Exton Station Area Concept Plan

October 2018

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

The Delaware Valley Regional Planning Commission is the federally designated Metropolitan Planning Organization for a diverse nine-county region in two states: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey.

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

DVRPC's vision for the Greater Philadelphia Region is a prosperous, innovative, equitable, resilient, and sustainable region that increases mobility choices by investing in a safe and modern transportation system; that protects and preserves our natural resources while creating healthy communities; and that fosters greater opportunities for all.

DVRPC's mission is to achieve this vision by convening the widest array of partners to inform and facilitate data-driven decision-making. We are engaged across the region, and strive to be leaders and innovators, exploring new ideas and creating best practices.

DVRPC is funded through a variety of funding sources including federal grants from the U.S. Department of Transportation's Federal Highway Administration (FHWA) and Federal Transit Administration (FTA), the Pennsylvania and New Jersey departments of transportation, as well as by DVRPC's state and local member governments. The authors, however, are solely responsible for the findings and conclusions herein, which may not represent the official views or policies of the funding agencies.

Cover Photo Source: DVRPC (1958-2015)

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EXECUTIVE SUMMARY

West Whiteland Township is a place where transportation infrastructure and planning is valued. The municipality is home to assets such as Exton Station (Amtrak and Southeastern Pennsylvania Transportation Authority [SEPTA] service), the former Philadelphia and Thorndale (P&T) Rail Line right-of-way, and the crossroads of two major roadways (US 30 and PA-100) that serve Chester County and beyond. The community is a mix of residential, commercial, and light industrial land uses. With both employment and population expected to soar (in comparison to the rest of the Delaware Valley Region), the municipality is seeking ways to manage this growth and provide needed services, including transportation.

The Delaware Valley Regional Planning Commission (DVRPC) was asked to coordinate existing ongoing plans and projects and gain consensus with a stakeholder committee for a program of phased improvements that can be made over time as funding is available at and around Exton Station. This includes, but is not limited to, new access points for vehicular, bicycle, and pedestrian movements, as well as safe bus stops and layovers, and expanded parking.

Steering committee members involved in the planning process who helped to prioritize improvements were Chester County Planning Commission (CCPC), Krapf's Coaches, Pennsylvania Department of Transportation (PennDOT; District 6.0 and Central Office), SEPTA, Transportation Management Association for Chester County (TMACC), and West Whiteland Township.

Additional local and regional stakeholders were asked to participate in a workshop and asked for their opinions about improvements for the station area. Attendees other than those listed above included: Exton Region Chamber of Commerce; Gannett Fleming, Inc.; MacMahon Associates; Michael Baker; and West Chester University.

GUIDING PRINCIPLES

The project team developed and prioritized recommendations for Exton Station and the surrounding area using the following three principles. Each principle is coupled with near- and long- term strategies that stakeholders can use as guidance to achieve them.

Principle: Extend and integrate the town center

PA-100, from Business US 30 near the Exton Square Mall to the US 30 Bypass ramps, is part of West Whiteland Township's Town Center District zoning. This extent is shown in the map on the right. The corridor currently has high volumes of commuter, commercial, and freight traffic, and has developed attractive walking and biking facilities along both Commerce Drive and within Main Street at Exton. To continue to maintain this balance, the community should pursue projects that reinforce this shared character by making it safer for all modes while also extending it south so that the portion of PA-100 adjacent to Exton Station has the character of a multimodal arterial roadway rather than a limited access highway.

Near-term strategies

- Continue pedestrian facility improvements along PA-100, using similar materials and design elements found in the town center.
- Implement a new signalized intersection at Mountain View Drive.
- Plan for curbside bus stop locations along PA-100 at local connectivity nodes (Business US 30, Commerce Drive, Mountain View Drive).

Long-term strategy

- When US 30 bypass is reconstructed, pursue leaner configurations with smaller interchange footprints so that space can be re purposed for other land uses and modes.

CORRIDOR RECOMMENDED TO EMPHASIZE TOWN CENTER ZONING DISTRICT

Source: DVRPC (2018)

Principle: Focus public transit investments where transit can succeed

Exton Station is a major public transit asset connecting West Whiteland Township with "Main Line" communities, Philadelphia, Harrisburg, and the entire Northeast megaregion.

However, other local transit service (bus service) in the area is infrequent and circuitous, and has fragmented stop patterns that are difficult or impossible to cost-effectively serve. This is due to the community advocating to serve major destinations, as well as residential communities, that are not along a single roadway or straight path. This limits frequencies and usefulness for many trip purposes. For short trips within the community, Lyft or Uber service is available within a few minutes most times of day, at a cost not much greater than base transit fare- and the community's better than average biking and walking connectivity makes those modes competitive with transit as well.

Therefore, the community should focus on public transit improvements that serve regional travel markets where public transit can and will succeed. In addition to Exton Station, this includes a growing market for increased north-south bus service along PA-100. It should also be noted that two of Chester County's priorities for new commuter service in the Chester County Public Transportation Plan (Exton to West Chester and Exton to Eagle) serve the PA-100 corridor and are proposed to converge at Exton Station.

Near-term strategies

- Continue to advance low-cost, tactical connectivity improvements at Exton Station.
- As station improvement projects progress, ensure they are adaptable to serve multiple purposes. For example, SEPTA's proposed bus loop can accommodate their service (current and future) but should also be flexibly designed to accommodate drop-offs and corporate shuttles.
- Plan for curbside bus stop locations along PA-100 at local connectivity nodes (Business US 30, Commerce Drive, Mountain View Drive) that can be served by current services and are equipped to accommodate higher levels of service in the future.

Long-term strategy

- Pursue a consolidated station facility at full build-out that integrates structured parking (if built) with a bus loop and layover capacity and direct connection with the new Chester Valley Trail (CVT) Extension.

EMPHASIZE PUBLIC TRANSIT INVESTMENT WHERE TRANSIT CAN SUCCEED

Source: DVRPC (2018)

Principle: Maximize local connectivity and safe crossing for pedestrians and bicyclists

In recent years West Whiteland Township and its partners have made considerable efforts to improve local pedestrian and bicycle connectivity. This includes efforts to establish the new CVT Extension along the former P&T Rail Line right-of-way which promises to be a signature, destination-level regional recreational asset.

The community should continue to pursue projects and design choices that make actual and perceived walking and biking distances smaller with new connections that are comfortable to use. In addition, there may be ways to leverage the new elevated trail connection as an economic and community development rather than just a recreational asset.

Near-term strategies

- Continue to pursue sidewalk, trail, and crosswalk connectivity projects, and make connectivity improvements a routine part of development review and approval.
- Pursue safety improvements to make crossing wider, busier roadways feel more comfortable on foot or by bike, such as leading pedestrian intervals at traffic signals, and pedestrian refuge islands in medians, especially at local connectivity nodes (Business US 30, Commerce Drive, Mountain View Drive).

Long-term strategy

- Pursue high-quality, dedicated trail connections along north-south axes through (over or under) the US 30 expressway, to connect the new CVT Extension with local neighborhoods and commercial centers like Main Street at Exton, and with existing bicycle and pedestrian infrastructure.

EMPHASIZE AND MAXIMIZE LOCAL CONNECTIVITY

Source: DVRPC (2018)

SUMMARY OF RECOMMENDATIONS

The recommendations of this report aim to improve access to Exton Station using non-motorized and public transportation. The figure to the right illustrates three possible scenarios of how the recommendations could be implemented over time, depending on factors the local stakeholders deem to be most important.

Scenario 1: Local Connectors recommends non-motorized improvements within and around Exton Station that will help it to feel better locally connected for pedestrians and cyclists. In all scenarios this study recommends (with the specified conditions) that the Pending Project Outcomes, Short-Term Tactical Recommendations, and Major Capital Improvements: Pedestrian and Bicycle Infrastructure be implemented.

Scenario 2: Continued Growth shows that building a parking structure, per SEPTA's capital plan, should first consider improving pedestrian and bicycle connections within the station and to the surrounding areas. It also indicates the need for a four-way intersection at PA-100 and Mountain View Drive in order to handle the increased traffic volumes that would be induced by a parking structure.

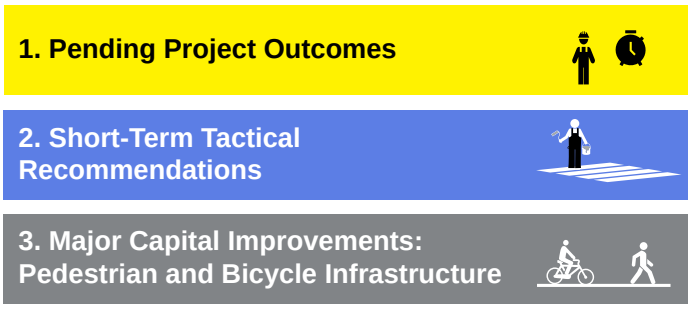
Scenario 3: Limited Capacity highlights the opportunity for a bus loop but does not include the new four-way access point into the station or a major parking expansion.

Other combinations of these recommendations are also possible.

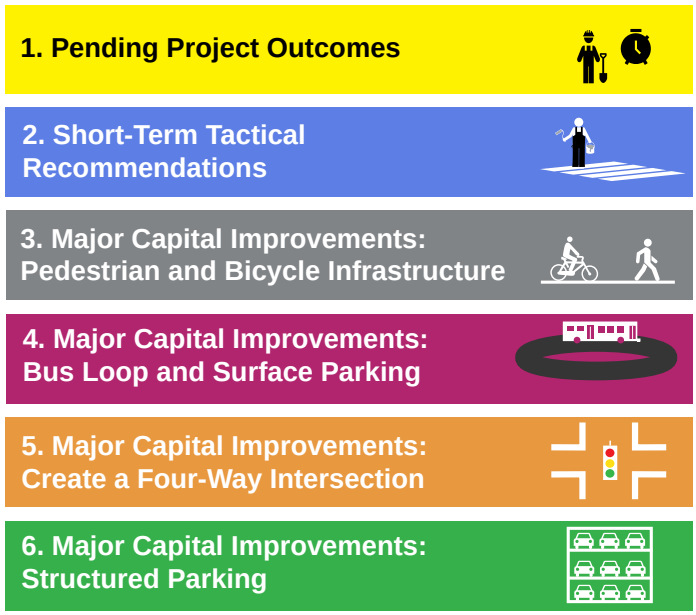
Providing more non-motorized and public transit connections could alleviate some existing congestion in the corridor. Prioritizing local transportation planning is needed to ensure that residents, employees, and visitors have the ability to make local trips in a safe and timely manner.

RECOMMENDATION SCENARIOS

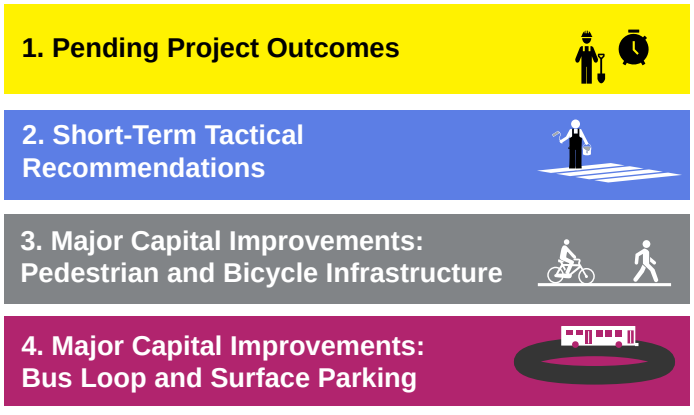
Scenario 1: Local Connectors



Scenario 2: Continued Growth



Scenario 3: Limited Capacity



Source: DVRPC (2018)

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CHAPTER 1: INTRODUCTION

PROJECT BACKGROUND

Exton Station is centrally located in Chester County in West Whiteland Township, with ample highway access, and it is in proximity to several residential developments and employment centers. Exton Station is well used by SEPTA passengers, and between 2001 and 2015 SEPTA Regional Rail ridership nearly doubled (see Figure 1.1). There is service at or close to the station from SEPTA Regional Rail and bus, Amtrak, and shuttles operated by Krapf's Services and West Chester University.

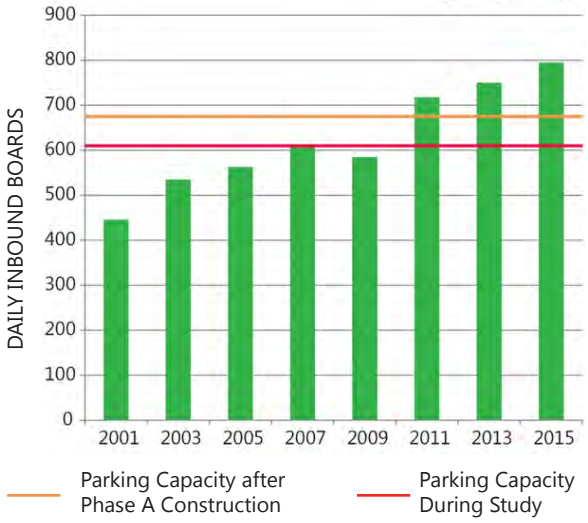
However, the lack of local multimodal connections hampers a passenger's ability to use the station without a car. In addition, parking demand exceeds the available spaces during peak periods. A map of Exton Station and the surrounding community is shown in Figure 1.2.

SEPTA acknowledged the importance of this station by adding a two-to-three-phased approach for making improvements.[1]

- In Phase 1 (currently in construction), new high-level platforms will be built. This work is funded through the Station Accessibility Program within SEPTA's Capital Program.
- Phase 2 and a possible Phase 3 include proposed enhancements for other station elements, such as the bus loop; a parking structure; and improved pedestrian, bicycle, and vehicle access. These phases are programmed in SEPTA's Capital Program but are unfunded.

[1] *SEPTA, Fiscal Year 2018 Capital Budget (2017).*

FIGURE 1.1: SEPTA EXTON STATION INBOUND BOARDS AND PARKING CAPACITY

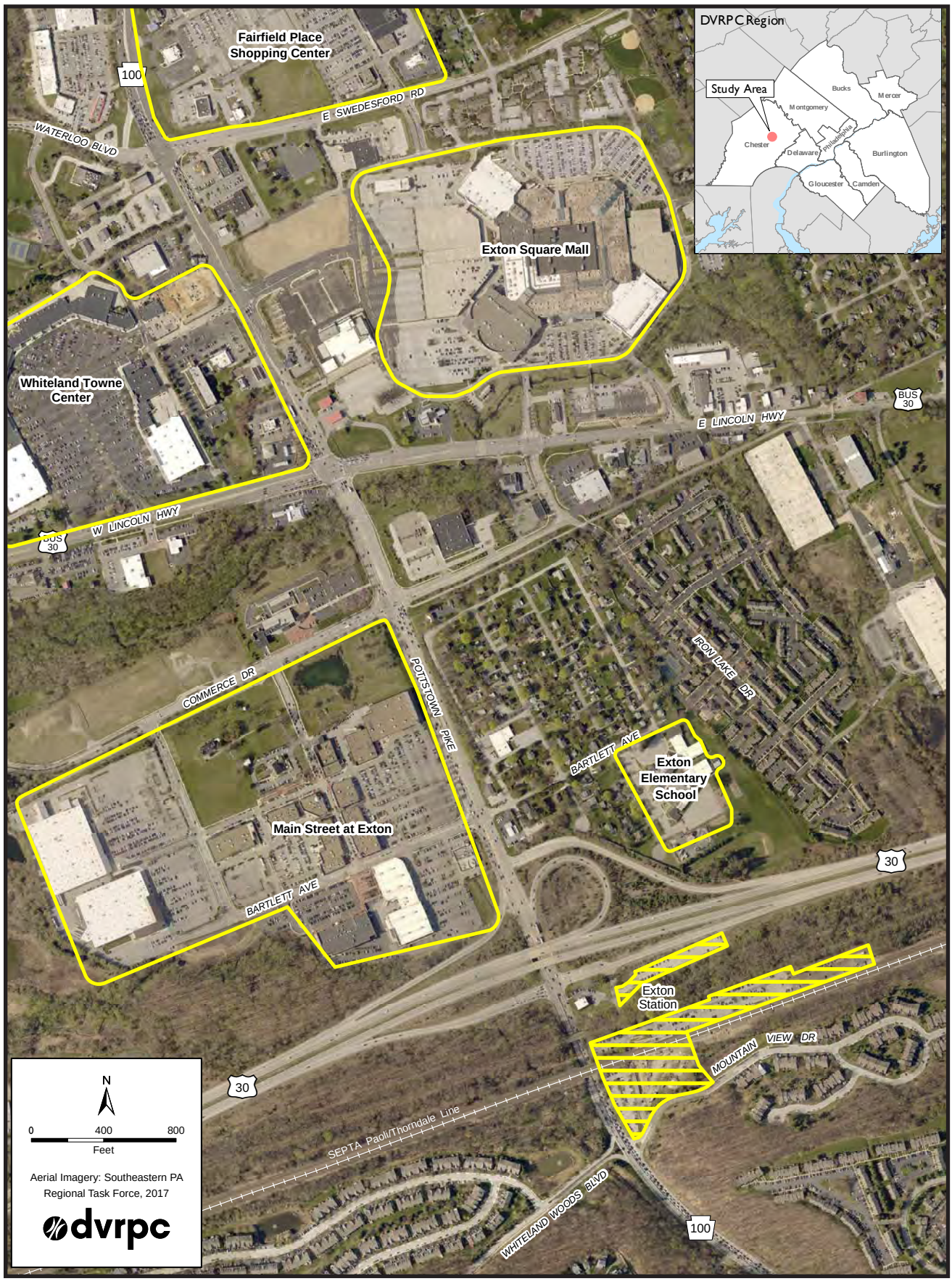


Source: SEPTA Regional Rail Census (2001-2015)

View of Exton Station parking at capacity
Source: DVRPC (2018)

View of Exton Station platforms and kiosks
Source: DVRPC (2018)

FIGURE 1.2: EXTON STATION AND SURROUNDING COMMUNITY



Source: DVRPC (2017)

PROJECT PURPOSE

The central purpose of DVRPC's project is to develop a coordinated and prioritized plan of the ongoing efforts between SEPTA, PennDOT, Amtrak, Chester County, and West Whiteland Township for phased improvements at and around Exton Station.

The scope includes, consideration of new access points for vehicular, bicycle, and pedestrian movements, as well as safe bus stops and layovers, and a parking garage at Exton Station. Maximizing local connectivity and crossability for pedestrians and bicyclists is a key principle for this plan.

Steering Committee

DVRPC asked members from Chester County, SEPTA, Transportation Management Association of Chester County (TMACC), PennDOT District 6.0, PennDOT Central Office, and West Whiteland Township to participate in the steering committee for this project. Members were asked to attend meetings and give feedback on recommendations to the DVRPC project team.

Lack of Local Connectivity

Regional connectivity (roads and rail) is strong in this community. Likely due to these connections, the area has experienced growth in both employment and population (up to 20 percent), and is projected to continue growing through 2045.[2] However, local connectivity, such as sidewalks and local roads, are fragmented. This causes customers within walking distance of Exton Station to drive, adding to the existing congestion of these regional connections.

Major infrastructure Crossing of US 30 and PA-100

Source: DVRPC (2016)

[2] *DVRPC, County and Municipal Population and Employment Forecasts 2015-2045 (2016).*

RELATED STUDIES

West Whiteland Township is an active community for transportation planning and implementation. This section inventories published and ongoing plans used by the DVRPC project team for guidance to develop recommendations.

West Whiteland Township Comprehensive Plan (1994)[3]

This plan is based on growth in West Whiteland Township (commercial, industrial, residential, and institutional development) that occurred between 1983 and 1994. The plan identifies issues, opportunities, and recommendations for private automobiles, transit, bicycle, and pedestrian travel. Those that align with DVRPC's findings and recommendations are listed below.

Issues and Opportunities

- SEPTA stations have inadequate parking.
- Township lacks a comprehensive connected transportation network to accomplish auto trip reduction. One method to reduce trips would be to create new transit routes to fill the gaps in the system; funding could come from both SEPTA and local businesses.
- Encourage *"walk-in"* connections between residential and office development and SEPTA's Exton Station (formerly R5).

Recommendations

- Widening of PA-100 from Shoen Road to the US 30 bypass;
- Intersection improvements at PA-100 and Commerce Road; and
- Congestion management strategies:
  - Increase the number of Employee Trip Reduction Plans for local businesses, in some parts of the county.
  - Create a trip reduction ordinance where developers are required to limit new development's trip-making potential.

[3] *West Whiteland Township, West Whiteland Township Comprehensive Plan (1994).*

Trail & Path Planning, A Guide for Municipalities (2007)[4]

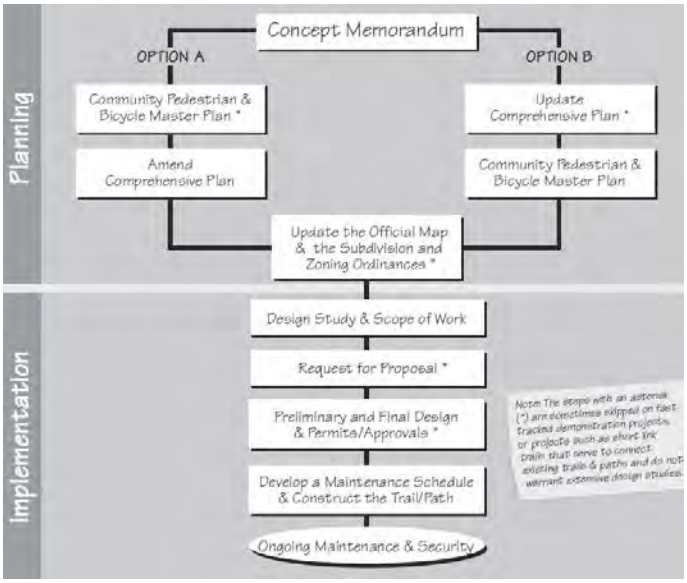
The document was created to assist municipalities building trail and path networks in Chester County. There is guidance regarding active planning and implementation, including how to be sensitive when reaching out to the public and landowners for new trails and paths. Figure 1.3 is an excerpt from the plan about trail planning and implementation. This is relevant because it explains the steps to create high-quality non-motorized connections in Chester County and can be used as a reference for adding elements in the Exton Station study area.

Central Chester County-Bicycle and Pedestrian Circulation Plan (2013)[5]

Seven municipalities, including West Whiteland Township, participated in creating the Chester County-led Central Chester County—Bicycle and Pedestrian Circulation Plan. The vision of the document is, "Healthy, vibrant, and economically viable communities that facilitate and encourage more walking and biking," and identifies 10

[4] *Chester County Planning Commission, Trail & Path Planning: A Guide for Municipalities (2007).*
[5] *Chester County Planning Commission and Chester County Health Department, Central Chester County-Bicycle and Pedestrian Circulation Plan (2013).*

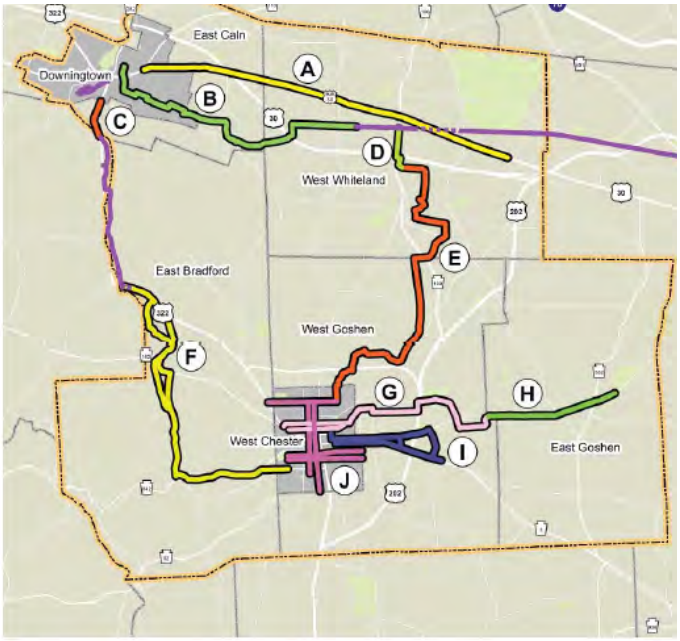
FIGURE 1.3: TRAIL AND PATH PLANNING AND IMPLEMENTATION STEPS



Source: CCPC (2007)

priority projects (as displayed in Figure 1.4) with regional significance for implementation. The document also includes specific recommendations for municipalities regarding intersection improvements, and adding and updating bus shelters.

FIGURE 1.4: CENTRAL CHESTER COUNTY PRIORITY BICYCLE AND PEDESTRIAN CORRIDORS



Source: CCPC (2013)

Lincoln Highway and Whitford Road Corridors Plan (2015)[6]

The study area of this corridor plan overlaps with the larger study area of DVRPC's project. The plan breaks up the primary study area into character areas and secondary study areas shown in Figure 1.5. Exton Station is included in one of the secondary study areas with a blue outline. These are described as areas that may not undergo any physical changes but could be affected by decisions that alter land use along the Lincoln Highway and Whitford Road corridors. The corridor plan acknowledges that traffic volumes are high and arterials are congested during peak periods, and that more investment should be made in non-auto-centric infrastructure.

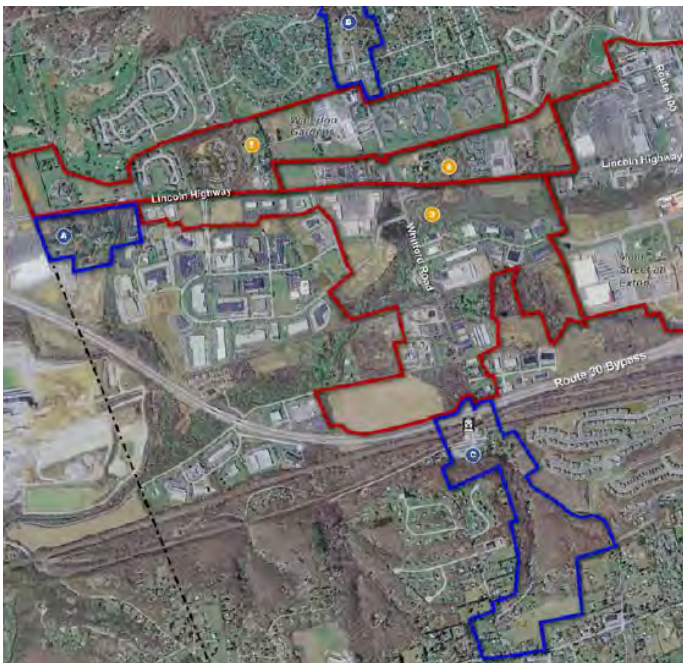
In theory, by providing alternative transportation options, more people may make trips as pedestrians, bicyclists, or transit users, causing a reduction in auto trips.

During public outreach, there was interest in creating better connections between the CVT, job centers, SEPTA's Regional Rail stations, and Main Street at Exton. There is continued support to create a better transit network throughout the township. Two recommendations are listed here and are being studied further. Further explanation and status can be found in the Ongoing Studies section of this chapter and the "Recommendations" chapter, respectively.

- Create connections between the CVT and the signalized intersections and explore rail-to-trail possibilities.

Commission an engineering study to determine a range of low- to high-cost solutions for facilitating pedestrian traffic between Exton Station and Main Street at Exton.

FIGURE 1.5: CHARACTER AND SECONDARY STUDY AREAS



Source: URS Corporation (2015)

[6] *URS Corporation, Lincoln Highway and Whitford Road Corridors Plan (2015).*

Act 209 Transportation Impact Fee Regulation[7,8]

The Pennsylvania General Assembly passed Act 209 of 1990 authorizing municipalities within the Commonwealth to enact, amend, and repeal impact fee ordinances and to charge impact fees to cover the cost of road improvements necessitated by new land development. Impact fees can only be used for the construction of roadway improvements designated in the transportation Capital Improvements Plan.

Road improvements are defined under the act as "the construction, enlargement, expansion or improvement of public highways, roads or streets. This does not include bicycle lanes, bus lanes, busways, pedestrian ways, rail lines or tollways, except where they supplement a roadway project such as by adding sidewalks, crosswalks, or bicycle facilities." In addition, the municipality is required to have adopted a municipal or county comprehensive plan, subdivision and land development ordinance, and zoning ordinance.

This regulation is a way for municipalities to develop a revenue source to fund new capital infrastructure from the public sector. The West Whiteland Code of Ordinances was amended to include the West Whiteland Impact Fee Ordinance (Ordinance Number 427) in November 2015. The West Whiteland Township Board of Supervisors chose to enact this amendment to ensure the transportation system is adequate, safe, convenient, and usable for residents as it continues to grow and develop. Impact fees are only imposed upon development to assist in supporting major transportation capacity improvements in the best interest of the town, and will not be imposed if it is an unfair burden to the developer. This is a funding source that can be used for recommendations in this document.

[7] *PennDOT, Transportation Impact Fees: A Handbook for Pennsylvania's Municipalities (updated 2009).*

[8] *West Whiteland Township, Chester County, PA, West Whiteland Township Transportation Impact Fee Ordinance (1990).*

PA-100 Signals: West Whiteland Closed Loop[9]

PennDOT began traffic signal re-timing work on the PA-100 corridor in June 2013 and completed the initial retiming implementation in December 2013. The purpose was to alleviate congestion along PA-100.

[9] *PennDOT, Technical Project Memorandum, E02891 PennDOT District 6-0 Signal Retiming Initiative (2013).*

FIGURE 1.6: PA-100 INTERSECTIONS IN CLOSED LOOP

Source: PennDOT (2013)

The signals between East Swedesford Road/ PA-100/Waterloo Boulevard and the off-ramp from westbound US 30 and on-ramp from PA-100 to eastbound US 30 were retimed. Figure 1.6 shows a map of the intersections included in this coordination.

The Project Team documented significant reductions in congestion with weekday AM and PM corridor travel times reduced by 27 percent and 28 percent, respectively.

ONGOING STUDIES

West Whiteland Township is actively working on multiple transportation planning and capital construction projects. Figure 1.7 illustrates these projects and where they overlap with DVRPC's study area for the Exton Station Area Concept Plan project. In addition, the descriptions in this section identify how the ongoing work is being used by DVRPC and integrated into the project.

Pottstown Pike Congestion Mitigation Feasibility Study (2017)[10]

West Whiteland Township was awarded $25,000 through DVRPC's Transportation and Community Development Initiative (TCDI) program to identify strategies to alleviate congestion and improve mobility along PA-100 between Boot and Commerce Roads (1.3 miles). In particular, one identified cause of congestion is the awkward access into and out of Exton Station.
The limits of the two studies overlap. DVRPC and the Pottstown Pike Congestion Mitigation Feasibility team collaborated to ensure the two projects advocate for similar goals and recommendations.

The municipality was interested in a comprehensive approach to congestion mitigation. The scope suggested that the following ideas be addressed: increase in capacity, safe accommodations for pedestrians and bicyclists, more intuitive access to Exton Station, intermodal connections, and the preservation and enhancement of quality of life for residents and businesses.

Recommendations from the study that are endorsed by the DVRPC study team are highlighted in the "Recommendations" chapter.

Exton Station Capital Improvement Plan (SEPTA/Amtrak)[11]

This project will likely be constructed in three phases. Phase 1 started in 2015, and it is expected to be completed by 2018. The new construction includes high-level platforms with canopies and wind screens; stormwater management improvements; a station building; and lighting, signage, security features, and passenger amenities. This phase will make the station facilities fully ADA compliant, as shown in green in Figure 1.7. Phases 2 and 3 include the construction of a bus circulation loop with shelters, a fully accessible multilevel parking garage, and pedestrian pathways to the station platforms. The quantity of parking spaces will be determined during design. The elements of this project and design options are addressed in the "Recommendations" chapter.

Route 100 Exton Station Multiuse Trail[12]

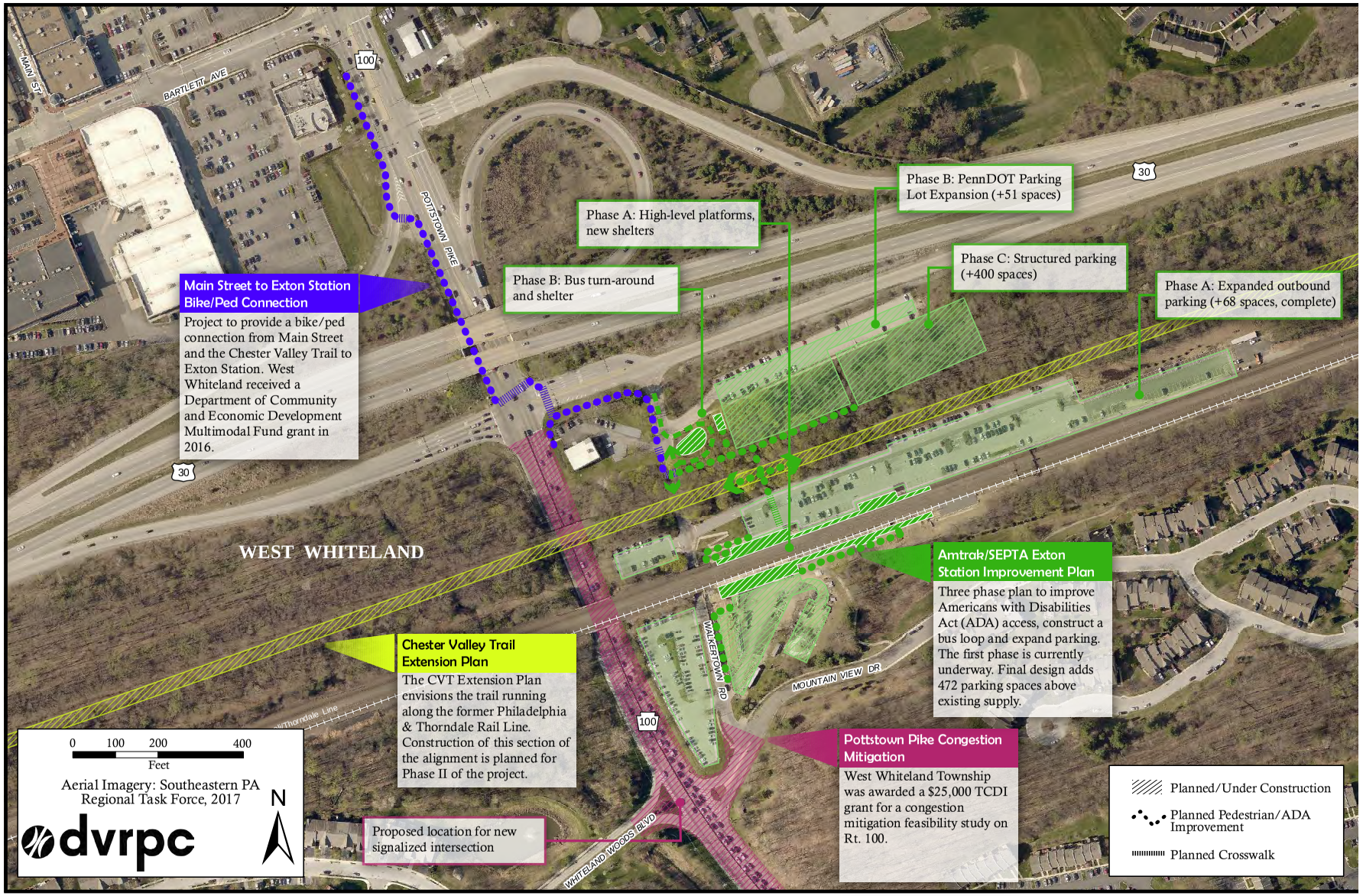
In 2016, West Whiteland Township received Multimodal Grant funds to create a multiuse trail from Exton Station to Main Street at Exton, a lifestyle center. The two sites are less than a half-mile apart but have large sidewalk gaps between them. This project includes implementation funding. A preliminary design is shown in dark purple in Figure 1.7. West Whiteland Township is working with a consultant and PennDOT to come up with the best solution for this new link. This link is also included in the "Recommendations" chapter of this report.

