Tri-County Transportation Study

A Vision for PA Route 100

December 2010

Prepared for:

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

By:

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

With:

WRT Wallace Roberts & Todd

WORD WORK message by design

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The Delaware Valley Regional Planning Commission is dedicated to uniting the region's elected officials, planning professionals, and the public with a common vision of making a great region even greater. Shaping the way we live, work, and play, DVRPC builds consensus on improving transportation, promoting smart growth, protecting the environment, and enhancing the economy. We serve a diverse region of nine counties: Bucks, Chester, Delaware, Montgomery, and Philadelphia in Pennsylvania; and Burlington, Camden, Gloucester, and Mercer in New Jersey. DVRPC is the federally designated Metropolitan Planning Organization for the Greater Philadelphia Region — leading the way to a better future.

The symbol in our logo is adapted from the official DVRPC seal and is designed as a stylized image of the Delaware Valley. The outer ring symbolizes the region as a whole while the diagonal bar signifies the Delaware River. The two adjoining crescents represent the Commonwealth of Pennsylvania and the State of New Jersey.

DVRPC is funded by 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.

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EXECUTIVE SUMMARY

PROJECT SUMMARY

The transportation challenge facing many communities along PA Route 100 is how to best manage their transportation network as the surrounding area develops, which could lead to adverse impacts on mobility and safety. Accordingly, the Delaware Valley Regional Planning Commission (DVRPC) has initiated this study of a key portion of the PA Route 100 corridor to create an effective and sustainable plan to accommodate future traffic demands resulting from continued development pressure. For this study, 11 miles of the corridor were evaluated between Hoffecker Road in North Coventry Township and the Montgomery Avenue interchange in Colebrookdale Township, including 18 study intersections in Chester, Montgomery, and Berks counties.

Upon review of current land development proposals and anticipated development potential within the study area municipalities, nearly 2,500 residential units, 1,430,700 square feet of retail space, 614,600 square feet of office space, and 56 acres for industrial uses could be developed by the year 2020. As a result, weekday commuter rush hour traffic has the potential to increase by as much as 50 percent to 150 percent along various segments of the study corridor. Regrettably, very few of the study intersections can accommodate such drastic traffic growth, which will result in severe congestion along most of the corridor. As the only major north-south arterial in the area, it is critical to establish and implement a plan to address the impacts of continued development and traffic growth along the corridor. Accordingly, the purpose of this study is to create an effective and sustainable plan to accommodate future traffic volumes resulting from intense development potential, improve safety and mobility along the corridor, provide for multiple modes of travel as practical, and promote smart growth practices.

PROJECT PROCESS

The project consulting team selected by DVRPC to complete this study consists of McMahon Associates, Inc., Wallace Roberts Todd, LLC, and Word Work. The completion of this report was a collaborative effort, as the consulting team worked closely with the project's Study Advisory Committee, which consisted of members from DVRPC, the Montgomery County Planning Commission, and the Chester County Planning Commission. Additionally, the project team met several times with the Pottstown Metropolitan Regional Planning Committee and conducted several public presentations of the preliminary study findings and recommendations in order to solicit feedback from the municipalities before finalizing the study. Also, the project team consulted with PennDOT to review the preliminary improvement recommendations and obtain preliminary feedback from the department.

EXISTING TRANSPORTATION SETTING

Today, some of the 18 study intersections already operate poorly overall and/or with significant delay on individual traffic movements during the weekday morning and afternoon commuter rush hour periods. Analysis and observations indicate that motorists typically experience congestion at intersections along PA Route 100 within the Borough of Pottstown, in the vicinity of Temple Road in North Coventry Township, and along PA Route 73 at its interchange with PA Route 100.

Along the study corridor, accommodations for transit and non vehicular travel are limited or non existent, resulting in the need for more individual vehicular trips throughout the transportation system. Also, the proliferation of driveways serving commercial properties south of Temple Road and along PA Route 73 in the vicinity of PA Route 100, as well as several poorly spaced intersections near the corridor (i.e., County Line Road/Holly Road and King Street/Shoemaker Road), further contribute to decreased mobility and increased vehicular conflicts points.

Given the congestion and access issues along the corridor, it is not surprising that the two segments along the PA Route 100 corridor between Hoffecker Road and Temple Road and between King Street and Shoemaker Road currently experience crash rates that are higher than the statewide average.

FUTURE TRANSPORTATION SETTING

As previously noted, the strong development potential along the PA Route 100 corridor will result in significant traffic growth, so much so that weekday commuter peak hour traffic volumes may increase up to 150 percent along segments of the roadway. As a result, nearly all of the study intersections will function with poor overall operating conditions in the future, thereby requiring additional capacity improvements to efficiently accommodate future traffic demands.

IMPROVEMENT ALTERNATIVES

Several improvement scenarios were considered at the study intersections to adequately address the forecasted operating deficiencies. Conventional capacity improvements, such as widening for additional through and turning lanes along PA Route 100, as well as along the side street approaches, were studied. Unfortunately, conventional widening improvements alone will result in the need for four through lanes per direction within the constrained Pottstown section of the study corridor, and generally three through lanes per direction north of Pottstown, and in total will add approximately 19 new travel lane miles to the study corridor (exclusive of turning lanes and side-street improvements). Further, the conventional improvements will result in significant property and right-of-way impacts throughout much of the corridor, yielding a substantial price tag for said improvements, and still will not fully accommodate future traffic at acceptable operating conditions at some intersections. Additionally, several of the study intersections could justify warrant guidelines from the American Association of State Highway and Transportation Officials for providing grade separated intersections; however, the impacts and costs of such improvements were thought to make these improvements impractical, similar to the conventional improvements.

Accordingly, the study examined several alternative improvement scenarios that could accommodate future traffic demands similarly or better than conventional improvements, reduce the overall scope of improvements along the corridor, and reduce impacts at lower or comparable costs than the identified conventional improvements. Furthermore, the selected alternative improvements offer a “right sized” (or “context sensitive”) approach for the corridor by meeting these noted improvement criteria and also satisfying the following vision for the corridor:

- Minimize the number of through lanes needed along the PA Route 100 corridor, as well as the scope of improvements needed at the study intersections and along intersecting roadways.

- Preserve the established limited access designation along the corridor.
- Integrate the surrounding roadway network into the improvement plan.
- Apply sound access management techniques.
- Encourage sustainable growth and avoid an improvement plan that will encourage sprawl.
- Offer comparatively lower-cost improvement solutions which may be more readily attainable considering today's transportation funding resource challenges than the conventional widening improvements.

The alternative improvements will result in a reduced scope of improvements such that additional widening along the corridor will be limited to only require two to three through lanes per direction. Overall, the corridor will only need to be widened for approximately seven (7) new through-lane miles (again, exclusive of turning lanes and side-street improvements), resulting in a substantial 12-mile reduction in new through-lane miles along the corridor with the preferred improvement plan, as compared to the conventional improvement scenario.

This study also identifies other additional measures or strategies that could lessen impacts of future development traffic and improve the mobility and safety of the PA Route 100 corridor. These measures include both infrastructure improvements and non infrastructure strategies, such as:

- Enhancing the surrounding roadway network by providing parallel routes and better connectivity of existing roadways to offer local traffic alternatives to PA Route 100. An example of such a roadway connection is "Market Street," which is being planned by Douglass Township in conjunction with a proposed land development, and will connect PA Route 73 to Jackson Road on the east side of PA Route 100.
- Providing multi modal improvements (i.e., sidewalks, trails, bike lanes) within the study area to reduce vehicular travel along the corridor. In many locations, these facilities may be better suited outside of the immediate PA Route 100 right-of-way, but uses along the corridor should be well connected to each other and adjacent roadways. Also, pedestrian crossings of PA Route 100 should be accommodated and linked to pedestrian facilities, where appropriate.
- Consider transportation demand strategies and intelligent transportation systems that reduce or better manage traffic along PA Route 100.
- Pursue changes to land use planning and ordinance changes that reduce traffic or improve the efficiency of the overall transportation network, such as:
    - Adopt municipal improvement plans or official maps detailing transportation improvements and right-of-way needs.
    - Direct high-intensity land uses to regional mixed-use centers to benefit from sharing of trips.
    - Strategically locate low traffic demand land uses along PA Route 100 near congested intersections with limited capacity to reduce impacts.
    - Adopt access management ordinances that limit or restrict driveways and intersections along PA Route 100, as well as along intersecting streets in the vicinity of the corridor, and maintain current limited access designation.
    - Adopt traffic impact fee ordinances and transportation capital improvement plans to raise funds toward development-related traffic impacts.

  - Modify ordinances to encourage improved connectivity between properties.
- Evaluate the feasibility of providing transit service along PA Route 100 as development continues along the corridor and throughout the region.

CORRIDOR RECOMMENDATIONS

The following list briefly summarizes the preferred corridor improvements, while the subsequent study provides more detail relative to each improvement, as well as implementation strategies, anticipated project timelines and priorities, measures of effectiveness, conceptually identified design issues, and conceptual opinions of costs. **Figure 1** also illustrates the preferred improvement plan.

Southern Segment (North Coventry Township)

- Widen PA Route 100 to provide two through (travel) lanes per direction south of Cedarville Road.
- Widen for turning lane improvements at key intersections.
- Implement access management techniques between Hoffecker Road and Temple Road, including provision of a center median and reverse frontage roadways, limiting access to/from Hoffecker Road (to right-in/right-out only).
- Provide sidewalk and trail linkages to accommodate non vehicular traffic and provide high-visibility pedestrian cross walks.
- Implement additional zoning and land use planning changes consistent with the *Northern Chester County Gateway Master Plan*.

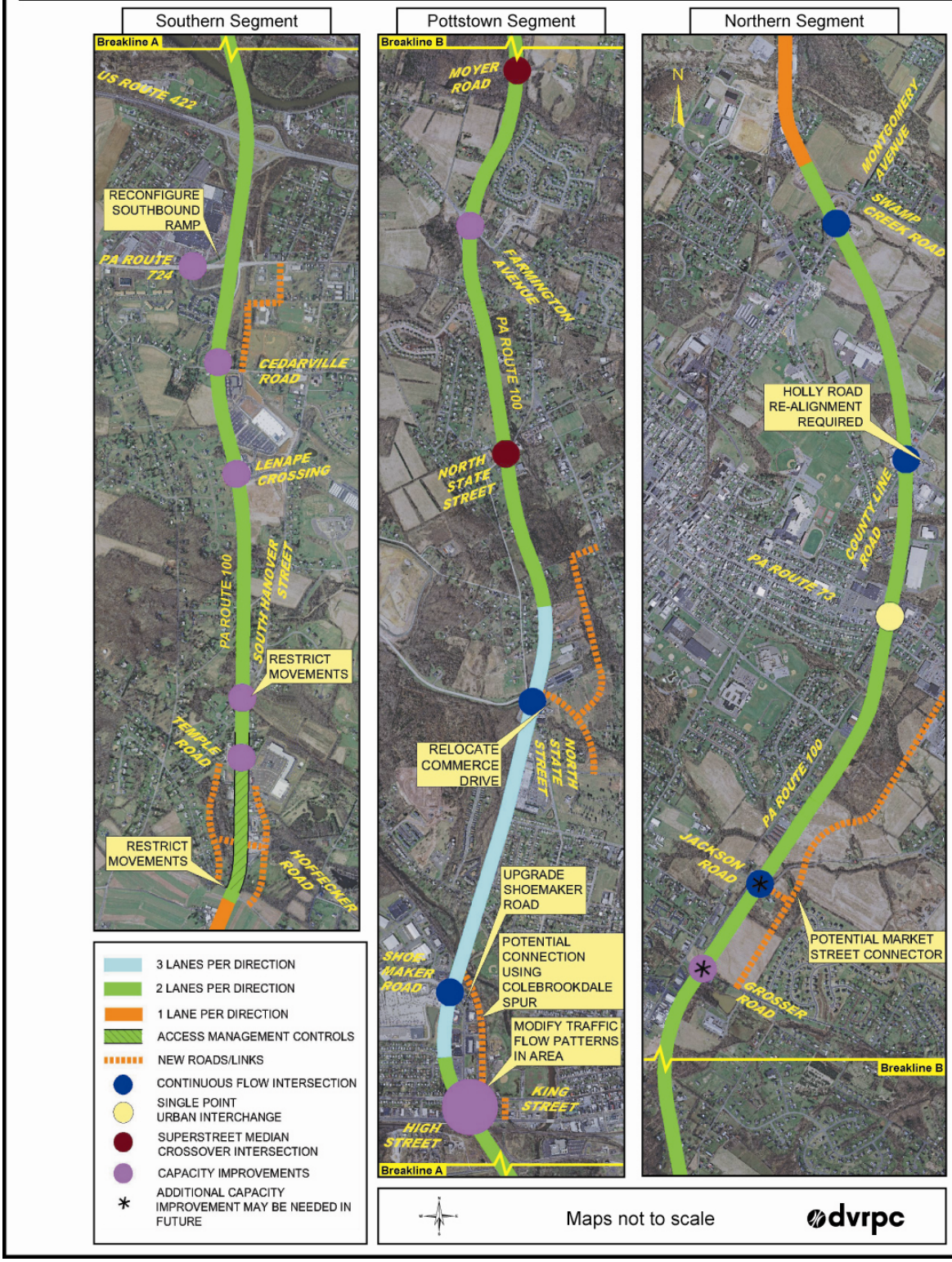
Pottstown Segment (Borough of Pottstown, West Pottsgrove Township, and Upper Pottsgrove Township)

- Widen PA Route 100 to provide three through lanes per direction from Shoemaker Road to the southern State Street intersection. Maintain two travel lanes per direction elsewhere; however, PennDOT recommends planning for three through lanes per direction as a potential long-term need.
- Modify traffic flow patterns in the vicinity of King Street, including:
  - Restrict/relocate left turns from PA Route 100 to King Street to the adjacent intersections.
  - Introduce a one-way westbound traffic pattern along the western leg of King Street between PA Route 100 and Gable Street.
  - Modify the Shoemaker Road/King Street intersection to permit southbound left turns from Shoemaker Road and westbound right turns to Shoemaker Road, which would provide better roadway connectivity and accommodate new traffic patterns in the area.
  - Consider a new connector road between High Street (at/near College Drive) and King Street, which would provide better roadway connectivity and accommodate new traffic patterns in the area.
  - Consider eliminating the northbound off-ramp to westbound High Street.

Figure 1

Tri-County Transportation Study
A Vision for PA Route 100

Preferred Improvement Plan Summary



- Construct a Continuous Flow Intersection (CFI) at both Shoemaker Road and at the southern State Street intersection, and widen for turning lane improvements at these intersections.
- Construct Superstreet Median Crossover intersections at the northern State Street intersection and at Moyer Road.
- Plan for potential widening of Farmington Avenue and its overpass of PA Route 100 to accommodate separate left-turn lanes at the ramp intersections and potential signalization.

Northern Segment (Douglass Township and Colebrookdale Township)

- Maintain two through lanes per direction; however, an additional third northbound through lane may ultimately be required at the Grosser Road and Jackson Road intersections. Other off-corridor transportation improvements and non-infrastructure improvement strategies, if implemented, may reduce the need for this widening. Nevertheless, PennDOT recommends planning for three through lanes per direction as a potential long-term need.
- Construct a CFI at the Jackson Road intersection, provide a connector roadway between Jackson Road and Grosser Road (along the east side of PA Route 100), restrict left turns from PA Route 100 onto Grosser Road and accommodate these movements at the new Jackson Road CFI, and widen for turning lane improvements at both intersections.
- Replace the existing PA Route 73 interchange with a Single Point Urban Interchange (SPUI) configuration, as widening/replacement of the overpass would be required under conventional improvement scenarios.
- Construct a CFI at the County Line Road intersection, relocate Holly Road away from its existing intersection with County Line Road, and widen for turning lanes.
- Widen Montgomery Avenue for additional through turning lanes at the PA Route 100 interchange, signalize the ramp intersections, and realign Swamp Creek Road opposite the northbound PA Route 100 on/off-ramp per the township's *Act 209 Study*.

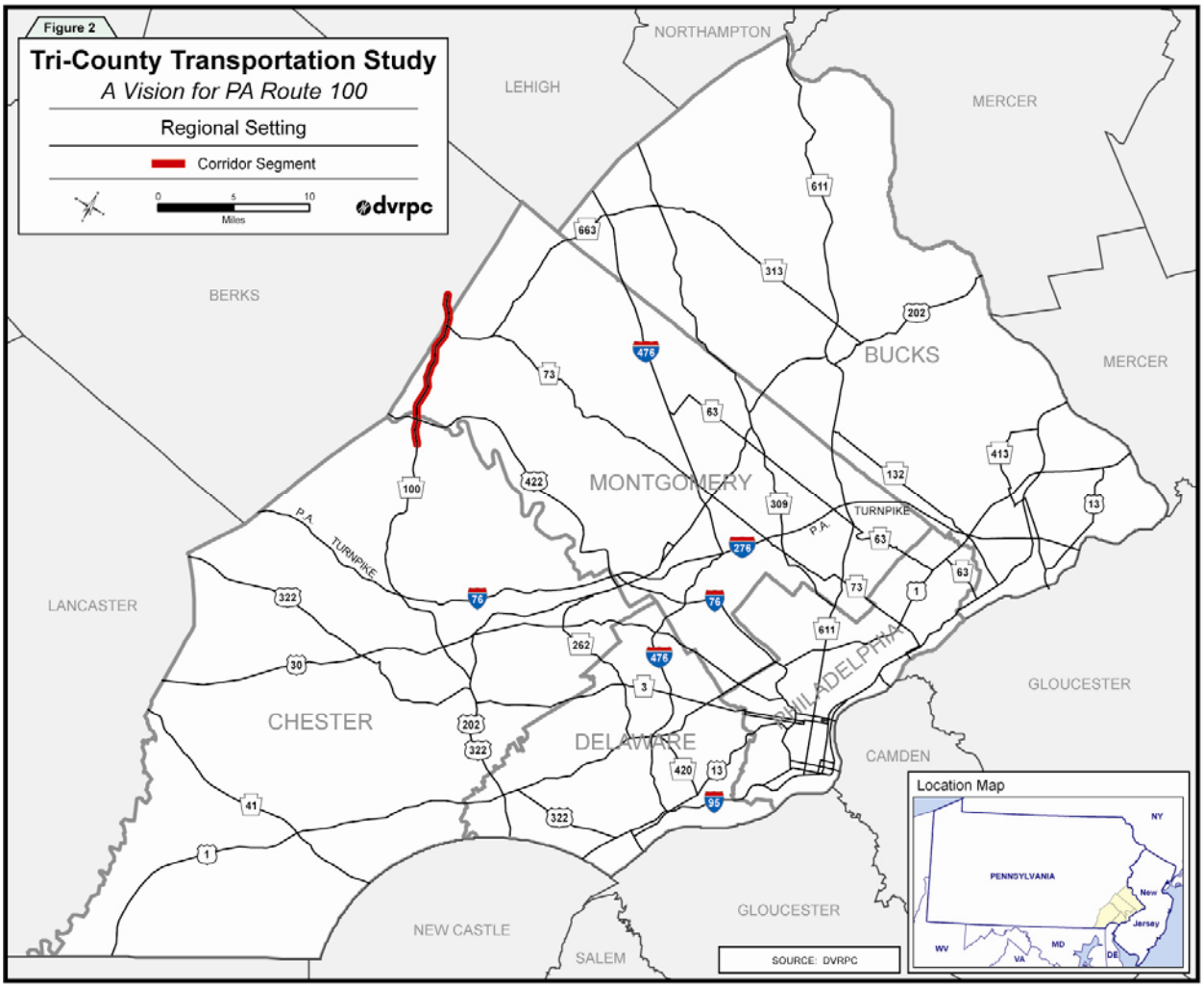
The total conceptual opinion of cost for the preferred improvement plan is approximately $153 to $181 million, which includes the alternative improvements identified in the study. By comparison, an improvement plan that includes conventional intersection and roadway widening would increase the total cost to approximately $213 to $250 million.

The significant costs associated with any improvement plan, which are considerable due to the scope of improvements needed along the 11-mile study corridor, require that numerous resources be identified, mobilized, and synchronized in order to be able to implement the recommended plan. As such, the study provides an action plan that identifies organizational needs, regulatory actions, funding needs and potential sources, and future studies that may be required, as well as responsible parties and a potential timeline for action. This action plan will provide stakeholders with a general guideline through the implementation process of the improvement plan, which will need to be constructed in phases and as development occurs along the corridor.

1. INTRODUCTION

PA Route 100 is a key arterial roadway in Chester County, western Montgomery County, and eastern Berks County, as it is the primary north-south roadway for accommodating long-distance regional traffic between the West Chester and Allentown regions (**Figure 2**), but also accommodates shorter local trips within the corridor's region. Land development over the past decade or so has burdened portions of the PA Route 100 corridor and will continue to do so as further development occurs. Current proposals under review and anticipated development potential within the study area municipalities will add over 60,000 daily vehicular trips to area roadways, many of which will use the PA Route 100 corridor. As such, it is imperative to assess future PA Route 100 transportation conditions to identify an improvement plan to accommodate traffic in the future. For this reason, the DVRPC has initiated this study of the PA Route 100 corridor. The goal of this study is to create an effective and sustainable plan to

Study Advisory Committee	**Delaware Valley Regional Planning Commission (DVRPC)** **Montgomery County Planning Commission (MCPC)** **Chester County Planning Commission (CCPC)**



accommodate future traffic volumes resulting from local and regional growth along the corridor, with recommendations focusing on practical capacity improvements, improving safety and mobility, accommodating multiple modes of travel, and smart growth.

This study focuses on an 11-mile section of PA Route 100 from Hoffecker Road in North Coventry Township (Chester County) northward through western Montgomery County to the Swamp Creek Road/Montgomery Avenue interchange situated in Colebrookdale Township (Berks County), as shown in **Figure 3**. For the purposes of this study, the PA Route 100 corridor has been separated into three sections, as follows:

- **Southern Segment** – Hoffecker Road north to U.S. Route 422 in Chester County.
- **Pottstown Segment** – High Street to Moyer Road in Montgomery County.
- **Northern Segment** – Grosser Road in Montgomery County to the Montgomery Avenue/Swamp Creek Road Interchange in Berks County.

In many ways, the Pottstown Metropolitan Regional Planning Committee's (PMRPC) *Regional Comprehensive Plan*, August 2005, prepared by the Montgomery County Planning Commission, is a valuable precursor to this study, as it thoroughly documents the existing transportation facilities, the existing and future land use characteristics, and desired growth areas for development. Therefore, this *Tri-County Transportation Study* represents a logical next step to the *Regional Comprehensive Plan* in terms of transportation and land use planning, as it builds upon the prior planning efforts in order to assess transportation improvement needs and identify a preferred transportation improvement plan to accommodate future traffic volumes.

The PMRC's *Regional Comprehensive Plan* identifies PA 100 as a key route for local and regional mobility. It recommends capacity and intersection improvements to PA 100 as well as multi-modal strategies throughout the region including context-sensitive design; pedestrian and bicycle mobility; mass transit; and well-planned land use.

In addition to the *Regional Comprehensive Plan*, several regional and local plans provide the foundation and framework for this study. Below is a list of plans most relevant to this study area and the PA 100 Corridor:

- **Connections 2035 (DVRPC Long Range Plan)**

  The region's long range transportation and land use plan, *Connections* provides an integrated transportation and land use vision and policies for the region's growth and development. Two of the plan's key tenets are to "support land use goals by transportation decisions" and to "advance economic development through transportation." The majority of the PA 100 study area is identified as Existing and Future Development within *Connections*. The transportation improvements sections of *Connections* do not list any capital improvements using state or federal funding for PA 100 through the plan's 2035 horizon.

PMRPC Member Municipalities	**Douglass Township** · **North Coventry Township** · **East Coventry Township** · **Pottstown Borough** · **Lower Pottsgrove Township** · **Upper Pottsgrove Township** · **New Hanover Township** · **West Pottsgrove Township**

- **2009 Congestion Management Process (CMP) Report (DVRPC)**

  DVRPC's Congestion Management Process (CMP) is a federal requirement that identifies where major single occupancy vehicle capacity-adding projects that would use federal funds are appropriate and includes additional steps for projects that are not initially consistent. The PA 100 corridor is identified as an "emerging corridor" within the CMP. "Emerging corridors" are defined as corridors that are "likely to become congested or are otherwise important for proactive planning." Per federal guidelines, any major capacity-adding projects using federal funding would require further documentation or an amendment to the CMP report. The US 422 corridor from Pottstown to Oaks is identified as a "congested corridor". In the context of this corridor study, the CMP lists the following strategies that are appropriate for all corridors:

  - Safety Improvements and Programs
  - Signage
  - Improvements for Pedestrians and Bicyclists as appropriate
  - Basic Upgrading of Traffic Signals
  - Signal Prioritization for Emergency Vehicles where needed
  - Intersection Improvements of a Limited Scale
  - Bottleneck Improvements of a Limited Scale, Vehicle or Rail
  - Marketing/Outreach for Transit and TDM Services where applicable (including carpool, vanpool, and ridesharing programs, alternate work hours; telecommuting, guaranteed ride home, TransitChek, carsharing and one-less-car programs)
  - Revision of Existing Land Use/Transportation Regulations
  - Growth Management and Smart Growth
  - Access Management (both engineering and policy strategies)
  - Accessibility and Environmental Justice

- **Berks Vision 2020 (Berks County Comprehensive Plan)**

  The *Berks Vision 2020 Comprehensive Plan* is Berk County's guide to land uses and attempts to direct new growth in appropriate densities to areas where they can be accommodated. The areas of Colebrookdale Township and Boyertown Borough are classified as future growth areas in the plan's Future Land Use Plan.

- **Landscapes2 (Chester County Comprehensive Plan)**

  As Chester County's comprehensive plan, *Landscapes2* designates growth and resource protection areas by establishing land use, transportation, and other planning policies. *Landscapes2* designates the northern portion of North Coventry Township as "urban" and the surrounding vicinity along PA 100 as "suburban". Notably, *Landscapes2* identifies the US 422 corridor as a priority "multi-modal corridor", which is defined as "priorities for maintaining and investing in our transportation system to support efficient movement of people and goods." Additionally, *Landscapes2* recognizes the significance of the area west of the PA 100 corridor as part of Hopewell Big Woods.

- **Shaping Our Future (Montgomery County Comprehensive Plan)**

  Adopted in 2005, *Shaping Our Future* helps the county accomplish many goals, including controlling sprawl, limiting traffic congestion, preserving open space, and revitalizing older areas. The future land use map considers the Pottstown community as a growth region, with a mix of town residential areas, employment centers, suburban residential areas, and community mixed-use services along PA 100. There are areas of rural conservation in Upper Pottsgrove Township along its borders with Douglass Township and with Berks County. *Shaping Our Future* also recommends a study of PA 100 from PA 724 to Boyertown to determine necessary long-term roadway improvements.

- **Boyertown – Colebrookdale – Pike Joint Comprehensive Plan**

  The *Boyertown – Colebrookdale – Pike Joint Comprehensive Plan* was adopted in 2005. The Future Land Use plan identifies the vicinity of PA 100 as predominately commercial, industrial, and planned business development. Additionally, the plan specifically calls for limiting new access points along PA 100, PA 73, and PA 562.

- **Northern Federation Resource Protection Plan**

  This nine-municipality plan, including North Coventry Township, was adopted in 2006. The Resource Protection Plan identified strategies for the protection of this region's natural, historic, scenic, recreational, and agricultural assets.

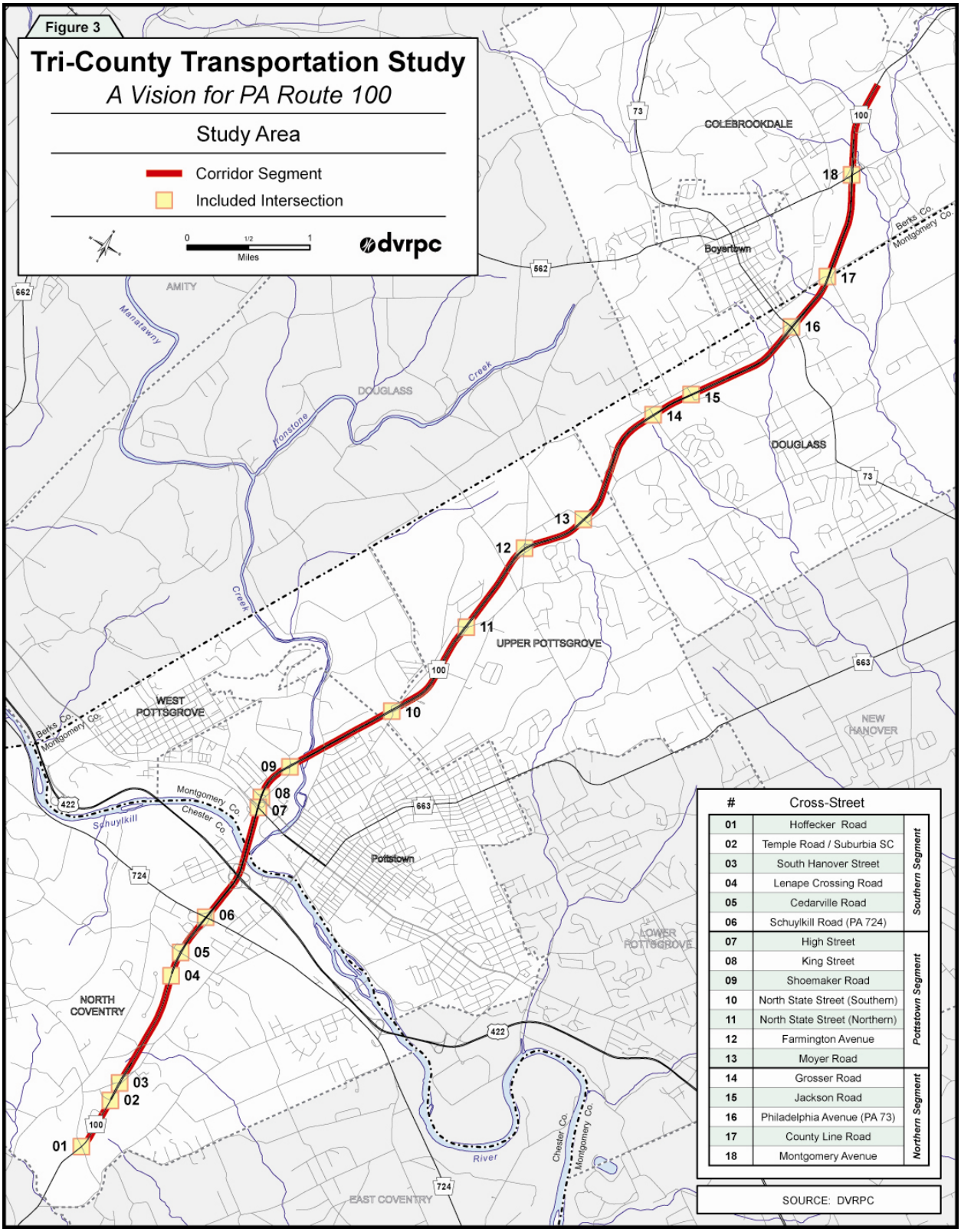
PROCESS

The consulting team completed this study in close coordination with the project's Study Advisory Committee (SAC). In doing so, three SAC project meetings were held to:

- outline the project goals and objectives
- review study findings and recommendations
- build project consensus among SAC members
- direct public outreach efforts

The consulting team also met three times with the PMRPC during the study process in order to explain the project, identify initial transportation concerns/issues, and present draft roadway recommendations in order to solicit feedback prior to finalizing the study recommendations. Likewise, the consulting team met with the Pennsylvania Department of Transportation (PennDOT), as well as with each municipality belonging to the PMRPC and the Montgomery County Planning Commission, to review preliminary findings and solicit feedback prior to finalizing the study.

Pictured: Planning exercise with the PMRPC members to identify transportation issues along the study corridor.



#	Cross-Street	
01	Hoffecker Road	Southern Segment
02	Temple Road / Suburbia SC	
03	South Hanover Street	
04	Lenape Crossing Road	
05	Cedarville Road	
06	Schuylkill Road (PA 724)	
07	High Street	Pottstown Segment
08	King Street	
09	Shoemaker Road	
10	North State Street (Southern)	
11	North State Street (Northern)	
12	Farmington Avenue	
13	Moyer Road	
14	Grosser Road	Northern Segment
15	Jackson Road	
16	Philadelphia Avenue (PA 73)	
17	County Line Road	
18	Montgomery Avenue	

SOURCE: DVRPC

2. EXISTING TRANSPORTATION SETTING

PA Route 100 provides local access to area roadways and adjacent traffic generators, as well as regional and interstate access via junctions with the Pennsylvania Turnpike (Interstate 76), Interstate 78, U.S. Route 202, U.S. Route 30, U.S. Route 422, U.S. Route 222, and other major highways. Within the study area, the character of PA Route 100 varies dramatically along the corridor from a bucolic, two-lane road, to a densely populated, suburban, multi lane roadway, to a four-lane, limited-access highway. While PA Route 100 is classified as "limited-access" through a majority of the study area, a portion of the corridor within North Coventry Township does not restrict or control access, which has led to numerous commercial driveways clustered within a relatively short segment of roadway. Land uses along PA Route 100, or in close proximity to the corridor, include commercial, residential, agricultural, institutional, open space, and recreational uses. Within the 11-mile study area, the adjacent land use context of PA Route 100 also varies widely, as it does regionally.

STUDY INTERSECTIONS

The SAC identified 18 key intersections and interchanges for evaluation as part of this study. **Table 1** lists the study intersections and their current operating characteristics.

Table 1. Study Intersections

Roadway	Intersection Type	County	Municipality
SOUTHERN SEGMENT			
Hoffecker Road	Unsignalized	Chester	North Coventry
Temple Road/Suburbia SC	Signalized	Chester	North Coventry
South Hanover Street	Unsignalized	Chester	North Coventry
Lenape Crossing Road	Signalized	Chester	North Coventry
Cedarville Road	Signalized	Chester	North Coventry
PA Route 724	Interchange	Chester	North Coventry
POTTSTOWN SEGMENT			
High Street	Interchange	Montgomery	Pottstown
King Street	Signalized	Montgomery	Pottstown
Shoemaker Road	Signalized	Montgomery	Pottstown
N. State Street (southern)	Signalized	Montgomery	Upper Pottsgrove
N. State Street (northern)	Signalized	Montgomery	Upper Pottsgrove
Farmington Avenue	Interchange	Montgomery	Upper Pottsgrove
Moyer Road	Signalized	Montgomery	Upper Pottsgrove
NORTHERN SEGMENT			
Grosser Road	Signalized	Montgomery	Douglass
Jackson Road	Signalized	Montgomery	Douglass
PA Route 73	Interchange	Montgomery	Douglass
County Line Road	Signalized	Montgomery/Berks	Douglass/Colebrookdale
Montgomery Avenue	Interchange	Berks	Douglass/Colebrookdale

It is noted that the U.S. Route 422 interchange with PA Route 100 is being evaluated by a separate study of the U.S. Route 422 Expressway, and therefore, the SAC determined that specific interchange improvements would not be included in this study. Also, at the direction of the SAC, this study does not include detailed evaluation of the High Street interchange; however, it is addressed qualitatively as part of this study.

ROADWAY CHARACTERISTICS

The characteristics of a particular roadway affect its utilization, operations, safety, and attractiveness to development. **Table 2** summarizes various characteristics of PA Route 100, and **Table 3** summarizes the intersecting study area roadways.

