Part 1 | Existing Conditions & Preliminary Station Siting

Introduction

The Village of Frazer in East Whiteland Township, Chester County, gets its name from the former post office and train station, which were both located near the intersection of Route 30 and Sproul Road (Route 352). Though loosely defined, the village roughly encompasses the area along Route 30 from Phoenixville Pike to Malin Road. In 2018, East Whiteland Township completed the Route 30 Corridor Master Plan, which calls for revitalizing Frazer as a place that people know and want to visit. A new train station is the cornerstone of the township's vision for transforming Route 30 and the Village of Frazer.

Funding for this project was provided by the Delaware Valley Regional Planning Commission (DVRPC) through the FY2019 Unified Planning Work Program. SEPTA and Chester County Planning Commission, with support from East Whiteland Township and other stakeholders, requested a technical feasibility study to evaluate adding a new SEPTA regional rail station in East Whiteland Township on the Amtrak Keystone Corridor/SEPTA Paoli Thorndale line.

This section provides a comprehensive inventory and assessment of the existing conditions in Frazer to identify feasible locations for a new regional rail station in East Whiteland Township. This assessment builds upon the preliminary evaluation included in East Whiteland Township's Route 30 Corridor Master Plan (2018) and other previous planning documents.

The following tasks were completed under Part 1 of this study.

- Review Relevant Plans and Studies
- Produce Base Mapping
- Define Evaluation Criteria
- Evaluate Railroad Configuration and Operations
- Conduct Field Inventory
- Assess Station Needs and Program Elements

Part 1 also included stakeholder coordination. Stakeholders identified for this project included representatives from SEPTA, PennDOT's Multimodal Deputate, Amtrak, Chester County, East Whiteland Township, Transportation Management Association of Chester County, Immaculata University, and Sisters, Servants of Immaculate Heart of Mary (Sisters IHM). Agendas from all stakeholder and technical coordination meetings are included in Appendix 1.1 and 1.2.

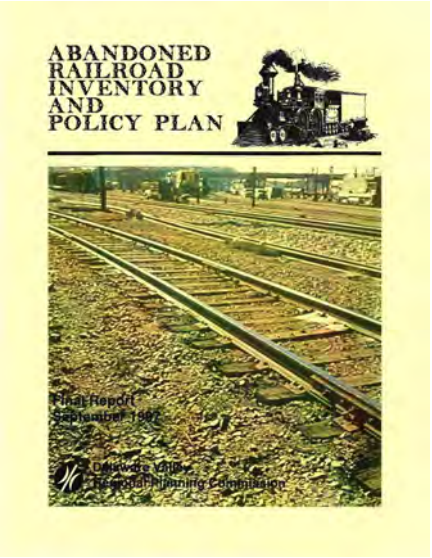
Stakeholder Meeting #1—Kickoff (December 4, 2018): The first stakeholder meeting hosted by Immaculata University included a discussion of the vision for a future train station, station elements, and identification of potential station sites.

SEPTA Technical Coordination #1—Workshop (December 18, 2018): A technical coordination meeting with SEPTA representatives included discussion of potential train station locations given SEPTA's operating parameters.

Background

Frazer has long been an area with abundant rail activity, and today, it is the convergence of two active passenger and freight rail lines. Amtrak's Keystone Line provides passenger service between Harrisburg, Philadelphia and Penn Station NYC, and is also used by SEPTA to provide regional rail service on the Paoli-Thorndale Line. Norfolk Southern's Trenton Cut-off is a freight bypass for center city Philadelphia and exits Amtrak's mainline in Frazer before continuing to Morrisville, PA and beyond.

Much of the history of rail service in Frazer is documented in the Abandoned Railroad Inventory and Policy Plan (DVRPC, 1997). In addition to the active rail lines, Frazer was the convergence point for three additional rail lines. The Philadelphia & Thorndale (P&T) Line provided service between Frazer and Coatesville. According to DVRPC's report, that line was abandoned in 1994 and is now owned by Norfolk Southern. The P&T line was studied by Chester County for future use as a regional trail. A line between Frazer and West Chester was operated by the Pennsylvania Railroad; with a small station serving Immaculata University. This line was abandoned between Frazer and Fern Hill in 1969. The railroad property for this line has reverted back to the adjacent property owners, and is no longer available for rail use. Much of the property that this line occupied adjacent to Amtrak's Keystone Corridor was acquired by the Sisters of IHM for the use of Immaculata University. Another railroad line



existed between Frazer and Phoenixville. Known today as the Devault Line, a portion of this line between Frazer and Swedesford Road was abandoned around 1936. Beyond Swedesford Road, the line remained active into the early 2000's, but has since fallen out of use and has now been identified as a potential trail corridor. Some of that railroad corridor is still owned by Norfolk Southern.

In addition, East Whiteland Township is home to SEPTA's Frazer Maintenance Facility. At this 40 acre site, SEPTA services their fleet of locomotives and cars for the regional rail system. Trains may access the facility from Amtrak's Keystone Line at two locations. One switch on the eastern end of the facility is located near Sproul Road (Route 352), and on the western end, a second switch is located between Phoenixville Pike and Ravine Road. (This is important because it impacts possible future station locations and railroad operations as will be discussed in more detail later in this section.) SEPTA's expansion project to increase the facility capacity and modernize equipment began in the Spring of 2016; completion is expected in the Fall of 2019. The Frazer Maintenance Facility is integral to SEPTA's operations and vehicle maintenance on the corridor.

In the Early 1900's, Immaculata College housed the Immaculata Train Station, located on a siding. Initially, this station provided for the delivery of materials for the construction of Villa Maria Hall. Later the station was used for transportation of riders to the Paoli Train Station and the ongoing delivery of merchandise.

Passenger rail service to the original Frazer train station located near Sproul Road (Route 352) was discontinued some time in the early twentieth century. All that remains of the original station is a shuttered pedestrian tunnel. Since then, the desire to bring passenger service to Philadelphia back to East Whiteland Township has been highlighted in various planning documents.

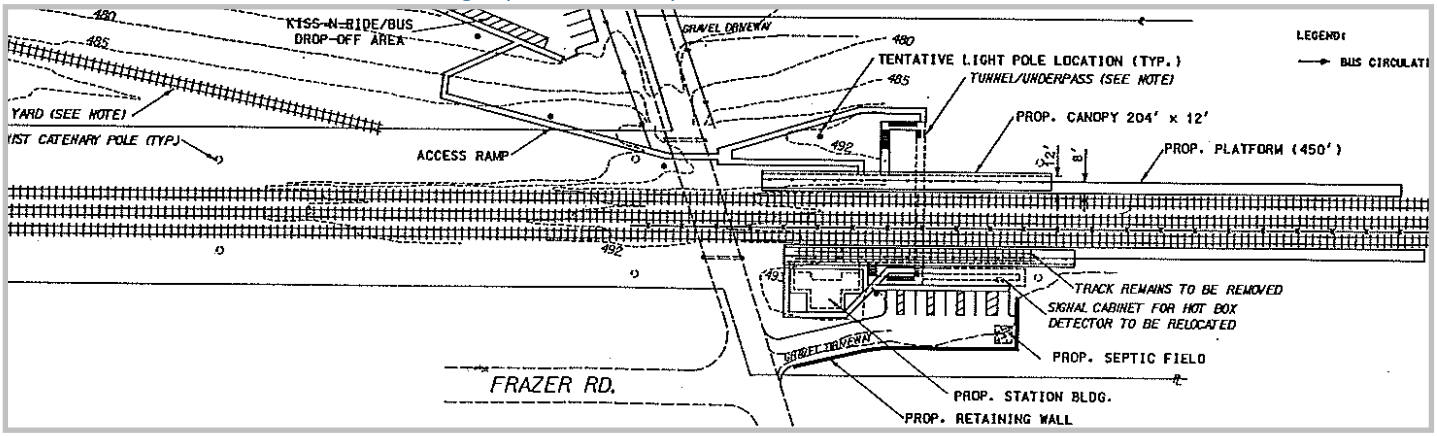
Railroad Terminology

Siding: a short stretch of railroad track used to store railcars or enable trains on the same line to pass