[10] *DVRPC (2017); TCDI Awards and Applications (2017).*

[11] *SEPTA, 2018 Capital Budget Proposal (2017).*

[12] *"Trail Improvments," West Whiteland Township, accessed December 2017, http://www.westwhiteland.org/300/Trail-Improvements.*

FIGURE 1.7: LOCAL ONGOING PROJECTS



Source: Created by DVRPC (2017). Information sources listed on pages 13–15

CVT Extension to Downingtown Feasibility Study/Master Plan[13]

The existing CVT crosses Lincoln Highway (US Business 30) in the northeast portion of Exton Station's study area, and extends approximately a quarter-mile west of PA-100 along Commerce Drive (overlapping the study area of DVRPC's current study).

The goal of Chester County's plan is to determine the feasibility of extending the existing CVT from its current terminus in West Whiteland Township (on Commerce Drive) to the Borough of Downingtown. The preferred alignment will connect the current trail terminus to the former P&T Rail Line, which will serve a portion of the extension to the new end-point in Downingtown. This is an integral part of DVRPC's current study and multimodal vision for Exton Station.

[13] *Chester County Planning Commission, Chester Valley Trail Extension Study (2017).*

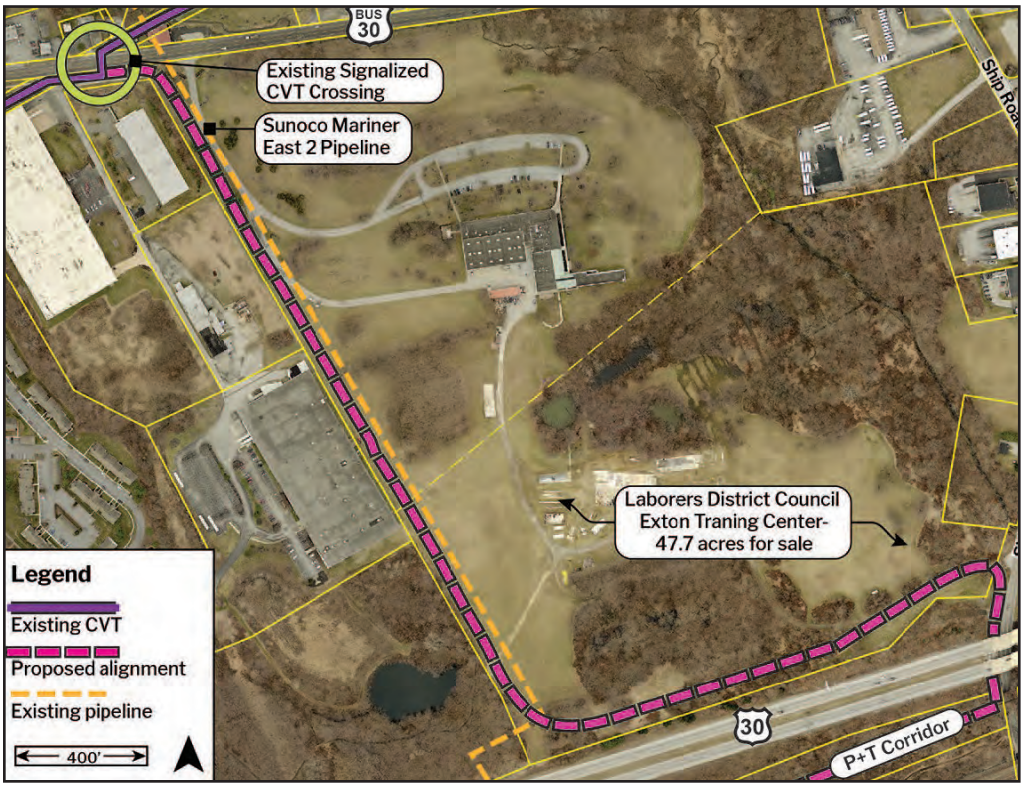
Creating this extension will provide Chester County residents better access to, and further the development of, the Circuit.[14] The preferred alignment of the new multiuse trail is adjacent to Exton Station. Figure 1.8 shows the new proposed connection via Ship Road onto the former P&T Rail Line.

This is preferred by Chester County because all parcels needed to create it are owned by a single entity, making it more feasible. The proposed connection would traverse the south side of Business Route 30 eastward a short distance, then turn south to traverse the western boundary of the Laborer's District Council (LDC) parcel that abuts both Lincoln Highway to the north and Ship Road to the east. The LDC is accepting proposals to sell and redevelop the southern portion that is approximately 48 acres abutting Ship Road and the US 30 Exton Bypass. PennDOT would acquire the former P&T Rail Line from the Norfolk Southern Corporation (the current owner) to provide a pedestrian and bicycle connection between the new trail and Exton Station.

As of 2018, when this study was published, the negotiation is positive, and it is believed that an agreement could be reached between PennDOT and Chester County to allow for trail use on the preferred alternative.

[14] *"About the Circuit Trails," Circuit Trails, accessed December 2017, http://circuittrails.org/what-is-the-circuit.*

FIGURE 1.8: PROPOSED CONNECTION BETWEEN EXISTING CVT AND P&T CORRIDOR



Source: CCPC (2017)

Existing transportation corridors pose significant barriers to trail development because the rights-of-way are limited access or limited in the method they can be expanded to include multiuse trail facilities. DVRPC's team has come to similar conclusions and therefore recommends the preferred alignment discussed in this study.

US 30 RECONSTRUCTION: BYPASS CONGESTION MITIGATION PROGRAM[15]

DVRPC's Congestion Management Process (CMP) reviews all projects funded in the Transportation Improvement Program to ensure consistency with the federally mandated CMP. Projects designated as adding major Single Occupancy Vehicle capacity are required to include a set of supplemental strategies to enhance the benefits of the capacity addition and get the most from the investment. See DVRPC's 2016-2017 CMP Supplemental Projects Status Memorandum (Publication #16016) for more details.

The purpose of this specific project is to reconstruct the mainline pavement of the US 30 Coatesville Downingtown Bypass. This includes the potential for the addition of through lanes and capacity enhancements between PA 113 and PA 340, to be determined by traffic analysis.
The project plans are to reconstruct and widen the mainline shoulders; replace and widen mainline bridge superstructures; construct new ramps to complete partial interchanges; reconstruct, realign, and lengthen all on- and off-ramps to provide storage length for traffic signals and/or ramp metering; and reconstruct arterial overpasses.

Minor improvements to parallel arterial routes may also be included as determined by traffic analysis. CMP commitments for the US 30, Coatesville Downingtown Bypass Reconstruction project also include the following.

- expansion of Intelligent Transportation Systems equipment throughout the corridor;
- signal improvements on parallel arterials;
- improvements to rail transit stations and services in consultation with SEPTA and Amtrak;
- improved access to rail stations; and
- improvements for pedestrians and bicyclists on parallel arterials.

Additionally, improvements at Exton Station, investigation of improved bus connections at Exton Station, and improved bicycle and pedestrian connections to rail stations (including Exton Station) are specifically identified.

This complex project will be designed over the next several years, with construction currently expected in the early to mid-2020s.

[15] *"Overview of Program," PennDOT, accessed December 2017, www.us30-chesco.com/project-information/program-overview/.*

PENNDOT'S ACCESS THE KEYSTONE[16]

The purpose of the *ACCESS THE KEYSTONE* study is to assess and identify opportunities to integrate multimodal access to and from the train stations along the eastern section of the Amtrak Keystone Corridor, between Philadelphia and Harrisburg. With this project, PennDOT is hoping to identify short- and long-term balanced opportunities for consideration as funding becomes available and planning/development progresses in the station areas.

Exton Station is served by Amtrak along the Keystone Corridor. Therefore, it is one of the station areas being considered for access implementation projects through the funding of this project. Figure 1.9 shows the bicycle opportunities suggested on the *ACCESS THE KEYSTONE* website at Exton Station.

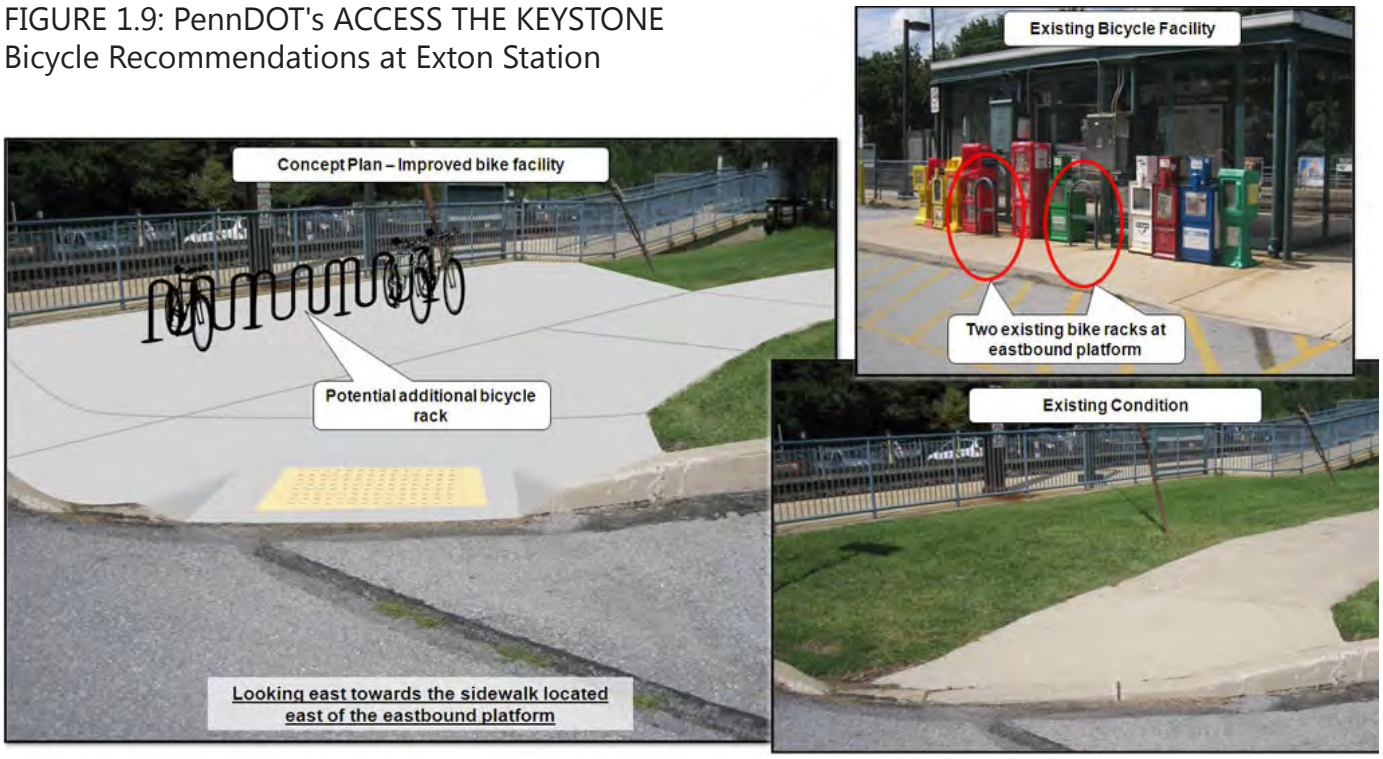
DVRPC and PennDOT District 6.0 and Central Office collaborated to ensure both projects advocate for similar goals and recommendations. In addition, some of the elements from the project website are shown in the "Recommendations" chapter of this study.

CONCLUSION

DVRPC's role is, in part, to take the strongest aspects of these projects and provide a structure that organizes them. The aforementioned studies help to paint a picture of the existing and ongoing projects within the study area. The remaining sections of this report elaborate upon the conditions these studies addressed, and identify scenarios in which these elements come together to improve mobility for Exton Station and West Whiteland Township. Sections of this report elaborate upon the conditions these studies addressed, and identify scenarios in which these elements come together to improve mobility for Exton Station and West Whiteland Township.

[16] *"Welcome," PennDOT Access the Keystone Project, accessed December 2017, www.accessthekeystone.com/.*

FIGURE 1.9: PennDOT's ACCESS THE KEYSTONE Bicycle Recommendations at Exton Station



Source: "Exton Station Bicycle Opportunities," PennDOT ACCESS THE KEYSTONE, accessed December 2017, www.accessthekeystone.com/exton_o_bike.html


SEPTA
Exton
AMTRAK
dvrpc

CHAPTER 2: EXISTING CONDITIONS

INTRODUCTION

West Whiteland Township is approximately 30 miles west of Philadelphia at the center of Chester County. Exton Crossroads is within West Whiteland Township, and folklore says the area may have been named after an "x" on a map denoting what is now the interchange of US 30 and Route 100.[1] Now also at this crossroads is Exton Station with connections to Amtrak (Keystone and Pennsylvanian service), SEPTA Regional Rail (Paoli/Thorndale Line), and SEPTA and Krapf bus lines.

On the Paoli/Thorndale Line, Exton Station is one of the most western (or end-of-line) stations with a large park-and-ride facility. The station is adjacent to Pottstown Pike (PA-100), a major arterial in this part of Chester County and West Whiteland Township. In this area, PA-100 land uses and arterial configuration shift from low-density residential, limited access to an area dominated by signals and large commercial centers, with some pedestrian and bicycle infrastructure. This chapter identifies existing conditions and trends that prompted Exton Station area stakeholders to ask DVRPC to review and analyze the station area, and provide recommendations (Chapter 3) to improve station access.

There are three sections in this chapter. The first section explores the growth, existing transportation options, and land use patterns of the local study area. The DVRPC project team, with stakeholder assistance, determined the local study area as half a mile east and west of PA-100 between Swedesford Avenue to the north and Whiteland Woods Boulevard to the south. The second section identifies the station area, and explains safety access issues at Exton Station. The station study area is the area within a quarter-mile radius of Exton Station.

The in-depth existing conditions analysis highlighted the major barriers that hinder passenger access to Exton Station and the movement throughout the existing transportation network. These are described in the third section of this chapter.

TRENDS IN THE LOCAL STUDY AREA

West Whiteland Township is a growing municipality in the center of Chester County, Pennsylvania. Exton Station is just south of the US-30 Bypass and PA-100 crossing. There are multiple retail shopping centers within a mile of Exton Station, such as Exton Square Mall, Whiteland Towne Center, Fairfield Place, and Main Street at Exton. In addition, there are schools and various types of residential developments. Local streets are residential in nature.

A major draw for residents and employers to West Whiteland Township is the strong regional connections including highway and rail. However, local connections are limited. Exton Station and the surrounding neighborhoods can primarily only be accessed by car because safe pedestrian and bicycle infrastructure is limited. Despite the density of roadways, driving locally and to the station can be difficult. PA-100 has a jersey barrier (or uncrossable median) that divides the right-of-way, forcing southbound drivers and residents of nearby neighborhoods to take longer, circuitous routes that turn what could be a five-minute drive into a 15-minute drive, barring traffic. There is congestion along PA-100, Walkertown Road, and other local neighborhood streets, especially during peak hours. Local buses do not service the stop at the station since there is no safe space for passengers to board and alight along PA-100.

This section highlights trends within the local study area, including demographics and SEPTA station shed data collected by the team, as well as the impact Exton Station has in the regional transportation network. In addition, there is information about existing land use and zoning, and how they affect the character of the local study area and station study areas and the regional, local, and public transit network.

[1] *"History," Revolvy, accessed May 9, 2017, www.revolvy.com/main/index.php?s=Exton%2C+Pennsylvania&uid=1575.*

Population and Employment

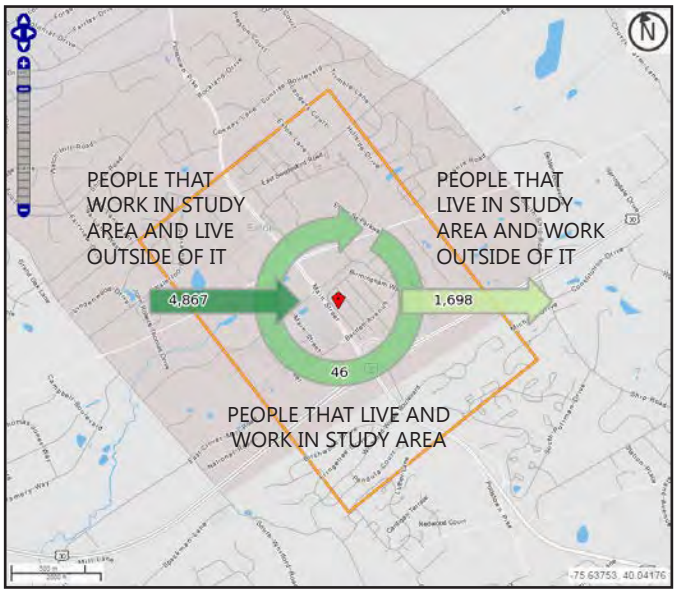
West Whiteland Township and Chester County are projected to grow well into 2045[2], both in terms of employment and population. Table 2.1 compares them to both adjacent Delaware County and the DVRPC region, which have lower projected growth.

Employment

Figure 2.1 illustrates the inflow and outflow of work trips for primary jobs within the local study area. Most employees that work within the local study area live outside of it. Residents that both live and work in the local study area account for a small (.9) percentage of the employees in West Whiteland Township. The same employees are coming to work at primarily large shopping centers and the small industrial park illustrated in Figure 2.2.

Figure 2.3 illustrates the projected change in employment between 2015 and 2045 for West Whiteland Township and its neighboring municipalities. The darkest-shaded municipalities (West Whiteland Township, East Whiteland Township, Uwchlan, and Tredyffrin) are those projected to add more than 6,000 jobs during this time period. With the exception of Uwchlan, the townships with the highest projected growth are located east of Exton Station and farther inbound along the Paoli/Thorndale Line, and inbound to Philadelphia.

FIGURE 2.1: INFLOW AND OUTFLOW OF WORK TRIPS IN THE LOCAL STUDY AREA



Source: U.S. Census Bureau (2017)

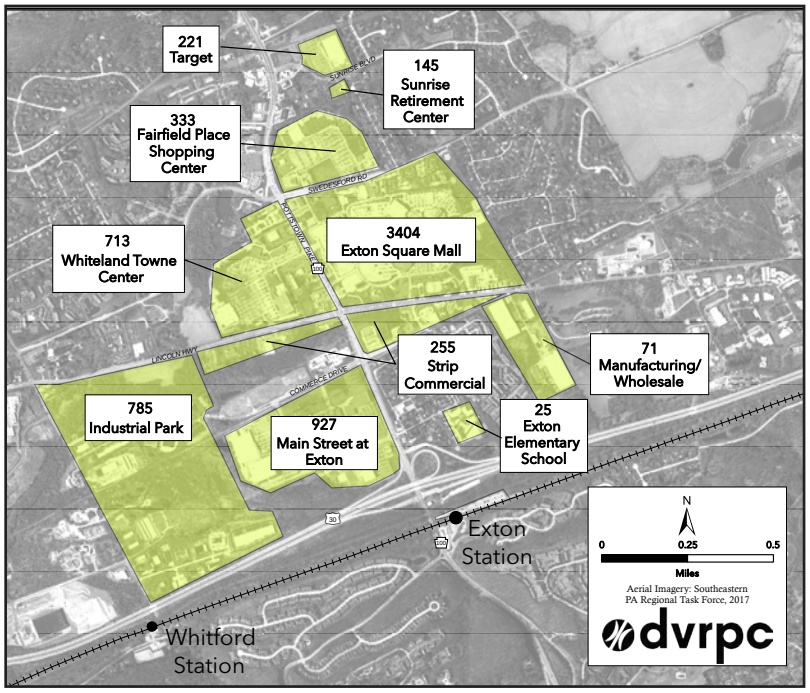
TABLE 2.1: EMPLOYMENT AND POPULATION GROWTH PROJECTED BETWEEN 2015 AND 2045

AREA	2015	2045	% CHANGE
EMPLOYMENT			
Delaware Valley Region	3,168,237	3,541,050	11.8%
Chester County	309,605	397,405	28.4%
Delaware County	268,054	279,050	4.1%
West Whiteland Township	23,476	29,076	26.7%
POPULATION			
Delaware Valley Region	5,717,933	6,376,067	11.5%
Chester County	515,939	662,283	28.4%
Delaware County	563,894	587,037	4.1%
West Whiteland Township	18,450	22,698	23%

Source: DVRPC Adopted Population and Employment Projections 2045 (2017)

[2] *DVRPC, Adopted Population and Employment Projections 2045 (2017) .*

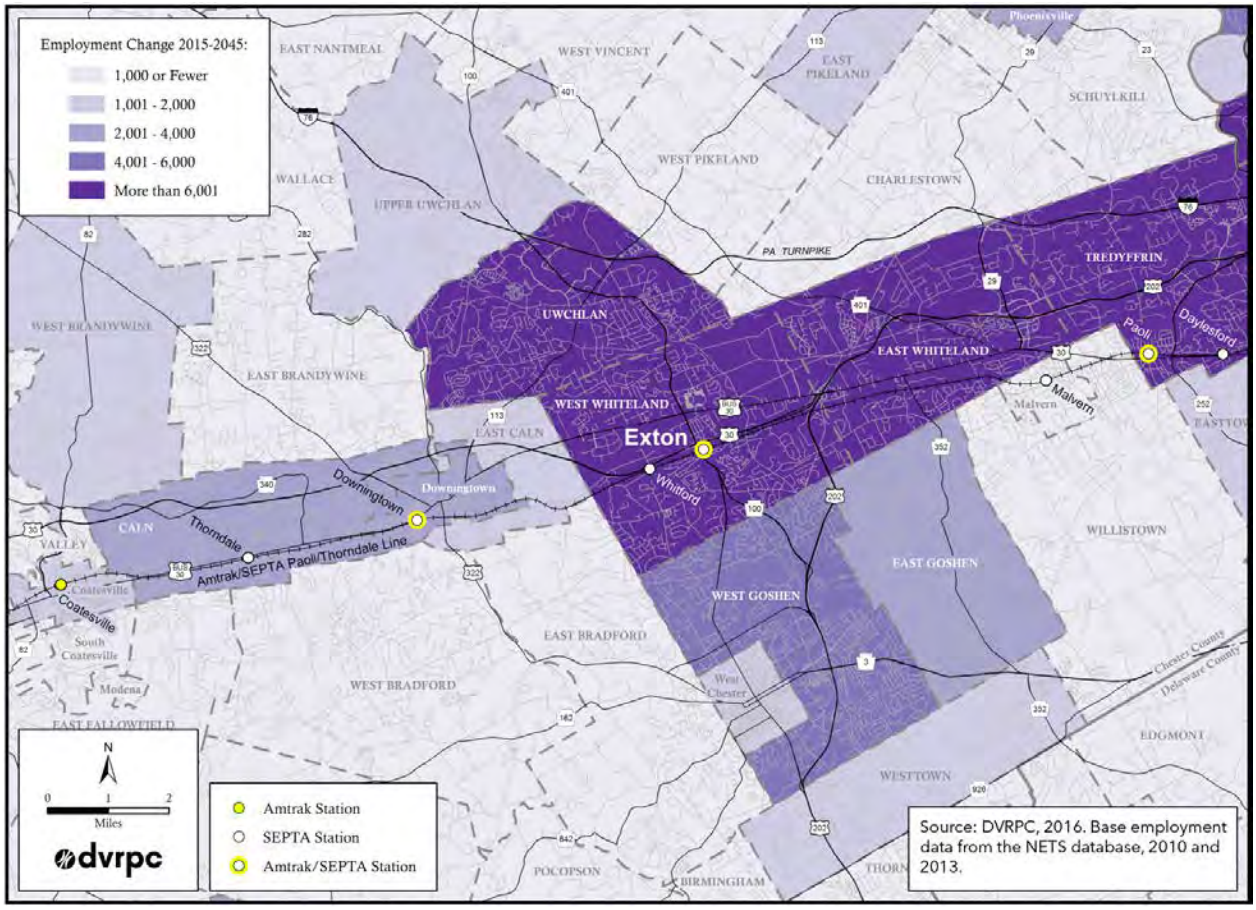
FIGURE 2.2: SUMMARY OF LARGE EMPLOYERS IN THE LOCAL STUDY AREA



ACTIVITY GENERATORS FOR EXTON	EMPLOYEE TOTALS
Whiteland Towne Center	713
Exton Square Mall	3,404
Fairfield Place Shopping Center	333
Target	221
Sunrise Retirement Center	145
Main Street at Exton	927
Exton Elementary School	25
Manufacturing/Wholesale	71
Strip Commercial	255
Industrial	785

Source: National Establishment Time Series (NETS) Database, 2015 Employment totals (2015)

FIGURE 2.3: PROJECTED MUNICIPAL EMPLOYMENT CHANGE BETWEEN 2015 AND 2045



Source: DVRPC (2017)

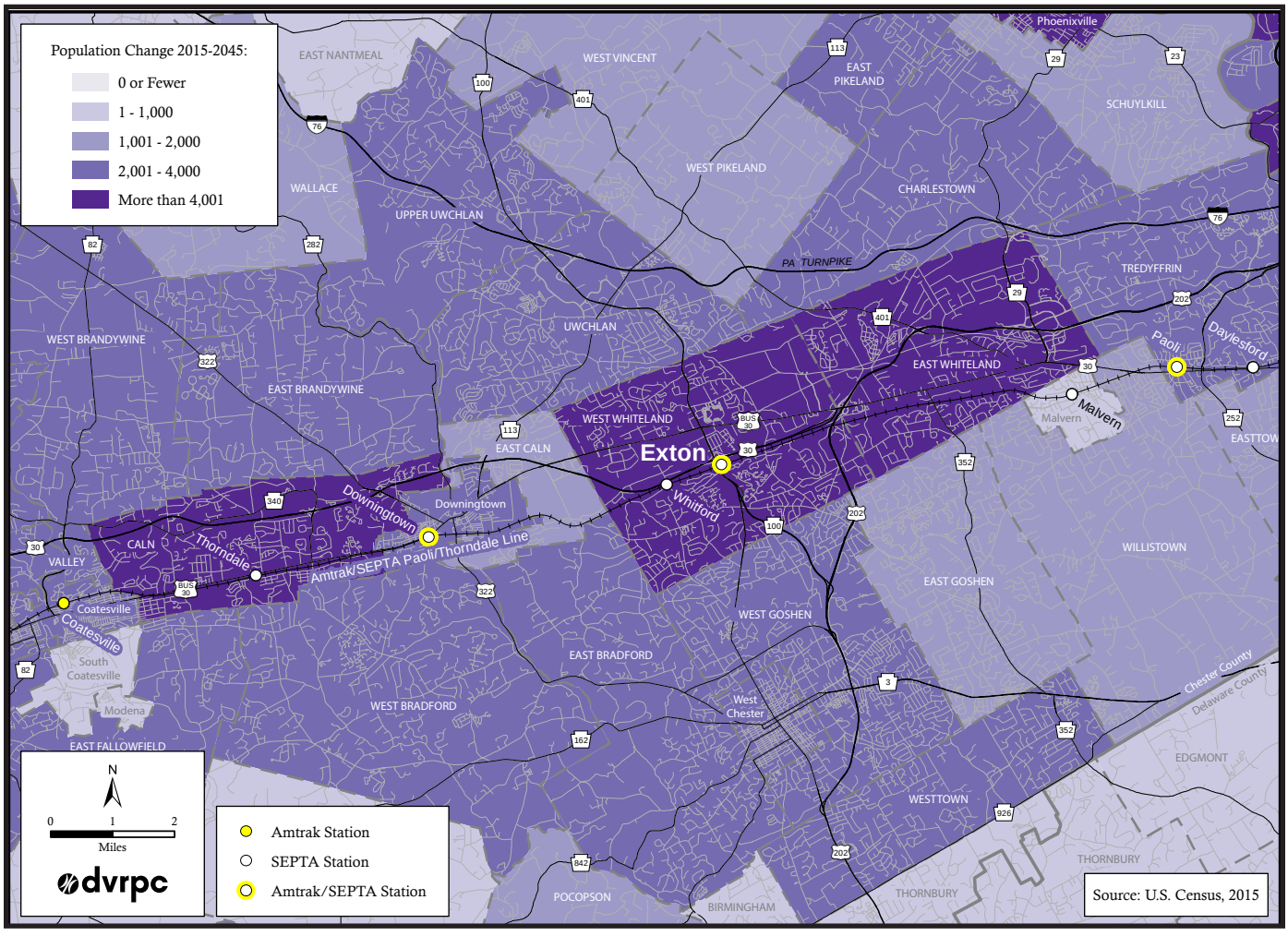
Population

Figure 2.4 shows the projected change in population between 2015 and 2045 for West Whiteland Township and its neighboring municipalities. The darker shaded municipalities are those projected to add more than 4,001 new residents during this time period. The municipalities with the highest projected population change are West Whiteland, East Whiteland, and Caln townships; many municipalities immediately around these three are projected to gain between 2,001 and 4,000 new residents between 2015 and 2045.

Exton Station platform during the AM peak period

Source: DVRPC (2018)

FIGURE 2.4: PROJECTED MUNICIPAL POPULATION CHANGE BETWEEN 2015 AND 2045



Source: DVRPC (2017)

Station Shed Inventory

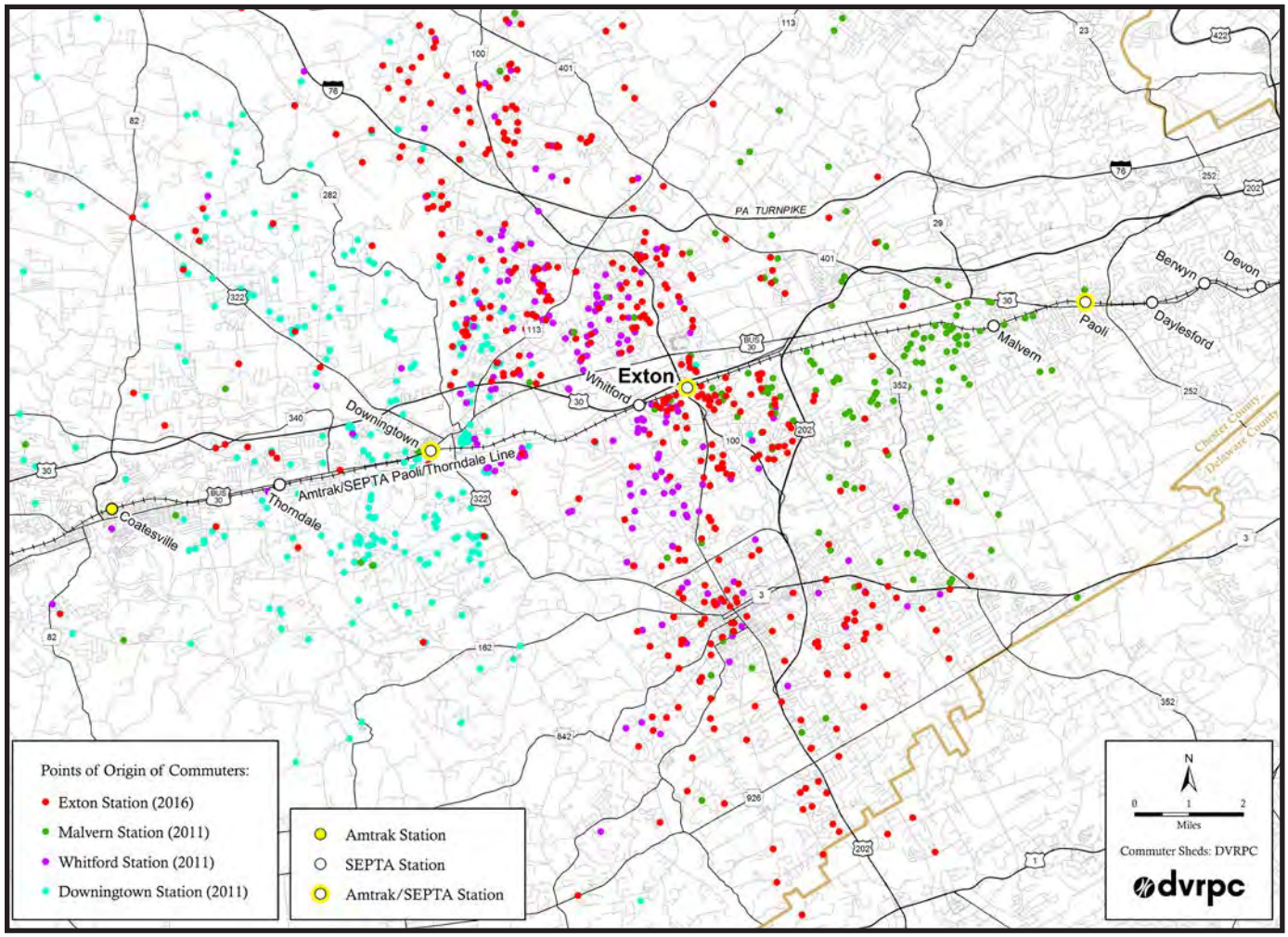
In the fall of 2016, the project team conducted fieldwork at Exton Station to better understand passenger patterns and thus potential locations for improvements at and around Exton Station.