Table 2. PA Route 100 Roadway Characteristics

Segment	Ownership	Functional Classification[1]	Travel Lanes (per direction)	Average Daily Traffic[2,3]
Southern	State	Arterial	1 to 2	17,400 to 22,700
Pottstown	State	Expressway[4]	2	31,900 to 35,700
Northern	State	Expressway[4]	2	17,200 to 26,600

Table 3. Intersecting Study Area Roadway Characteristics

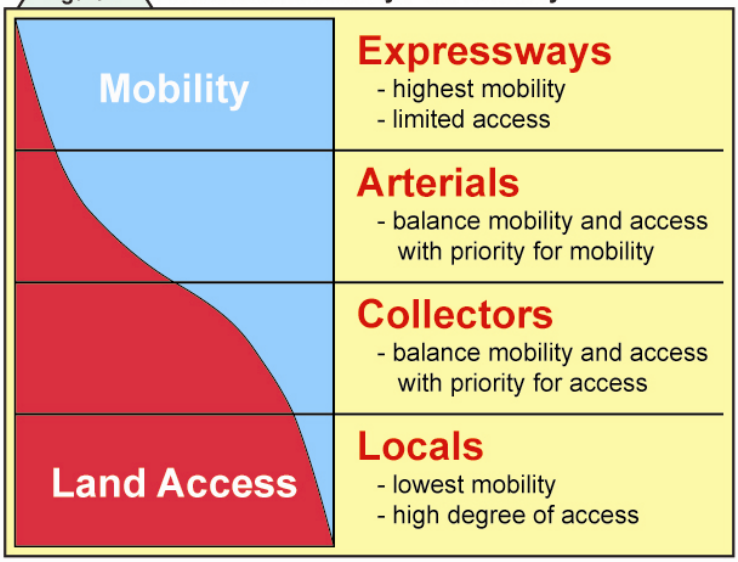
Roadway	Ownership	Functional Classification[1]	Travel Lanes (each direction)	Average Daily Traffic[2,3]
SOUTHERN SEGMENT				
Hoffecker Road	Township	Collector	1	Not available
Temple Road	Township	Collector	1	1,500
South Hanover Rd	State	Arterial	1	5,900
Lenape Road	Township	Local	1	Not available
Cedarville Road	State	Collector	1	West: 3,100 East: 2,100
PA Route 724	State	Arterial	1 to 2	West: 9,400 East: 10,200
U.S. Route 422	State	Expressway	2	West: 33,900 East: 42,100 (2006)
POTTSTOWN SEGMENT				
King Street	State	Arterial	1 to 2	West: 5,100 East: 5,300
High Street	State	Arterial	1 to 2	West: 5,100 East: 7,400
Shoemaker Road	State	Collector	1	West: 18,100
Shoemaker Road	Township	Local	1	East: 4,500
North State Street (southern)	State	Collector	1	West: 1,600 East: 11,000
North State Street (northern)	State	Collector	1	3,000
Farmington Avenue	State	Arterial	1	West: 5,900 East: 5,100
Moyer Road	Township	Collector	1	West: 300 East: 1,600
NORTHERN SEGMENT				
Grosser Road	Township	Collector	1	West: 4,600 East: 5,100
Jackson Road	Township	Collector	1	West: 2,100 East: 1,300
PA Route 73	State	Arterial	1 to 2	West: 19,200 East: 21,100
County Line Road	Township	Arterial	1	West: 4,200 East: 4,000
Swamp Creek Road	Township	Collector	1	Not available
Montgomery Ave	State	Collector	1	Not available

1 – Source: *Pottstown Metropolitan Regional Comprehensive Plan*
2 – Source: Delaware Valley Regional Planning Commission and PennDOT Internet Traffic Monitoring System (iTMS) website
3 – Daily traffic volumes were collected in 2005 unless otherwise noted.
4 – PennDOT classifies PA Route 100 as an 'Arterial'.

ROADWAY CLASSIFICATION AND CONTEXT

A major principle for integration of traffic circulation and land use is the need to establish and maintain hierarchies of roads, or a highway functional classification, based on the intended function of the roadway (i.e., mobility versus access). Mobility refers to the ability and efficiency of a roadway to carry traffic, while access refers to the ability of a roadway to provide effective ingress and egress to intersecting roadways and adjacent land uses. Both mobility and access are indirectly proportional, such that providing greater access to adjacent land uses results in a decrease in mobility, and vice versa.

Figure 4 Intended Roadway Functionality



SOURCE: McMahon Transportation Engineers and Planners

The highway functional classification system used by PennDOT, regional agencies, and local municipalities includes four classifications of roadways: expressways, arterials, collector roads, and local roads. As illustrated in the figure above, expressways provide the greatest mobility and least amount of access, while local roads provide the greatest access, but are the least effective for mobility. Tables 2 and 3 summarize the roadway classification for the various segments of PA Route 100, as well as for key intersecting roadways.

To a certain extent, however, the traditional roadway classification system does not provide a complete characterization of a roadway for two reasons. First, the roadway's context, or setting of the roadway in relation to its surroundings, is an important consideration for the design of the roadway or improvements. For example, two roadways may be classified as arterial; however, their character will likely differ greatly if one road is within an urban or village context and the other is in a rural setting. Second, the traditional roadway classification does not consider multi modal traffic or facilities to accommodate non vehicular travel. **Table 4** summarizes the context and multi modal aspects of each segment of the study corridor:

Table 4. Roadway Context and Multi Modal Facilities along PA Route 100

Segment	Context[1]	Multi Modal Facilities	Description
Southern	Suburban Neighborhood	Limited	Limited sidewalks in the vicinity of Temple Road.
Pottstown	Suburban Corridor	Significantly Limited	Pedestrian crossings generally banned at most intersections, with no pedestrian or bicycle facilities along corridor.
Northern	Rural	No	Pedestrian crossings generally banned at most intersections, with no pedestrian or bicycle facilities along corridor.

1 – Based on the *Smart Transportation Guidebook, March 2008*, published by the New Jersey and Pennsylvania Departments of Transportation.

ACCESS CONTROLS

Within the study area, PennDOT designates most of PA Route 100 for "limited-access," and therefore, access to the corridor is controlled to essentially existing intersections and interchanges, with new intersections only permitted when they serve a regional benefit. South of Temple Road in North Coventry Township, PA Route 100 is not designated as a limited-access highway, and as a result, development over the years has resulted in a concentration of commercial driveways clustered within the southernmost segment of the study area.

Because PA Route 100 serves as a regional and local gateway to the municipalities along the corridor, and also provides a convenient route to other key roadways and highways, development along the corridor has been strong, and so has the desire to provide vehicular access along or proximate to the highway. As illustrated in **Figure 5**, in many areas, the density of driveways and intersections along intersecting roadways (i.e. PA Route 73, Shoemaker Road) is high, resulting in adverse operational and/or safety conditions. Additionally, several streets also intersect the PA Route 100 side streets in close proximity to PA Route 100, and are within the influence area (or within the length of turn lanes or typical vehicular queue lengths) of the PA Route 100 intersection. For example, the County Line Road/Holly Road and State Street/Commerce Drive intersections are located in close proximity to PA Route 100; therefore, this creates operational and vehicular conflict issues.

Pictured: Proximity of the Holly Road/County Line Road intersection to PA Route 100.

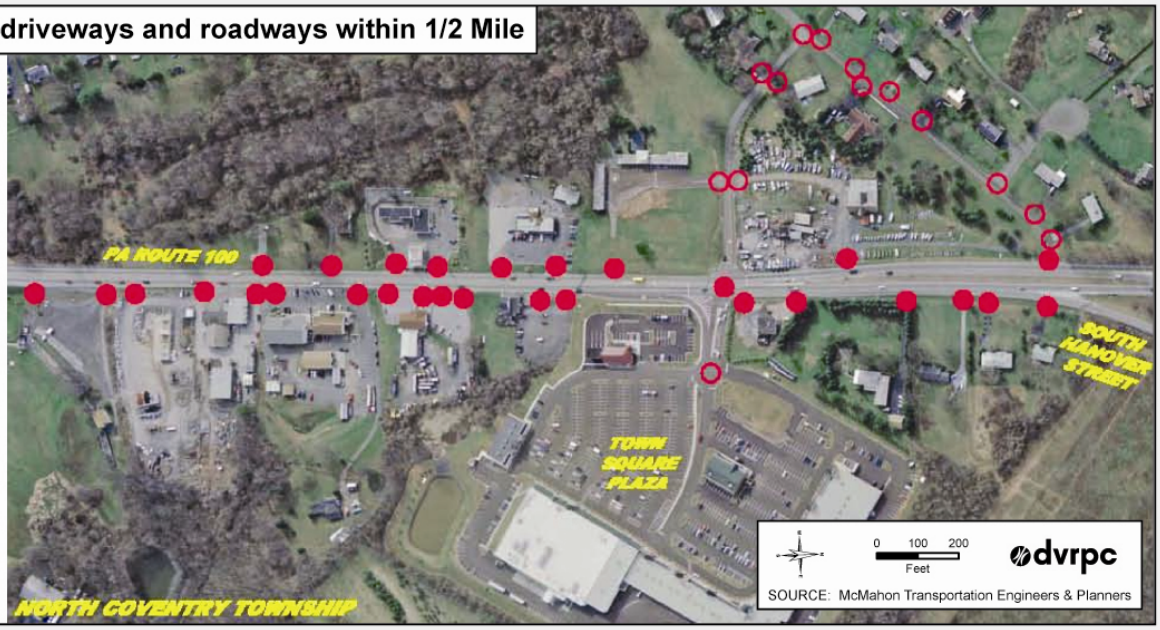
Figure 5

Tri-County Transportation Study
A Vision for PA Route 100

Driveway/Intersection Density

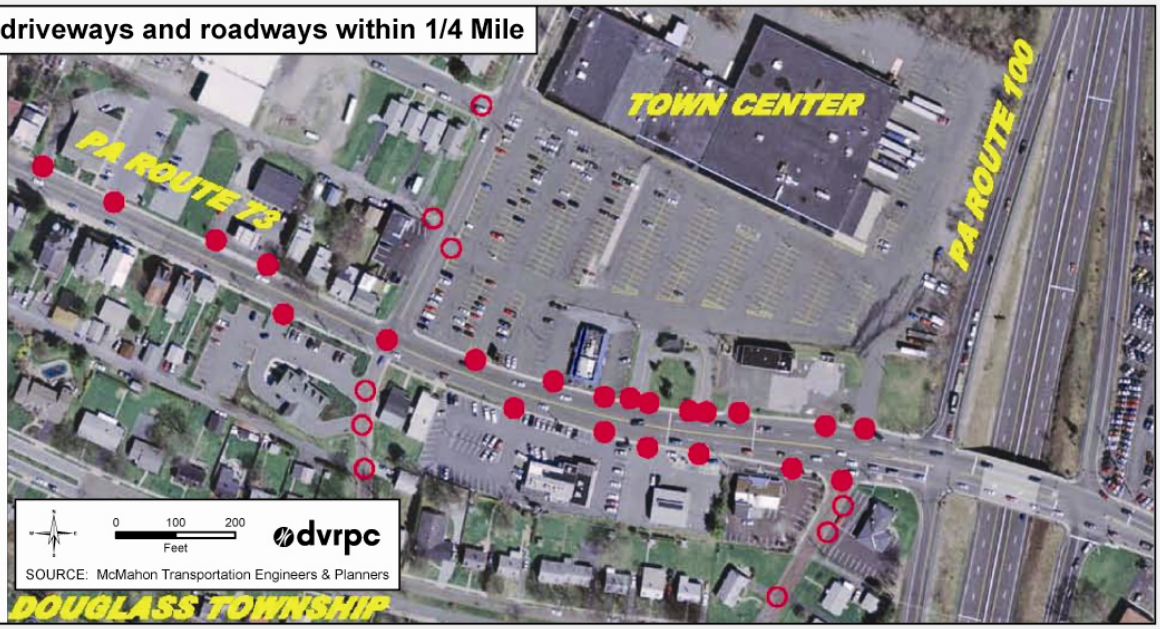
29 driveways and roadways within 1/2 Mile

PA Route 100 between Hoffecker Rd & S. Hanover St



22 driveways and roadways within 1/4 Mile

PA Route 73 west of PA Route 100 Ramps



● Driveway / Intersection Location Along Primary Route
○ Driveway / Intersection Location Along Intersecting Route

CURRENT LAND USE CHARACTERISTICS

The PA Route 100 corridor in the Pottstown region is located on the edge of Philadelphia's expanding metropolitan area. PA Route 100 bisects the Borough of Pottstown. Also, a number of older villages are adjacent to the roadway, including Gilbertsville, Halfway House, New Berlinville, Pottstown Landing, and South Pottstown. Substantial amounts of agricultural and rural land remain along the corridor; however, this land is transitioning from a rural to a suburban environment, with many newer, suburban residential developments situated along the entire length of PA Route 100 to house the region's growing population.

The large amount of vehicular traffic and high visibility along PA Route 100 has also promoted significant commercial development. The Coventry Mall, located at the interchange of PA Route 100 and PA Route 724, is the only existing regional shopping center along the corridor. An additional regional center is currently being constructed at North State Street (i.e. Upland Square) and PA Route 100, with approximately 725,000 square feet of commercial space. Also, a number of community shopping centers with anchor stores, including Wal-mart, Lowes, Weis, Giant, and Redners, are located at major intersections along PA Route 100 at Temple Road, Cedarville Road, Shoemaker Road, State Street, PA Route 73, and County Line Road.

Pictured: Sample of land use types along the study corridor.

Two other significant nonresidential uses along the PA Route 100 corridor are the Pottstown Airport and the Pottstown Landfill. These uses are surrounded by additional industrial and distribution facilities from Shoemaker Road to North State Street. Additional industrial clusters along PA Route 100 are located along the Schuylkill River in the Borough of Pottstown, and in Douglass and Colebrookedale townships, abutting the boundary between Montgomery and Berks counties.

PUBLIC TRANSIT

The Southeastern Pennsylvania Transportation Authority (SEPTA) and Pottstown Urban Transit, Inc. (PUT) presently provide bus service within the Borough of Pottstown, with routes connecting to Collegeville, Norristown, and King of Prussia. There are presently no bus routes provided along PA Route 100 linking the study area to other traffic generators to the north and south; however, the *Pottstown Metropolitan Regional Comprehensive Plan* does recommend connecting Pottstown to Exton/Downingtown via a proposed bus route. Rail service is not currently provided in the study area or the immediate surrounding locale. The potential also exists for a regional rail line extending from the Reading area, through the Pottstown area, to the Philadelphia area (formerly called the proposed Schuylkill Valley Metro Line, and more recently, the extension of SEPTA's R6 service).

PEDESTRIAN AND BICYCLE TRAFFIC

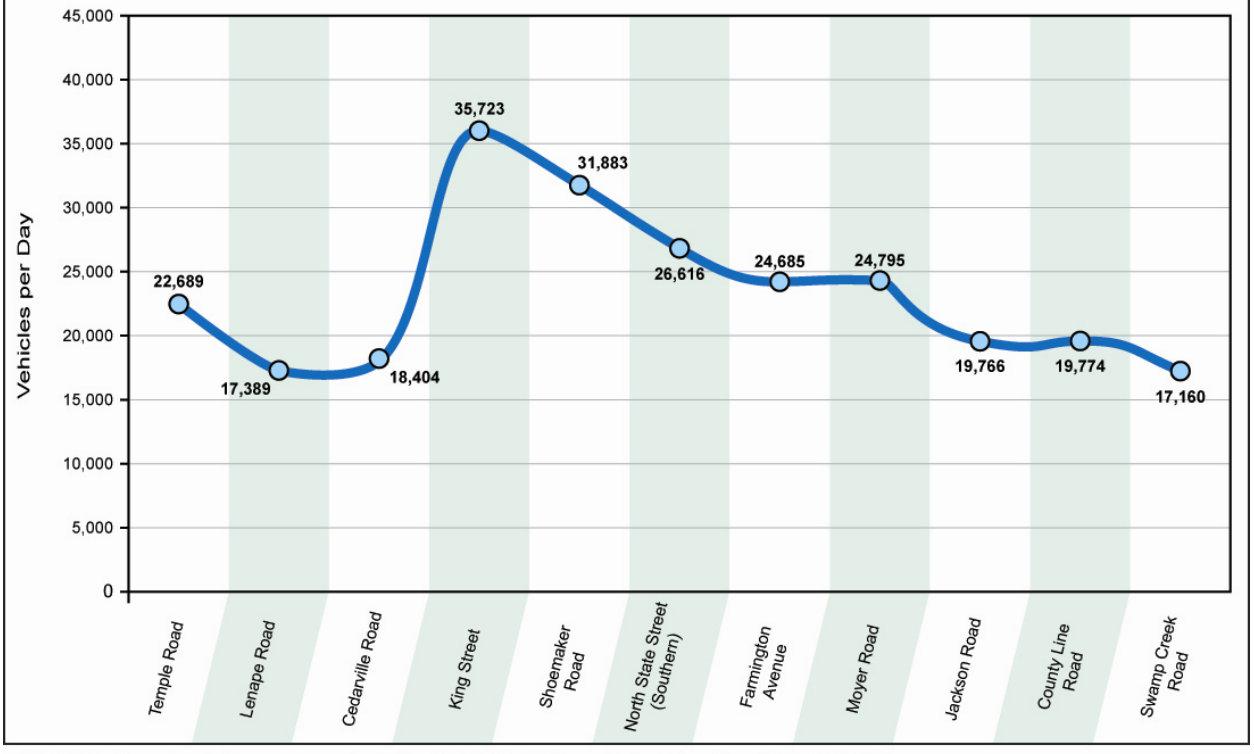
Pedestrian and bicycle traffic are not presently accommodated along PA Route 100, as vehicular mobility is the clear objective of the corridor. In general, facilities such as sidewalks, bike lanes, and trails are not provided, and pedestrian crossings are prohibited at most intersections. In locations where pedestrian crossings are permitted, the existing facilities minimally accommodate pedestrians, making such crossings undesirable.

Bike Pottstown is a community bike-sharing program that provides bicycles free of charge for the community to use and enjoy, so there is an apparent desire for bicycling in the study area despite the lack of accommodations along PA Route 100.

VEHICULAR TRAFFIC VOLUMES

Current daily traffic volumes along PA Route 100 range from approximately 17,000 to 36,000 vehicles per day within the study area, as shown in **Figure 6**, based on traffic volume data collected by DVRPC in 2005. The peak daily traffic volumes on PA Route 100 are experienced in the vicinity of King Street, which is a result of the proximity of the U.S. Route 422 Expressway, significant commercial development, and population density within Pottstown Borough. **Table 2** also shows daily traffic volumes along many of the intersecting roadways within the study area. Daily traffic counts and peak hour intersection traffic count data are provided in **Appendix H** (Technical Appendix).

Figure 6 **Existing Daily Traffic Volumes Along Study Area Corridor**



SOURCE: Based on traffic counts conducted by DVRPC in 2005 or obtained from PennDOT's iTMS data.

Traffic volumes during the weekday commuter periods (or "rush hours") represent the peak traffic volumes along the corridor. Specifically, these commuter peak periods generally occur in the morning (7:00 AM to 9:00 AM) and again in the late afternoon (4:00 PM to 6:00 PM), and are the focus of this study. Figures illustrating the existing weekday morning and afternoon peak hour traffic volumes at each of the study intersections are provided in **Appendix A**.

Varying directional flows are apparent along the corridor, but there is a tendency for traffic to be destined to U.S. Route 422 during the weekday morning commute, and then oriented away from U.S. Route 422 during the weekday afternoon commute.

TRAFFIC OPERATIONS

The peak hour traffic volumes at the study intersections along PA Route 100 within the study area were analyzed to determine the current operating conditions, in accordance with the standard capacity/level-of-service analysis techniques contained in the current *Highway Capacity Manual (2000)*.[(1)] By definition, capacity represents "the maximum rate of flow that can reasonably be expected to pass a point on a uniform section of a lane or roadway under prevailing roadway, traffic, and control conditions." The level of functioning of an intersection or a uniform section of a lane or roadway can be expressed in terms of levels of service. Level of service (LOS) is defined as "a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers." Such measures include "speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety."

At unsignalized intersections, a methodology for evaluating the relative functioning of intersections controlled by either a stop or yield sign has been developed and is based on several assumptions, including:

- Major street flows are not affected by the minor (stop-sign controlled) street movements.
- Left turns from the major street to the minor street are influenced only by opposing major street through flow.
- Minor street left turns are impeded by all major street traffic plus opposing minor street traffic.
- Minor street through traffic is impeded by all major street traffic.
- Minor street right turns are impeded only by the major street traffic coming from the left.

The concept of stop-controlled or yield-controlled intersection analysis is based on the estimate of average total delay on minor streets. The methodology of analysis relies on three elements: the size and distribution of gaps in the major traffic stream, the usefulness of these gaps to the minor stream drivers, and the relative priority of the various traffic streams at the intersection. The results of the analysis provide an estimate of average total delay for the various critical movements at the unsignalized intersections (see **Figure 7**).

(1) *Transportation Research Board, Special Report 209, Highway Capacity Manual, published by the Transportation Research Board, Washington, DC, Updated 2000.*

At signalized intersections, time allocation must also be considered. LOS is based primarily on the average control delay per vehicle for various movements within the intersection. Volume/capacity relationships also affect LOS. Thus, both volume/capacity and delay must be considered to evaluate the overall operation of a signalized intersection (see **Figure 7**).

PennDOT considers LOS A through D in urban/suburban areas to be acceptable operating conditions, while LOS E represents conditions approaching capacity and LOS F indicates that traffic volumes have exceeded available capacity. The capacity/LOS analysis worksheets for this report are provided in **Appendix H** (Technical Appendix).

Figure 7 **Correlation Between Average Delay and Level of Service**

Level of Service	*Unsignalized Intersections*		*Signalized Intersections*	
	Description	Control Delay Per Vehicle (seconds)	Description	Control Delay Per Vehicle (seconds)
A	Little or no delay	≤ 10.0	Very low delay, high quality flow	≤ 10.0
B	Short traffic delays	10.1 to 15.0	Low delay, good traffic flow	10.1 to 20.0
C	Average traffic delays	15.1 to 25.0	Average delay, stable traffic flow	20.1 to 35.0
D	Long traffic delays	25.1 to 35.0	Longer delay, approach capacity delay	35.1 to 55.0
E	Very long traffic delays	35.1 to 50.0	Limit of acceptable delay, capacity flow	55.1 to 80.0
F	Demand exceeds capacity	> 50.0	Demand exceeds capacity	> 80.0

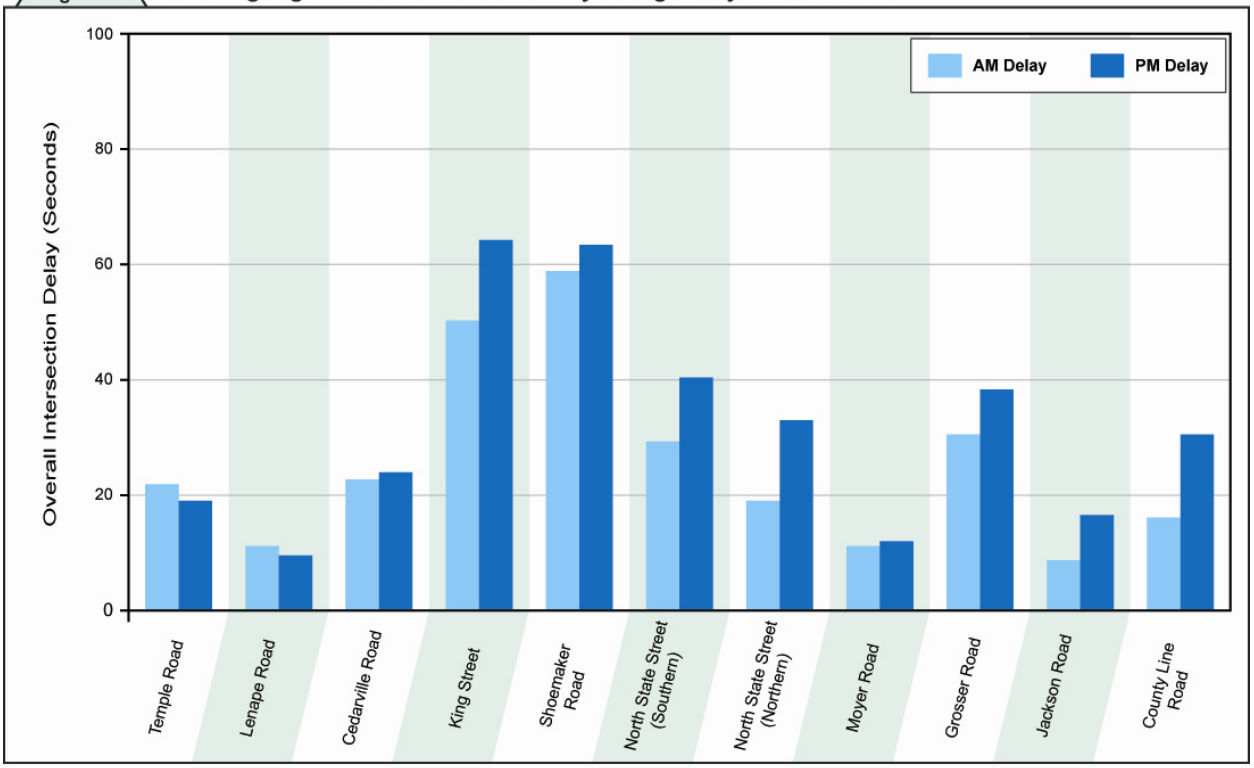
SOURCE: McMahon Transportation Engineers and Planners

EXISTING TRAFFIC OPERATING CONDITIONS

Pictured: Traffic congestion and queues northbound along PA Route 100 at Temple Road.

The existing weekday morning and weekday afternoon peak hour traffic volumes were subject to the detailed capacity/LOS analysis methodologies previously described. The results of the analysis indicate that most of the corridor functions in a generally acceptable way with desirable LOS during the commuter peak hours. However, the analysis reveals some areas of congestion, such as the PA Route 100 intersections with King Street and Shoemaker Road, which currently operate with poor overall LOS (LOS E or F) during the weekday commuter peak hours. Furthermore, several individual movements at these two intersections, as well as other intersections, currently operate with poor LOS during the peak hours. **Figure 8** summarizes the overall LOS and delay conditions at signalized intersections during the existing weekday commuter peak hours, while **Table 5** summarizes the existing peak hour LOS at the study intersections. In addition, **Appendix B** contains figures detailing the existing LOS analysis results at each of the study intersections.

Figure 8 **Existing Signalized Intersection Delay Along Study Area Corridor**



SOURCE: McMahon Transportation Engineers & Planners

CRASH DATA

DVRPC provided a summary of crash rates along PA Route 100 in the study area, which are summarized in **Figure 9**. This information indicates that crash rates are higher than average statewide crash rates along two segments of PA Route 100. These two problematic areas are located in the Chester County segment (between Hoffecker Road and Temple Road) and in the Pottstown area (between King Street and Shoemaker Road). Specifically, along the Chester County segment, traffic congestion and the number of unrestricted driveways between Hoffecker Road and Temple Road likely contribute to the higher crash rates along this segment. Along the Pottstown segment, heavy traffic congestion also likely contributes to the higher crash rates. As traffic volumes, traffic congestion, and the number of intersections/driveways all lessen along the corridor, the crash rates subside to average or below average conditions.

PARALLEL ROADWAYS

Roadways parallel to a transportation corridor provide alternative routes for motorists, particularly for local traffic. A well-designed and connective network can improve the effectiveness of the overall transportation network. Today, there exists no convenient and complete parallel route through the entire study area; however, there are a number of roadways that provide intermittent parallel routes. These nearby roadways that have the potential to serve as parallel routes are illustrated in **Figure 10**. The South Hanover Street/Hanover Street/Farmington Avenue route is the longest contiguous parallel route within the study area, and it traverses the central (downtown) portion of the Borough

of Pottstown. Elsewhere, various segments of roadways form intermittent portions of a parallel route that would require connections to other roadways in order to function as a convenient and efficient parallel route.

The safety and transportation needs of pedestrians, bicyclists, transit riders, and motorists should be carefully evaluated on these parallel facilities. Following the Smart Transportation Guidebook, the design of any parallel roadways or new roadway connections should address the needs of all transportation modes and be closely coordinated with the land use plans.

Table 5. Existing Traffic Operating Conditions at Key Intersections[1]

Cross Street	Weekday Morning Peak Hour	Weekday Afternoon Peak Hour
SOUTHERN SEGMENT		
Hoffecker Road (Unsignalized)	D	D
Temple Road[2]	C	B
S. Hanover Street (Unsignalized)	C	E
Lenape Crossing Road	B	A
Cedarville Road	C	C
PA Route 724 (NB Ramps)	A	A
PA Route 724 WB (SB Off-Ramp)	A	C
PA Route 724 EB (SB Off-Ramp)	B	B
PA Route 724 (SB On-Ramp)	A	A
POTTSTOWN SEGMENT		
King Street	D	E
Shoemaker Road[3]	E	E
North State Street (southern)	C	D
North State Street (northern)	B	C
Farmington Avenue (NB Ramps)	B	B
Farmington Avenue (SB Ramps)	B	C
Moyer Road	B	B
NORTHERN SEGMENT		
Grosser Road	C	D
Jackson Road	A	B
PA Route 73 (NB Ramps)[4]	B	B
PA Route 73 (SB Ramps)[4]	A	B
County Line Road	B	C
Montgomery Ave (Swamp Creek Road/Cherry Lane)	A	A
Montgomery Ave (NB On-Ramp)	A	A
Montgomery Ave (NB Off-Ramp)	A	B
Montgomery Ave (SB Ramps)	B	C
Montgomery Ave (SB Off-Ramp Right Turn)	B	B

1 – Overall Intersection Levels of Service reported for signalized intersections and side street delay (worst approach) reported for unsignalized intersections.
2 – Unbalanced lane utilization due to lane drop at South Hanover Street often causes northbound PA Route 100 to function with worse levels of service than the analysis reports.
3 – Inadequate storage length of the left-turn lane causes northbound PA Route 100 to function with worse levels of service than the analysis reports.
4 – Congestion along the PA Route 73 corridor due to close intersection spacing causes the interchange to function with worse levels of service than the analysis reports.

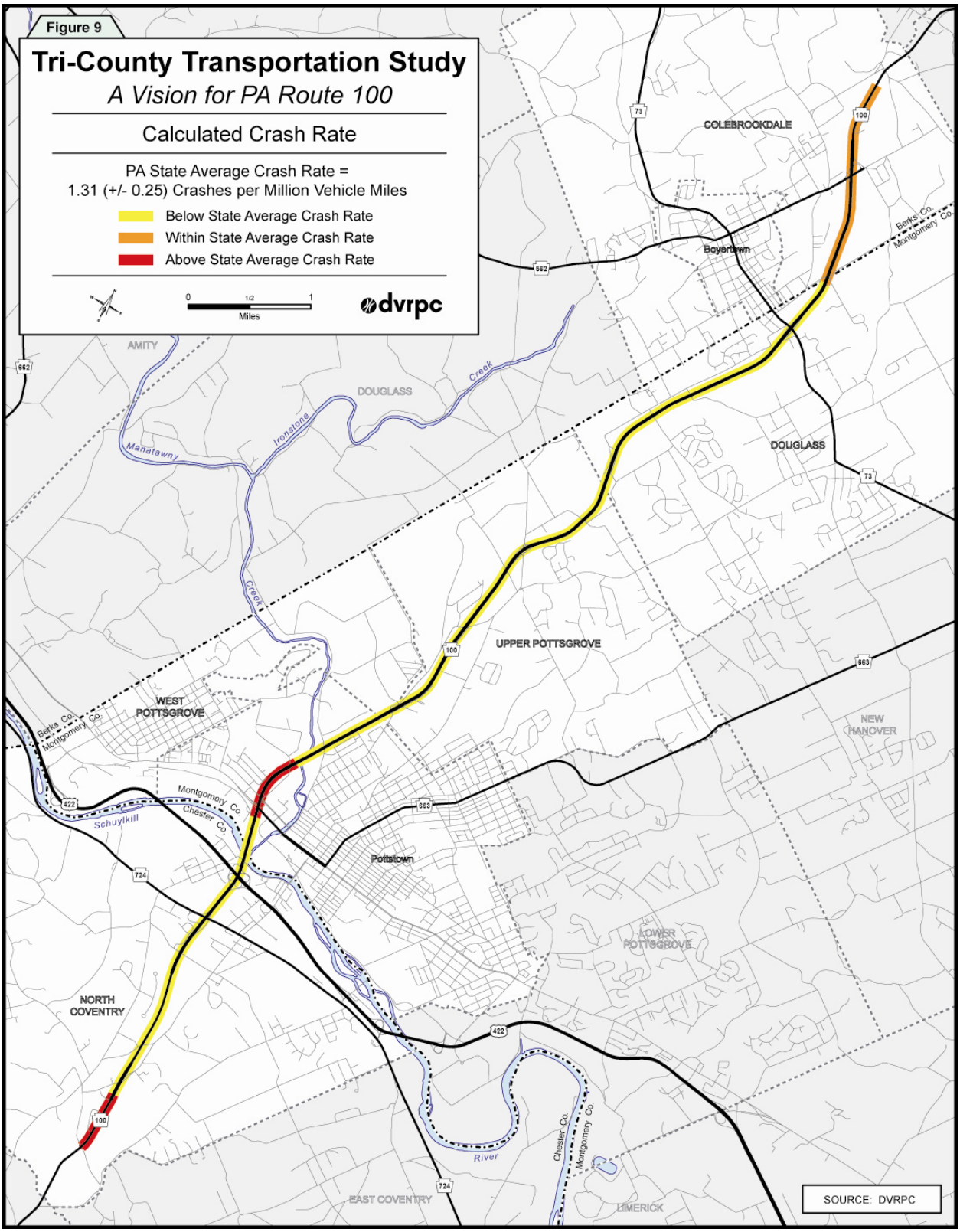


Figure 9
Tri-County Transportation Study
A Vision for PA Route 100
Calculated Crash Rate
PA State Average Crash Rate =
1.31 (+/- 0.25) Crashes per Million Vehicle Miles
Below State Average Crash Rate
Within State Average Crash Rate
Above State Average Crash Rate
0
1/2
1
Miles
dvrpc
COLEBROOKDALE
Boyertown
Berks Co.
Montgomery Co.
AMITY
DOUGLASS
Manatawny
Ironstone
Creek
UPPER POTTSGROVE
WEST POTTSGROVE
NEW HANOVER
Montgomery Co.
Chester Co.
Schuylkill
Pottstown
LOWER POTTSGROVE
NORTH COVENTRY
River
EAST COVENTRY
LIMERICK
SOURCE: DVRPC

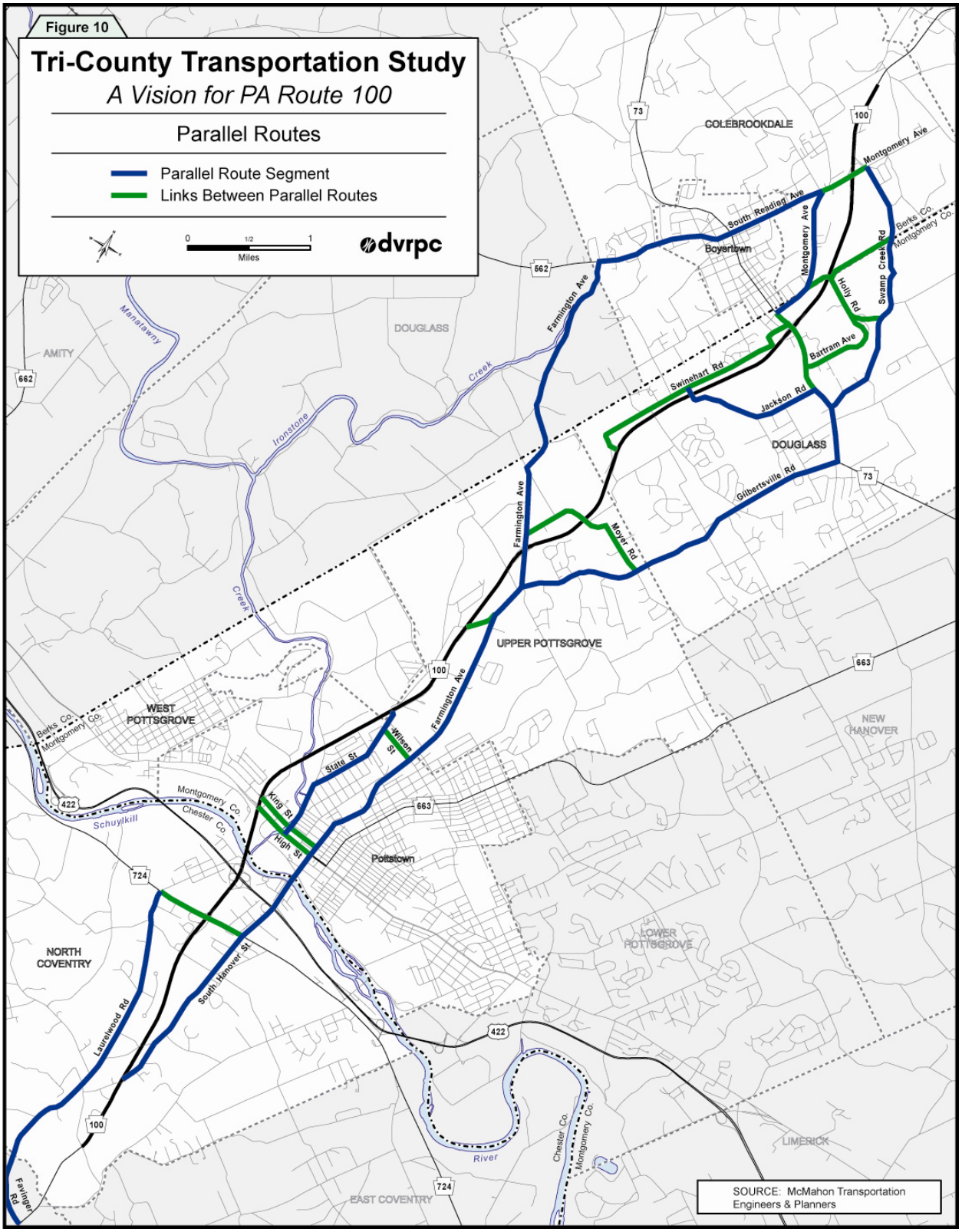


Figure 10
Tri-County Transportation Study
A Vision for PA Route 100
Parallel Routes
Parallel Route Segment
Links Between Parallel Routes
0 1/2 1
Miles
dvrpc
COLEBROOKDALE
Boyertown
DOUGLASS
AMITY
UPPER POTTSGROVE
WEST POTTSGROVE
NORTH COVENTRY
LOWER POTTSGROVE
NEW HANOVER
LIMERICK
EAST COVENTRY
Pottstown
Manatawny Creek
Ironstone Creek
Schuylkill River
Farmington Ave
Montgomery Ave
South Reading Ave
Swamp Creek Rd
Holly Rd
Bartram Ave
Swinehart Rd
Jackson Rd
Gilbertsville Rd
Moyer Rd
State St
Wilson St
King St
High St
South Hanover St
Laurelwood Rd
Berks Co.
Montgomery Co.
Chester Co.
73
100
562
662
663
422
724
SOURCE: McMahon Transportation Engineers & Planners

3. FUTURE TRANSPORTATION SETTING

FUTURE TRAFFIC PROJECTIONS

The SAC recommended 2020 as the future design year for this study, and as such, the existing traffic volumes were increased to reflect regional and local traffic growth along the study corridor and surrounding area.