Relevant Plans and Studies

In the late 1980's, SEPTA had plans to build a train station in East Whiteland Township utilizing the former Pennsylvania Railroad station site near Sproul Road (Route 352). Documents show that SEPTA procured professional engineering services to prepare conceptual design plans. However, formal plans to restore service to Frazer were abandoned in 1993 as SEPTA move forward with plans for the Frazer Rail Yard on the west side of Sproul Road (Route 352).

Alternative Frazer Station Design (SEPTA, 1992)



Additional station concepts from 1992 can be found in Appendix 1.3.

In conjunction with SEPTA's conceptual design for a new station, DVRPC completed the Frazer Train Station Traffic Study in 1992. The traffic study evaluated a proposed passenger station in Frazer, located near Sproul Road (Route 352), with a 250 stall parking lot on the north side of the tracks on SEPTA's Frazer Yard property. However, this location is no longer viable, because it is within an interlocking area that did not exist at the time.

Although SEPTA did not move forward with the new station, benefits of a potential train station in East Whiteland were documented in the East Whiteland Township Comprehensive Plan (2001). Stating, "A stop on the R5 (Paoli-Thorndale) line would offer significant support for office, retail, and mixed-use activities in this vicinity." The plan also references the township's strategic location should the Cross County Metro be implemented in the future. The Cross County Metro was a planned commuter rail line between Frazer and Morrisville, Bucks County, PA that did not advance due to a lack of funding.

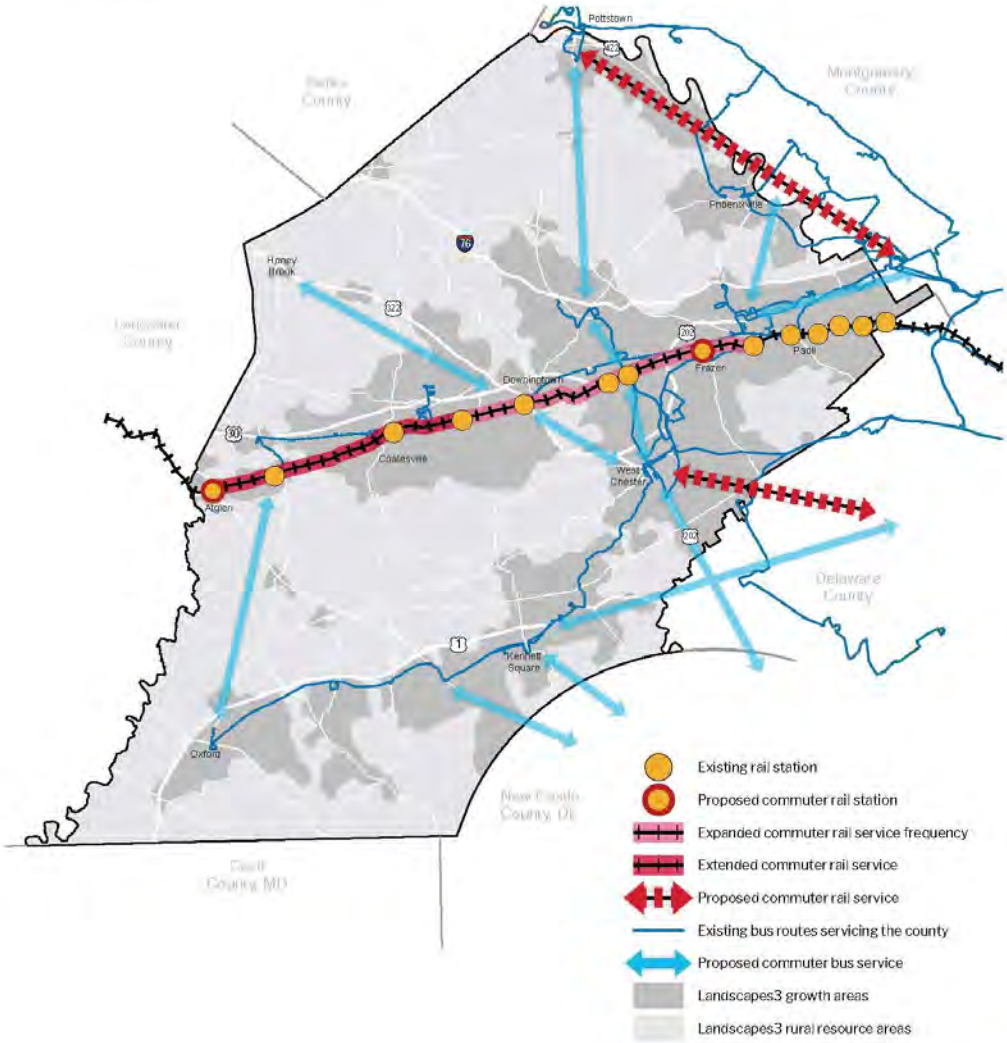
Previous efforts were not forgotten when East Whiteland Township prepared its Comprehensive Plan Update in 2016. The Comprehensive Plan Update recognized that the rail line created a barrier to circulation and that it provided no direct access to regional passenger rail service within the township. The plan also cited the idea of a new regional rail station in Frazer and identified some of the next steps to achieve this. A new train station would support two of the guiding principles from the plan: balance the pace of growth with infrastructure capacity and improvements, and promote Route 30 as a vibrant and attractive thoroughfare that reflects the diversity and vitality of the Township. Additionally, it recommended the implementation of a master plan for Route 30.

As a follow-up to the Comprehensive Plan Update, the Route 30 Corridor Master Plan (2018) identified ways to improve mobility and spur economic redevelopment along the Route 30 Corridor. A new

regional rail station was identified as a strategy to alleviate parking and access pressures at nearby stations, provide access to nearby employment centers, and energize development interest in Frazer – a concept that was overwhelmingly supported by the community. The report lists several reasons why a new train station in the area should be considered, as well as potential obstacles to constructing and providing service to a new station. The report also identifies focus areas for a new station location, next steps, and key project stakeholders.

The Chester County Public Transportation Plan (2014) does not mention any specific plans for a train station in East Whiteland Township. However, as an overarching policy plan, it generally supports the need for increased access to public transportation. Landscapes3 (2018), Chester County's Comprehensive Plan, also supports increased access to public transportation, and specifically identifies a new train station in Frazer.