In partnership with SEPTA and PennDOT, DVRPC has a longstanding program to assess rail station market areas by surveying license plates of the vehicles that are parked at each station and mapping the addresses that are associated with those plates. By exploring the distribution of mapped records, the project team can get a sense of where a given station's highest concentrations of park-and-ride customers are located, as well as typical drive-access distances. Using this data, the team can prioritize recommendations at the station.

Figure 2.5 pairs shed data collected from Exton Station and the adjacent Paoli/Thorndale stations in either direction. The distribution of the shed data reinforces that Exton Station is a strong regional connector compared to its adjacent stations.

Farther southwest along the Paoli/Thorndale Line, Whitford and Downingtown stations draw commuters from neighborhoods and local streets north of each station, which primarily parallels US-30. Whitford Station also has a significant number of commuters that come from the south to park at the station. To the northwest, Malvern Station primarily draws commuters west between it and Exton Station.

FIGURE 2.5: EXTON STATION SHED INVENTORY WITH ADJACENT SEPTA STATION SHEDS



Source: DVRPC (2017)

Table 2.2 looks more closely at the number of parking spots available and those utilized when DVRPC surveyed the parking facilities. Some of the survey points are not located within the map extent. Exton Station has the largest number of parking spots, which might explain the station's extended draw spatially and geographically (Figures 2.5 and 2.6), and popularity among these four stations. Meeting parking demands at end-of-line stations has the potential to reduce the number of drivers commuting into Philadelphia as single passengers in private vehicles, reducing vehicle miles traveled (VMT) and traffic congestion.

The results of the commuter shed collection for Exton Station are shown in Figure 2.6 for 2011 and 2016. The station shed inventory suggests that the range of where commuters come from is rather linear; most park-and-riders travel north or south on PA-100 to reach the station from municipalities such as Upper Uwchlan Township, Uwchlan Township, West Whiteland Township, West Goshen Township, West Chester, Westtown Township, and Thornbury Township.

The map highlights the station's strong regional connectivity for residents of Chester County. In both years, the spatial distribution of surveyed commuters remained consistent.

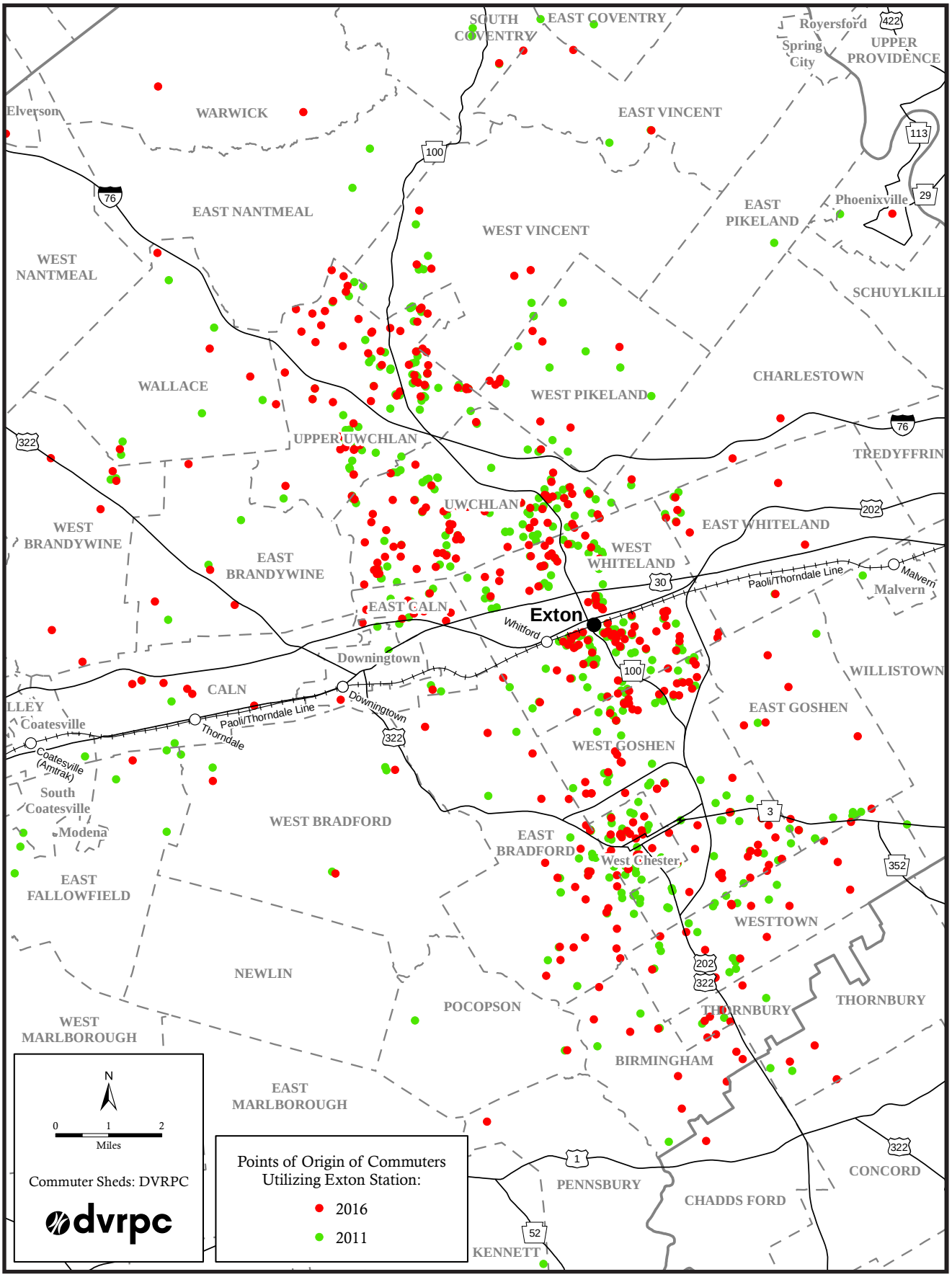
The shed data highlights the important role parking at end-of-line stations can play in the commuting patterns within the surrounding area. Though Exton Station may not be the nearest station for residents of surrounding municipalities, the availability of parking at Exton Station attracts users who might otherwise use adjacent stations, which accounts for its higher demand and extended spatial and geographic draw.

TABLE 2.2: STATION SHED INVENTORY: PAOLI/THORNDALE END-OF-LINE STATIONS

STATION	YEAR	PARKING SPOTS	TOTAL SURVEYED
Downington	2011	360	308
Exton	2011	610	565
	2016	610	501
Malvern	2011	383	202
Whitford	2011	287	216

Sources: SEPTA Parking Utilization Report (2015) and DVRPC (2011 and 2016)

FIGURE 2.6: EXTON STATION SHED MAP



Source: DVRPC (2017)

Land Use and Zoning

West Whiteland Township's land use and zoning policies aim to create areas of mixed use and streets that support multimodalism. However, in practice the existing land use does not reflect the extent of integration of uses encouraged and allowed by the zoning code. Future planning efforts should focus on connecting and integrating compatible land uses that facilitate local connections between focal areas, such as the Town Center District and Exton Station.

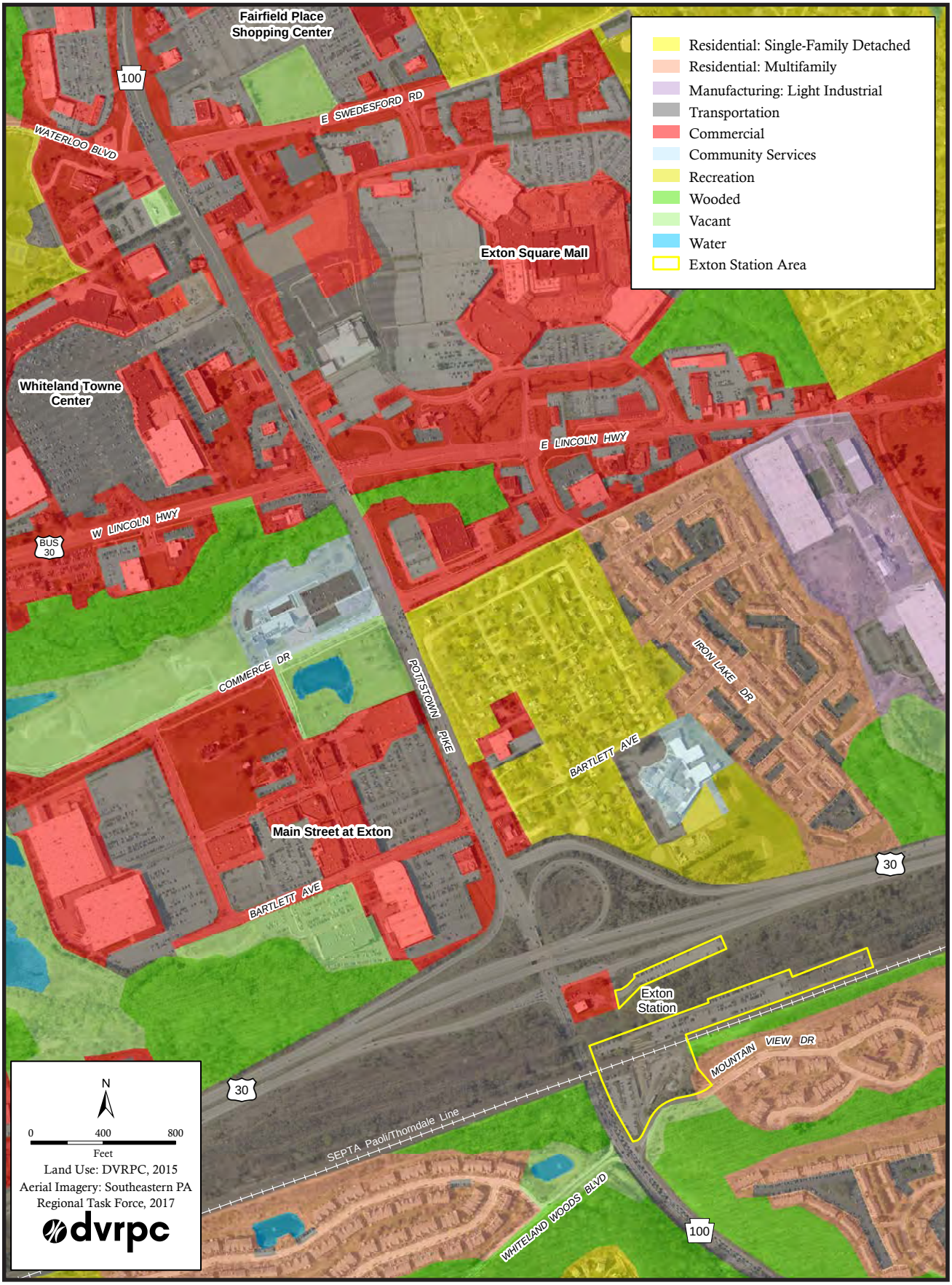
Land Use

Figure 2.7 highlights the land uses for both the local and station study areas. Exton Station, rail rights-of-way and US 30 bisect the town laterally, creating two distinct areas. The northern portion contains the commercial, office, industrial and residential uses, while the southern portion is almost exclusively residential. North of the station, large shopping centers, big-box retailers, and strip malls occupy a majority of the land at the center of the town, surrounded by a mix of housing types on its periphery. Single-family detached and attached housing, bordered by wooded land, makes up the area south of the Bypass and around Exton Station. While commercial districts and residential uses abut one another north of the US-30 Bypass, only Main Street at Exton has a mix of different uses within a single community.

Main Street at Exton streetscape and commercial uses

Source: DVRPC (2016)

FIGURE 2.7: LOCAL STUDY AREA LAND USE MAP



Source: DVRPC (2017)

Zoning

West Whiteland Township is responsible for creating and updating zoning around Exton Station. Figure 2.8 shows both the local and station study area zoning. The zoning designations in this area are Industrial (I-1), Residential (R-1, R-3, R-4), Rail Transit Overlay (RTO), and Town Center District (TC). The Town Center District dominates the majority of the study area.

The zoning code places a strong emphasis on the provision of reasonable population density, vehicle parking and loading space, and prevention of travel and transportation congestion, as well as improving quality of life by promoting mixed-use development.[3]

Industrial

Within the local study area Limited Industrial is allowed. The intent is to permit light industrial uses that are compatible with surrounding residential and commercial districts, and maintain a consistent degree of aesthetic quality. The designated area is between Whitford Road and the US 30 Exton Bypass. Within this area, there are a number of small-scale light industrial businesses. This is another source of employment near Exton Station.

Residential

The local study area includes three types of residential zoning: R-1, R-3, and R-4. Residential R-1 zoning allows for low-density, single-family residential development with a minimum of 70 feet of frontage. R-1 zoning is designed to protect existing patterns of development and to encourage compatible development of vacant land for similar types of development that will minimize impact on the natural environment. Single-family detached, agriculture, and publicly owned recreational buildings can be built in R-1 zones. Residential R-3 zoning allows for moderate- to higher-density residential development with a minimum of 40 feet of frontage. R-3 zones require residential development that is compatible with existing residential development and directly accessible to major highways and commercial uses. Duplex, twin, and detached single-family housing can be built in R-3 zones. Subject to approval, larger multifamily residences and group homes are permitted as well. A smaller portion of the study area east of PA-100 just south of Exton Station and directly north of the US 30 west off-ramp is designated R-4 which allows the same uses provided in R-3 zones as well as manufactured home parks and their associated administrative buildings, with a minimum of 25 feet of frontage.

Rail Transit Overlay

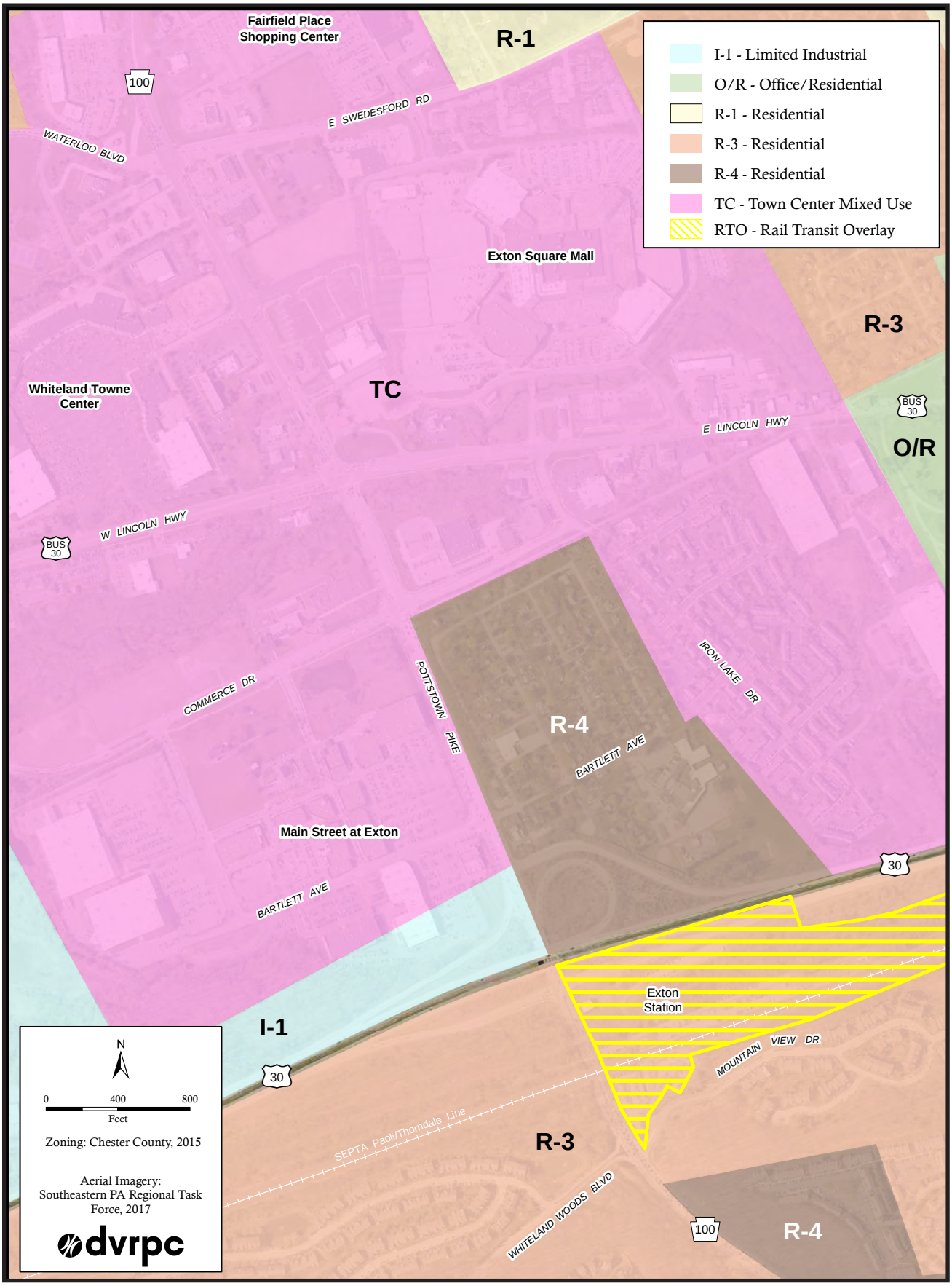
West Whiteland Township designated Exton Station and a small area around it as a Rail Transit Overlay District. This zoning classification aims to accommodate associated structures and land uses of rail stations and promote passenger rail service for residents and businesses that facilitate connections between passenger rail service and other modes of transit (bicycles, pedestrians, buses) and promote the safety of patrons by providing parking for cars, bikes, and safe pedestrian areas. This zoning category allows for development strategies to improve station access and traffic circulation that are traditionally discouraged within residential areas.

Town Center District

To facilitate mixed-use, multimodal development, the municipality created the Town Center District. This area allows for mixed-use, residential, and light-industrial uses with a minimum of 250 feet of frontage. In addition, there are multimodal connections within the Town Center District, but there are limited bicycle and pedestrian links that get people from the train station and residential neighborhoods to the area.

[3] *"Zoning Ordinance," Planning & Zoning, West Whiteland Township, accessed December 2017, https://www.westwhiteland.org/155/Planning-Zoning.*

FIGURE 2.8: LOCAL STUDY AREA ZONING MAP



Source: DVRPC (2017)

Transportation Network

The transportation network in West Whiteland Township includes regional and local roadways, public transit and pedestrian and bicycle facilities. Regional roadways and rail lines are exceptional connectors and make this municipality unique. However, frequent bus and shuttle service and pedestrian and bicycle facilities are lacking. To create a more complete local transportation network, new facilities are needed that will allow residents and employees more mobility options to get around other than by using their personal vehicles.

Regional and Local Roadways

West Whiteland Township has noteworthy roadway connections that allow drivers to move throughout the region. US 30 and PA-100 provide direct access to Exton Station, including nearby job centers. Local roadway connections are not as established, and provide access to the regional roadway facilities, but do not connect well to each other. Figure 2.9 highlights the regional and local roadways within the local study area.

Regional Roadways

Three major roadways pass through West Whiteland Township connecting it well with the region: Lincoln Highway/Business 30, US 30, and PA-100.

Lincoln Highway travels east to west through West Whiteland Township. Lincoln Highway continues east into Philadelphia and west into Downingtown.

US 30 travels east to west across the center of West Whiteland Township. US 30 continues west into nearby Downingtown and farther through western Pennsylvania. The highway on- and off-ramps are located at the center of the township, just north of Exton Station on Howard Road.

PA-100 (Pottstown Pike) is both an arterial and limited access highway running north to south in the municipality. PA-100 is limited access highway with a cement jersey barrier that acts as a median until PA-100 and the US 30 Bypass eastbound off- and on-ramps meet.

PA-100 has a limited number of traffic signals. US 30 and PA-100 experience high volumes of traffic, particularly at the intersection of the two. The collected annual daily traffic counts are shown in Figure 2.9.

Local Roadways

The local roadway network in West Whiteland Township is organized to connect residential developments with regional roadways and local commercial and employment centers. South of Exton Station, local roads such as Whiteland Woods Boulevard and Mountain View Drive connect nearby developments to PA-100. However, these roads do not connect to each other.

Public Transit

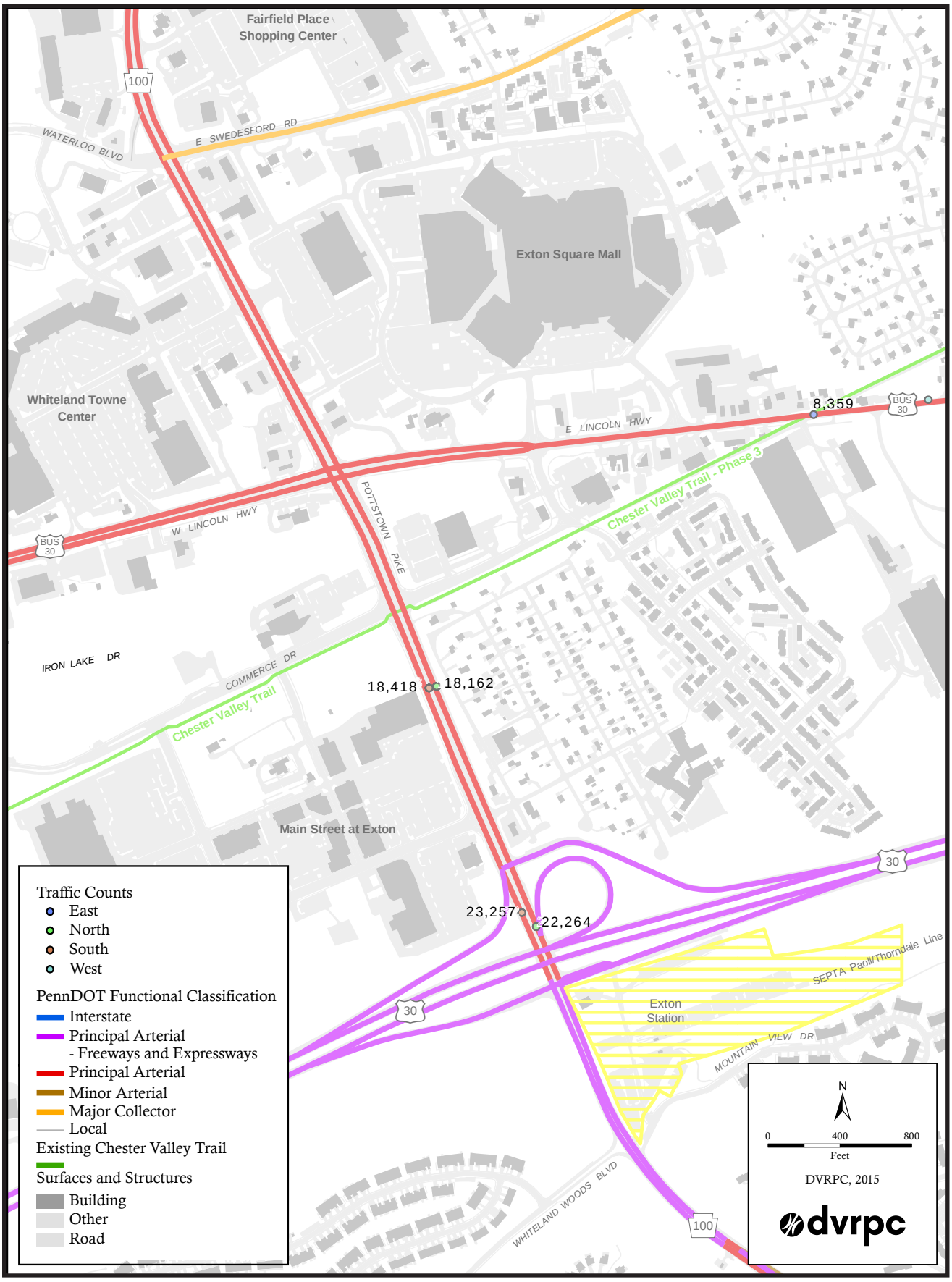
Exton Station is served by the SEPTA Paoli/Thorndale Line, Amtrak Keystone Service/Pennsylvania lines, Krapf's Bus A, SEPTA Bus Routes 92 and 204, and West Chester University's Exton Train Station Shuttle Bus. Figure 2.10 illustrates transit routes in the station area, and Table 2.3 shows the frequency of service for each transit provider.

SEPTA's Paoli/Thorndale Regional Rail Line connects Chester County to Montgomery, Delaware, and Philadelphia counties. In 2015, average daily boards at Exton Station on the Paoli/Thorndale Line was approximately 800.[4] The tracks are shared with Amtrak, which connects passengers to 30th Street Station in Philadelphia, and other major cities along the Northeast Corridor, as well as the western cities of Lancaster and Harrisburg, Pennsylvania.

Krapf's Coaches manages and operates the Krapf's "A" Bus, providing service between Coatesville and West Chester. In the study area, there are three stops: Exton Square Mall, Main Street at Exton, and Exton Station.

[4] *SEPTA, 2015 Regional Rail Census (2015).*

FIGURE 2.9: REGIONAL AND LOCAL ROADWAYS MAP



Source: DVRPC (2017)

Service is primarily hourly on weekdays. [5] SEPTA Bus Routes 92 and 204 serve the study area. Buses are unable to stop within Exton Station because of the limited space available for the vehicles to safely turn around. In addition, SEPTA vehicles cannot clear the two bridges that pass over Walkertown Road. SEPTA's Route 92 bus connects the Exton Square Mall (just about a mile from Exton Station) to King of Prussia. Average daily ridership is 383 on weekdays.[6] Service is infrequent, with average headways of 90 minutes during off-peak hours. During peak hours, frequency improves. The Route 92 bus is currently signed to stop along PA-100 at Mountain View Drive, but there is no safe corresponding bus stop on southbound PA-100; nor is there a safe stopping location. SEPTA's Route 204 connects Paoli Station to Eagleview Corporate Park and stops at Exton Square Mall. Route 204 has roughly hourly service. Average daily ridership is 178 per weekday.[7]

West Chester University (WCU) provides shuttle service for students and staff, Monday through Friday when classes are in session, to Exton Station. In 2016, WCU partnered with Chester County, offering the shuttle service to employees of Chester County; however, only a small number of them participated. In the fall of 2015 total ridership amounted to just over 1,300. WCU students, faculty, and staff were the only passengers during this period.

[5] *TMAAC, Krapf's "A" Bus Schedule (2018).*
[6] *SEPTA, Route Statistics (2017).*
[7] *SEPTA, Route Statistics (2017).*

TABLE 2.3: PUBLIC TRANSPORTATION FREQUENCY IN STUDY AREA

MODE	TRANSIT PROVIDER	ROUTE NAME	AM PEAK* FREQUENCY
Regional Rail	SEPTA	Paoli/Thorndale	22-34 min
Shuttle	WCU	Exton Train Station Shuttle Bus	20 min
Shuttle	Krapf's	A	60 min
Rail	Amtrak	Keystone	60 min
		Pennsylvanian	Once daily
Bus Service	SEPTA	92	60 min
		204	30 min

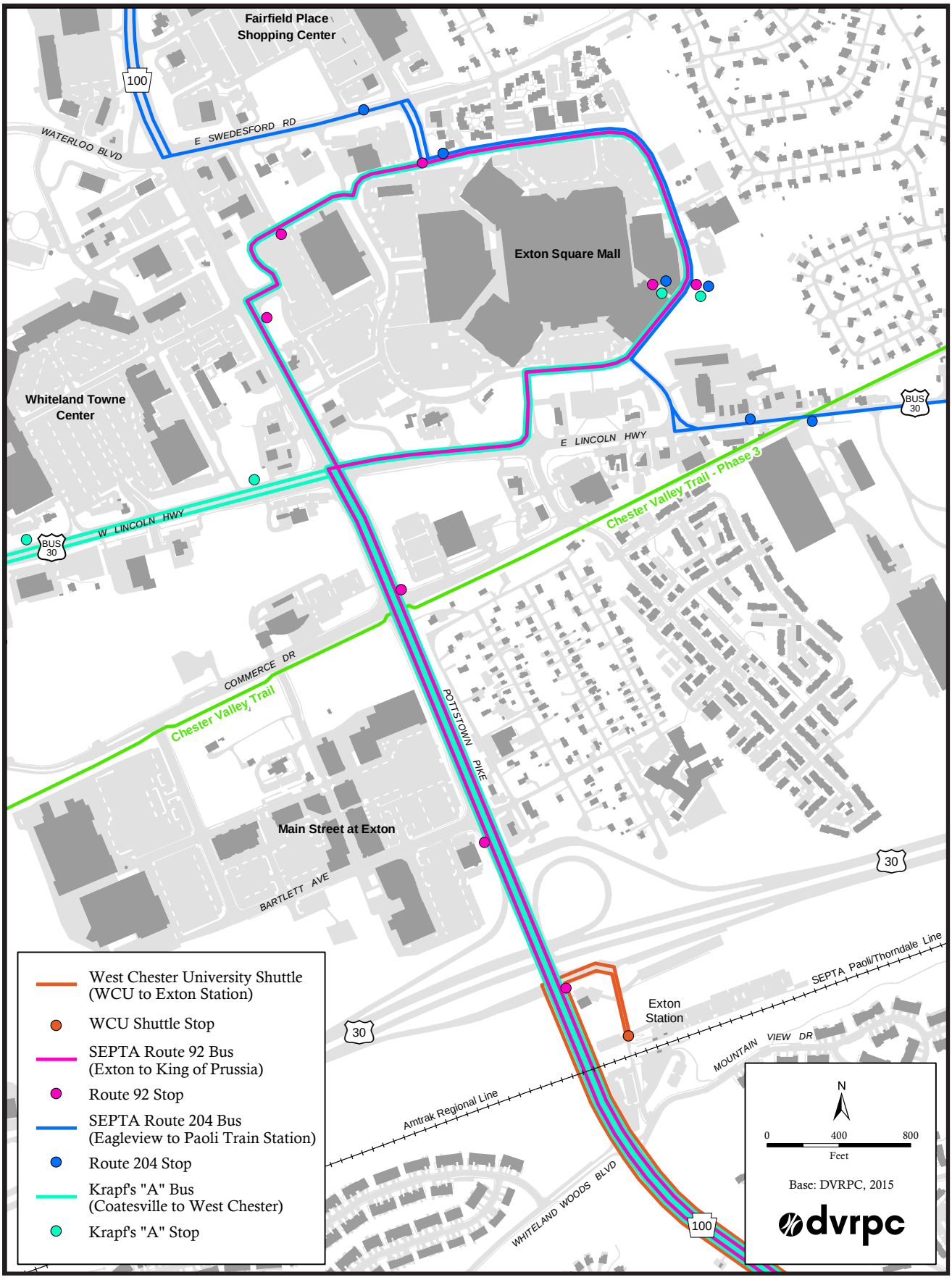
Sources: SEPTA Route Statistics (2017), TMAAC, Krapf's "A" Bus Schedule (2018)
**Frequency approximations for peak hours 6AM-9AM on weekdays*

WEST WHITELAND WHIRL

West Whiteland Whirl was a local bus service that debuted in 2001 to reduce congestion and improve air quality. The Whirl was a collaborative project between CCPC, TMACC, and West Whiteland Township. Funding came from a federal transportation grant, as well as from private developers. The Whirl provided passengers service to major local destinations, such as Exton Square Mall, Main Street at Exton, and Exton Station. The service lasted for only three years, discontinuing in May 2004 due to consistently low ridership.

Source: Metz, Gretchen, "Officials kick off new bus service in Exton area," Daily Local, May 5, 2001, http://www.dailylocal.com/article/DL/20010509/FINANCE01/305099989

FIGURE 2.10: PUBLIC TRANSPORTATION IN STUDY AREA



Source: DVRPC (2017)

Pedestrian and Bicycle Facilities in the Study Area

Accessing the station by foot is difficult, as sidewalk connections are limited from PA-100 and Howard Road. The following section describes the non-motorized network in the study area.

Sidewalk Network

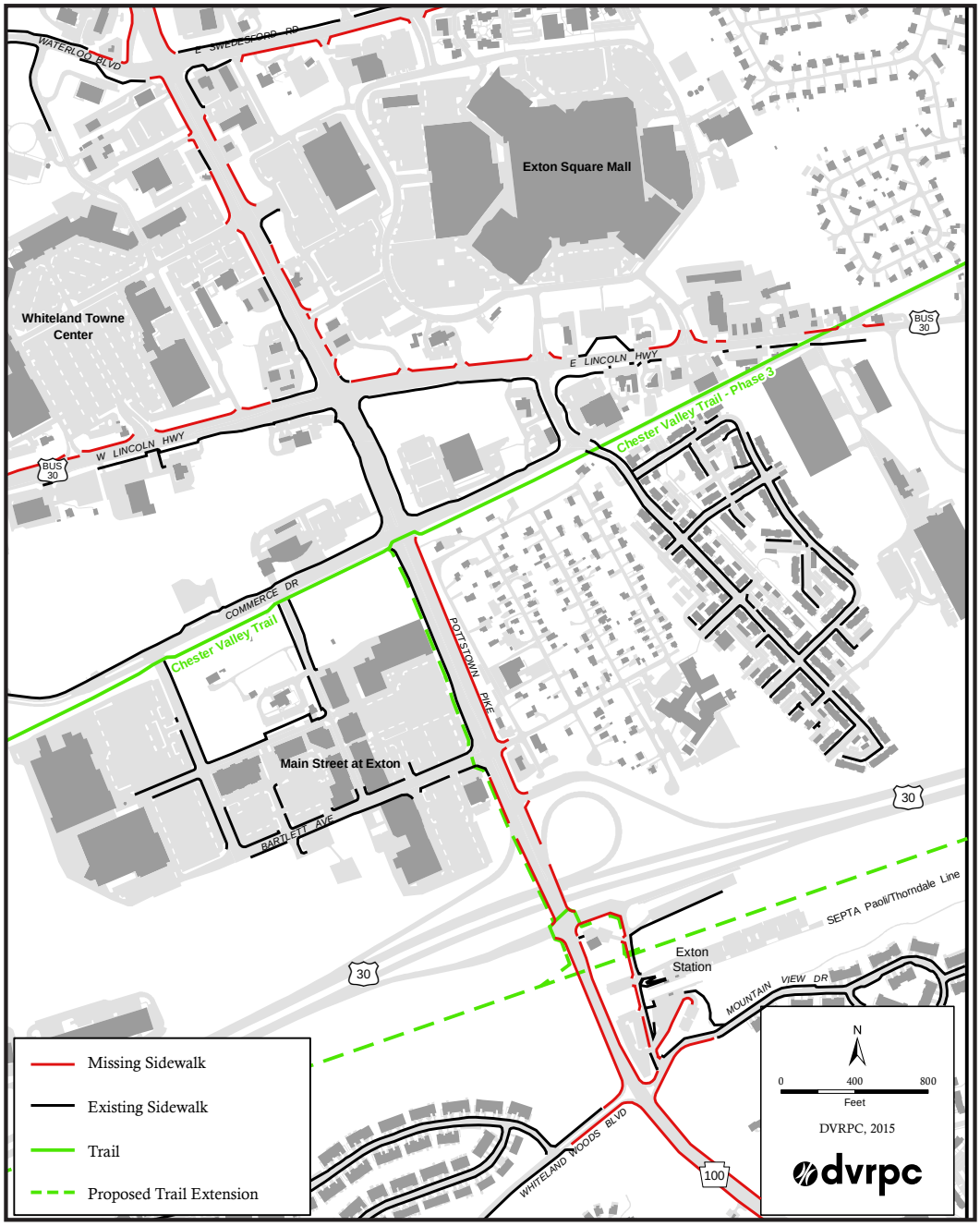
The existing sidewalk network around Exton Station has major gaps, creating a lack in connectivity within and around the site. Figure 2.11 delineates the sidewalk network in the local study area. A pedestrian is unable to navigate the station's adjacent local roadways, such as PA-100 or Howard Road.