First, a regional traffic growth rate of 0.7 percent per year for 15 years was applied to the existing (2005) traffic volumes to reflect natural regional traffic growth through 2020. This annual regional traffic growth rate is consistent with data contained in PennDOT's publication, *2006 Pennsylvania Traffic Data*.

Second, local traffic growth was accounted for by adding traffic associated with known future/planned developments. Traffic associated with 55 developments identified by the study area municipalities, which are considered to be of significance to the corridor and study area traffic conditions, was specifically included in the traffic growth projections. **Figure 11** illustrates the locations of these known specific developments included in the traffic projections.

Lastly, a detailed land use analysis was performed to forecast further future development potential in the study area. This land use analysis utilized data prepared by DVRPC in 2005. DVRPC's projections were adjusted to reflect known developments so as not to underestimate or overestimate (double count) development potential. The future land use projections are summarized in **Table 6**. Also, **Appendix C** contains more detailed information regarding the land use analysis.

By 2020, in addition to the currently known developments, this corridor may contain approximately 2,500 more housing units, just less than 1.5 million square feet of new retail space, almost 600,000 square feet of additional office space, and 55 more acres of industrial facilities. However, since commencement of this study, our nation and this local region is experiencing a severe and prolonged economic recession. Because the timeframe for a full economic recovery is unknown, new development growth may lag, and therefore the anticipated schedule for development build-out may be protracted and occur beyond the study year.

FUTURE LAND USE CHARACTERISTICS

The entire PA Route 100 study corridor is included in a designated growth area, except for a small section along the border between Douglass and Upper Pottsgrove townships (see **Figure 12**). Most of the land area along the corridor is identified for low-density residential development, according to the Future Land Use Plan of the *Pottstown Metropolitan Regional Comprehensive Plan* (see **Figure 13**) and municipal development regulations. More concentrated mixed-use centers are directed around the Village of Gilbertsville, the Borough of Pottstown, the Coventry Mall area, the Town Square Plaza, and the Suburbia Shopping Center area in North Coventry Township. Future retail

Pictured: Retail along PA Route 100 corridor in Douglass Township.

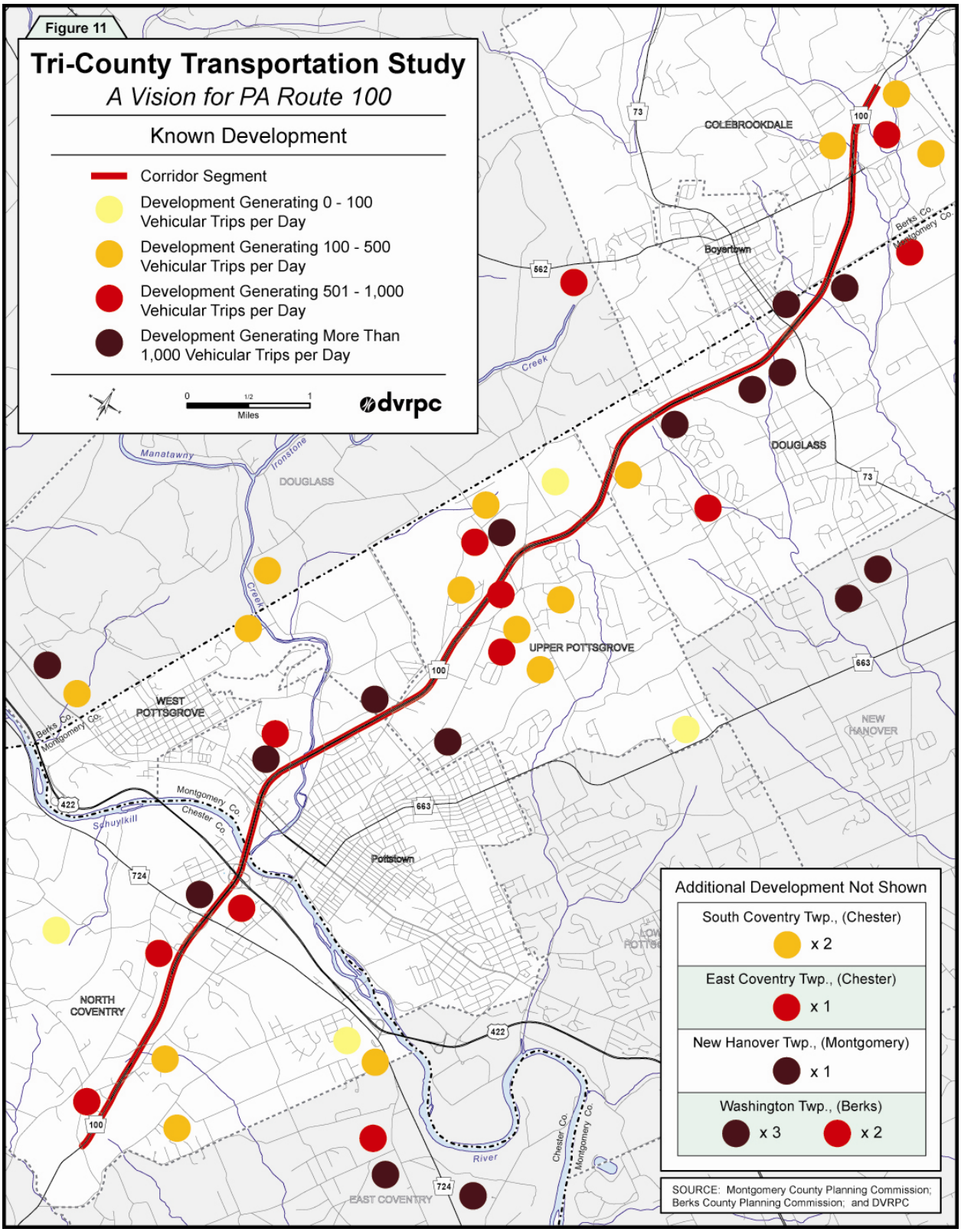


Figure 11
Tri-County Transportation Study
A Vision for PA Route 100
Known Development
Corridor Segment
Development Generating 0 - 100 Vehicular Trips per Day
Development Generating 100 - 500 Vehicular Trips per Day
Development Generating 501 - 1,000 Vehicular Trips per Day
Development Generating More Than 1,000 Vehicular Trips per Day
0 1/2 1 Miles
dvrpc
COLEBROOKDALE
Boyertown
DOUGLASS
UPPER POTTSGROVE
WEST POTTSGROVE
NEW HANOVER
Pottstown
NORTH COVENTRY
EAST COVENTRY
Manatawny Creek
Ironstone Creek
Schuylkill River
Berks Co.
Montgomery Co.
Chester Co.
73
100
562
663
422
724
Additional Development Not Shown
South Coventry Twp., (Chester) x 2
East Coventry Twp., (Chester) x 1
New Hanover Twp., (Montgomery) x 1
Washington Twp., (Berks) x 3 x 2
SOURCE: Montgomery County Planning Commission; Berks County Planning Commission; and DVRPC

Table 6. Future Land Use Projections

Municipality	Land Use Category	New Development (Size)
Southern Segment		
North Coventry Township	Residential	307 units
	Retail	327,121 square feet
	Office	173,052 square feet
	Industrial	5.0 acres
Pottstown Segment		
Pottstown Borough	Residential	90 units
	Retail	24,227 square feet
	Office	139,856 square feet
	Industrial	10.4 acres
West Pottsgrove Township	Residential	23 units
	Retail	731,696 square feet
	Office	42,510 square feet
	Industrial	18.5 acres
Upper Pottsgrove Township	Residential	934 units
	Retail	13,543 square feet
	Office	71,854 square feet
	Industrial	11.3 acres
Northern Segment		
Douglass Township	Residential	916 units
	Retail	329,221 square feet
	Office	131,670 square feet
	Industrial	9.5 acres
Colebrookdale Township	Residential	245 units
	Retail	4,891 square feet
	Office	55,678 square feet
	Industrial	1.1 acres

centers are also being constructed at North State Street in West Pottsgrove Township (Upland Square), and several highway commercial areas along PA Route 100 near New Berlinville in Colebrookedale Township. Future major employment centers also include developments along Commerce Drive in Upper Pottsgrove Township and along PA Route 100 north and south of the Village of Gilbertsville.

FUTURE LAND USE INTENSITY

Future development along PA Route 100 in the study area, especially related to new retail uses, may cause pressure on municipalities to direct more high intensity development along the corridor by modifying current, low-intensity zoning districts, such as residential or industrial districts abutting PA Route 100 to allow more retail uses based on the high visibility of these locations. Increasing future land use intensities along the corridor needs to be carefully considered with respect to traffic volume generation, access impacts, and consistency with regional comprehensive planning efforts.

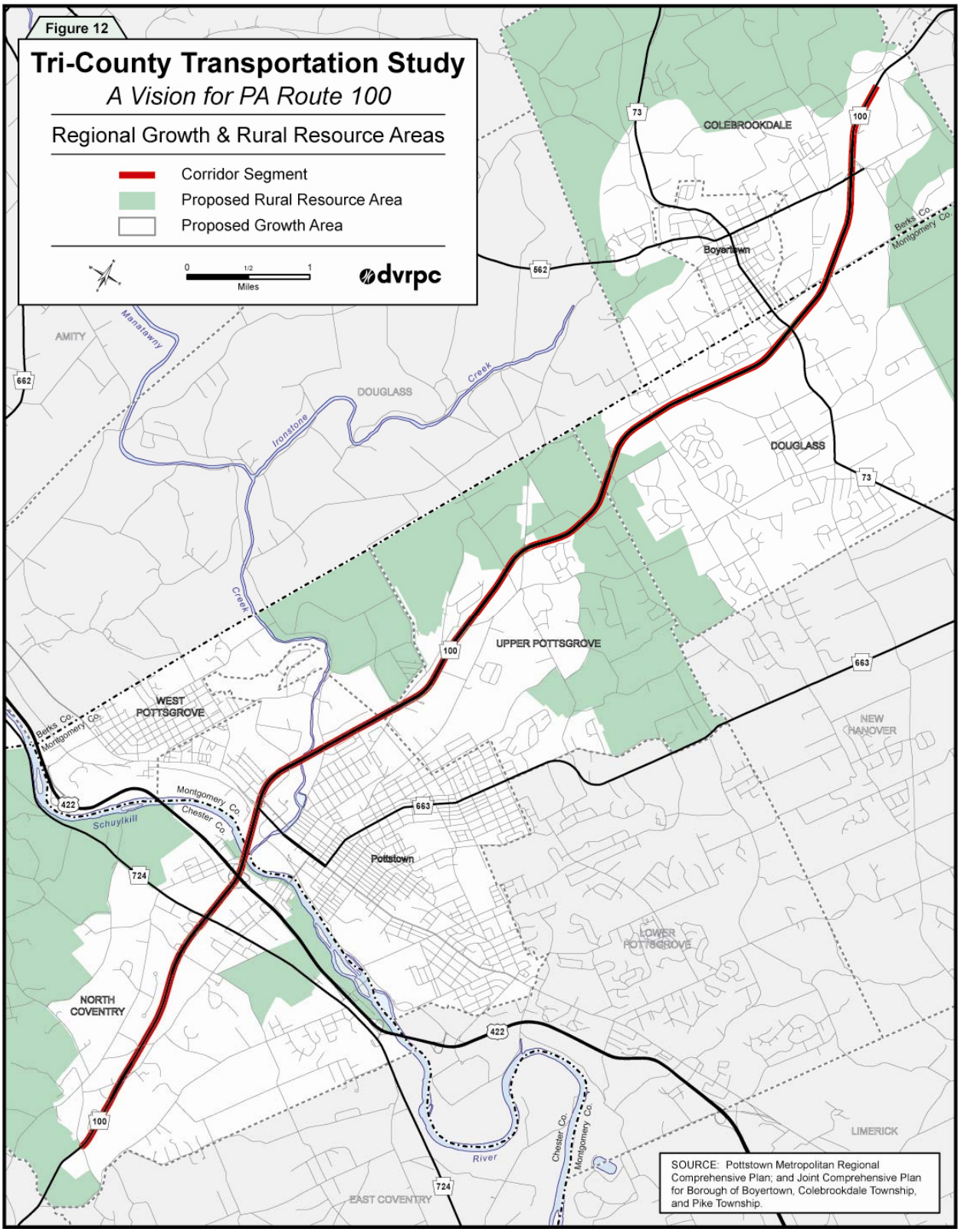


Figure 12
Tri-County Transportation Study
A Vision for PA Route 100
Regional Growth & Rural Resource Areas
Corridor Segment
Proposed Rural Resource Area
Proposed Growth Area
0
1/2
1
Miles
dvrpc
COLEBROOKDALE
Boyertown
Berks Co.
Montgomery Co.
AMITY
Manatawny
Creek
DOUGLASS
Ironstone
Creek
UPPER POTTSGROVE
WEST POTTSGROVE
Berks Co.
Montgomery Co.
NEW HANOVER
Montgomery Co.
Chester Co.
Schuylkill
Pottstown
LOWER POTTSGROVE
NORTH COVENTRY
River
Chester Co.
Montgomery Co.
LIMERICK
EAST COVENTRY
73
100
562
662
663
422
724
SOURCE: Pottstown Metropolitan Regional Comprehensive Plan; and Joint Comprehensive Plan for Borough of Boyertown, Colebrookdale Township, and Pike Township.

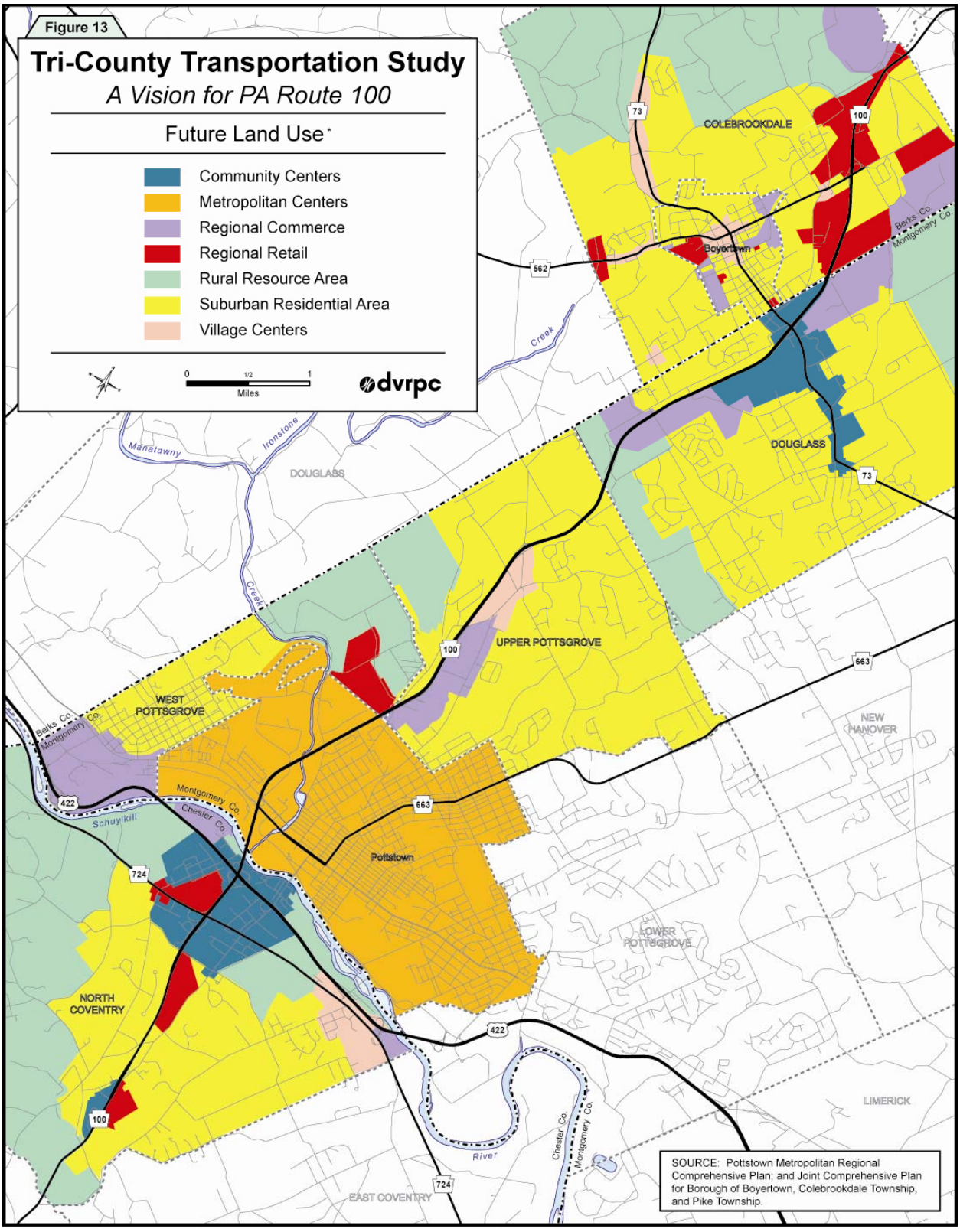


Figure 13
Tri-County Transportation Study
A Vision for PA Route 100
Future Land Use*
Community Centers
Metropolitan Centers
Regional Commerce
Regional Retail
Rural Resource Area
Suburban Residential Area
Village Centers
0
1/2
1
Miles
dvrpc
COLEBROOKDALE
Boyertown
Berks Co.
Montgomery Co.
DOUGLASS
Manatawny
Ironstone
Creek
UPPER POTTSGROVE
WEST POTTSGROVE
Chester Co.
Schuylkill
Pottstown
NEW HANOVER
LOWER POTTSGROVE
NORTH COVENTRY
EAST COVENTRY
LIMERICK
River
73
100
562
422
663
724
SOURCE: Pottstown Metropolitan Regional Comprehensive Plan; and Joint Comprehensive Plan for Borough of Boyertown, Colebrookdale Township, and Pike Township.

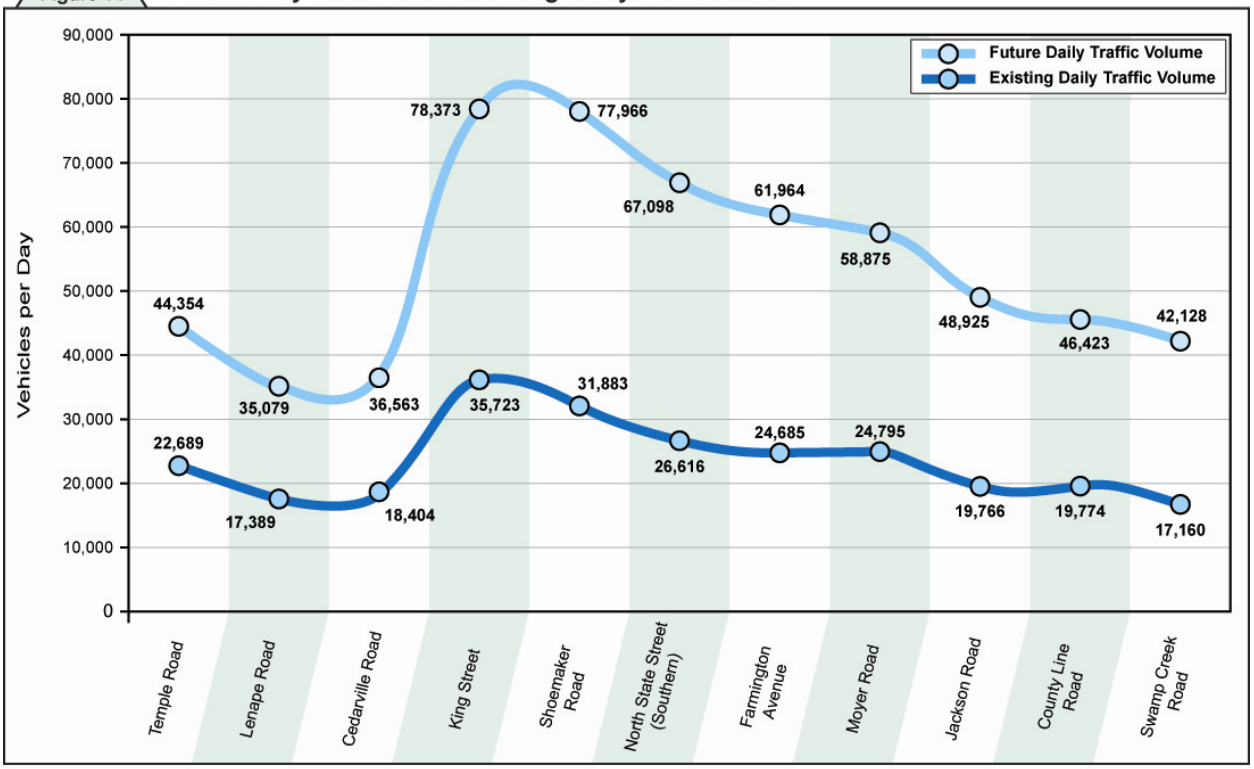
FUTURE TRAFFIC VOLUMES

Traffic associated with the previously described future development projections (**Table 6**) was estimated utilizing traffic generation data contained in the Institute of Transportation Engineers publication, *Trip Generation*. Specifically, the ITE traffic generation for future developments was added to existing traffic volumes in addition to regional traffic growth projections.

Pictured: Construction of the new Upland Square retail development begins in West Pottsgrove Township.

Figure 14 illustrates the future daily traffic volume increases at various locations along PA Route 100 within the study area. Also, existing and future projected peak hour traffic volumes are summarized in **Table 7**. Additionally, figures illustrating the future weekday morning and afternoon peak hour traffic volumes at each study intersection are provided in **Appendix D**. These projected traffic volumes represent a snapshot of anticipated future traffic volumes that are expected to occur based on historic traffic growth and development trends. However, due to outside influences, such as economic factors, these future traffic projections could be realized sometime after this study's 2020 design year.

Figure 14 **Future Daily Traffic Volumes Along Study Area Corridor**



SOURCE: Based on traffic counts conducted by DVRPC in 2005 or obtained from PennDOT's iTMS data.

Table 7. Future Two-Way Peak Hour Traffic Volumes[1]

Segment	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
	Existing	Future	% Increase	Existing	Future	% Increase
Southern	1,925	2,817	46%	1,991	3,819	92%
Pottstown	2,255	4,114	82%	2,624	6,615	152%
Northern	1,874	3,581	91%	2,593	6,165	138%

1 – Highest mid block peak hour volumes by segment.

FUTURE BASE TRAFFIC OPERATIONS

The future base, or "do nothing," scenario evaluates traffic conditions along the PA Route 100 network without the investment of capacity improvements or any zoning and land use policy changes. Only those identified improvements currently proposed, in association with pending development plans, have been considered for this analysis (i.e., the improvements at North State Street associated with the Upland Square development). Figures illustrating the future weekday morning and afternoon peak hour level-of-service analysis results for the base conditions are provided in **Appendix E**.

Pictured: PA Route 100 between King Street and Shoemaker Road (off-peak).

In summary, traffic conditions along the PA Route 100 corridor will deteriorate significantly as a result of regional and local traffic growth, such that six signalized intersections during the weekday morning peak hour and 15 signalized intersections during the weekday afternoon peak hour will function at poor (LOS E and F) conditions overall. The most highly congested locations along PA Route 100 are the intersections with King Street, Shoemaker Road, and North State Street (southern), and at the PA Route 100/PA Route 73 interchange ramps. Additionally, several unsignalized intersections along the corridor will experience delay (LOS E and F) conditions on the stop-controlled, side-street approaches. As a result, the traffic congestion experienced by motorists today will worsen in the future to encompass multiple intersections and affect longer segments of the corridor. The future overall levels of service for the study intersections are illustrated below in **Table 8**.

Table 8. Future Base Traffic Operating Conditions at Key Intersections[1]

Cross Street	Weekday Morning Peak Hour (seconds of delay)	Weekday Afternoon Peak Hour (seconds of delay)
SOUTHERN SEGMENT		
Hoffecker Road	F (n/a[2])	F (n/a[2])
Temple Road	F (90.9)	F (214.2)
S. Hanover Street	F (91.0)	F (n/a[2])
Lenape Crossing Road	D	D
Cedarville Road	D	E
PA Route 724 (NB Ramps)	B	C
PA Route 724 WB (SB Off-Ramp)	B	E
PA Route 724 EB (SB Off-Ramp)	B	C
PA Route 724 (SB On-Ramp)	A	A
POTTSTOWN SEGMENT		
King Street	F (391.3)	F (574.6)
Shoemaker Road	F (135.8)	F (281.2)
North State Street (southern)	D[3]	F (173.7)[3]
North State Street (northern)	F (171.1)	F (665.4)
Farmington Avenue (NB Ramps)	C	F (56.1)
Farmington Avenue (SB Ramps)	F (111.9)	F (433.8)
Moyer Road	C	F (265.5)
NORTHERN SEGMENT		
Grosser Road	F (157.1)	F (512.2)
Jackson Road	B	F (412.0)
PA Route 73 (NB Ramps)	C	F (147.6)
PA Route 73 (SB Ramps)	B	F (91.7)
County Line Road	C	F (408.3)
Montgomery Ave (Swamp Creek Road/Cherry Lane)	B	C
Montgomery Ave (NB On-Ramp)	A	A
Montgomery Ave (NB Off-Ramp)	B	B
Montgomery Ave (SB Ramps)	C	D
Montgomery Ave (SB Off-Ramp Right-Turn)	B	C

1 – Overall Intersection Levels of Service reported for signalized intersections and side-street delay (worst approach) reported for unsignalized intersections.
2 – Synchro does not report the delay on the side-street approach at this intersection.
3 – With improvements provided in conjunction with the Upland Square development, consisting of three through lanes in each direction, as well as dual northbound left-turn lanes, a single southbound left-turn lane, and separate right-turn lanes in each direction along PA Route 100. Additionally, the eastbound North State Street (Upland Square) approach will provide dual left-turn lanes, a single through lane, and dual right-turn lanes, and the westbound State Street approach will provide dual left-turn lanes, a single through lane, and a shared through/right-turn lane.

4. TRANSPORTATION IMPROVEMENT ALTERNATIVES

TRANSPORTATION IMPROVEMENT SCENARIOS

Based on the projected poor traffic operations along the PA Route 100 corridor under the future base (do nothing) condition, it is evident that improvements will be required to remedy future congested conditions. The following improvement scenarios were evaluated:

- **Northern Chester County (North Coventry) Gateway Improvements** – North Coventry Township recently adopted its *Northern Chester County Gateway Master Plan*. This is a detailed land use and transportation study that thoroughly evaluated the PA Route 100 corridor within the municipality and provided specific recommendations "to create a coordinated approach toward accommodating new development (and redevelopment) in the corridor, while effectively managing traffic circulation and maintaining the character that reflects the Township's, Pottstown Regional's, and Chester County's goals." In many respects, the Gateway Study is a next step evaluation to this *Tri-County Transportation Study*, and other municipalities along the corridor should consider a similar follow-up study. Only the roadway improvement recommendations contained in the Gateway Study were considered for the intersections within the southern segment of this study, and no additional improvement scenarios were evaluated.

- **Conventional Improvements** – These include typical road widening capacity improvements, such as additional through lanes and turning lanes along PA Route 100 and its intersecting roadways.

- **Grade Separation / Interchange Upgrade** – This includes converting an at-grade intersection to grade separated, if justified, or modifications to an existing interchange configuration. Primary warrants for interchanges and grade separation were based on guidelines provided in the American Association of Highway Transportation Officials (AASHTO) publication, *A Policy on Geometric Design of Highways and Streets*.

- **Alternative Improvements** – Recognizing the limitations along the corridor that may render many of the conventional improvements impractical and in many cases undesirable, alternative improvement concepts were developed. The goals of the alternative improvements were to "right size" improvements to:

    - minimize the number of through lanes needed along the PA Route 100 corridor, as well as the scope of improvements needed at the study intersections and along intersecting roadways;
    - preserve the established limited access designation along the corridor;
    - integrate the surrounding roadway network into the improvement plan;
    - apply sound access management techniques;
    - encourage sustainable growth and avoid an improvement plan that will encourage sprawl; and
    - offer comparatively lower-cost improvement solutions which may be attainable considering today's transportation funding resource challenges, than the conventional widening improvements.

Several types of alternative type improvements were initially considered for this analysis, such as jughandles, continuous flow intersections, quadrant roadway intersections, super-street median crossover, and grade-separation, as well as other intersection treatments, as appropriate. However, the heavy traffic volumes along the corridor and side streets (in many cases), as well as limited right-of-way, eliminated several alternative improvement possibilities. The alternative improvements presented in this report represent the improvements considered to be the most desirable and practical options.

- **Additional Measures** – There are additional improvement measures to help reduce future traffic congestion along the study corridor. These additional improvement measures include infrastructure improvements, such as enhancing the surrounding roadway network by providing parallel routes, and better connectivity of existing roadways to provide local traffic with alternatives to PA Route 100. Multi modal improvements (i.e., sidewalks, trails, bike lanes) within the study area can also serve to reduce vehicular travel along the PA Route 100 corridor. Additional measures to reduce congestion through non infrastructure improvements/strategies should also be pursued, such as transportation demand strategies, intelligent transportation systems, and land use planning or ordinance changes. These additional improvement measures have not specifically been evaluated as part of this study, but should be considered to help alleviate future traffic congestion and potentially reduce the scope of costly infrastructure improvements needed along the corridor.

DESIGN LEVELS OF SERVICE

An overall intersection level of service (LOS) D was selected as the preferred operating condition, or "design level of service." In many cases, the identified improvements satisfy this criterion; however, there are several instances where intersections will continue to function with poor LOS (LOS E and F), despite the recommendations for additional capacity improvements (i.e., through travel lanes and turning lanes), particularly under the conventional improvement scenario. In these instances, the necessary improvements to achieve LOS D may actually far exceed what would be considered reasonable, in terms of the characteristics of the study area and acceptance by motorists and the review agencies (i.e., triple left-turn lanes, etc.), and therefore, they are considered impractical and unfeasible.

FUTURE TRANSPORTATION IMPROVEMENTS ANALYSIS

The above-noted improvement scenarios are described and evaluated in greater detail below. For comparison, the findings related to each of the improvement scenarios are presented by corridor section, as appropriate.

Southern Segment

In order to tackle the traffic operating and safety conditions along the southernmost portion of the PA Route 100 study corridor, the recommendations of the *Northern Chester County Gateway Master Plan* were used for this study. In summary, these recommendations include:

- Widening of PA Route 100 to provide two through lanes per direction south of Cedarville Road.
- Widening for turning lane improvements at key intersections.

- Implementation of access management techniques between Hoffecker Road and Temple Road, including a landscaped center median, reverse frontage roadways, and limiting access to/from Hoffecker Road (to right-in/right-out only).
- Providing sidewalk and trail linkages to accommodate non vehicular traffic, as well as providing high-visibility pedestrian cross walks.
- Implementing additional zoning and land use planning changes.

Table 9 summarizes the Gateway Study transportation improvements for key intersections within the southern segment. **Figure 15** illustrates three of the key transportation improvements identified by the *Chester County Gateway Master Plan.* All of the three areas are located in the southern study segment, and more specifically, in North Coventry Township, Chester County. The three areas:

- **Hoffecker Road to Temple Road**
- **Cedarville Road Area**
- **PA Route 724 Area**

Pictured: PA Route 100 in North Coventry Township (south of Temple Road).

