 4:20 a.m. and leave Norristown Transportation Center at 4:55 a.m. The last train arrives at 69th Street Transportation Center at 2:34 a.m. and at Norristown Transportation Center at 2:06 a.m.
	I think it’ll be better if our transpass were to be used for this new idea. For example, we would have to use cash for the 125 bus to get to KOP Mall. Just a free ride for others that are working & etc. may not have cash on them to shop. Tranpass use only would be very useful. Also less traffic.	The project is in the planning phase and no official fare policy has been set for the line.
Support Recommended LPA	I am very much in favor of the project. The LPA is one of my preferred routes.	Comments agreed the Recommended LPA was the best performing of the five Build Alternatives.
Not supportive of the Recommended Locally Preferred Alternative (Recommended LPA)	My sister sold her house because they don’t want SEPTA in their backyard. I will fight. I don’t take public transportation.	The alignment of the Recommended Locally Preferred Alternative is proposed on the south side of the Pennsylvania Turnpike right-of-way between the PECO right-of-way and Allendale Road. At the March 2016 public meetings, residents of Upper Merion Township voiced concerns regarding the possible impacts to private property. In response, SEPTA is exploring the feasibility of altering the alignment in the Pennsylvania Turnpike right-of-way to reduce impacts to properties. Various options will be examined as part of this process. SEPTA will meet with those affected residents to update them about any potential changes and mitigations that can lessen any type of impact to their properties.
	Concern with section passing through Valley Forge Homes neighborhood. Beginning with proximity of the rail system to the houses along Bluebuff, removal of trees which help to control turnpike noise and overall closing in at the back yards. Construction concerns are noise, dust, times of day especially at night. Although appears favorable to public, homeowners in Valley Forge Homes feel the railway will take away from peace and quality of living.	
	Please find another location. This is going to destroy the value of our homes at Valley Forge home development.	
Decision Making	Why are these decisions being made behind closed doors? If Upper Merion Township is involved, when will they notify us? Can we vote?	No decisions are being made behind closed doors. The National Environmental Policy Act (NEPA) process requires frequent coordination and consultation with elected officials, stakeholders and the public. This open and transparent process of evaluating alternatives and identifying a Recommended LPA included six sets of public meetings along with committee and stakeholder meetings. In addition to these frequent meetings, the website provided constant updates, newsletters were published and surveys were conducted. The website was also used to receive comments and suggestions from the public throughout scoping and all three tiers of the Draft EIS process.
	Why is SEPTA not going with the alternative that doesn’t affect residents? Why not choose the alternative that doesn’t run behind homes? Putting a train near my back yard takes away my privacy, the reason I moved to my house in the first place.	The analysis of alternatives involved examining a wide range of issues, including how the alternatives are able to achieve the project purpose and need while minimizing impacts to the environment and the community. Although there is no mathematical formula to assign what is considered more important or less important, the process requires the identification of the best overall alternative, and strives to balance the benefits and impacts as much as possible.
	What happens if the township doesn’t adopt the plan? Do they have more of a veto power than the county? In order for the project to move forward, all entities would have to adopt this plan?	SEPTA will request adoption of the Recommended Locally Preferred Alternative (Recommended LPA) by Upper Merion Township, Montgomery County, Delaware Valley Regional Planning Commission (DVRPC), and SEPTA’s board. While the adoption of the LPA is not required, township support is necessary for many land use and permitting decisions on which the project depends.
Planning and Studies	How long has this been in planning?	Planning for the KOP Rail project began in 2012.
	Compared to other projects, why is this project taking so long?	The KOP Rail project is a very complex project. Detailed environmental analysis is required to be documented as part of NEPA when using federal funds. The project schedule can be found on the project website.

Affected Environment: Public Comments and Questions		
Theme	Representative comments and questions	Response
Environmental Impacts	What about concern for sinkholes in this area, esp during construction, also after build? Why not just improve Gulph Mills station and add modern bus transportation to malls/business area – or perhaps trolley system?	SEPTA is aware of the karst topography in the King of Prussia area. As engineering design for the project progresses, studies will be undertaken to determine the type and depth of foundations needed, as well as construction techniques to be used to reduce risk. Rail service, unlike bus service, operates in its own exclusive right-of-way with no interference from traffic and can, therefore, achieve higher operating speeds and provide greater reliability compared to bus. Bus service uses roadways and experiences delays due to traffic congestion and, as a result, has lower operating speeds. The bus routes serving the King of Prussia area are some of the least effective in terms of on-time performance in SEPTA’s operating division.
Parking	Will the business park have parking?	Yes, a park-and-ride is proposed for the business park. The KOP Rail project is currently proposing two park-and-rides along the recommended extension. One would be at Henderson Road Station near the intersection of Henderson Road and Saulin Boulevard. The other would be in the business park at the terminal station, 1st and Moore Station, near the intersection of 1st Avenue and Moore Road along the LPA. These park-and-rides are located at each end of the extension to capture ridership coming from U.S. Route 422 or U.S. Route 202 before they need to drive through the congested arterials of Upper Merion Township.
	People will come from 23/422. How many parking spots will be at the end station stop?	SEPTA has not determined the size for the park-and-ride at Henderson Road Station. The parking lot will be sized based on ridership expected to drive to the station as determined by Delaware Valley Regional Planning Commission's (DVRPC’s) ridership modeling and the constraints of the sites available.
Safety and Security	Will there be a significant increase in crime & litter?	Most research related to crime around transit facilities show that crime rates in and around stations is closely correlated to the existing crime rates in the adjacent communities. SEPTA Transit Police are currently working on compiling crime analysis and statistics for all stations along the Norristown High Speed Line (NHSL), and expects to release that data later this summer. Additionally, all SEPTA stations and NHSL vehicles are equipped with many cameras, which have proven to be a deterrent to both crimes committed onboard the vehicle as well as using the SEPTA system as a means of travel before or after committing a crime.
	I have concerns about crime happening on the train. People will use the train to get to the mall and shoplift. Won’t the train create more crime?	
	How would you address security?	New stations built for the KOP Rail project will be designed to incorporate safety into their design, including multiple cameras, higher levels of lighting as well as ensuring good sight lines throughout the station area. In addition, SEPTA Transit Police will periodically patrol stations and will be actively involved in ensuring that our station areas are safe.
	You will increase the calls to the Fire Company, EMS, and police that could increase UMT taxes. Have you considered that?	SEPTA will respond to all incidents that occur on the extension, and will regularly patrol stations. SEPTA will coordinate all aspects of emergency response with the local jurisdiction and coordinate how SEPTA's response can be most useful to local authorities.
	How is SEPTA transit going to respond to emergencies? This will be a burden. You don’t see them. What will you do?	
Noise & Visual Impacts	I live across the street from the SEPTA Hughes Park station. The noise level is low, it’s a very quiet line. The noise defuses and goes up. I really don’t think the level of noise that the KOP rail will affect the residents. Public transportation often mitigates environmental problems.	Modern rail technology is far less noisy in operation, compared to railroad operations in the past. A noise assessment is being prepared for the KOP Rail Draft EIS using the guidelines set forth by the Federal Transit Administration (FTA). This assessment will identify where noise effects are likely to occur in order to compare the five Build Alternatives and a range of possible minimization and mitigation strategies will be identified. As the Final EIS and engineering design progresses, further noise studies will determine the specific mitigation methods needed. Mitigation methods may include noise walls.
	I’m most concerned for the visual and noise impact for the residents along the turnpike section who would have this in their backyards. I think the elevation would adversely change the character of this area. I’m a realtor and lifelong resident and appreciate the forward moving growth but not sold on this.	Visual impacts will be assessed and reported in the Draft EIS, along with strategies identified to reduce and mitigate impacts. Similarly, the Draft EIS will include a noise assessment prepared using the guidelines set forth by the Federal Transit Administration (FTA). This assessment will identify where noise effects are likely to occur and a range of possible minimization and mitigation strategies will be identified. As the Final EIS and engineering design progresses, further noise studies will determine the specific mitigation methods needed.
Economic Development	Is there a distinguishing percent of property value increase for light rail?	The study completed by Econsult Solutions on SEPTA’s positive impacts on property values looked only at Regional Rail service. The report determined that the average property premium from Regional Rail service in the four counties outside of Philadelphia was \$7,900 per house. No corresponding study was done for the Norristown High Speed Line (NHSL). However, we would expect new access and mobility to increase values.
	Bring in more business. I pay less in taxes.	The stakeholders supporting the KOP Rail project are working to make sure the rail extension will have a positive economic impact on the township, county, and region.
Community/ Property Acquisition	Make clear that there are potential for housing acquisitions in future mailings.	The KOP Rail Project is at 3% design. While we have a general sense of potential property impacts, it is too early in the project to determine exact impacts or acquire properties. SEPTA will work with all affected residents to minimize impacts.
	[What happens if a property is acquired?] [Homeowners] get fair market value. Do [homeowners] get any additional monies?	Projects using federal funding like the KOP Rail project must follow the Uniform Relocation Assistance and Real Property Acquisition Policies Act. The Act and the Federal Transit Administration’s (FTA’s) guidance on implementing the act provide for the reimbursement of relocation expenses in addition to the costs of acquiring real property. It is reimbursed based upon the actual, reasonable, and necessary costs.

Other Impacts	I am the assistant chief of the fire company. The KOP Rail will be built over our 911 Memorial; the Memorial contains two pieces of steel from the World Trade Center. SEPTA is taking land and income from our firehouse, which is 100% volunteer. We already have a stable tax base. The rail line will also affect our fire company’s billboard, which generates revenue.	At our current level of design, SEPTA does not believe it will need to take any property from the fire company or 9/11 memorial. SEPTA is committed to working with the Township and the Fire Company to address any impacts to their property or the 9/11 memorial.
	Would prefer to see a route that does not affect turnpike property. Turnpike is already crowded at rush hour. Putting trains there congests an already congested area.	None of the KOP Rail project alternatives that use a portion of the Pennsylvania Turnpike’s right-of-way would reduce the number of travel lanes. The Turnpike is a vital transportation corridor in the region and negatively impacting it could lead to greater congestion. The KOP Rail project is proposing an elevated structure that would only touch the ground with support columns approximately six to eight feet in diameter. This relatively small impact at the ground level could be accommodated in the Turnpike’s existing right of way with no permanent impacts to traffic.
Costs and Funding: Public Comments and Questions		
Theme	Representative comments and questions	Response
Sources of Funding	Where is the funding coming from if 50% comes from the New Starts program? Where is the other 50% of the funding coming from?	<p>The KOP Rail project is working with Econsult Solutions on a potential funding sources report. The report will lay out possible sources of funding, projected annual revenue and how much sources could yield for the construction of the KOP Rail project. They will not recommend how the project should be funded, but instead lay out a variety of options to be considered by project decision makers and regional leaders.</p> <p>The potential sources for the remaining fifty percent of funding will be laid out in the report. The funding sources will be finalized later in the project.</p>
Costs Concerns or Questions	One major question that needs to be addressed: How did you come to the cost estimate...?	The KOP Rail project has followed the industry best practices and the Federal Transit Administration’s (FTA’s) guidance on estimating capital costs. Capital costs are calculated using the FTA’s standard cost category template which takes inputs from the project’s conceptual design and categorizes it. Consultant and agency expertise on unit costs are applied and a contingency is added to come up with the capital cost.
Public Agency Involvement: Public Comments and Questions		
Theme	Representative comments and questions	Response
Public Comment	Is there another way to express opinions on the project?	Comments can be emailed to info@kingofprussiarail.com or submitted on the project website.
	How will you have the public comment on the DEIS?	The Draft EIS is planned for circulation, public review and comment late in 2016. Hard copies will be available in public offices and places throughout Upper Merion Township. In addition, the Draft EIS will be available on-line via the KOP Rail website. Comments on the Draft EIS will be accepted in written or electronic form. All comments will be compiled for team review and responses will be written and posted. The formal Public Hearing on the project will be held in the first half of 2017 and again comments may be provided as written or spoken public testimony for the record.
Public Outreach	Have you gone down the road or drove around the neighborhood? I had to find out about this from a neighbor. Work on getting access to the areas you haven’t yet.	Prior to the public meetings, SEPTA had toured all publicly accessible parts of the study area along the alignment with its planning and engineering team. Subsequent to the public meetings, neighbors offered access to their backyards to allow SEPTA to view the Turnpike ROW behind Valley Forge Homes.
Outside of Scope: Public Comments and Questions		
Theme	Representative comments and questions	Response
Maintenance of Current SEPTA Rail Stations	Your current system is crumbling.	When SEPTA was created in 1964, the first task was to take the resources of bankrupt private companies, including assets built in the nineteenth century, and shape them into a transit network to meet the travel needs of southeastern Pennsylvania. Half a century later, the system is a blend of legacy and modern stations, vehicles, and infrastructure critical to the economy of the region. Maintaining and improving the system has always been a priority and even in the face of funding challenges, the Authority has made progress renewing assets including rebuilding the Market-Frankford Line, introducing new Silverliner V rail cars, rehabilitating stations, introducing new technologies, and investing in major infrastructure and maintenance facility upgrades to preserve and enhance safety on the system. In late 2013, Harrisburg took bold action with the passage of Pennsylvania Act 89, which creates, for the first time, a long term funding solution for critical highway and transit infrastructure needs across the Commonwealth. Taking a business approach to managing its asset portfolio, SEPTA will rehabilitate or replace bridges, replace critical power systems, and design and procure new vehicles. This places SEPTA in a strong position to reinvest in and rebuild the system to provide safe, reliable service, while enhancing the travel experience for current and future customers.
Other Possible Projects	Are there any plans to extend out to Collegeville? Other areas?	The KOP Rail project is focused on extending the Norristown High Speed Line (NHSL) to King of Prussia. Previous planning studies have looked at further extension of transit service along the U.S. 422 corridor. The KOP Rail project seeks to not preclude any options for service towards Collegeville. Currently, the Greater Valley Forge Transit Management Association (TMA) organizes the U.S. 422 Corridor Coalition to discuss transportation options along the U.S. 422 corridor.

Appendix D: Frequently Asked Questions

**King of Prussia Rail Project
Frequently Asked Questions
Version: Summer 2016**



These frequently asked questions (FAQ) have been developed to help residents, businesses and area stakeholders develop a better understanding of the proposed King of Prussia Rail Project, the project development process, proposed build alternatives, and next steps.

1. What is the genesis of the KOP Rail project? How long has this been studied?

The King of Prussia Rail project and its predecessor projects have been an integral part of the region's long-range transportation plan for several decades. The regional transportation plan – called the LRTP – is required by USDOT regulations and is developed and managed by the Delaware Valley Regional Planning Commission (DVRPC) along with its planning partners, including PennDOT, county governments, transit agencies and others. The Long-Range Transportation Plan is updated every five years and includes a capital spending plan for all federally-funded transportation investments in the nine county Philadelphia region. Many state and local government officials, diverse stakeholders, and the public provide input into this planning process. Transportation needs recognized for the project included the growing traffic congestion on I-76 and U.S. 202, rapid growth of KOP as a center for employment and shopping, and the increasing need for mobility options.

Several decades ago, a major rail project called the Schuylkill Valley Metro was studied to connect communities in the Schuylkill Valley to Philadelphia. The Schuylkill Valley Metro project included rail service to King of Prussia due to the high number of jobs and, in turn, the high ridership potential projected in King of Prussia. Federal "earmark" funds were approved by Congress, and a Draft EIS was prepared. However, high projected construction costs, operational issues and other problems rendered the project, as conceived, to be impractical. Subsequently, several studies were conducted to reduce potential project impacts and costs while refocusing on the greatest mobility needs in the region. As a result, the KOP Rail project was advanced as an extension of the Norristown High Speed Line with service to both Norristown and 69th Street transportation centers. This new reduced rail concept was then placed on the Long-Range Transportation Plan and programmed for further evaluation and development through the formal NEPA process. The Draft EIS now being developed is the result of this planning effort.

Other plans in the region have recognized the need and value for this rail extension, including the Montgomery County Comprehensive Plan and the Upper Merion Township Comprehensive Plan.

2. Why are you not just extending the Regional Rail Line from Norristown to make it a one-seat ride from King of Prussia to Center City Philadelphia?

Extensions of SEPTA's Regional Rail service– including the Cross-County Metro – have been studied at the Draft EIS level in the past. However, these earlier studies have failed to meet the latest federal New Starts evaluation criteria.

Additionally, the purpose of this project is to better serve activity centers in the King of Prussia/Valley Forge area, including the King of Prussia Mall. Therefore, an extension of any rail infrastructure to the

area will require a service to run frequently and operates over the course of an entire day. This longer duration of operations and increased frequency of service will provide the necessary balance of mobility options while offering nearly equivalent service for both inbound travel (toward Philadelphia), and outbound travel (toward Norristown) to connect both markets. The current headways of 10 to 12 minutes on the NHSL cannot be replicated on SEPTA's Regional Rail line due to its operating characteristics, fleet parameters and train volume constraints of the SEPTA network north of Temple University. Although the NHSL offers a frequency of service for both inbound and outbound passengers, Regional Rail service does not, as it is primarily oriented to provide service from outlying areas into Center City Philadelphia in the morning and from Center City Philadelphia to outlying areas in the afternoons and evenings.

3. Are all of these decisions being made behind closed doors? Will the KOP Rail extension definitely be built?

It's important to note that SEPTA has engaged in a robust public engagement process, and no decisions are being made behind closed doors. The NEPA process requires frequent coordination and consultation with elected officials, stakeholders and the public. This open and transparent process of evaluating alternatives and identifying a Recommended Locally Preferred Alternative began in January 2013, and has included six (6) sets of public meetings along with committee and stakeholder meetings. In addition to these frequent meetings, the website provided constant updates, newsletters were published and surveys were conducted. The website was also used to receive comments and suggestions from the public throughout scoping and all three tiers of the Draft EIS process.

The KOP Rail project is led by SEPTA with the support of local and regional stakeholders. As with any large project, it relies on the support of the public and regional leaders, and can only continue with that support.

4. How will this project benefit the residents of King of Prussia?

The KOP Rail extension will offer a variety of benefits to residents, visitors and businesses in the King of Prussia area. These includes: increased development and redevelopment of office, residential and retail space, further reinforcing the municipality's competitive tax structure; increased access and mobility options for residents; more reliable transit service that will not be hindered by local traffic congestion; environmental benefits due to non-motorized travel options between destinations; increased walkability through pedestrian and bicycling enhancements within and surrounding station sites; and a reduction in congestion and overall travel time.

5. Will the value of my property decline because of KOP Rail?

The study "The Impacts of SEPTA Regional Rail Service on Suburban House Prices," completed by Econsult Solutions in October 2013, discussed the impacts SEPTA's rail lines have on local property values considered only Regional Rail service. However, the report determined that the average property premium resulting from Regional Rail service in the four counties outside of Philadelphia was \$7,900 per house. Although no corresponding study was done for the NHSL, the improved access and mobility resulting from the proposed rail extension is expected to correlate to a similar premium for residential properties in the King of Prussia area.