The nearby residential communities of Whiteland Woods and Mountain View Drive townhomes have sidewalks throughout them, but those sidewalks end at PA-100. Sidewalks on PA-100 exist north of the station at Bartlett Avenue on the southbound side of the road. The sidewalk network remains inconsistent along PA-100 past this juncture.

Bicycle Network

There is limited bicycle infrastructure (lanes or parking) in the station or on the adjacent streets. PA-100 is a limited access highway that cannot accommodate cyclists. Howard Road is similarly restricted for motorized vehicles.

FIGURE 2.11: SIDEWALK NETWORK MAP



Source: DVRPC (2017)

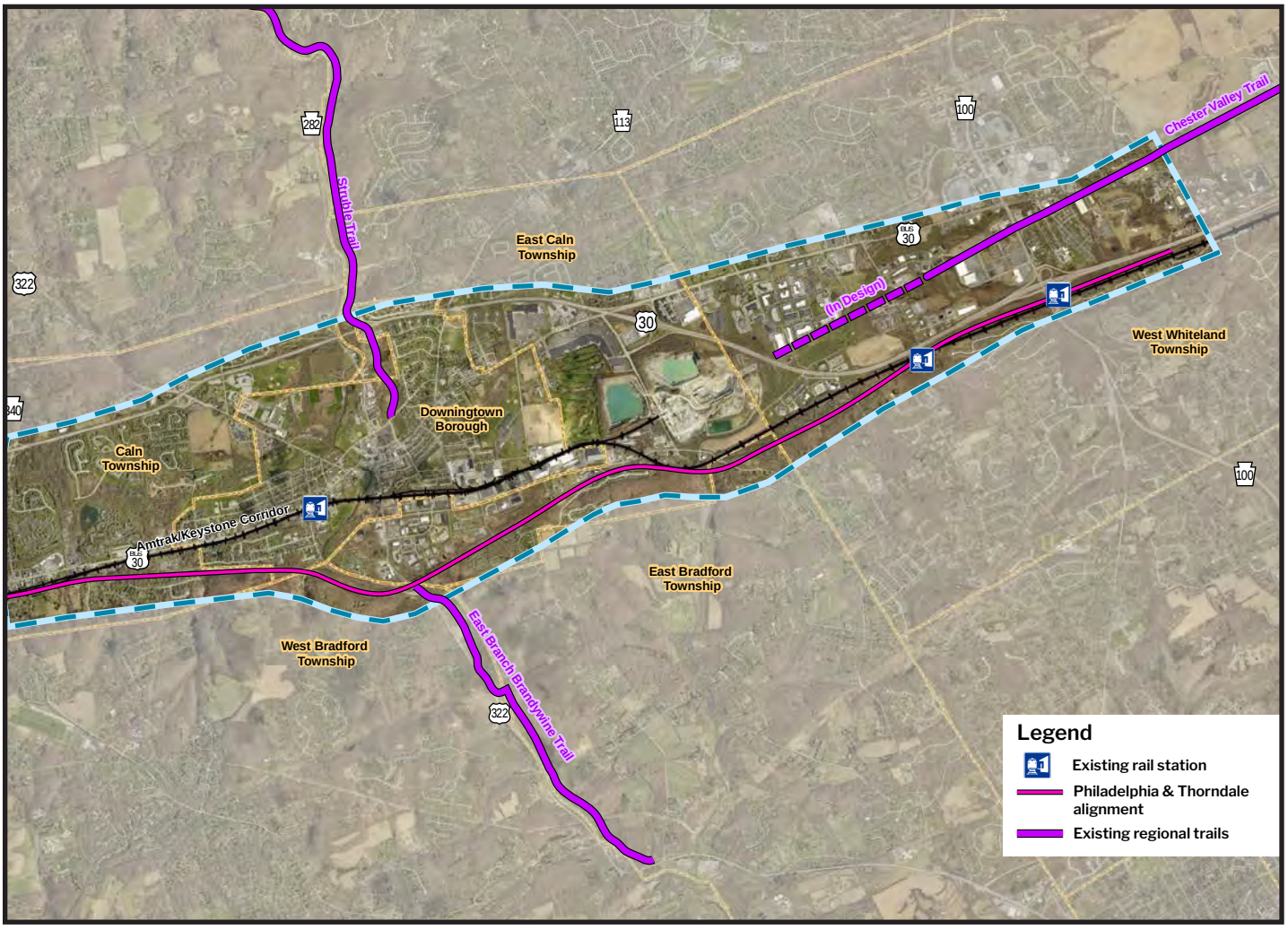
However, Exton Station has four parking spaces for bicycles. As discussed earlier, there is an off-street bicycle network that exists within the local area along the CVT, which in the current form does not connect to Exton Station.

CVT

The CVT is a regional trail that stretches through Chester and Montgomery counties along the former Philadelphia-Reading railroad, roughly following US 30 and Route 202 alignments. In West Whiteland Township, the trail stretches across the study area to Commerce Drive but terminates after crossing PA-100.
Primarily, the trail has painted crosswalks and bollards where it meets major streets to slow traffic before the crossings and to restrict access by motorized vehicles. Pedestrians and cyclists are permitted users of the CVT.

There are current plans to extend the trail within West Whiteland Township. A full description of this plan can be found in Chapter 1. Figure 2.12 shows the existing CVT and the Philadelphia & Thorndale alignment or the preferred alternative for the CVT extension.

FIGURE 2.12: MAP OF CVT EXTENSION STUDY AREA



Source: CCPC (2017)

STATION AREA CONDITIONS

The station area serves as an effective regional connector for local residents and employees in West Whiteland Township. However, this orientation toward regional connectivity has come at the cost of local connectivity. The regional roadways and rail rights-of-way (both in-use and former) create a difficult environment to navigate for both non-motorized and motorized travelers and station users.

Station Area Roadway Conditions

Existing roadways and circulation patterns are at capacity during peak hours.[8] The resulting congestion impedes a station user's ability to access the station and exacerbates the area's unfriendliness to pedestrians and cyclists.

Exton Station can be accessed by Walkertown Road, a two-lane municipal road oriented south-to-north between Mountain View Drive, Howard Road, and the US 30 (Exton Bypass) Eastbound on-ramp, as labeled in Figure 2.13. The width of Walkertown Road varies between 17 and 19 feet, with a five- to six-foot-wide sidewalk on the east side of the roadway only. This is just enough space for two cars to pass, not two large vehicles. Vehicles use Walkertown Road as a cut-through to get to US 30 and avoid congestion along PA-100 northbound. Stop signs control traffic flows where Walkertown Road meets both Mountain View Drive and Howard Road.

There are two entry points onto Walkertown Road from PA-100 via Mountain View Drive and Howard Road. When entering the station via Mountain View Drive, vehicles can only make right turns from PA-100. A multiphase traffic signal controls traffic flows at the intersection of PA-100 and Howard Road; westbound through movement here is restricted.

Station Parking

There are five parking lots at Exton Station. At the time of this study, one lot was undergoing construction and 127 spaces were not available for use. The remaining four parking lots have a combined total of 582 spaces for commuters. Station parking is $1 per day or $25 per month for permit parking. The parking lots are at capacity and unable to accommodate the parking demand for the station. The resulting backlog of cars coming into and out of Exton Station can add to congestion along PA-100 northbound during peak hours.

Sidewalk Network and Safety

Sidewalks and crosswalks do exist within Exton Station but are limited. There is a sidewalk on the east side of Walkertown Road that connects the northeast and southeast parking lots to the station platforms. Crosswalks exist just north of the rail tracks. Dramatic grade changes in the vicinity of Exton Station also diminish local connectivity. Contour lines illustrate this topography in Figure 2.14.

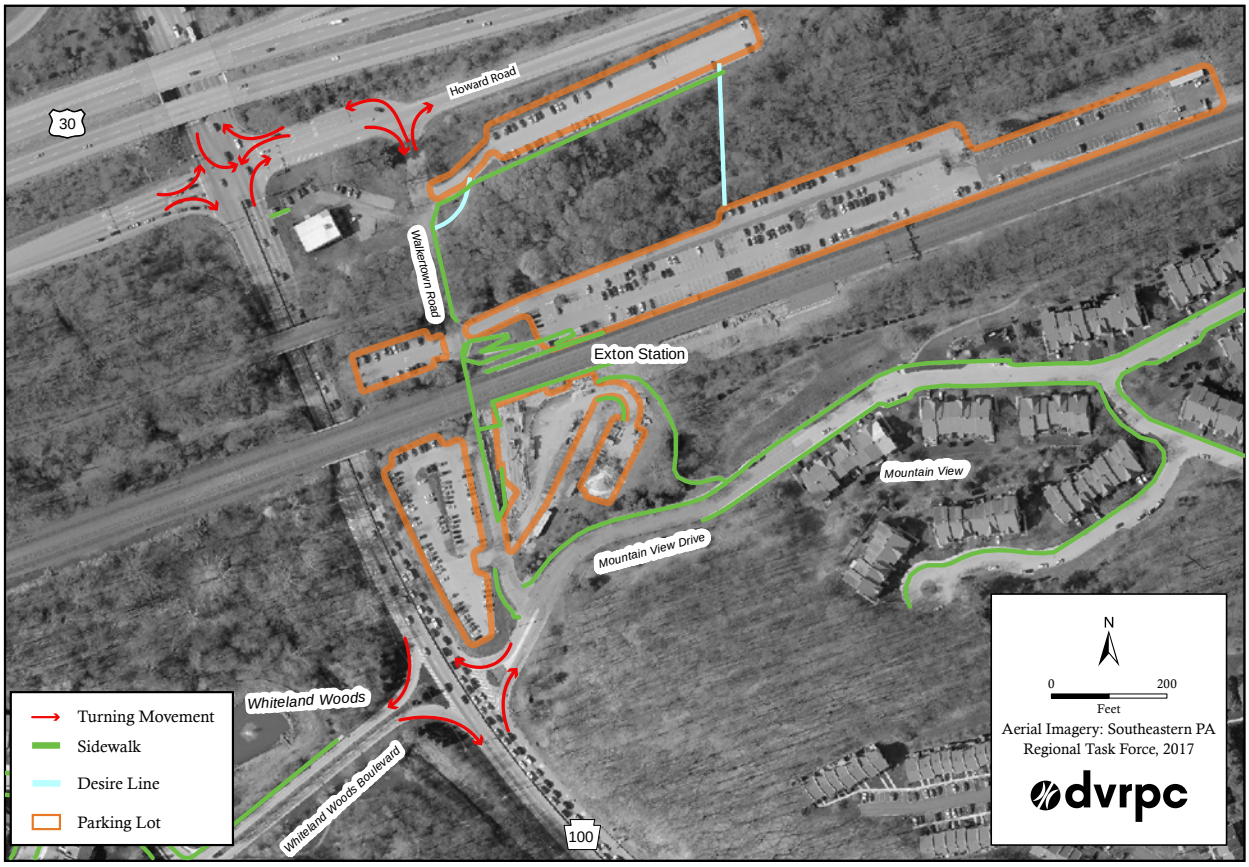
[8] *McMahon Associates, PA Route 100 Congestion Mitigation Study (2018).*

AUTOMATED RED LIGHT ENFORCEMENT GRANT

In 2017, the Chester County Department of Facilities and Parks received a grant from the Pennsylvania Department of Transportation's Automated Red Light Enforcement Grant Program to improve the CVT crossing of PA-100. Currently, trail users must cross three legs of the intersection to continue east or west on the trail, which can take up to five minutes to complete. This upgrade will create a direct crossing along the south side of the intersection by installing a pedestrian crosswalk. The upgrade will also create wider channel islands and ADA ramps, countdown timers, trail crossing signage and markers, a lead pedestrian intervals, and a minor striping change to improve sight distance for vehicles traveling on Commerce Drive.

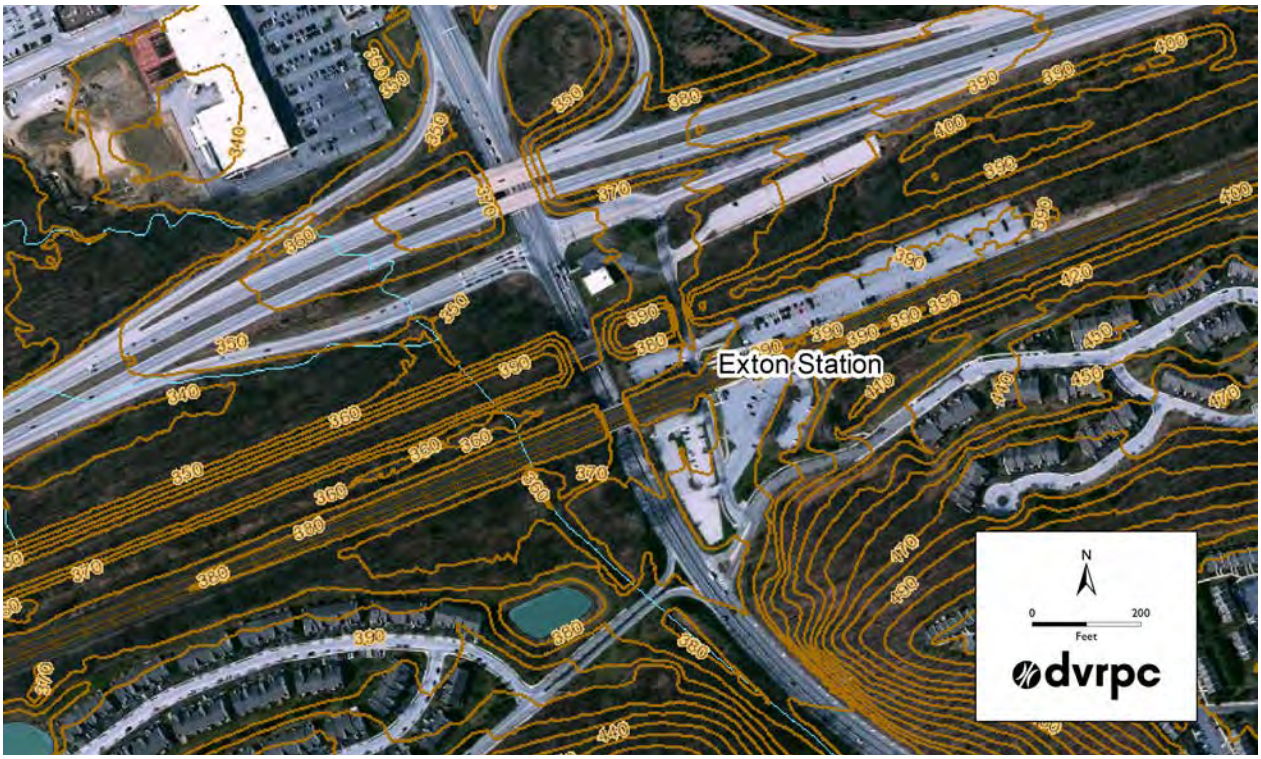
Source: McMahon Associates, PennDOT Automated Red Light Enforcement (ARLE) Grant Program Application, (2017)

FIGURE 2.13: STATION STUDY AREA ACCESS, PARKING, AND SIDEWALKS



Source: DVRPC (2017)

FIGURE 2.14: STATION AREA TOPOGRAPHY



Source: CCPC (2018)

Sidewalk and crosswalk gaps exist in the station area. As a reminder, Figure 2.11 highlights the existing sidewalk network. The lack of pedestrian facilities hinders local connectivity and creates an unsafe pedestrian environment, likely discouraging people from walking. In addition, this disjointed network poses serious safety risks to station users with disabilities or short-term mobility issues. The pedestrian network dissolves in key places, forcing passengers to walk through the parking lots to reach the station platforms.

Analysis of Potential Traffic Patterns at Exton Station

This analysis was prepared by DVRPC to support McMahon Associates in their TCDI-funded study of PA-100. (See Chapter 1 and Appendix A for more details.) The analysis provides an assessment of proposed recommendations and potential changes for traffic congestion at access points into Exton Station.

The two access points of Whiteland Woods Boulevard/Mountain View Drive and PA-100, as well as the US 30 eastbound on-ramp where it meets Howard Road and Walkertown Road, are shown on the right.

SEPTA's Capital Program includes additional renovations at Exton Station, including the addition of 578 parking spaces resulting from the following proposals:

- returning 127 existing parking spaces to service following the current construction project;
- expanding surface parking by 58 spaces; and
- constructing a 400-space parking garage.

The results of the analysis show that with the additionally planned parking, nearly twice as many vehicles would be accessing the station during peak periods. Consequently, higher traffic volumes would concentrate on Walkertown Road and the US 30 eastbound on-ramp.

Creating a four-way intersection at PA-100 and Mountain View Drive, and eliminating southbound turns from Howard Road onto PA-100—with those southbound movements redirected to the new intersection—could help mitigate the estimated future vehicle trips. This would allow increased station traffic from the additional parking to be more evenly distributed between north and south access points, potentially alleviating some congestion caused by station users during peak periods.

Due to the anticipated congestion, DVRPC strongly recommends that a four-way intersection be constructed at PA-100 and Mountain View Drive if additional parking is built at Exton Station. On the left side of Table 2.4 is a compilation of existing traffic volumes during peak hours based on traffic counts taken by DVRPC in 2016. The right side of the table shows the *additional* estimated traffic volumes during peak periods if parking at the station was expanded from 582 to 1160 total parking spaces. This is currently proposed in SEPTA's Capital Program.[9]

[9] *SEPTA, Fiscal Year 2018 Capital Budget (2017).*

Whiteland Woods Boulevard/Mountain View Drive and PA-100
Source: Google (2016)

US 30 eastbound on-ramp where it meets Howard Road and Walkertown Road
Source: Google (2016)

TABLE 2.4: EXTON STATION TRIP GENERATION

			EXTON STATION EXISTING TOTAL TRIP GENERATION [582 PARKING SPACES-CURRENT TOTAL DURING CONSTRUCTION]						EXTON STATION ADDITIONAL TRIP GENERATION AFTER PHASE C (NEW GARAGE + 400 SPACES) = 1160 TOTAL PARKING SPACES					
INTERVAL			IN			OUT			IN			OUT		
BEGIN	END		SB	NB	TOT	SB	NB	TOT	SB	NB	TOT	SB	NB	TOT
6:45 AM	7:45 AM	AM Peak Hour of Generator	167	171	338	4	39	43	166	170	336	4	39	43
5:00 PM	6:00 PM	PM Peak Hour of Generator	42	0	42	10	279	289	42	0	42	10	277	287
7:30AM	8:30 AM	AM Peak Hour of Adjacent Traffic	68	46	114	5	50	55	68	45	113	5	50	55
5:15 PM	6:15 PM	PM Peak Hour of Adjacent Traffic	39	0	39	10	240	250	39	0	39	10	238	248

More details can be found in Appendix A.

Source: DVRPC (2017)

Source: DVRPC (2016)

PROJECT STAKEHOLDER WORKSHOP

To further the concept plan and develop local and regional transportation priorities, DVRPC hosted a workshop with representatives who had local knowledge and could provide support for future planning efforts at and around Exton Station. Attendees were asked to participate in two activities: a visioning and discussion group exercise and then an exercise ranking improvements independently. The outcome of the workshop allowed DVRPC to prioritize ideas that are short and long term, as well as site specific, and improvements that could be made across the entire study area, which is reflected in the "Recommendations" chapter.

BARRIERS TO LOCAL CONNECTIVITY

Local access to Exton Station is restricted by limited circulation patterns, a lack of public transportation, a non-contiguous sidewalk network, and restrictive rights-of-way. This section highlights four major barriers to local connectivity in and around the station.

Overcoming these barriers to local connectivity will require a shift in priorities around the station. As will be discussed in the "Recommendations" chapter, improvements should focus on balancing local and regional connectivity, or if they continue to emphasize regional access (such as adding parking), they must simultaneously improve local connectivity (such as integrating the CVT and building an accessible sidewalk network within the station).

Barrier 1: Limited Access Highways

Exton Station is situated between two limited access highways: PA-100 and US 30. These highways have large footprints, and traffic flows are prioritized along these two routes. As a result, local roadway connections are poor. The limited street grid and the congestion along major arterials restrict a driver's mobility in the study area.

Both PA-100 and US 30 have large infrastructural footprints that limit mobility in the station area.
Source: DVRPC (2017)

Barrier 2: Lack of Contiguous Sidewalk Network

The lack of a contiguous sidewalk network around and within the station area makes it difficult for pedestrians to safely navigate. Nearby residents cannot safely access the station by foot despite living a short distance away. The majority of park-and-riders have to walk through parking lot driveways to reach a sidewalk or the station waiting area. The absence of sidewalks and crosswalks throughout Exton Station and on adjacent roadways hinders pedestrian activity, particularly for those who require accessible facilities in the short or long term.

Sidewalks in the station area are narrow and non-contiguous; with the amount of traffic the station area experiences, this condition is a safety concern for pedestrians.

Source: DVRPC (2017)

Barrier 3: Limited Public Transit Access to the Station

There is limited public transportation access between major destinations within West Whiteland Township, due to infrequent service and circuitous stop patterns of the existing services. Having such limited public transit options limits station users' ability to get to Exton Station without a private vehicle.

Bus stop at intersection of Howard Road and PA-100; this is the only active bus stop within Exton Station's study area.

Source: Googlemaps (2017)

Barrier 4: Low Clearance and Limited Right-of-Way

The built area around Exton Station limits local connectivity. The clearances of the former P&T Rail Line and shared SEPTA and Amtrak rights-of-way create limited clearances along Walktertown Road both vertically and horizontally. The width of the road under the bridge is about 18 feet, which makes two-way traffic movements difficult for larger vehicles and pedestrians to occupy that space. The rail rights-of-way limit access and traffic flows within the station area.

SEPTA rail right-of-way underpass within station area.

Source: DVRPC (2017)


dvrpc

CHAPTER 3: RECOMMENDATIONS

West Whiteland Township, where Exton Station is located, is a growing community with a mix of residential, commercial, and light industrial land uses. Local transportation planning is needed to ensure that residents, employees, and visitors have the ability to make local trips in a safe and timely manner.

The central purpose of this plan is to develop a coordinated and prioritized plan of the ongoing efforts between SEPTA, PennDOT/Amtrak, Chester County, and West Whiteland Township for phased improvements at and around Exton Station. This includes but is not limited to new access points for vehicular, bicycle, and pedestrian movements, as well as safe bus stops and layovers, and expanded parking at Exton Station.

During the workshop for this project, stakeholders (regional and local public agencies and local stakeholders) had the opportunity to propose ideas for improving access to and within Exton Station. Their ideas are addressed in this chapter in varying detail and were used by the project team to develop the recommendations in this chapter. In addition, a steering committee of local and regional stakeholders participated in multiple meetings to review and comment on the recommendations expressed in this report.

This chapter contains pre-existing plans that DVRPC and the project stakeholders have endorsed that are ongoing, planned, or proposed, as well as new recommendations developed during the course of the study. Priority was given to recommendations that fit into the guiding principles (see the Executive Summary). The bulk of this chapter is comprised of grouped recommendations.

These groups of recommendations are modular and build upon one another but do not require the prior or entire set to be built at once or all to be implemented, unless noted. Each set of recommendations (numbers 1-6, in the subsequent pages) uses a map and table to identify a physical location and explanation of the conditions in which it would be ripe for each element to be implemented.

The first set of recommendations discusses pending project outcomes, which are likely results of ongoing studies. Short-term tactical improvements are those that can be implemented at low cost without major construction. These improvements would create a safer environment, especially for pedestrians within the station itself.

Major capital improvements that have the potential to alter capacity and access to Exton Station are described in this section:

- Pedestrian and Bicycle Infrastructure;
- Create a Four-Way Intersection;
- Bus Loop and Surface Parking; and
- Structured Parking.

The last section of this chapter discusses long-term recommendations or large-scale projects that require additional research prior to implementation.

1. Pending Project Outcomes

DVRPC expects that two of the ongoing planning studies in the area will be partially or fully implemented. This section is a summary of each project and illustrates the likely outcomes. Stakeholders have completed a PA-100 TCDI project that sought to determine how to alleviate existing and mitigate future congestion along PA-100. One recommendation is the construction of a third northbound lane on PA-100 between Boot Road and the US 30 on-ramps. Included in this section of the roadway are the access points for Exton Station. Figure 3.1 illustrates this location in yellow with letter 1.B.

A pedestrian connection between the two parking areas is proposed on PennDOT's *ACCESS THE KEYSTONE* project website, shown in Figure 1.3. DVRPC also recommends this new connection, but slightly west, due to topography and the desire to link this new path to other recommended elements. Chester County has proposed that an extension of the CVT be built upon a portion of the former P&T Rail Line. The existing conditions of the right-of-way are shown in the photo to the right.

Figure 3.1 includes an aerial view of the existing right-of-way, labeled with letter 1.A.

Table 3.1 explains these recommendations and the conditions required for implementation. With the proposed CVT Extension, a new connection between the station and the proposed trail is recommended. Figures 3.2 and 3.3 are renderings illustrating how the CVT Extension could interface with Exton Station. The recommended project outcomes assume all partner agencies agree and that funding is available.

Existing condition of former P&T right-of-way

Source: DVRPC (2016)

FIGURE 3.1: PENDING PROJECT OUTCOMES

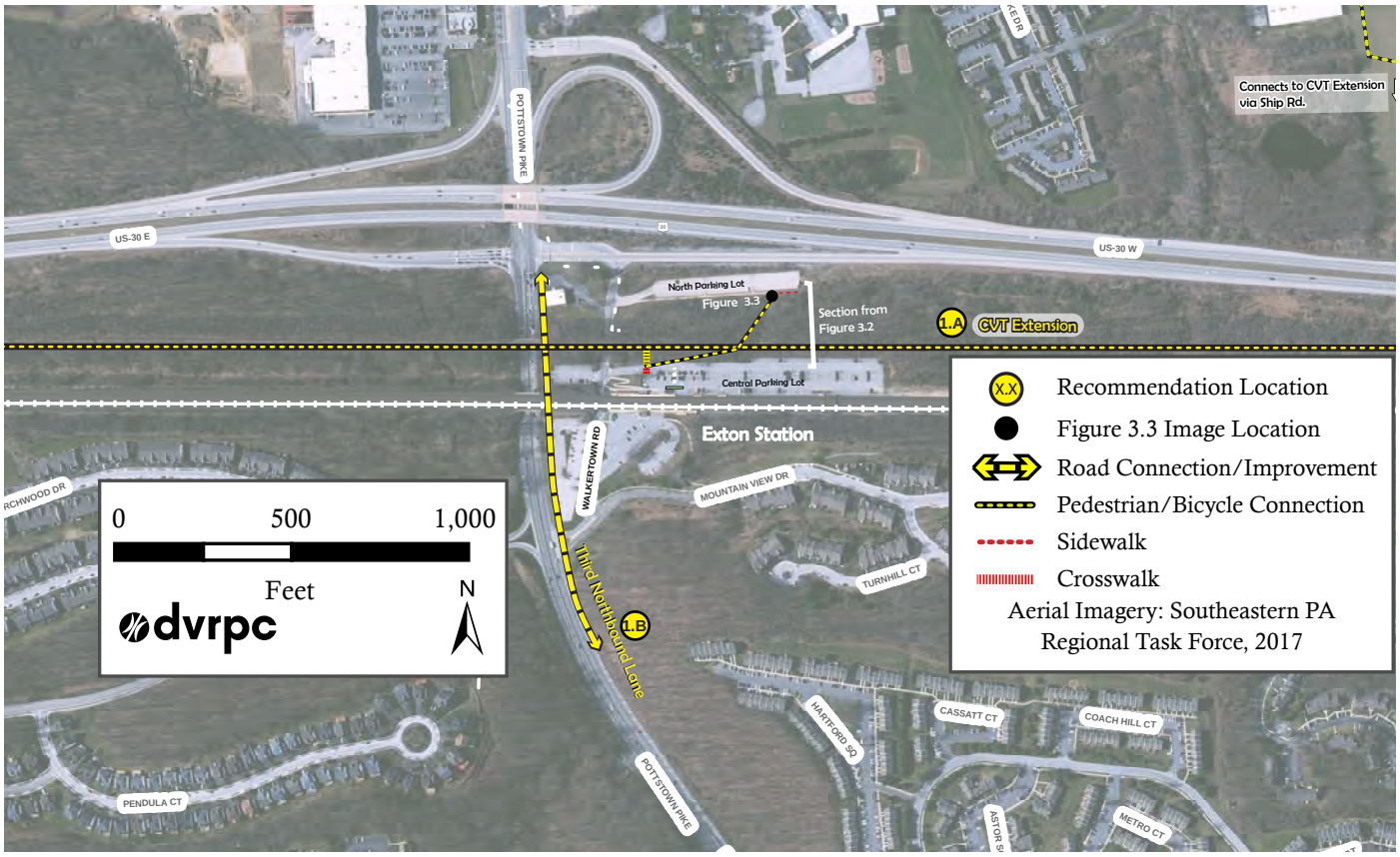
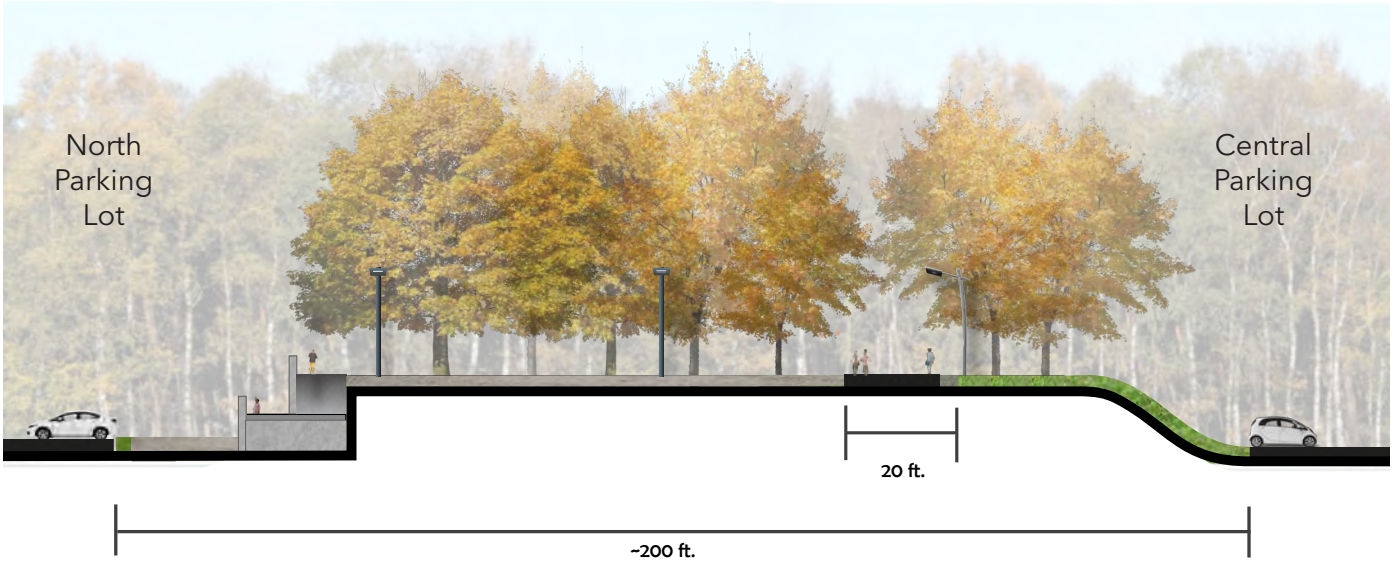


TABLE 3.1: PENDING PROJECT OUTCOMES

Item	Recommendations	Conditions
1.A	CVT Extension to be built connecting to and running along former P&T right-of-way with new pedestrian path illustrated in Figures 3.1, 3.2, and 3.3.	Requires agreement of purchase and maintenance of former P&T right-of-way, as well as a new connection from existing trail.
1.B	Third northbound travel lane on PA-100 between Boot Road and US 30 on-ramps.	Agreement of partners to add a third northbound lane on PA-100.

Source: DVRPC (2017)

FIGURE 3.2: CVT EXTENSION CROSS SECTION LOOKING EAST



Source: DVRPC (2017)

FIGURE 3.3: CVT EXTENSION RENDERING, RAMP FROM NORTH LOT

Source: DVRPC (2017)

2. Short-Term Tactical Recommendations

This set of low-cost and high-impact recommendations could create a safer environment for all users of Exton Station. Table 3.2 and Figure 3.4 explain, illustrate, and locate these elements. SEPTA and West Whiteland Township would be the leaders in implementing these concepts. In Figure 3.4 the dotted outline in the top portion, or map of the area, indicates a section of the lower diagram shown. The lower portion is SEPTA's final design of the construction work that was ongoing at Exton Station throughout this study. All proposed elements are shown in red.

Recommendations include crosswalks for passengers who need to safely cross from parking lots to the station platforms (B, C, D, G). Letter G is listed as an opportunity for consideration on PennDOT's *ACCESS THE KEYSTONE* (described in Chapter 1) project website. The project team suggests raised crosswalks at the location of letters C and G as a traffic-calming technique, to slow vehicles and deter cut-through traffic trying to get to the US 30 on-ramps.