Table 9. Gateway Master Plan Improvements – Southern Segment

Intersecting Roadway	Gateway Master Plan Improvements	PA Route 100 Through Lanes by Direction
Hoffecker Road *See Figure 15*	• Restrict Hoffecker Road through and left-turn movements at this intersection with a PA Route 100 center median that extends northward to approximately Temple Road. • Construct a new signalized intersection to the north that serves development traffic and Hoffecker Road via reverse frontage roads. • Implement access management techniques between Hoffecker Road and Temple Road.	⇩ ⇧
Temple Road *See Figure 15*	• Provide a second southbound PA Route 100 through lane. • Provide a second continuous northbound PA Route 100 through lane beyond South Hanover Street. • Realign Temple Road and provide separate left- and right-turn lanes (by others). • Provide pedestrian facilities, including high-visibility crosswalks and sidewalks, at the intersection and within the area. • Plan for a future right-turn lane exiting the Suburbia Shopping Center, if needed in the future.	➔ ⇩ ⇧ ➔
South Hanover Street	• Provide a second northbound PA Route 100 through lane and a separate northbound deceleration lane to South Hanover Street, including widening the bridge of Neiman Road. • Restrict the left-turn movement from South Hanover Street and accommodate this traffic at Lenape Crossing Road OR install a traffic signal at South Hanover Street.	⇩ ⇩ ⇧ ➔
Lenape Crossing Road *See Figure 15*	• Provide a second southbound PA Route 100 through lane. • Restripe Lenape Crossing Road to provide dual left-turn lanes in conjunction with the restriction of left-turns from South Hanover Street. • Provide pedestrian facilities, including high-visibility crosswalks and a pedestrian connection (i.e., sidewalk or trail), between Lenape Crossing Road and Cedarville Road.	➔ ⇩ ⇧ ⇧
Cedarville Road *See Figure 15*	• Provide eastbound and westbound Cedarville Road left-turn lanes. • Provide pedestrian facilities, including high-visibility crosswalks and sidewalks/trails, at the intersection and within the area. • Plan for future right-turn lanes along both Cedarville Road approaches, if needed in the future. • Provide a connector roadway between Cedarville Road and PA Route 724.	⇩ ⇩ ⇧ ⇧
PA Route 724 *See Figure 15*	• Relocate the southbound off-ramp to the southwest quadrant of the interchange and construct a new signalized intersection opposite a new/relocated Coventry Mall access point. • Improve deceleration/acceleration lanes along southbound PA Route 100. • Provide pedestrian facilities, including high-visibility crosswalks and sidewalks, along PA Route 724. • Implement access management techniques and other capacity improvements along PA Route 724.	⇩ ⇩ ⇧ ⇧

LEGEND: ⇨ *EXISTING LANE* ➔ *FUTURE LANE*

Figure 15

Tri-County Transportation Study
A Vision for PA Route 100

Key Transportation Improvements

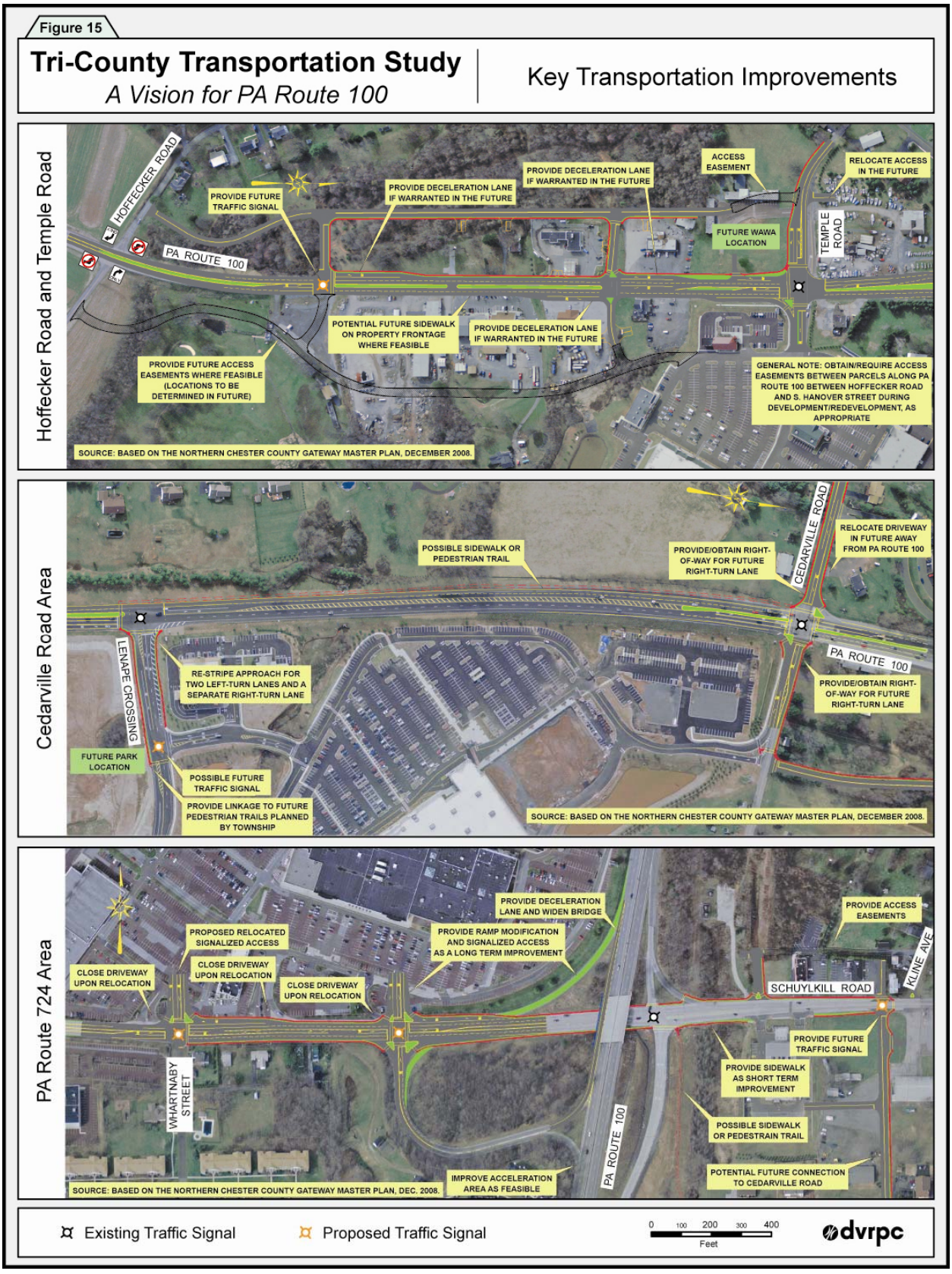


Table 10 summarizes the future traffic operating conditions (overall levels of service) with the implementation of the improvements described above.

Table 10. Overall Levels of Service at Key Intersections with Gateway Master Plan Improvements – Southern Segment

Cross Street	Weekday Morning Peak Hour		Weekday Afternoon Peak Hour	
	Base Condition (sec. of delay)	Improvements	Base Condition (sec. of delay)	Improvements
Hoffecker Road (Unsignalized)	F (n/a)	**A**[1]	F (n/a)	**B**[1]
Temple Road	F (90.9)	**B**	F (214.2)	**C**
South Hanover Street (Unsignalized)	F (91.0)	**A**[2] or **B**[3]	F (n/a)	**A**[2] or **B**[3]
Lenape Crossing Road	D	**A**	D	**B**
Cedarville Road	D	**C**	E	**D**
PA Route 724 (SB Ramps)	B	**C**	E	**D**

1 – Level of service reported for new signalized intersection to the north of Hoffecker Road.
2 – Level of service with left turn restriction from South Hanover Street.
3 – Level of service maintaining all movements from South Hanover Street with installation of a traffic signal.

It is noted that the U.S. Route 422 interchange, which is located within the Southern Segment of this study, is being evaluated in greater detail as part of a separate study of the U.S. Route 422 expressway.

Pottstown Segment

The heaviest traffic volumes, most limited right-of-way, and the highest development density abutting PA Route 100 all characterize this segment of the corridor. In this segment, conventional improvements, grade separation, and alternative improvements were considered.

The following figures illustrate and compare the scope/impacts of the improvement scenarios at key intersections in the Pottstown segment:

- **Figure 16** - King Street Alternatives
- **Figure 17** - Shoemaker Road Alternatives
- **Figure 18** – North State Street (south) Alternatives

<u>Conventional Improvements</u>

Under the conventional improvement scenario, in order to provide the necessary capacity to accommodate the projected traffic volumes, it is generally necessary to provide four through lanes in each direction along PA Route 100 within the Pottstown segment, plus additional turning lanes at intersections and side-street capacity improvements. The conventional improvements are listed by intersection below in **Table 11**.

Pictured: PA Route 100 in Pottstown (at King Street).

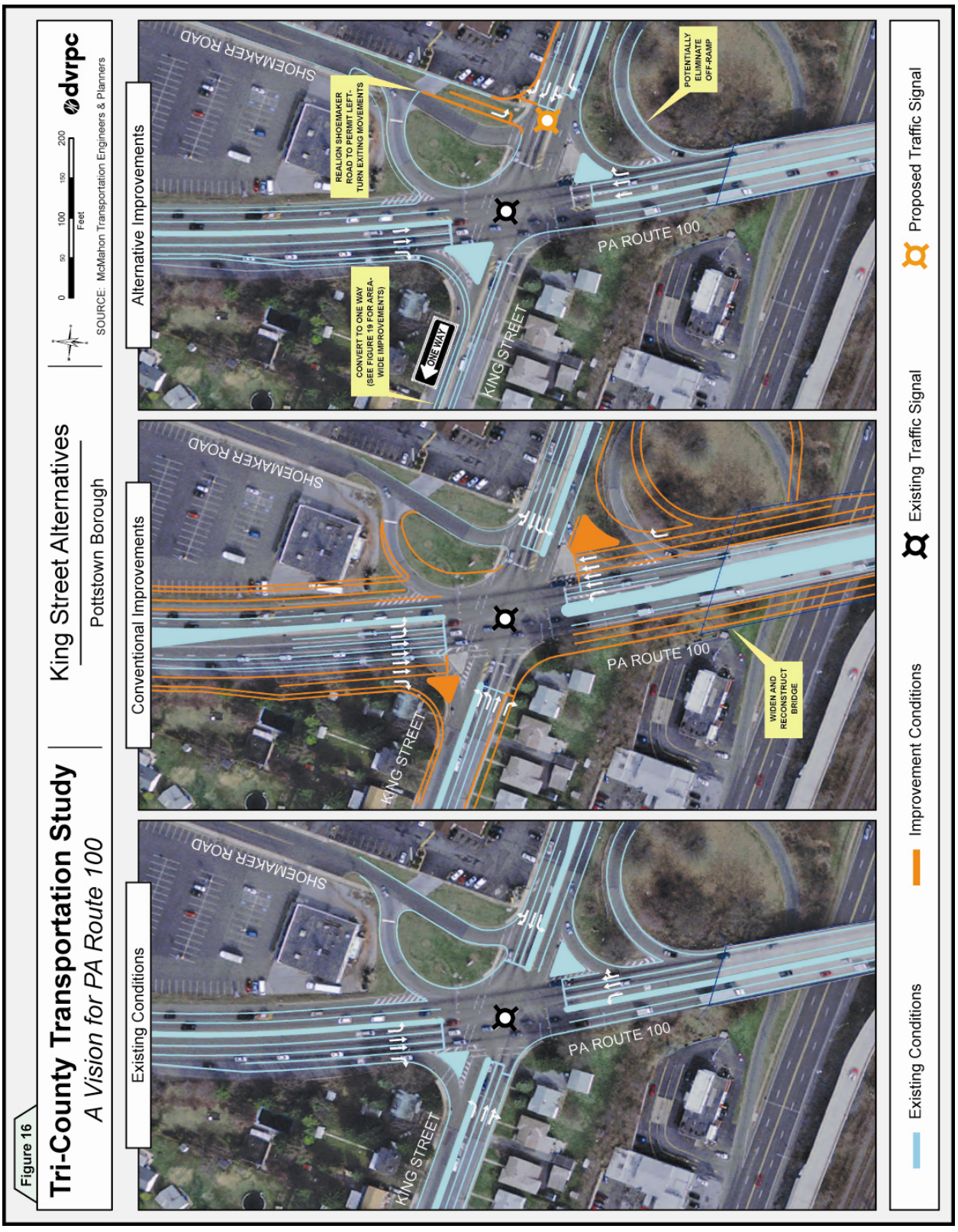


Figure 16
Tri-County Transportation Study
A Vision for PA Route 100
King Street Alternatives
Pottstown Borough
dvrpc
0 50 100 150 200
Feet
SOURCE: McMahon Transportation Engineers & Planners
Existing Conditions
Conventional Improvements
Alternative Improvements
SHOEMAKER ROAD
KING STREET
PA ROUTE 100
REALIGN SHOEMAKER ROAD TO PERMIT LEFT-TURN EXITING MOVEMENTS
CONVERT TO ONE WAY (SEE FIGURE 19 FOR AREA-WIDE IMPROVEMENTS)
ONE WAY
POTENTIALLY ELIMINATE OFF-RAMP
WIDEN AND RECONSTRUCT BRIDGE
Existing Conditions
Improvement Conditions
Existing Traffic Signal
Proposed Traffic Signal

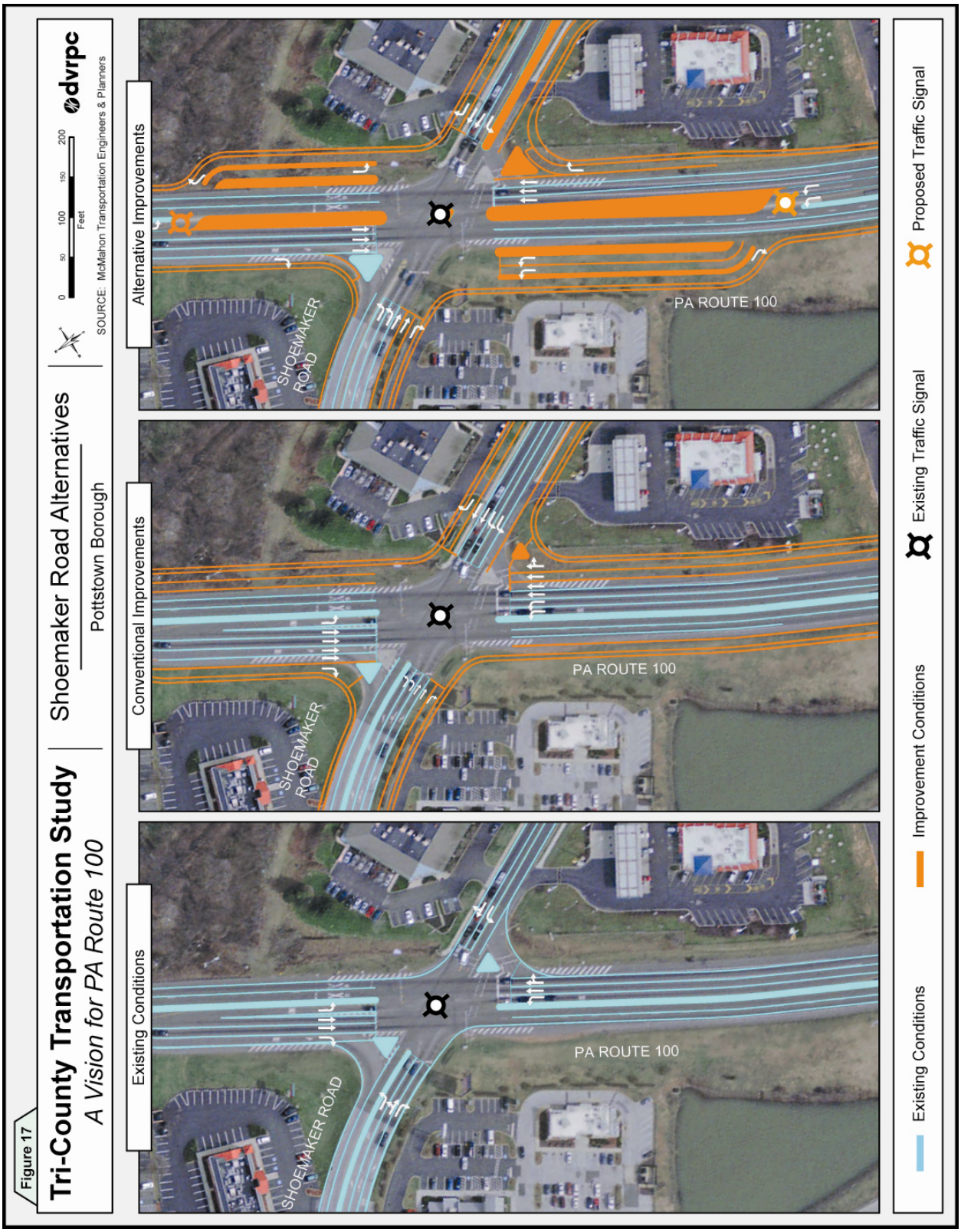


Figure 17
Tri-County Transportation Study
A Vision for PA Route 100
Shoemaker Road Alternatives
Pottstown Borough
dvrpc
SOURCE: McMahon Transportation Engineers & Planners
0 50 100 150 200
Feet
Existing Conditions
Conventional Improvements
Alternative Improvements
SHOEMAKER ROAD
PA ROUTE 100
Existing Conditions
Improvement Conditions
Existing Traffic Signal
Proposed Traffic Signal

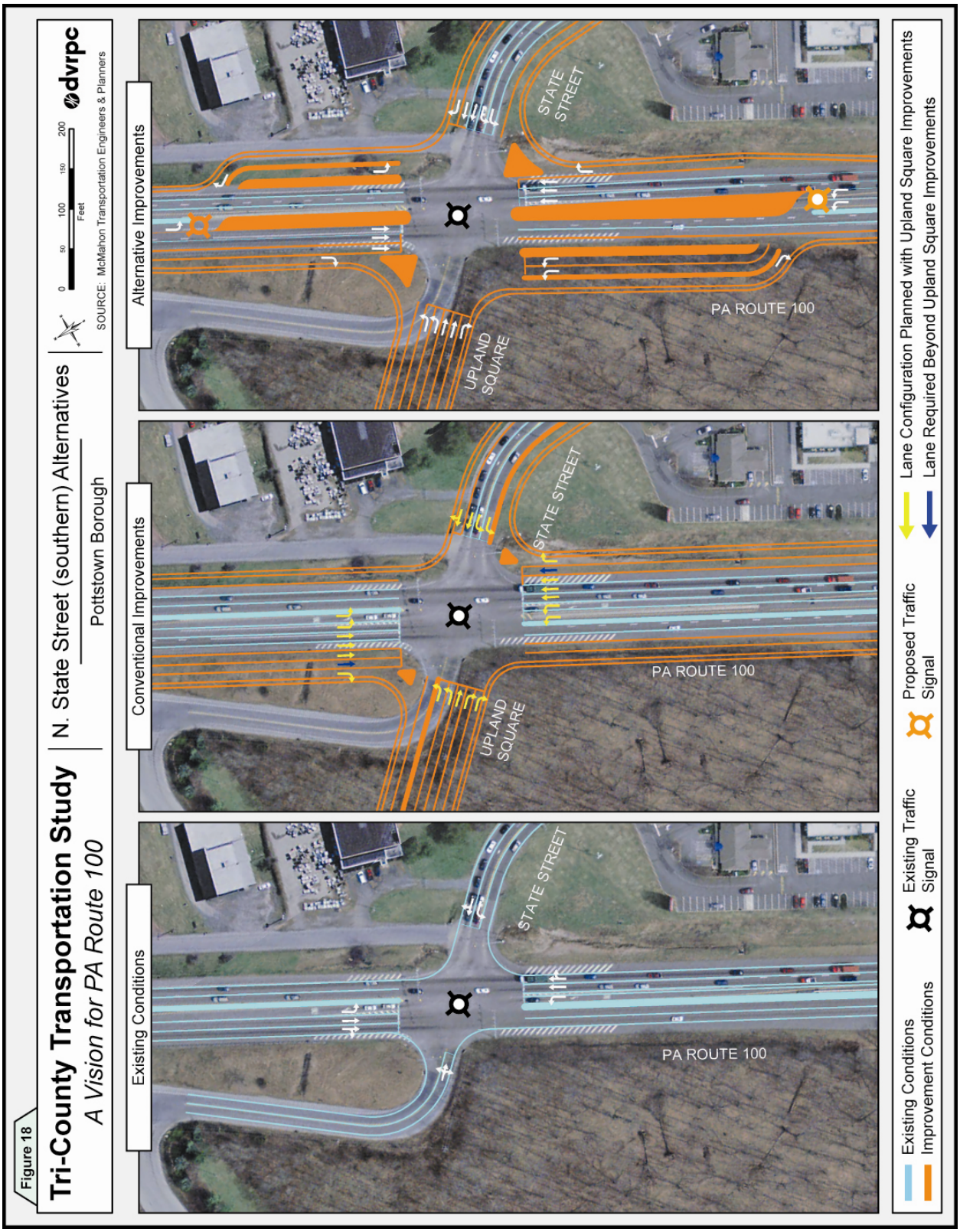
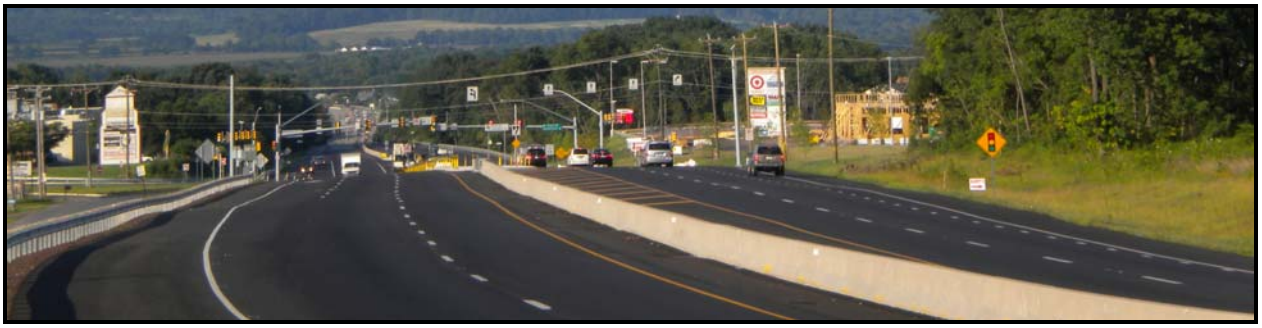


Figure 18
Tri-County Transportation Study
A Vision for PA Route 100
N. State Street (southern) Alternatives
Pottstown Borough
dvrpc
SOURCE: McMahon Transportation Engineers & Planners
0 50 100 150 200
Feet
Existing Conditions
Conventional Improvements
Alternative Improvements
STATE STREET
PA ROUTE 100
UPLAND SQUARE
Existing Conditions
Improvement Conditions
Existing Traffic Signal
Proposed Traffic Signal
Lane Configuration Planned with Upland Square Improvements
Lane Required Beyond Upland Square Improvements



Pictured: PA Route 100 in Pottstown (at State Street (north) with recently completed intersection improvements by Upland Square).

Table 11. Conventional Improvements – Pottstown Segment

Intersecting Roadway	Conventional Improvements	PA Route 100 Through Lanes by Direction
King Street *See Figure 16*	• Provide two additional through lanes in each direction on PA Route 100 (requires widening of bridge over High Street). • Provide dual left-turn lanes on all four approaches. • Provide second westbound through lane along King Street.	⇩ ⇩ ⇩ ⇩ ⇧ ⇧ ⇧ ⇧
Shoemaker Road *See Figure 17*	• Provide two additional through lanes in each direction on PA Route 100. • Provide dual left-turn lanes on the northbound PA Route 100 and both Shoemaker Road approaches. • Provide second through lane on both Shoemaker Road approaches. • Provide separate westbound right-turn lane on Shoemaker Road.	⇩ ⇩ ⇩ ⇩ ⇧ ⇧ ⇧ ⇧
North State Street (southern) *See Figure 18*	• Provide improvements proposed in conjunction with Upland Square. • Provide two additional through lanes in each direction along PA Route 100.	⇩ ⇩ ⇩ ⇩ ⇧ ⇧ ⇧ ⇧
North State Street (northern)	• Provide a third through lane in each direction on PA Route 100. • Provide separate right-turn lanes in both directions along PA Route 100. • Provide a separate westbound N. State Street left-turn lane.	⇩ ⇩ ⇩ ⇧ ⇧ ⇧
Farmington Avenue	• Signalize both ramp intersections. • Plan for future left-turn lanes along Farmington Avenue at the ramps. • Plan for one additional through lane in each direction on PA Route 100 for corridor consistency (not required for capacity).	⇩ ⇩ ⇩ ⇧ ⇧ ⇧
Moyer Road	• Provide a third through lane in each direction on PA Route 100. • Provide separate right-turn lanes on PA Route 100 in both directions. • Provide separate left-turn lanes on both Moyer Road approaches.	⇩ ⇩ ⇩ ⇧ ⇧ ⇧

LEGEND: ⇨ *EXISTING LANE* ➔ *FUTURE LANE*

Table 12 summarizes the future traffic operating conditions (overall levels of service) within the Pottstown area segment with implementation of the conventional improvements described above.

Table 12. Overall Levels of Service at Key Intersections with Conventional Improvements – Pottstown Segment

Cross Street	Weekday Morning Peak Hour		Weekday Afternoon Peak Hour	
	Base Condition (sec. of delay)	Improvements	Base Condition (sec. of delay)	Improvements
King Street	F (391.3)	**E**	F (574.6)	**E**
Shoemaker Road	F (135.8)	**D**	F (281.2)	**F (82.9)**
North State Street (southern)	D	**C**	F (173.7)	**E**
North State Street (northern)	F (171.1)	**D**	F (665.4)	**E**
Farmington Avenue (NB Ramps)	C	**B**	F (56.1)	**C**
Farmington Avenue (SB Ramps)	F (111.9)	**B**	F (433.8)	**B**
Moyer Road	C	**B**	F (265.5)	**E**

Grade Separation

Based upon AASHTO guidelines, it may be justifiable to provide grade separation to relieve traffic congestion, address safety issues, and accommodate high traffic volumes at the King Street, Shoemaker Road, and State Street (southern) intersections. The other at-grade intersections within this segment do not justify grade separation due to their relatively low volume of side-street traffic. However, if any intersection within this segment were ultimately improved through grade separation, then, if feasible, considerations should be given to removing traffic signal control at the other intersections and provide grade separation or restrict turning and side-street through movements in order to provide more consistent roadway character.

The High Street and Farmington Avenue grade-separated intersections (interchanges) do not require modifications to address capacity issues through the design year. However, it should be planned to provide separate left-turn lanes along Farmington Avenue at both ramp intersections in the future as a safety and operational improvement, which will ultimately require widening of the overpass structure.

Alternative Improvements

Due to the developed nature of the area and other corridor limitations, many of the conventional improvements and grade separation of intersections are impractical, and in many cases undesirable. Therefore, alternative improvements were considered to reduce the scope of capacity improvements. Accordingly, the alternative improvements generally require three travel lanes in each direction along PA Route 100, as compared to four travel lanes in each direction under the conventional improvement scenario. The alternative improvements within this segment are described in more detail below:

- King Street – The improvements take advantage of the surrounding roadway network layout and the adjacent grade-separated High Street interchange, while introducing a new roadway link between High Street and King Street (east of PA

Route 100), removal of the ramp from northbound PA Route 100 to westbound High Street, relocation of northbound and southbound PA Route 100 left-turns from the intersection, and modification of the traffic patterns along King Street. These modifications improve the traffic conditions while limiting the right-of-way impacts.

In addition, the alternative improvements include expansion of the existing King Street/Shoemaker Road intersection to allow left-turn movements exiting Shoemaker Road and right-turn movements entering Shoemaker Road (both presently prohibited), and incorporating this expanded intersection as part of the traffic signal at the PA Route 100/King Street intersection.

Figure 19 illustrates the alternative improvements to King Street, as well as the new traffic flows and improvements to affected intersections off the immediate study corridor.

- Shoemaker Road – These improvements involve conversion of the existing intersection to a Continuous Flow Intersection (CFI), which relocates the left-turn movements that would normally occur at the intersection (see **Figure 20**). In conjunction with the King Street improvements noted above, the southbound PA Route 100 left turns onto King Street are redirected to occur sooner at Shoemaker Road (see **Figure 19**). This traffic is then carried via Shoemaker Road to a new signalized intersection with King Street, as described above. In addition to accommodating traffic, this improvement may also boost redevelopment along this section of Shoemaker Road.

  It is noted that preliminary considerations to accommodate the southbound left-turn movements at King Street focused on the alignment of the Colebrookdale Spur of the East Penn Railroad, which extends between Boyertown and Pottstown. The Colebrookdale Spur was to be abandoned or sold, and it was thought that its right-of-way could be acquired for non rail transportation improvements (i.e., trail, roadway, etc). Specifically, the segment of the railway that runs between PA Route 100 (just north of Shoemaker Road) and King Street was preliminarily considered to accommodate traffic destined between these two roadways in order to relocate the southbound left-turn movements from the congested PA Route 100/King Street intersection. However, at this time, the Colebrookdale Spur continues to operate as a rail line. If the Colebrookdale Spur right-of-way becomes available in the future, the feasibility of providing a new roadway or other non vehicular transportation facility should be considered.

- North State Street (south) – Although significant improvements are proposed by the Upland Square project, additional improvements are necessary to accommodate projected future traffic volumes. Accordingly, a CFI configuration should be considered. In addition, it is recommended to provide a new parallel roadway east of PA Route 100 to accommodate existing Commerce Drive traffic and to eliminate/relocate the problematic State Street/Commerce Drive intersection (see **Figure 21**) due to its proximity to PA Route 100.

Figure 19

Tri-County Transportation Study
A Vision for PA Route 100

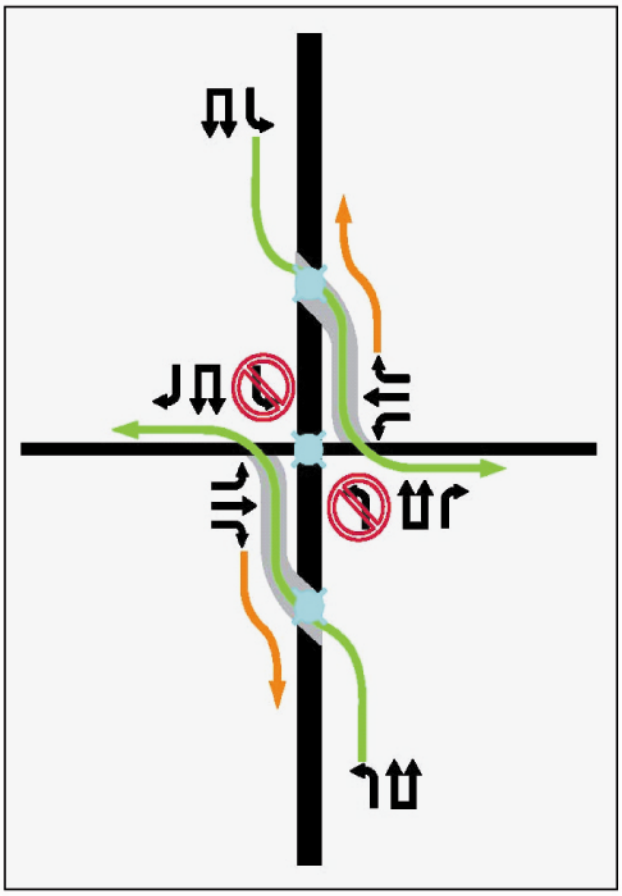
King Street Area Alternative Improvements
Pottstown Borough

0 150 300 450 600 Feet

SOURCE: McMahon Transportation Engineers & Planners

dvrpc

Figure 20 **Continuous Flow Intersection (CFI)**



A ***Continuous Flow Intersection (CFI)*** removes the conflicting left-turning traffic from an intersection by constructing a signalized left-turn lane several hundred feet prior to the main signalized intersection.

This left-turn lane serves a new road alignment, feeding the left-turning vehicles from the main street directly to the side street at a signalized intersection.

SOURCE: McMahon Transportation Engineers and Planners

- State Street (north) – The side street traffic at this State Street intersection is relatively low as compared to other nearby intersections, possibly due to the proximity of the Farmington Avenue interchange; however, heavy traffic volumes along PA Route 100 necessitate additional capacity in the future. Due to the low side-street traffic volumes and the goal of limiting the need for additional through lanes along PA Route 100, a Superstreet Median Crossover intersection should be considered (see **Figure 22**). Since the Upper Pottsgrove Township Police Department and the Upper Pottsgrove Fire Company are located along State Street on the west and east sides of PA Route 100, respectively, the design of this improvement must make accommodations for emergency responders to allow direct intersection crossings at the main intersection.

- Moyer Road – Similar to the northern State Street intersection, low side-street volumes and heavy traffic flow along PA Route 100 necessitate future capacity improvements, and therefore a Superstreet Median Crossover intersection should be considered.

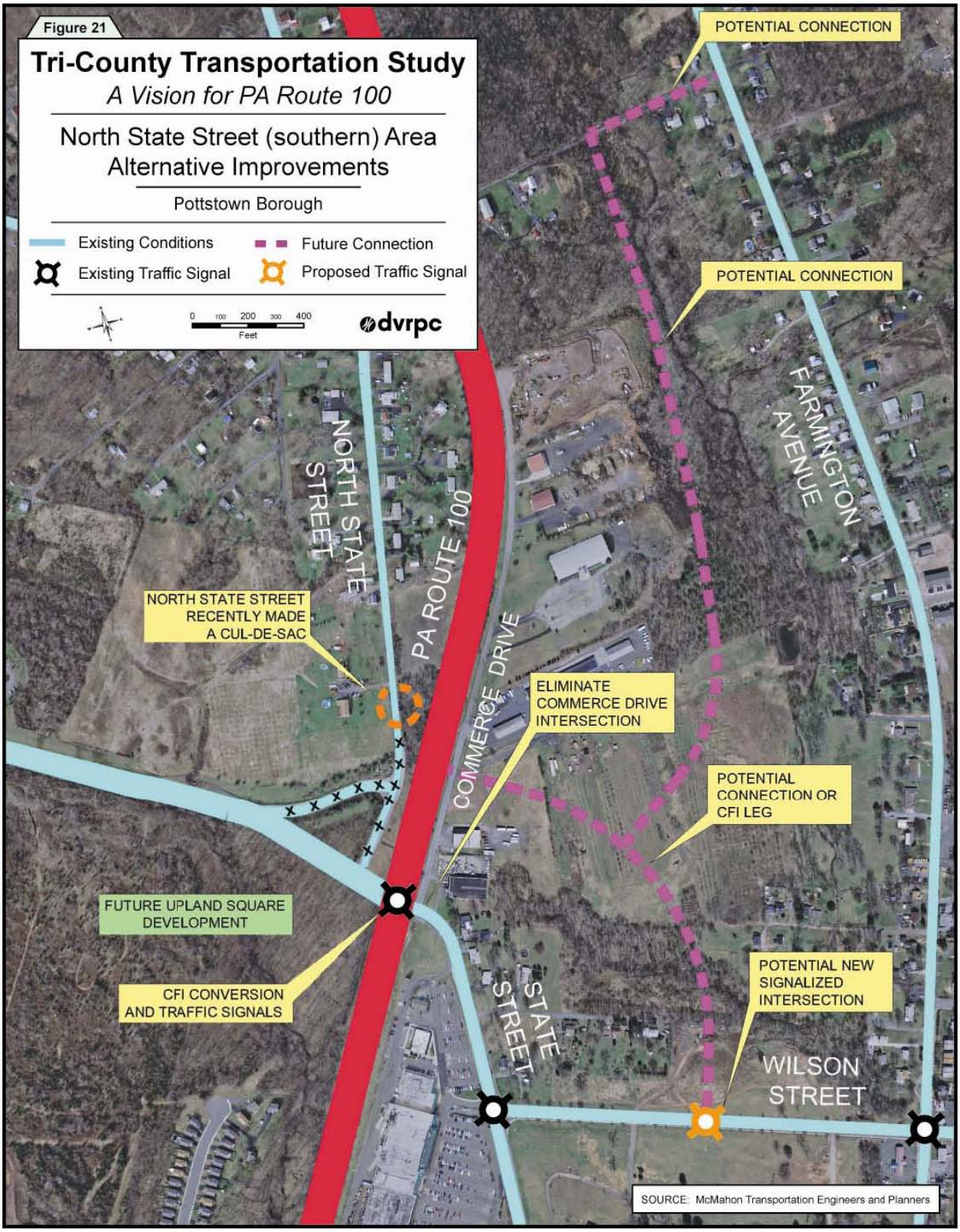
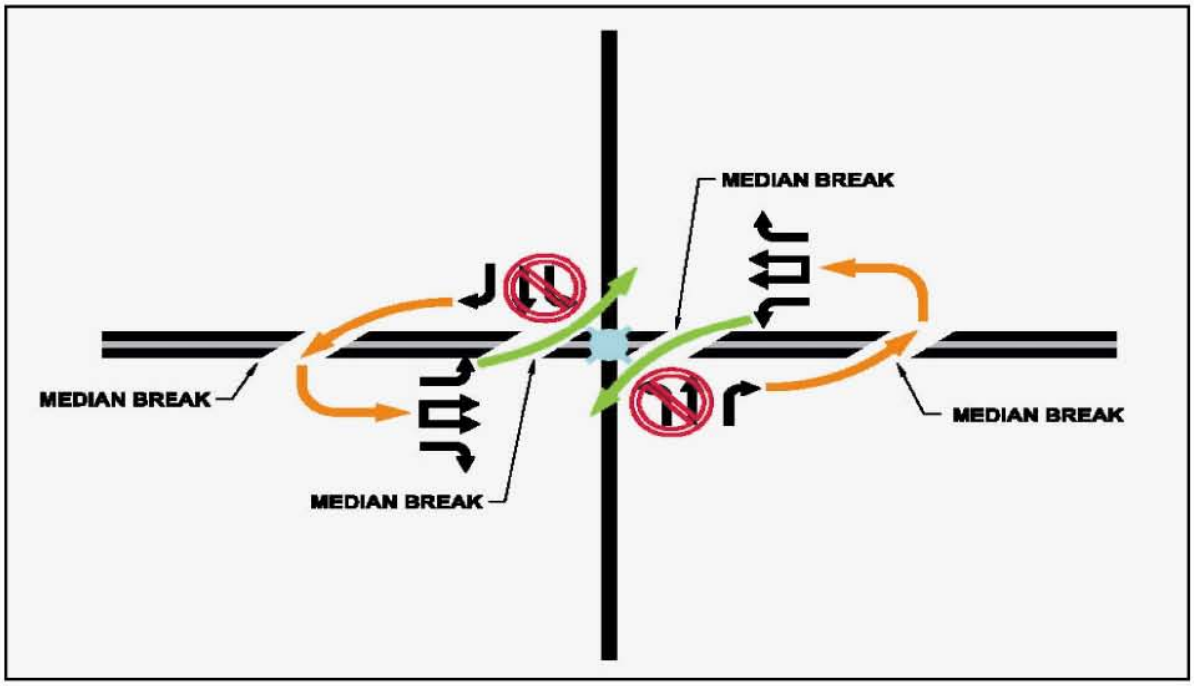


Figure 21
Tri-County Transportation Study
A Vision for PA Route 100
North State Street (southern) Area
Alternative Improvements
Pottstown Borough
Existing Conditions
Future Connection
Existing Traffic Signal
Proposed Traffic Signal
0 100 200 300 400
Feet
dvrpc
POTENTIAL CONNECTION
POTENTIAL CONNECTION
NORTH STATE STREET
PA ROUTE 100
COMMERCE DRIVE
FARMINGTON AVENUE
NORTH STATE STREET RECENTLY MADE A CUL-DE-SAC
ELIMINATE COMMERCE DRIVE INTERSECTION
POTENTIAL CONNECTION OR CFI LEG
FUTURE UPLAND SQUARE DEVELOPMENT
CFI CONVERSION AND TRAFFIC SIGNALS
STATE STREET
POTENTIAL NEW SIGNALIZED INTERSECTION
WILSON STREET
SOURCE: McMahon Transportation Engineers and Planners

Figure 22 **Superstreet Median Crossover**



A ***Superstreet Median Crossover*** intersection treatment improves traffic operations for the main street through movements, and also reduces the delay for left turns from the main street. All traffic from the side street is required to turn right onto the main street. A side street through movement is accomplished by turning right on the main street, turning left at the median crossover, and then turning right onto the side street. A side street left turn is accomplished by turning right onto the main street and turning left at the median crossover. This intersection design allows for a two-phase traffic signal at the main intersection: (1) for the main street left turns and side street right turns, and (2) for the main street through movements, thereby increasing capacity and decreasing delay as compared to a traditional four-leg signalized intersection design. Left turns can be accomplished with either a single lane or dual turn lanes within the median, as needed.