6. Why does the proposed KOP Rail extension have to run along the Pennsylvania Turnpike right-of-way adjacent to the backyards of residents living in the Valley Forge Homes community?

The alignment of the Recommended Locally Preferred Alternative traverses the south side of the Pennsylvania Turnpike right-of-way between PECO's right-of-way near Kingwood Road and Allendale Road. At the March 2016 public meetings, residents of the Valley Forge Homes community in Upper Merion Township voiced concerns regarding the possible impacts to private property. In response, SEPTA is exploring the feasibility of altering the alignment along the Pennsylvania Turnpike right-of-way to reduce impacts to these properties. Various options will be examined as part of this process.

7. Will there be a significant increase in crime and litter?

Research shows that crime rates in and around stations is correlated to the existing crime rates in the adjacent community. SEPTA Transit Police are currently working on compiling crime analysis and statistics for all stations along the Norristown High Speed Line, and expect to release that data later this summer. Additionally, all SEPTA stations and Norristown High Speed Line vehicles are equipped with numerous cameras, which have proven to be a deterrent to crimes committed onboard the vehicle, as well as when the SEPTA system is used as a means of travel before or after committing a crime.

New stations built for the King of Prussia Rail project will be designed to incorporate safety into their designs, including multiple cameras, higher levels of lighting, as well as ensuring good sight lines throughout the station area. In addition, SEPTA Transit Police will periodically patrol stations and will be actively involved in ensuring that our station areas are safe.

8. The King of Prussia area is prone to sinkholes. How will SEPTA manage sinkholes during construction and once the new rail line is up and running?

As engineering plans for the KOP Rail project progress, a geotechnical report will be prepared to determine the type and depth of the foundations needed for the columns supporting the elevated guideway and stations, based on the karst topography in the KOP area.

If the sinkhole was found to be caused by the KOP Rail project – either during its construction or its operation – SEPTA would be responsible for making the necessary repairs.

9. How high will the train run? I'm concerned with visual impacts to the community.

Visual impacts will be assessed and reported in the Draft EIS, along with strategies identified to reduce and mitigate impacts. Similarly, the Draft EIS will include an assessment of noise prepared using the guidelines set forth by the Federal Transit Administration (FTA).

In terms of height, the bottom of the guideway structure must be at least 17 feet above roadways. There will be places where the guideway structure height will be higher than that, due to the generally hilly nature of the King of Prussia area and, for example, where the rail guideway crosses U.S. Route 202 over the Pennsylvania Turnpike. In terms of width, the minimum guideway width will be 34 feet, to accommodate two tracks. The structure will be wider in station areas to accommodate platforms and other related amenities. Visual impacts will be assessed and reported in the Draft EIS, along with

possible strategies identified to reduce and mitigate impacts.

10. How noisy is the rail? What is SEPTA doing to minimize the noise impacts to residents along the alignment?

Modern rail technology is far less noisy in operation, compared to railroad operations in the past. A noise assessment is being prepared for the KOP Rail Draft EIS using the guidelines set forth by the Federal Transit Administration (FTA). This assessment will identify where noise effects are likely to occur in order to compare the five Build Alternatives. Based on this assessment, a range of possible minimization and mitigation strategies will be identified. As the Final EIS and engineering design progresses, further noise studies will determine the specific mitigation methods needed.

11. Will the new stations have parking for the transit riders? What about additional parking at current stations along the NHSL?

The King of Prussia Rail project is currently proposing two park-and-rides along the extension. One would be at Henderson Road (the Henderson Road Station) near the intersection of Henderson Road and Saulin Boulevard. The other would be in the business park near the rail extension's terminus (the 1st and Moore Station), near the intersection of 1st Avenue and Moore Road. These park-and-rides are deliberately located at each end of the new extension to capture motorists traveling from U.S. 422 or U.S. 202 before they would need to drive through the congested arterials of Upper Merion Township.

As part of the King of Prussia Rail project, there are currently no plans to modify parking lots along the existing NHSL.

12. Will a passenger need to travel all the way to Norristown or 69th Street in order to get a train that will run to King of Prussia? What about having the train ride in a loop?

The King of Prussia Rail project is not proposing a loop for service. Passengers boarding the NHSL at either 69th Street or Norristown transportation centers will be able to access trains traveling directly to King of Prussia. Similarly, passengers in King of Prussia will be able to board trains traveling directly to Norristown or 69th Street transportation centers. In all scenarios, there will be more options for SEPTA passengers utilizing the NHSL, and the final destination of the train will be clearly marked on the train car's display.

13. How is this project being funded?

The current study is being funded through a federal earmark that was originally established for the Schuylkill Valley Metro project. However, additional funds will need to be identified in order to construct the nearly four-mile long rail extension project. As a result, the King of Prussia Rail project team is working with Econsult Solutions on a potential funding sources report. The report will lay out possible sources of funding, projected annual revenue and how much sources could yield for the construction of the KOP Rail project. They will not recommend how the project should be funded, but instead lay out a variety of options to be considered by project decision makers and regional leaders as the project continues to progress.

SEPTA anticipates seeking approximately fifty percent of its funding from the Federal Transit

Administration's New Starts Program which can fund extensions to fixed guideways such as the Norristown High Speed Line.

14. How many riders are expected?

Ridership modeling performed by the Delaware Valley Regional Planning Commission (DVRPC) has forecasted an additional 7,500 to 9,500 annual riders, depending on the Build Alternative. The Recommended Locally Preferred Alternative (Recommended LPA) is forecast to have 9,500 additional riders. This figure is calculated by comparing the expected ridership in the year 2040 if no changes are made to the Norristown High Speed Line (NHSL), versus the expected ridership on the line if the extension is built. Ridership modeling for transportation projects is forecast for both the year a project is initiated and the project's horizon year. For the KOP Rail project, those years are 2013 and 2040.

We are currently in the process of working with DVRPC to break down where trips on the extension are coming from based upon their travel demand model outputs, and expect to release that data in the summer/fall of 2016 on the project website.

15. What will the fare structure be like? How much will it cost to ride the rail out to King of Prussia?

The King of Prussia Rail project is in the planning phase and no official fare policy has been set. Currently, the bus service that travels from Center City or the 69th Street Transportation Center to King of Prussia has a cash fare of \$3.75, or requires a TrailPass 2. The existing Norristown High Speed Line has a cash fare of \$2.75 or requires at TrailPass 1. For more information, please see SEPTA's Fare Brochure which can be found at www.septa.org.

Appendix B: Meeting Photographs

Meeting Photographs – March 7, Radisson Valley Forge



Meeting Photographs – March 9, 2016 Norristown Municipal Building



Meeting Photographs – March 15, 2016 DoubleTree Philadelphia-Valley Forge



Public Information Session Photographs – March 10, 2016 City Hall, SEPTA Concourse



Appendix C: Summary of Public Comments by Theme

Comments in black font are from the Public Meeting Question and Answer sessions.

Comments in blue font are from comment cards received.

Comments in green font are emails received at info@kingofprussiarail.com.

Purpose and Need: Public Comments and Questions	
Theme	Comments and questions
Supports increased transit services to King of Prussia	I am a user of public transportation, the noise is not bad. Riding a train is much more preferable then to having to smell the fumes from a city bus. A train is much more environmentally friendly.
	I am a frequent passenger of PATCO. Crime and graffiti did not occur. I live in an auto reliant community. Will future development be auto centric or transit centric? Older and younger people want public transit options. You need more transit in King of Prussia in order to keep it from becoming obsolete. Eventually you will be spending more on highway improvements. This area will be becomes less and less attractive without transit in the future.
	Currently our infrastructure cuts our community off from one another. We can help our community by becoming less car centric.
	I strongly support this project. I live in Delaware County and travel to King of Prussia frequently.
	I'm in support of the project. I ride the Route 100 trolley line and am very familiar with the parking congestion and the fumes from the buses.
	I agree that it's a good project that has been well researched. It's good for employees to get to and from work.
	I support the KOP Rail extension and think is will benefit a lot of people. You need to improve 69th street.
	Younger people are driving far less. My friends don't want to take the bus. It is important to remember younger people will want this. "We" are subsidizing your property. We need to keep in mind it's foolish to spend this money and not help people get there.
	No more cars on the road!
	The 125 is standing room only.
	Public transportation is not that dangerous. I urge you all to try it.
	Can't wait! Why hasn't this been built yet?
	I work at the King of Prussia mall for 20 years and it would be a joy to take the rail instead of 124/125 bus. Sitting on 76 traffic and being late to work is exhausting. Thank you for considering the project.
	Absolutely a fantastic plan. More public transportation is needed.
	In its current incarnation KOP is a nightmare to access because of congestion and an undesirable area to live, work, or play. Rail will be one way to help get employees to the mall and business parks and make the area more attractive and sustainable for future generations. - That said, if the project does not move forward, there are numerous worthy, desired and equally beneficial projects that would benefit the region: Roosevelt Blvd, BSL Extension and even regional rail restoration to West Chester. Let the naysayers stew in their own exhaust!
	This project is a big win for the region. Hopefully the small vocal minority won't kill the project that could benefit hundreds of thousands over many years. Please create more MFL A and B stops to decrease the length of the trip. A stop inside of the mall would be terrific
	That anti-rail group, NO KOP Rail, blocked me from their Facebook page. SEPTA has to be COMMENDED for bringing forth this major regional rail transit expansion. It's the first new rail line since: the Broad Street Subway to Pattison Ave in the 1970s; the Airport rail line in the 1980s.Two rail plans in the 1990s: the Schuylkill Valley Metro and Cross County Metro both failed on the drawing board. This is more realistic and workable.
	I think this is an awesome idea. NO TRAFFIC
	Great idea! When?
	This project has multiple benefits long term. Because train to the mall cannot be realized, this project is the best way to get in a lot of commuters from 69th Street to the mall. Also, people drive from Collegeville and Phoenixville to Dekalb or Gulf Mills Stations which can be avoided.
	Dear King of Prussia Rail Coalition:
	I am writing in tentative support of the King of Prussia Rail Extension project, provided that the route chosen is the best one for the people of Upper Merion Township.
	Whereas the PECO/turnpike/First Avenue route appeared to be is most, direct unobtrusive and overall advantageous proposed I have now read in a recent letter to the Philadelphia Inquirer, of an alternate, possibly superior route.
	The route would follow the R 6 Manayunk/Norristown line.

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	<p>I support the extension of the NHSL to King of Prussia proper. I ride the NHSL every day to work, and find it one of the more reliable and easy to use portions of the septa system. I avoid the horrendous experience of tackling 76, and have the opportunity to relax and read or listen to music on my way to and from work. I work for the government and benefit from DOT funds, but even without, the cost of a pass is substantially lower than gas and parking costs would be. The lots at stations throughout the line are full to capacity every day, demonstrating the popularity and need for increased public transport options from the suburbs to the city. This would also allow for a better public transportation to King of Prussia's jewel-Valley Forge NHP, which lacks good reliable public transportation access for locals and tourists alike. Increased access to public transportation is important for income equality and development. The fears from the extension of this line are frequently little more than very thinly veiled racism. Public transportation is progressive. Public transportation is egalitarian. Public transportation is important to access and increase. I support the KOP rail project.</p>
<p><i>Not supportive of increased transit services to King of Prussia</i></p>	<p>I walk and ride my bike to work. We already have a great tax base and don't need it. The residents are getting the short end of the stick.</p>
	<p>It's unfair to say that there is no rail access to KOP. 124, 125 bus lines run through KOP, we should be utilizing infrastructure we already have.</p>
	<p>You need residents to make a community, and the residents are feeling choked. Every other stakeholder's needs are being met, except for the residents. Let's make better use of the existing transportation system.</p>
	<p>We don't want this. What are the kickbacks that we are not seeing?</p>
	<p>How many times have you seen a SEPTA bus on 202 packed? Never! I do not intend to sink more money into our house.</p>
	<p>How can I stop this project from happening?</p>
	<p>Those taking the 124/125 buses from Wissahickon will not be taking the NHSL.</p>
	<p>After listening to SEPTA and residents...we still do not want the line. We don't need parking traffic on S. Henderson (already hard to traverse). The Valley Forge Village residents would have a nightmare ahead. (Would you want to live there?) Already hear turnpike traffic (all night also- sound travels) and now 21 hours per day of high speed line in addition. No more concrete! This used to be a residential community first...not concerned for workers! We live here, raise families, improve our homes, and pay the taxes. We don't force other communities to consider our needs!</p>
	<p>There is no benefit to KOP residents. Stop wasting tax payer money, including federal taxes!</p>
	<p>No way! Why? Have bus now</p>
	<p>I am against this project!</p>
	<p>We are 100% AGAINST the train. You shouldn't be impacting the families at Valley Forge Homes.</p>
	<p>It is not needed. The improvements made to local stations with bus transportation- SEPTA connect, etc. to the Mall and Casino should be enough. Workers coming in from Philadelphia need to adjust their commute as all other workers do. This township needs to WORRY ABOUT their residents and NOT Philadelphia residents. PA is an AT WILL EMPLOYMENT STATE. You don't have to work in KOP!!! NO RAIL LINE!!!</p>
	<p>I am going to be 70 years old and I do NOT want this project for Valley Forge Residents. Please! This is very unfair and you must choose another route that does not affect homeowners. You must listen to wise counsel and close the door to this project. Thank you.</p>
	<p>No KOP Rail- no benefits to the residents of Upper Merion township residents. This project will only benefit SEPTA. YOU'RE TAKING OUR HOMES! Benefits to SEPTA: More efficient ridership time from Phila to KoP- this is not the residents' problem that it takes too much time from the Philadelphia residents to commute to KOP.</p>
	<p>I prefer no train!</p>
	<p>You seem to care very much more about money and the people outside of Upper Merion. Very few people in Upper Merion will benefit from this, but we are the ones that have to live with it every day of our lives. You do not have to live with it. You really do not seem to care about us at all, and we should be the ones you care about the most because we have to live with this monstrosity every day.</p>
	<p>Generated by GREED AND "THE MALL". We do NOT NEED a rail in King of Prussia. Am a resident of Upper Merion, Noise, URBAN SPRAWL, Eyesore, Need peace and quiet where I live</p>
	<p>KOP already has service- residents don't need more. Project costs too much- taxpayer money can be used for better projects. Benefits are based on flawed assumptions. Prove they aren't!</p>
	<p>This has 0 benefit to residents!</p>
	<p>Auntie Rail Nimby says: NO nice things , K.O.P Rail</p>
	<p>Nobody that lives in KoP wants this train. It only benefits you, the casino, and the mall. It's obvious that you do not care about the residents here.</p>
	<p>Considering costs of construction and the many millions of dollars maintenance costs per mile, why is it necessary for the rail line to extend to the Valley Forge Casino/Resort? Their parking lot is never full, per my observations so it would seem not enough people care to go to VFCR- no real need for the extra rail line and attendant costs.</p>
	<p>No to Rail Project. No benefit to residents in U.M.</p>
	<p>No KOP Rail</p>
	<p>NO!!</p>
	<p>I don't go to KOP</p>

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	People don't use public transportation in KOP
	This is of no value to residents. Nobody is trying to get from King of Prussia to 69th Street and if they want to go to Center City, they take the rail from Radnor or Wayne. This is an EL-NOT a regional rail. It is an elevated subway. This will only benefit the casino-NOT the township. We don't need it. Not economically feasible.
	This project is the biggest waste of money that I have ever heard proposed.
	Just look at SEPTA's other rail systems and what they look like: nothing but rust and graffiti and disrepair and eyesores. SEPTA is not Disney. This rail system will look like West Philadelphia in 4 years and because it is elevated it will be an eyesore for all to see. When the project stops being self-sustaining (if it ever is) other riders will be forced to pay for it with increased fees. The eventual deconstruction and removal of this boondoggle will also cost millions.
	The amount of potential riders does not justify such a system or expense. Not even close.
	Pollution-free (propane) short buses could do the same as this rail system, cost millions less, have zero environmental impact and have no neighborhood displacements and be much more flexible as needs and routs change, which of course they will.
	I would like to state that I am against the construction of this extension. There are many negatives that would affect the integrity of this area for residents: Lack of parking, eminent domain, noise, loss of visual aesthetics, loss allocation of local emergency resources, possible over-population of the area, additional local congestion. Please try to reach out to the community about this issue, perhaps have news channels do a story about it to encourage local attendance at meetings.
	To the Septa Rail Project: We, the residents and taxpayers of Valley Forge Homes and Upper Merion, are 100% against SEPTA's aggressive plan to extend the Norristown High Speed Line through King of Prussia BUT especially so in bringing this rail line right through our neighborhood.
	SEPTA's "locally preferred alternative" LPA plans to run this rail in behind many houses on Powderhorn Road and Blue Bluff is far from being an acceptable and good idea. With this LPA, 29 homes will be affected and it involves several houses located in two cul-de-sacs (Blue Buff and Kingwood). The other alternative using the PECO right-of-way field behind the houses on Kingwood Road is not acceptable either because with this recommendation 55 homes would be affected as well if this route is selected. We, the Valley Forge Homes residents, are strongly NOT in favor of either of these recommended routes because they only invade and take over our neighborhood!
	SEPTA officials also have to understand that many residents of Upper Merion were completely unaware of this rail project for the first two years. We were only given a "whisper" of this proposed extension of the Norristown High Speed Line WHICH does NOT benefit the citizens of Upper Merion. Also, this extension plan does NOT address any safety concerns that residents have about train tracks being within 20-60 feet of their backdoors and what about the safety of the children who live in Valley Forge Homes? Is SEPTA going to erect a giant-size fence making our neighborhood look like Stalag 13 in order to keep teenagers and children away from the tracks? In addition, this rail project will drive away any remaining wildlife in the area. King of Prussia will become the Capitol of concrete, asphalt and metal; and trees, birds, rabbits, etc. will also lose their natural homes and disappear from our environment. Also noise and vibration will affect the ability for us to live in our homes peacefully.
	We also understand that this plan is only "conceptual" right now and we want it to stay as only a concept and NOT become a "reality!" We will try our best to ensure that SEPTA's LPA is NOT adopted in 2017 and may the Smart Funds from the Federal Government not be available in 2018.
	Apparently, "business" is more important than the "residents/homeowners" of Upper Merion. It is our opinion that it's all about MONEY and SEPTA is not considering the welfare and well-being of the Valley Forge Homes residents/homeowners.
	Right now, there are so many various issues connected to this rail project that SEPTA hasn't scratched the surface in coming up with practical solutions.
	However, the VFH residents' BIGGEST FEAR is that the value of our homes will plummet tremendously and will not be worth a dime. None of us can allow this to happen, because all of us have worked very hard to own our homes and to keep them attractive and pleasing to the eye.
	If the residents of Valley Forge Homes don't stand a chance of being against this rail line may the sinkholes of King of Prussia win on our behalf! VFH residents would also like to know who came up with the idea to run this train 21 hour a day. This idea too is utterly ridiculous and not acceptable.
	Valley Forge Home residents vow to fight SEPTA's proposed extension of the Norristown High Speed Line and NOT let SEPTA take our homes away from us and make our homes worthless!