Public Transit Enhancements Map (CCPC, 2018)



Study Area

The area depicted on the Study Area Map was identified because of its strategic location midway between the Malvern and Exton regional rail stations. This is the longest stretch of track (approximately six miles) on SEPTA's Paoli-Thorndale regional rail line without a train station. The study area encompasses the properties immediately adjacent to the Amtrak Keystone Corridor/SEPTA Paoli-Thorndale rail line between Malin Road to the east and Phoenixville Pike to the west. There is strong community support for establishing a train station in this area of East Whiteland Township based on feedback received during the development of the Comprehensive Plan Update and the Route 30 Corridor Master Plan. However, the study area does not include the well established residential neighborhoods on the south side of the tracks east of Sproul Road (Route 352), because this area provides limited access to the rail line, which could not be improved without greatly impacting local residents.

Due to surrounding land uses and access issues, the rail line outside of the selected study area is similarly constrained. Sites further east are too close to the Malvern station to provide efficient spacing between stations, and that area has steep topography and curved railroad tracks which limit the feasibility of a station. Areas further west are constrained by the US 30 Exton Bypass to the north of the tracks and single-family residences to the south of the tracks.

Evaluation of Potential Station Sites

A comprehensive evaluation process was undertaken to identify potential locations for a new train station. At the outset, all locations within the study area were considered and evaluated. Each step in the evaluation process involved eliminating sites that were not feasible for a variety of factors, including:

- Site constraints;
- Ability to support required and desirable station elements and features; and
- Railroad operations and service.

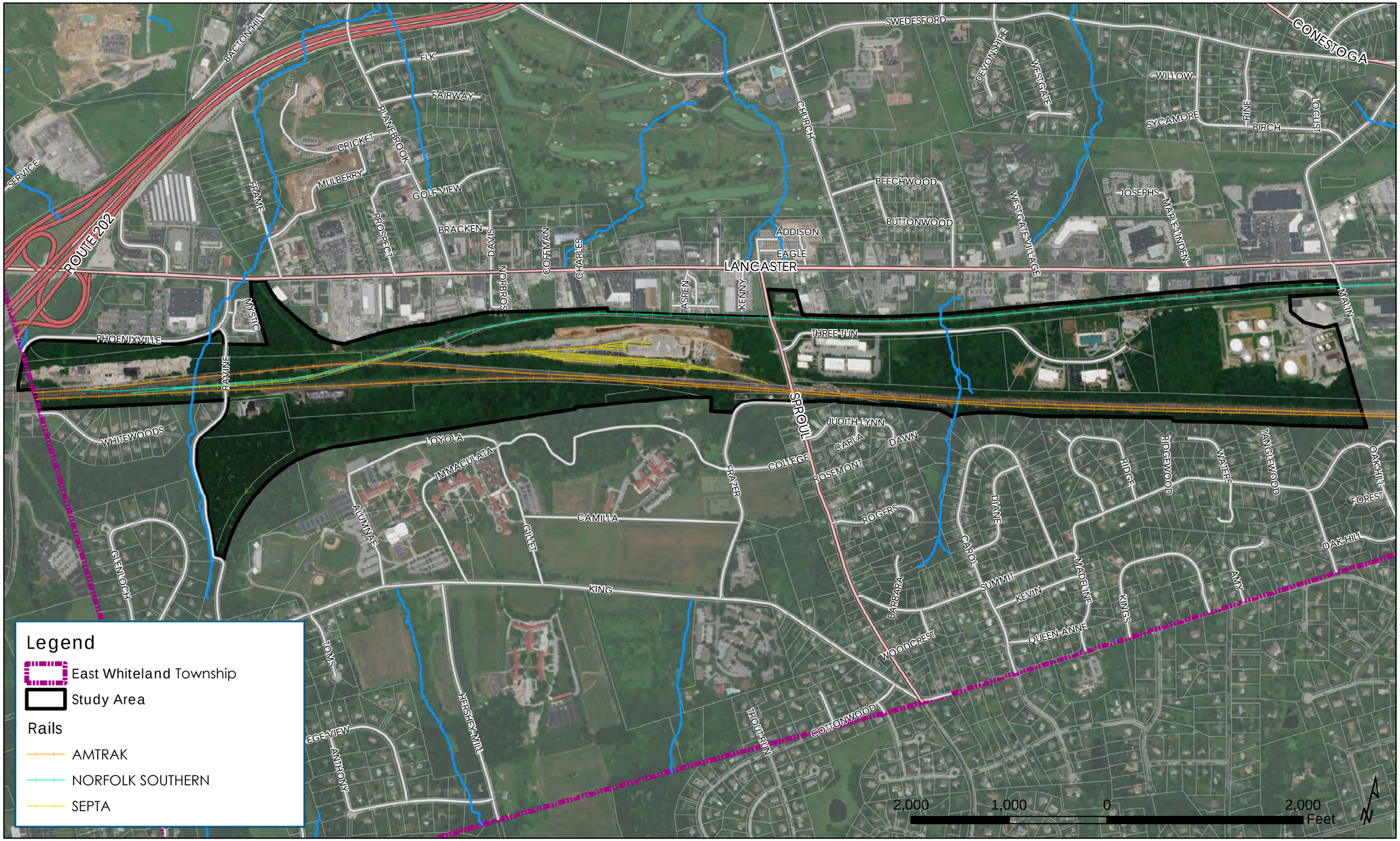
The following steps were taken to eliminate sites from further consideration and identify sites that could potentially support the necessary and desirable train station elements and operations.

Base Maps

The first step in the evaluation process involved compiling available GIS and other data and developing several base maps to provide a high level overview of the study area. The data was provided by a variety of

EWT Train Station Feasibility Study

Study Area Map



sources, including DVRPC, Chester County, and East Whiteland Township. The data examined and base maps developed include:

- Existing Land Use
- Potential Land Development: *Proposed/Approved Development, Potential Development/Redevelopment, Vacant-Nonresidential, Vacant-Residential*
- Property Ownership
- Environmental Features: *Streams, Wetlands, Floodplain, Steep Slopes, Moderate Slopes, Historic Resources*
- Existing Transportation Features: *State Roads, Local Roads, Railroads, Traffic Signals, Bridges, Park and Ride Lots, Current SEPTA Bus Routes, SEPTA Bus Stops, Sidewalks*
- Proposed Transportation Features (based on East Whiteland Township's Act 209 Study, Route 30 Corridor Master Plan, and other local plans): *Road Widening, New Roadway Connections, Multiuse Trails, Paths, Striped Shoulders, Bike Lanes, Intersection Improvements*

The base maps are included in Appendix 1.4. Based on these maps, some areas were eliminated from further consideration for the new train station. In particular, well developed parcels along Three Tun Road were dismissed due to the high cost and impact of siting a station on developed properties. Additionally, SEPTA's Frazer Maintenance Yard was eliminated due to the importance of this facility for SEPTA's operations and the limited available space to provide station elements without conflicting with maintenance and operations on the site.