Shuttles and personal vehicles currently wait for passengers in the lots to the north and south of the train platforms.

There are no areas marked or signed specifically for short-term use. Letters E, F, and H propose providing short-term designated parking for vehicles, bicycles, and shuttles.

With the extension of the CVT along the former P&T right-of-way and a connection to the station (described more on the previous page), Letter H recommends sheltered bike parking with signage. This creates a convenient location for passengers to park their bikes at the station after using the CVT.

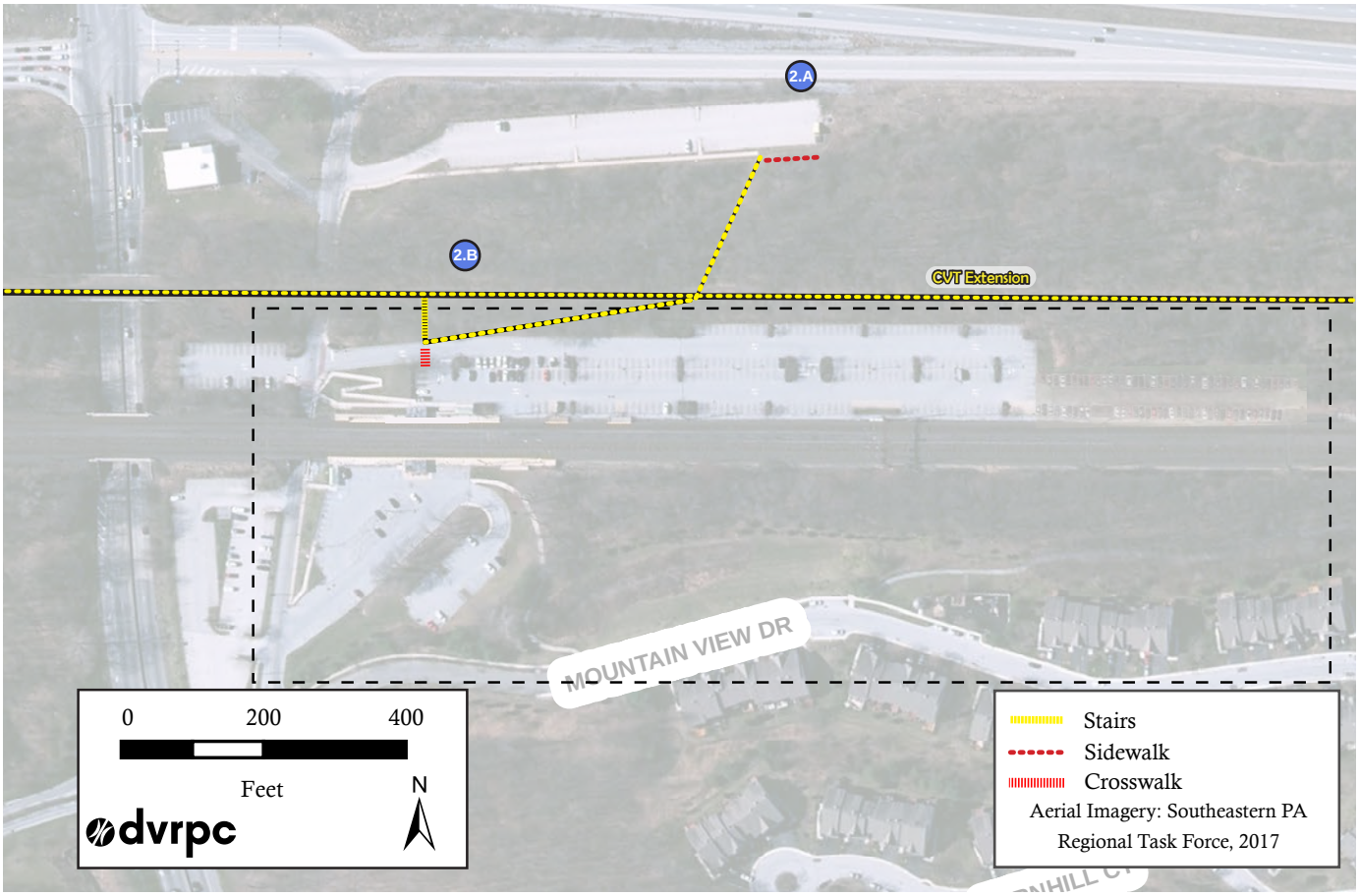
Example of raised crosswalks in Philadelphia, Pennsylvania
Source: Googlemaps (2018)

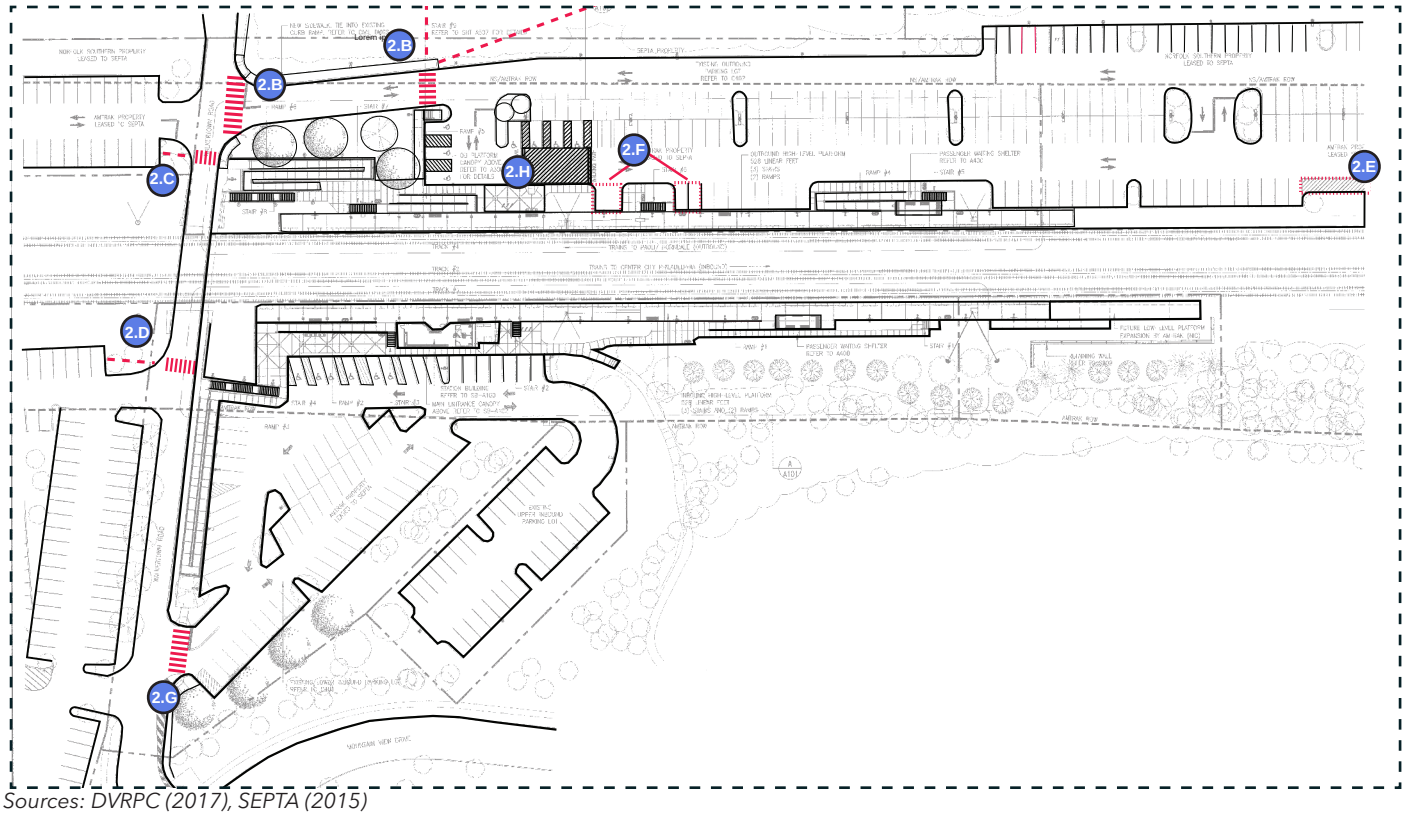
TABLE 3.2: SHORT-TERM TACTICAL RECOMMENDATIONS

Item	Mode	Recommendation
2.A	Pedestrian	Extend sidewalk to the end of the parking aisle in the northern lot.
2.B	Pedestrian	Create a new sidewalk, ramp, staircase, and crosswalks to connect the north and central lots to the CVT Extension.
2.C	Pedestrian	Create a new crosswalk to connect the platforms to the northwest parking lot.
2.D	Pedestrian	Create a new sidewalk and raised crosswalk (shown in photo above) to connect the platforms to the west parking lot.
2.E	Shuttle	Designate a waiting area for shuttle buses to wait to pickup passengers.
2.F	Car	Designate short-term parking spaces in the central parking lot for cars waiting to pickup passengers.
2.G	Pedestrian	Create a new raised crosswalk (example shown in photo above) between renovated parking lot and Mountain View Drive.
2.H	Bicycle	Create bicycle parking near the outbound platform.

Source: DVRPC (2017)

FIGURE 3.4: SHORT-TERM TACTICAL RECOMMENDATIONS





Sources: DVRPC (2017), SEPTA (2015)

3. Major Capital Improvements: Pedestrian and Bicycle Infrastructure

A fundamental part of designing a public transit stop or station is to include elements that make the passenger feel safe. Every passenger is a pedestrian at some point in their trip. Even those who drive to a station become pedestrians when traveling from their car to the platforms and back again. The priority of this set of recommendations is to provide safe connections to Exton Station for cyclists and pedestrians.

At this time, there are limited ways for bicyclists and pedestrians to safely access Exton Station. The types of investments suggested will link commercial and residential areas to the station and will help to create new pedestrian and bicycle networks in the area. With a safe, connected network there is the potential that passengers will feel safe and comfortable enough to choose to walk or bike to the station rather than using their personal vehicles. This in turn could reduce demand for parking at the station. A major benefit of non-motorized improvements is that they have the capability to improve the quality of life of residents in the community and create a welcoming environment for visitors and station users.

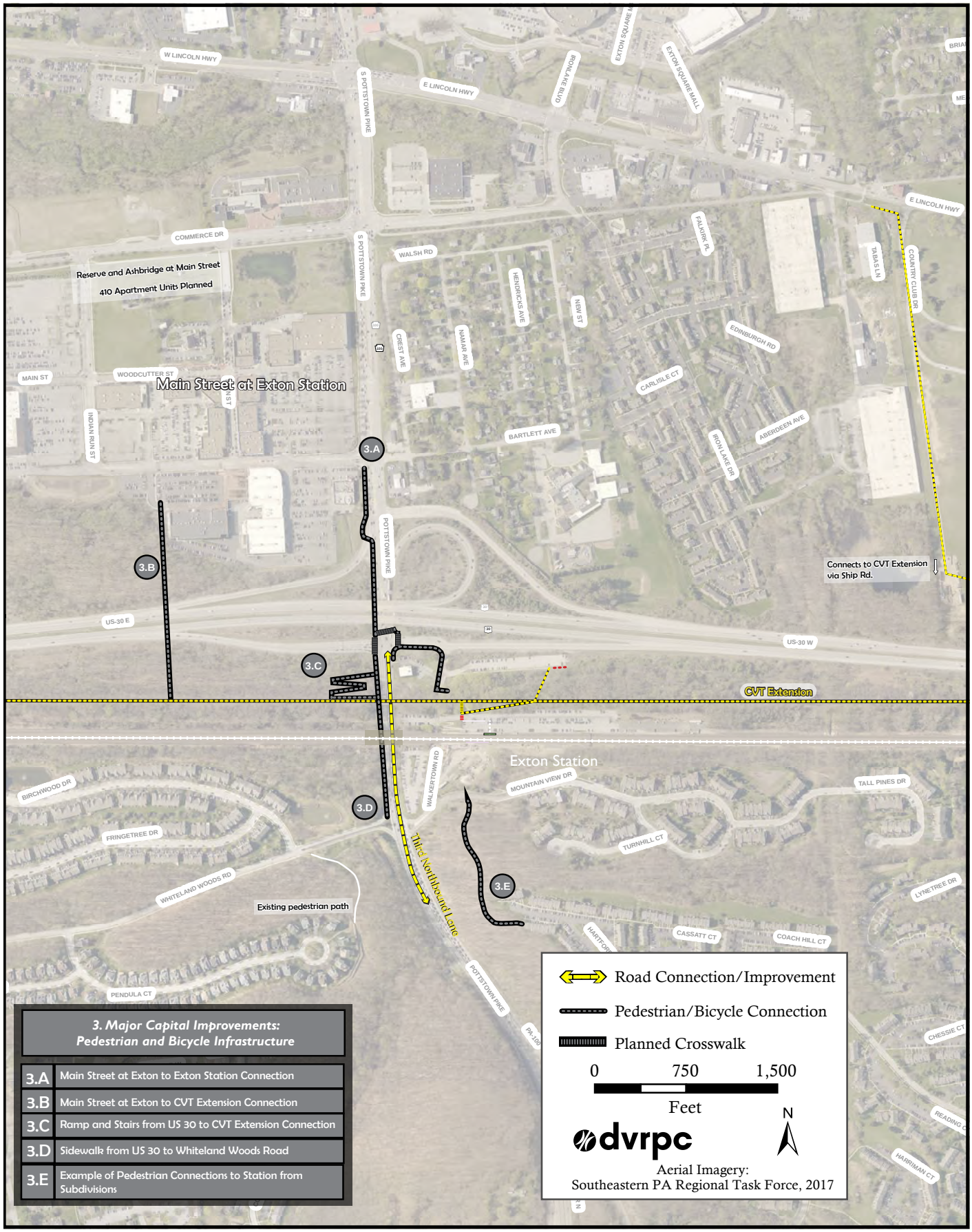
Table 3.3 and Figure 3.5 further illustrate the proposed recommendations. Planning, engineering, and construction of each of these elements could be a coordinated effort between all stakeholders but especially between West Whiteland Township, Chester County, and PennDOT (where appropriate).

TABLE 3.3: MAJOR CAPITAL IMPROVEMENTS: PEDESTRIAN AND BICYCLE INFRASTRUCTURE

Item	Mode	Recommendation	Conditions
3.A	Pedestrian and Bicycle	Create a safe and direct bicycle and pedestrian connection between Main Street at Exton and Exton Station. (Under design.)	N/A
3.B	Pedestrian and Bicycle	Create a new pedestrian and bicycle overpass from Main Street at Exton over US 30 to the CVT Extension.	This ensures that the CVT Extension has a greater impact by connecting it directly to a large mixed-use development. Not necessary if Letter C is preferred or built.
3.C	Pedestrian and Bicycle	Build a ramp up to the CVT Extension on the west side of PA-100.	Construction of stairs and a ramp needed to manage the grade change from sidewalk to CVT Extension. New crosswalk across US 30 off-ramp and a sidewalk along the west side of PA-100 also needed.
3.D	Pedestrian and Bicycle	Add non-motorized connection along the west side of PA-100 between the Howard Rd./US 30 off-ramp intersection and the PA-100/Whiteland Woods Rd./ Walkertown Rd./Mountain View Dr. intersection.	Major construction will be needed to create this non-motorized connection, such as perforating holes under the support walls to allow for pedestrians and bicyclists to safely pass under the bridge.
3.E	Pedestrian and Bicycle	Create new pedestrian connections centered around Exton Station, specifically from residential subdivisions with dead-end streets. (Location of Letter E is an example.)	This depends on the new configuration of PA-100 (additional lanes, crosswalks, and/or sidewalks) and requires agreement between each neighborhood and West Whiteland Township about the location and maintenance of new connections.

Source: DVRPC (2017)

FIGURE 3.5: MAJOR CAPITAL IMPROVEMENTS: PEDESTRIAN AND BICYCLE INFRASTRUCTURE



4. Major Capital Improvements: Bus Loop and Surface Parking

At this time, buses do not stop within the station because there is no dedicated space to accommodate a layover and turn-around. SEPTA's station renovation plan (Phases 2 and 3) includes a new bus loop on the north side of the station, as well as some expanded surface parking. With this in mind, the project assessed if the proposed location was most suited, as well as alternatives of how and where these elements could fit in the existing station footprint.

The goals of this set of capital improvements are to improve circulation and further mitigate conflicts between buses, cars, and pedestrians and aim at creating better connections for passengers who are traveling on or transferring between modes. Table 3.4 and Figure 3.6 illustrate the proposed recommendations.

Letter A illustrates a new loop that can accommodate buses but also flexible space for drop-offs and pick-ups of other vehicle types (Lyft, Uber, kiss-and-ride, future autonomous vehicles).

One loop provides bus-only access into the station via Walkertown Road and out of the station onto Howard Road. This additional access point may require a transit-only signal to prioritize and separate bus movements from traffic movements.

Letter B illustrates a new shared passenger and operator amenties area. This graphic illustrates the loop on the north side of the station (the same location as SEPTA's plans) because this location does not require major bridge or road reconstruction. Also, larger vehicles accessing the station will not have to travel under the Amtrak/ Paoli/Thorndale Line or the former P&T Rail Line to access PA-100 in either direction.

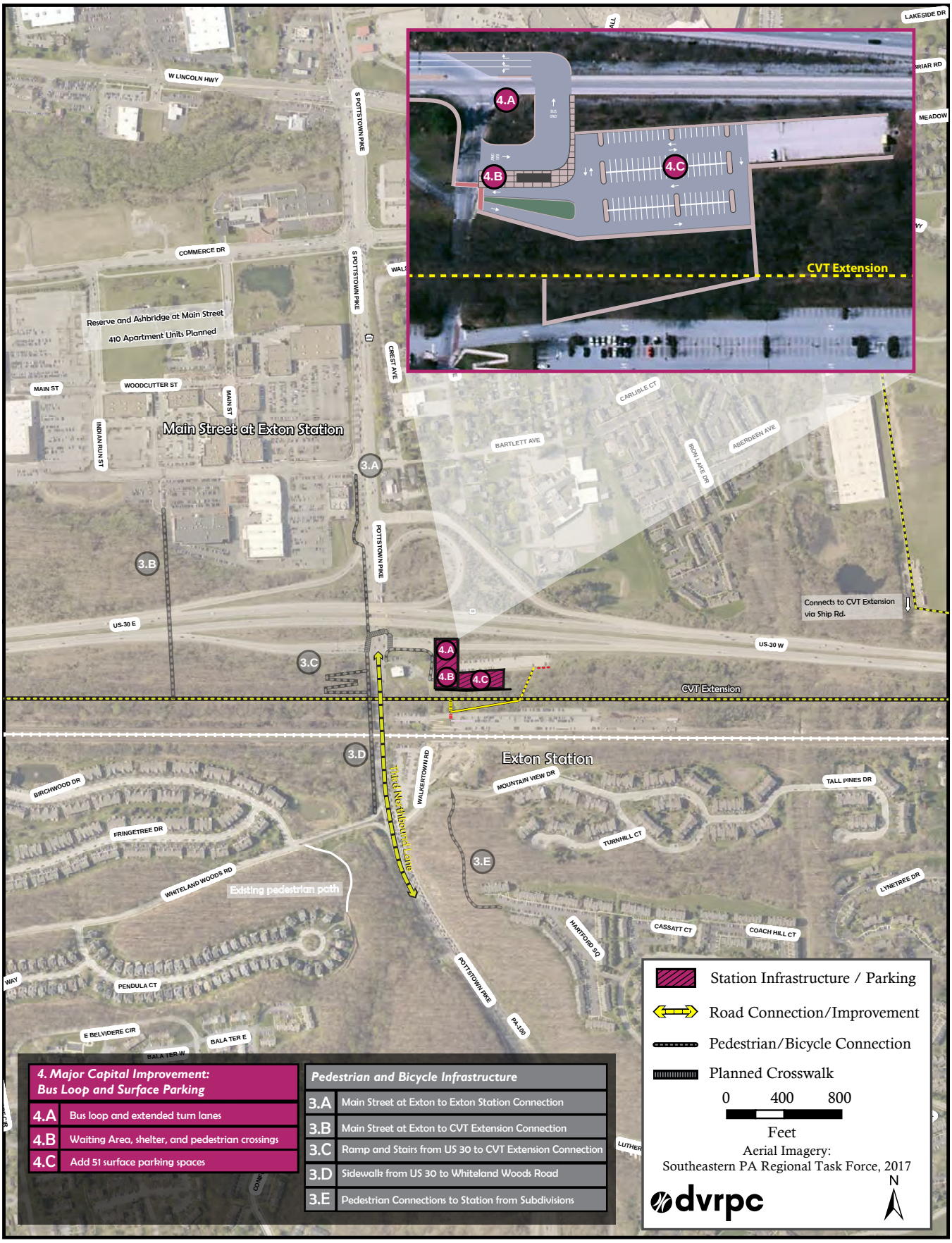
Letter C shows expanded surface parking where there is unused land that is within the station boundaries.

TABLE 3.4: MAJOR CAPITAL IMPROVEMENTS: BUS LOOP AND SURFACE PARKING

Item	Mode	Category	Recommendation	Conditions
4.A	Bus	Bus Access	Build a bus loop with space for vehicles to pick up and drop off customers, as well as layover between runs. The westbound turn lanes on Howard Road farther east provide exclusive egress from the loop. May require a transit-only signal to prioritize and separate bus movements from traffic movements. Alternate bus loop configurations can be found in Appendix B.	Relocation of retention pond. Extension of turn lanes on PA-100.
4.B	Car and Bus	Bus Access	Build a passenger waiting area with a shelter and pedestrian crossings to planned and existing sidewalks.	Agreement between partners about the best location and access points.
4.C	Car	Road	Expand surface parking in the Exton Station north parking area (approximately 50 spots).	Agreement between partners over purchase or lease of land and exact location and capacity of lot.

Source: DVRPC (2017)

FIGURE 3.6: MAJOR CAPITAL IMPROVEMENTS: BUS LOOP AND SURFACE PARKING



5. Major Capital Improvements: Create a Four-Way Intersection

The PA-100 TCDI project (seeking to alleviate existing and mitigate future congestion) suggests creating a modified four-way intersection at PA-100 and Whiteland Woods Boulevard/Mountain View Drive. Another bidirectional access point into Exton Station will allow for safer pedestrian and vehicle entry, exit, and crossing.

The study team endorses ending the limited access highway portion of PA-100 at Whiteland Woods Road and creating this four-way intersection if there is agreement between the local stakeholders and no evidence it will further increase congestion along PA-100. In addition, if built, the new intersection should serve all modes. This would require removing the center median and adding ADA crosswalks and sidewalks.

The same TCDI study recommends a jughandle that would allow vehicles heading southbound to access the station at the new intersection, in addition to access via Howard Road as anticipated in DVRPC's traffic analysis (Appendix A). The current cartway width does not allow for dual left-turn lanes on PA-100. DVRPC acknowledges the jughandle could provide benefits to some station users, but the study team believes more investigation should be done before implementing this element. Currently there is no southbound SEPTA bus stop along PA-100 between Main Street at Exton and Boot Road/ Phoenixville Pike. At this time, bus vehicles do not stop within the station because there is not space to accommodate a layover and turn-around. Additionally, the Amtrak/Paoli/Thorndale Line and former P&T Rail Line bridge widths and clearances on Walkertown Road are too low to accommodate two passing standard bus vehicles. Therefore, passengers heading southbound on a SEPTA bus are required to walk a distance to access Exton Station. With new ADA crosswalks and sidewalks at PA-100 and Whiteland Woods Boulevard/ Mountain View Drive, a safer environment will be created for cyclists and pedestrians. In addition, it is possible that transit vehicles could be permitted to stop at this new intersection. Pictures illustrating the intersection can be found on pages 40-41.

Table 3.5 and Figure 3.7 further depict the proposed recommendations. Planning, engineering, and construction of each of these elements should be a coordinated effort between the municipality, Chester County, and PennDOT (where appropriate), Krapf's Coaches, SEPTA, and TMACC.

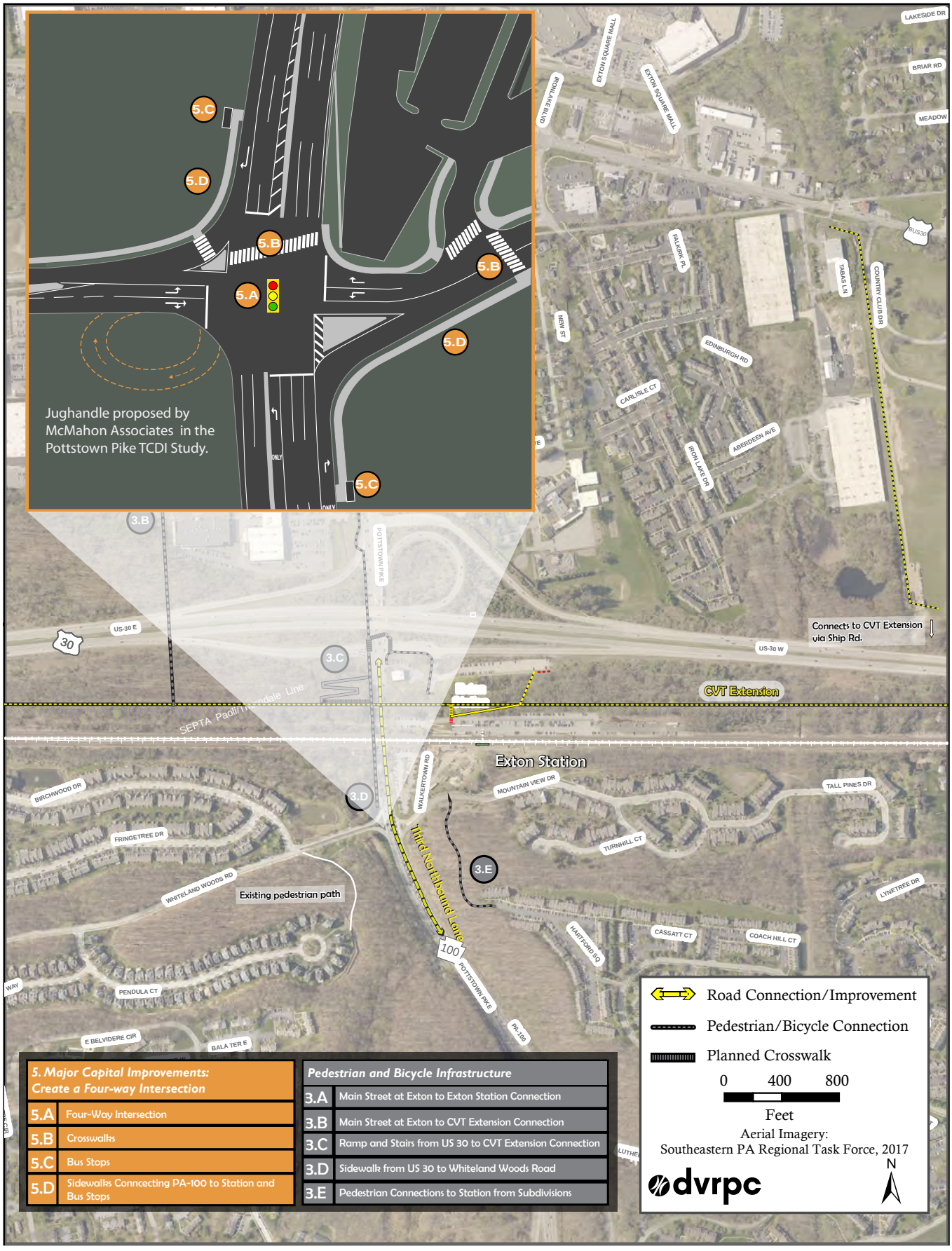
Note: Lowering Walkertown Road to allow two-way bus service through the station (and thus better southbound passenger connections) was discussed and eliminated from this scenario. The project team concluded that building this new intersection will allow for bus passengers to access the station in both directions.

TABLE 3.5: MAJOR CAPITAL IMPROVEMENTS: CREATE A FOUR-WAY INTERSECTION

Item	Mode	Recommendation	Conditions
5.A	Car	Create a four-way intersection with signalization.	Median must be removed. This modification requires a redesign for channelization islands and the lane reconfiguration.
5.B	Pedestrian	Crosswalks to create safe pedestrian crossing and access to the station.	N/A
5.C	Bus	Reinstate bus stops with shelters along PA-100 at the new intersection.	Work with SEPTA and Krapf's to ensure these locations are suitable for service with new conditions.*
5.D	Bus and Pedestrian	Sidewalks that connect PA-100 to Exton Station and reinstated bus stops.	N/A

Source: DVRPC (2017)
**Note: SEPTA has safety concerns about on-road bus stops along PA-100 in the vicinity of Exton Station that led to their previous removal. New stop locations should be designed collaboratively with transit operator(s) to ensure viability for safe and efficient operations.*

FIGURE 3.7 MAJOR CAPITAL IMPROVEMENTS: CREATE A FOUR-WAY INTERSECTION



5. Major Capital Improvements: Create a Four-way Intersection	
5.A	Four-Way Intersection
5.B	Crosswalks
5.C	Bus Stops
5.D	Sidewalks Conncecting PA-100 to Station and Bus Stops

Pedestrian and Bicycle Infrastructure	
3.A	Main Street at Exton to Exton Station Connection
3.B	Main Street at Exton to CVT Extension Connection
3.C	Ramp and Stairs from US 30 to CVT Extension Connection
3.D	Sidewalk from US 30 to Whiteland Woods Road
3.E	Pedestrian Connections to Station from Subdivisions

6: Major Capital Improvements: Structured Parking

The analysis of current traffic conditions suggests that adding another station access point will likely alleviate some congestion along PA-100, making it feasible to accommodate additional park-and-ride vehicular volumes at Exton Station. This could take the form of expanded surface parking and/or structured parking.

DVRPC endorses additional parking with the completion of the proposed new four-way intersection; concepts can be found on the pages before this, as well as in the TCDI study prepared by McMahon Associates.[1] Prior to building additional parking DVRPC recommends a parking demand analysis be completed for the entire Paoli/Thorndale Line.

Table 3.6 and Figure 3.8 illustrate and describe two options for the location of the new structured parking. An eastern side of the station option is shown in more detail (6.B), and a western option is located conceptually (6.A) based on a concept drawing from CCPC (Appendix B). The eastern option is consistent with SEPTA's fluid concept.

[1] *McMahon Associates, PA-100 Congestion Mitigation Study (2018).*

TABLE 3.6: MAJOR CAPITAL IMPROVEMENTS: STRUCTURED PARKING

Item	Mode	Category	Recommendation	Conditions
6.A	Car	Parking	Build structured parking at Exton Station, adding approximately 400 spaces. See Appendix B for detailed concept of garage option 6.A.	1. Additional parking without congestion mitigation (especially recommendations 1.B and 5.A, in addition to bike/pedestrian access improvements) may exacerbate congestion along PA-100. 2. Structured parking will likely require a partnership for funding, due to the cost of building and maintaining the facility.
6.B	Car	Parking	Build structured parking at Exton Station, adding approximately 400 spaces.	

Source: DVRPC (2017)

FIGURE 3.8: MAJOR CAPITAL IMPROVEMENTS: STRUCTURED PARKING

CONCLUSION

Although the recommendations are shown in a specific order, it is not necessary that they all be implemented in this order. Figure 3.9 illustrates three scenarios of recommendation combinations.

Scenario 1: Local Connectors recommends non-motorized improvements within and around Exton Station that will help it to feel better locally connected for pedestrians and cyclists (see Figure 3.9). In all scenarios this study recommends (with the specified conditions) that the Pending Project Outcomes, Short-Term Tactical Recommendations, and Major Capital Improvements: Pedestrian and Bicycle Infrastructure be implemented.

Scenario 2: Continued Growth shows that building a parking structure per SEPTA's capital plan should first consider improving pedestrian and bicycle connections within the station and to the surrounding areas. It also indicates the need for a four-way intersection at PA-100 and Mountain View Drive in order to handle the increased traffic volumes that would be induced by a parking structure.

Scenario 3: Limited Capacity highlights the opportunity for a bus loop but does not include the new four-way access point into the station or a major parking expansion.

The recommendations are broken up into sets based loosely on when and how they may be implemented. The first set, *Pending Project Outcomes* are more formalized projects (with designs) and will likely happen with additional funds and local stakeholder agreement.

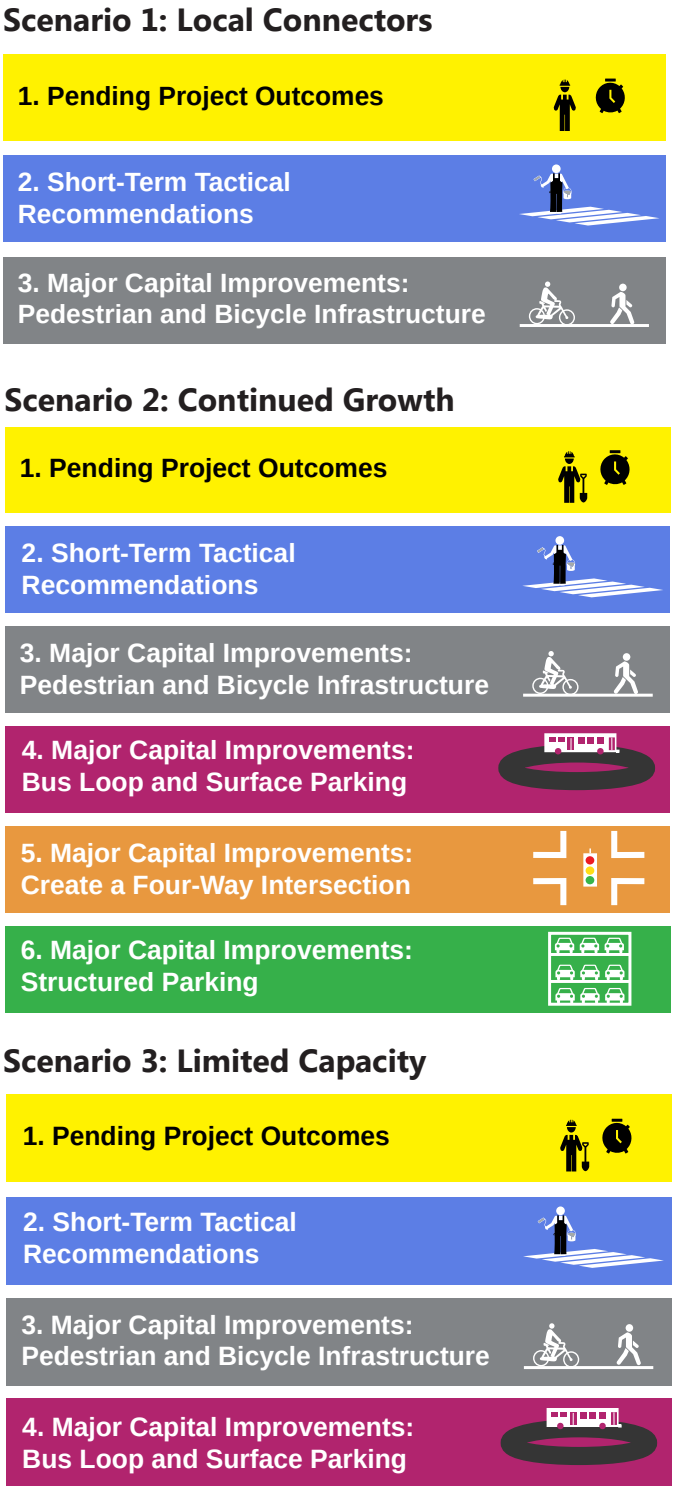
The *Short-Term Tactical Recommendations* are primarily on SEPTA property and could therefore be built when the agency has the resources to do so.