SOURCE: McMahon Transportation Engineers and Planners

Pictured: Possible location for a Superstreet Median Crossover at Moyer Road (off-peak).

The alternative improvements are listed by intersection below in **Table 13**.

Table 13. Alternative Improvements – Pottstown Segment

Intersecting Roadway	Alternative Improvements	PA Route 100 Through Lanes by Direction
King Street *See Figures 16 & 19*	• Restrict the western leg of King Street to one-way westbound traffic only. • Restrict (redirect) left-turn movements from PA Route 100. • Consider eliminating the loop ramp for northbound PA Route 100 traffic to access westbound High Street.	⇩ ⇩ ⇧ ⇧
Shoemaker Road *See Figures 17 & 19*	• Provide a Continuous Flow Intersection with two northbound left-turn lanes and a single southbound left-turn lane to accommodate turning movements. • Provide one additional through lane in each direction along PA Route 100. • Provide a separate second left-turn lane on the eastbound Shoemaker Road approach. • Provide a second through lane in each direction along Shoemaker Road. • Provide a separate right-turn lane along westbound Shoemaker Road.	⇩ ⇩ ⇩ ⇧ ⇧ ⇧
North State Street (southern)[1] *See Figures 18 & 21*	• Provide a Continuous Flow Intersection with two northbound left-turn lanes and a single southbound left-turn lane to accommodate turning movements. • Provide one additional through lane in each direction along PA Route 100. • Provide a second through lane along westbound North State Street.	⇩ ⇩ ⇩ ⇧ ⇧ ⇧
North State Street (northern)	• Provide a Superstreet Median Crossover intersection (with single turn lanes to accommodate northbound/southbound U-turns). The need for signalization of the U-turn maneuvers should be monitored. • Provide separate right-turn lanes along PA Route 100 in both directions. • Provide accommodations for emergency responders located on State Street.	⇩ ⇩ ⇧ ⇧
Farmington Avenue	• Signalize both ramp intersections. • Plan for future left-turn lanes along Farmington Avenue at both ramps. • No widening required along PA Route 100.	⇩ ⇩ ⇧ ⇧
Moyer Road	• Provide a Superstreet Median Crossover intersection (with single turn lanes to accommodate northbound/southbound U-turns). The need for signalization of the U-turn maneuvers should be monitored. • Provide separate right-turn lanes along PA Route 100 in both directions.	⇩ ⇩ ⇧ ⇧

1 – Existing lanes include improvements recently completed by developers of Upland Square.

LEGEND: ⇨ *EXISTING LANE* ➔ *FUTURE LANE*

Table 14 illustrates the future traffic operating conditions (overall levels of service) within the Pottstown area segment with implementation of the alternative improvements described above.

Table 14. Overall Levels of Service at Key Intersections with Alternative Improvements – Pottstown Segment

Cross Street	Weekday Morning Peak Hour		Weekday Afternoon Peak Hour	
	Base Condition (sec. of delay)	Improvements	Base Condition (sec. of delay)	Improvements
King Street	F (391.3)	**C**	F (574.6)	**D**
Shoemaker Road	F (135.8)	**B**	F (281.2)	**D**
North State Street (southern)	D	**B**	F (173.7)	**D**
North State Street (northern)	F (171.1)	**C**	F (665.4)	**D**
Farmington Avenue (NB Ramps)	C	**B**	F (56.1)	**C**
Farmington Avenue (SB Ramps)	F (111.9)	**B**	F (433.8)	**B**
Moyer Road	C	**C**	F (265.5)	**E**[1]

1 – An LOS E condition, which is less than the design level of service, was deemed acceptable due to low side-street traffic volumes.

It is noted that PennDOT has recommended planning for the potential future need for three through lanes per direction from Shoemaker Road northward through the remainder of this segment.

Northern Segment

Significant development potential defines this segment of the study corridor. In this segment, conventional improvements, grade separation, and alternative improvements were considered.

Additionally, the following figures illustrate and compare the scope/impacts of the improvement scenarios at key intersections in the Pottstown segment:

- **Figure 23** - Grosser Road Alternatives
- **Figure 24** - Jackson Road Alternatives
- **Figure 25** - PA Route 73 Alternatives
- **Figure 26** - County Line Road Alternatives

Pictured: PA Route 73/PA Route 100 interchange in Douglass (off-peak).

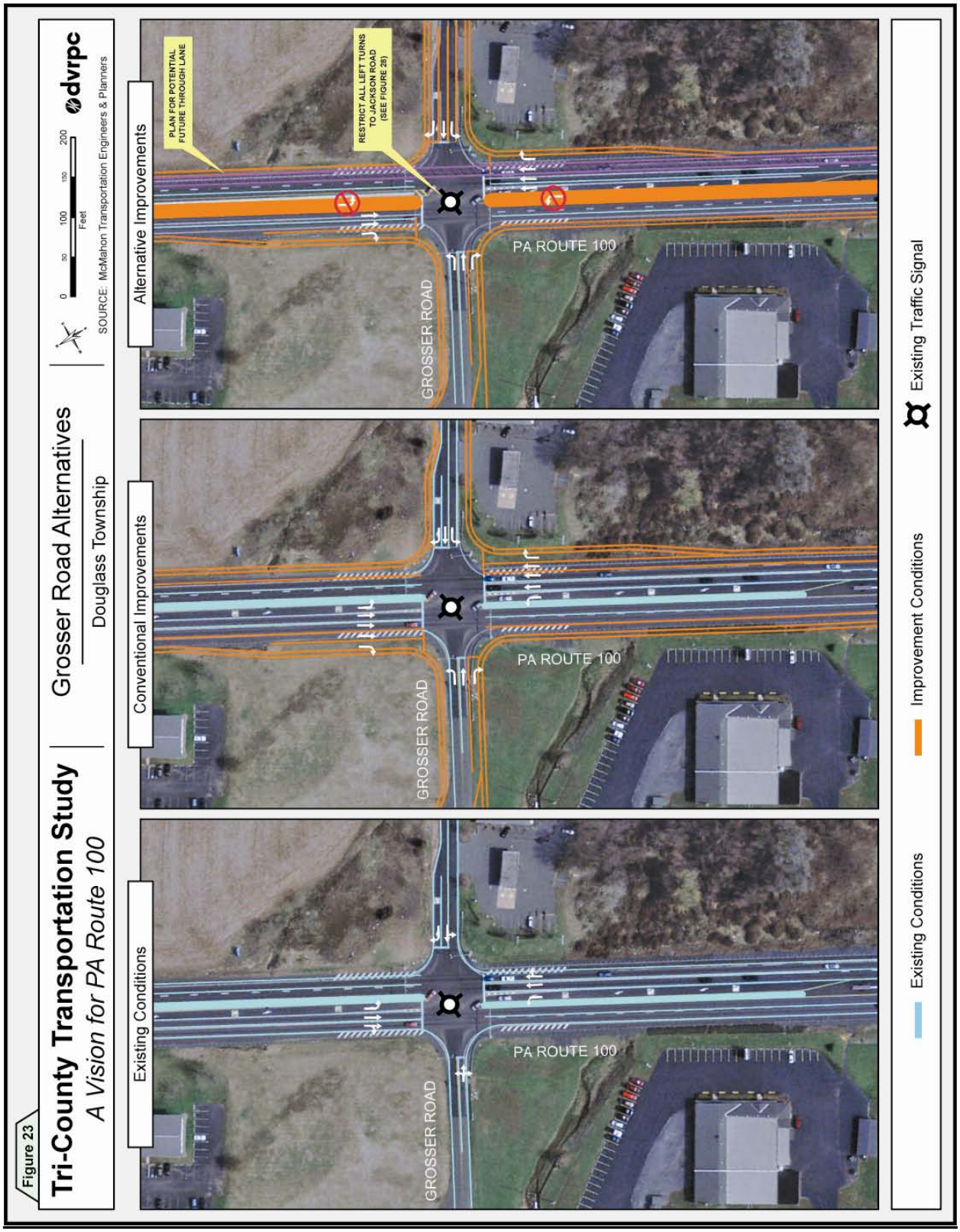


Figure 23
Tri-County Transportation Study
A Vision for PA Route 100
Grosser Road Alternatives
Douglass Township
dvrpc
0 50 100 150 200
Feet
SOURCE: McMahon Transportation Engineers & Planners
Existing Conditions
Conventional Improvements
Alternative Improvements
PLAN FOR POTENTIAL FUTURE THROUGH LANE
RESTRICT ALL LEFT TURNS TO JACKSON ROAD (SEE FIGURE 28)
GROSSER ROAD
PA ROUTE 100
Existing Conditions
Improvement Conditions
Existing Traffic Signal

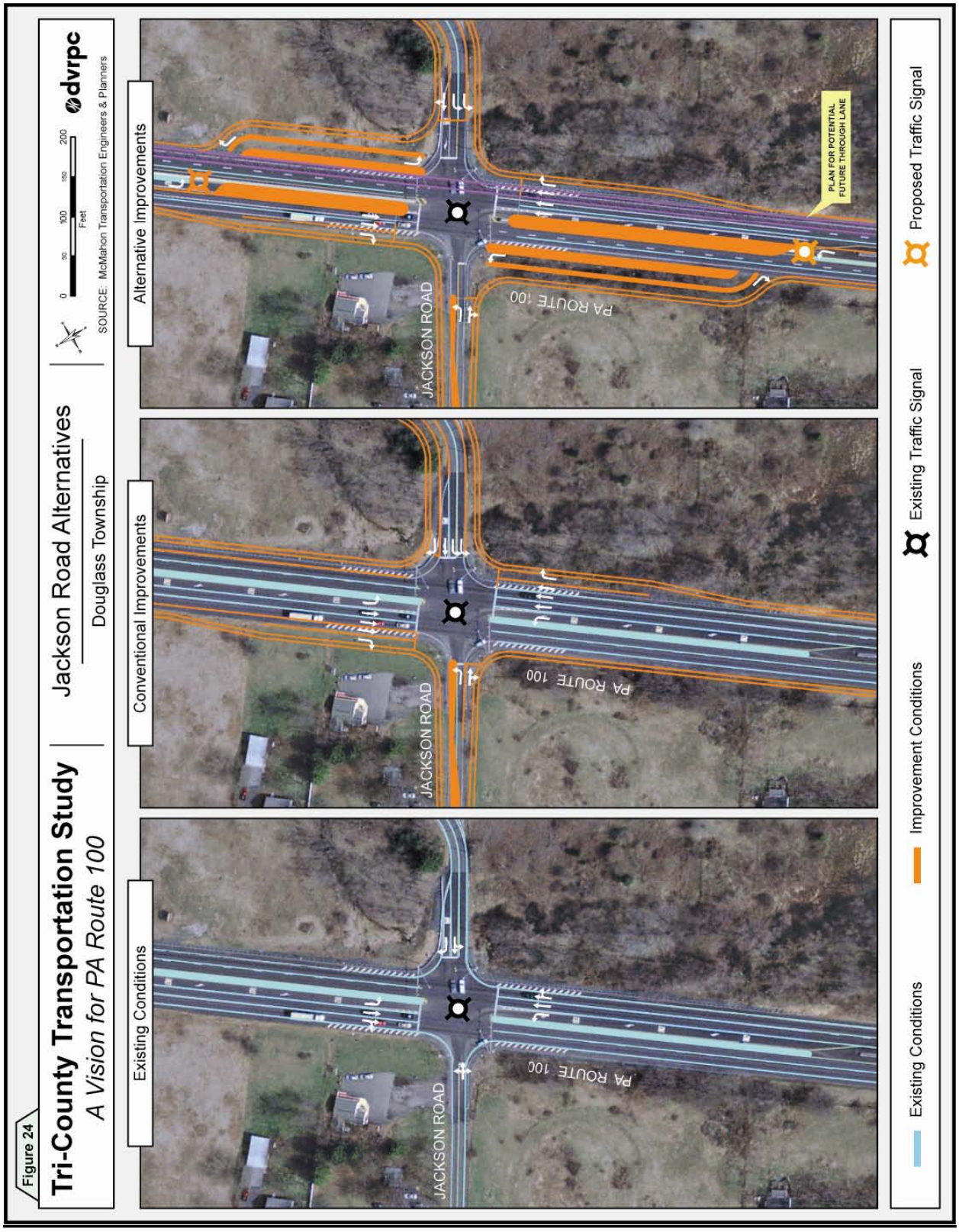


Figure 24
Tri-County Transportation Study
A Vision for PA Route 100
Jackson Road Alternatives
Douglass Township
dvrpc
0 50 100 150 200
Feet
SOURCE: McMahon Transportation Engineers & Planners
Existing Conditions
Conventional Improvements
Alternative Improvements
JACKSON ROAD
PA ROUTE 100
PLAN FOR POTENTIAL FUTURE THROUGH LANE
Existing Conditions
Improvement Conditions
Existing Traffic Signal
Proposed Traffic Signal

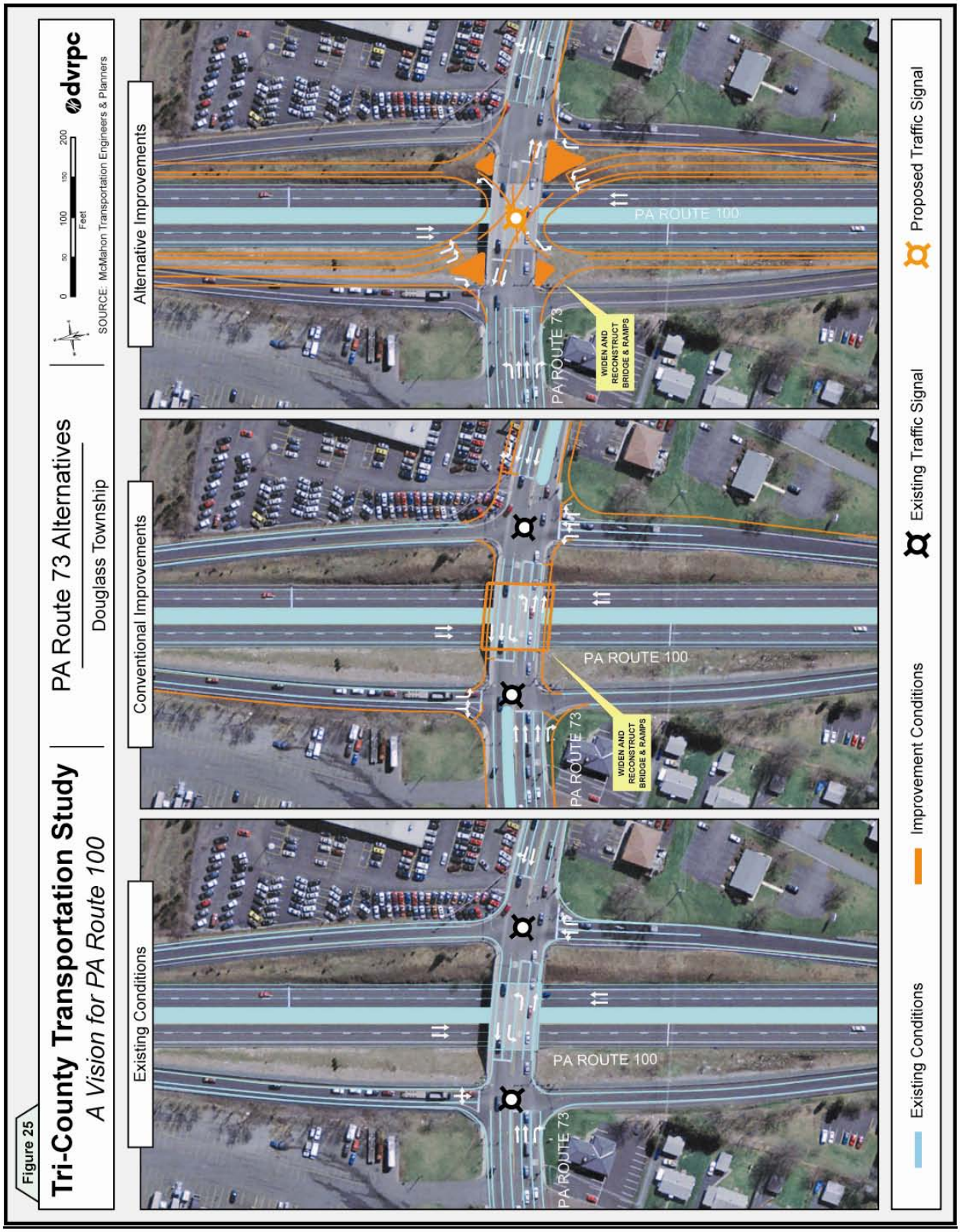


Figure 25
Tri-County Transportation Study
A Vision for PA Route 100
PA Route 73 Alternatives
Douglass Township
dvrpc
0 50 100 150 200
Feet
SOURCE: McMahon Transportation Engineers & Planners
Existing Conditions
Conventional Improvements
Alternative Improvements
PA ROUTE 100
PA ROUTE 73
WIDEN AND RECONSTRUCT BRIDGE & RAMPS
Existing Conditions
Improvement Conditions
Existing Traffic Signal
Proposed Traffic Signal

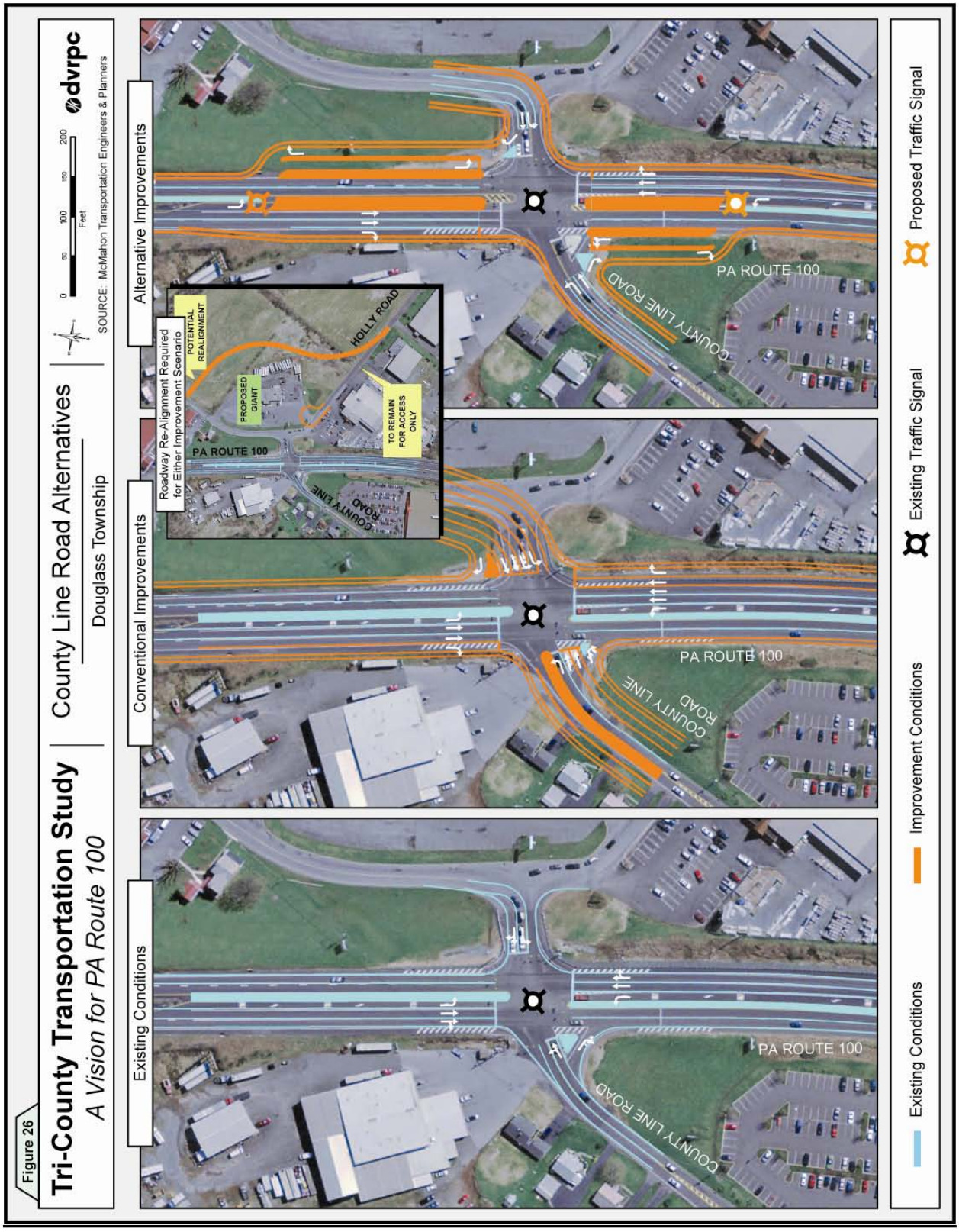


Figure 26
Tri-County Transportation Study
A Vision for PA Route 100
County Line Road Alternatives
Douglass Township
dvrpc
SOURCE: McMahon Transportation Engineers & Planners
Feet
0
50
100
150
200
Existing Conditions
Conventional Improvements
Alternative Improvements
PA ROUTE 100
COUNTY LINE ROAD
Roadway Re-Alignment Required for Either Improvement Scenario
POTENTIAL REALIGNMENT
HOLLY ROAD
PROPOSED GIANT
TO REMAIN FOR ACCESS ONLY
Existing Conditions
Improvement Conditions
Existing Traffic Signal
Proposed Traffic Signal

Conventional Improvements

Under the conventional improvement scenario (see **Table 15**) and in order to provide the necessary capacity to accommodate the projected traffic volumes, it is necessary to provide

Table 15. Conventional Improvements – Northern Segment

Intersecting Roadway	Conventional Improvement	PA Route 100 Through Lanes by Direction
Grosser Road *See Figure 23*	• Provide a third PA Route 100 through lane in each direction. • Provide a second PA Route 100 left-turn lane in both directions. • Provide separate right-turn lanes in both directions on PA Route 100. • Provide separate left-turn lanes on both approaches of Grosser Road. • Provide a separate eastbound right-turn lane on Grosser Road.	⇩ ⇩ ⇩ ⇧ ⇧ ⇧
Jackson Road *See Figures 24*	• Provide a third PA Route 100 through lane in each direction. • Provide separate right-turn lanes in both directions on PA Route 100. • Provide a separate eastbound right-turn lane on Jackson Road. • Provide a separate left-turn lane on the eastbound Jackson Road approach and dual westbound left-turn lanes.	⇩ ⇩ ⇩ ⇧ ⇧ ⇧
PA Route 73 *See Figure 25*	• Widen PA Route 73 to provide two through lanes in each direction through both the northbound and southbound PA Route 100 ramp intersections, which requires widening/replacement of existing bridge structure. • Provide a second left-turn lane on both the northbound and southbound PA Route 100 off-ramps.	⇩ ⇩ ⇧ ⇧
County Line Road *See Figure 26*	• Provide a third northbound PA Route 100 through lane. • Provide separate right-turn lanes in both directions on PA Route 100. • Provide a separate eastbound County Line Road left-turn lane. • Provide dual left-turn lanes on westbound County Line Road. • Provide a second County Line Road through lane in each direction. • Provide a separate right-turn lane on westbound County Line Road.	⇩ ⇩ ⇧ ⇧ ⇧
Montgomery Avenue	• Realign Swamp Creek Road opposite the northbound on/off-ramp. • Signalize both ramp intersections along Montgomery Avenue. • Provide second eastbound and westbound through lanes along Montgomery Avenue. • Provide left-turn lanes on eastbound and westbound Montgomery Avenue at Swamp Creek Road, the northbound on/off ramp, and the southbound on-ramp. • Provide a separate right-turn lane on westbound Montgomery Avenue at Swamp Creek Road and at the southbound ramps. • Provide separate left-turn lanes on northbound Swamp Creek Road and the northbound off-ramp. • Provide a second southbound right-turn lane on the southbound off-ramp at Montgomery Avenue.	⇩ ⇩ ⇧ ⇧

LEGEND: ⇨ *EXISTING LANE* ➔ *FUTURE LANE*

three travel lanes along certain portions of PA Route 100 within this segment. Also, additional turning lanes at intersections and side-street capacity improvements are needed, as well as replacement of the PA Route 73 overpass with a wider structure in order to accommodate additional capacity improvements at the on/off-ramp intersections serving PA Route 100.

Also, it is noted that the capacity improvements contained in Colebrookdale Township's *Roadway Sufficiency Analysis and Transportation Capital Improvement Plan* were assumed to address future traffic demands within the township, and specifically at and in the vicinity of the Montgomery Avenue interchange.

Table 16 illustrates the future traffic operating conditions (overall levels of service) within the northern segment with implementation of the conventional improvements described above.

Table 16. Overall Levels of Service at Key Intersections with Conventional Improvements – Northern Segment

Cross Street	Weekday Morning Peak Hour		Weekday Afternoon Peak Hour	
	Base Condition (sec. of delay)	Improvements	Base Condition (sec. of delay)	Improvements
Grosser Road	F (157.1)	**C**	F (512.2)	**D**
Jackson Road	B	**B**	F (412.0)	**D**
PA Route 73 (NB Ramps)	C	**B**	F (147.6)	**C**
PA Route 73 (SB Ramps)	B	**B**	F (91.7)	**C**
County Line Road	C	**C**	F (408.3)	**D**
Montgomery Ave (Swamp Creek Road/NB Ramps)	B	**A**	C	**B**
Montgomery Ave (SB Ramps)	C	**B**	D	**A**

Grade Separation

Based upon AASHTO guidelines, it may be justifiable to provide grade separation to relieve traffic congestion and to accommodate high traffic volumes at the Grosser Road, Jackson Road, and County Line Road intersections in the future.

As mentioned previously, the existing PA Route 73 interchange will require significant capacity improvements (widen/replace the bridge) to accommodate projected traffic volumes, which will increase the footprint of the interchange, as well as require significant improvement along PA Route 73 that are outside of the existing right-of-way. Accordingly, a Single-Point Urban Interchange (SPUI) will result in a more efficient interchange than the existing tight diamond interchange configuration, and it will also reduce the scope and impacts of improvements along PA Route 73. An example of an SPUI is illustrated in **Figure 27**.

Figure 27 **Single-Point Urban Interchange (SPUI)**

A ***Single-Point Urban Interchange (SPUI)*** operates as a single signalized intersection. Left turns from the ramps and on the cross street are aligned in such a way that they oppose each other, eliminating a potential source of conflict. Because of the layout of the interchange, at-grade movements are served by a three-phase signal, and queue spillovers between ramp intersections are eliminated.

SOURCE: McMahon Transportation Engineers and Planners

Alternative Improvements

Due to significant development projected along this segment of the corridor, and the resulting traffic volume increases that necessitate major capacity improvements, alternative improvements were developed to reduce the scope of the capacity improvements. These alternative improvements reduce the scope of the conventional improvements and consist of the following:

- **Grosser Road** – By linking Grosser Road and Jackson Road with a new roadway connector (that may eventually extend northward to PA Route 73, as it is being considered by Douglass Township), as shown in **Figure 28**, and implementation of alternative improvements at Jackson Road, the capacity improvements at Grosser Road can be limited somewhat to side-street improvements. However, a third northbound PA Route 100 through lane may ultimately be required through Grosser Road to accommodate the projected heavy peak hour traffic volumes.

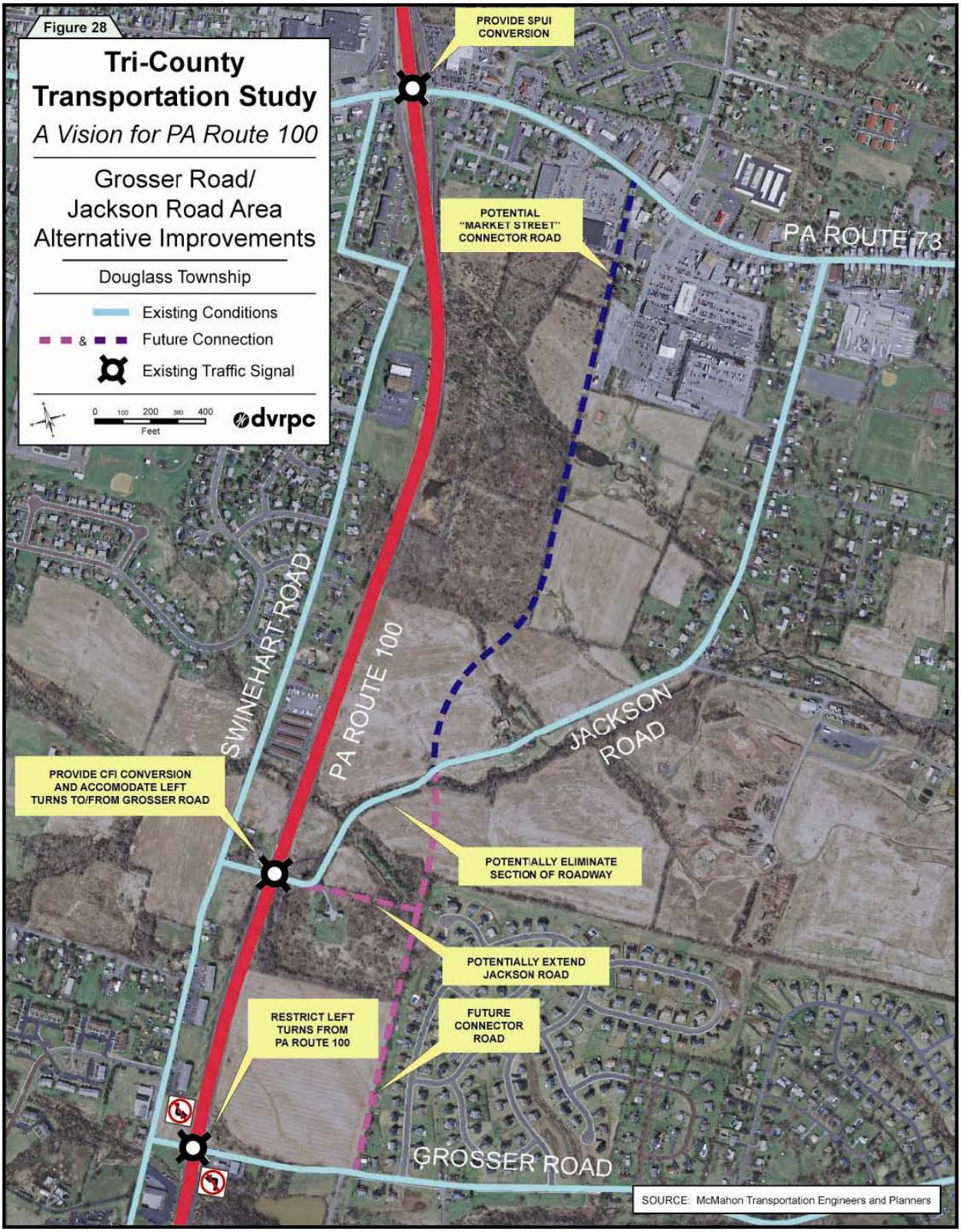


Figure 28
Tri-County Transportation Study
A Vision for PA Route 100
Grosser Road/ Jackson Road Area Alternative Improvements
Douglass Township
Existing Conditions
Future Connection
Existing Traffic Signal
0 100 200 300 400
Feet
dvrpc
PROVIDE SPUI CONVERSION
POTENTIAL "MARKET STREET" CONNECTOR ROAD
PA ROUTE 73
SWINEHART ROAD
PA ROUTE 100
JACKSON ROAD
PROVIDE CFI CONVERSION AND ACCOMODATE LEFT TURNS TO/FROM GROSSER ROAD
POTENTIALLY ELIMINATE SECTION OF ROADWAY
POTENTIALLY EXTEND JACKSON ROAD
RESTRICT LEFT TURNS FROM PA ROUTE 100
FUTURE CONNECTOR ROAD
GROSSER ROAD
SOURCE: McMahon Transportation Engineers and Planners

- **Jackson Road** – A CFI configuration should be considered under this scenario. As at Grosser Road, a third northbound through lane may ultimately be required at this intersection.

- **PA Route 73** – Significant improvements are required along PA Route 73 under the conventional improvement scenario, which will create property/right-of-way impacts, as well as necessitate the replacement/widening of the bridge structure over PA Route 100. Accordingly, the alternative improvement for this interchange consists of a Single-Point Urban Interchange (SPUI), as previously noted, which will result in a more efficient interchange that reduces surrounding right-of-way impacts.

- **County Line Road** – A CFI configuration should be considered under this scenario. Due to the proximity of Holly Road and the planned Giant supermarket development to PA Route 100, it should be considered to relocate Holly Road to the east side of the Giant supermarket property and intersect County Line Road north of its intersection with PA Route 100.

The alternative improvements are listed by intersection below in **Table 17**.

Table 17. Alternative Improvements – Northern Segment

Intersecting Roadway	Alternative Improvement	PA Route 100 Travel Lanes by Direction
Grosser Road *See Figures 23 & 28*	• Prohibit northbound and southbound left-turn movements along PA Route 100. • Plan for a potential third northbound PA Route 100 through lane. • Provide northbound and southbound right-turn lanes along PA Route 100.	⇩ ⇩ ⇧ ⇧
Jackson Road *See Figures 24 & 28*	• Provide a Continuous Flow Intersection with single northbound and southbound PA Route 100 left-turn lanes. • Plan for a potential third northbound PA Route 100 through lane. • Provide northbound and southbound right-turn lanes on PA Route 100.	⇩ ⇩ ⇧ ⇧
PA Route 73 *See Figure 25*	• Construct a Single Point Urban Interchange.	⇩ ⇩ ⇧ ⇧
County Line Road *See Figure 26*	• Provide single-lane Continuous Flow Intersection legs for the northbound and southbound PA Route 100 left-turn movements. • Provide northbound and southbound right-turn lanes along PA Route 100. • Provide separate eastbound and westbound County Line Road left-turn lanes. • Realign Holly Road to eliminate the closely spaced intersection along the east side of PA Route 100.	⇩ ⇩ ⇧ ⇧

LEGEND: ⇨ *EXISTING LANE* ➔ *FUTURE LANE*

Table 18 illustrates the future traffic operating conditions (overall levels of service) within the northern segment with implementation of the alternative improvements described above.

Table 18. Overall Levels of Service at Key Intersections with Alternative Improvements – Northern Segment

Cross Street	Weekday Morning Peak Hour		Weekday Afternoon Peak Hour	
	Base Condition (seconds of delay)	**Improvements**	Base Condition (seconds of delay)	**Improvements**
Grosser Road	F (157.1)	**C**	F (512.2)	**D**
Jackson Road	B	**B**	F (412.0)	**D**
PA Route 73	C	**C**	F (147.6)	**D**
County Line Road	C	**B**	F (408.3)	**D**

The results of the capacity/level-of-service analysis are provided in **Appendix H** (Technical Appendix) for the improvement scenarios, and the summary level-of-service figures are provided in **Appendix F**. It is noted that PennDOT has recommended planning for the potential future need for three through lanes per direction from PA Route 73 southward through the remainder of this segment.