Railroad Operational Requirements

The Federal Railroad Administration (FRA), Amtrak, and SEPTA each have requirements associated with maintaining their current operations, as well as locating and designing new stations. This is particularly important and challenging within the study area due to SEPTA's Frazer Maintenance Yard, Norfolk Southern freight service, and both SEPTA and Amtrak passenger rail service. The following key station siting criteria based on railroad requirements were identified through coordination with Amtrak and SEPTA representatives:

- Platforms cannot be within 250' of an interlocking
- Platforms must be in a location with less than 1 degree, 40 minutes track curve and less than 1" of super elevation
- Minimum high-level platform length is 528' with potential to expand to 700'
- Provide access to service in both directions

Railroad Terminology

Interlocking: An arrangement of signals and tracks with their controls so interconnected as to prevent conflicting movements between trains. May be operated manually or automatically, and also by remote control

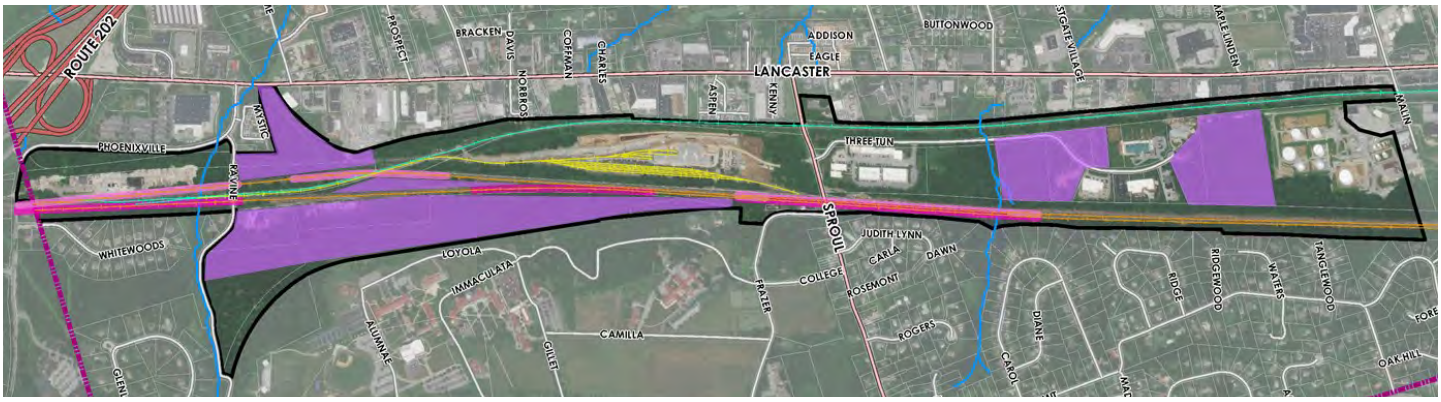
Super Elevation: the amount by which the outer edge of a curve is banked above the inner edge

- Consider the potential for a future third track and freight service through the station area
- Balance the distance between stations

The Track Restrictions Map shows locations along Amtrak's existing Track 4 (outbound) and Track 1 (inbound) where the railroad requirements for platforms are not met. This includes the area for two interlockings, one centrally located in the study area near Sproul Road (Route 352) and one at the western end of the study area near Phoenixville Pike and Ravine Road. It also includes areas where the track curvature or super elevation does not meet the requirements for platforms. There are restrictions relative to the placement of platforms along approximately 11,000 linear feet of the existing Amtrak tracks (out of 27,000 total linear feet of Amtrak tracks within the study area). This leaves approximately 60% of the total track length within the study area available for platforms; however this does not account for the need to provide access to service in both directions. The combined restriction on platform placement and requirement for access in both directions significantly narrowed the areas available for a train station.

The review of the base maps and evaluation of railroad requirements narrowed the potential sites for further consideration to the areas highlighted in purple on the map below. These sites became the focus for the remaining steps in the evaluation process.

Potential Sites for Further Evaluation

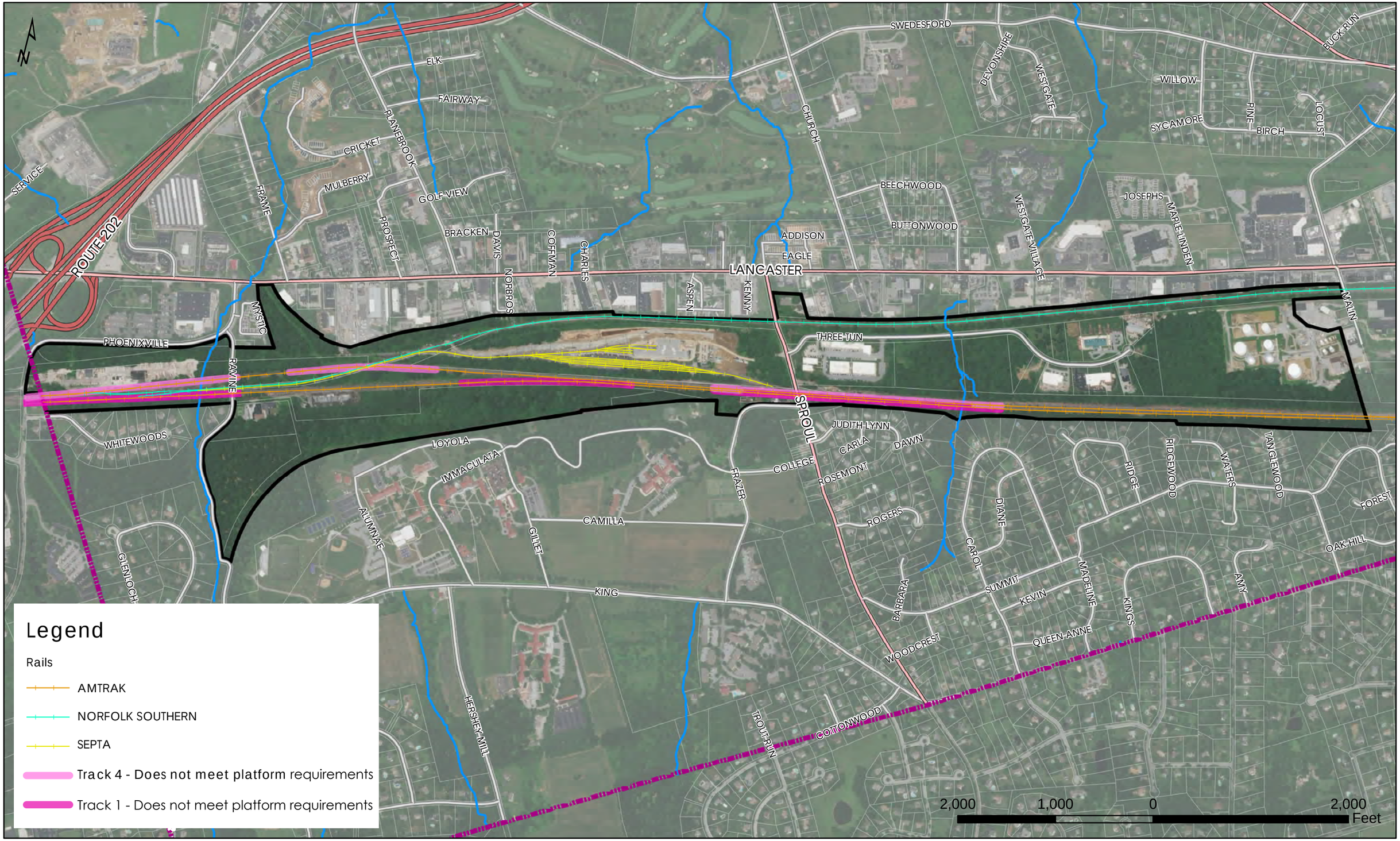


Station Program Elements

In addition to the railroad operational requirements, a viable site for the new train station must provide sufficient space and opportunities to support the necessary and desirable station elements. Key elements can be classified in two categories: Waiting and Boarding Area Features and Site Access and Circulation. Required and desirable station elements were discussed with project stakeholders and SEPTA representatives at the two coordination meetings. Stakeholders

EWT Train Station Feasibility Study

Track Restrictions



provided input regarding important elements of their vision for the future train station that should be accommodated on the preferred site. The following summary of key station elements reflect input from stakeholders, as well as features of similar SEPTA regional rail station.