Major Capital Improvements are investments that require more discussion by stakeholders about the trade-offs to choose between multiple options and the best fit for the community.

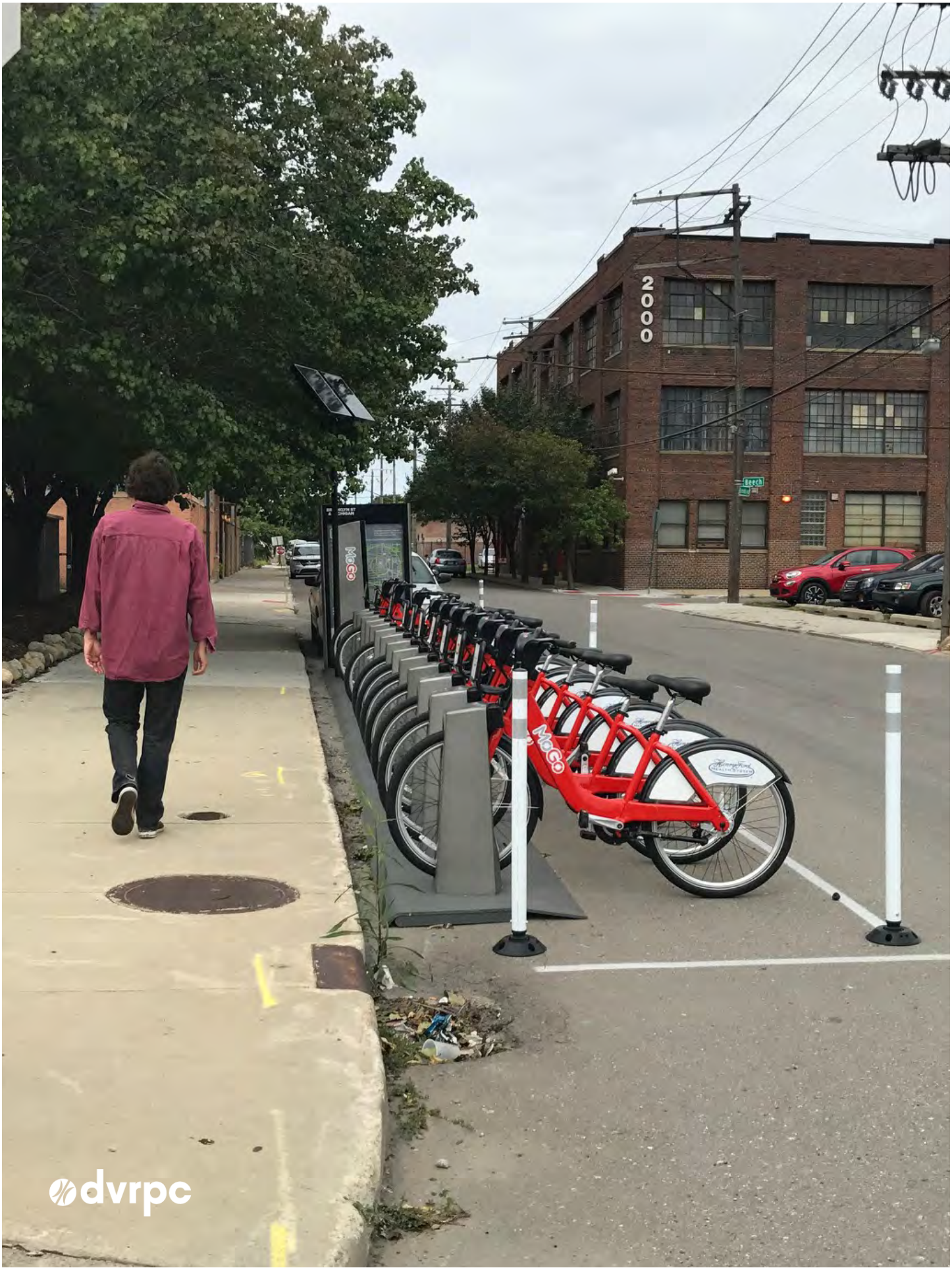
For example, this study does not recommend that both 3.B (an overpass from the CVT to Main Street at Exton) and the combination of 3.C/3.D (a non-motorized connection along PA-100 through the US-30 interchange and a ramp up to the CVT) be built because the connections serve a similar purpose: to move cyclists and pedestrians along PA-100 from Main Street at Exton to the CVT Extension and Exton Station (see pages 48-49).

Additionally, since the major capital improvements are larger in scale more studies and design phases will likely be required, depending upon the funding and support for each project. Other combinations of these recommendations are also possible.

FIGURE 3.9: RECOMMENDATION SCENARIOS



Source: DVRPC (2018)



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CHAPTER 4: SUPPLEMENTAL STRATEGIES

A number of ideas raised by stakeholders will require new partnerships and significant research to implement, build, and maintain. The following section includes concepts the team deemed as longer-term mobility strategies for Exton Station and the surrounding area. These are a resource for communities like West Whiteland Township, where there is limited parking availablility at the station, low-density suburban land uses, limited bus access, and few bicycle and pedestrian connections.

The DVRPC team recommends further study for implementation for shared parking, ridesharing partnerships, and reconstructing the interchange at PA-100 and US 30. TMACC could be the leader in this coordination because they know the local partners well. Bike sharing, vanpooling, and additional shuttles are conceptually feasible in this environment but would likely be difficult to implement in practice at this time. This is due to the limited bicycle and pedestrian infrastructure and density of residents and jobs. These concepts should be revisited once the appropriate infrastructure and denser land use patterns are in place.

Shared Parking[1]

Shared parking is a strategy that could further improve station access and alleviate congestion in the study area. This is an arrangement where parking is shared between multiple tenants for their consumers rather than being reserved for a single property owner's patrons. At Exton Station the acute need for more parking could be relieved by partnering with property owners at nearby retail centers, such as Main Street at Exton, to allow for station users to park. Shared parking takes advantage of the variation of parking utilization by different users at different times of the day. With the implementation of the short-term recommendations, ADA pedestrian connections will be built throughout the study area, making walking feasible between commercial properties with parking facilities that are underused during the peak hours for commuters.

Partnership for Ridesourcing and RideSplitting[2]

Ridesourcing provides trips using an online platform that connects passengers with drivers using their personal vehicles. This is the model used by well-known companies such as Uber and Lyft. These third-party platform companies are commonly called Transportation Network Companies or TNCs.

Ridesplitting is a subset of ridesourcing that allows drivers to add more than one passenger. This combines fares, reduces the number of vehicle trips, and generates cost savings, all of which can be done in realtime.

Specific outcomes and statistics for ridesourcing are being heavily researched. Existing research suggests ridesourcing differs from ridesharing because there is a chance this same passenger may have used a different mode of transit that had higher benefits for the environment and lower vehicles miles traveled (VMT). (Higher VMT may also be caused by ridesourcing drivers driving around in search of a customer.)

The major benefit for the customer is the flexibility of this service. In the Exton Station area both Uber and Lyft are available for ridesourcing and ridesplitting.

Uber and New Jersey Transit Case Study[3]

One solution to the first-mile/last-mile problem at Exton Station, and a way to leverage the popularity and ease of use of ridesharing companies, is to build a relationship with one of the companies. This partnership could take the form of subsidized trips to and from a rail station for passengers within a specific distance of the station.

In 2016, Summit, New Jersey, a suburb of New York City, implemented a pilot program that subsidized Uber trips to and from their train station for the same price of the daily parking fee. The pilot was limited to 100 resident commuters for a limited time period. The pilot provided two trips per day to each resident from a designated pick-up and drop-off zone. A resident was allowed one trip to the station and one from the station per day. Those who prepaid for parking were given a code to use when hailing an Uber and were not charged for their rides. Those who paid for parking by day were charged $2 each ride through their Uber account. The right partnership between a ridesharing/ride-hailing company with SEPTA for Exton Station users has the potential to reduce parking demand and mitigate congestion in the area. Effective December 2017, Summit, New Jersey, switched to start using Lyft for this program.[4]

UBER designated waiting area at 30th Street Station
Source: DVRPC (2018)

[1] *Shared-Use Mobility Center, Shared-Use Mobility Toolkit for Cities, (2016).*

[2] *Shared-Use Mobility Center, Shared-Use Mobility Toolkit for Cities, (2016).*

[3] *Enjoy Summit, "Summit's New Uber Ridesharing Program for Resident Commuters," https://www.cityofsummit.org (2017).*

[4] *Summit Patch, "Summit's Ride Sharing Partnership Now Using Lyft," https://patch.com/new-jersey/summit (2017).*

Alternative Interchange Concepts [5]

Exton Station is a popular train station, in part, because of its close proximity to the US 30 interchange at PA-100. While vehicular access is important for the station, this interchange was not designed to accommodate pedestrian or bicycle use, and thus it is difficult to access the station without a vehicle.

Additionally, this interchange (which features five entry and exit ramps) takes up a considerable amount of space in an area that is highly desirable for development. Stakeholders at both DVRPC's project workshop and the Pottstown Pike Congestion Mitigation Feasibility Study public outreach meeting proposed concepts to replace, realign, and shrink the existing interchange at PA-100 and US 30. This would allow for improved pedestrian and bicycle connections to Exton Station. The ideas in this section are exercises in reimagining a more accessible and less congested corridor. Any further consideration would require a more thorough analysis of cost and circulation effects. These examples are preliminary ideas for how to improve traffic flows, reduce the highway footprint, and provide safer pedestrian access at this interchange.

Single Point Urban Interchange (SPUI)

A SPUI features arterials and ramps controlled by a single traffic signal. For Exton Station, a SPUI would provide direct access to two neighborhoods, as well as remove station traffic from and reduce traffic delays at critical intersections. The construction of a SPUI would be constrained by both the Exton Bypass and both rail bridges and would require heavy reconstruction to accommodate it.

Diverging Diamond Interchange (DDI)

DDIs accommodate left-turning movements at signals by bringing the travel lanes from the right to the left side of the road as it passes through the interchange, eliminating the need for left-turn phases at intersections. DDIs can have pedestrian facilities located either at the center or the outside of the interchange.

A DDI would require the reconstruction of PA-100 to eliminate left turns and shift egress movement to new signalized access points. DDIs have the same benefits as a SPUI but further reduce delays at critical intersections. DDIs would be restricted by the existing rail bridges and Exton Bypass and have potential bus circulation impacts due to the reconstruction of PA-100 and inability to make left turns.

Displaced Left-Turn Interchange (DLT)

DLT intersections have left-turning traffic cross over the opposing travel lanes upstream of the main intersection. Vehicles proceed on a new roadway between the opposing travel lanes and a roadway that carries right-turning traffic from the ramp. If a DLT were built, reconstruction would be required to relocate left turns and shift egress movements to new signalized access points. A DLT would improve access to the two neighborhoods near Exton Station, as well as reduce delays at critical intersections. Like the previous examples, a DLT would be constrained by the existing rail bridges and Exton Bypass. It could also potentially affect bus circulation patterns.

On-Ramp Realignment

Another idea that came from the stakeholder workshop was to realign the southbound PA-100 and US 30 on-ramp to create a sharper (right-angle) right turn. This option would require less physical alteration and preserve the interchange otherwise. This would shorten the crossing distance for pedestrians, improve visibility for vehicles and pedestrians, and reduce the amount of land occupied by US 30 infrastructure.

[5] *McMahon Associates, PA Route 100 Congestion Mitigation Study (2018).*

Policy Modifications

This section recommends West Whiteland Township enact congestion management strategies and proposes to alter a funding mechanism to prepare for future transportation as population and employment growth continue. Relaying and employing these strategies to new and existing residential and commercial developments may assist in reducing vehicle trips, and thus help mitigate future congestion. All stakeholders can work together, but the leaders in these intiatives should be TMACC, Chester County, and West Whiteland Township, with assistance from DVRPC as needed.

Congestion Management Strategies [6]

West Whiteland Township's 1994 Comprehensive Plan Update addresses congestion management strategies in Section 4, or the Circulation Plan. To put this set of strategies into action, DVRPC recommends that a survey be conducted to estimate the daily trips of local residents and employees, as well as the available services for the major trip pairs other than a personal vehicle. This will give the township detailed data on the trip patterns that people are making in West Whiteland Township. This data can be used for future transportation planning concepts and designs. A the same time, West Whiteland Township can use their Comprehensive Plan language to come up with a set of goals for their congestion management strategies. Two strategies already in the West Whiteland Comprehensive Plan are to set up and enforce an Employee Trip Reduction Plan (ETRP) and Trip Reduction Ordinances.

ETRP

The objective of an ETRP is to reduce the average vehicle occupancy by decreasing the volume of traffic on the road system. At the time the Comprehensive Plan was published, 36 businesses had ETRP programs. Encouraging companies to create ETRP programs once again is recommended by this study.

West Whiteland Township could suggest that employers in the study area survey their employees to ascertain the percentage that drive to work.

Each company could then create a self-imposed sustainability plan that could include a way to reduce existing trips or limit additional trips beyond that current number or share.

Trip Reduction Ordinances

In West Whiteland Township's Comprehensive Plan, trip reduction ordinances are proposed as a part of the land development process as a way to limit a new development's trip-making potential. The plan suggests that West Whiteland Township determine a site's trip-making quota using the *Institute of Transportation Engineers Trip Generation Manual*. When this quota is reached, the municipality could limit future building permits for that single entity until corrective plans and actions were taken.

Act 209 Transportation Impact Fee Regulation of West Whiteland Township [7,8]

As discussed in Chapter 1, the Pennsylvania General Assembly passed Act 209 of 1990 authorizing municipalities within the Commonwealth to enact, amend, and repeal impact fee ordinances and to charge impact fees to cover the cost of road improvements necessitated by new land development. Impact fees can only be used for the construction of roadway improvements designated in the municipality's transportation Capital Improvements Plan. This does not include the construction of bicycle lanes, bus lanes, busways, pedestrian ways, or rail lines except where they may supplement a highway project. The West Whiteland Township Board of Supervisors chose to enact this amendment to ensure the transportation system is adequate, safe, convenient, and usable for residents as it continues to grow and develop.

At this time, West Whiteland Township is collecting funds from new developments under Act 209. To date, municipalities are not able to use the funds collected to build non-motorized improvements alone. However, if this were revised by the state legislature and did allow for non-motorized transportation improvements to be made, the recommendations combined to create Scenario 1: Local Connectors, could be implemented with that funding in the near term.

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[6] *West Whiteland Township Comprehensive Plan (1994).*
[7] *West Whiteland Township, Chester County, PA, West Whiteland Township Transportation Impact Fee Ordinance (1990).*
[8] *PennDOT, Transportation Impact Fees A Handbook for Pennsylvania's Municipalities (Updated 2009).*

Opportunities for Future Research

With continued growth, infill of residential and employment, and the recommended bicycle and pedestrian infrastructure earlier in this chapter, it may be warranted to research other shared mobility strategies for implementation for the Exton Station area. Some of those that were discussed throughout this project were bike sharing, vanpooling, and additional shuttles to Exton Station. This section includes information about where these mobility strategies are used in the DVRPC region.

Bike Sharing

If the bicycle and pedestrian infrastructure from Scenario 1: Local Connectors is built, these safer new accommodations will help provide last-mile connections between Exton Station, job centers, and residences in the study area. A bike share system could be introduced as a first- and last-mile connection to Exton Station from jobs and neighborhoods within a two-mile radius of the station. West Whiteland Township and partner agencies need to further research and explore the best system for the area. Either at the local or regional scale, bike share in West Whiteland Township has the opportunity to improve local mobility.

Bike share programs are being explored in places, and by sponsors, that we might never have imagined. Within the DVRPC region, a number of bike share practices are being explored for different contexts and operating goals. Locally, docked bike share systems were implemented in Philadelphia (Indego) and on WCU's campus (Zagster), among others. In DVRPC's Planning Work Program for fiscal year 2019, there is a project that will develop an appropriate framework for creating a platform for regionally coordinating bike share program(s).

Vanpooling

A vanpool is a collection of people who are interested in using transportation other than their personal vehicle and may not have access to public transit on one end of their trip. Vanpooling uses a public or private transit provider to coordinate a group of potential passengers who have similar trip ends.

The costs of commuting (gas, insurance, car maintenance, cost of a vehicle, tolls, and parking) are shared among the participants of the vanpool. Vanpooling has the potential to save time and money, and to provide additional time for riders to work or relax.

In this region, Enterprise Rideshare is a private firm that coordinates vanpools for people online. The website offers potential passengers, employers, and other agencies information about existing ridesharing (both carpooling and vanpooling) opportunities for their trip and information about starting vanpools. This method of ridesharing could be put to use in West Whiteland Township in the small industrial park area.

Shuttles

Shuttle service is typically run with a vehicle that is smaller than a standard public transit bus and has limited stops. Service can be implemented as a fixed or flexible route. Shuttles are generally created to supplement the existing transit network, and often provide a tailored, high-quality service. The primary function of a shuttle is to make public transit a more feasible option for travelers. Shuttle service was discussed throughout this project as a way to link the local destinations to Exton Station. The West Whiteland Whirl was a circulator that provided service in the Exton Station area in the early 2000s. Due to low ridership and funding constraints, the service was eliminated. Currently, there is a shuttle that provides service from WCU to Exton Station. The service is limited to peakhour when school is in session. More information describing these services can be found in Chapters 1 and 2, respectively.

Conclusion

Chapters 3 and 4 recommend implementing ideas that align with the way people access Exton Station now. With technology advancement in transportation options (such as TNCs, Autonomous Vehicles, and Microtransit) these recommendations should be continually re-evaluated as they are pursued in the future to make sure the passenger preferences remain the same.

APPENDIX A: Analysis of Potential Traffic Patterns at Exton Station

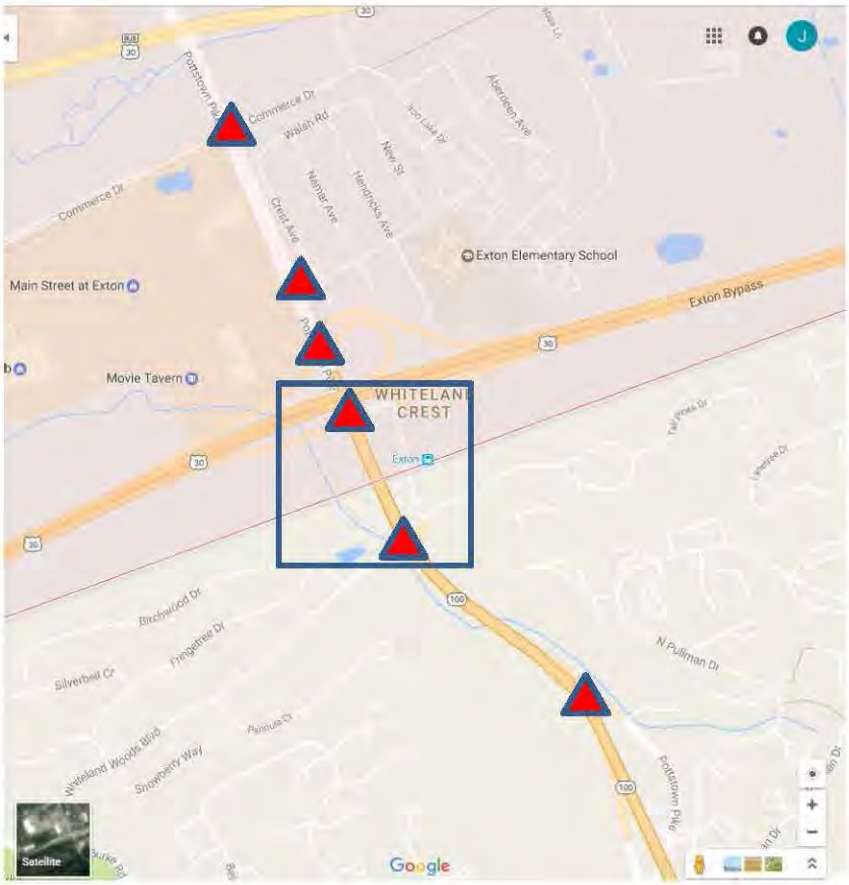
Traffic Element for Exton Station Area Concept Planning (Phases 2 & 3)

The project was conducted to provide a traffic- and parking-demand dimension to DVRPC's concept planning study, and a vehicle to communicate with the TCDI-funded Pottstown Pike (PA 100) Congestion Mitigation Feasibility Study.

Background

The congestion mitigation study is currently being performed by McMahon Associates, Inc. Their work includes evaluating vehicular and non-vehicular movement along PA-100 adjacent to the station area (**Figure 1**). A recommended plan for the corridor will be the outcome.

Figure 1



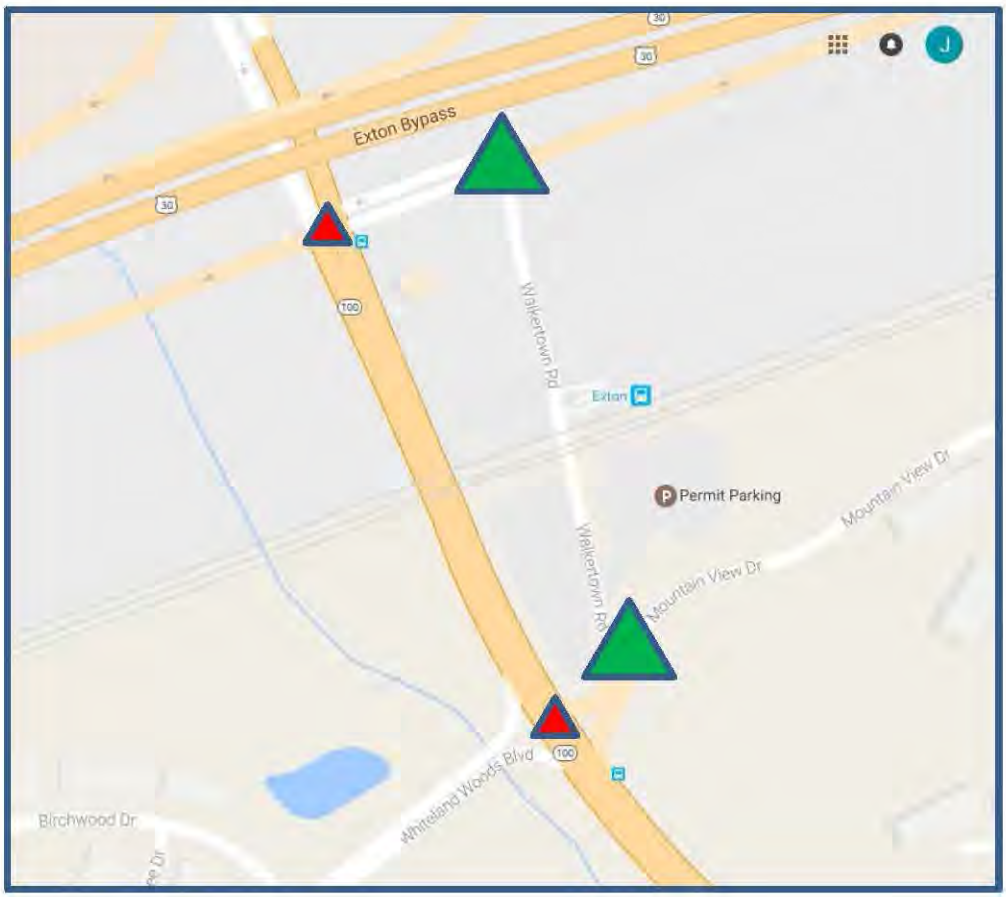
McMahon's traffic corridor and six study intersections. Inset: footprint of DVRPC's "Traffic Element."

Source: DVRPC (2017, Google (2017)

DVRPC's concept planning study is focused on the station property's assets and services, but also on connections with its surrounding community.

The overlapping projects connect at four points (**Figure 2**).

Figure 2



Source: DVRPC (2017), Google (2017)

DVRPC's two traffic count locations.

Improvement proposals have already been identified that will directly impact the four intersections. These include:

- adding station parking;
- constructing a bus loop on the north end of the property;
- enhancing driveway access to and from the station;
- supplying two-way bus service via Walkertown Road (versus a bus loop); and
- reconstructing the Exton Bypass (US 30) interchange with PA-100 as a SPUI.

This report summarizes DVRPC's evaluation of those proposals.

DVRPC Scope

Data collection activities included the following:

- a midday license plate survey of parked cars in the Exton Station parking lot (Wednesday, November 16, 2016), and address matching of vehicle registrations to determine residency patterns of the station's parking customers;
- peak-period (6:00 AM to 9:00 AM, and 3:00 PM to 7:00 PM) turning movement traffic counts (Tuesday, April 4, 2017) at Walkertown Road's intersections with Howard Road/US 30 Eastbound On-Ramp, and Mountain View Drive. (The counts were conducted with a view toward PA-100 and tabulated to estimate directional distribution of Walkertown Road-oriented traffic. The extended timeframes for the counts captured peak parking activity at the station and peak volume conditions along PA-100.); and
- field inspections and measurements, and spot parking lot counts.

Analysis of the data followed:

- Traffic count data was analyzed to supply estimates of traffic generation and parking accumulation at the station, and cut-through or pick-up and drop-off traffic along Walkertown Road for four identified peak hours during the course of a typical weekday.
- Future-year turning movement traffic volumes were formulated for two alternative access scenarios at the two Walkertown Road intersections and benchmarked to the adjacent PA-100 intersections (for four peak evaluation hours each).
- Relationships were drawn and evaluated between the alternatives and the improvement proposals using the traffic estimates and other criteria.

Prepare and share this summary report because:

- Through-traffic demand along Walkertown Road and additional vehicular trips generated by potential parking expansions at the station can be direct inputs into the traffic component of the congestion mitigation study.
- Understanding directional distribution of station-based traffic is helpful for determining the effects of circulation changes within the station property, the effects of revised access with a median break at PA-100 and Mountain View Drive/Whiteland Woods Boulevard, and the ability to integrate with a SPUI at PA-100 and the Exton Bypass.

Existing Transportation Conditions

Exton Station is served by SEPTA and Amtrak trains. Currently the station is undergoing construction to add high-level platforms. Because of the construction project, one of its five parking lots (containing 127 spaces) is out of service; 582 parking spaces remain available. Walkertown Road is the sole means of accessing the station and its parking lots.

Walkertown Road is a two-lane municipal road oriented south-to-north between Mountain View Drive and the Howard Road/US 30 (Exton Bypass) Eastbound On-Ramp. Along the way, the road serves the Exton Station and its parking lots, and a privately owned dance studio. Cartway widths vary between 17 and 19 feet, with a five-to-six-foot wide sidewalk on the east side of the roadway. Walkertown Road traffic

approaching both cross streets is controlled by stop signs. Both cross streets intersect PA-100 in close proximity to Walkertown Road. Only right turns to and from Mountain View at PA-100 are possible. All but the westbound through movement are permitted at PA-100 and Howard Road/US 30 Eastbound Off-Ramp. The latter intersection is controlled by a multiphase traffic signal.

Besides station and dance studio patrons, Walkertown Road traffic includes cut-through travelers between PA-100 northbound and the US 30 Eastbound On-Ramp, and residents of the Mountain View residential community. Full-sized (and smaller) school buses are routed via Walkertown Road northbound.

A screenshot from the traffic count video: the school bus stop at Walkertown and Mountain View

Source: DVRPC (2017)

Two bridges span Walkertown Road; spot measurements were taken at each.

Source: DVRPC (2017)

- Amtrak
  - vertical clearance measured at 11'6"; posted at 10'8"; and
  - horizontal clearance/roadway width measured at 17'.
- Chester Valley Trail
  - vertical clearance measured at 12'4"–at lowest edge over the roadway; and
  - horizontal clearance / roadway width measured at 19'.

PennDOT's Design Manual Part Two indicates desirable dimensions for a new bridge over a two-lane local road at

- vertical–14'6"; and
- Horizontal–18' to 36'.

The SEPTA Route 92 bus currently operates along PA 100, adjacent to the Exton Station, in a portion of its run between Exton and King of Prussia (via West Chester and Paoli). Headways are one hour. SEPTA's bus dimensions are 10'10" high and 10'6" wide—explaining why the bus does not enter the property, and why the proposed bus loop is cited for the north end of the property.

Existing Traffic Data

Traffic movements at the Walkertown Road intersections were transcribed from videos in 15-minute intervals for both peak periods and analyzed. [Copies of the turning movement traffic counts are attached.]

Considering traffic movements typical for a train station (predominantly in during the morning, and out in the evening), and the fact (from the license plate survey) that only one parked car in the lot had a registered address in the Mountain View residential community, it was possible to develop a methodology for processing the traffic count data that reasonably estimates station-based-parking traffic separately from pick-up and drop-off or cut-through traffic along Walkertown Road. A byproduct of the methodology was parking accumulation at the station. Spot checks of parked cars in the lots validated the methodology. **Table 1** contains the data.

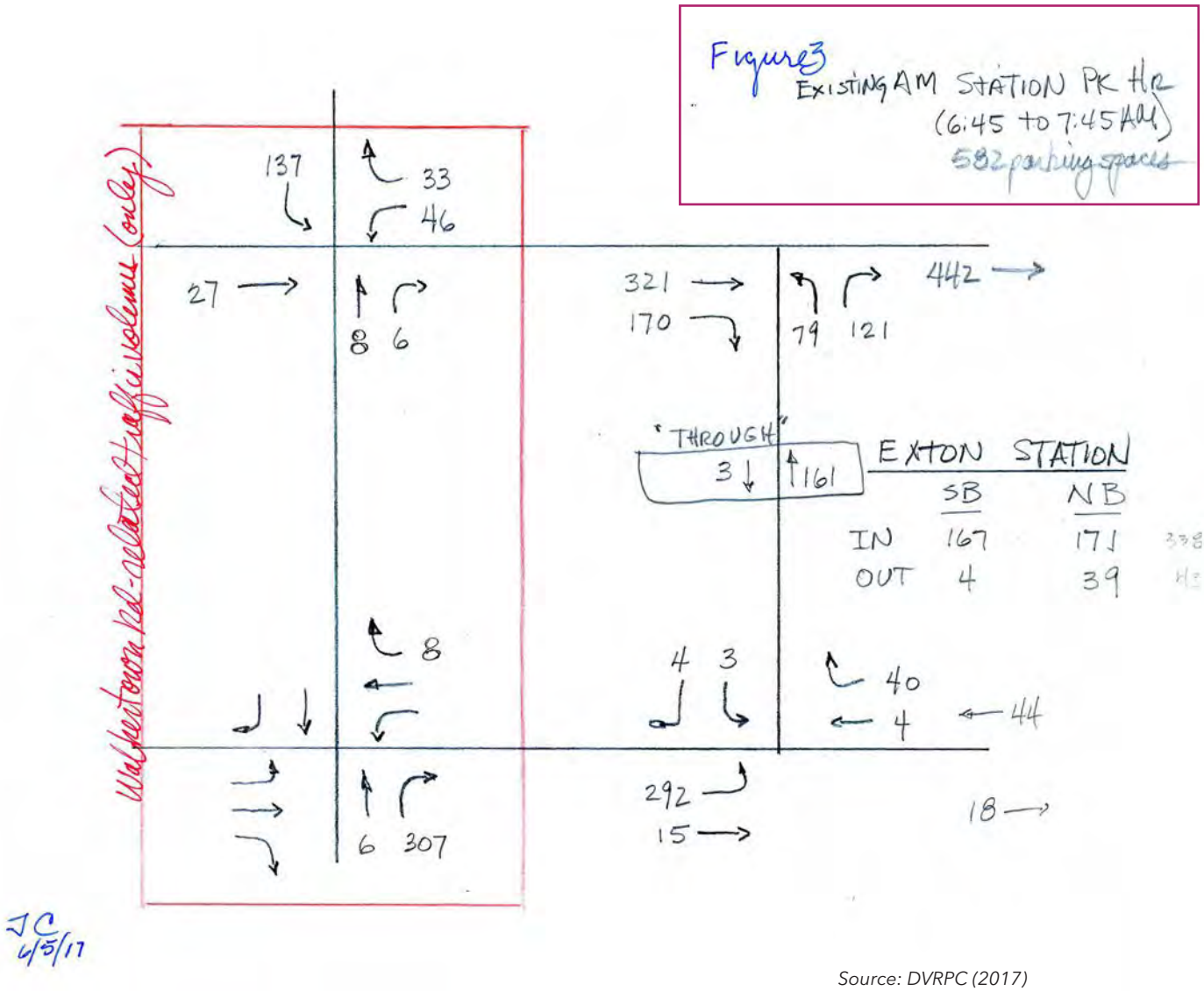
Four peak hours were identified in the traffic count data and illustrated.

- The Peak Hours of the Generator (in this case, the Exton Station):
    1) 6:45 AM to 7:45 AM (**Figure 3**); and
    2) 5:00 PM to 6:00 PM (**Figure 4**).
- The Peak Hours of Adjacent Street Traffic (in this case, Walkertown Road through traffic as an indicator of PA 100's peaking characteristics):
    1) 7:30 AM to 8:30 AM (**Figure 5**); and
    2) 5:15 PM to 6:15 PM (**Figure 6**).