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Other	I was at the meeting on Monday, please explain the genesis of the project. Where did it come from, SEPTA? Or did the county specifically push for it? We want to find the ideal project that satisfies everyone but it doesn't feel like it's there yet. A lot of people, residents, feel that this will only help the businesses, the mall, etc. What benefit is it to residents? We already have a great tax base. I would like more information on who really wants the project. Where does the push come from? Is there any other option other than up 202 that doesn't impact any residents? If you could look at the north side of the Turnpike that may be a possibility. Can you just buy the ballpark and relocate it?
	How will this project help residents? Montgomery County has the lowest tax base.
	52% like the idea of rail (per last year's survey results); less than 1000 filled out the survey.
	Communication and input from residents is subpar. This project is not the project of KOP.
	NIMBY rail opponents: Astroturfed by Fossil Fuel interests.
	Get a head count from a temporary bus route from SEPTA to High Speed Line on King of Prussia Road, to KoP Mall, Count, Allendale Road to First Ave to Convention Center before starting construction.
	How many riders are expected?
	I DO NOT SUPPORT THIS RAIL EXTENSION. I would be in favor of extending the Regional Rail Line into King of Prussia. This area needs a 1-seat ride into Center City.
Alternatives: Public Comments and Questions	
Theme	Comments and questions
Design Considerations	Where will the train enter the park? Is it going to stop at the casino or go up to 422 and 202 south? 422 is underserved.
	Why didn't you extend the Norristown High Speed Line to stations in Fort (Port) Kennedy?
	Run the train along the northern side of the Pennsylvania Turnpike, not right next to my house. Why is the train not running down the middle of the Turnpike?
	Why not consider extending the 202 route? If those people want the rail line, it should impact their community. You rather impact residents rather than impact the business. What about utilizing Gulph Road which is straight through?
	I do believe that the rail line should be moved to the other side of the turnpike, away from the homes.
	No matter where it is, it will affect the local people. If we put a station at DeKalb Pike where the alternative crosses at 202 on the north side, then it would actually allow the residents to actually use the train.
	How will the route fit along Wills Boulevard running by Costco?
	Why don't you extend the rail from Norristown?
	Will there be more tracks?
	The bike trails are on the opposite side of the busy road. Who will make the connections?
	How does this loop work? Will someone have to get off if they get on the wrong train direction?
	You compared DC Metro and JFK – where do they connect? Are they busy areas? Main issue for me is the transfer at 69th.
	When it goes from the turnpike what happens at 202? Will it run over or under?
	What is the height and width of the structure? I don't think it will fit. Concerned with visual impacts.
	Is there a national recommendation on how dense the area should be in terms of walkability and ridership?
	How do we make the rail line a desirable place to be and live?
	Consider station at PATPK 202 so people can walk to station. It will require acquiring hotel property. That should be a good price to pay. Consider only one station in mall. People go there and park at one place and walk to entire mall anyhow and having one station will be the same situation. If mall wants extra mobility within the property they can shuttle as they do during holidays. Provide a connection to 1st Ave Station. Direct parking from turnpike to serve commuters coming from Montgomery area. Show sidewalk connection as part of this project as a complete package for acceptance by the residents better.
	Construction Vehicle Access. South side of north side of the "wall". Will the "wall" be raised in height. Will the wall be moved – north or south. Will there be two walls same level of train
	I will appreciate your considering the "at grade" extension from Henderson Road to a little beyond Rt. 202, to go around the King of Prussia service center. (You can save money by not having to elevate the tracks for the area).
	Can the train go around the turnpike plaza and down 202 to the turnpike route?
	Recommendations: 139 be re-routed to pass by KoP mall stop. Free transfer for those traveling on 99 going to/from Phoenixville-currently is direct route to NTC to Route 100/NHSL. Free/reduced fare for shuttles for businesses on First Ave NOT near NHSL stops. Extend current stop at KoP mall. Question: Will this also be 2 zones fare?

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	Please include N. Gulph Road. 1st Avenue will redevelop. N. Gulph Road will be a parking lot when developed fully. This will mitigate this growth.
	No station planned between Henderson Road and the Court. Considers shifting parallel PA TPKE segment to NORTH of the turnpike with a stop at K of P service plaza. This would prevent up to 29 homes taking removal and 29 homeowners claiming to take displacement. (Not my idea but from a fellow in the neighborhood on the south side of the turnpike who’s one of those homeowners.)
	As a supporter of this project, I would like to make sure at the Valley Forge end that the infrastructure allows for future extension to Port Kennedy for connections to a future commuter rail service to Pottstown, Reading, and beyond. I do have ridership concerns of the Norristown to KOP portion due to the Route 99 bus. I strongly support the KOP HSL project. I do however have a concern about the Turnpike alignment. Instead of building the line on the south side of the turnpike, move it to the north side where it will not be in neighbors back yards. The North alignment will put it through the turnpike rest area which can be trained through creative engineering. As a support project to the KOPHSL I strongly urge that an expanded Radnor Station be built similar to Bryn Mawr Station to support three tracks and Radnor short trips so King of Prussia and Norristown limited stop cars can operate from Villanova Station and 69th Street Terminal.
	It should run through the developments near urban benefit and run back along the present tracks by the river- no visual impact now. If you’re going to spend a billion then don’t bother.
	Nobody that lives in KoP wants this train. It only benefits you, the casino, and the mall. It’s obvious that you do not care about the residents here
	Why extend the high speed line and not the Norristown rail. People in center city will have to travel to 69th street. Seems connecting CC to KOP directly would be more convenient.
Operations and Service	What rate of increase will the train run after the train is built?
	From Norristown to 69th Street, cars are full. If you’re running at capacity now how can you run more trains?
	When will we hear about changes in bus routes?
	How accurate is DVRPC’s ridership prediction? What is your track record?
	76/422 are very congested. How do you get them off the road? It would be so much more convenient without having to transfer.
	Are you going to increase the number of cars or frequency?
	NHSL currently has buttons to stop now, how will that work on the new route?
	What will people do if they drink too much and miss the train?
	Are you committing to 4:30 a.m. to 2 a.m. run times?
	How long does the NHSL run?
	Will other train lines’ service decrease, such as the existing Norristown line?
	Improve inbound/outbound connections at 69th. Currently NHSL trains get bogged down and delayed near depots/employee boarding area. Connection must be smooth for people to do a 2-seat trip between KoP and Center City. Keep the stops close to the mall
	A connection should be made between 251 Dekalb, the apartment complex, and the future Chester Valley Trail. That way residents can use the future trail to connect with the Henderson Station. The Route 124 and 125 if truncated to Wissahickon, should be adjusted to make a stop in Conshohocken before proceeding to KOP and Chesterbrook. Currently access between Conshy and KOP is over an hour by SEPTA or 15 minutes by car.
	I think it’ll be better if our transpass were to be used for this new idea. For example, we would have to use cash for the 125 bus to get to KOP Mall. Just a free ride for others that are working & etc. may not have cash on them to shop. Tranpass use only would be very useful. Also less traffic.

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Support Recommended LPA	I've been a transit user all my life. This is the most cost effective project for this area.
	I am very much in favor of the project. The LPA is one of my preferred routes. Did you ever consider a single-line loop from the mall via N. Gulf and VF towers to provide greater coverage of the business park?
	I am in full support of this project. I believe it will greatly benefit the township economically, keep my taxes low, and add value to my property. Public transit is the way of the future and I appreciate the ability to give my input. I have lived in two areas within 1.5 miles of NJ transit train stations, and the convenience was fantastic. I look forward to using this rail line to get into Philadelphia very frequently.
Not supportive of the Recommended Locally Preferred Alternative (Recommended LPA)	The train will be 52 feet from my home. The train will produce 80-90 decibels of noise, which is too much noise. Construction will rock the foundation of my home. The train will be visible above the noise wall. I have not received a mailing to my home. Why did my township not contact me? If businesses want this, run the train down 202. My home has sink holes and culverts, how will this affect my house? SEPTA needs to see it from the home owner's perspective. My property value will go down. I went around passing out flyers to the homes directly impacted and they had no idea about the project. If the business district wants the rail line, put it down 202 so that these homes aren't the only ones affected.
	I have concerns about SEPTA's presentation, there is dishonesty woven into the presentation. There are no businesses along the LPA. The mall is being treated like a cathedral. 202 is one big long business. Everything is an impact to traffic. Fewer people will be impacted on 202.
	I do not feel compassion from Byron for the neighbors, not getting the whole truth. She feels a lot worse than when she came in.
	You wonder why this country is in trillions of dollars in debt. Go protest. The supervisors work for us!
	My sister sold her house because they don't want SEPTA in their backyard. I will fight. I don't take public transportation.
	I oppose this project! The visual blight and vulnerabilities this proposal brings to my home and children far outweighs the increase in ridership that your company will benefit from. In addition, your presentation was filled with contradictions with regards to the DEIS, impacts, findings, etc.
	Concern with section passing through Valley Forge Homes neighborhood. Beginning with proximity of the rail system to the houses along Bluebuff, removal of trees which help to control turnpike noise and overall closing in at the back yards. Construction concerns are noise, dust, times of day especially at night. Although appears favorable to public, homeowners in Valley Forge Homes feel the railway will take away from peace and quality of living.
	I am a home owner for the tentative route. I am against this route this train will be 52 feet from my back door – use 202 or other side of turnpike.
	I am against this train- Don't go forward with this project.
	A rail system that needs to acquire resident property is unacceptable. The residents do not need nor want the project if it destroys property values.
	This train is a joke- what benefit does it have for anyone who lives in the township
	Please find another location. This is going to destroy the value of our homes at Valley Forge home development.
	Put it in your own BACKYARD! Not within 40' of my pool!
	There is nothing about this project that I am in favor of. Nothing will change my mind.
	Not in favor- my home is in the impact area- I love this community, invested of \$100,000 in my home for it to be my forever home. Rethinking my commitment to that.
	10 yrs ago I moved to VFHs to enjoy suburban living again after having lived in Phila. for 26 years. NEVER in my "wildest" dreams did I imagine SEPTA would be putting a rail through so very close to my house at 512 Powderhorn Rd. While this train won't be in my backyard I'm not at all happy with this "selected LPA!" I have invested BIG bucks into my "HOME" i.e. \$21,000 in ALL NEW windows, new furnace & central air, \$7,000 NEW roof (1 yr ago). I'm a widow for 20 years and now preparing to retire in May after 36 years of service. I IMPLORE SEPTA to go back to the drawing board to resurrect the other earlier 30 alternatives to rethink this factor. I'll be present for the upcoming walk-through. Thank you.
	Hello Ms. Smith, I wanted to first thank you for your time last night at the Valley Forge Radisson. Your presentation was very detailed and helpful to understand as to what may be happening to the King of Prussia area. You also handled yourself very well considering some of the concerns and frustrations of the some 29 families that may be affected by this expansion. Kudos to you! Regarding the 29 families/houses along the turnpike section that may have a high speed rail line in their backyard is my concern. I've lived in Norristown most of my life and I've been working in Kop for 20 years. Before I attended the meeting, I was 100% on board with this project because of the impact it could do for Norristown financially. Possibly create growth/jobs and also increase property values. Now I'm about 50% on board because I have sympathy for the 29 Kop families that may be affected. After listening to your presentation and the concerns from the residents, I don't feel that the rail system is necessary for growth in Upper Merion. The township has grown substantially over the years without the rail. Upper Merion doesn't seem to be a struggling township that needs commercial and smokeless industrial growth. However, a rail system would help commuters from outside areas getting to and from work in Kop. I'm still 50% on board with this project, but I feel zero houses/families should be affected if Septa wants to sell the idea of the Kop rail. I don't think the Kop rail would add any value to the current Kop residents (especially from the responses I heard last night). If there is one house in jeopardy, the rail or route should be squashed. Last thing, a vote from the residents wouldn't be a bad idea. For the record, I live at 600 Noble Street, Norristown, 19401. Thank you for your time.

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Decision Making	Was the township manager involved in the LPA decision? Why are these decisions being made behind closed doors? If Upper Merion Township is involved, when will they notify us? Can we vote?
	Is there potential that this project won't happen?
	Why is SEPTA not going with the alternative that doesn't affect residents? Why not choose the alternative that doesn't run behind homes? Putting a train near my back yard takes away my privacy, the reason I moved to my house in the first place.
	What happens if the township doesn't adopt the plan? Do they have more of a veto power than the county? In order for the project to move forward, all entities would have to adopt this plan?
	No action feasibility study – when is that coming out?
	What happens if you find out this is not feasible? So you're saying the no action vs RLPA is the same?
	If there is not impact to traffic will you continue?
	What's the probability of the project happening?
	Do our supervisors have to vote on this?
	Does the project move forward if the supervisors vote it down?
	Is there a no choice option if it is not supported?
	When is the drop dead date of whether or not this project is moving forward? At what point?
	When was the decision to pursue this project made and by who? Was it voted on by a board at SEPTA?
	Take the number of properties needing to be acquired, and double it, because in acquiring and leveling homes in the right of way, their neighbors across the street suddenly have a high speed behemoth in their front yard. Who are the stakeholders, exactly, by now you have all of our names, addresses, phone numbers, email addresses, tax parcel id, etc. How much \$ are these stakeholders getting for this? Let's have their names and their payoffs listed in the papers.
	Put on a voting ballot to see if Upper Merion wants a rail system through our city townships.
	Please publish the results of surveys! I am a resident and do not see a representative identified as a stakeholder. Who told you this is our LPA? Don't you have a more cost effective project?
Planning and Studies	How long has this been in planning?
	Compared to other projects, why is this project taking so long?
	The KOP industrial park has 3 proposed developments- all mixed use- residential and retail/ 1st Ave. is being reduced. If Industrial Parks are eliminating business, where do your "numbers" come from?
Environmental Impacts	How are you going to anchor the train when the sink holes have no bottom? Will you anchor in bedrock?
	What happens if the analysis comes back fine then I find a sinkhole in my backyard?
	What about concern for sinkholes in this area, esp during construction, also after build? Why not just improve Gulph Mills station and add modern bus transportation to malls/business area – or perhaps trolley system?
Parking	Will the business park have parking?
	Will there be more parking at Norristown Station?
	How big will the parking lot be at Henderson Road?
	Will mall management be OK with cars parking in their parking lots to take the extension?
	Currently parking lots are full along the NHSL. How will you plan for additional parking?
	People will come from 23/422. How many parking spots will be at the end station stop?
	How will the parking garage at the end of the line near the casino work?
	Parking lots are way undersized. You don't have enough now. What are you going to do about it? It needs to be more comprehensive.

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Safety and Security	Will there be a significant increase in crime & litter?
	There is no info on crime and graffiti in the presentation.
	We are going to see people coming from the city, but not the reverse. The train will run through some seedy areas.
	I am a women and I would never take the rail to 69th Street at night.
	I have concerns about crime happening on the train. People will use the train to get to the mall and shoplift. Won't the train create more crime?
	Shifting the train to the north side could relieve issues but if we have to stick to the LPA, could we put up a wall around the train to preserve people's privacy?
	I have never seen criminals or homeless people in the King of Prussia Mall. If there are shoplifters they will not be waiting for a train or a bus to get away.
	How would you address security?
	In the rendering of the turnpike, could you shift the wall? Could vehicles hit the pillars?
	You will increase the calls to the Fire Company, EMS, and police that could increase UMT taxes. Have you considered that?
	Does SEPTA police patrol these stations? What about the parking lots?
	I live near rail; I assure you there is more crime.
	Is KOP Mall going to become the Gallery?
	Students congregate at the Gallery (Student TransPass works from 6 a.m. – 7 p.m.)
	If I'm not carrying my gun I'm not going to 69th Street.
	Concerns with trash and graffiti.
	What will SEPTA do about safety and crime?
	(Resident that lives along S. Gulph) Two people almost broke into his house. They took bikes and patio furniture. What is SEPTA going to do?
	There has been an uptick in crime in the mall along DC Metro.
	How is SEPTA transit going to respond to emergencies? This will be a burden. You don't see them. What will you do?
Noise & Visual Impacts	I live in the first house across the street from the SEPTA Hughes Park station. The noise level is low, it's a very quiet line. The noise defuses and goes up. I really don't think the level of noise that the KOP rail will affect the residents. Public transportation often mitigates environmental problems.
	Can a sound barrier wall be suspended from a rail line to minimize visual and noise impacts?
	How many cars will run into the city and out of the city per day? I currently live along the line and it has become very noisy since the improvements were made.
	I'm most concerned for the visual and noise impact for the residents along the turnpike section who would have this in their backyards. I think the elevation would adversely change the character of this area. I'm a realtor and lifelong resident and appreciate the forward moving growth but not sold on this.
	How noisy is the current Norristown HSL? How noisy are similar elevated metrosystems?
Economic Development	What is the economic impact of not doing anything at all?
	In 2040, 62,000 jobs expected. How many employees will come from Philly, South, Chester County, etc.? I think they will come from 422. Can you tell where they're coming from?
	Is there a distinguishing percent of property value increase for light rail?
	Bring in more business. I pay less in taxes.

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Community/Property Acquisition	Does SEPTA have a history of acquiring property? Has there been consideration for property value guarantees?
	If you paid the houses to displace the residents is that an option for all 29?
	What is the process for TOD rezoning? Hughes Park redevelopment issues
	Please explain the process of acquiring properties. Should the homeowner get you info? Who gives you the fair market value? SEPTA workers?
	Make clear that there are potential for housing acquisitions in future mailings.
	We get fair market value. Do we get any additional monies?
	What happens if you take five feet, value goes down. Does SEPTA compensate for that?
	SEPTA is going to take my home. This is my home. I will fight you. What you say you cannot know how I feel. Nobody cares. My property won't have any value.
	To what extent will they condemn the land to make it easier to acquire?
	Residents of Kingwood, people, nurses, professionals, educatory tradesmen are soon to be peasants living on wrong side of tracks with worthless homes. Originally planned to be their money for old age. What about houses at end of Kingwood and along Blue Buff? On what side of the sound barrier will the 17' train bridge run? On the turnpike side or on the side adjacent to Blue Buff and end of Kingwood homes? How will the rail line affect property values on Kingwood?
	I don't wish to have this in my back yard. I have invested a lot into my home which was completely remodeled into a two stories four bed room two bath two car garage and a man's cave. I am concerned about the noise, scene, property value, vibrations, sink holes just to mention a few.
	Dear Ms. Smith, I attended the March 7 meeting and I'm very concerned about the impact of this "aggressive" rail SEPTA project. The main reason why I moved out of Phila. To KOP was because of the "LOW" tax base. I will not find another place like this in which to live. I truly believe this new rail "Recommendation" will bring down the value of my home and many other homes in Valley Forge Homes. Crime will DEFINITELY RISE – the KOP POLICE have enough crime to deal with now! THIEVES USE VFH TO TRY TO AVOID POLICE! ALREADY
	Could a SEPTA rep have knocked on doors of those 25 homes before a public notification? I will look directly at the train near my front door, but I am sure I am not in the 25 homes – will I be compensated?
Other Impacts	I really do not want this rail project as proposed. It is way too near my house – will have an adverse visual effect as well as a noise and vibration. I am very concerned that construction will "disturb" the sink holes in the area and cause one to form in my yard. I do not like the elevation of the tracks – will visually affect the whole neighborhood.
	I feel for residents that have property backed up to the project rail. In all honesty having a train run through your backyard will kill their property value. Eminent domain should certainly be an opt out for the home owners to get fair market value before the rail goes in.
	I am the assistant chief of the fire company. The KOP Rail will be built over our 911 Memorial; the Memorial contains two pieces of steel from the World Trade Center. SEPTA is taking land and income from our firehouse, which is 100% volunteer. We already have a stable tax base. The rail line will also affect our fire company's billboard, which generates revenue.
	Vibration from the train lines is undermining the foundation. Sink holes are horrendous. I already had to rebuild parts of my home from the trees in by back yard when Superstorm Sandy happened. What environmental engineering steps are you taking? It's not fair that we have to put our lives on hold while we wait to hear the outcome of their project.
	I can already feel cars driving on the turnpike already, what will a train feel like?
	Concerns about the 9/11 Memorial
	The area is still really congested. Not sure where you are getting your data.
	Did you say Target was upset about covering their sign?
	We were told the Village at Valley Forge community would be walkable and not using cars. Now you tell us they are auto dependent.
	Would prefer to see a route that does not affect turnpike property. Turnpike is already crowded at rush hour. Putting trains there congests an already congested area.