Waiting and Boarding Area Features

Overall, stakeholders expressed a desire for the station to help create a sense of place and be a landmark within the Township. Stakeholders discussed an opportunity for architectural design treatments to be used for the pedestrian overpass/elevator structure to help with placemaking, particularly if a station building is not provided.

- High Level Platforms

  A minimum platform length of 540' is needed to support access to six car trains, which currently operate on the Paoli-Thorndale rail line. Additionally, SEPTA would like to plan for future eight car train service, which will require platforms totaling 710' in length. Therefore, an ideal station site has adequate space to provide 710' platforms. Platforms can either be located along each side, with a preferred width of 10-12' or within the center of the inbound and outbound tracks with a preferred width of 24'. Other desirable features would include canopies and heated shelters for passenger waiting.
- Cross Track Circulation

  Access to the platforms can be provided either with a pedestrian tunnel or overpass. Due to requirements associated with the Americans with Disabilities Act (ADA) and conditions within the study area, a pedestrian overpass with elevators is likely to be the preferred form of cross track circulation. At least one elevator must be provided, with potential for a second at each stairwell.
- Station Building and Ticketing Kiosks

  Stakeholders agreed that a traditional station building may not be necessary, especially since ticketing counters are no longer needed given new payment technology and the use of electronic ticketing kiosks. However, stakeholders identified the need for restroom facilities at the station. If a station building is required to meet code, it would likely be consistent with SEPTA's current standard station design.
- Transit Oriented Development (TOD)

  Private development at the station site could present an opportunity to offset initial development and ongoing station maintenance costs. Stakeholders discussed the potential for customer driven retail (coffee shop, or other food and amenities) or

Infrastructure Terminology

Pedestrian Overpass: structure that carries pedestrians over transportation infrastructure (railroad or roadway)

Pedestrian Tunnel: feature that allows pedestrians to pass under transportation infrastructure (railroad or roadway)

Bridge: structure that carries transportation infrastructure (railroad or roadway) over another feature (manmade or natural)

office uses within the station site. Additionally, there was agreement that other opportunities for transit oriented development should not drive the site selection; however, TOD potential should be evaluated based on selected sites, market demand, and consistency with local plans.

Site Access and Circulation

Overall, stakeholders expressed a strong desire for the new train station to have a connection or relationship to Route 30 and East Whiteland Township's plans for revitalization of the corridor. In addition, access to Immaculata University was a key destination for direct and convenient access to the train station. Stakeholders also noted the importance of providing vehicular access to the station, particularly connections to the nearby regional highways, including US 202, US 30, and the PA Turnpike.

Access and circulation was a concern for stakeholders, particularly because the railroads act as barriers to north-south circulation today. There are a limited number of roadways that cross the Amtrak and Norfolk Southern tracks, namely Phoenxiville Pike, Ravine Road, and Sproul Road (Route 352). All of the railroad and roadway bridges for these corridors are constrained in terms of width and/or height. These constraints limit mobility for drivers, bicyclists, pedestrians, and emergency vehicles, and also contribute to congestion. Stakeholders noted that roadway or bridge improvements will be needed to accommodate access to the new station or possibly a new roadway connection will need to be provided. East Whiteland Township's Route 30 Corridor Master Plan included the concept of extending Planebrook Road to Gillet Drive/King Road and extending Three Tun Road to Malin Road, which was also documented in the Malin Road Extension Feasibility Study (2010). Stakeholders noted the need for improved access between Route 30 and King Road, especially for emergency vehicles, and suggested these potential roadway connections could be considered and evaluated further depending upon the selected train station site. (Part 2 of this report provides a summary of access and circulation options evaluated after two feasible sites for the train station were selected.)

- Parking

  Stakeholders expressed a desire to maximize parking provided at the station, particularly to help relieve parking constraints at neighboring stations on the Paoli-Thorndale Line and to take advantage of nearby access to the regional highways. However, stakeholders also agreed that a parking garage is not essential and should be evaluated depending upon the site selected, available

footprint for parking, and potential cost. Additionally, a garage could be considered as an opportunity for Transit Oriented Development or Public-Private Partnership in the future. However, this feasibility study will assume that parking at the future station would be limited to surface lots.

Based on a cursory analysis of current license plate survey data (provided by DVRPC) and travel patterns to neighboring stations, it was initially estimated that approximately 100 to 150 current train station users may elect to use a new station in East Whiteland over an existing neighboring station, such as Paoli, Malvern, or Exton. The analysis was based on riders electing to drive and park at a station that is closer to home. This cursory analysis did not account for growth in ridership and was not based on ridership forecasts for the new station. Given the anticipated growth in both population and employment in East Whiteland Township alone, it was estimated that a viable station site must be able to support 250 to 300 parking spaces at a minimum. Additionally, there is a desire to have capacity for expansion to 350 to 400 spaces in the future. This supply of parking is generally consistent with other stations along the Paoli-Thorndale rail line. A map summarizing this analysis can be found in Appendix 1.5. These determinations were used to help identify potential minimum site requirements for a train station in East Whiteland Township. Typical best practices dictate that parking needs analyses account for projected ridership. However, that information was not available at this stage in the East Whiteland Train Station Feasibility Study. (Part 3 of this report provides a summary of ridership forecasts developed after two feasible sites for the train station were selected.)

Parking Analysis

License plate survey data was used to determine that the average distance that people are currently driving to park at adjacent stations along the corridor (Paoli, Malvern, Exton, Whitford) was 1.86 miles (however, many are traveling much further). Based on this information, it is reasonable to assume that someone would travel up to 2.5 miles to a new station in East Whiteland Township unless their origin was within one mile of another station. A spatial analysis determined that approximately 120 automobiles meet that basic criteria.