IMPROVEMENT COMPARISON

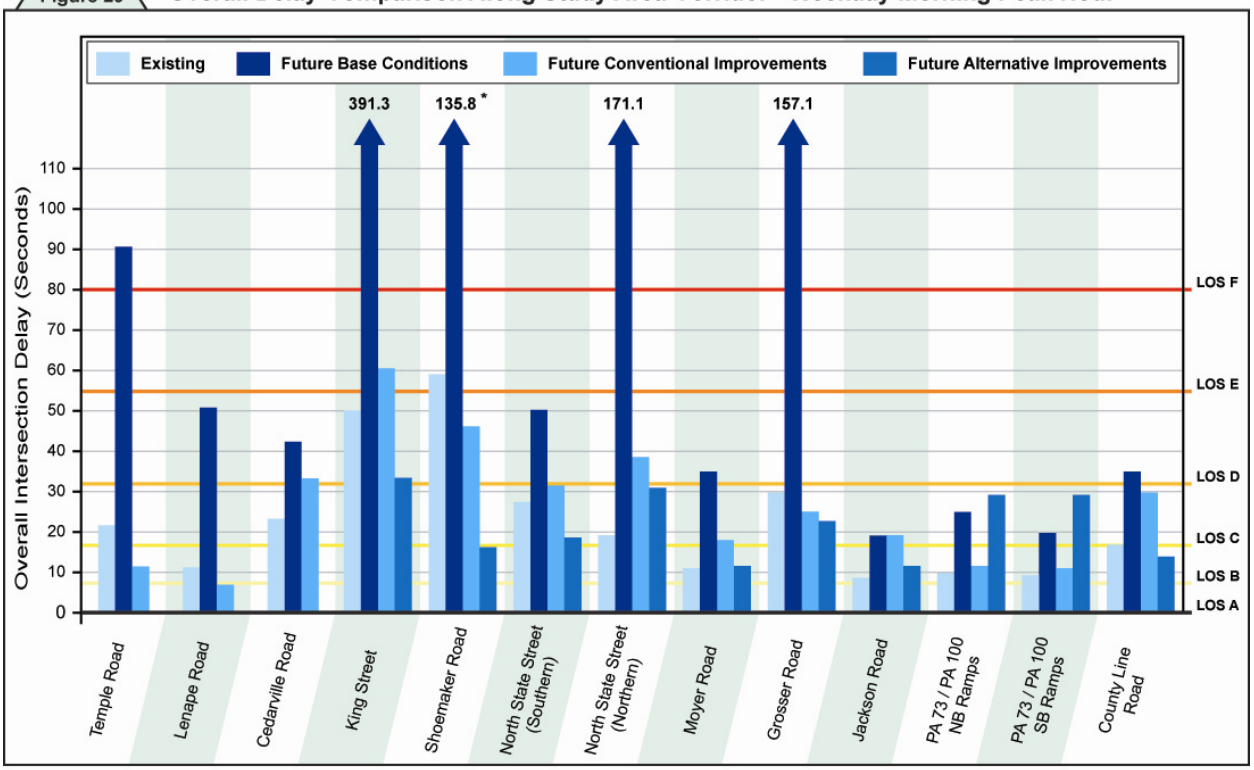
Each of the identified improvement scenarios provides benefits to the operating conditions of the PA Route 100 corridor. These benefits, as well as the associated design challenges and impacts, are compared herein. A matrix summarizing the various measures of effectiveness, impacts, and costs for the alternative improvement scenarios along the corridor is provided in **Appendix G.** This also compares the alternatives in the Pottstown and northern study segments, where the improvement plan has not yet been adopted locally. The criteria used for this comparison are further described below, and it is noted that these various measures of effectiveness, with the exception of the traffic operation results, are based only on preliminary field visits and the conceptual improvement figures, and they should be further evaluated during more detailed study and design stages.

Traffic Operations

The ability of an improvement to decrease delay and congestion, as well as improve the overall level of service at a subject intersection, is a primary consideration when evaluating and comparing alternatives. **Figures 29 and 30** summarize and compare the levels of service for each improvement scenario, as analyzed.

Although the conventional improvements will reduce congestion along the corridor, the alternative improvements similarly improve traffic operations with a generally smaller scope of improvements. Furthermore, many study intersections will still experience operating deficiencies for certain intersection movements under the conventional improvement plan, while under the alternative improvement plan the study intersections will all achieve the overall design levels of service for the intersection, as well as for all intersection movements. **Table 19** further summarizes the traffic operations during the critical weekday afternoon commuter peak hour at each study intersection under existing conditions, future base conditions, future conditions with conventional improvements, future conditions with grade separation or interchange improvements (as evaluated), and future conditions with alternative improvements, as appropriate.

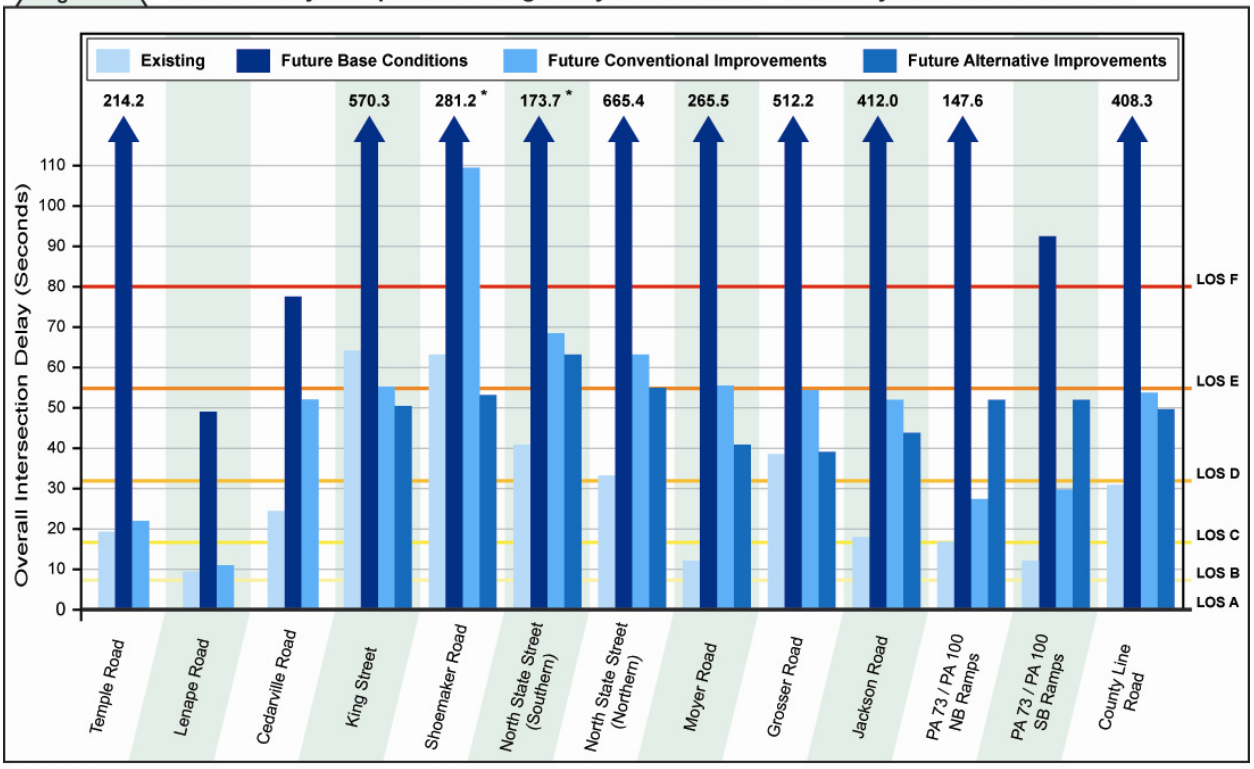
Figure 29 **Overall Delay Comparison Along Study Area Corridor - Weekday Morning Peak Hour**



SOURCE: McMahon Transportation Engineers & Planners

* Includes improvements completed in conjunction with the Upland Square development

Figure 30 **Overall Delay Comparison Along Study Area Corridor - Weekday Afternoon Peak Hour**



SOURCE: McMahon Transportation Engineers & Planners

* Includes improvements completed in conjunction with the Upland Square development

Table 19. Traffic Operations Comparison[1]

Intersection with Route 100	Existing Conditions	Future Base Conditions	Future Conditions with Conventional Improvements	Future Conditions with Alternative Improvements
Hoffecker Road (Unsignalized)	LOS D	LOS F	N/A[3]	N/A[4]
Temple Road	LOS B	LOS F		LOS C
South Hanover Street (Unsignalized)	LOS E	LOS F		LOS A (ban lefts out) or LOS B (signalized)
Lenape Road	LOS A	LOS D		LOS B
Cedarville Road	LOS C	LOS E		LOS D
PA Route 724 NB Ramps	LOS A	LOS C		LOS C
PA Route 724 SB Ramps	LOS C	LOS E		LOS D
King Street	LOS E	LOS F	LOS E	LOS D
Shoemaker Road	LOS E	LOS F	LOS F	LOS D
North State Street (Southern)	LOS D	LOS F[2]	LOS F	LOS D
North State Street (northern)	LOS C	LOS F	LOS D	LOS D
Farmington Avenue (NB Ramps)	LOS B	LOS F	LOS C	---
Farmington Avenue (SB Ramps)	LOS C	LOS F	LOS B	---
Moyer Road	LOS B	LOS F	LOS E	LOS E[5]
Grosser Road	LOS D	LOS F	LOS D	LOS D
Jackson Road	LOS B	LOS F	LOS D	LOS D
PA Route 73 (NB Ramps)	LOS B	LOS F	LOS C	LOS D[6]
PA Route 73 (SB Ramps)	LOS B	LOS F	LOS C	
County Line Road	LOS C	LOS F	LOS D	LOS D
Swamp Creek Road (NB Ramps)	LOS B	LOS B	LOS B	---
Montgomery Ave (SB Ramps)	LOS C	LOS D	LOS B	---

1 – Overall intersection LOS reported for signalized intersections and side-street delay (worst approach) reported for unsignalized intersections during the critical weekday afternoon peak hour.
2 – Includes improvements completed in conjunction with the Upland Square development.
3 – Improvements associated with the *Northern Chester County Gateway Master Plan* were only considered, and have been noted as Alternative Improvements since many include non conventional, smart transportation practices.
4 – The Hoffecker Road approach will restrict all movements except the right-in/right-out maneuvers. A new signalized intersection will be created to accommodate Hoffecker Road and adjacent development traffic, and it will function at LOS D or better.
5 – An LOS E condition, which is less than the design level of service, was deemed acceptable due to low side-street traffic volumes.
6 – Single signalized intersection created by a Single Point Urban Interchange (SPUI).

Multi Modal Accommodations

As sustainable land use and transportation planning stresses the importance of non vehicular transportation facilities and accommodations, it is important to consider the impacts of potential improvements for not only vehicular traffic, but also for pedestrians and bicycle traffic. Along the existing study corridor, multi modal accommodations are limited and future accommodations should be considered, where practical and desirable. Due to the heavy traffic volumes and roadway characteristics, it may not be practical to recommend providing sidewalks and bicycle lanes along the entire corridor; however, it is feasible to provide these types of facilities along parallel routes, as well as provide high-visibility crosswalks, and convenient linkages between traffic generators for non-vehicular travel.

Conceptual opinions of whether the improvement alternatives can accommodate or promote multi modal accommodations are summarized in **Appendix G**.

With respect to some of the alternative improvement concepts, it is noted that the Federal Highway Administration (FHWA) has reported (*FHWA-HRT-04-091*, August 2004) that despite the complexity of the CFI configuration, pedestrian safety can be improved or maintained compared to traditional intersections. FHWA also reports that SPUI interchanges need to accommodate pedestrians by a separate traffic signal phase. Similarly, if pedestrian crossings are provided with the Superstreet Median Crossover intersection configuration (pedestrian crossings are presently banned at these intersections), a separate traffic signal phase and accommodations for pedestrians would need to be provided.

Property and Right-of-Way Impacts

The impacts of additional widening for capacity improvements that occur outside of the legal right-of-way is an important consideration, as it will require right-of-way acquisition, increase the costs of the project, and impact adjacent properties, driveways, and parking lots, in many cases.

Conceptual opinions as to the land area required and the properties affected in order to accommodate construction of the improvements are summarized further in **Appendix G** for the alternatives. In general, the alternative improvements require less right-of-way than the conventional improvements due to their decreased scope. However, in some cases more right-of-way may be required at a study intersection with the alternative improvement, but less right-of-way will ultimately be needed along mid block segments, and thereby less overall right-of-way acquisition.

Structural Impacts

There are various bridges and other structures (i.e., culverts, etc.) along the corridor that will need to be replaced, upgraded, widened, or otherwise modified in order to accommodate the needed capacity improvements. These structural modifications will increase the cost and magnitude of the various improvement projects. In some cases, it may be possible to incorporate structural improvements recommended by this study into long-term maintenance/rehabilitation programs, such that when a bridge is scheduled for repair or rehabilitation, it may also be improved to accommodate future needs.

The structures and number of culverts that will likely be impacted by the various improvements are summarized in **Appendix G**.

Utility Impacts

Relocation of aboveground and overhead utilities will be required at many locations with the improvement alternatives. Utility relocation will increase the cost of any improvement project, particularly in cases that require acquisition of private easements or rights-of-ways on private property to accommodate the relocation. Conceptual opinions as to the level of impact requiring relocation of utility poles to accommodate construction of the various improvements are summarized in **Appendix G**.

Environmental Considerations

The scope of this study did not include any environmental assessment in accordance with the National Environmental Protection Act (NEPA). The level of effort completed for this study was only to identify potential environmental areas/issues that could be impacted by the potential highway improvements in the study, and which should be investigated further. Specifically, detailed environmental studies will be required as part of the design process for most of the recommended improvements.

A cursory review of several potential environmental issues was completed and is summarized in **Appendix G**. It notes such considerations as: river/stream crossings (RC), water resources and potential wetlands (WR), and potential cultural resources (CR). Other environmental issues, such as potential waste sites, agricultural resources, threatened and endangered species, and socioeconomic impacts will also need to be identified and evaluated, as appropriate.

Construction Costs

The potential costs of improvements are an important consideration when selecting a preferred improvement among various alternatives, particularly as transportation funding is limited and highly competitive. Order of magnitude opinions of costs were estimated for the various alternatives and are shown in Appendix G, and these generally include construction, engineering, right-of-way acquisition, utility relocation, and structural modifications. Once a more detailed design has been completed for the improvements, more precise cost estimates should be prepared. However, for planning purposes, the estimated cost range for the Southern Segment is between $24 and $30 million for the preferred Gateway/Alternative improvements. For the Pottstown Segment, the estimated cost range for the conventional improvements is approximately $101 to $118 million, while the alternative improvement is only approximately $47 million to $55 million. For the Northern Segment, the estimated cost range for the conventional improvements is $88 to $102 million, while the alternative improvement is only $82 million to $96 million.

Additional Improvement Strategies

The *Pottstown Metropolitan Regional Comprehensive Plan* provides many of the measures and recommendations necessary to successfully improve traffic conditions along PA Route 100 by implementing smart growth policies, defining desirable development patterns, and encouraging redevelopment within the Borough of Pottstown. These strategies should be undertaken and implemented by the individual PMRPC municipalities and, in particular, those municipalities along the corridor.

Ordinance Changes

- **Official Maps and/or Specific Plans** – The municipalities participating in this study should consider utilizing official maps or specific plans for key future road connections and other important elements of expanded or improved infrastructure. The *Pennsylvania Municipalities Planning Code* supports use of these tools.

- **Direct High-Intensity Land Uses to Regional Mixed-Use Centers** – To better coordinate new development along the PA Route 100 corridor and provide access to the roadway, new high-intensity development should be located within or adjacent to the identified regional mixed-use centers of Gilbertsville, the Borough of Pottstown, the Coventry Mall area, the Town Square Plaza, and adjacent to the Suburbia Shopping Center in North Coventry Township. This will support common road access and parking infrastructure and encourage non vehicular connections between properties in the mixed-use centers. Municipal zoning and other land development regulations should be consistent with this mixed-use center strategy.

- **Strategically Locate Low Traffic Demand Land Uses Along PA Route 100** – For nonresidential sites abutting PA Route 100 where vehicular access is available, but outside of a regional mixed-use center, municipalities should consider allowing land uses with low peak commuter period traffic demands, including: furniture stores, car dealerships, institutional uses, storage facilities, etc. This is especially recommended for minor intersections with PA Route 100 to discourage higher-intensity uses at these locations. Municipal zoning and other land development regulations should promote this lower traffic demand strategy.

- **Access Management Ordinances** – The municipalities along the corridor should adopt specific ordinances (or access management districts) to control/limit/restrict accesses along PA Route 100, as well as along intersecting roadways within the vicinity of PA Route 100, which may also contain land use requirements that regulate the location of larger traffic generators. While retaining the regulations of the underlying zoning district, more restrictive regulations regarding setbacks, location and number of driveways, joint/cross access, and internal circulation can be applied.

- **Traffic Impact Fee Ordinances and Transportation Capital Improvement Plan** – Municipalities should consider enacting a traffic impact fee in accordance with PA Act 209 to offset the burdens to the PA Route 100 corridor created by the traffic generated by future development. The corresponding transportation capital improvement plan, which is required as part of the impact fee adoption process, should incorporate the preferred improvement plan of this study, as appropriate. PennDOT's *Transportation Impact Fees: A Handbook for Pennsylvania's Municipalities*, November 2006, provides a comprehensive reference and guide to the impact fee process.

- **Land Use and Site Design Ordinances for Improved Connectivity** – Promoting vehicular and pedestrian connections to link buildings within a common site and with adjacent developments will support the efficiency and safety of circulation along the PA Route 100 corridor. This can be accomplished by amending ordinances to achieve the desired design

standards. Common access and parking areas, a linked pedestrian and bicycle network, buildings designed for easy pedestrian connections with a mix of complimentary uses, and proximity to public transportation will all reduce vehicular trips and often improve the physical character of new developments.

Access Management

- **Access Management Ordinance** – As noted above, access management policies should be formalized utilizing PennDOT's *Access Management: Model Ordinances for Pennsylvania Municipalities Handbook*.

- **Consolidate Accesses** – Consolidate and/or close existing driveways south of Temple Road, as recommended in the *Northern Chester County Gateway Study*, to improve traffic operations and vehicular/pedestrian safety along this portion of the PA Route 100 corridor.

- **Restrict Access** – Restrict new intersection breaks along the limited access highway portion of the corridor (or approximately north of South Hanover Street) unless detailed study demonstrates a regional or corridor-wide benefit.

- **Clearance from Interchange/Intersections** – Adopt/adhere to minimum intersection spacing requirements that prohibit driveways or new roadway intersections along side streets within their intersection/interchange influence zone (i.e., beyond the start of turning lanes) with PA Route 100. Again, PennDOT's *Access Management: Model Ordinances for Pennsylvania Municipalities Handbook* should be used.

Roadway Improvements

- **Official Maps and/or Specific Plans** – With implementation of these tools, as described above, the preferred improvement alternatives can be outlined and coordinated between the various municipalities, developers, PennDOT, and other stakeholders.

- **Municipal Improvement Plans** - The improvements contained in this study provide a general plan to address the needs of the corridor, which should be further refined by the individual municipalities based on the goals and visions appropriate for each jurisdiction. For example, the *Northern Chester County Gateway Study*, which was commissioned by North Coventry Township and the Chester County Planning Commission, provides a vision and plan for future development and redevelopment that can be more incorporated into future land development proposals.

Roadway Linkages

To provide an effective transportation system, roadways that parallel PA Route 100 should provide a convenient alternative for local traffic. Shorter, more localized trips can therefore be made along parallel routes leaving PA Route 100 to more efficiently accommodate longer distance, or regional pass-through, traffic. Accordingly, many roadways surrounding the PA Route 100 corridor will need to be upgraded and improved over time to provide efficient

and convenient parallel routes, and this will require further study. Furthermore, the existing roadway classification and context, as well as future use, should be considered when evaluating parallel routes. For example, upgrades to roads such as Farmington Avenue or Swamp Creek Pike, which could potentially serve as a prominent parallel route, may not be as extensive as those upgrades that may be needed on a road such as Swinehart Road, which may continue to serve more of a localized route.

Also, new links in the parallel roadway network should be considered when new development occurs, such as the potential "Market Street Connector Road" in Douglass Township, which would link Jackson Road and PA Route 73 just east of their intersections with PA Route 100 (see **Figure 28**). Several other potential parallel routes, roadway connections, and reverse frontage roads were depicted within this study and should be further evaluated. These should not be considered as an exhaustive list of future connections, and where feasible when opportunities arise, new connections should be considered.

Public Transportation

As previously indicated, public transportation opportunities along the PA Route 100 corridor are limited. Given the development potential of the area, consideration should be given to future service along the corridor, which will reduce traffic volumes and provide transit accessibility to an underserved population of non drivers within the area. As developments occur, provisions for future public transportation service should be planned (i.e. provide areas for future bus stops, park-and-ride facilities, etc.).

If an east-west regional rail line is provided between the Reading and Philadelphia areas (similar to the Schuylkill Valley Metro line or the extension of the SEPTA R6 Norristown regional rail line), this rail line will likely cross the study corridor at some point, as well as potentially provide transit access near PA Route 100. This rail service would likely benefit the overall transportation system in the region; however, potential traffic impacts to the study corridor would also need to be evaluated.

Multi Modal Improvements

Many of the study intersections do not adequately accommodate pedestrian traffic or restrict pedestrian crossings all together, and PA Route 100 is not a bicycle-friendly route. In fact, public comment indicated that PA Route 100 created a barrier and impediment to pedestrian traffic flow from one side of the roadway to the other in many sections.

The alternative improvements can provide better accessibility for pedestrians by providing improved intersections (i.e., generally shorter crossing distances) with better accommodations for pedestrians. High-visibility crosswalks, median refuges, and pedestrian traffic signal equipment should be considered at all appropriate intersections along the corridor. Also, intersecting roadways and parallel roadways can be upgraded in the future to accommodate non vehicular traffic or local/regional trail networks should incorporate connections to destinations (i.e., traffic generators) along the corridor.

Safety Improvements

The recommended capacity and access management improvements recommended herein should generally help to relieve many of the existing and future safety issues along the corridor. In the future, a thorough safety study and roadway audit of the corridor should be periodically conducted, as well as after transportation improvements are provided, in order to identify any specific countermeasures needed for identified crash patterns. Additionally, the following general safety improvements should be considered:

- Medians/barriers – Physical separation (i.e., raised medians, jersey barriers) of the northbound and southbound travels lanes should be provided, particularly in high-volume/high-speed portions of the corridor.
- Auxiliary turn and deceleration lanes – Separation of left-turn and right-turn movements from the through lanes should be provided at all intersections.
- Signage – Highly visible and legible signing should be provided to provide adequate advance warning to drivers. For example, well positioned and easily readable regulatory signs, warning signs, and even street name signs will all improve safety conditions.

5. CORRIDOR RECOMMENDATIONS

The recommended improvements that most effectively satisfy the existing and future needs of the PA Route 100 corridor represent the *preferred improvement plan*. In the case of those intersections for which two improvement scenarios were considered (conventional and alternative improvements), the recommendation is for the alternative improvements. In addition, other improvement strategies are also identified for consideration, which could ultimately reduce the scope of improvements needed along the corridor. An action and implementation plan is also provided to guide the various corridor stakeholders.

Preferred Improvement Plan

The Study Advisory Committee, upon review of the various improvement scenarios, potential implementation schedule, funding opportunities, impacts to adjacent properties, and receipt of feedback from both PennDOT District 6-0 representatives and the PMRPC, recommends that the improvements summarized in **Table 20** be pursued. Not all of the improvements will be funded with federal or state dollars. Many will be done through the PennDOT highway occupancy permits, Act 209 transportation impact fees, developer agreements, or other forms of separate financing. Additionally, the recommendations of this plan are intended to complement the land use recommendations of previous studies; these recommendations remain valid and should continue to be pursued and implemented by appropriate stakeholders

Table 20. Preferred Improvements

Segment / Intersecting Roadway	Improvements	PA Rt. 100 Travel Lanes	Priority
Southern Segment			
PA Route 100	• Implement access management improvements between Hoffecker Road and Temple Road.	⇩ ⇧	High
Hoffecker Road	• Restrict through and left-turns at this intersection with a center median. • Provide intersection via new signalized intersection serving future development.	⇩ ⇧	High
Temple Road	• Provide two through lanes by direction along PA Route 100 with turning lanes. • Realign Temple Road Shopping Center access and provide additional turning lanes.	⇩ ↓ ⇧ ⇧	High

LEGEND: ⇨ *EXISTING LANE* ➔ *FUTURE LANE*

Table 20. Preferred Improvements (Continued)

Segment / Intersecting Roadway	Improvements	PA Rt. 100 Travel Lanes	Priority
South Hanover Street	• Provide two through lanes by direction along PA Route 100 and separate northbound deceleration lane to South Hanover Street. • Widen bridge over Neiman Road for additional through lanes. • Restrict left-turn movements from South Hanover Street and accommodate at Lenape Crossing Road.	↓ ⇧ ⇧ ↑	Medium
Lenape Crossing Road	• Provide two through lanes by direction along PA Route 100 with turning lanes. • Restripe Lenape Crossing Road to provide dual left-turn lanes.	⇩ ↓ ⇧ ⇧	Medium
Cedarville Road	• Provide left-turn lanes on the Cedarville Road approaches and plan for future right-turn lanes. • Provide a connector roadway between Cedarville Road and PA Route 724.	⇩ ⇩ ⇧ ⇧	Medium
PA Route 724	• Relocate southbound off-ramp to southwest quadrant of interchange and construct a new signalized intersection opposite a new/relocated Coventry Mall access. • Improve deceleration/acceleration lanes along southbound PA Route 100.	⇩ ⇩ ⇧ ⇧	Low
Pottstown Segment			
King Street	• Restrict the western leg of King Street to one-way westbound traffic only. • Restrict (redirect) left-turn movements on PA Route 100. • Consider eliminating the loop ramp for northbound PA Route 100 traffic to access westbound High Street.	⇩ ⇩ ⇧ ⇧	High
Shoemaker Road	• Provide a Continuous Flow Intersection. • Provide three through lanes in each direction along PA Route 100 and side-street improvements. • Accommodate southbound left-turns to King Street at Shoemaker Road and modify the Shoemaker Road/King Street intersection accordingly.	↓ ⇩ ⇩ ⇧ ⇧ ↑	High

LEGEND: ⇨ *EXISTING LANE* → *FUTURE LANE*

Table 20. Preferred Improvements (Continued)

Segment/ Intersecting Roadway	Improvements	PA Rt. 100 Travel Lanes	Priority
N. State Street (southern)	• Provide a Continuous Flow Intersection. • Provide three through lane in each direction along PA Route 100 and side-street improvements (including those recently completed by developers of Upland Square). • Relocate Commerce Drive with new parallel roadway.	⇩ ⇩ ⇩ ⇧ ⇧ ⇧	High
N. State Street (northern)	• Provide a Superstreet Median Crossover intersection with accommodations for emergency responders and a separate U-turn lane and separate right-turn lane in both directions.	⇩ ⇩ ⇧ ⇧	Low
Farmington Avenue	• Plan for separate left-turn lanes and signalized off-ramp in future as needed.	⇩ ⇩ ⇧ ⇧	Low
Moyer Road	• Provide a Superstreet Median Crossover intersection and a separate U-turn lane and separate right-turn lane in both directions.	⇩ ⇩ ⇧ ⇧	Low
NORTHERN SEGMENT			
Grosser Road	• Prohibit northbound and southbound left-turn movements along PA Route 100 and accommodate them at Jackson Road. • Provide right-turn lanes along PA Route 100 and side-street improvements. • Plan for three northbound through lanes and two southbound through lanes plus side-street improvements. • Provide connector road between Grosser Road and Jackson Road (possible extension of proposed Market Street).	⇩ ⇩ ⇧ ⇧	High
Jackson Road	• Provide Continuous Flow Intersection. • Plan for three northbound through lanes and provide two southbound through lanes, plus side-street improvements.	⇩ ⇩ ⇧ ⇧	High
PA Route 73	• Construct a Single Point Urban Interchange.	⇩ ⇩ ⇧ ⇧	Low

LEGEND: ⇨ *EXISTING LANE* ➔ *FUTURE LANE*

Table 20. Preferred Improvements (Continued)

Segment/ Intersecting Roadway	Improvements	PA Rt. 100 Travel Lanes	Priority
County Line Road	• Provide Continuous Flow Intersection legs for northbound and southbound PA Route 100. • Provide northbound and southbound right-turn lanes along PA Route 100 and side-street improvements. • Relocate Holly Road north of the existing intersection.	⇩ ⇩ ⇧ ⇧	High
Montgomery Avenue	• Plan for Colebrookdale Township's Transportation Capital Improvement Plan (Act 209 Study) recommendations: - Provide two through lanes along Montgomery Avenue and turning lanes. - Realign the northbound on/off-ramp opposite Swamp Creek Road. - Signalize the ramp intersections and provide additional turning lanes.	⇩ ⇩ ⇧ ⇧	Low
CORRIDOR-WIDE			
Public Transportation	• Provide public transit amenities on existing and planned corridors and key destinations • Improve vehicular and multi-modal circulation to planned Pottstown passenger rail station	N/A	Medium
Multi-Modal	• Improve intersections for bicycle and pedestrian access with improvements such as high-visibility crosswalks, median refuges, and pedestrian traffic signal equipment • Upgrade intersecting roadways and parallel roadways to accommodate non-vehicular traffic • Expand the local/regional trail network	N/A	High
Access Management and Safety	• Identify locations for raised medians/barriers • Install auxiliary turning lanes, as feasible • Upgrade regulatory and advisory signage	N/A	Medium

LEGEND: ⇨ *EXISTING LANE* ➔ *FUTURE LANE*

Action Plan

Due to the magnitude of the needed improvements along PA Route 100, numerous resources will need to be identified, mobilized, and synchronized in order to implement these improvements. Therefore, it is important that an action plan be clearly identified and put into use immediately in order to lay the groundwork for future implementation.

The action plan, or implementation process, for the PA Route 100 corridor is broken down in four categories: 1) organizational, 2) regulatory, 3) finance, and 4) future studies. Accordingly, the following action plan is recommended for the PA Route 100 study corridor.

1. **Organizational** – Within the project study area, there are many jurisdictional entities, stakeholders, property owners, and communities that will need to work in a concerted effort to implement the recommendations of this study so that the PA Route 100 corridor and its surrounding transportation network can effectively serve future traffic demands. A mutual "partnership" among the various municipalities and stakeholders will be necessary to implement many of the improvements identified for the corridor, with the understanding that these improvements will need to occur gradually and in various segments. Many improvements can be provided by stakeholders/developers as development occurs.

   Presently, the PMRPC provides a strong organizing body, consisting of local government representatives from most of the municipalities along the study corridor, that will be invaluable in establishing clear paths for inter municipal cooperation and action. However, the PMRPC and Colebrookdale Township, which is not a member of the PMRPC, will need to work together in issues related to the PA Route 100 Corridor.

Action Items	*Responsible Parties/Leaders*
a. Adopt this study and its recommendations as a supplement to the Regional Comprehensive Plan, as well as county and local comprehensive plans.	PMRPC
b. Collaborate as a region to identify and prioritize portions of the improvement plan while working directly with Counties, DVRPC, PennDOT, and Transit providers, as appropriate, to move projects into the county comprehensive plans and then onto the regional TIP as priority and funding permits.	DVRPC, PennDOT, Counties, Municipalities
c. Identify key stakeholders (i.e., land owners, developers, etc.) along the corridor that will be affected (positively or negatively) by the improvements, review the preferred improvement plan with them, and establish a work plan to accomplish future improvements.	Municipalities
d. Promote the improvement plan and study recommendations throughout the implementation process at public meetings and meetings with stakeholders by posting study and recommendations on municipal or agency websites, or via media news articles.	DVRPC, PennDOT, Counties, Municipalities
e. Acquire right-of-way along the corridor and at study intersections for the recommended improvements and new roadway links. The most cost-effective method for acquisition is to obtain right-of-way during land development and during the highway occupancy permit process.	PennDOT, Municipalities
f. Upgrade the surrounding roadway network to provide desirable parallel routes that are tied into existing connections with PA Route 100 to improve local vehicular and non vehicular traffic.	PennDOT, Municipalities
g. Promote the use of existing and future public transportation options along the study corridor. Future major developments should reserve areas for bus service and be well integrated with an overall transit and pedestrian circulation plan.	DVRPC, PennDOT, Counties, Municipalities, SEPTA, Developers

2. **Regulatory** – The PMRPC and member municipalities can adopt new ordinances, revise existing ordinances, and set policies to help achieve a more efficient transportation corridor and supporting network, including establishing sustainable land use policies.

Action Items	*Responsible Parties/Leaders*
a. Develop official multi modal maps that show existing roadways, future roadway alignments, supportive roadway design guidelines, and non vehicular transportation facilities (i.e., sidewalks, trails, bicycle facilities, etc.), as well as required right-of-ways for improvements.	Municipalities
b. Develop more detailed conceptual plans and/or roadway improvement plans that reflect the preferred improvements. These plans can provide a valuable visual tool for presenting improvements to stakeholders.	Municipalities
c. Adopt and enforce access management policies and ordinances to control and limit/restrict future driveways, consolidate existing driveways, reduce conflict points, and improve safety and mobility along the corridor. At a minimum, these policies should apply to the PA Route 100 corridor and intersecting roadways in the vicinity of the corridor.	Municipalities, PennDOT
d. Adopt shared parking policies and policies that encourage/require connections of parking lots for various compatible land uses.	Municipalities
e. Adopt and adhere to land development policies that promote/require internal and external sidewalks and trails in a manner that leads to a highly connective network for nonvehicular travel throughout the entire municipality.	Municipalities
f. Consider this improvement plan during land development reviews and highway occupancy reviews to ensure compliance by proposed projects or to ensure that future implementation of the transportation improvements are not encumbered by land development.	PennDOT, Counties, Municipalities
g. Consider and adopt land use policies that promote sustainable growth and transportation, which are consistent with PennDOT's Smart Transportation guidelines. Also, future higher traffic generating developments can be directed to mixed-use centers to benefit from the mixing of trips and/or lower traffic generating developments can be directed along the corridor at problematic locations.	Municipalities
h. Support existing and future transit opportunities, as well as pedestrian and bicycle travel, throughout the land planning process and development design by adopting strong land development/zoning ordinances. The goal should be to provide a comprehensive and well coordinated regional/corridor-wide plan to encourage non vehicular traffic and promote public transportation.	PennDOT, SEPTA, Counties, Municipalities, Pottstown Urban Transit, Developers

3. **Finance** – Due to the size of the study area and the scope of needed improvements, implementation will be expensive. As such, funding support will be needed from multiple sources, including federal, state, local, and private sources.

Action Items	*Responsible Parties/Leaders*
a. Seek and secure funding to implement portions of the improvement plan. Funding sources may include federal, state, county, and local sources, as shown below. As appropriate and necessary, pursue adding identified projects to the region's Long Range Plan and Transportation Improvement Program (TIP).	DVRPC, PennDOT, Counties, Municipalities
b. Seek grant funding for transportation improvements and new ordinances or revisions, as available. Grant funding sources could include federal, state, regional, and county sources.	Counties, Municipalities
c. Consider establishing transportation impact fees to address new development impacts.	Municipalities
d. Integrate various improvements such as new roadway linkages, reverse frontage roadways, and traffic signal upgrades into development plans.	PennDOT, Municipalities, Developers
e. Integrate various improvements such a bridge expansion or parallel roadway widening into maintenance programs, as appropriate.	PennDOT, Counties, Municipalities
f. Require dedication of right-of-way needed to accommodate roadway improvements during land development reviews.	Municipalities

Despite today's challenging climate for transportation funding of municipal capital improvements, a variety of federal, state, regional, and county grants and programs do exist and offer potential resources for funding of the preferred improvement plan. Today, a sample of the statewide programs that exist to fund the construction and further study/design of the needed improvements include PennDOT programs such as the Statewide Planning and Research Funds (SPR), Land Use Planning & Technical Assistance Programs (LUPTAP), and Community Development Block Grant Funds (CDBG), and federal/state funding through the state's *12-Year Transportation Improvement Plan*. Regional programs such as DVRPC's Transportation and Community Development Initiative (TCDI) grants are also an example of a regional grant program. Because funding options are subject to changes, as are funding levels, opportunities for transportation funding should be routinely reassessed.