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Costs and Funding: Public Comments and Questions	
Theme	Comments and questions
Sources of Funding	Are you saying there is not an impact to Upper Merion Township taxes?
	What grants are you working on obtaining? Will the Presidential election affect that funding?
	Where is the funding coming from if 50% comes from the New Starts program? Where is the other 50% of the funding coming from?
	Is it true that SEPTA is 100% state funded?
	Why can't SEPTA support itself? You get money from the turnpike. No one in KOP will get on and go to the mall. Why are the only big buildings near rail not sold or leased? The Schuylkill has nothing to do with this.
	Funding isn't required until 2018.
	I don't want to pay any taxes in relation to the proposed rail line. Therefore security and who is going to pay for it needs to be addressed before the next meeting and someone needs to own it!
Costs Concerns or Questions	Total project cost: 1.1 billion. Roughly 9,500 turn style clicks per day. 4,000 people will ride a day; 14 million riders over 10 years; 6 divided by 1.1 billion = \$75 dollars a day per rider. Give the money to riders to buy a car \$27,500 per rider per year.
	In your presentation you compared the KOP Rail to the construction of a train in Washington DC. What is the cost per rider in comparison to DC?
	Over 20 years, cost per ride is \$70. What is the cost compared to other systems?
	I've read about other rail extensions that are much cheaper. KOP Rail is high cost and has extensive impacts on residents.
	Currently, riding the train costs \$200 per month. What will be the price of a train ticket?
	If there is an increase in use of fire/ECMS/etc. will SEPTA be footing the bill? I am concerned that the residents will have to fit the bill.
	What is the tax structure for residents? Concerned with additional costs of safety, police force
	9500 riders for \$4000/in!
	One major question that needs to be addressed: How did you come to the cost estimate of \$100million/mile of new NHSR?
	Price new highways in similar areas.

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Public Agency Involvement: Public Comments and Questions	
Theme	Comments and questions
Public Meeting 6 Content	Are the survey numbers correct?
	Are the numbers correct on the pie chart? Why are so few riders coming from Philadelphia, your numbers are confusing.
	Are we able to get the maps that are used in the presentation?
	I ride the 123 from 69th street to the mall. You should show time savings from Center City.
	On slide 25 dealing with ridership, is that weekly or daily?
	Are you noting the comments made last night? You need to adjust your numbers throughout the week. You have to stop. This is a major flaw in your presentation.
	Please provide me a link to the “Recommended Locally Preferred Alternative” map which was recently announced.
	What you need to print in your brochures AND post on your website, Septa, are the number of residents that will be displaced by your proposed project. What you also need to post/print is the REAL reason you're planning this project...to accommodate the 19% of people traveling FROM Philadelphia to go to work at the KoP Mall. These statistics and facts come directly from your presentations. The Residents of the Upper Merion Township Community deserve better.
	Hello, I attended the meeting about KOP rail last night at the Doubletree in King of Prussia. I've been a supporter of the project since I first heard about it a few years ago, but this was the first meeting I've attended. I was thoroughly impressed with the presentation that Septa gave, and wanted to let you know this. I really hope that some of the concerns of the public can be addressed, and would love to see the project go forward. I am admittedly embarrassed on behalf of some of the other members of the public who were in attendance, and just wanted to make sure that Septa and in particular Liz the project director did a great job, despite the rudeness and negativity of many people that spoke during the Q&A. You have my full support of this project, and I hope that it is built and operated successfully. It would be a great benefit to the community and as a daily rider of the line currently, would be a huge factor in deciding whether I stay in King of Prussia in the future, or move to another town with better transit access. Thank you again for an excellent presentation.
	Please send me a copy of the presentation used for the King of Prussia Rail meetings starting on 3/7. I am unable to attend the meetings and would appreciate knowing what was presented. Thank you for your help.
Public Comment	Thank you for the slides and the video of the presentation. It is very helpful in understanding what people are saying versus what was actually said. BTW, it was a very good, informative presentation. Kudos to Liz and the team.
	Folks, Some people have questioned the integrity of the survey that was done to collect the statistics used in the March 2016 presentation. Would you please send me a copy of the survey questions? I want to be able to dispute an (other) inaccurate claim or have a basis to ask more questions. Thank you.
	I attended one of this week's meetings. Couple of points to consider: 1. Presenters need conflict management training. They didn't manage conflict at all. 2. We need details about same sliver of land being used by turnpike authority for slip ramp and SEPTA adding a station at the same location. 3. You need stations that benefit residents to get their support. To ask residents to sacrifice while businesses benefit will get you nowhere. 4. De-emphasize the "reduced traffic" marketing. We've heard this before and it never came true. PENDOT said that about Blue Route and the additional capacity just added more traffic. Expressway and its feeder roads never unclogged. 5. Those who can afford to drive will drive unless you provide a convenience/good experience to lure drivers to the Rt 100 line. You have a serious PR problem with 69th Street after dark that inhibits suburban travel- the place is awful and feels dangerous even though it statistically may not be. Burned out light bulbs, generally dirty "looking", winter homeless population, no security presence. I would love to support this project, but you offer no benefits for residents to use it. I certainly can't- it's nowhere close enough to walk to on a rainy day. All the benefits are for businesses. Make them pay for the benefits they'll realize from it.
	Is there another way to express opinions on the project?
	I’ll see the train out my front window. None of these meetings have any town reps or people from PennDOT. Why not bring them in for a panel so they can hear the public’s concerns?
	We are not represented at these meeting by officials and there has been no statement of acquisition of property.
	Any plans to meet with Brandywine Homes?
	How will you have the public comment on the DEIS?
	What feedback have you received by surrounding townships (i.e. Chester County, Tredyffrin Township, etc.)?
	Is homeland security going to be involved?
	Get organized and let your public officials know how you feel.

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Public Outreach	Your marketing is terrible.
	You need a PR firm.
	You had 1% of people at the workshop. That’s appalling. I don’t know how to tell you how to market.
	Need to address residents at the table.
	Use UMT literature to communicate to the residents.
	Questioned Liz’s position at DVRPC and why she didn’t tell the public.
	You can reach the residents by posting in the grocery store.
	Have you gone down the road or drove around the neighborhood? I had to find out about this from a neighbor. Work on getting access to the areas you haven’t yet.
	Will you let the residents know before you make it public?
	DID NOT RECEIVE FEB. 2016 MAILING OR SURVEY INFORMATION
Outside of Scope: Public Comments and Questions	
Theme	Comments and questions
Maintenance of Current SEPTA Rail Stations	Your current system is crumbling.
	Get rid of King Manor Station. There are no sidewalks. Move the station.
Other Possible Projects	I work in the business park. The business park is not walkable, what are the future plans for the business park?
	Henderson Road corridor residents have tried really hard to improve it, how will this project affect that corridor? How big is that lot going to be?
	How are you going to alleviate gridlock?
	Why not extend regional rail? AECOM said close to impossible to extend the regional but didn’t say it was impossible, why not push for it? Have residents keep housing.
	The township should come up with a real comprehensive plan to fix Norristown.
	Are there any plans to extend out to Collegeville? Other areas?
	What about the old rail road tracks? (freight tracks)
	Why did you pick King Manor Station? Did you think about using the Schuylkill expressway?
	If we are going to have rail service, it should take us all the way to 30th Street Station. If 69th Street is not bypassed then this will be useless to residents wanting to go to Philadelphia. Otherwise we don’t need it.
	Why aren’t we simply using buses (electric or CNG preferred) for any mass transit needs instead of an expensive and intrusive new rail system.
	Suggestion to please improve the bus stop at the corner of Gulph Road and 1st Avenue for the 139 bus. This is the bus stop for the Valley Forge Casino/Hotel.
	Sell the Norristown-K of P leg as connection to the Norristown-Manayunk regional rail lines plus 90-series suburban buses.
	Is there plans to hook to KOP from the north say Lansdale?
	It's wonderful that this plan will finally connect the heart of King of Prussia, and Montgomery County's economic engine, with Philly and Norristown. However, I'm dismayed that this plan doesn't do much of anything to alleviate commutes for Montgomery County residents, who at this point have no other option than driving to KOP. The current plan is wonderful for Delaware County and Philadelphia commuters. I realize that costs would be very high for a rail link to Jenkintown, Lansdale and other important rail hubs in Montgomery County, but as far as I know, there isn't even a reasonable bus link between KOP and most parts of Montgomery County. Struggling towns like Jenkintown and Lansdale would see significant growth should they become hubs for people commuting to KOP from other parts of Montgomery County and even Bucks County and traffic on our roads would be drastically reduced if there was another option. Is there any possibility that SEPTA might consider expanding the plan to benefit Montgomery County?

Appendix D: Frequently Asked Questions

**King of Prussia Rail Project
Frequently Asked Questions
Version: Summer 2016**



These frequently asked questions (FAQ) have been developed to help residents, businesses and area stakeholders develop a better understanding of the proposed King of Prussia Rail Project, the project development process, proposed build alternatives, and next steps.

1. What is the genesis of the KOP Rail project? How long has this been studied?

The King of Prussia Rail project and its predecessor projects have been an integral part of the region's long-range transportation plan for several decades. The regional transportation plan – called the LRTP – is required by USDOT regulations and is developed and managed by the Delaware Valley Regional Planning Commission (DVRPC) along with its planning partners, including PennDOT, county governments, transit agencies and others. The Long-Range Transportation Plan is updated every five years and includes a capital spending plan for all federally-funded transportation investments in the nine county Philadelphia region. Many state and local government officials, diverse stakeholders, and the public provide input into this planning process. Transportation needs recognized for the project included the growing traffic congestion on I-76 and U.S. 202, rapid growth of KOP as a center for employment and shopping, and the increasing need for mobility options.

Several decades ago, a major rail project called the Schuylkill Valley Metro was studied to connect communities in the Schuylkill Valley to Philadelphia. The Schuylkill Valley Metro project included rail service to King of Prussia due to the high number of jobs and, in turn, the high ridership potential projected in King of Prussia. Federal "earmark" funds were approved by Congress, and a Draft EIS was prepared. However, high projected construction costs, operational issues and other problems rendered the project, as conceived, to be impractical. Subsequently, several studies were conducted to reduce potential project impacts and costs while refocusing on the greatest mobility needs in the region. As a result, the KOP Rail project was advanced as an extension of the Norristown High Speed Line with service to both Norristown and 69th Street transportation centers. This new reduced rail concept was then placed on the Long-Range Transportation Plan and programmed for further evaluation and development through the formal NEPA process. The Draft EIS now being developed is the result of this planning effort.

Other plans in the region have recognized the need and value for this rail extension, including the Montgomery County Comprehensive Plan and the Upper Merion Township Comprehensive Plan.

2. Why are you not just extending the Regional Rail Line from Norristown to make it a one-seat ride from King of Prussia to Center City Philadelphia?

Extensions of SEPTA's Regional Rail service– including the Cross-County Metro – have been studied at the Draft EIS level in the past. However, these earlier studies have failed to meet the latest federal New Starts evaluation criteria.

Additionally, the purpose of this project is to better serve activity centers in the King of Prussia/Valley Forge area, including the King of Prussia Mall. Therefore, an extension of any rail infrastructure to the

area will require a service to run frequently and operates over the course of an entire day. This longer duration of operations and increased frequency of service will provide the necessary balance of mobility options while offering nearly equivalent service for both inbound travel (toward Philadelphia), and outbound travel (toward Norristown) to connect both markets. The current headways of 10 to 12 minutes on the NHSL cannot be replicated on SEPTA's Regional Rail line due to its operating characteristics, fleet parameters and train volume constraints of the SEPTA network north of Temple University. Although the NHSL offers a frequency of service for both inbound and outbound passengers, Regional Rail service does not, as it is primarily oriented to provide service from outlying areas into Center City Philadelphia in the morning and from Center City Philadelphia to outlying areas in the afternoons and evenings.

3. Are all of these decisions being made behind closed doors? Will the KOP Rail extension definitely be built?

It's important to note that SEPTA has engaged in a robust public engagement process, and no decisions are being made behind closed doors. The NEPA process requires frequent coordination and consultation with elected officials, stakeholders and the public. This open and transparent process of evaluating alternatives and identifying a Recommended Locally Preferred Alternative began in January 2013, and has included six (6) sets of public meetings along with committee and stakeholder meetings. In addition to these frequent meetings, the website provided constant updates, newsletters were published and surveys were conducted. The website was also used to receive comments and suggestions from the public throughout scoping and all three tiers of the Draft EIS process.

The KOP Rail project is led by SEPTA with the support of local and regional stakeholders. As with any large project, it relies on the support of the public and regional leaders, and can only continue with that support.

4. How will this project benefit the residents of King of Prussia?

The KOP Rail extension will offer a variety of benefits to residents, visitors and businesses in the King of Prussia area. These includes: increased development and redevelopment of office, residential and retail space, further reinforcing the municipality's competitive tax structure; increased access and mobility options for residents; more reliable transit service that will not be hindered by local traffic congestion; environmental benefits due to non-motorized travel options between destinations; increased walkability through pedestrian and bicycling enhancements within and surrounding station sites; and a reduction in congestion and overall travel time.

5. Will the value of my property decline because of KOP Rail?

The study "The Impacts of SEPTA Regional Rail Service on Suburban House Prices," completed by Econsult Solutions in October 2013, discussed the impacts SEPTA's rail lines have on local property values considered only Regional Rail service. However, the report determined that the average property premium resulting from Regional Rail service in the four counties outside of Philadelphia was \$7,900 per house. Although no corresponding study was done for the NHSL, the improved access and mobility resulting from the proposed rail extension is expected to correlate to a similar premium for residential properties in the King of Prussia area.

6. Why does the proposed KOP Rail extension have to run along the Pennsylvania Turnpike right-of-way adjacent to the backyards of residents living in the Valley Forge Homes community?

The alignment of the Recommended Locally Preferred Alternative traverses the south side of the Pennsylvania Turnpike right-of-way between PECO's right-of-way near Kingwood Road and Allendale Road. At the March 2016 public meetings, residents of the Valley Forge Homes community in Upper Merion Township voiced concerns regarding the possible impacts to private property. In response, SEPTA is exploring the feasibility of altering the alignment along the Pennsylvania Turnpike right-of-way to reduce impacts to these properties. Various options will be examined as part of this process.

7. Will there be a significant increase in crime and litter?

Research shows that crime rates in and around stations is correlated to the existing crime rates in the adjacent community. SEPTA Transit Police are currently working on compiling crime analysis and statistics for all stations along the Norristown High Speed Line, and expect to release that data later this summer. Additionally, all SEPTA stations and Norristown High Speed Line vehicles are equipped with numerous cameras, which have proven to be a deterrent to crimes committed onboard the vehicle, as well as when the SEPTA system is used as a means of travel before or after committing a crime.

New stations built for the King of Prussia Rail project will be designed to incorporate safety into their designs, including multiple cameras, higher levels of lighting, as well as ensuring good sight lines throughout the station area. In addition, SEPTA Transit Police will periodically patrol stations and will be actively involved in ensuring that our station areas are safe.

8. The King of Prussia area is prone to sinkholes. How will SEPTA manage sinkholes during construction and once the new rail line is up and running?

As engineering plans for the KOP Rail project progress, a geotechnical report will be prepared to determine the type and depth of the foundations needed for the columns supporting the elevated guideway and stations, based on the karst topography in the KOP area.

If the sinkhole was found to be caused by the KOP Rail project – either during its construction or its operation – SEPTA would be responsible for making the necessary repairs.

9. How high will the train run? I'm concerned with visual impacts to the community.

Visual impacts will be assessed and reported in the Draft EIS, along with strategies identified to reduce and mitigate impacts. Similarly, the Draft EIS will include an assessment of noise prepared using the guidelines set forth by the Federal Transit Administration (FTA).

In terms of height, the bottom of the guideway structure must be at least 17 feet above roadways. There will be places where the guideway structure height will be higher than that, due to the generally hilly nature of the King of Prussia area and, for example, where the rail guideway crosses U.S. Route 202 over the Pennsylvania Turnpike. In terms of width, the minimum guideway width will be 34 feet, to accommodate two tracks. The structure will be wider in station areas to accommodate platforms and other related amenities. Visual impacts will be assessed and reported in the Draft EIS, along with possible strategies identified to reduce and mitigate impacts.

10. How noisy is the rail? What is SEPTA doing to minimize the noise impacts to residents along the alignment?

Modern rail technology is far less noisy in operation, compared to railroad operations in the past. A noise assessment is being prepared for the KOP Rail Draft EIS using the guidelines set forth by the Federal Transit Administration (FTA). This assessment will identify where noise effects are likely to occur in order to compare the five Build Alternatives. Based on this assessment, a range of possible minimization and mitigation strategies will be identified. As the Final EIS and engineering design progresses, further noise studies will determine the specific mitigation methods needed.

11. Will the new stations have parking for the transit riders? What about additional parking at current stations along the NHSL?

The King of Prussia Rail project is currently proposing two park-and-rides along the extension. One would be at Henderson Road (the Henderson Road Station) near the intersection of Henderson Road and Saulin Boulevard. The other would be in the business park near the rail extension's terminus (the 1st and Moore Station), near the intersection of 1st Avenue and Moore Road. These park-and-rides are deliberately located at each end of the new extension to capture motorists traveling from U.S. 422 or U.S. 202 before they would need to drive through the congested arterials of Upper Merion Township.

As part of the King of Prussia Rail project, there are currently no plans to modify parking lots along the existing NHSL.