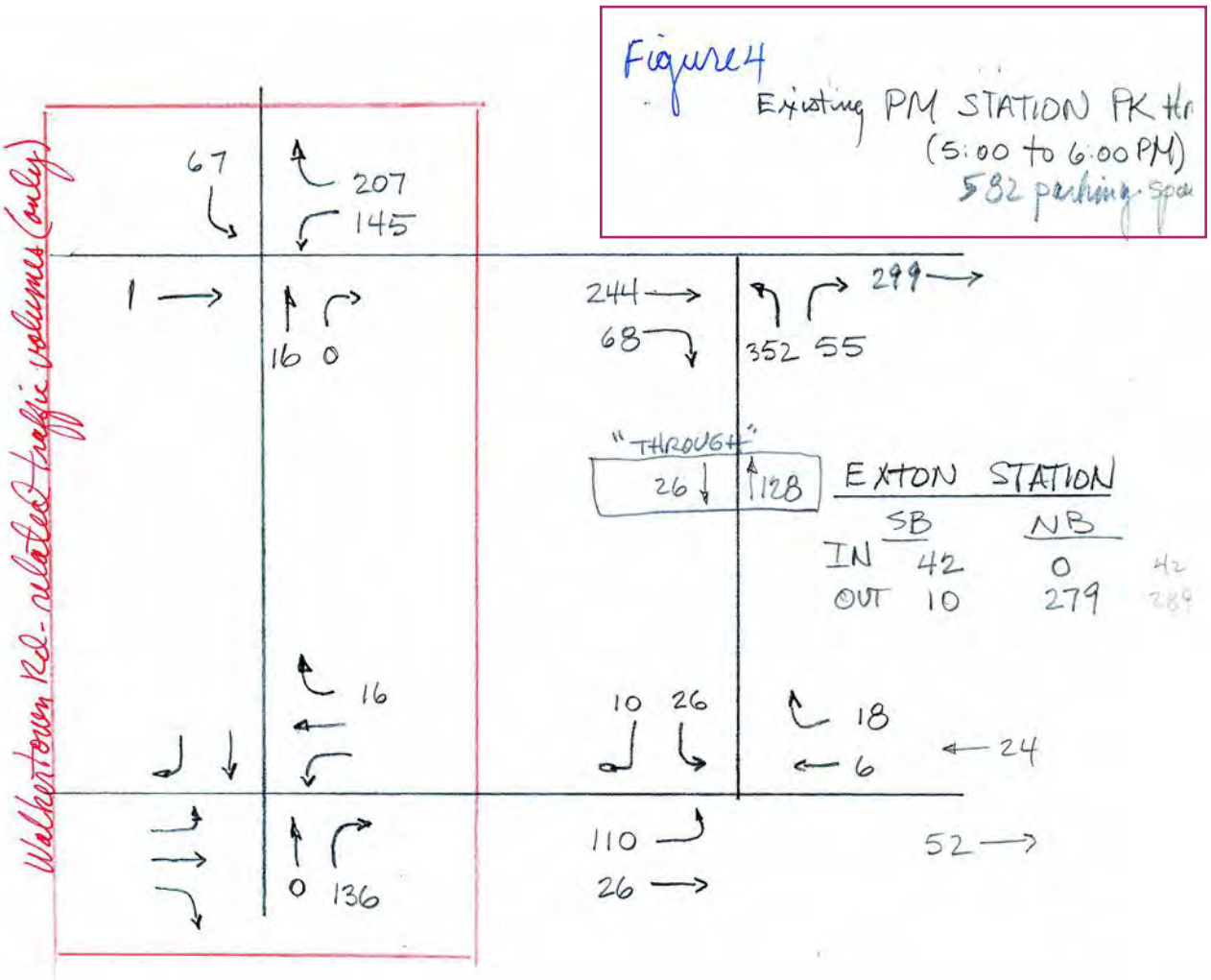
Table 1: Analysis of Traffic Count Data

interval begin	interval end	Exton Station Existing Total Trip Generation [582 parking spaces - current total during construction] IN SB	IN NB	IN Tot	OUT SB	OUT NB	OUT Tot	Exton Station: TOTAL Ins + TOTAL OUTs	Parking Accumulation	Through Traffic on Walkertown Road SB	Through Traffic on Walkertown Road NB	Through Traffic on Walkertown Road Tot	Weekday TRAIN Service (per Jan 1, 2017 schedules in effect on 4/4/2017) SEPTA Inbound	SEPTA Outbound	AMTRAK Eastbound	AMTRAK Westbound
									5/4/2017 spot check for starting occupancy at 6:00 AM							
									125							
6:00 AM	6:15 AM	30	14	44	1	0	1	45	168	0	18	18			6:10	
6:15 AM	6:30 AM	20	21	41	1	12	13	54	196	0	14	14	6:26			
6:30 AM	6:45 AM	25	9	34	0	2	2	36	228	0	21	21		6:33		
6:45 AM	7:00 AM	65	59	124	1	5	6	130	346	0	23	23				6:59
7:00 AM	7:15 AM	43	42	85	1	20	21	106	410	2	28	30	7:03		7:14	
7:15 AM	7:30 AM	41	50	91	0	9	9	100	492	0	40	40	7:30			
7:30 AM	7:45 AM	18	20	38	2	5	7	45	523	1	70	71		7:40		
7:45 AM	8:00 AM	28	17	45	1	23	24	69	544	3	80	83	7:51		7:59	7:58
8:00 AM	8:15 AM	7	0	7	0	17	17	24	534	3	87	90				
8:15 AM	8:30 AM	15	9	24	2	5	7	31	551	3	84	87	8:25			
8:30 AM	8:45 AM	3	0	3	1	0	1	4	553	4	61	65		8:37		
8:45 AM	9:00 AM	0	0	0	2	6	8	8	545	3	54	57				
		295	**241**	**536**	**12**	**104**	**116**	**652**		**19**	**580**	**599**	9:19	9:36	10:10	9:30
					midday accumulation per 11/16/2016 plates survey:				548							
3:00 PM	3:15 PM	2	0	2	2	9	11	13	536	4	16	20		3:10		
3:15 PM	3:30 PM	6	0	6	1	16	17	23	525	4	27	31	3:24			3:18
3:30 PM	3:45 PM	0	0	0	1	5	6	6	519	7	34	41				
3:45 PM	4:00 PM	4	0	4	0	2	2	6	521	3	22	25				
4:00 PM	4:15 PM	14	0	14	1	16	17	31	518	9	27	36	4:15	4:04		
4:15 PM	4:30 PM	1	0	1	2	41	43	44	476	4	29	33			4:28	4:17
4:30 PM	4:45 PM	5	0	5	2	6	8	13	473	10	23	33				
4:45 PM	5:00 PM	4	0	4	1	0	1	5	476	8	30	38	4:52			
5:00 PM	5:15 PM	11	0	11	0	70	70	81	417	5	25	30		5:03		
5:15 PM	5:30 PM	5	0	5	2	47	49	54	373	7	29	36				5:20
5:30 PM	5:45 PM	11	0	11	0	13	13	24	371	6	41	47		5:36	5:41	
5:45 PM	6:00 PM	15	0	15	8	149	157	172	229	8	33	41	5:50	5:49		
6:00 PM	6:15 PM	8	0	8	0	31	31	39	206	10	35	45				6:09
6:15 PM	6:30 PM	6	0	6	0	14	14	20	198	5	20	25				
6:30 PM	6:45 PM	7	0	7	1	27	28	35	177	6	17	23		6:36		
6:45 PM	7:00 PM	12	0	12	3	80	83	95	106	4	17	21		6:47	6:46	
		111	**0**	**111**	**24**	**526**	**550**	**661**	**116**	**100**	**425**	**525**	7:54	7:46	7:46	7:14
									5/10/2017 spot check for ending occupancy at 7:00 PM				Great Valley Flyer			

Source: DVRPC (2017)



Source: DVRPC (2017)



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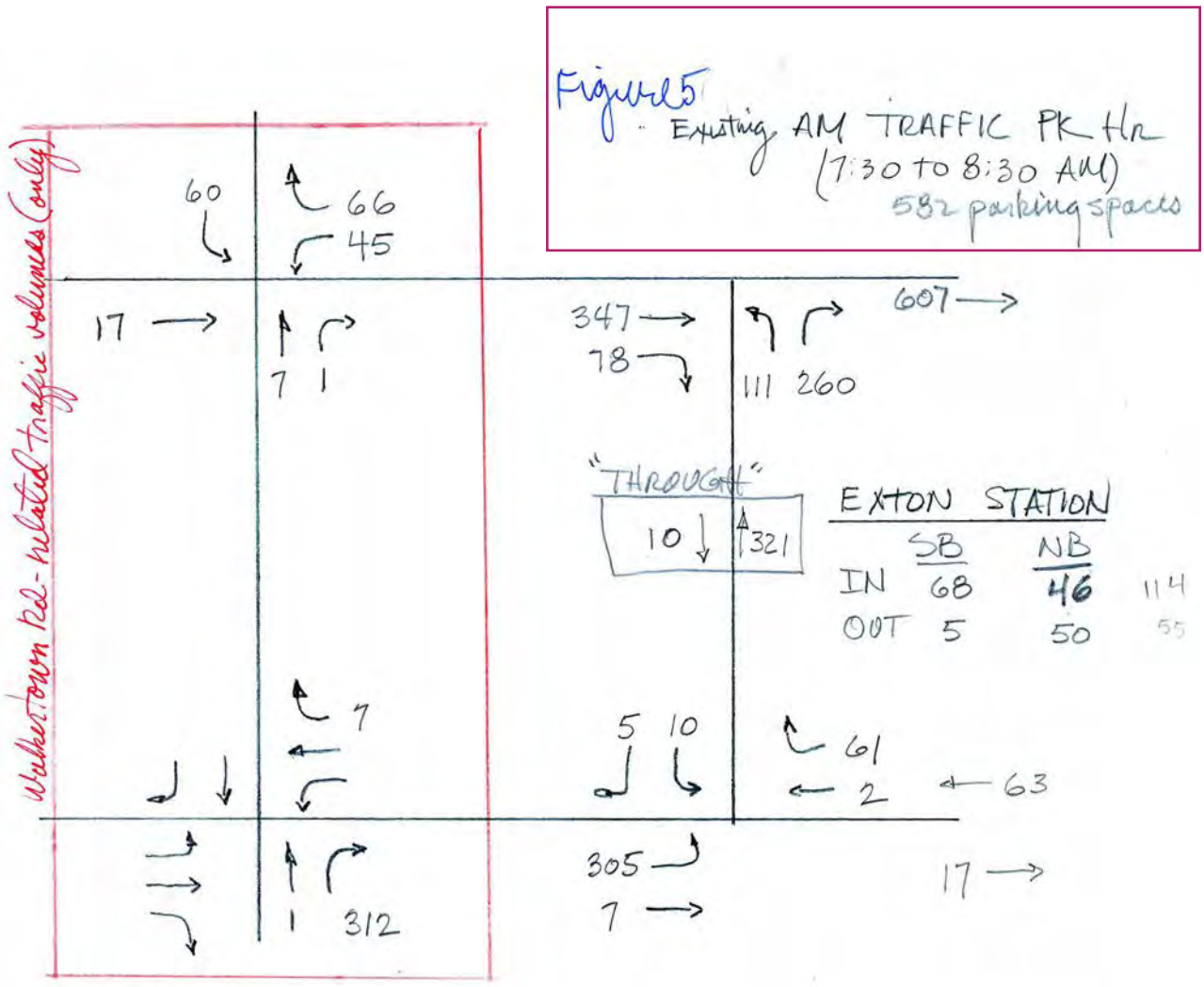
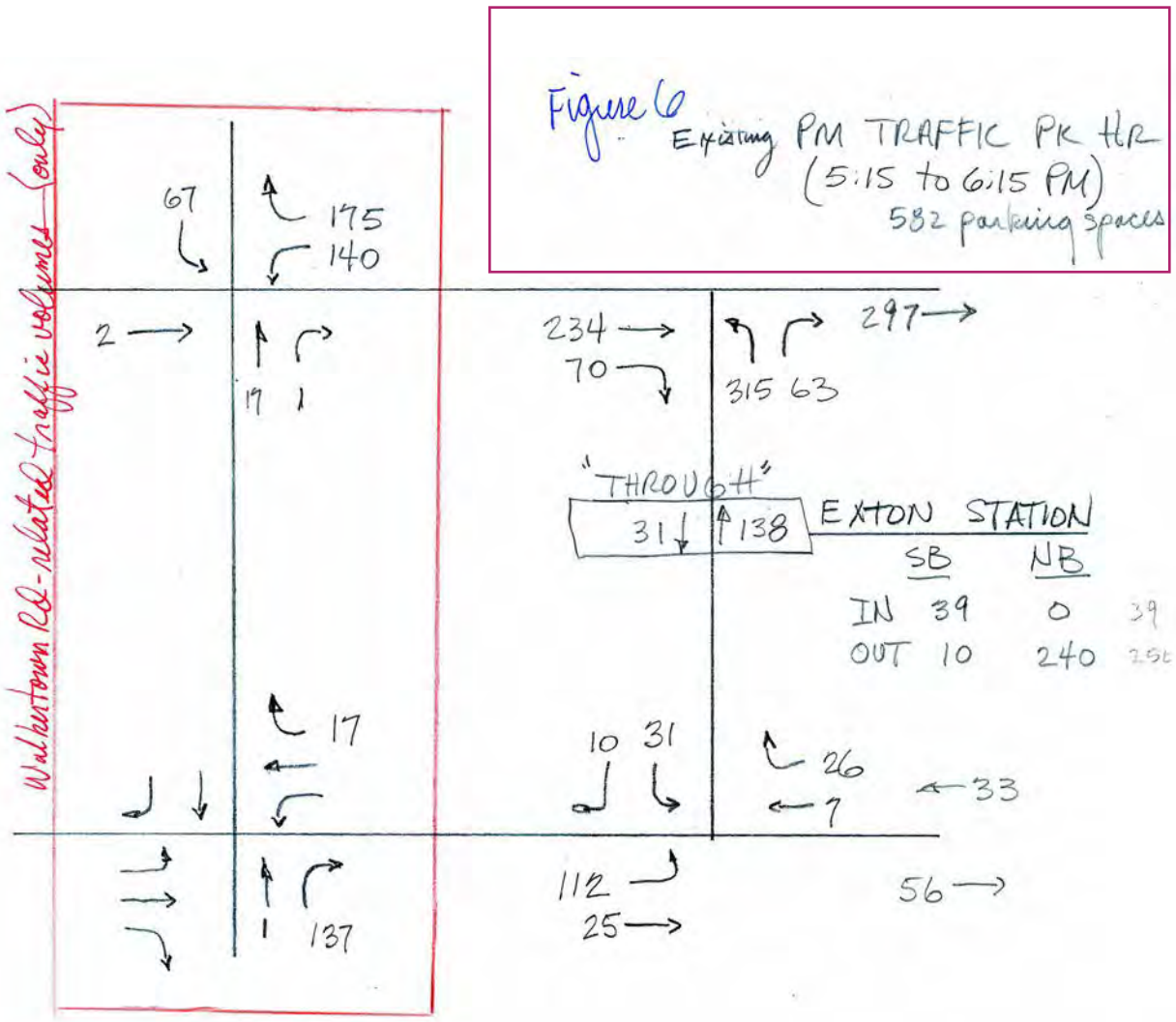


Source: DVRPC (2017)



Source: DVRPC (2017)

Future Conditions

Proposals have been identified to expand parking supply and enhance driveway access at the station.

- Adding 578 additional parking spaces will result from:
  - returning 127 existing parking spaces to service following the current construction project;
  - expanding surface parking by 58 spaces after Phase B station improvements; and
  - constructing a 400-space parking garage associated with Phase C improvements.
- Constructing a median break at the PA-100 and Mountain View Drive/Whiteland Woods Boulevard intersection. Preliminarily, the new intersection's design will allow all traffic movements except for left turns from PA-100. The intersection will be signalized.

More parking spaces will increase vehicular demands to and from the property and on the roads leading to it. Revising driveway access will alter circulation patterns on the property, and vary the impacts on PA-100. Traffic volume estimates were prepared to describe the potential for change for two alternatives.

Trip Generation

New trips were estimated for each peak hour in proportion to the number of added parking spaces.

Table 2: Exton Station Trip Generation

			Current: 582 spaces						Proposed: plus 578 spaces					
			Exton Station Existing Total Trip Generation [582 parking spaces - current total during construction]						Exton Station Additional Trip Generation After Phase C (new garage + 400 spaces) = 1160 total parking spaces					
interval			IN			OUT			IN			OUT		
begin	end		SB	NB	Tot	SB	NB	Tot	SB	NB	Tot	SB	NB	Tot
6:45:00 AM	7:45:00 AM	AM Peak Hour of Generator	167	171	338	4	39	43	166	170	336	4	39	43
5:00:00 PM	6:00:00 PM	PM Peak Hour of Generator	42	0	42	10	279	289	42	0	42	10	277	287
7:30:00 AM	8:30:00 AM	AM Peak Hour of Adjacent Traffic	68	46	114	5	50	55	68	45	113	5	50	55
5:15:00 PM	6:15:00 PM	PM Peak Hour of Adjacent Traffic	39	0	39	10	240	250	39	0	39	10	238	248

Source: DVRPC (2017)

In time, expect a doubling of station traffic versus today's conditions, and with it sizeable increases in traffic at the Walkertown Road and PA-100 intersections.

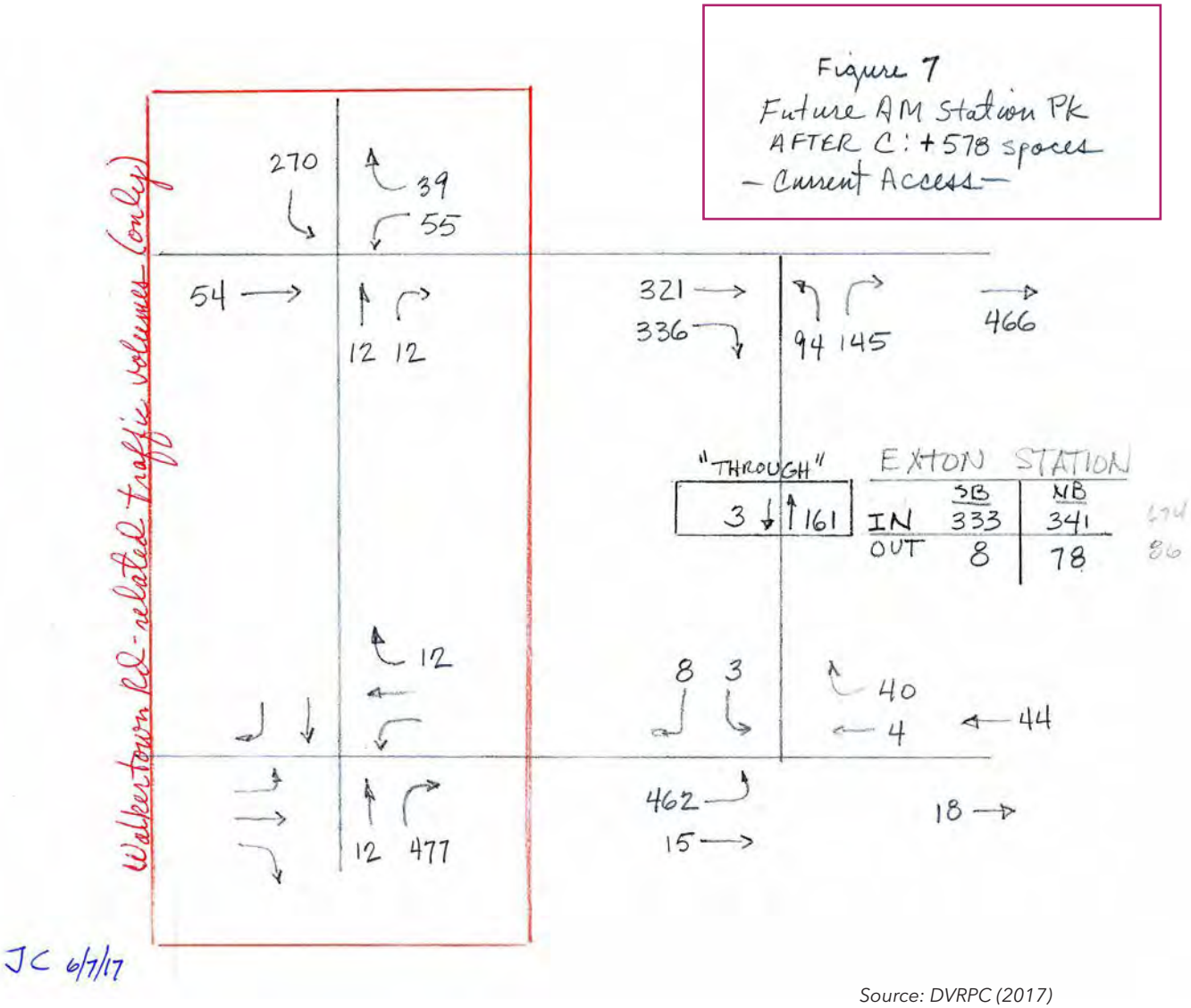
Future Traffic Volumes

Future peak-hour traffic volumes were developed for two circulation scenarios assuming full build-out of the parking proposals:

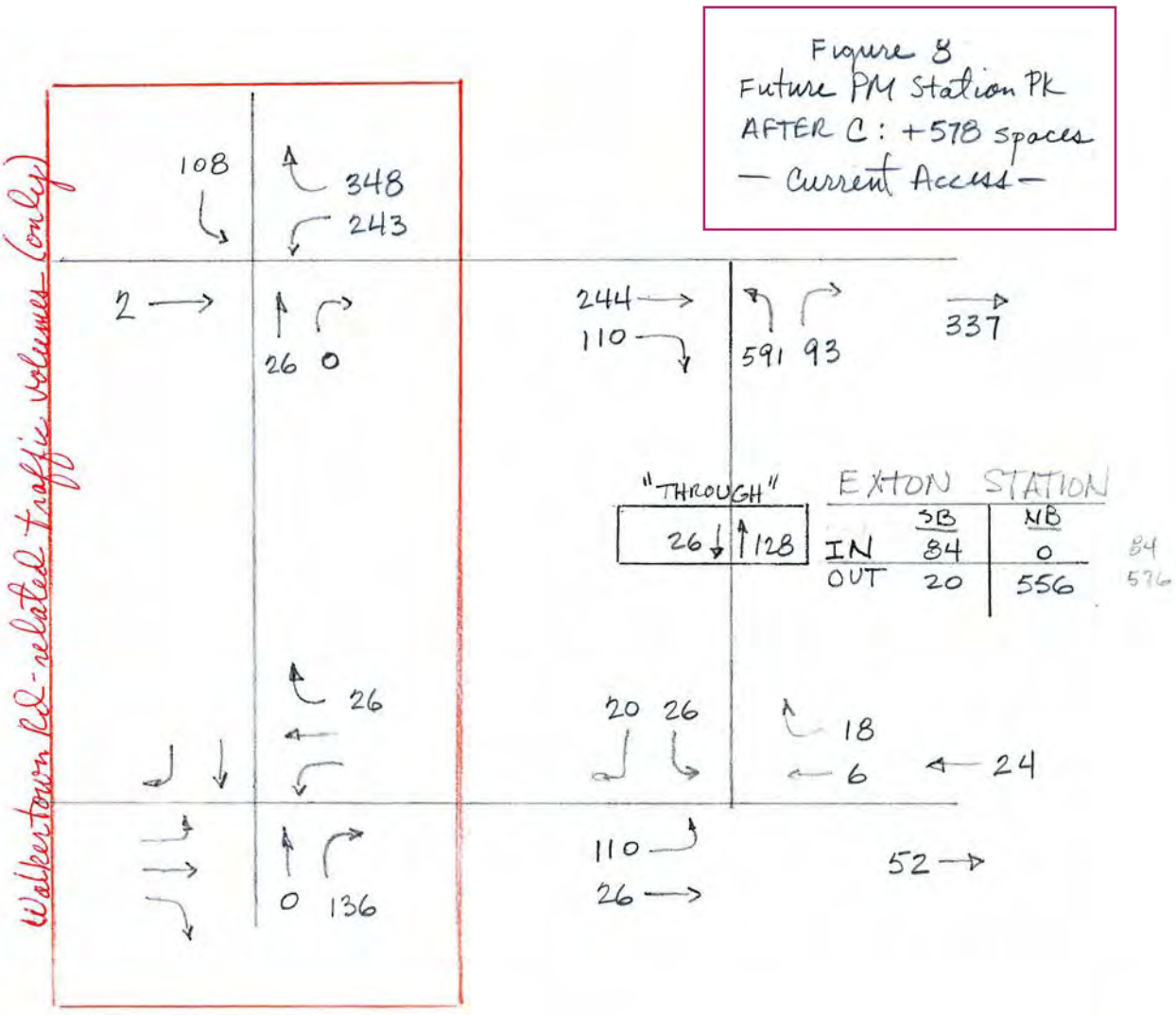
1) current station access; and
2) revised and expanded station access (i.e., at the Mountain View Drive/Whiteland Woods Boulevard and PA-100 intersection).

Current Station Access Scenario

New trips were distributed according to existing traffic patterns and added to the existing base volume for that hour. **Figures 7, 8, 9, and 10** illustrate the final volume estimates.

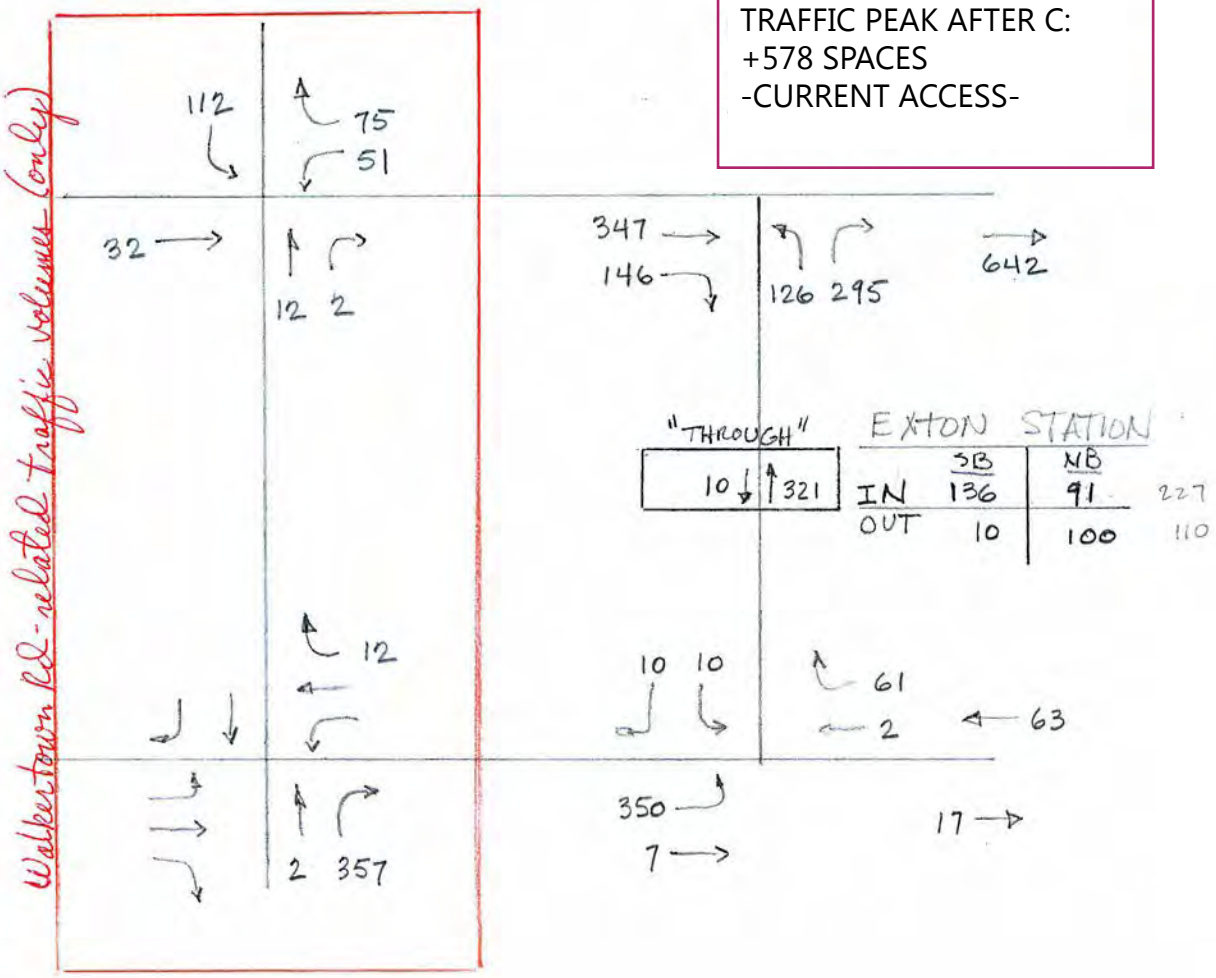


Source: DVRPC (2017)

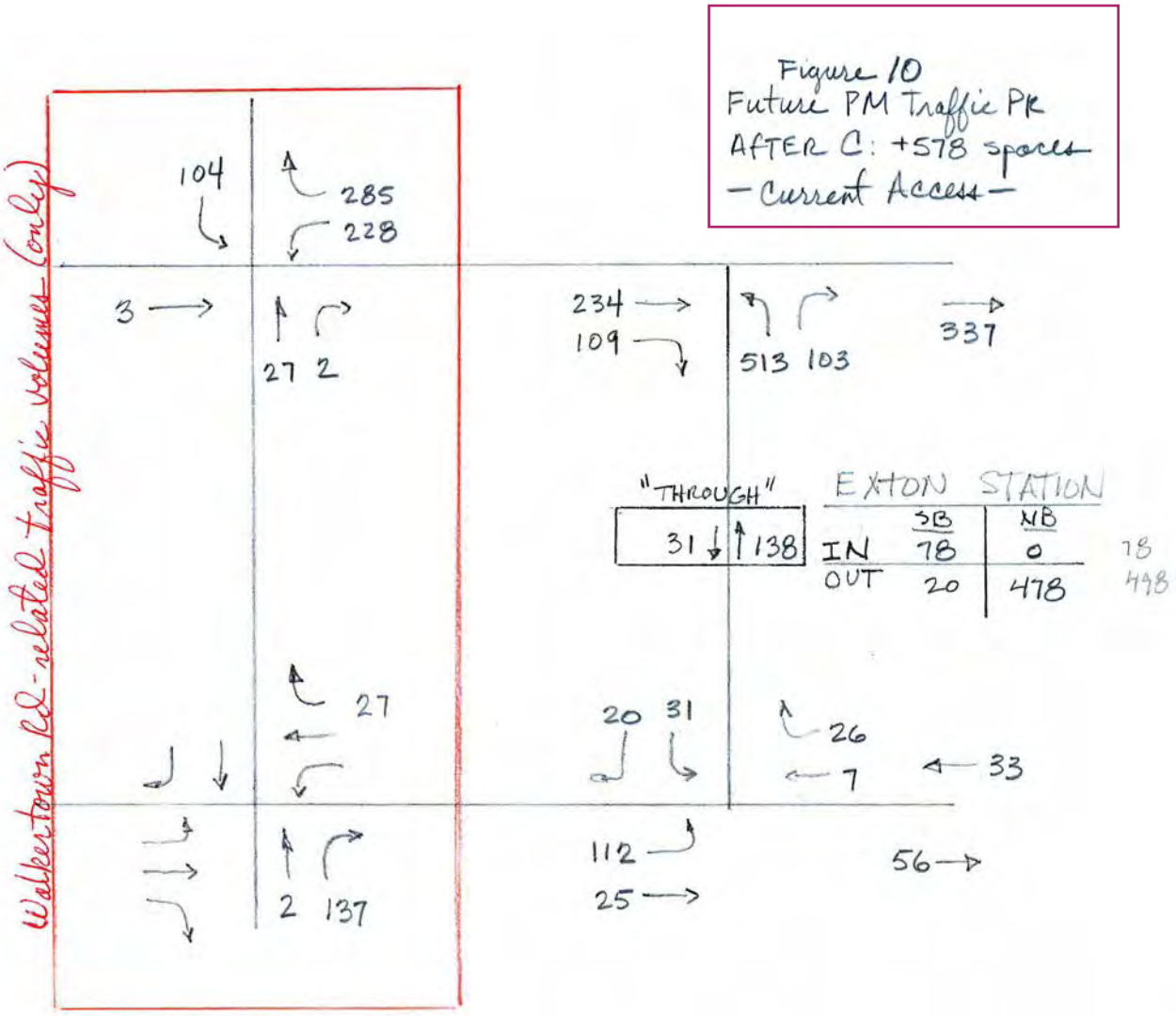


Source: DVRPC (2017)

FIGURE 9: FUTURE AM TRAFFIC PEAK AFTER C:
+578 SPACES
-CURRENT ACCESS-



Source: DVRPC (2017)



Source: DVRPC (2017)

Compared to existing conditions, the data indicates:

- substantially more traffic entering and exiting Walkertown Road, particularly during the peak generator hours; and
- an excessive left-turning volume departing Walkertown Road northbound at the US 30 Eastbound On-Ramp, and subsequently entering the Howard Road westbound approach to PA-100 during the evening peak hours.