4. **Future Studies** – Additional and more detailed study of some of the recommended improvements will be required as various phases or portions of the plan move forward. Some will be feasibility studies to specify the details of certain improvements, while others will be documents meant to meet federal and state regulations. The type and scope of such studies will vary depending on the funding and implementation processes, and as such, it is not possible to identify all of the exact types of studies required at this time. Additionally, each of the recommended improvements will need to be designed and will be subject to review by various jurisdictional agencies

Potential Future Studies

a. Feasibility studies to identify key parallel roadway upgrades and linkages, which would better support the overall transportation network and provide relief for the heavily travelled PA Route 100. This type of Feasibility Study for parallel multi-modal connections was conducted for North Coventry Township within the Northern Chester County Gateway Study.

b. Feasibility studies for non-motorized transportation (i.e., sidewalks, bicycle lanes, trails, etc.) improvements.

c. Feasibility studies for public transit service along the PA Route 100 corridor and Pottstown region.

d. Regional Multi Modal and Transit Plan that comprehensively identifies existing and future pedestrian accommodations and networks, and that can be integrated with a future transit plan. It is recommended that such a plan be prepared on a regional level, and that it consider the municipalities along the corridor and those participating in the PMRPC.

e. Detailed roadway improvement plans, including bridge design, in accordance with jurisdictional requirements.

Some transportation improvements may be completed in association with future land development along the corridor, and therefore would be subject to study/design requirements of the municipality and/or PennDOT. PennDOT emphasizes the connection between transportation improvements and land development in the *Smart Transportation Guidebook* and other publications. Coordinated transportation and land use planning will be expected through the *Pottstown Metropolitan Regional Comprehensive Plan* and other municipal comprehensive plans. In addition, for projects using state or federal funds, detailed environmental studies will be required to identify and evaluate impacts to various environmental resources.

Also, it is recommended that this study be updated, as needed, to reflect major development activity, major changes to transportation land use planning efforts/regulations, and implementation of transportation improvements.

This action plan is not intended to be a detailed or exclusive recommendation, but to provide a guideline for the various corridor stakeholders and municipalities. Nevertheless, it is recommended that this study and its improvement plan and action plan be adopted by the PMRPC as an amendment to the PMRPC's regional comprehensive plan.

Addendum

Connections 2035 – The Regional Plan for a Sustainable Future was adopted by the DVRPC Board in 2009 as the long-range plan for the Greater Philadelphia region. The Plan puts a strong emphasis on creating livable communities, managing growth and protecting resources, building an energy-efficient economy, and creating a modern multimodal transportation system. The majority of the PA 100 corridor is classified for future land use as either "existing development" or "future growth," with a few limited areas of "greenspace network" and "rural conservation lands."

The Tri-County Transportation Study supports *Connections'* goals by considering multi-modalism and land use as part of the final recommendations for PA 100 and its adjacent roadway network (pages 67-70). This study also reinforces the future land uses in the *Pottstown Metropolitan Regional Comprehensive Plan*, which is consistent with *Connections 2035*.

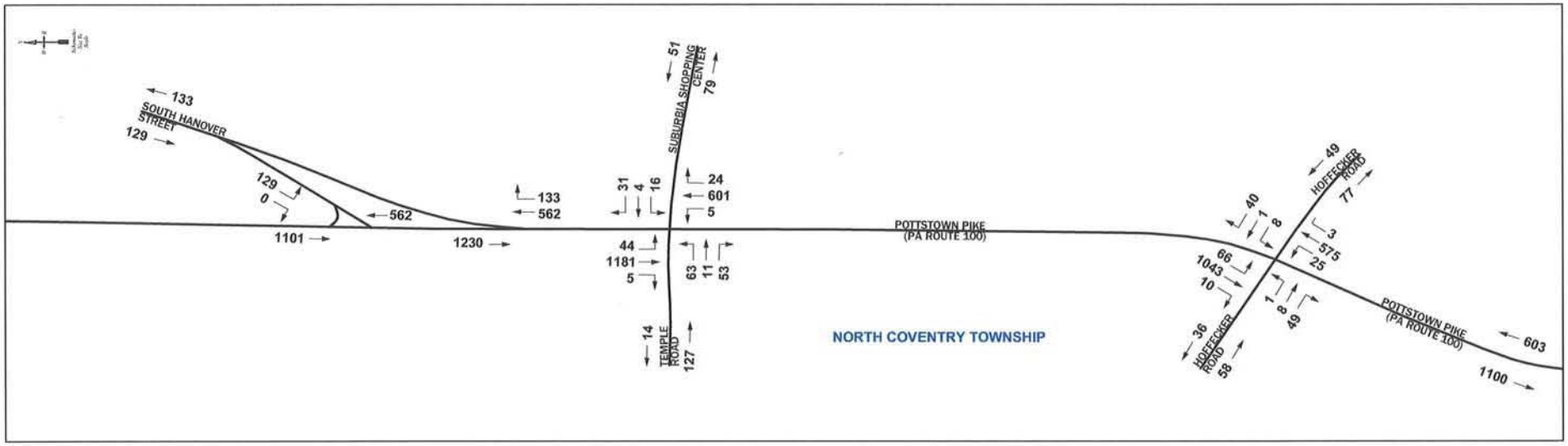
The DVRPC Congestion Management Process (CMP) is a systematic process that performs analyses of the regional transportation network, identifies congested corridors, and includes multimodal strategies to mitigate the congestion. DVRPC is charged with developing and implementing the CMP for the region. The CMP classifies the PA 100 area as an Emerging Corridor and the US 422 area as a Congested Corridor.

The *Tri-County Transportation Study* incorporates many of the "very appropriate" and "secondary" strategies that the CMP identifies for these two corridors into its recommendations, including:

- County and local road connectivity
- Context sensitive design
- Reconstruction with minor capacity
- Safety improvements
- Improvements for pedestrians and bicyclists
- Basic upgrading of traffic signals
- Intersection improvements of a limited scale
- Bottleneck improvements of a limited scale
- Access management
- New bus routes
- Revision of existing land use regulations

APPENDIX A

Existing Weekday Morning and Afternoon Peak Hour Traffic Volumes



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DELAWARE VALLEY REGIONAL PLANNING COMMISSION

PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

EXISTING WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES

DRWN. BY JMW
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
2/13/08

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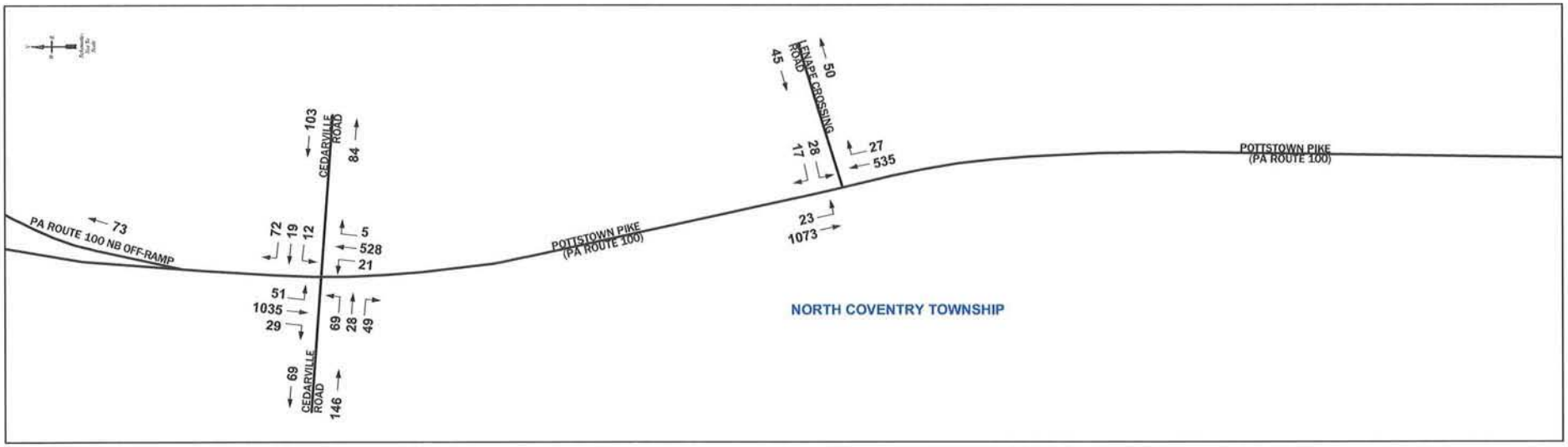
DWG # 1 OF 9



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CHESTER, MONTGOMERY AND BERKS COUNTIES

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CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
2/13/08

SCALE: 1" = 400'
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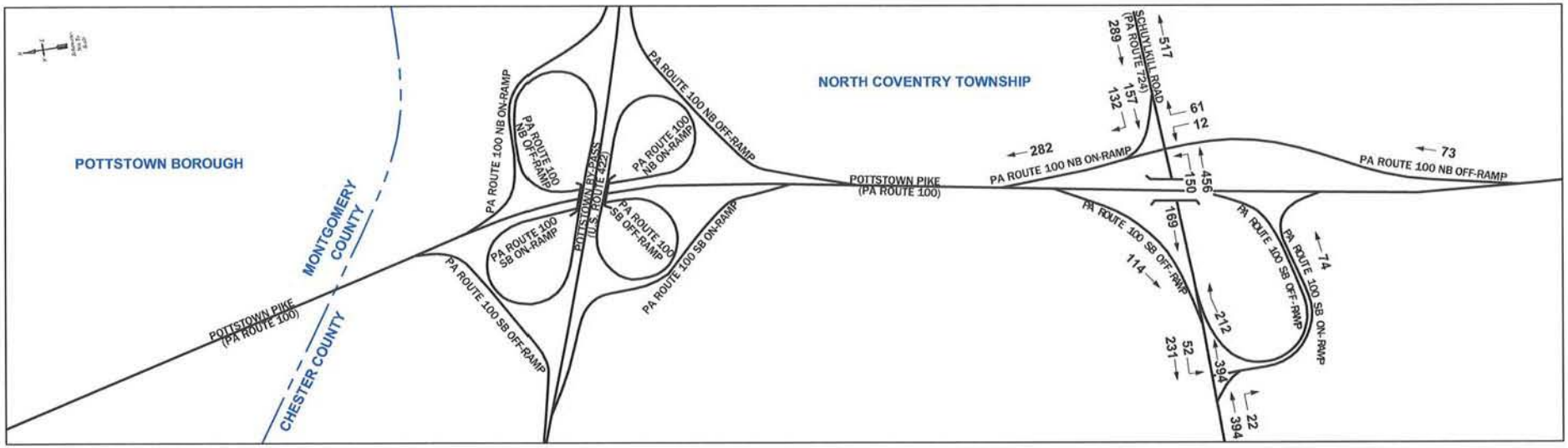
DWG # 2 OF 9



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APPRD. BY CJW

DATE OF PLAN
2/13/08

SCALE: 1" = 400'
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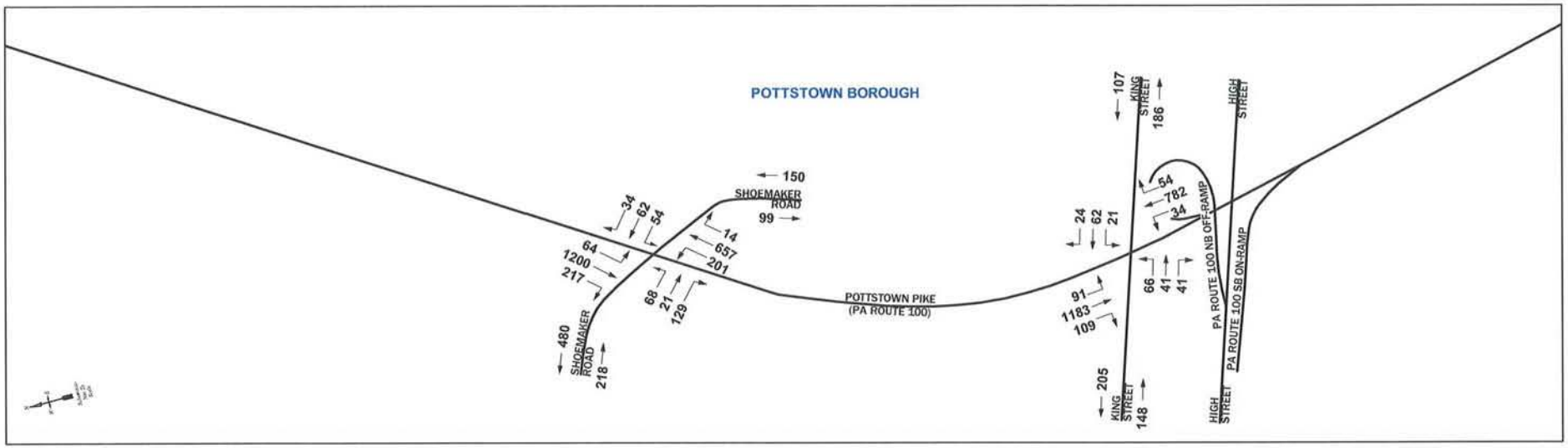
DWG # 3 OF 9



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APPRD. BY CJW

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2/13/08

SCALE: 1" = 400'
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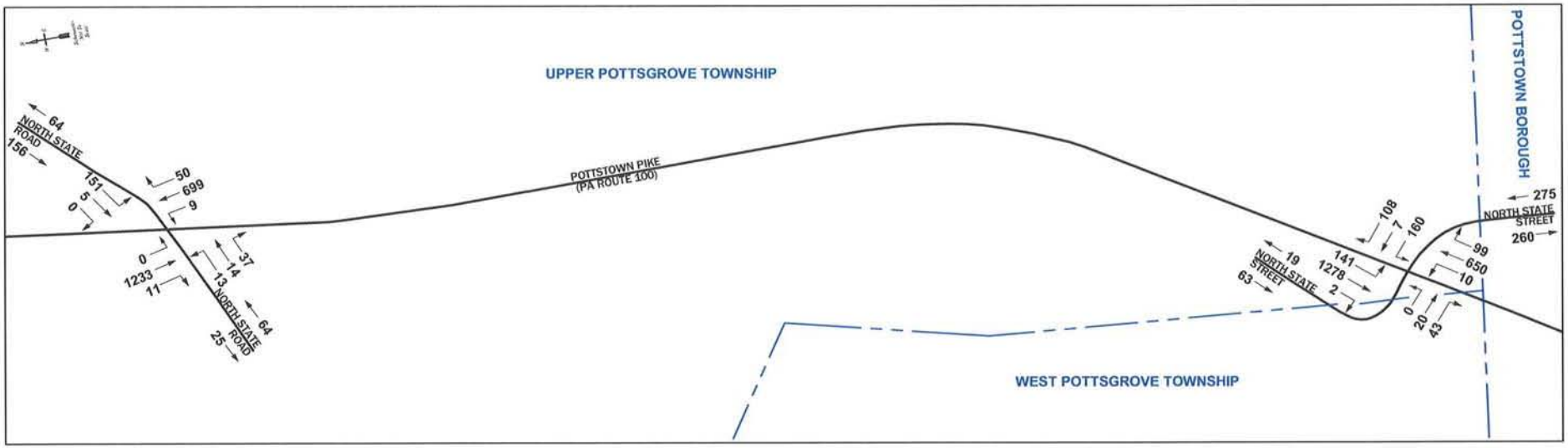
DWG # 4 OF 9



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CHESTER, MONTGOMERY AND BERKS COUNTIES

EXISTING WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES

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CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
2/13/08

SCALE: 1" = 400'
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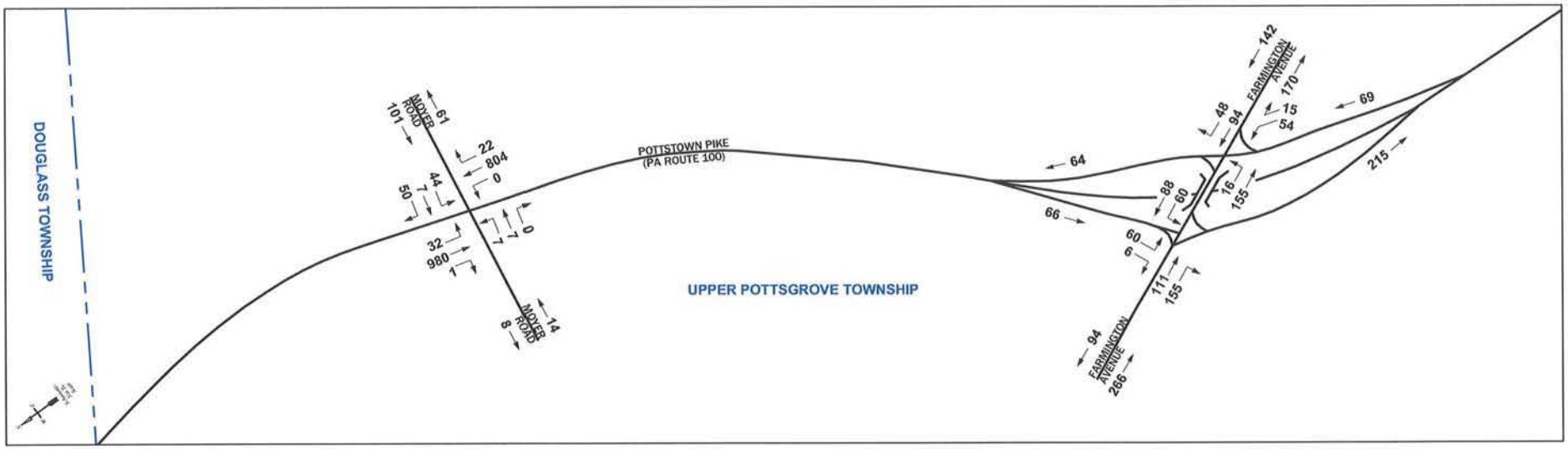
DWG # 5 OF 9



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CHESTER, MONTGOMERY AND BERKS COUNTIES

EXISTING WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES

DRWN. BY JMW
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
2/13/08

SCALE: 1" = 400'
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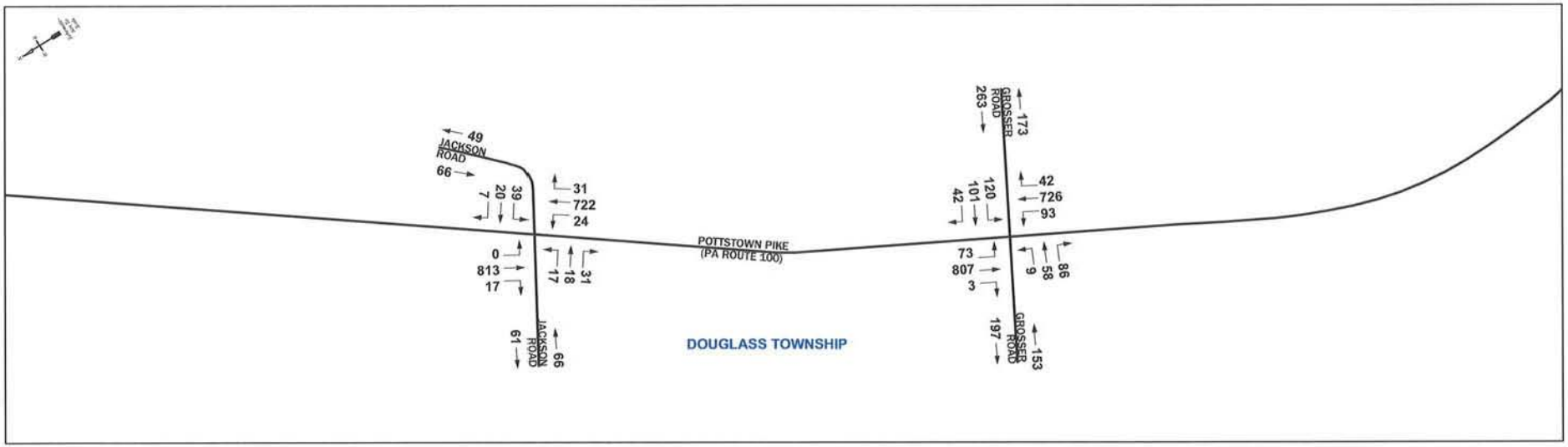
DWG # 6 OF 9



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PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

EXISTING WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES

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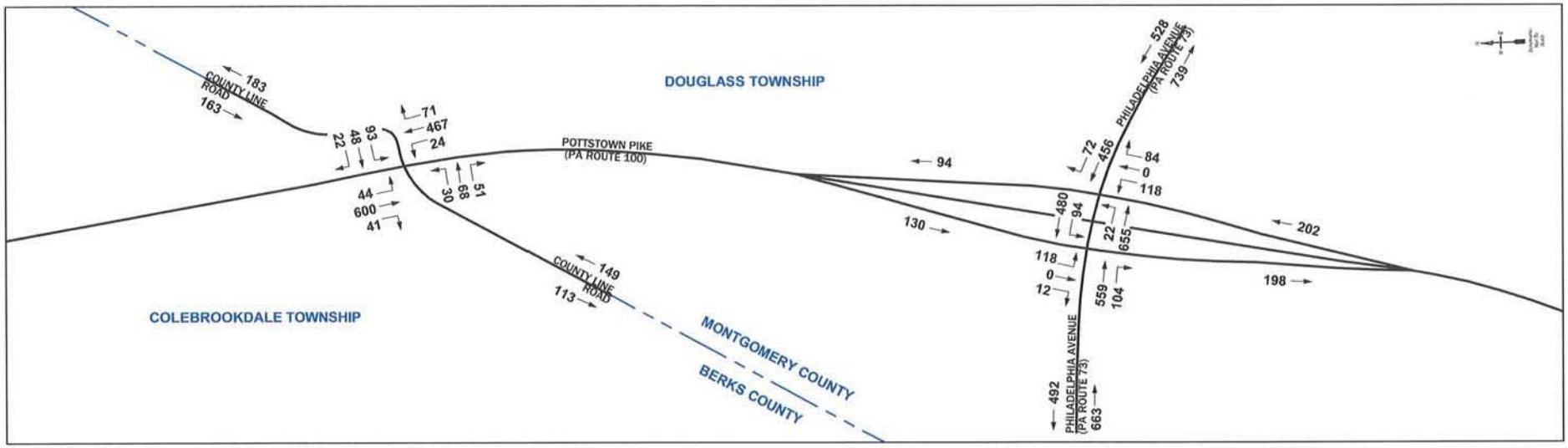
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
2/13/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 7 OF 9



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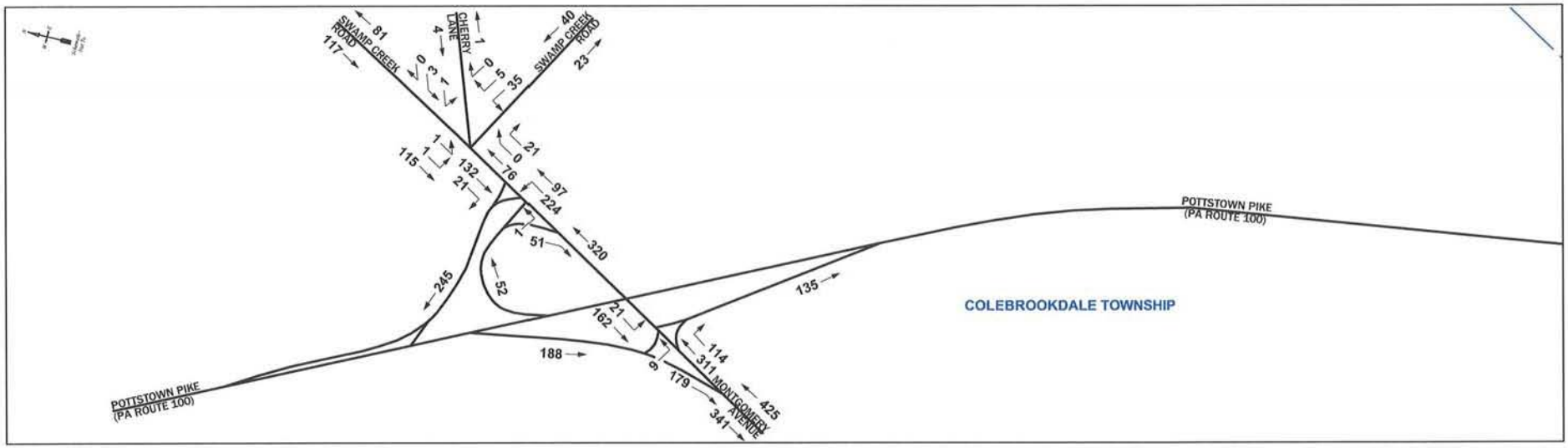

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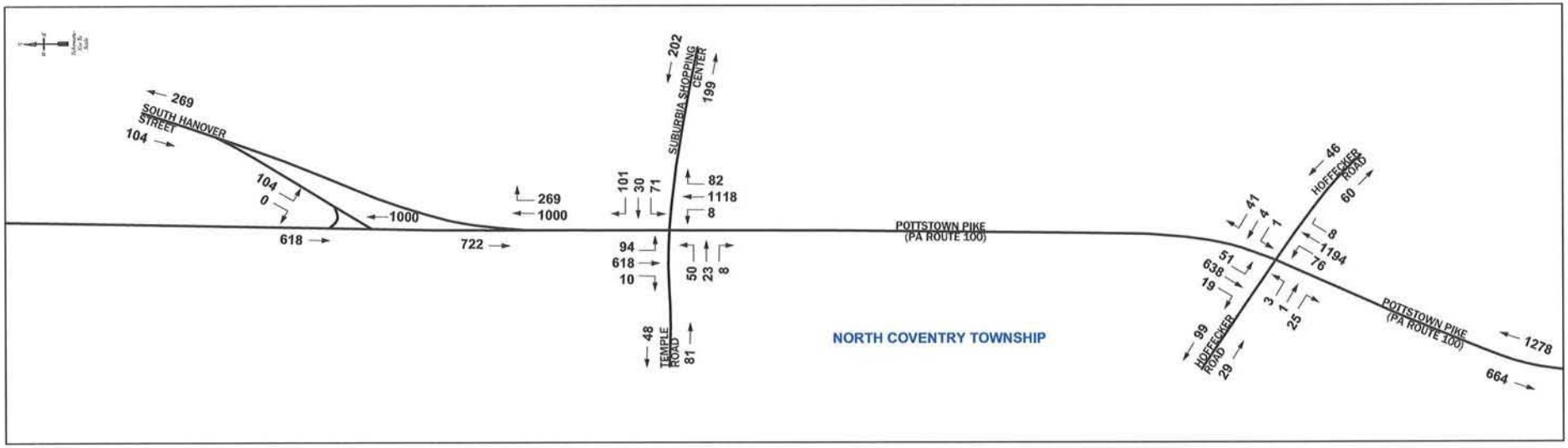

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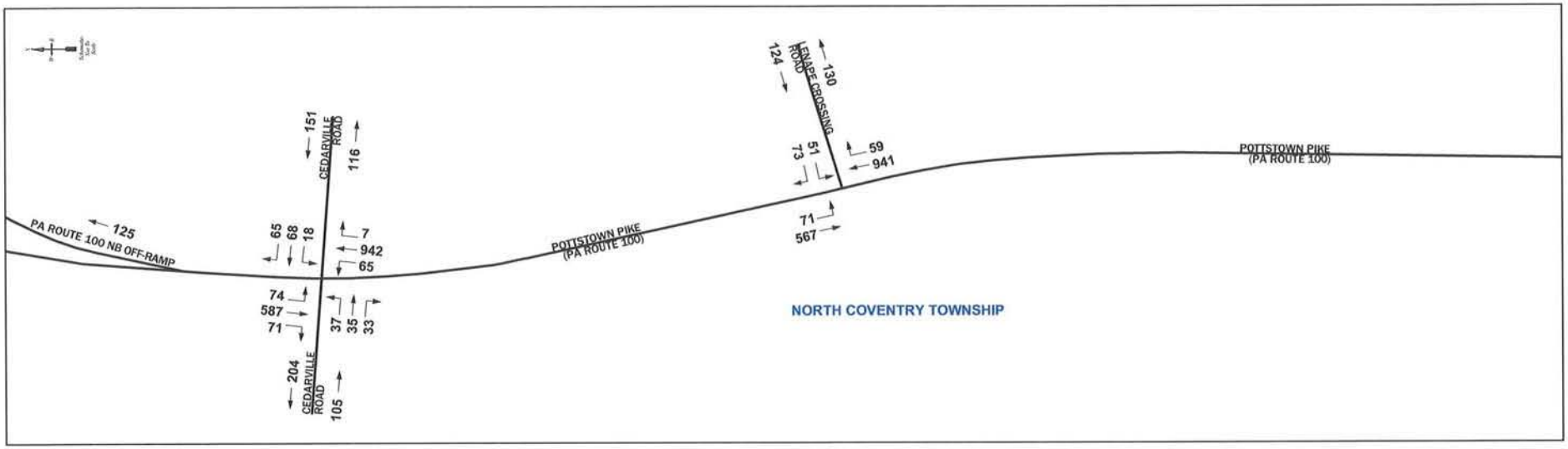

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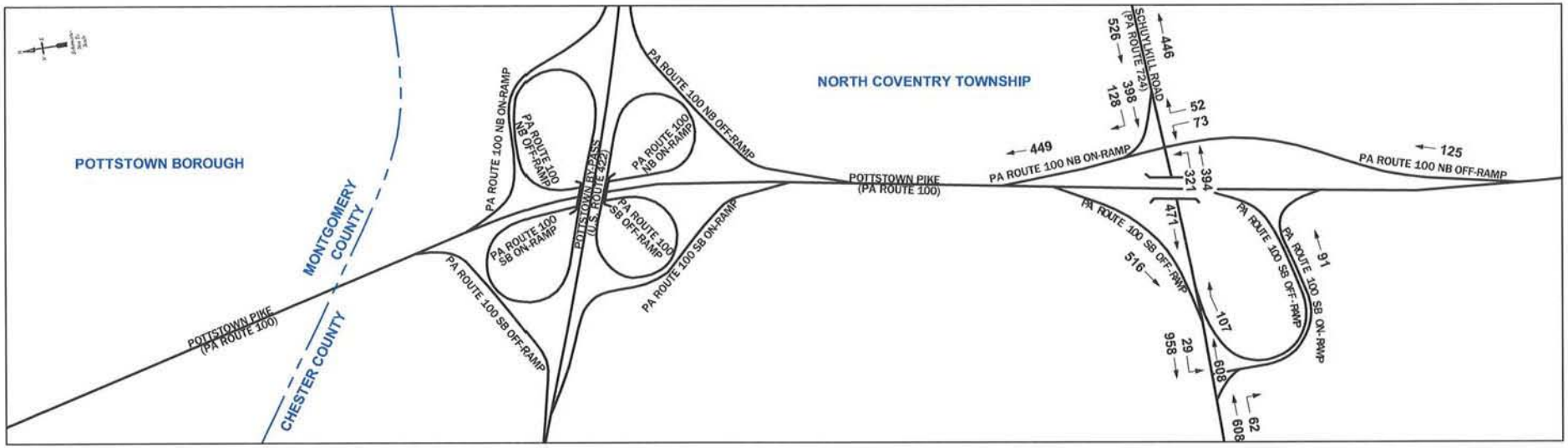

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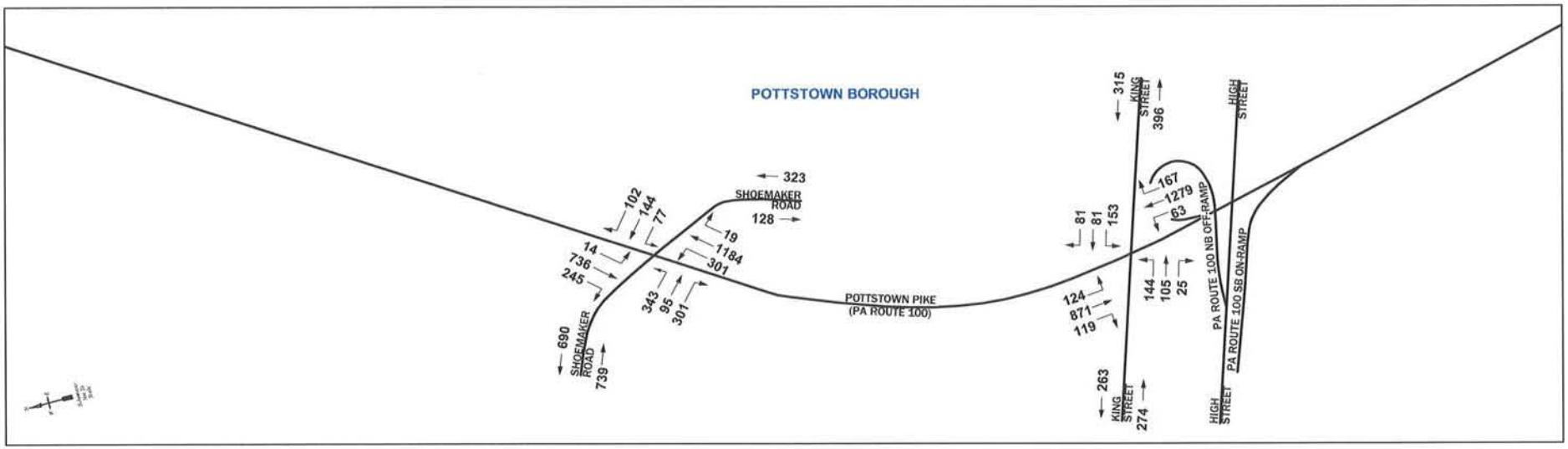

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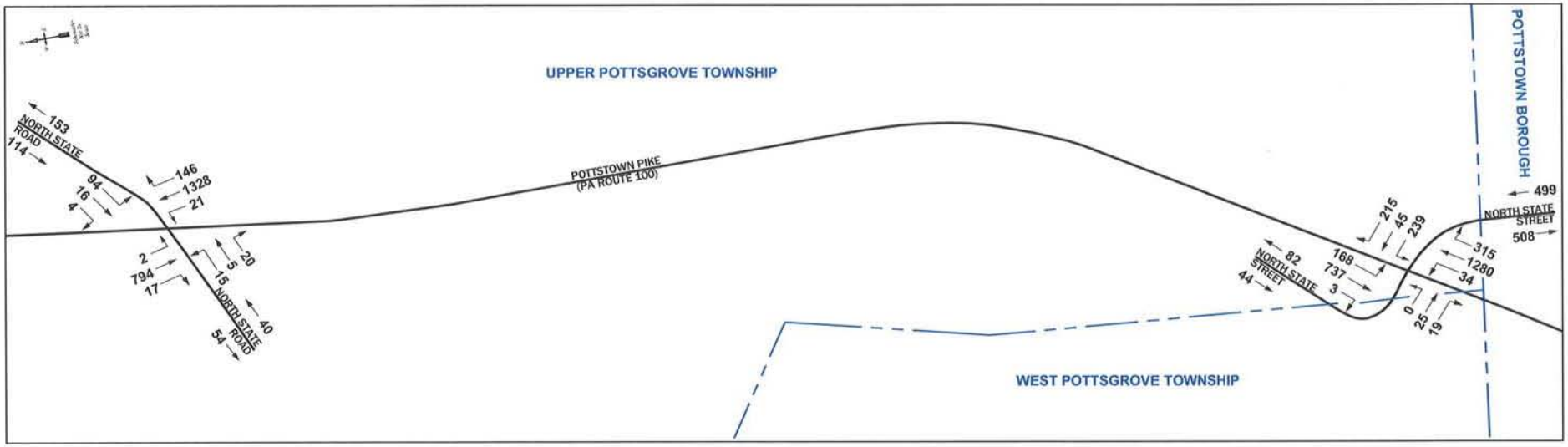

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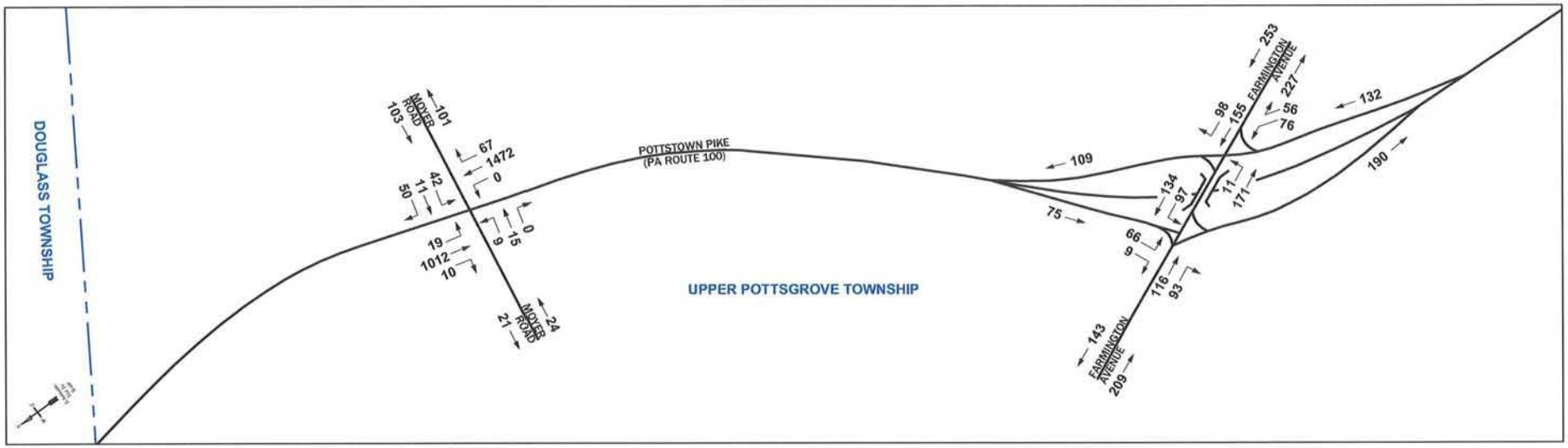