12. Will a passenger need to travel all the way to Norristown or 69th Street in order to get a train that will run to King of Prussia? What about having the train ride in a loop?

The King of Prussia Rail project is not proposing a loop for service. Passengers boarding the NHSL at either 69th Street or Norristown transportation centers will be able to access trains traveling directly to King of Prussia. Similarly, passengers in King of Prussia will be able to board trains traveling directly to Norristown or 69th Street transportation centers. In all scenarios, there will be more options for SEPTA passengers utilizing the NHSL, and the final destination of the train will be clearly marked on the train car's display.

13. How is this project being funded?

The current study is being funded through a federal earmark that was originally established for the Schuylkill Valley Metro project. However, additional funds will need to be identified in order to construct the nearly four-mile long rail extension project. As a result, the King of Prussia Rail project team is working with Econsult Solutions on a potential funding sources report. The report will lay out possible sources of funding, projected annual revenue and how much sources could yield for the construction of the KOP Rail project. They will not recommend how the project should be funded, but instead lay out a variety of options to be considered by project decision makers and regional leaders as the project continues to progress.

SEPTA anticipates seeking approximately fifty percent of its funding from the Federal Transit Administration's New Starts Program which can fund extensions to fixed guideways such as the Norristown High Speed Line.

14. How many riders are expected?

Ridership modeling performed by the Delaware Valley Regional Planning Commission (DVRPC) has forecasted an additional 7,500 to 9,500 annual riders, depending on the Build Alternative. The Recommended Locally Preferred Alternative (Recommended LPA) is forecast to have 9,500 additional riders. This figure is calculated by comparing the expected ridership in the year 2040 if no changes are made to the Norristown High Speed Line (NHSL), versus the expected ridership on the line if the extension is built. Ridership modeling for transportation projects is forecast for both the year a project is initiated and the project's horizon year. For the KOP Rail project, those years are 2013 and 2040.

We are currently in the process of working with DVRPC to break down where trips on the extension are coming from based upon their travel demand model outputs, and expect to release that data in the summer/fall of 2016 on the project website.

15. What will the fare structure be like? How much will it cost to ride the rail out to King of Prussia?

The King of Prussia Rail project is in the planning phase and no official fare policy has been set. Currently, the bus service that travels from Center City or the 69th Street Transportation Center to King of Prussia has a cash fare of \$3.75, or requires a TrailPass 2. The existing Norristown High Speed Line has a cash fare of \$2.75 or requires at TrailPass 1. For more information, please see SEPTA's Fare Brochure which can be found at www.septa.org.

King of Prussia Rail Project - Public Outreach Log

Meeting Group #						
	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
	Outreach Plan	Public	To establish a plan on how to reach out to the public while considering EJ groups and their needs.	N/A	December 2012	Project File
	Website	Public	Share documents, updates and other information about the Project; to communicate with the public via email and surveys.	Includes PDF and image accessibility; Included on all printed materials, meeting announcements, press releases and presentations.	Ongoing	www.kingofprussiarail.com
	E-mail Address	Public	Provide a methodology for the public to send direct communications to the Project team.	Included on all printed materials, meeting announcements, press releases and presentations.	Ongoing	info@kingofprussiarail.com
	Twitter account	Public	To help bring traffic to the website, share information and ask for public input.	Included on all printed materials, meeting announcements, press releases and presentations.	Ongoing	@KOPRail www.twitter.com/koprail #KOPRail
	Bi-Lingual Materials and Translators	Spanish speaking community members	Inform Spanish speaking community members of upcoming meetings.	and Spanish for all meeting announcements. Meeting locations varied to reach these individuals.	Ongoing	Translators included during public meetings when known Spanish populations are present.
	Multi-lingual web tool	Non-English speaking community members	Translate the website into various languages.	Website	Ongoing	Website
	Generation of mailing list using parcel data.	EJ Mapping- Minority Populations	To identify presence and location of underserved and potential vulnerable populations within and adjacent to the study area.	Public and stakeholder meeting locations varied to reach these individuals.	Fall 2012 and spring 2103; updated spring 2015	The following municipalities: Ardmore, Bala Cynwyd, Berwyn, Bridgeport, Broomall, Bryn Mawr, Conshohocken, Devon, Drexel Hill, Gladwyne, Glen Mills, Glenolden, Haverford, Havertown, King of Prussia, Lansdowne, Malvern, Media, Merion Station, Narberth, Newtown Square, Norristown, Radnor, Rosemont, Springfield, St. Davids, Upper Darby, Villanova, Wayne, West Conshohocken, Wynnewood
	Generation of mailing list using parcel data	EJ Mapping- Persons Below Poverty	To identify presence and location of underserved and potential vulnerable populations within and adjacent to the study area.	Public and stakeholder meeting locations varied to reach these individuals.	Fall 2012 and spring 2103; updated spring 2015	The following municipalities: Ardmore, Bala Cynwyd, Berwyn, Bridgeport, Broomall, Bryn Mawr, Conshohocken, Devon, Drexel Hill, Gladwyne, Glen Mills, Glenolden, Haverford, Havertown, King of Prussia, Lansdowne, Malvern, Media, Merion Station, Narberth, Newtown Square, Norristown, Radnor, Rosemont, Springfield, St. Davids, Upper Darby, Villanova, Wayne, West Conshohocken,

King of Prussia Rail Project - Public Outreach Log

Meeting Group #						
	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
	Generation of mailing list using parcel data.	EJ Mapping- Low income populations	To identify presence and location of underserved and potential vulnerable populations within and adjacent to the study area.	Public and stakeholder meeting locations varied to reach these individuals.	Fall 2012 and spring 2103; updated spring 2015	The following municipalities: Ardmore, Bala Cynwyd, Berwyn, Bridgeport, Broomall, Bryn Mawr, Conshohocken, Devon, Drexel Hill, Gladwyne, Glen Mills, Glenolden, Haverford, Havertown, King of Prussia, Lansdowne, Malvern, Media, Merion Station, Narberth, Newtown Square, Norristown, Radnor, Rosemont, Springfield, St. Davids, Upper Darby, Villanova, Wayne, West Conshohocken, Wynnewood
	Assessment of multi-family housing locations and distribution of information.	Residents of multi-family housing	To identify sub-unit address information to include on the Project mailing list.	Distribution of meeting notices to these addresses.	Spring 2015	Upper Merion Township, Municipality of Norristown and surrounding areas.
	Meeting Announcement - Block Ad	Public	Announce January 2013 public meetings.	Published in printed versions of the newspapers.	1/16/2013	Times Herald newspaper Serves Montgomery County
	Meeting Announcement - Block Ad	Public	Announce January 2013 public meetings.	Published in printed versions of the newspapers.	1/17/2013	Main Line Times Serves the Philadelphia Main Line

King of Prussia Rail Project - Public Outreach Log

Meeting Group #	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
PRE-SCOPING MEETINGS (PUBLIC MEETING 1 INDICATED BY SHADING)	Elected Officials Briefing	Elected officials (Federal and state)	To introduce Elected Officials (Federal and state) to the Project prior to the public meetings	Invitation from SEPTA sent to elected officials.	January 2013	Varies - SEPTA presented to interested officials at their respective locations
	Meeting locations chosen based on access to public transportation.	Public (transit-dependent, zero-car households)	Provide transit-dependent residents an opportunity to access the meeting via public transportation.			Norristown High Speed Line - Villanova University
	Meeting locations chosen based on access to public transportation.	Public (transit-dependent, zero-car households)	Provide transit-dependent residents an opportunity to access the meeting via public transportation.			Manayunk/Norristown Regional Rail Line - Montgomery County Planning Commission
	Pre-Scoping Meeting - Open house and presentation. Comment cards were available.	Public - community members	Present the latest Project news and information to residents and stakeholders and answer questions at a facility located in the western part of the study area.	Meeting announcements posted in English and Spanish, block ad run in local newspaper (both included nondiscrimination notices)	1/29/2013 4:00 p.m. - 8:00 p.m. (Open House/Discussions) 6:00 p.m. (Presentation)	Valley Forge National Historic Park King of Prussia
	Pre-Scoping Meeting - Open house and presentation. Comment cards were available.	Public - existing NHSL users, college students	Present the latest Project news and information to residents and stakeholders and answer questions at a facility located along the NHSL line.	Meeting announcements posted in English and Spanish, block ad run in local newspaper (both included nondiscrimination notices); near transit location	1/30/2013 4:00 p.m. - 8:00 p.m. (Open House/Discussions) 6:00 p.m. (Presentation)	Villanova University Villanova
	Pre-Scoping Meeting - Open house and presentation. Comment cards were available.	Public	Present the latest Project news and information to residents and stakeholders and answer questions at a facility located in the eastern part of the study area.	Meeting announcements posted in English and Spanish, block ad run in local newspaper (both included nondiscrimination notices)	1/31/2013 4:00 p.m. - 8:00 p.m. (Open House/Discussions) 6:00 p.m. (Presentation)	Montgomery County Planning Commission Norristown
	Meeting Announcement - Block Ad	Public	Announce July 2013 Public Scoping meeting	Published in printed versions of the newspapers.	6/30/2013	Main Line Times Serves the Philadelphia Main Line
	Meeting Announcement - Block Ad	Public	Announce July 2013 Public Scoping meeting	Published in printed versions of the newspapers.	6/30/2013	King of Prussia Courier Serves the King of Prussia area
	Meeting Announcement - Block Ad	Public	Announce July 2013 Public Scoping meeting	Published in printed versions of the newspapers.	6/27/2013	Times Herald newspaper Serves Montgomery County
	Meeting Announcement - Block Ad	Public	Announce July 2013 Public Scoping meeting	Published in printed versions of the newspapers.	6/27/2013	Philadelphia Inquirer Serves the Philadelphia area

King of Prussia Rail Project - Public Outreach Log

Meeting Group #						
	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
	Elected Officials Briefing	Elected officials (Federal and state)	To present the latest Project news and information to Elected Officials (Federal and state) prior to the Public Scoping meeting.	Invitation from SEPTA sent to elected officials.	7/16/2013 1:00 p.m. - 3:00 p.m.	Radisson Hotel King of Prussia
SCOPING MEETINGS (PUBLIC MEETING 2 INDICATED BY SHADING)	Scoping Meeting - Open house and presentation. Comment cards were available.	Public	Provide an opportunity to provide comments and testimony on the scope of the EIS.	Meeting announcements posted in English and Spanish, block ad run in local newspaper (both included nondiscrimination notices).	7/16/2013 4:00 p.m. - 8:00 p.m. (Open House) 6:00 p.m. (Presentation)	Radisson Hotel King of Prussia
	Scoping Meeting - Shuttle service	Public (transit-dependent, zero-car households)	Provide transit-dependent residents an opportunity to access the meeting via a meeting-specific shuttle service between Norristown Transportation Center and the Radisson Hotel - King of Prussia	Block ads and meeting notices	7/16/2013 4:00 p.m. - 8:00 p.m.	Municipality of Norristown, Borough of Bridgeport and King of Prussia
	Scoping Meeting - Sign Language and Interpretation Services	Public (English as a Second Language and the Deaf)	Provide Spanish translators to residents who speak Spanish or who speak English as a second language; provide sign-language to residents with hearing deficiencies or are deaf.	Block ads and meeting notices	7/16/2013 4:00 p.m. - 8:00 p.m.	Radisson Hotel King of Prussia
	Meeting Announcement - Block Ad	Public	Announce January 2014 public meeting	Published in printed versions of the newspapers.	1/16/2014	Times Herald newspaper Serves Montgomery County
	Meeting Announcement - Block Ad	Public	Announce January 2014 public meeting	Published in printed versions of the newspapers.	1/19/2014	Main Line Times Serves the Philadelphia Main Line
	Meeting Announcement - Block Ad	Public	Announce January 2014 public meeting	Published in printed versions of the newspapers.	1/19/2014	King of Prussia Courier Serves the King of Prussia area
	Meeting locations chosen based on access to public transportation.	Public (transit-dependent, zero-car households)	Provide transit-dependent residents an opportunity to access the meeting via public transportation.			SEPTA Bus #99 and 125 - Radisson Hotel, King of Prussia
OPEN HOUSE (PUBLIC MEETING 3)	Public Meeting - Open house and presentations. Comment cards were available.	Public	Present a summary of the July 2013 Public Scoping meeting and answer questions.	Meeting announcements posted in English and Spanish, block ad run in local newspaper (both included nondiscrimination notices).	1/30/2014 4:00 p.m. - 8:00 p.m. (Open House) 5:00 and 7:00 p.m. (Presentations)	Radisson Hotel King of Prussia

King of Prussia Rail Project - Public Outreach Log

Meeting Group #	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
	Meeting/conference call	Barbara Okorn (EPA), Reginald Harris (EPA), Tom (EPA), John Mullen (McCormick Taylor), Morgan Barlow (Portfolio Associates), Sita Ng (Portfolio Associates)	Meeting with EPA officials to discuss EJ Outreach efforts, and receive guidance feedback on how the outreach efforts can be enhanced going forward.	N/A	10/27/2014 9:30 a.m. - 10:30 a.m.	Philadelphia, PA
	Meeting Announcement - Flyers to KOP Area Businesses	KOP Business Owners (see Note "c" below.)	Engage local business owners. Inform them about the Project and invite to Oct. 29th business meeting.	E-mail, direct mail and in-person (door to door)	10/27/2014	KOP-area businesses and businesses located along Route 202
	Business Outreach Meeting (AM and PM)	King of Prussia area business owners and employees.	Informational meeting intended to inform the business community (owners, managers and employees) about the Project and collect feedback.	Email announcements through Upper Merion Township Chamber, KOP-BID	10/29/2014 7:00 a.m. - 9:00 a.m. 4:00 p.m. - 6:00 p.m.	Best Western Plus King of Prussia
	Meeting Announcement	Environmental Justice organizations in Philadelphia, Montgomery and Delaware Counties.	To inform and invite the participation of Environmental Justice communities, residents and leaders during the November public meetings.	See Note "a" below.	11/7/2014	King of Prussia Study area, including Municipality of Norristown, King of Prussia, Bridgeport Borough, NHSL trunk line communities and surrounding areas.
	Meeting Announcement	Environmental Justice organizations in Philadelphia, Montgomery and Delaware Counties.	To inform and invite the participation of Environmental Justice communities, residents and leaders during the November public meetings.	See Note "b" below.	11/7/2014	King of Prussia Study area, including Municipality of Norristown, King of Prussia, Bridgeport Borough, NHSL trunk line communities and surrounding areas.
	Meeting Announcement	Environmental Justice organizations in Philadelphia, Montgomery and Delaware Counties and the Project database.	To inform and invite the participation of Environmental Justice communities, residents and leaders during the November public meetings.	Email- 251 total emails sent with a 58% open rate.	11/7/2014	King of Prussia Study area, including Municipality of Norristown, King of Prussia, Bridgeport Borough, NHSL trunk line communities and surrounding areas.
	Meeting Announcement - Individual distribution of flyers	SEPTA customers (transit users) and residents	Advertise November 17 and 19 public meetings, encourage visiting the website and bring awareness to the Project.	1,150 flyers distributed to transit customers on the platform.	11/11/2014 6:30 a.m. - 9:30 a.m. 3:30 p.m. - 6:30 p.m.	69th Street Transportation Center Philadelphia
	Meeting Announcement - Individual distribution of flyers	SEPTA customers (transit users) and residents	Advertise November 17 and 19 public meetings, encourage visiting the website and bring awareness to the Project.	950 flyers distributed to transit customers on the platform.	11/12/2014 6:30 a.m. - 9:30 a.m. 3:30 p.m. - 6:30 p.m.	Norristown Transportation Center and Train Station Norristown
	Meeting Announcement - Individual distribution of flyers	SEPTA customers (transit users) and residents	Advertise November 17 and 19 public meetings, encourage visiting the website and bring awareness to the Project.	600 flyers distributed to transit customers at the Transportation Center behind the King of Prussia Mall.	11/13/14 6:30 a.m. - 9:30 a.m. 3:30 p.m. - 6:30 p.m.	KOP Mall Transportation Center King of Prussia
	Meeting Announcement - Posters	SEPTA customers (transit users) and residents	Advertise November 17 and 19 public meetings, encourage visiting the website and bring awareness to the Project.	Posters posted at station locations in both English and Spanish.	11/13/2014	All NHSL Stations

King of Prussia Rail Project - Public Outreach Log

Meeting Group #						
	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
	Meeting Announcement - Block Ad	Public	Announce November 2014 Public Meetings	Published in printed versions of the newspaper.	11/3/2014	Times Herald newspaper Serves Montgomery County
	Meeting Announcement - Block Ad	Public	Announce November 2014 Public Meetings	Published in printed versions of the newspaper.	11/3/2014	Main Line Times Serves the Philadelphia Main Line
	Meeting Announcement - Block Ad	Public	Announce November 2014 Public Meetings	Published in printed versions of the newspaper.	11/3/2014	King of Prussia Courier Serves the King of Prussia area
	Meeting locations chosen based on access to public transportation.	Public (transit-dependent, zero-car households)	Provide transit-dependent residents an opportunity to access the meeting via public transportation.			SEPTA Bus #99 and 125 - Radisson Hotel, King of Prussia
	Meeting locations chosen based on access to public transportation.	Public (transit-dependent, zero-car households)	Provide transit-dependent residents an opportunity to access the meeting via public transportation.			Manayunk/Norristown Regional Rail Line - Norristown Municipal Building
PUBLIC MEETING AND OPEN HOUSE (MEETING 4 INDICATED BY SHADING)	Elected Officials Briefing	Elected Officials (Federal and state)	To bring elected officials (Federal and state) up to date with the latest Project news and information ahead of the public meetings.	Invitation from SEPTA sent to elected officials.	11/17/2014 1:00 p.m. - 3:00 p.m.	Radisson Hotel King of Prussia
	Public meeting and presentation. Comment cards were available.	Public	Present the latest Project news and information to residents and stakeholders and answer questions at a facility located in the western part of the study area.	Meeting announcements posted in English and Spanish, block ad run in local newspaper (both included nondiscrimination notices).	11/17/2014 4:00 p.m. - 8:00 p.m. (Open House) 6:30 p.m. (Presentation)	Radisson Hotel King of Prussia
	Public Meeting - Open House and Presentation. Comment cards were available.	Public	Present the latest Project news and information to residents and stakeholders and answer questions at a facility located in the eastern part of the study area.	Meeting announcements posted in English and Spanish, block ad run in local newspaper (both included nondiscrimination notices).	11/19/2014 4:00 - 8:00 p.m. (Open House) 6:30 p.m. (Presentation)	Norristown Municipal Building Norristown
	Public Meeting - Open House. Comment cards were available.	KOP Mall Employees and Tenants	Provide an opportunity for mall tenants and employees to learn about the Project and provide feedback on the retained alternatives.	E-mail announcement sent through the King of Prussia Mall to all tenants, flyers distributed to store managers, and posters were hung throughout the mall. Flyers also were provided at guest services.	11/21/2014 8:30 a.m. - 3:00 p.m.	King of Prussia Mall Community Room King of Prussia
	Meeting Announcement - Posters in both English and Spanish	SEPTA NHSL Customers	Advertise March 16 and 25 public workshops, encourage visiting the website and bring awareness to the Project.	Posters placed on display at all NHSL stations.	3/8/2015	All NHSL Stations
	Meeting Announcement - Flyers in both English and Spanish	SEPTA customers	Advertise March 16 public workshop, encourage visiting the website and bring awareness to the Project.	Individual distribution of flyers to transit customers on the platform.	3/9/2015	69th Street Transportation Center Philadelphia
	Meeting Announcement - Flyers in both English and Spanish	SEPTA customers	Advertise March 16 public workshop, encourage visiting the website and bring awareness to the Project.	Individual distribution of flyers to transit customers on the platform.	3/10/2015	KOP Mall Transportation Center King of Prussia