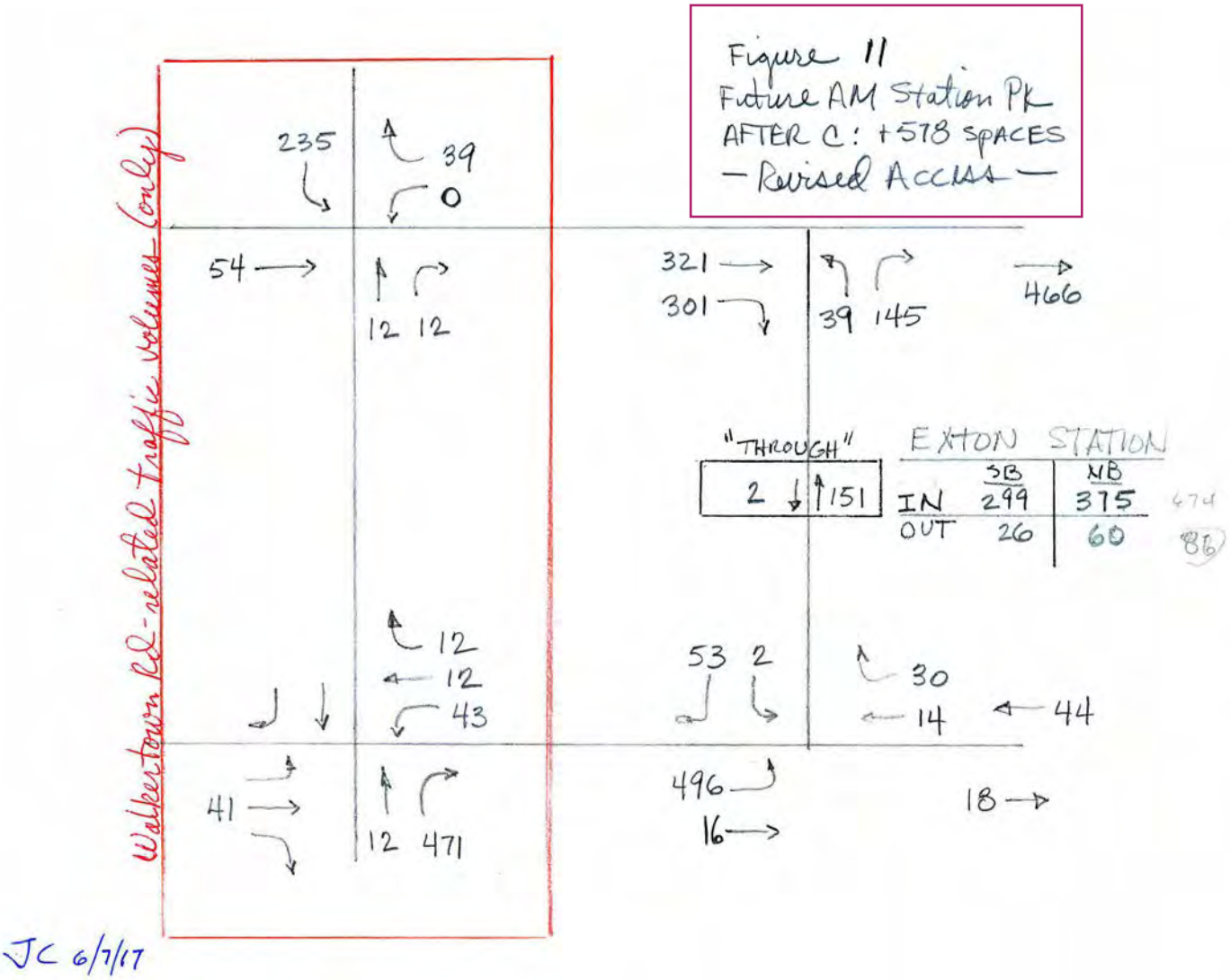
Revised Access Scenario

Conditions noted above indicated an opportunity at PA-100 and Howard Road that influenced the "design" of the second scenario: accommodate all left turns to southbound PA-100 at the new median break at Mountain View Drive, and redesign the Howard Road westbound approach to PA-100. At the latter location, specifically to:

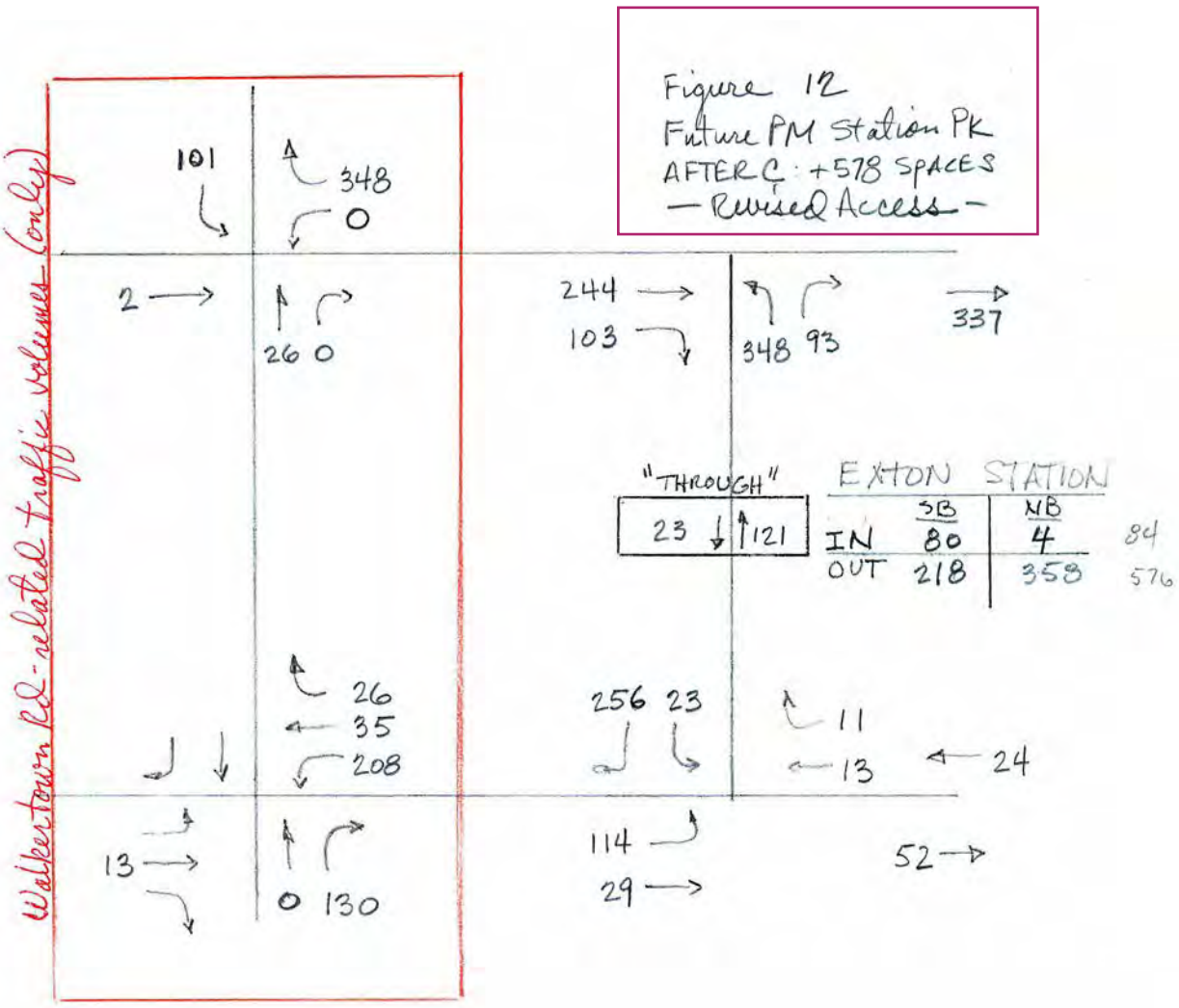
- Prohibit left turns from westbound Howard Road and eliminate the exclusive westbound left-turn signal phase. Convert the exclusive westbound right-turn lane on Howard Road to an exclusive double-right-turn lane to northbound PA-100, and overlap the signal phasing with the advance southbound left-turn phase regulating PA-100 (as is presently occurring).

Traffic estimates from the previous scenario were reassigned. Residency patterns of station patrons from the license plate survey suggest that 5 percent of the station's shed may presently be approaching and departing via Commerce Drive/Whiteland Woods Boulevard. Therefore, this estimate was used to guide the draw to/from Whiteland Woods Boulevard with a median break at PA-100 and Mountain View Drive.

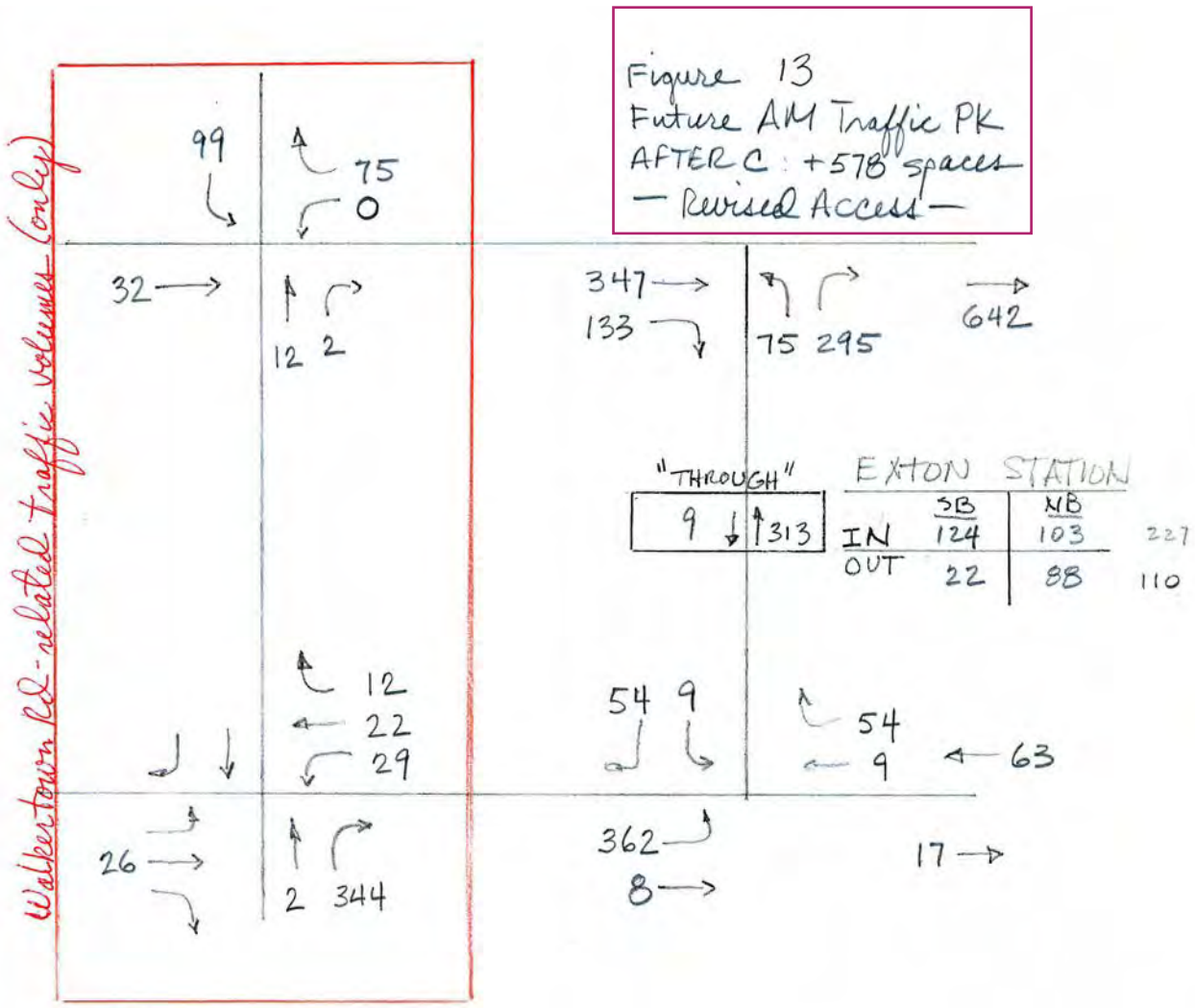
Figures 11, 12, 13, and 14 illustrate the final volume estimates.



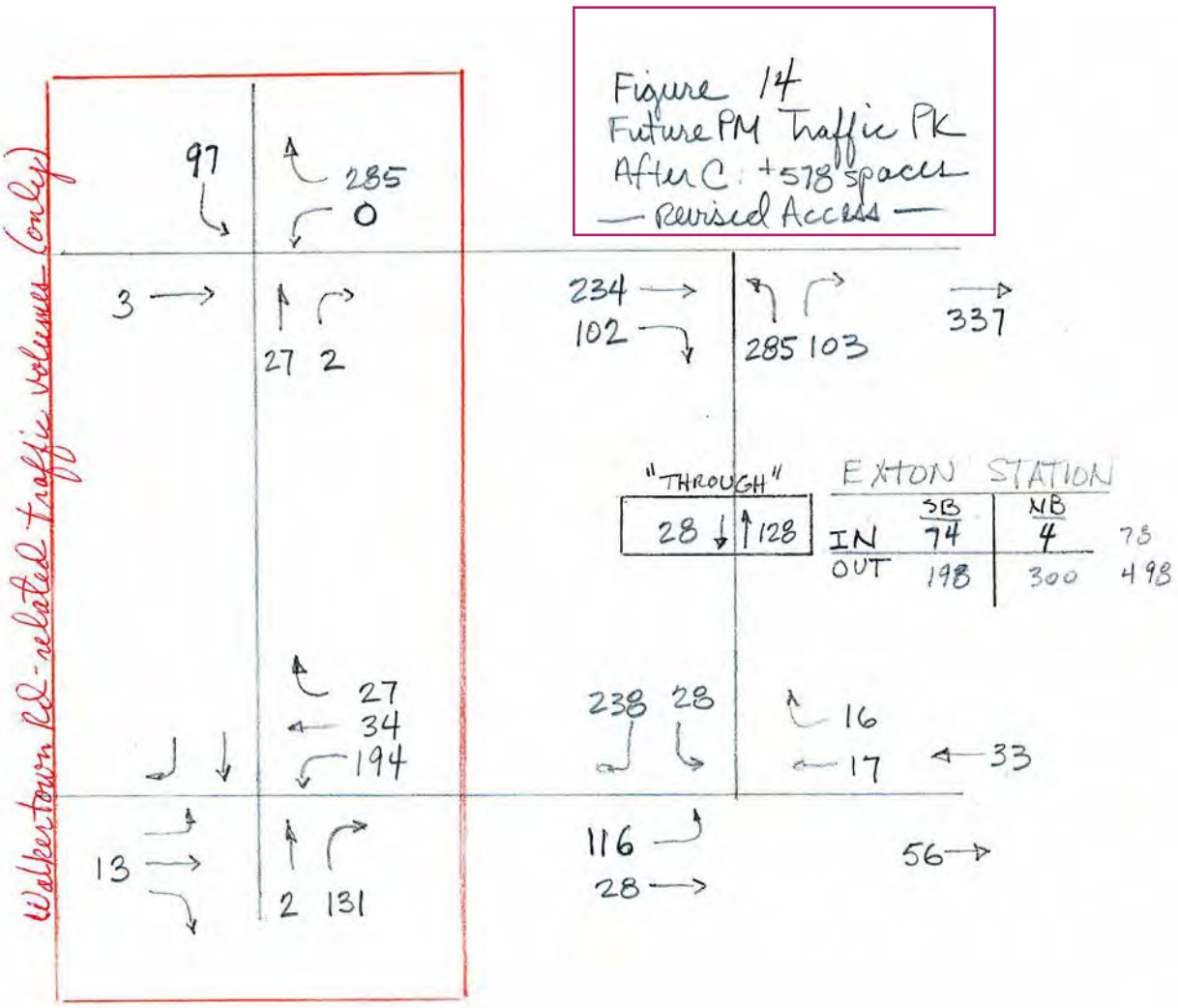
Source: DVRPC (2017)



Source: DVRPC (2017)



Source: DVRPC (2017)



Source: DVRPC (2017)

Compared with previously presented traffic volumes, the latest data indicates that:

- Station traffic accessing PA-100 in the afternoon is more evenly distributed than future volumes in the Current Access scenario.
- Evening left-turn volume from Walkertown Road to Howard Road/ US 30 Eastbound On-Ramp is returned to levels equal to today's rush following the arrival of the afternoon Great Valley Flyer.
- There is a minor reduction in the volume of through traffic on Walkertown Road with the enhanced access point at Mountain View Drive and PA-100.

Evaluation of the Improvement Proposals

A third, "hybrid" traffic volume scenario can readily be imagined. The hybrid access design would maintain existing movements at Howard Road and PA-100 and add the median break at Mountain View Drive/Whiteland Woods Boulevard and PA-100. That traffic volume scenario was not developed. Still, it can be integrated into the general evaluations that follow in **Table 3**.

Recommendations

Use this report's beneficial content in the proceedings and products of the ongoing DVRPC Exton Station Area Concept Planning study.

Share this report for McMahon's consideration and use in the ongoing Pottstown Pike Congestion Mitigation Feasibility Study. Consider their reactions, and obtain any new details they have that will influence the Exton Station Concept Area Planning study. Continue the dialogue throughout both projects.

Share this report with West Whiteland Township.

Update ongoing design developments with stakeholders and advisors guiding both projects.

Attachments–Walkertown Road Traffic Counts

Table 3: Evaluation Matrix

Future Traffic Volume Scenario	Improvement Proposal			
	Parking Expansion	Direct SEPTA Bus Service to Exton Station*		US 30 & PA-100 SPUI
		Bus Loop	Two-Way Bus Operation on Walkertown Road	
Current Station Access Patterns	Focuses exorbitant volume at Walkertown and US 30 EB On-Ramp, and Howard Road's approach to PA-100.	Yes.	No.	Unknown. Not clear how NB LTs from Walkertown to Howard, and subsequent LTs to SB PA 100 can be integrated into the design.
Revised Station Access: All Left Turns to Southbound PA-100 at Median Break	Evenly distributes station traffic to two locations on PA-100, and opens opportunity for a low-cost intersection improvement at PA-100 and Howard Road.	No. Requires straight bus routing through the station area.	Yes, but at a minimum also requires increased vertical clearance under the Amtrak bridge.	Yes.
Hybrid: Maintain Current Access and Provide Median Break (Traffic estimates were not prepared for this scenario)	Traffic estimates were not prepared for this scenario. Likely a mix of the two above with respect to traffic distribution. Does not afford the intersection and signalization improvement at PA 100 and Howard identified in the Revised Access scenario.	Yes	Yes, but at a minimum also requires increased vertical clearance under the Amtrak bridge.	Unknown. Not clear how NB LTs from Walkertown to Howard, and subsequent LTs to SB PA-100 can be integrated into the design.

Source: DVRPC (2017)

*The alternative: improving bus stops along PA-100 always exists.

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONIT AM INTERVAL COUNTS

COUNTY: Chester
MUNICIPALITY: West Whiteland Twp

INTERSECTION: North-South Street & East-West Street
STREETS: Walkertown Rd Howard Rd/US 30 EB On Ramp
SR/SEG/OFF: LOCAL sr/seg/off

DATE: 4/4/2017
DAY: Tuesday
WEATHER: FAIR

FILE NUMBER: 136145
OBSERVER JC VIDEO

AM INTERVAL COUNTS

	Walkertown Rd									Howard Rd/US 30 EB On Ramp									
	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
STARTING TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
6:00 6:15	5	0	13	18	0	0	0	0	0	46	30	76	0	0	0	0	18	76	94
6:15 6:30	13	0	13	26	0	0	0	0	0	39	20	59	0	0	0	0	26	59	85
6:30 6:45	12	0	11	23	0	0	0	0	0	63	25	88	0	0	0	0	23	88	111
6:45 7:00	13	0	15	28	0	0	0	0	0	64	65	129	0	0	0	0	28	129	157
7:00 7:15	29	0	19	48	0	0	0	0	0	77	45	122	0	0	0	0	48	122	170
7:15 7:30	18	0	31	49	0	0	0	0	0	90	41	131	0	0	0	0	49	131	180
7:30 7:45	19	0	56	75	0	0	0	0	0	90	19	109	0	0	0	0	75	109	184
7:45 8:00	35	0	68	103	0	0	0	0	0	81	31	112	0	0	0	0	103	112	215
8:00 8:15	31	0	73	104	0	0	0	0	0	89	10	99	0	0	0	0	104	99	203
8:15 8:30	26	0	63	89	0	0	0	0	0	87	18	105	0	0	0	0	89	105	194
8:30 8:45	10	0	47	57	0	0	0	0	0	88	7	95	0	0	0	0	57	95	152
8:45 9:00	17	0	43	60	0	0	0	0	0	77	2	79	0	0	0	0	60	79	139
TOTALS	228	0	452	680	0	0	0	0	0	891	313	1204	0	0	0	0	680	1204	1884
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	Walkertown Rd									Howard Rd/US 30 EB On Ramp									
	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
STARTING TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
6:00 7:00	43	0	52	95	0	0	0	0	0	212	140	352	0	0	0	0	95	352	447
7:00 8:00	101	0	174	275	0	0	0	0	0	338	136	474	0	0	0	0	275	474	749
8:00 9:00	84	0	226	310	0	0	0	0	0	341	37	378	0	0	0	0	310	378	688
TOTALS	228	0	452	680	0	0	0	0	0	891	313	1204	0	0	0	0	680	1204	1884

Source: DVRPC (2017)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
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LOCAL sr/seg/off

DATE: 4/4/2017
DAY: Tuesday
WEATHER: FAIR

FILE NUMBER: 136145
OBSERVER JC VIDEO

PM INTERVAL COUNTS

	Walkertown Rd									Howard Rd/US 30 EB On Ramp									
	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
STARTING TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
3:00 3:15	11	0	14	25	0	0	0	0	0	63	6	69	0	0	0	0	25	69	94
3:15 3:30	30	0	13	43	0	0	0	0	0	67	10	77	0	0	0	0	43	77	120
3:30 3:45	33	0	6	39	0	0	0	0	0	65	7	72	0	0	0	0	39	72	111
3:45 4:00	20	0	4	24	0	0	0	0	0	43	7	50	0	0	0	0	24	50	74
4:00 4:15	34	0	9	43	0	0	0	0	0	70	23	93	0	0	0	0	43	93	136
4:15 4:30	66	0	4	70	0	0	0	0	0	75	5	80	0	0	0	0	70	80	150
4:30 4:45	19	0	10	29	0	0	0	0	0	67	15	82	0	0	0	0	29	82	111
4:45 5:00	23	0	7	30	0	0	0	0	0	59	12	71	0	0	0	0	30	71	101
5:00 5:15	87	0	8	95	0	0	0	0	0	67	16	83	0	0	0	0	95	83	178
5:15 5:30	64	0	12	76	0	0	0	0	0	65	12	77	0	0	0	0	76	77	153
5:30 5:45	39	0	15	54	0	0	0	0	0	56	17	73	0	0	0	0	54	73	127
5:45 6:00	162	0	20	182	0	0	0	0	0	56	23	79	0	0	0	0	182	79	261
6:00 6:15	50	0	16	66	0	0	0	0	0	57	18	75	0	0	0	0	66	75	141
6:15 6:30	28	0	6	34	0	0	0	0	0	43	11	54	0	0	0	0	34	54	88
6:30 6:45	32	0	12	44	0	0	0	0	0	45	13	58	0	0	0	0	44	58	102
6:45 7:00	86	0	11	97	0	0	0	0	0	74	16	90	0	0	0	0	97	90	187
TOTALS	784	0	167	951	0	0	0	0	0	972	211	1183	0	0	0	0	951	1183	2134
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	Walkertown Rd									Howard Rd/US 30 EB On Ramp									
	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
STARTING TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
3:00 4:00	94	0	37	131	0	0	0	0	0	238	30	268	0	0	0	0	131	268	399
4:00 5:00	142	0	30	172	0	0	0	0	0	271	55	326	0	0	0	0	172	326	498
5:00 6:00	352	0	55	407	0	0	0	0	0	244	68	312	0	0	0	0	407	312	719
6:00 7:00	196	0	45	241	0	0	0	0	0	219	58	277	0	0	0	0	241	277	518
TOTALS	784	0	167	951	0	0	0	0	0	972	211	1183	0	0	0	0	951	1183	2134

Source: DVRPC (2017)

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONIT AM INTERVAL COUNTS

COUNTY: Chester
MUNICIPALITY: West Whiteland Twp

INTERSECTION: North-South Street & East-West Street
STREETS: Walkretown Rd Mountain View Rd
SR/SEG/OFF: LOCAL sr/seg/off

DATE: 4/4/2017
DAY: Tuesday
WEATHER: FAIR

FILE NUMBER: 136146
OBSERVER JC VIDEO

AM INTERVAL COUNTS

	Walkretown Rd									Mountain View Rd									
	1-NORTHBOUND				2-SOUTHBOUND					3-EASTBOUND				4-WESTBOUND				N-S	E-W
STARTING TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
6:00 6:15	0	0	0	0	0	0	1	1	27	0	0	27	0	0	5	5	1	32	33
6:15 6:30	0	0	0	0	0	0	1	1	34	0	0	34	0	1	1	2	1	36	37
6:30 6:45	0	0	0	0	0	0	0	0	20	2	0	22	0	1	10	11	0	33	33
6:45 7:00	0	0	0	0	0	0	1	1	74	3	0	77	0	0	8	8	1	85	86
7:00 7:15	0	0	0	0	2	0	1	3	61	3	0	64	0	0	9	9	3	73	76
7:15 7:30	0	0	0	0	0	0	0	0	81	5	0	86	0	4	9	13	0	99	99
7:30 7:45	0	0	0	0	1	0	2	3	76	4	0	80	0	0	14	14	3	94	97
7:45 8:00	0	0	0	0	3	0	1	4	85	1	0	86	0	0	12	12	4	98	102
8:00 8:15	0	0	0	0	3	0	0	3	72	1	0	73	0	1	14	15	3	88	91
8:15 8:30	0	0	0	0	3	0	2	5	72	1	0	73	0	1	21	22	5	95	100
8:30 8:45	0	0	0	0	4	0	1	5	46	0	0	46	0	0	14	14	5	60	65
8:45 9:00	0	0	0	0	3	0	2	5	44	1	0	45	0	1	11	12	5	57	62
TOTALS	0	0	0	0	19	0	12	31	692	21	0	713	0	9	128	137	31	850	881
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

	Walkretown Rd									Mountain View Rd									
	1-NORTHBOUND				2-SOUTHBOUND					3-EASTBOUND				4-WESTBOUND				N-S	E-W
STARTING TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
6:00 7:00	0	0	0	0	0	0	3	3	155	5	0	160	0	2	24	26	3	186	189
7:00 8:00	0	0	0	0	6	0	4	10	303	13	0	316	0	4	44	48	10	364	374
8:00 9:00	0	0	0	0	13	0	5	18	234	3	0	237	0	3	60	63	18	300	318
TOTALS	0	0	0	0	19	0	12	31	692	21	0	713	0	9	128	137	31	850	881

Source: DVRPC (2017)

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PM INTERVAL COUNTS

	Walkretown Rd									Mountain View Rd									
	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
STARTING TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
3:00 3:15	0	0	0	0	4	0	2	6	12	1	0	13	0	0	4	4	6	17	23
3:15 3:30	0	0	0	0	4	0	1	5	20	5	0	25	0	1	7	8	5	33	38
3:30 3:45	0	0	0	0	7	0	1	8	25	1	0	26	0	1	9	10	8	36	44
3:45 4:00	0	0	0	0	3	0	0	3	16	4	0	20	0	1	6	7	3	27	30
4:00 4:15	0	0	0	0	9	0	1	10	25	1	0	26	0	1	2	3	10	29	39
4:15 4:30	0	0	0	0	4	0	2	6	20	3	0	23	0	0	9	9	6	32	38
4:30 4:45	0	0	0	0	10	0	2	12	19	5	0	24	0	0	4	4	12	28	40
4:45 5:00	0	0	0	0	8	0	1	9	24	3	0	27	0	0	6	6	9	33	42
5:00 5:15	0	0	0	0	5	0	0	5	20	3	0	23	0	1	5	6	5	29	34
5:15 5:30	0	0	0	0	7	0	2	9	28	5	0	33	0	1	1	2	9	35	44
5:30 5:45	0	0	0	0	6	0	0	6	37	7	0	44	0	2	4	6	6	50	56
5:45 6:00	0	0	0	0	8	0	8	16	25	11	0	36	0	2	8	10	16	46	62
6:00 6:15	0	0	0	0	10	0	0	10	22	2	0	24	0	2	13	15	10	39	49
6:15 6:30	0	0	0	0	5	0	0	5	15	6	0	21	0	2	5	7	5	28	33
6:30 6:45	0	0	0	0	6	0	1	7	13	4	0	17	0	2	4	6	7	23	30
6:45 7:00	0	0	0	0	4	0	3	7	11	3	0	14	0	0	6	6	7	20	27
TOTALS	0	0	0	0	100	0	24	124	332	64	0	396	0	16	93	109	124	505	629
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

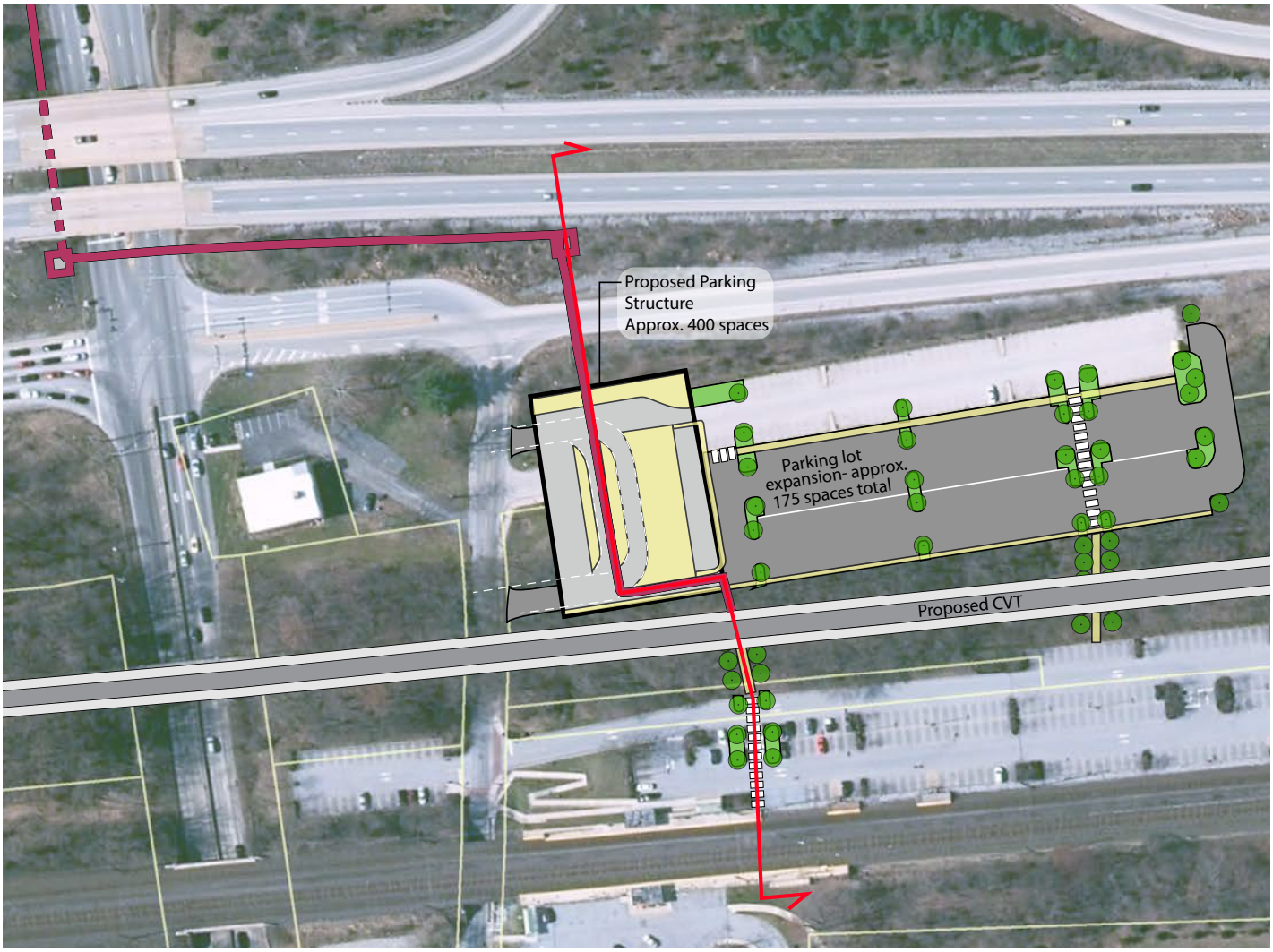
	Walkretown Rd									Mountain View Rd									
	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND				N-S	E-W	
STARTING TIME	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
3:00 4:00	0	0	0	0	18	0	4	22	73	11	0	84	0	3	26	29	22	113	135
4:00 5:00	0	0	0	0	31	0	6	37	88	12	0	100	0	1	21	22	37	122	159
5:00 6:00	0	0	0	0	26	0	10	36	110	26	0	136	0	6	18	24	36	160	196
6:00 7:00	0	0	0	0	25	0	4	29	61	15	0	76	0	6	28	34	29	110	139
TOTALS	0	0	0	0	100	0	24	124	332	64	0	396	0	16	93	109	124	505	629

Source: DVRPC (2017)

APPENDIX B: Alternate SEPTA Structured Parking Garage Concept and CVT Link

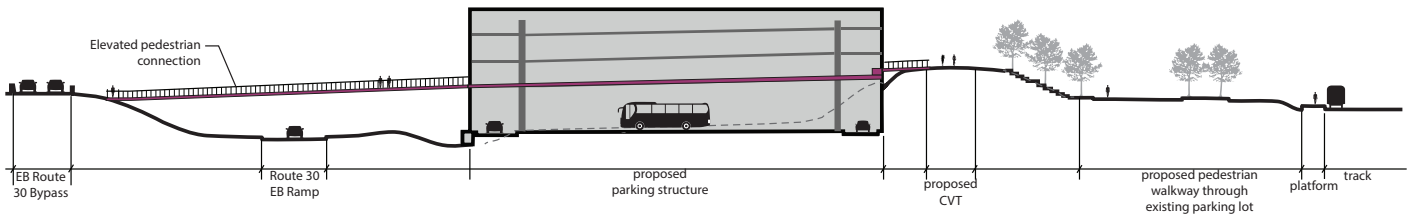
ALTERNATE GARAGE, BUS LOOP, AND SURFACE PARKING DESIGN

FIGURE B.1: ALTERNATE GARAGE, BUS LOOP, AND SURFACE PARKING DESIGN, PLAN VIEW



Source: CCPC (2018)

FIGURE B.2: ALTERNATE GARAGE, BUS LOOP, AND SURFACE PARKING DESIGN, ELEVATION VIEW



Source: CCPC (2018)

EXTON STATION AREA CONCEPT PLAN

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Geographic Area Covered: West Whiteland Township, Chester County, Pennsylvania

Keywords: Exton Station, West Whiteland Township, Chester County, Non-Motorized Transportation, Bicycle and Pedestrian Access, Public Transportation, Bus Layover, Parking Capacity, and Chester Valley Trail

Abstract:
This study evaluates existing and ongoing plans and projects at and in the vicinity of Exton Station in West Whiteland Township, Pennsylvania, and uses local stakeholder input to develop phased improvements that can be made as funding becomes available. This includes, but is not limited to, new access points for vehicular, bicycle, and pedestrian movements, as well as safe bus stops and layovers, and expanded parking.

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