- Bus, Private Shuttles, and Vehicle Pick-up/Drop-off

Stakeholders agreed that the station site should include space for SEPTA bus access, private shuttle access, and area for other vehicular pick-up and drop-off. SEPTA currently operates two bus routes near the study area. Depending upon the selected site, one or both of these bus routes could provide access to the station, if warranted. Currently, several private corporate shuttles serving employers in the Great Valley area of Chester County (included Great Valley Corporate Center) operate from the Paoli Station, where there is limited space for staging. The new station could help to relieve pressure at the Paoli Station and provide similar access to destinations in Great Valley. Finally, areas for pick-up and drop-off should incorporate planning for the future of mobility and particularly ridesharing services and autonomous vehicles. (Part 2 of this report includes station concept plans that incorporate pick-

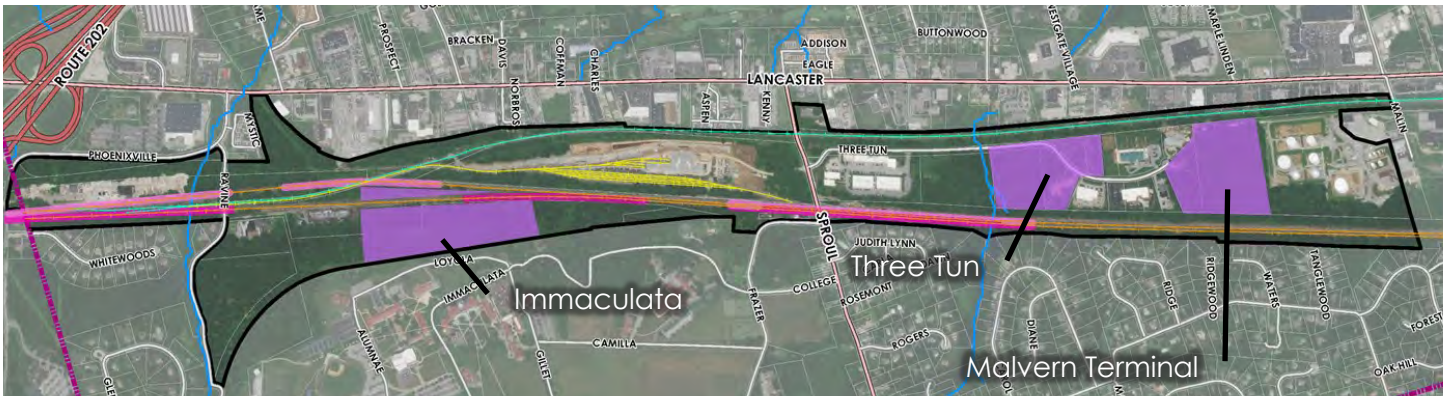
up and drop-off facilities. Additionally, it includes a summary of considerations related to potential SEPTA Bus service to the two preferred station sites.)

- Bicycle and Pedestrian Access

  Stakeholders agreed that providing safe and convenient access for bicyclists and pedestrians is an essential element of the new station. A new station should have good internal and external bicycle and pedestrian access and circulation. In particular, stakeholders expressed the desire to have bicycle and pedestrian access to key destinations within the study area, namely the Route 30 corridor and Immaculata University.

Based on required and desirable station elements, some areas of the study area between Sproul Road (Route 352) and Ravine Road were eliminated from further consideration. The following map of preliminary station sites depicts three general areas that became the focus during the final steps in the evaluation process.

Preliminary Station Sites



Field Visit

A field view of the preliminary sites was conducted by the project team on December 11, 2018. The purpose of the field view was to confirm conditions or issues identified on the base maps and further evaluate land available to support the train station facilities, access and circulation for all modes, potential station and platform configurations, and constructability. Observations and photographs were taken from publicly accessible locations and within properties where access was granted. Additionally, drone images and videos provided by SEPTA were used to evaluate other locations not easily accessible. As a result of the field visit, none of the three preliminary station sites were eliminated from consideration. Rather, the field visit observations confirmed that the preliminary station sites were viable and should be evaluated further.

Service Frequency and Reliability

Another factor considered during site selection is train service frequency and reliability, which depend on the existing infrastructure and demand. Currently, SEPTA provides regional rail service approximately every half hour to the Malvern Station and every hour to the Exton Station. This difference is due to the need for a siding or alternative track for engineers to safely inspect trains at the end of each run without the potential of disrupting service on the mainline. There is a siding available at Frazer Yard, allowing SEPTA to inspect and effectively "turn the train around" to provide inbound service. Given the current conditions and operations, a station located east of Frazer Yard could become the first/last stop for SEPTA service approximately every half hour. Under current conditions, a new station located west of Frazer Yard would likely only have hourly service, since there is currently not a location for the train to easily change the direction of service.

PennDOT and Amtrak are evaluating potential rail infrastructure improvements that will facilitate half hourly service to stations west of Frazer Yard and as far as Exton. The 2015 Pennsylvania State Rail Plan includes a capital improvement project called "New Potts Interlocking." As listed in the plan, this includes a new interlocking west of the Exton Station, along with removing a switch at Glen and retiring the Downs interlocking for an estimated cost of $23.4 million. PennDOT noted that funding is not yet identified, and these potential passenger railroad infrastructure improvements are still being evaluated. However, if these or equivalent improvements are constructed, it will be feasible to provide SEPTA regional rail service every half hour to a station site west of Frazer Yard.

Pennsylvania State Rail Plan

SEPTA representatives also noted that due to the current track configuration, the reliability of service is also reduced west of the Frazer Yard. More specifically, west of Frazer SEPTA and Amtrak share two tracks and they do not have reverse running. Currently, there are no crossovers between the tracks until Thorndale. Therefore, if there is a track problem or other issue west of Frazer Yard, service may be terminated. Whereas, if a track or other issue occurs east of Frazer Yard, limited levels of service may be maintained because there are multiple tracks and more crossovers which allow SEPTA and Amtrak trains to bypass problems.

The two preliminary sites east of Frazer Yard on Three Tun Road are comparable and could support similar levels of service. In assessing the two, the area closer to Sproul Road (Route 352) provides more spacing between Malvern Station and the proposed station, which is preferable

Railroad Terminology

Reverse Running: The ability to run in the opposite direction than the normal flow. Track signals are often setup to control train movements in one direction only. This limits the ability to run trains in the opposite direction. A bi-directional signal system allows reverse running to be remotely controlled and provides flexibility to adjust operations, if needed.

for railroad operations. Additionally, this area does not involve property owned by Buckeye Partners for their Malvern Terminal, which includes the storage and transmission of heating oil, gasoline, ethanol, biodiesel. Since there were no distinctive advantages associated with the site involving the Malvern Terminal, it was dismissed from further consideration.

Although the preliminary site west of Frazer Yard may have lower levels of train service, it does offer other advantages, such as direct access to Immaculata University. As a result, this preliminary site was retained for further evaluation.

Preferred Station Sites

The site selection evaluation process resulted in the identification of two preferred station sites:

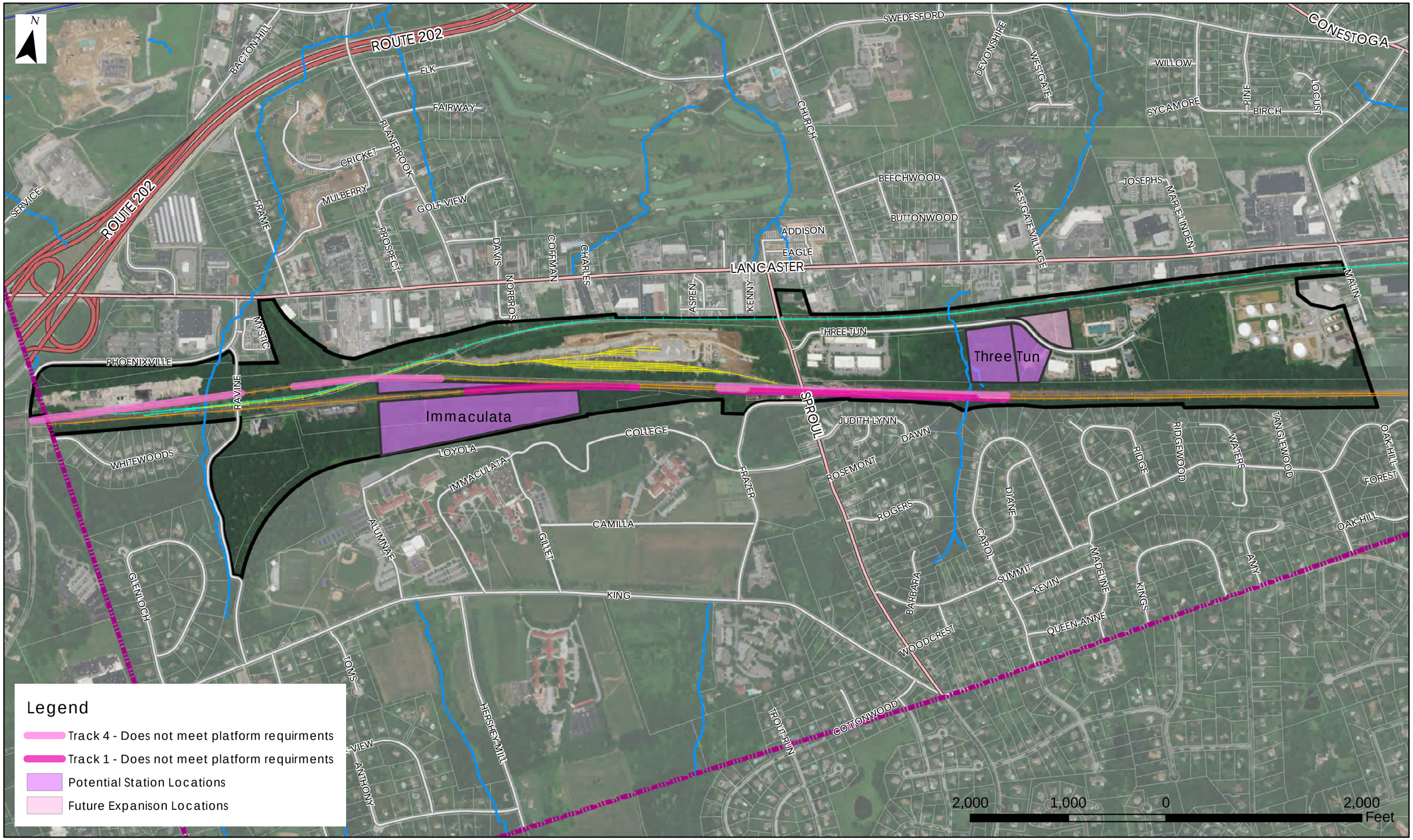
- **Immaculata**—site west of Sproul Road (Route 352)
- **Three Tun**—site east of Sproul Road (Route 352)

These locations are depicted on the Preferred Station Sites Map. More detailed descriptions, maps, and a summary of the advantages and disadvantages of each site are highlighted in the following pages.

Station conceptual design and features, operations and service, and potential future ridership for both of these potential station sites are further detailed in Part 2 and Part 3 of this report.

EWT Train Station Feasibility Study

Preferred Train Station Locations



Immaculata Station Site Profile

Characteristics

The Sisters, Servants of the Immaculata Heart of Mary (Sisters IHM) own a 27-acre parcel in use by Immaculata University, immediately between the University proper and Amtrak's Keystone line that was formerly occupied by the West Chester Railroad. The parcel stretches from Ravine Road in the west nearly the entire way to Frazer Road in the east. This parcel is heavily wooded, and it is difficult to determine the exact location of the abandoned railroad bed. Steep slopes exist on the south side of the property (adjacent to the University). However, much of the property is relatively flat and developable. This parcel is in proximity to the Norfolk Southern crossover where the freight line joins Amtrak's Keystone Corridor.

ADVANTAGES

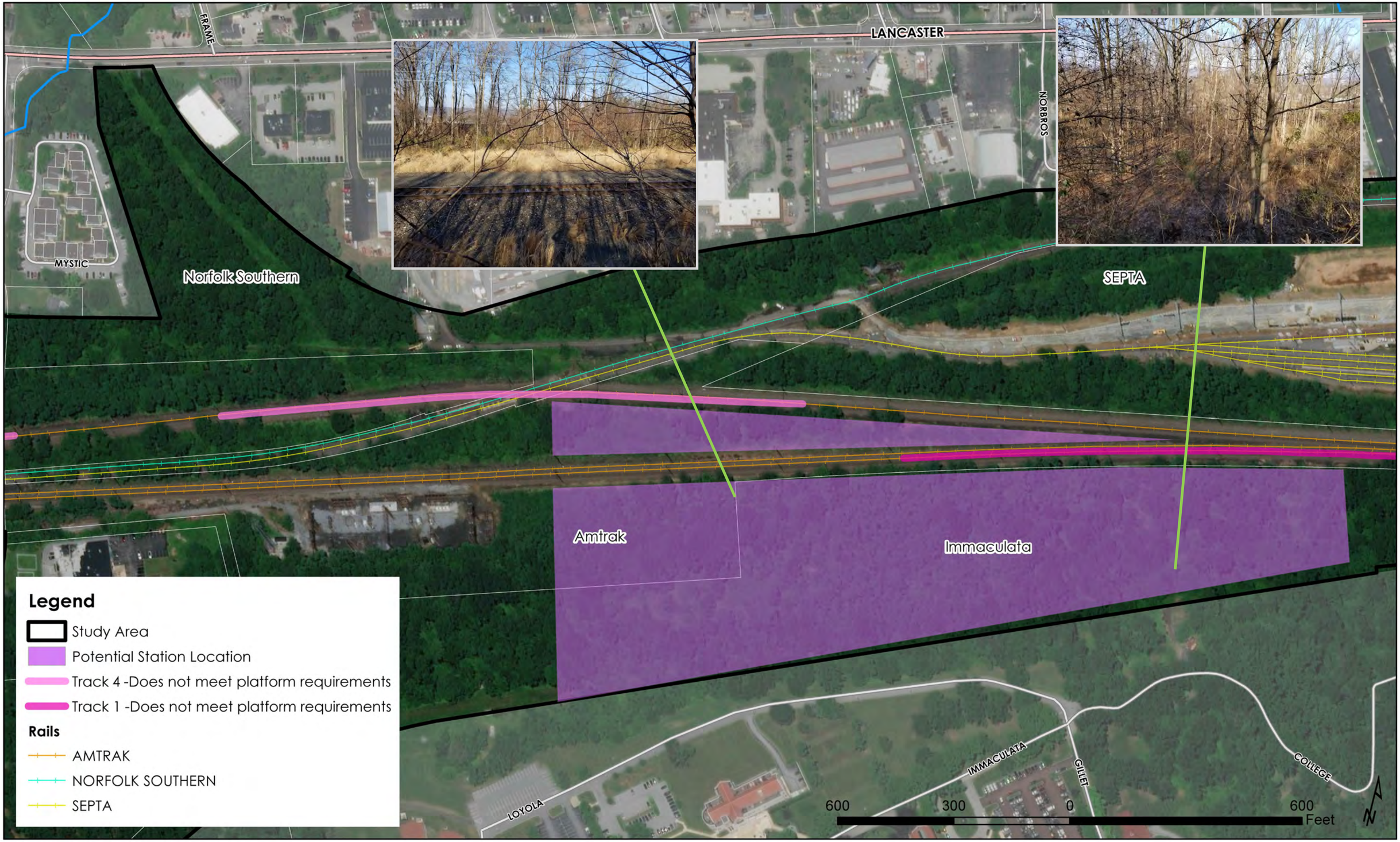
- Located half-way between Malvern and Exton; approximately three miles from each
- Minimal need for track work
- Multiple possible access points
  - ◊ Ravine Road
  - ◊ King Road
  - ◊ Sproul Road (Route 352) to Frazer Road/College Ave/Grotto Drive
  - ◊ Route 30/Phoenixville Pike—requires coordination with Norfolk Southern
- Ample developable land for station facilities and parking with room for expansion
- Center median station area provides room for different platform and track configurations
- Opportunity for direct pedestrian connection to Immaculata University, Camilla Hall, Villa Maria House of Studies, and William Henry Apartments
- Key parcel privately owned by the Servant Sisters of IHM for use by Immaculata University
- Consistent with East Whiteland Township plans for revitalization along Route 30