King of Prussia Rail Project - Public Outreach Log

Meeting Group #	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
	Meeting Announcement - E-mail	Email announcement to 316 addresses in the Project database	Announcement for March 2015 workshops.	March 13 - reminder notice emailed to same group - 45% open rate	03/10/15	King of Prussia Study area, including Municipality of Norristown, King of Prussia, Bridgeport Borough, NHSL trunk line communities and surrounding areas.
	Meeting Announcement - Direct Mail	Multifamily Dwelling units	Announcement March 2015 workshops and update on Project. Included a survey.	20,000 parcel addresses of which 6,300 were Multi-family homes. Additionally, coordinated with multi-	03/11/15	Municipality of Norristown, Bridgeport Borough, King of Prussia and surrounding areas.
	Meeting Announcement - Flyers in both English and Spanish.	SEPTA customers	Advertise March 16 public workshop, encourage visiting the website and bring awareness to the Project.	Individual distribution of flyers to transit customers on the platform.	3/11/2015	Norristown Transportation Center and Train Station Norristown
	Meeting Announcement - Bulk Delivery	Community members	To encourage Project partners to distribute Project meeting information on behalf of SEPTA.	50 meeting announcements per location	3/11/2015	Local municipalities (West Norristown Township, Norristown Planning Department, Tredyffrin Township, Tredyffrin Township (office #2), Upper Merion Township)
	Meeting Announcement - Flyers in both English and Spanish	SEPTA customers	Advertise March 25 public workshops, encourage visiting the website and bring awareness to the Project.	Individual distribution of flyers to transit customers on the platform.	3/18/2015	69th Street Transportation Center Philadelphia
	Meeting Announcement - Flyers in both English and Spanish	SEPTA customers	Advertise March 25 public workshops, encourage visiting the website and bring awareness to the Project.	Individual distribution of flyers to transit customers on the platform.	3/19/2015	KOP Mall Transportation Center King of Prussia
	Meeting Announcement - Flyers in both English and Spanish	SEPTA customers	Advertise March 25 public workshops, encourage visiting the website and bring awareness to the Project.	Individual distribution of flyers to transit customers on the platform.	3/20/2015	Norristown Transportation Center and Train Station Norristown
	Community Survey	Public	Public input requested	Twitter; Newsletter	Mid-December through Mid-March	Website
	Meeting Announcement - Block Ad	Public	Announce November 2014 open houses	Published in printed versions of the newspapers.	2/27/2015	Times Herald newspaper Serves Montgomery County
	Meeting Announcement - Block Ad	Public	Announce November 2014 open houses	Published in printed versions of the newspapers.	3/2/2015	Times Herald newspaper Serves Montgomery County
	Meeting locations chosen based on access to public transportation.	Public (transit-dependent, zero-car households)	Provide transit-dependent residents an opportunity to access the meeting via public transportation.			SEPTA Bus #99 and 125 - Radisson Hotel, King of Prussia
	Meeting locations chosen based on access to public transportation.	Public (transit-dependent, zero-car households)	Provide transit-dependent residents an opportunity to access the meeting via public transportation.			SEPTA Bus #99 and 124 - DoubleTree Hotel, Philadelphia Valley Forge

King of Prussia Rail Project - Public Outreach Log

Meeting Group #	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
PUBLIC WORKSHOP (MEETING 5 INDICATED BY SHADING)	Elected Officials Briefings	Elected officials (Federal and state)	To bring elected officials up to date with the latest Project news and information ahead of the public meetings.	Invitation from SEPTA sent to elected officials.	3/16/2015 12:00 p.m. - 2:00 p.m.	Radisson Hotel King of Prussia
	Presentation and public workshop. Comment cards were available.	Public	To present the latest Project news and information to stakeholders, residents and special interest groups at a location in the western part of the study area regarding the Project's Build Alternative and solicit feedback in a workshop setting. Workshop stations were staffed by facilitators, planners and scribes to record comments on both maps and flip charts.	Block ad in local paper, social media (Twitter), newsletter sent out, flyers distributed on KOP-BID shuttles, flyers handed out at 69th Street Station, notification included in Upper Merion's weekly e-newsletter.	3/16/2015 2:00 p.m. - 4:00 p.m.	Radisson Hotel King of Prussia
	Presentation and public workshop. Comment cards were available.	Public	To present the latest Project news and information to stakeholders, residents and special interest groups in the eastern part of the study area regarding the Project's Build Alternative and solicit feedback in a workshop setting. Workshop stations were staffed by facilitators, planners and scribes to record comments on both maps and flip charts.	Block ad in local paper, social media (Twitter), newsletter sent out, flyers distributed on KOP-BID shuttles, flyers handed out at 69th Street Station, notification included in Upper Merion's weekly e-newsletter.	3/25/2015 4:00 p.m.-8:30 p.m.	DoubleTree Hotel King of Prussia
	Meeting Announcement - Flyers in both English and Spanish	SEPTA NHSL Customers	Advertise March 7. 9 and 15 public meetings, encourage visiting the website and bring awareness to the Project.	Posters placed on display at all NHSL stations.	2/22/2016	All NHSL Stations
	Meeting Announcement - Flyers in both English and Spanish	SEPTA customers	Advertise March 7. 9 and 15 public meetings, encourage visiting the website and bring awareness to the Project.	Individual distribution of flyers to transit customers on the platform.	2/22/2016	69th St. Station - NHSL area Upper Darby
	Meeting Announcement - Flyers in both English and Spanish	SEPTA customers	Advertise March 7. 9 and 15 public meetings, encourage visiting the website and bring awareness to the Project.	Individual distribution of flyers to transit customers on the platform.	2/23/2016	King of Prussia Transit Center King of Prussia
	Meeting Announcement - Flyers in both English and Spanish	SEPTA customers	Advertise March 7. 9 and 15 public meetings, encourage visiting the website and bring awareness to the Project.	Individual distribution of flyers to transit customers on the platform.	2/24/2016	Norristown Transportation Center and Train Station Norristown
	Meeting Announcement - Posters in both English and Spanish	SEPTA NHSL Customers, King of Prussia area bus riders	Advertise March 7. 9 and 15 public meetings, encourage visiting the website and bring awareness to the Project.	Posters displayed on buses that serve the King of Prussia area and NHSL cars.	2/25/2016	NHSL cars Buses that serve King of Prussia
	Meeting Announcement - E-mail	Email announcement to 434 addresses in the Project database	Announcement for March 2016 Public Meetings and Public Information Sessions.	March 1 - reminder notice emailed to same group - 44% open rate	02/22/16	King of Prussia Study area, including Municipality of Norristown, King of Prussia, Bridgeport Borough, NHSL trunk line communities and surrounding areas.

King of Prussia Rail Project - Public Outreach Log

Meeting Group #	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
	Meeting Announcement - Direct Mail	Residents; Multifamily Dwelling units	Announcement for March 2016 Public Meetings and Public Information Sessions. Included a survey.	20,092 parcel addresses of which 5,434 were Multi-family homes. Additionally, coordinated with multi-	02/25/16	Municipality of Norristown, Bridgeport Borough, King of Prussia and surrounding areas.
	Community Survey	Public	Public input requested	Twitter; Newsletter	End of February through beginning of	Website; hard copies mailed in
	Meeting Announcement - Block Ad	Public	Announcement for March 2016 Public Meetings .	Published in printed versions of the newspapers.	2/22/2016	Times Herald newspaper Serves Montgomery County
	Meeting locations chosen based on access to public transportation.	Public (transit-dependent, zero-car households)	Provide transit-dependent residents an opportunity to access the meeting via public transportation.			SEPTA Bus #99 and 125 - Radisson Hotel, King of Prussia
	Meeting locations chosen based on access to public transportation.	Public (transit-dependent, zero-car households)	Provide transit-dependent residents an opportunity to access the meeting via public transportation.			Manayunk/Norristown Regional Rail Line - Norristown Municipal Building
	Meeting locations chosen based on access to public transportation.	Public (transit-dependent, zero-car households)	Provide transit-dependent residents an opportunity to access the meeting via public transportation.			SEPTA Bus #99 and 124 - DoubleTree Hotel, Philadelphia Valley Forge

King of Prussia Rail Project - Public Outreach Log

Meeting Group #	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
PUBLIC MEETING AND INFORMATION SESSION (MEETING 6 INDICATED BY SHADING)	Elected Officials Briefings	Elected officials (Federal and state)	To bring elected officials up to date with the latest Project news and information ahead of the public meetings.	Invitation from SEPTA sent to elected officials.	3/7/2016 1:00 p.m. - 3:00 p.m.	Radisson Hotel King of Prussia
	Presentation and public meeting. Comment cards were available.	Public	To present the recommended LPA and information to stakeholders, residents and special interest groups at a location in the western part of the study area. The meeting was staffed by Project team members.	Block ad in local paper, social media (Twitter), newsletter sent out, flyers distributed on KOP-BID shuttle, flyers handed out at 69th Street Transportation Center, notification included in Upper Merion's weekly e-newsletter.	3/7/2016 4:00 p.m. - 8:00 p.m.	Radisson Hotel King of Prussia
	Presentation and public meeting. Comment cards were available.	Public	To present the recommended LPA and information to stakeholders, residents and special interest groups at a location along the NHSL. The meeting was staffed by Project team members.	Block ad in local paper, social media (Twitter), newsletter sent out, flyers distributed on KOP-BID shuttle, flyers handed out at 69th Street Transportation Center, notification included in Upper Merion's weekly e-newsletter.	3/9/2016 4:00 p.m.-8:00 p.m.	Norristown Municipal Building Norristown
	Public information session. Comment cards were available.	Public	To display the latest project news and answer questions about the Project to those passing by at key locations in the study area and along the NHSL.	Website	3/10/2016 4:00 p.m. - 7:00 p.m.	City Hall, SEPTA Concourse Philadelphia
	Public information session. Comment cards were available.	Public	To display the latest project news and answer questions about the Project to those passing by at key locations in the study area and along the NHSL.	Website	3/10/2016 4:00 p.m. - 7:00 p.m.	King of Prussia Transit Center King of Prussia
	Valley Forge Homes Neighborhood meeting	Neighborhood adjacent to the recommended LPA	Present the recommended LPA to the neighborhood along the PA Turnpike ROW.	Direct mail	3/14/2016 7:00 p.m. - 10:00 p.m.	Upper Merion Township Building

King of Prussia Rail Project - Public Outreach Log

Meeting Group #	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
PUBLIC MEETING AND INFORMATION SESSION (MEETING 6 INDICATED BY SHADING)	Presentation and public meeting. Comment cards were available.	Public	To present the recommended LPA and information to stakeholders, residents and special interest groups at a location in the eastern part of the study area. The meeting was staffed by Project team members.	Block ad in local paper, social media (Twitter), newsletter sent out, flyers distributed on KOP-BID shuttle, flyers handed out at 69th Street Station, notification included in Upper Merion's weekly e-newsletter.	3/15/2016 4:00 p.m.-8:00 p.m.	DoubleTree Hotel King of Prussia
	Public information session. Comment cards were available.	Public	To display the latest Project news and answer questions about the Project to those passing by at key locations in the study area and along the NHSL.	Website	3/12/2016 1:00 p.m. - 4:00 p.m.	King of Prussia Mall at the Court King of Prussia
	Public information session. Comment cards were available.	Public	To display the latest Project news and answer questions about the Project to those passing by at key locations in the study area and along the NHSL.	Website	3/12/2016 1:00 p.m. - 4:00 p.m.	King of Prussia Mall at the Plaza King of Prussia
	Public information session. Comment cards were available.	Public	To display the latest Project news and answer questions about the Project to those passing by at key locations in the study area and along the NHSL.	Website	3/17/2016 4:00 p.m. - 7 :00 p.m.	69th Street Transportation Center Philadelphia
	Public information session. Comment cards were available.	Public	To display the latest Project news and answer questions about the Project to those passing by at key locations in the study area and along the NHSL.	Website	3/17/2016 4:00 p.m. - 7 :00 p.m.	Norristown Transportation Center and Train Station Norristown
	Backyard visits	Residents adjacent to the recommended LPA	To visit the backyards of those adjacent to the PA Turnpike ROW; take photos for renderings.	Direct mail; email	5/12/16, 10 a.m. - 1 p.m; 5/14/16, 10 a.m. - 2 p.m.; 5/21/16, 1 p.m. - 4 p.m.	Varies
	Valley Forge Homes Neighborhood meeting	Neighborhood adjacent to the recommended LPA	Present updated information on the progress of the Project that would directly affect the neighborhood.	Direct mail	6/21/2016 7:00 p.m. - 10:00 p.m.	Upper Merion Township Building
	Brandywine Village Neighborhood meeting	Neighborhood close proximity to the recommended LPA	Present updated information on the progress of the Project that would directly affect the neighborhood.	Direct mail	6/29/2016 7:00 p.m. - 9:00 p.m.	Upper Merion Township Building
	Community Working Group Committee Meeting	A select variety of residents in the township who are engaged in the Project	To give residents of Upper Merion Township a platform to learn, ask questions and give feedback on the progress of the Project in a small group setting.	Email; phone call	9/14/2016 7:00 p.m. - 9:00 p.m.	Upper Merion Township Building
	Valley Forge Homes and Brandywine Village Neighborhood meeting	Neighborhoods adjacent and in close proximity to the recommended LPA	Present updated information on the progress of the Project that would directly affect the neighborhood.	Direct mail	10/4 and 10/11/2016 7:00 p.m. - 10:00 p.m.	Upper Merion Township Building

King of Prussia Rail Project - Public Outreach Log

Meeting Group #	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location
	Community Working Group Committee Meeting	A select variety of residents in the township who are engaged in the Project	To give residents of Upper Merion Township a platform to learn, ask questions and give feedback on the progress of the Project in a small group setting.	Email; phone call	10/19/2016 7:00 p.m. - 9:00 p.m.	Upper Merion Township Building
	Community Working Group Committee Meeting	A select variety of residents in the township who are engaged in the Project	To give residents of Upper Merion Township a platform to learn, ask questions and give feedback on the progress of the Project in a small group setting.	Email; phone call	11/16/2016 7:00 p.m. - 9:00 p.m.	Upper Merion Township Building
	Community Working Group Committee Meeting	A select variety of residents in the township who are engaged in the Project	To give residents of Upper Merion Township a platform to learn, ask questions and give feedback on the progress of the Project in a small group setting.	Email; phone call	12/13/2016 7:00 p.m. - 9:00 p.m.	Upper Merion Township Building
	Community Working Group Committee Meeting	A select variety of residents in the township who are engaged in the Project	To give residents of Upper Merion Township a platform to learn, ask questions and give feedback on the progress of the Project in a small group setting.	Email; phone call	1/11/2017 7:00 p.m. - 9:00 p.m.	Upper Merion Township Building
	Valley Forge Homes and Brandywine Village Neighborhood meeting	Neighborhoods adjacent and in close proximity to the recommended LPA	Present updated information on the progress of the Project that would directly affect the neighborhood.	Direct mail	1/31/2017 7:00 p.m. - 9:00 p.m.	Upper Merion Township Building
Notes:	<p>(a) Postal mail was sent to the following EJ organizations:</p> <p>Asian Americans United, Acts Christian Transitional Services, Upper Merion Senior Service Center, Greater Phila. Congress of Black Women, Mt. Airy USA, Haddington Multi Services For Older Adults, Inc., Bethel Deliverance International Fellowship of Churches Inc., Temple University, American Women's Heritage Society, KAPA - Haddington Youth, Norris Square Civic Association, Methodist Family Services Of Phila., 1260 Housing Development Corp., Committee of 70, Children's Service, Inc., Africas Hope, KAPPA ALPHA PSI International H.Q., Neighborhood Bike Works, House of Umoja, Habitat for Humanity, Women's Christian Alliance, Project Home, Studio Agoos Lovera, Beech Interplex, Inc., To Our Childrens Future with Health, Inc., Yorktown Community Development Corp., Mt. Sinai Holy Church District Office, Achieve Ability CDC, Korean Community Development, Services Center, Catholic Social Services, Calcutta House, Simpson Senior Services, Center in the Park, Greater Philadelphia Cares, William Penn Foundation, African Education Program, Right to Know Committee, Nicetown CDC, Ascend Consulting Inc., Homeless Advocacy Project, Keep Philadelphia Beautiful, Walnut Hill Civic Assn., Greater Phila. Urban Affairs Coalition, Kappa Alpha Psi International H.Q., Greater Phila. Urban Affairs Coalition, Center for Literacy, Wynnefield Residents Assn., Mt. Zion Baptist Church, Chestnut Hill United Methodist Church, Penrose Park Association, HELP Philadelphia, Advocate Community Dev. Corp., Kids Smiles Inc., Casa Del Carmen, Afro American Historical & Cultural Museum, Haddington Leadership Org., HACE CDC, Archdiocese of Philadelphia - Office for Community Development, Indo Chinese American Council, Allegheny Community Council, Calvary Community Center, Mantua Community Planners, Free & Accepted Masons Light of Elmwood Lodge #45, American Legion Post 292 A Corp, Z.A.T. Community Enrichment Corp., West Philadelphia Partnership CDC, Morris Recreation Center, 60th St & West Market St Business Assoc., Asian Arts Initiative, Holy Temple Church, Jo-Dan Enterprises/McDonald's Licensee, Leon H. Sullivan Charitable Trust, National Temple Baptist Church, New Jersey Education Association, Disabled American Veterans, Barbados Society of Pennsylvania Inc., Chesters Refuge In Christ, Better Housing for Chester Incorporated, Collingdale Senior Citizens Club, Brazil U S Center for Education and Culture, Center for The Blind and Visually Impaired, Korean Calvary Independent Baptist Church, Delaware County Community Foundation, Darby Community Forum, A New Vision for Africa - Usa Inc., Centro De Apoyo Comunitario, Africian Education & Health Support Services Inc., 69th Street Gospel Tabernacle of The Christian and Missionary, Care Consortium of The Delaware Valley Inc., American Ex-Prisoners of War, National Association for the Advancement of Colored People (Willow Grove), National Association for the Advancement of Colored People (Blue Bell), Korean Presbyterian Church of Philadelphia, National Association for the Advancement of Colored People (King of Prussia), Korean Womens Association of Greater Philadelphia, Wilt Chamberlain Memorial Fund Inc., Senior Adult Activity Center of Indian Valley, Accion Communal Latino Americano De Montgomery County Inc., Senior Adult Activities Center of Montgomery County, Chinese for Christ Bible Institute, Veterans of Foreign Wars of the United States Dept of PA, Penn Asian Senior Services Inc., Veterans of Foreign Wars of the United States Dept of PA, Bahais of Upper Merion Township, Disabled American Veterans, Japanese American Citizens League, National Association for the Advancement of Colored People (Wyncote), Veterans of Foreign Wars of the United States Dept of PA, Archdiocesan Senior Citizens Council, Archdiocesan Senior Citizens Council of Philadelphia, Upper Dublin Chinese Association, Korean-American Presbyterian Church, New Beginnings Community Development Corporation, Linh Quang Buddhist Temple Inc., Polish Army Veterans Association of America Inc.</p>					

King of Prussia Rail Project - Public Outreach Log

Meeting Group #	Type of Outreach	Target Group	Subject/Purpose	Notified by	Date & Time	Location

(b) Email was sent to the following EJ organizations: Asian Americans United, Acts Christian Transitional Services, Upper Merion Senior Service Center, Greater Phila. Congress of Black Women, Mt. Airy USA, Haddington Multi Services For Older Adults, Inc., Bethel Deliverance International Fellowship of Churches Inc., Temple University, American Women's Heritage Society, KAPA - Haddington Youth, Norris Square Civic Association, Methodist Family Services Of Phila., 1260 Housing Development Corp., Committee of 70, Children's Service, Inc., Africas Hope, KAPPA ALPHA PSI International H.Q., Neighborhood Bike Works, House of Umoja, Habitat for Humanity, Women's Christian Alliance, Project Home, Studio Agoos Lovera, Beech Interplex, Inc., To Our Childrens Future with Health, Inc., Yorktown Community Development Corp., Mt. Sinai Holy Church District Office, Achieve Ability CDC, Korean Community Development, Services Center, Catholic Social Services, Calcutta House, Simpson Senior Services, Center in the Park, Greater Philadelphia Cares, William Penn Foundation, African Education Program, Right to Know Committee, Nicetown CDC, Ascend Consulting Inc., Homeless Advocacy Project, Keep Philadelphia Beautiful, Walnut Hill Civic Assn., Greater Phila. Urban Affairs Coalition, Kappa Alpha Psi International H.Q., Greater Phila. Urban Affairs Coalition, Center for Literacy, Wynnefield Residents Assn.;

(c) Target, Sleepys, Wild Rice, Starbucks, Michaels, Bed Bath and Beyond, American Heritage, Credit Union, FedEx/Kinkos, Wine and Spirits Store, Dairy Queen, Michaels Restaurant and Deli, Acme, Double Tree Hotel, Hampton Inn, Comfort Inn, Sunoco Gas Station, Burger King, Panera Bread, Costco, Fairfield Inn, Crowne Plaza, Bahama Breeze, Champs, Best Buy, Nordstrom Rack, Ruth's Chris Steakhouse, Holiday Inn Express, Corner Bakery, Maggianos and Seasons 52.

*A*ppendix E - Acronyms and Abbreviations

Appendix E Acronyms and Abbreviations

Acronym	Definitions
202	U.S. Route 202
4(f)	Section 4(f) of the USDOT Transportation Act
AADT	Average annual daily traffic
ACC	Agency Coordination Committee
ACP	Agency Coordination Plan
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
ADT	Average daily traffic
AOC	Area of concern
APE	Area of potential effects
AUL	Pennsylvania Activity Use Limitation site
Ave.	Avenue
BHP	Bureau of Historic Preservation
BID	King of Prussia Business Improvement District
Blvd	Boulevard
BMP	Best management practice
Ca.	Circa
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CHOP	Children's Specialized Hospital
CMP	Critical Habitat/Endangered Species Mitigation Plan
CO	Carbon monoxide
Co.	Company
CO ₂	Carbon dioxide
CRGIS	Cultural Resources Geographic Information System
CRP	Montgomery County's <i>Comprehensive Regional Plan</i>
dB	Decibels
dBA	Decibel in A-weighted one-third octave band scale
DCNR	Pennsylvania Department of Conservation and Natural Resources
DEIS	Draft Environmental Impact Statement
DHHS	Department of Health and Human Services
DOE	Determination of eligibility
DOT	Department of Transportation
DVRPC	Delaware Valley Regional Planning Commission
EIS	Environmental impact statement
EJ	Environmental justice
EO	Federal Executive Order
EPA	United States Environmental Protection Agency
ESA	Environmental site assessment
FAST Act	Fixing America's Surface Transportation Act
FEIS	Final Environmental Impact Statement

Acronym	Definitions
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood insurance rate maps
FPPA	Farmland Protection Policy Act
FRA	Federal Railroad Administration
FTA	Federal Transit Administration
FY	Fiscal year
GIS	Geographic information system
GVFTMA	Greater Valley Forge Transportation Management Association
H	High
HCM	Highway Capacity Manual
Inc.	Incorporated
K	Thousands of dollars
KOP	King of Prussia
KOP-BID	King of Prussia Business Improvement District
KPMU	King of Prussia Mixed Use
L	Low
Ldn	Cumulative noise exposure over a 24-hour period
Leq or Leq(h)	Equivalent sound level (hourly)
LOD	Limits of disturbance
LOS	level of service
LPA	Locally Preferred Alternative
M	Moderate
MAP-21	Moving Ahead for Progress in the 21 st Century Act
Mod.	Moderate
Montco	Montgomery County
MPO	Metropolitan Planning Organization
MSAT	Mobile source air toxics
N. or N	North
N/A	Not applicable
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NHSL	Norristown High Speed Line
NMFS	National Marine Fisheries Service
NOI	Notice of Intent
NOR	Manayunk/Norristown Regional Rail Line
NPL	National Priority List
NPS	National Park Service
NR	National Register of Historic Places
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NS	Norfolk Southern Railroad
NTC	Norristown Transportation Center
NWI	National Wetlands Inventory
O&M	Operations and maintenance

Acronym	Definitions
O ₃	Ozone
PA	Pennsylvania
PADEP	Pennsylvania Department of Environmental Protection
PaGEODE	Pennsylvania Geological Survey Interactive Map
PAO	Paoli-Thorndale Regional Rail Line
PASDA	Pennsylvania Spatial Data Access
PASPGP	Pennsylvania State Programmatic General Permit
PATCO	Port Authority Transit Corporation
PECO	PECO Energy Company
PennDOT	Pennsylvania Department of Transportation
PHMC	Pennsylvania Historical and Museum Commission
PIP	Public Involvement Plan
PM _{2.5}	Particulate matter with an aerodynamic diameter less than 2.5 micrometers
PNDI	Pennsylvania Natural Diversity Inventory
PNHP	Pennsylvania Natural Heritage Program
RCRA	Resource Conservation and Recovery Act
Rd	Road
RMS	Root mean square
ROD	Record of Decision
ROW	Right-of-way
S. or S	South
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users
SC	Steering Committee
SEPTA	Southeastern Pennsylvania Transit Authority
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
SSA	Sole Source Aquifer
TAC	Technical Advisory Committee
TAZ	Traffic analysis zone
TCR	Transportation Conformity Rule
TIP	Transportation Improvement Program
TMA	Transportation Management Association
TOD	Transit oriented development
TP	PA Turnpike
TPHPD	Trains per hour per direction
TRI	Pennsylvania's Toxic Release Inventory
UMT	Upper Merion Township
un	Unknown
UNT	Unnamed tributary
USACE	United States Army Corps of Engineers
US or U.S. or USA	United States
US 202	U.S. Route 202
USC or U.S.C.	United States Code
USACE	United States Army Corps of Engineers
USDOI	United States Department of the Interior

Acronym	Definitions
USDOT	United States Department of Transportation
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VAU	Visual assessment unit
V/C	Volume/capacity
VdB	Vibration velocity level in decibels
VFCR	Valley Forge Casino Resort
VFNHP	Valley Forge National Historical Park
VHT	Vehicle hours traveled
VMT	Vehicle miles traveled

*A*ppendix F Glossary of Terms

*A*ppendix F Glossary of Terms

A

Accessibility

(1) The ability of vehicles and facilities to accommodate the disabled and comply with the Americans with Disabilities Act (ADA).

(2) A measure of the ability or ease of all persons to travel among various origins and destinations.

Action Alternative

A project alternative that involves a major capital investment.

Advisory Council on Historic Preservation (ACHP)

An independent federal agency that provides a forum for influencing federal policy, programs, and activities as they affect historic and archaeological resources in communities and on public lands nationwide.

Adverse

A negative or unfavorable condition.

Air Pollution

Is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere.

Alignment

The horizontal and vertical location of a roadway, railroad, transit route, or other linear transportation facility.

Alternatives

The set of transportation improvements or projects that are compared in the EIS to determine their effectiveness in serving as potential solutions to a transportation problem. Along with the set of “Action” Alternatives, there is a “No Action Alternative,” which evaluates the effects of not building a project. Alternatives may consist of different configurations, alignments, type of access control, or transportation modes and strategies.

Aquifer

A layer of permeable rock, sand, or gravel through which ground water flows, containing enough water to supply wells and springs.

<u>Area of Potential Effect (APE)</u>	The geographic area within which a transportation project may cause changes in the character of, or use of, historic properties. The APE is influenced by the scale and nature of the project, and there may be different kinds of effects caused by the undertaking.
<u>At Grade</u>	On the ground, at surface level.
<u>At-Grade Crossing</u>	Same as a “grade crossing.” A rail crossing with roadways or streets on the same level as the tracks, resulting in a level intersection of both modes. See grade separation.
<u>Avoidance</u>	The act of avoiding or keeping away from impacting on something or someone.
B	
<u>Bus</u>	Rubber-tired vehicles operating on fixed routes and schedules on roadways. Buses are powered by diesel, gasoline, battery, or alternative fuel engines contained within the vehicle.
C	
<u>Capital Costs</u>	The one-time expenses incurred to design and build a transit system.
<u>Carbon Monoxide (CO)</u>	Is a colorless and odorless gas, which is a product of incomplete combustion. CO is absorbed by the lungs and reacts with hemoglobin to reduce the oxygen carrying capacity of the blood. At low concentrations, CO has been shown to aggravate the symptoms of cardiovascular disease. It can cause headaches and nausea, and at sustained high concentration levels, can lead to coma and death. CO concentrations tend to be highest in localized areas because they are most affected by local traffic congestion, since motor vehicles are a major source of CO emissions.
<u>Clean Air Act (CAA)</u>	Federal legislation that sets air quality standards. Sometimes cited as CAAA, Clean Air Act and Amendments of 1990.
<u>Connectivity</u>	Connecting various transportation modes and services to minimize wait times between transfers and reduce overall travel time.
<u>Construction Impact</u>	Temporary impact that would occur while a project is under construction.

Constructive Use Impact

An impact adversely impacting activities on or enjoyment of a property without directly acquiring the property or any portion of the property. A new noisy project adjacent to a previously quiet outdoor theater would be an example of a constructive use impact.

Cultural Resources

Archaeological and historic resources eligible for or listed on the National Register of Historic Places. Cultural resources include buildings, sites, districts, structures, or objects having historical, architectural, archaeological, cultural, or scientific importance.

Cumulative Impact

Impact that “results from incremental consequences of an action when added to other past and reasonably foreseeable future actions.” The cumulative effects of an action may be undetectable when viewed in the individual context of direct and indirect impacts but can add to other changes and eventually lead to a measurable environmental change. Potential cumulative effects on the environment must be assessed as required by the National Environmental Policy Act (NEPA).

D

de minimis

Of insufficient significance. A *de minimis* contribution means that the environmental conditions would essentially be the same whether or not a proposed project is implemented. Used to evaluate impacts to parks under a 4(f) evaluation.

Dedicated Guideway

A right-of-way that is solely for use of transit vehicles and is not occupied by any other type of vehicle or by pedestrians. Dedicated guideway may be either grade-separated or protected by a fence or substantial permanent barrier.

Demand Forecasting

A technique of estimating the number and travel times of potential users of a system.

Design Speed

The speed used for design and relationship of the physical features of a highway or rail that influence vehicle operation. It is the maximum safe speed that can be maintained over a specified section of highway or rail when conditions are favorable (i.e., clear, dry, daylight).

Design Year

The year for which the facility is designed. The transit facility should be able to handle the traffic forecasted for that year, which is generally 20 to 25 years in the future.

Determination of Eligibility

The process of assembling documentation to render professional evaluation of the historical significance of a property. Departments of Transportation, in consultation with the State Historic Preservation Office, apply the National Register of Historic Places criteria when deciding matters of historical significance.

Displacement

Results in converting current residential or commercial uses to transportation use.

Dust Control

Controlling dust from exposed soils by minimizing the time soils are exposed, temporarily mulching, seeding or covering exposed soils, and/or spraying water on exposed soils.

Dwell Time

The time, in seconds, that a transit vehicle spends at each stop waiting for passengers to alight and board.

E

Easement

A temporary or permanent right to use the land of another for a specific purpose sometimes referred to as a “deed restriction.” Easements may be purchased from the property owner or donated by the owner.

Effects

Effects” and “impacts” are synonymous. Effects include ecological, aesthetic, historic, cultural, economic, social, or health, whether direct, indirect, or cumulative. Effects may also include those resulting from actions that may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial. Effects include (1) direct effects that are caused by the action and occur at the same time and place and (2) indirect effects that are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

“

Eminent Domain

Authority of an agency to acquire property at fair market value for public purposes. Also known as condemnation.

Endangered

An organism of very limited numbers that may be subject to extinction and is protected by law under the Endangered Species Act.

<u>Envelope</u>	Definition of the vertical and horizontal space required for both the transit vehicle and/or the guideway. Also called operating envelope.
<u>Environmental Impact Statement</u>	A public document that a federal agency prepares under NEPA to document the expected impacts of a development or action on the surrounding natural and human environment. The document must detail efforts to avoid, minimize, or mitigate any adverse impacts.
<u>Environmental Justice (EJ)</u>	Presidential Executive Order 12898 requires federal agencies to ensure that their actions (or actions they oversee) do not disproportionately discriminate against or impact minority populations and low income populations.
F	
<u>Fare Box Revenue</u>	Value of cash, tickets, tokens, and pass receipts given by passengers as payment for rides; excludes charter revenue.
<u>Feasible</u>	Feasible means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.
<u>FEMA</u>	Federal Emergency Management Agency. FEMA has ten regional offices and two area offices. Each region serves several states, and regional staff work directly with the states to help plan for disasters, develop mitigation programs, and meet needs when major disasters occur.
<u>Financially Constrained</u>	A term used to describe the financial requirement that all projects must have an identified funding source.
<u>FIRM</u>	Flood Insurance Rate Maps. Maps produced by the Federal Emergency Management Agency (FEMA) to determine the locations of flood risks and hazards.
<u>Full Acquisition</u>	Purchase of all land ownership rights of a property. Also known as a “fee simple” acquisition.
<u>Floodplain (100-year)</u>	The area adjacent to a stream that contains a flood event that has a 1 percent probability of occurring in any given year.
G	
<u>Geographic Information System (GIS)</u>	A computer system capable of storing and manipulating spatial data.

<u>Grade</u>	<p>(1) Refers to a rise in elevation within a specified distance. For example, a one-percent grade is a one-foot or 0.305 meter rise in elevation in 100 feet or 30.5 meters of horizontal distance.</p> <p>(2) The rate of upward or downward slope of a roadway, expressed as a percent.</p> <p>(3) “At grade” refers to a transportation facility built at ground level in a level intersection of both modes. See grade separation.</p>
<u>Grade Separated Crossings</u>	<p>Facilities such as overpasses, underpasses, skywalks, or tunnels that allow pedestrians or vehicles to cross paths at different levels; also referred to as grade separations.</p>
<u>Grade Separation</u>	<p>The crossing of transportation rights-of-way that are separated vertically and for which there is no shared common intersection. A transit right-of-way may be fully grade-separated or partially grade-separated.</p>
<u>Groundwater</u>	<p>Subsurface water and underground streams that can be collected with wells or that flow naturally to the earth’s surface through springs.</p>
<u>Groundwater Recharge</u>	<p>A hydraulic process where water moves downward from surface water to groundwater.</p>
H	
<u>Hazardous Materials</u>	<p>Material, often waste, that poses a threat to human health and/or the environment.</p>
<u>Headway</u>	<p>The time interval between transit vehicles operating in the same direction along a fixed route.</p>
I	
<u>Impacts</u>	<p>See Effects.</p>
<u>Independent Utility</u>	<p>A project is said to have independent utility if it will provide functional transportation improvements that can stand alone and serve a major purpose, even if no other improvements are made in the region.</p>
<u>Indirect Effects (Secondary Impacts)</u>	<p>Impacts on the environment resulting from the primary impact of the proposed action but occurring later in time or farther removed in distance, although still reasonably foreseeable. Potential indirect or secondary and cumulative effects on the environment must be assessed as required by the National Environmental Policy Act (NEPA).</p>

Intelligent Transportation Systems (ITS)

Computer-based technology applications designed to increase capacity, to move traffic and transit more safely and efficiently, and to supply information to travelers. Examples include global positioning systems for locating vehicles and traffic signal priority for giving preferential green time to transit vehicles at intersections.

Intermodal

The ability to connect, and the connections between, different modes of transportation.

K

Kiss-and-Ride

A drive-through area, sometimes with short-term parking, to allow passengers to be dropped off or picked up at a transit station, with or without a kiss.

L

Land and Water Conservation Fund (LWCF) Act 1965

Regulates the use of parklands that were purchased or developed with LWCF funds.

Level of Service (LOS)

Level of service (LOS) is a measure of the quality of operations of a roadway. It looks at speed, traffic volume and road geometry. LOS A represents free flow conditions and LOS F represents a breakdown of vehicular flow. Typically, in urbanized areas LOS D or better is considered adequate.

Limits of Disturbance

The horizontal boundary where soil will be exposed during construction activities. The limits of disturbance includes, but is not limited to, the limits of excavation, borrow areas, storage areas, staging areas, areas to be cleared and grubbed, and roadways.

Locally Preferred Alternative (LPA)

A project alternative chosen by a sponsoring agency as a result of the federal project development process. It defines the alternative that is deemed best suited to meet the region's transportation goals, is responsive to community concerns and input and has been examined and declared superior to the other alternatives that are identified and studied in relation to its social, economic and environmental impacts.

Logical Termini

Rational endpoint for consideration of transportation improvements and for review of environmental impacts.

Low-Income Household

A low-income household is one where the median household income is below the Department of Health and Human Services poverty guidelines.

Low-Income Population

Any readily identifiable group of low-income persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed federal transportation program, policy, or activity.

M

Map Overlays

Quantitative and qualitative analysis using layering of maps showing land use and resource context from various time periods.