DISADVANTAGES

- Multiple rail lines to cross over for connection and access on the north side of the tracks
- Difficulty constructing pedestrian overpass due to overhead wire (for traction and signals) configuration
- Ravine Road connection to Route 30 limited by four low-clearance tunnels
- Sproul Road (Route 352) connection to Route 30 limited by one low-clearance tunnel and bridge over Norfolk Southern rail lines
- Connection to Route 30 limited—difficult to create "village" around site
- More difficult to provide higher frequency of service since it is west of Frazer Rail Yard without new "Potts" Interlocking
- Some areas with steep slopes (particularly east of the preferred station location); may impact station access

EWT Train Station Feasibility Study

Immaculata Station Site



Three Tun Station Site Profile

Characteristics

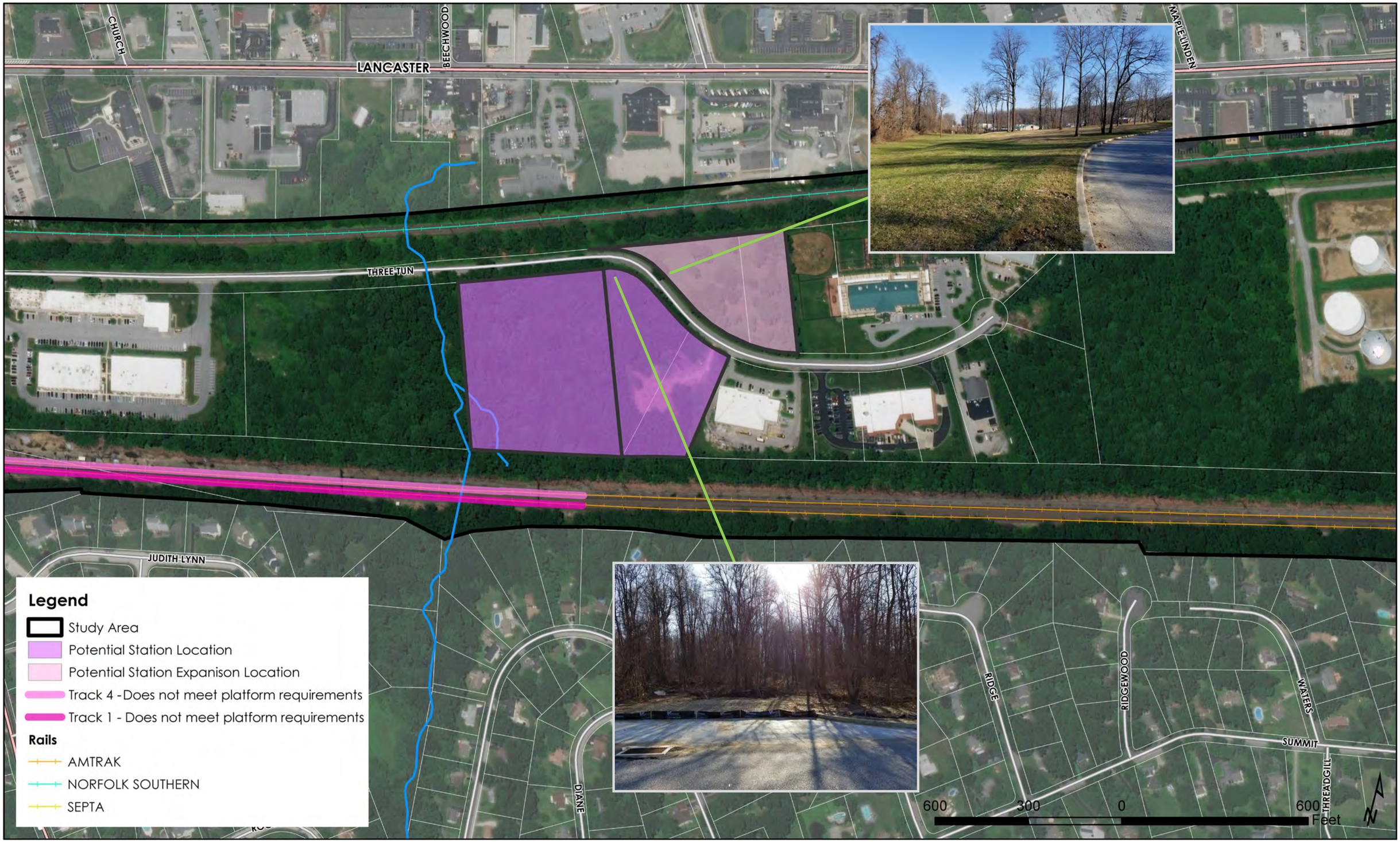
There are multiple available lots located along Three Tun Road to the east of Sproul Road (Route 352) that are vacant and available for development. The parcels are bounded to the north by the Norfolk Southern line and to the south by Amtrak. All of the parcels are easily accessed from Sproul Road (Route 352) via Three Tun Road. The adjacent land uses along Three Tun Road are primarily light industrial. Opposite the parcels, south of the Amtrak line, is a residential neighborhood. The parcels are located partially within an interlocking area, and access to the rail line is obstructed by steep slope areas.

ADVANTAGES

- Three Tun Road easily accessible by automobile from Route 30 via Sproul Road (Route 352)
- Land available and ready for development
- Additional parcels provide opportunity for expansion
- May be possible to retrofit existing bridge carrying Sproul Road (Route 352) over Norfolk Southern with pedestrian infrastructure
- Can accommodate half-hourly service

DISADVANTAGES

- Need to assemble multiple privately owned parcels with development potential
- Potential for site development for commercial use in the near term
- Available parcels not directly adjacent to feasible platform location, but still accessible
- Direct connection to Route 30 requires further evaluation
- No pedestrian access for Immaculata University
- Adjacent well established residential area on opposite side of tracks limits vehicular access and residents may have concerns regarding potential impacts
- Some areas with steep slopes, particularly adjacent to the railroad tracks
- Difficulty constructing pedestrian overpass due to overhead wire (for traction and signals) configuration

EWT Train Station Feasibility Study

Three Tun Station Site