Minimization

Measures taken to reduce the severity of adverse impacts.

Minority

A person who is (1) Black (having origins in any of the black racial groups of Africa); (2) Hispanic (of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race); (3) Asian American (having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent, or the Pacific Islands); or (4) American Indian and Alaskan Native (having origins in any of the original people of North America and who maintains cultural identification through tribal affiliation or community recognition).

Minority Population

Any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed federal transportation program, policy, or activity.

Mitigation

Measures taken to alleviate adverse impacts that remain after minimization.

Mixed-Use Development

Development with multiple categories of land use typically including residential, commercial, retail, and entertainment. Mixed-use areas generally have higher population densities and are pedestrian friendly.

Mobil Source Air Toxics (MSAT)

Are a subset of the 188 air toxics defined by the Clean Air Act. Most air toxics originate from human-made sources, including on-road mobile sources, non-road mobile sources (e.g., locomotives, airplanes), area sources (e.g., dry cleaners) and stationary sources (e.g., factories or refineries).

<u>Mode</u>	Refers to a specific form of transportation (auto, bus, LRT, heavy rail, pedestrian, bicycle, etc.).
<u>Model</u>	An analytical tool (often mathematical) used by transportation planners to assist in making forecasts of land use, economic activity, travel activity and their effects on the quality of resources such as land, air, and water.
<u>Multimodal</u>	Having or involving several modes of transportation.
N	
<u>National Environmental Policy Act (NEPA)</u>	The federal law that requires every federal agency to evaluate the effect of its proposed actions on the natural and man-made environment by preparing an Environmental Assessment or Environmental Impact Statement.
<u>National Register Eligible</u>	Cultural resources eligible for inclusion on the National Register of Historic Places. Eligible resources receive the same protection as listed resources.
<u>National Register of Historic Places (NRHP)</u>	A federal listing of historic resources protected under the National Historic Preservation Act of 1966. Properties include districts, sites, buildings, structures, and objects that are significant in American history, architecture, archeology, engineering, and culture.
<u>New Starts</u>	Discretionary federal funding program for the construction of new fixed guideway systems or extensions of existing fixed guideway systems, based on cost effectiveness, alternatives analysis results and the degree of local financial commitment.
<u>No Action Alternative</u>	The alternative describing projected future conditions of an area in the absence of a proposed project. It serves as a benchmark to which the impacts of the build alternatives can be compared. As part of this alternative, financially constrained and programmed projects are considered together with existing conditions.
<u>Noise</u>	Unwanted sound.
O	
<u>Off-Board Fare Collection</u>	Collection of transit fares off the vehicle, typically at a station. Boarding time is greatly reduced with off-board fare collection. When off-board fare collection is used, verification of fare payment is often made by random inspection onboard the vehicles.

<u>Off-Peak Period</u>	Periods of the day when travel activity is lower.
<u>Operating and Maintenance Costs (O&M Costs)</u>	All costs involved with running a transit system, including labor for operations and for vehicle and fixed facility maintenance, fuel and electric power, spare parts and other supplies, insurance premiums and claims payments, direct supervision, and general and administrative expenses.
<u>Operating Plan</u>	For transit, an operating plan details characteristics such as running times, frequency, required number of vehicles, changes in frequency throughout the day, and assumptions pertaining to stations.
<u>Origin-Destination Study</u>	A method to determine where trips are coming from and going to, or where they desire to travel.
<u>Ozone (O₃)</u>	Is a strong oxidizer and a pulmonary irritant that affects the respiratory mucous membranes, other lung tissues, and respiratory functions. Exposure to ozone can impair the ability to perform physical exercise, can result in symptoms such as tightness in the chest, coughing, and wheezing, and can ultimately result in asthma, bronchitis, and emphysema. Motor vehicles do not emit ozone directly. Emissions of volatile organic compounds (VOC) and nitrogen oxides (NO _x), which are the precursor pollutants to ozone formation, react in the presence of sunlight to form ozone in the atmosphere. These reactions occur over periods of hours to days during atmospheric mixing and transport downwind. Accordingly, ozone and its precursors VOC and NO _x are regulated at the regional level as part of the Delaware Valley Regional Planning Commission's (DVRPC) transportation plan.
P	
<u>Park-and-Ride Facility</u>	A parking lot to which passengers drive their cars, leave them for the day, and either board transit vehicles or carpool.
<u>Partial Acquisition</u>	Purchase of a portion of a property. A partial acquisition could include fee simple or easement acquisitions.

Particulate Matter (PM_{2.5})

Is made up of small solid particles and liquid droplets. PM₁₀ refers to particulate matter with an aerodynamic diameter of 10 microns and smaller, and PM_{2.5} refers to particulate matter with an aerodynamic diameter of 2.5 microns and smaller. Particulates enter the body by way of the respiratory system. Particulates over 10 microns in size are captured in the nose and throat and are readily expelled from the body. Particles smaller than 10 microns, and especially particles smaller than 2.5 microns, can reach the air ducts (bronchi) and the air sacs (alveoli). Particulates, especially PM_{2.5}, have been associated with increased incidence of respiratory diseases such as asthma, bronchitis, and emphysema; cardiopulmonary disease; and cancer. The majority of PM emissions from mobile sources are attributed to diesel vehicles.

Peak (Peak Period, Rush Hours)

The period during which the maximum amount of travel occurs. It may be specified as the morning (a.m.) or afternoon or evening (p.m.) peak.

Performance Measures

Indicators of how well the transportation system is performing with regard to such things as average speed, reliability of travel, and accident rates. Used as feedback in the decision-making process.

Preliminary Engineering

At the preliminary engineering phase the design is approximately 30 percent complete. The deliverables at the 30 percent submittal includes contract drawings, specifications, design calculations and a preliminary cost estimate.

Public Hearing

A formal meeting held to receive public comment on proposed action.

Public Meeting

An informal meeting held to present information about the proposed action and to discuss it with the public.

Purpose and Need Statement

A project purpose is a broad statement of the overall objective to be achieved by a proposed action. Need is a more detailed explanation of the specific transportation problems that exist or are expected to occur in the future. It is the foundation to determine if alternatives meet the needs in the area.

Q

Queue

A line of vehicles stopped at an intersection, merge or diverge point.

R

Ridership

The number of rides taken by people using a public transportation system in a given time period.

Root Mean Square (RMS)

Average vibration amplitude

(Public) Right-of-Way (ROW)

The area over which a legal right of passage exists; land used for public purposes in association with the construction or provision of transportation projects or other linear infrastructure and the associated facilities.

S

Scoping

This is the first step in the NEPA process that determines the range of proposed actions, alternatives, and impacts to be discussed in a DEIS. The required scoping process provides agencies and the public opportunity to comment. Scoping is used to encourage cooperation and early resolutions of potential conflicts, to improve decisions, and to reduce paperwork and delay.

Section 106

The section of the National Historic Preservation Act that requires federal agencies to consider the potential effects of proposed federal action on any known or potential historic, architectural, or archaeological resources and to consult with the SHPO.

Section 4(f)

Section 4(f) of the US Department of Transportation Act of 1966 includes a national policy to make special effort to preserve the natural beauty of the countryside, public parks and recreation lands, wildlife and waterfowl refuges, and significant historic sites. Use of these lands for a transportation project will be permitted only when it has been determined that there is no feasible and prudent alternative and the project includes all possible planning to minimize harm to the property resulting from such use.

SHPO (State Historic Preservation Office)

The office of the State Historic Preservation Officer, a state official in each state that is responsible under the National Historic Preservation Act of 1966 to review potential impacts to cultural resources by federal actions and to supervise the mitigation of adverse impacts.

Shuttle Service

Local bus service that moves passengers to collection points for bus or rail service.

Soil Erosion and Sediment Control

To reduce the uncontrolled movement of soils.

Stakeholders

Individuals and organizations involved in, or affected by, the transportation planning process, including federal/state/local officials, MPOs, transit operators, freight companies, shippers, and the general public.

State Implementation Plan (SIP)

The SIP is a state-adopted plan required for compliance with the Clean Air Act for regions that are not in attainment of the National Ambient Air Quality Standards. In the case of the King of Prussia/Valley Forge area, the DVRPC is responsible for developing a Transportation Improvement Program for the area that conforms to the SIP, which means that it does not create new violations of the Standards or make existing violations worse in the future.

Stormwater Management (SWM)

Physical design features such as ponds, bioretention, or drainage swales that retain or direct stormwater run-off in a manner that controls discharge volumes and/or water quality.

T

Terminal Station

The bus or rail station where a route or line begins and ends.

Traffic Analysis Zone (TAZ)

A geographic area typically ranging in size from a city block to a one-square-mile section (or larger) used in computer models that identify changes in traffic flow based on estimated land use changes, population growth, employment growth, and other factors.

Transfer

The portion of a trip between two connecting transit routes.

Transportation Center

A station in a multi-destination transit system where passengers may conveniently transfer among trunk lines, local feeder routes, or modes. Also referred to as intermodal transfer facilities, transit centers, stations.

Transit Dependent Population

Generally those without their own means of transportation (e.g., zero-car households, children, low-income groups, some elderly, and those who are unable to operate a vehicle due to a physical disability).

Transit Oriented Development (TOD)

A term used for urban development that encompasses a direct and planned access to transit facilities.

Transit Zone

Communities within a one-half mile radius of transit facilities.

Transportation System User Benefit

A measurement of a project's value. The measurement divides the cost (including capital, and operations and maintenance) by the travel time savings of all users of the transit system (including existing and new riders). This measure is part of the FTA New Starts evaluations.

Travel Demand Forecast

A projection for travel demand on future or modified transportation system alternatives using existing or projected land use, socioeconomic, and transportation services data.

Travel Time

The average time required to travel between two points, including delays at intersections, but not including terminal or waiting time.

Trends Analysis

Used to identify effects occurring over time and to identify the future context of land use and environmental resources of interest

U

Uniform Relocation and Real Property Acquisitions Policies Act

Grants Management Requirements and State laws that establish the process through which SEPTA may acquire real property through a negotiated purchase or through condemnation.

V

Viewshed

An area visible from a specific vantage point.

W

Wetlands

As defined by the U.S. Army Corps of Engineers, areas that are inundated or saturated by surface water or groundwater sufficiently to support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, and similar areas and are subject to protection under Executive Order 11990 and Section 404 of the Clean Water Act.

*A*ppendix G - List of References

Appendix G List of References

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Appendix H List of Preparers

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Patrick Coleman, PE	B.S., M.S.	Ridership Forecasting Reviewer
Kevin Sheahan, PE	B.S., M.B.A.	Capital Costing
Harry Roecker, PE	B.S.	Quality Assurance
Malick & Scherer, PC		
Colleen Connolly, PE	B.E.	Screening and Analysis for Operations
Aino-Liis Tootsov	B.S.	Traffic Impact Analysis
John Boyce	B.S.	Natural Resources and Hazardous Materials Specialist

Name	Degree	DEIS Contribution
Andrew Ferri	B.S.	Conceptual Station Layouts
Bergmann Associates, PC		
Eric Brady	B.A., M.A.	3D Simulation Manager
Todd Heckaman	G.E.D.	3D Simulation Technical Lead
Nick Carrington	G.E.D.	3D Simulation Technician
LTK Engineering Services		
F. William Lipfert, Jr	B.A.	Rail Operations Planning and Modeling, Rail and Bus Operations Costing
John Schumann	B.A., M.S.	Rail Operating Plan Development
Nicholas Willey	B.A., B.E., M.E.M.	Rail Operations Modeling and Fleet Requirements
Steven Hanson	B.S.	Rail Vehicle Performance Requirements
McCormick Taylor		
L. Bert Cossaboon, AICP, NJPP, LEED GA	B.S., M.S.	Planner, Public Outreach Director
John Mullen, AICP, NJPP	B.L.S.	Planner, Public Involvement Manager
Emily Watts	B.S.	Communications Coordinator
Katie Carver	B.A., M.A.	Communications Coordinator
Jessica Lerda	B.S.	Graphic Designer
William Dennis	B.S.	Website Designer
Adam Dall	A.S.	Photographer, Visualization Specialist
Portfolio Associates, Inc.		
Beverly A. Harper	B.S.	Principal in Charge
Morgan Barlow	B.A., M.B.A.	Committee Meeting Logistics
Terence Milstead	B.A., M.S., PhD	Meeting Minutes Editor and Quality Control
Sita Ng, AICP	B.Arch., M.Pl.	Project Committees Meetings, Minutes

*A*ppendix I - List of DEIS Recipients

*A*ppendix I List of DEIS Receipts

Federal Agencies

Federal Transit Administration

Administrator, Region III

Ms. Theresa Garcia Crews

Community Planner

Mr. Timothy Lidiak

Environmental Protection Specialist

Mr. Daniel Koenig

Federal Highway Administration

Pennsylvania Division Administrator

Ms. Renee Sigel

Federal Railroad Administration

Executive Director

Mr. Patrick T. Warren

National Park Service, Northeast Region

Acting Regional Director

Mr. Joshua Laird

United States Army Corps of Engineers

Chief, Regulatory Branch

Mr. Edward Bonner

United States Coast Guard

Bridge Specialist, 5th District

Mr. Waverly W. Gregory, Jr.

United States Department of the Interior

Office of Environmental Policy and Compliance, Director

Ms. Michaela E. Noble

United States Department of the Interior

Fish and Wildlife Service, Pennsylvania Field Office

Supervisor

Ms. Lora Lattanzi

United States Environmental Protection Agency

Acting Regional Administrator, Region 3

Mr. Cecil A. Rodrigues

State AgenciesValley Forge National Historic Park

Supervisor

Ms. Deirdre GibsonPA Department of Conservation and Natural Resources

Secretary

Ms. Cindy Adams DunnPennsylvania Department of Environmental Protection

Chief, Stormwater Section

Mr. Domenic RoccoPennsylvania Department of Transportation

Secretary of Transportation

Ms. Leslie S. Richards

Deputy Secretary, Bureau of Multimodal Transportation

Mr. Toby L. Fauver

District 6-0, Executive

Mr. Charles H. Davies, PE

District 6-0, Portfolio Manager

Mr. Timothy StevensonPennsylvania Historical and Museum Commission

Executive Director

Mr. James M. VaughanPennsylvania Turnpike Commission

Vice Chairman

Mr. William K. Lieberman

Senior Engineering Project Manager

Mr. Donald Steele, P.E.**Regional Agencies**Delaware County Transportation Management Association

Executive Director

Ms. Cecile CharltonDelaware Valley Regional Planning Commission

Executive Director

Mr. Barry SeymourGreater Valley Forge Transportation Management Association

Executive Director

Mr. Rob Henry

County Agencies**Montgomery County**

Executive Director, Planning Commission

Ms. Jody L. Holton, AICP

Department Head, Parks, Trails and Historic Sites

Mr. Chris Smith**Chester County**

Executive Director, Planning Commission

Mr. Brian N. O’Leary, AICP**Delaware County**

Planning Commission Chairman

Mr. William C. Payne

Planning Department Director

Ms. Linda F. Hill**Municipal Agencies****Upper Merion Township**

Chairperson, Upper Merion Township Board of Supervisors

Mr. William Jenaway, Ph.D.

Vice-Chairperson, Board of Supervisors

Mr. Greg Philips

Supervisor

Ms. Carole Kenney

Supervisor

Ms. Erika Spott

Supervisor

Mr. Greg Waks

Township Manager

Mr. David Kraynik

Lead Planner

Mr. Robert Loeper

Director, Parks & Recreation Department

Mr. Daniel Russell**King of Prussia Business Improvement District**

Executive Director

Mr. Eric Goldstein**Township of Haverford**

Township Manager

Mr. Lawrence J. Gentile**Township of Lower Merion**

Township Manager

Mr. Ernie B. McNeely

Township of Radnor

Township Manager

Mr. Robert A. ZienkowskiUpper Darby Township

Mayor

Mayor Thomas N. MicozzieBorough of Bridgeport

Mayor

Mayor Thaddeus PruskowskiMunicipality of Norristown

Administrator

Mr. Crandall JonesTredyffrin Township

Township Manager

Mr. William F. Martin**Libraries**Upper Merion LibraryUpper Darby Township Free Public LibraryMontgomery County-Norristown Public Library**Elected Officials—Federal**United States Senate**Senator Robert P. Casey, Jr.****Senator Patrick J. Toomey**United States House of Representatives

Pennsylvania District 13 (King of Prussia study area)

Representative Brendan BoylePennsylvania District 1 (69th Street Transportation Center study area)**Representative Robert Brady****Elected Officials—State**Senate of Pennsylvania

District 17 (King of Prussia study area)

Senator Daylin Leach

District 44 (Montgomery County)

Senator John C. Rafferty, Jr.

District 26 (69th Street Transportation Center study area)
Senator Thomas McGarrigle

[Pennsylvania House of Representatives](#)

District 149 (King of Prussia study area)
Representative Timothy Briggs

District 164 (69th Street Transportation Center study area)
Representative Margo Davidson

Elected Officials—County

[Montgomery County Commissioners](#)

Chair

Commissioner Valerie Arkoosh

[Delaware County Council](#)

Chairman

Chairman Mario Civera, Jr.

Other Representatives

[Montgomery County Development Corporation](#)

Executive Director

Ms. Tiffany O'Neill

[Bicycle Coalition of Greater Philadelphia](#)

Executive Director

Ms. Sarah Clark Stuart

[Clean Air Council](#)

Executive Director and Chief Council

Mr. Joseph Otis Minott, Esq.

[CEO Council for Growth](#)

Executive Director and Vice President for Leadership
 Engagement

Ms. Claire Greenwood

Chair

Mr. Robert C. Wonderling

[Delaware Valley Association of Rail Passengers](#)

President

Mr. Tony DeSantis

[King of Prussia Volunteer Fire Company](#)

Chief

Mr. Jim Gallagher

[KOP Rail Community Working Group](#)

The Membership

Main Line Chamber of Commerce

President and Chief Executive Officer
Mr. Bernard Dagenais

Montgomery County Chamber of Commerce

Executive Director
Ms. Kathy Brandon

Norfolk Southern

Manager, Strategic Planning
Mr. J. Lee Cochran

Director, Public Projects
Mr. Richard Crawford

Director, Railroad Real Estate
Ms. Kelle Williams

PECO Energy

Manager, External Affairs
Mr. Edward McBride

Real Estate Specialist
Ms. Lori Natale

Senior Real Estate Representative
Ms. Suzanne Lydsinski

Schuylkill River National and State Heritage Area

Executive Director
Ms. Elaine Schaefer

Simon Property Group

General Manager, King of Prussia Mall
Mr. Robert Hart

10,000 Friends of Pennsylvania

President and Chief Executive Officer
Mr. Jack Machak

Valley Forge Casino Resort

President and Chief Executive Officer
Mr. Eric Pearson

Valley Forge Convention Center

Director of Operations
Mr. Phil Murray

Valley Forge Homes Civic Association

President

Mr. Ed Mustard

Valley Forge Tourism and Convention Board

President

Mr. Michael S. Bowman