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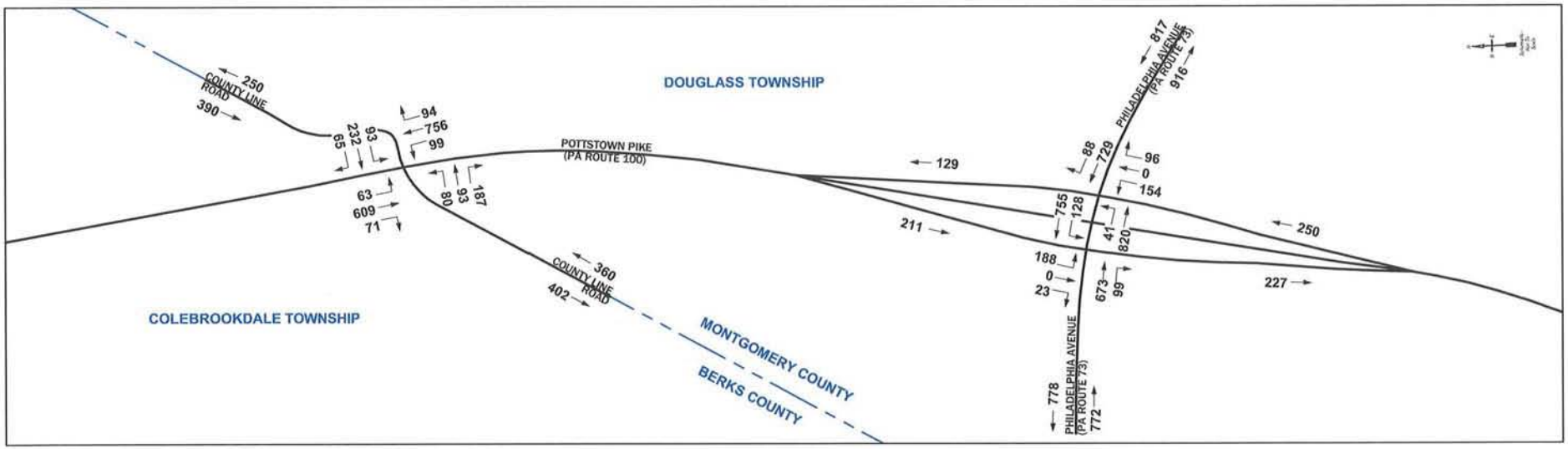

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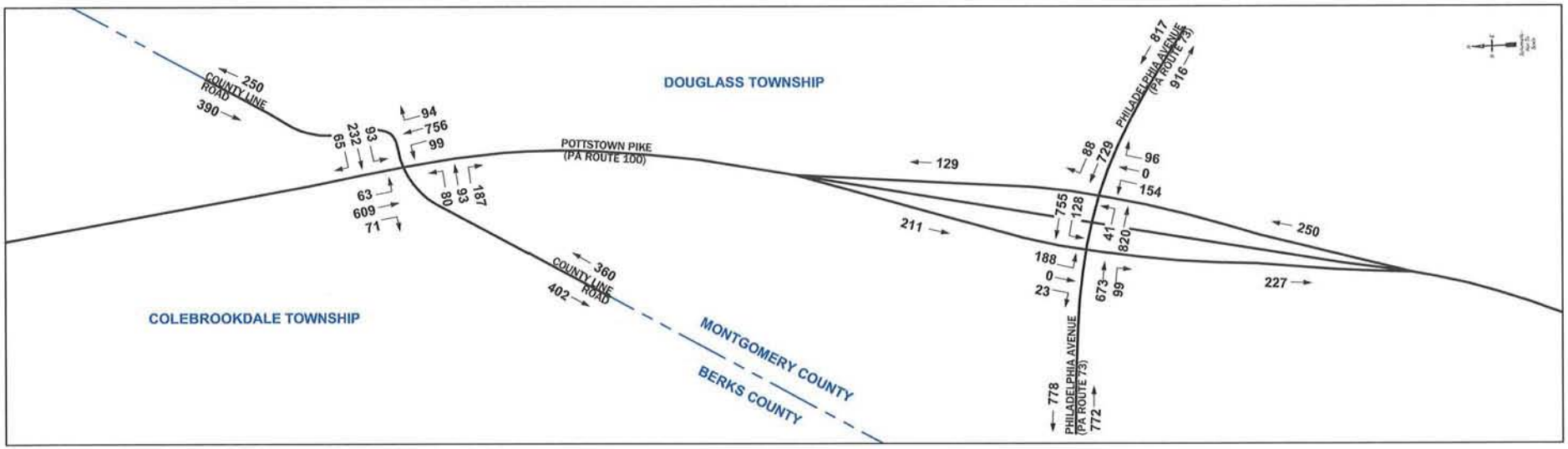

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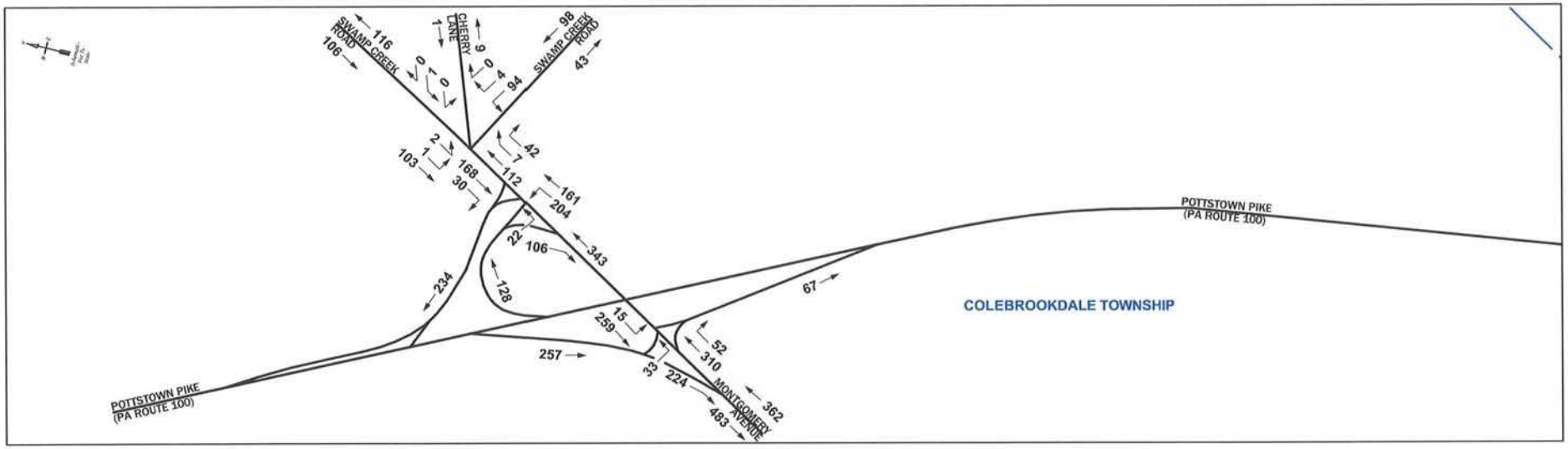

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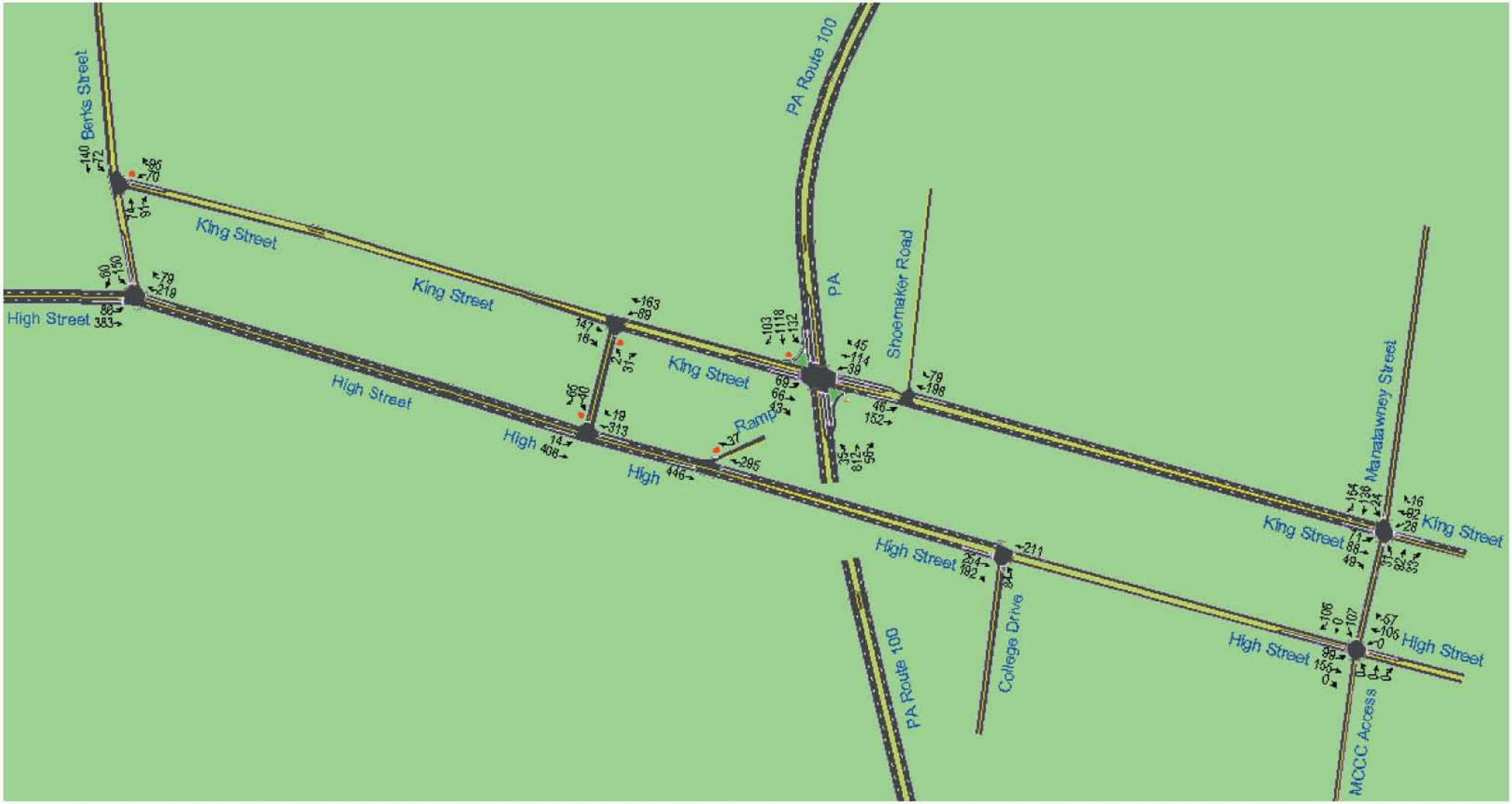
Supplemental Intersections: High Street and King Street Area

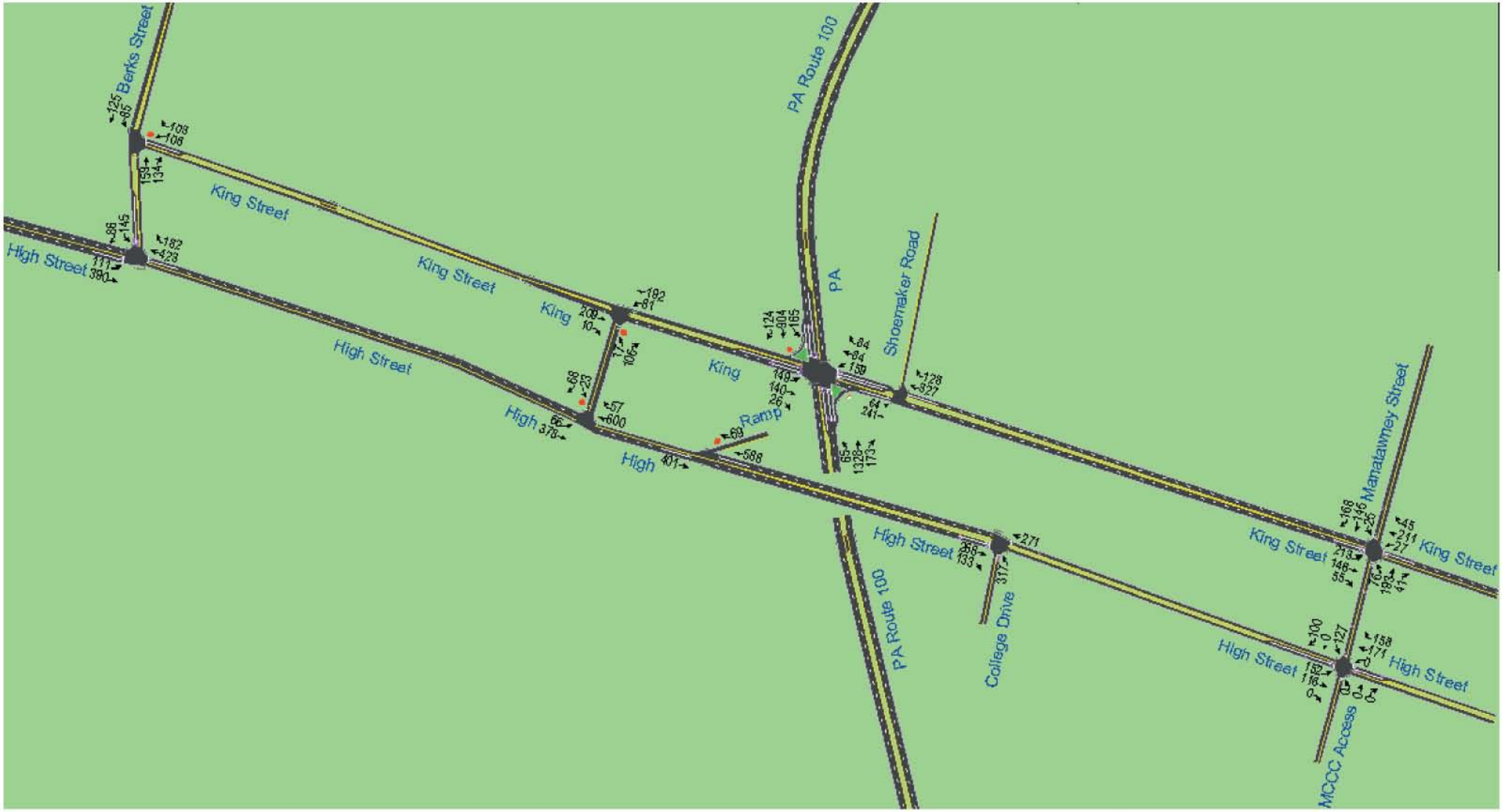
Existing Weekday Morning Peak Hour Traffic Volumes



Map prepared by McMahon Transportation Engineers and Planners

Delaware Valley Regional Planning Commission
PA Route 100 Transportation Plan

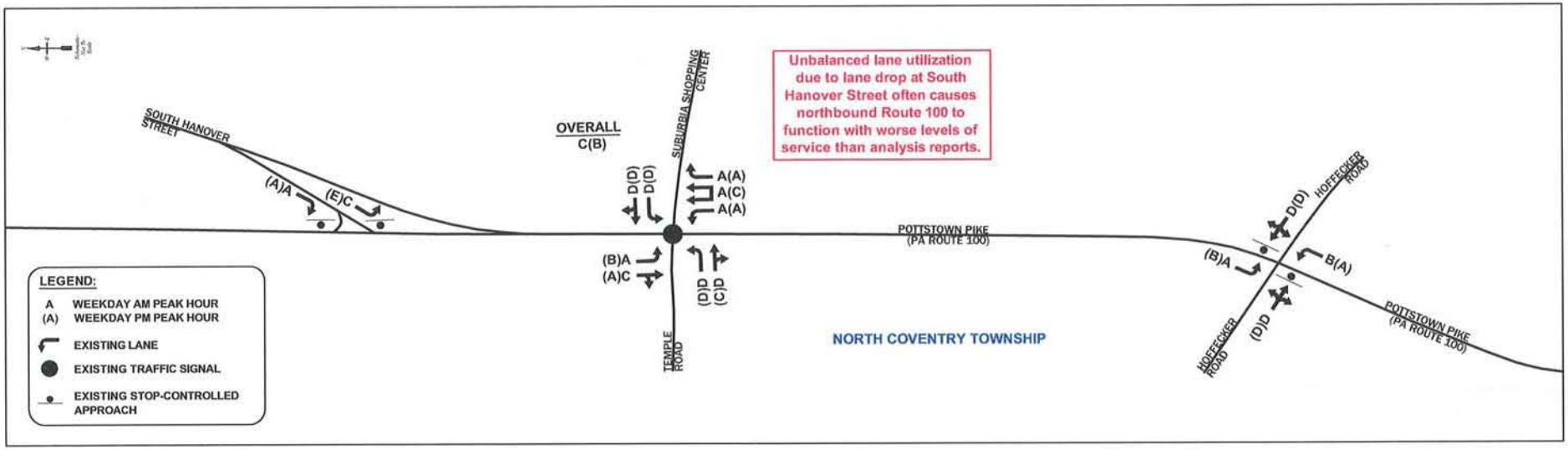
Existing Weekday Afternoon Peak Hour Traffic Volumes



Map prepared by McMahon Transportation Engineers and Planners

APPENDIX B

Existing Study Intersection Levels of Service



Unbalanced lane utilization due to lane drop at South Hanover Street often causes northbound Route 100 to function with worse levels of service than analysis reports.

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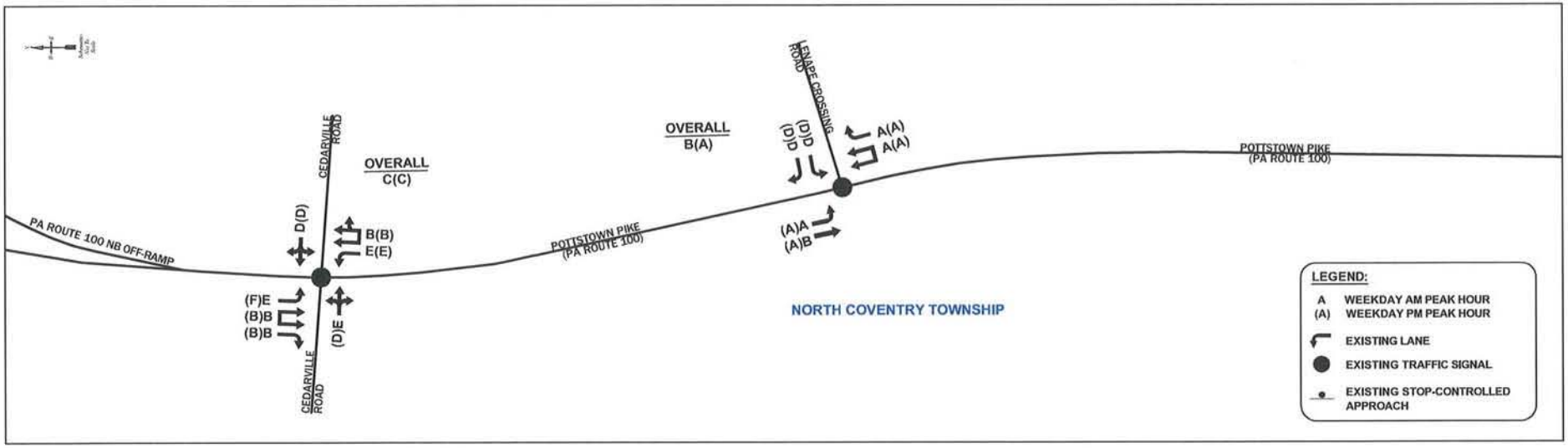

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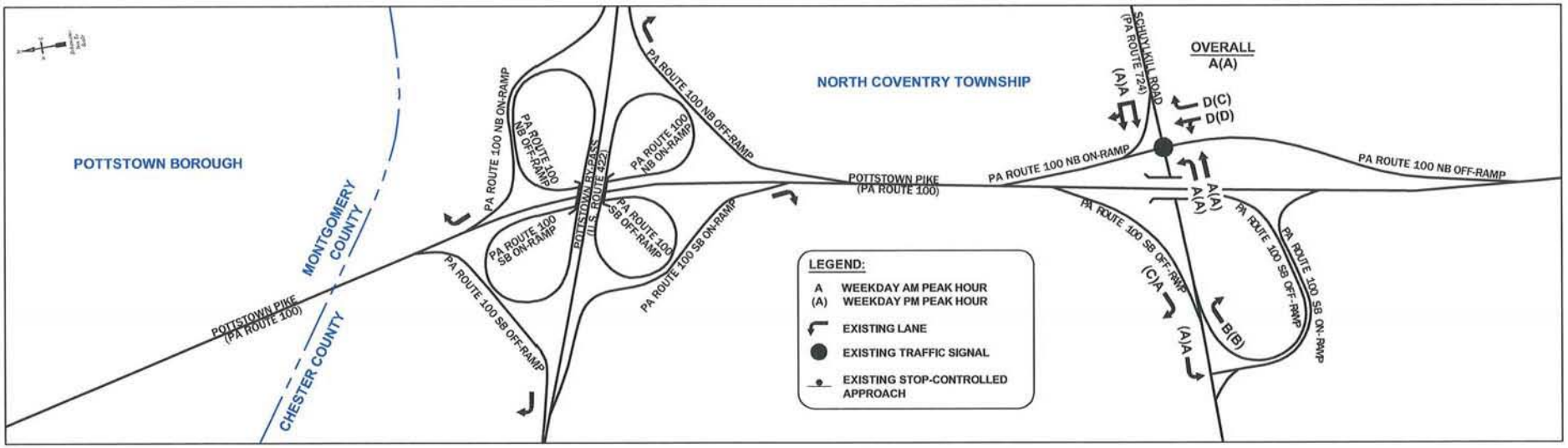

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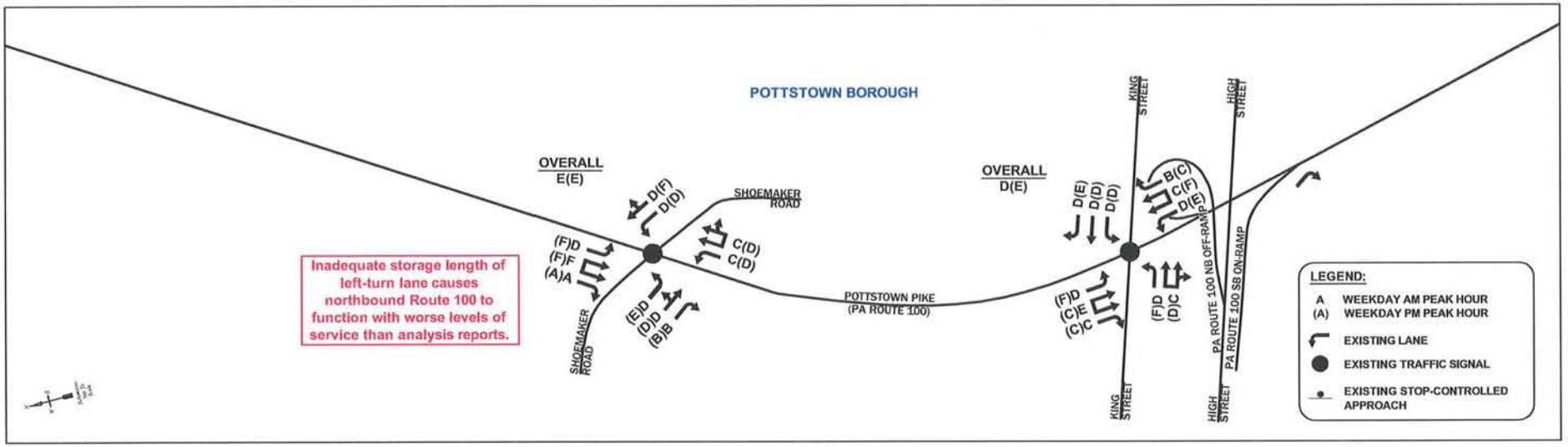

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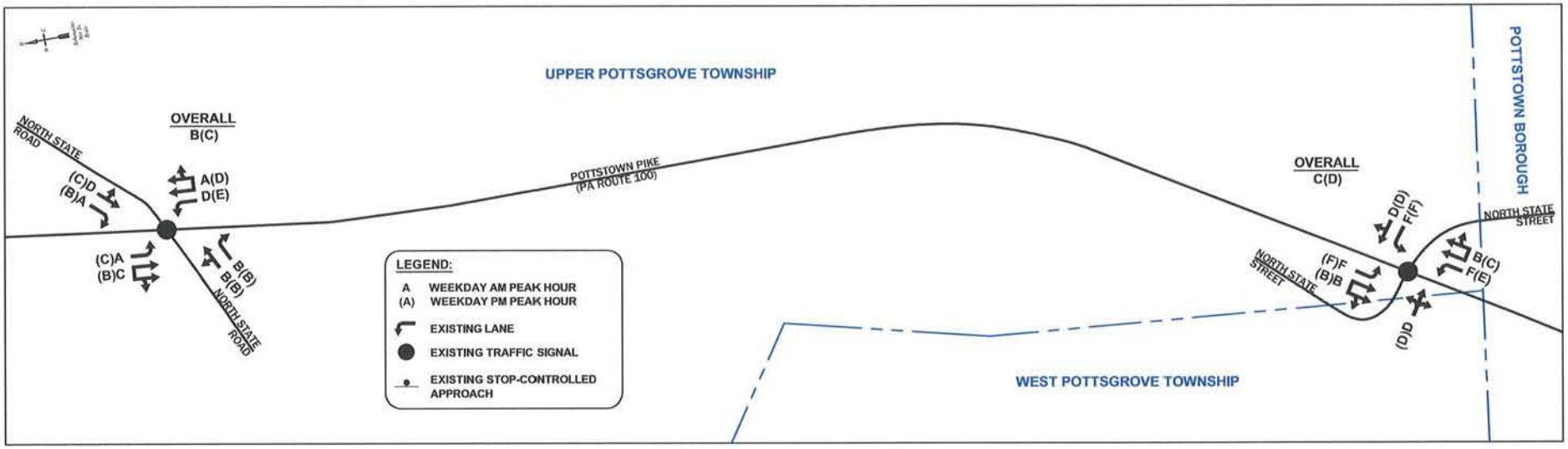

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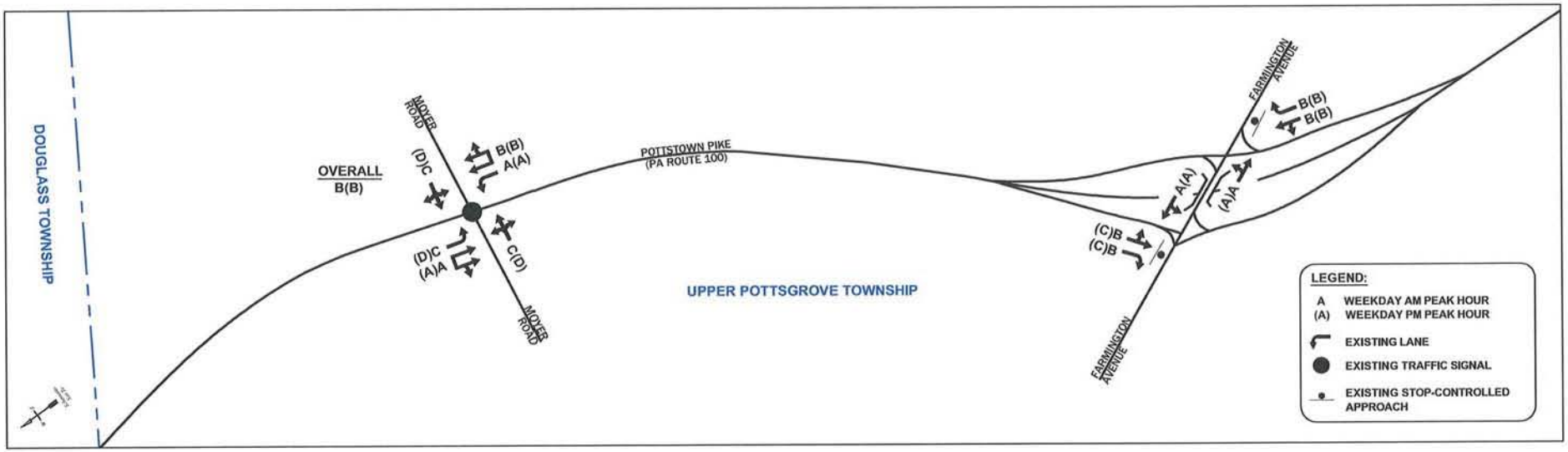

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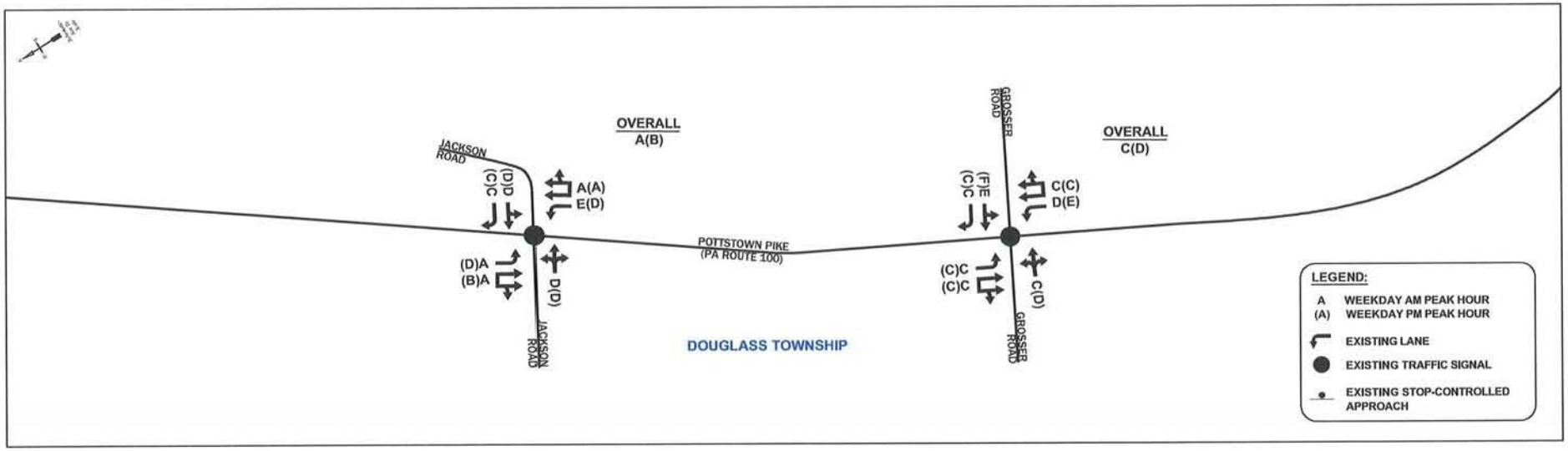

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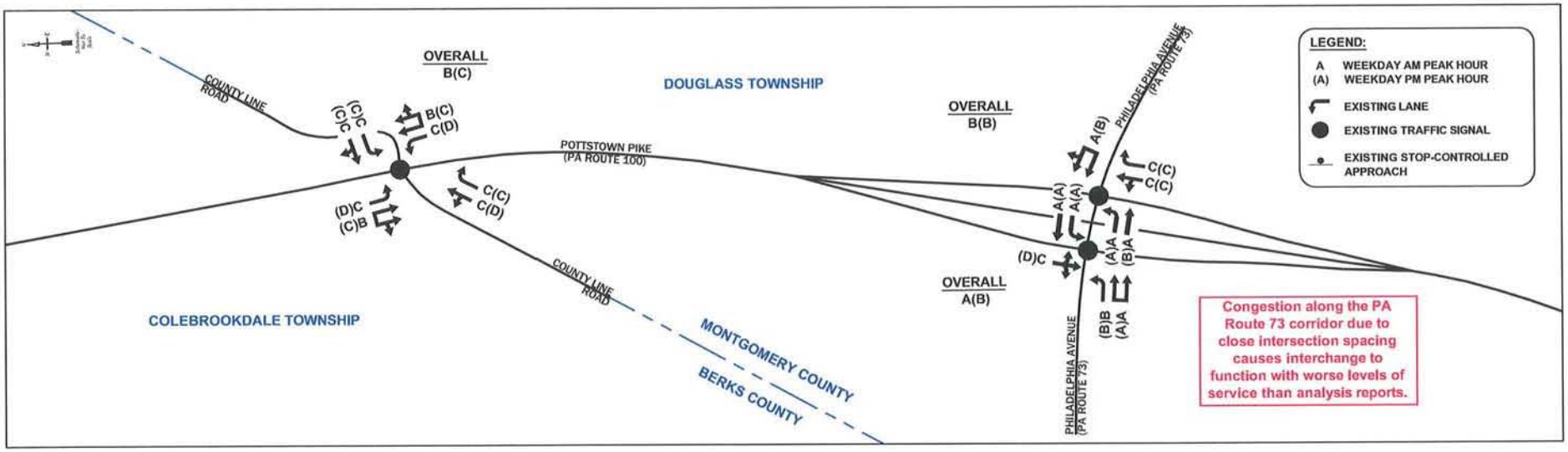

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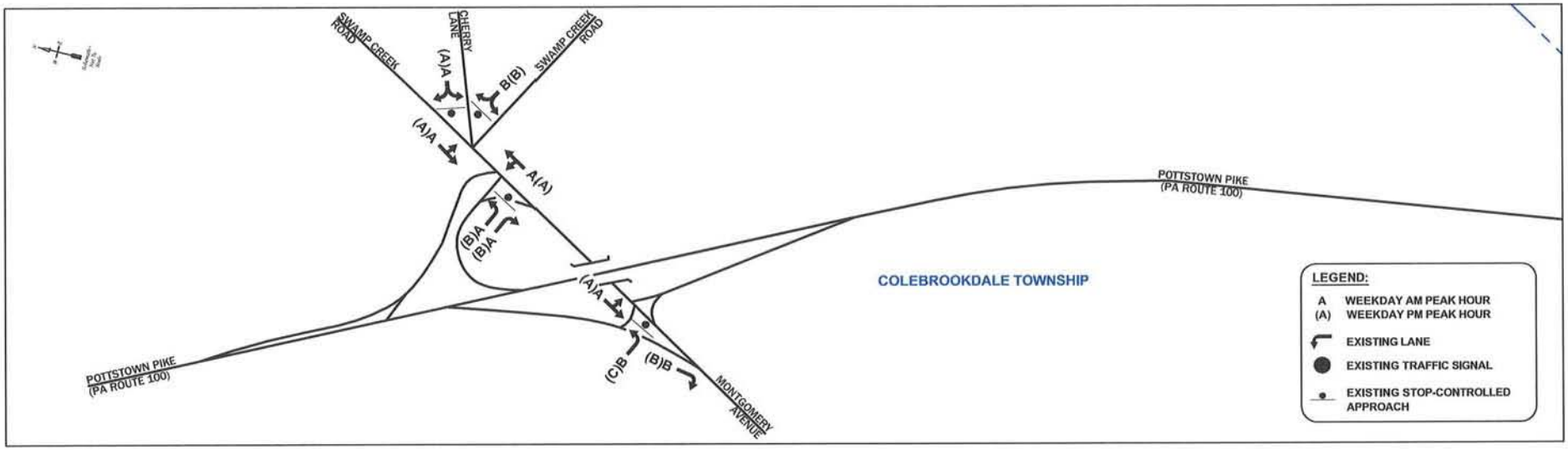

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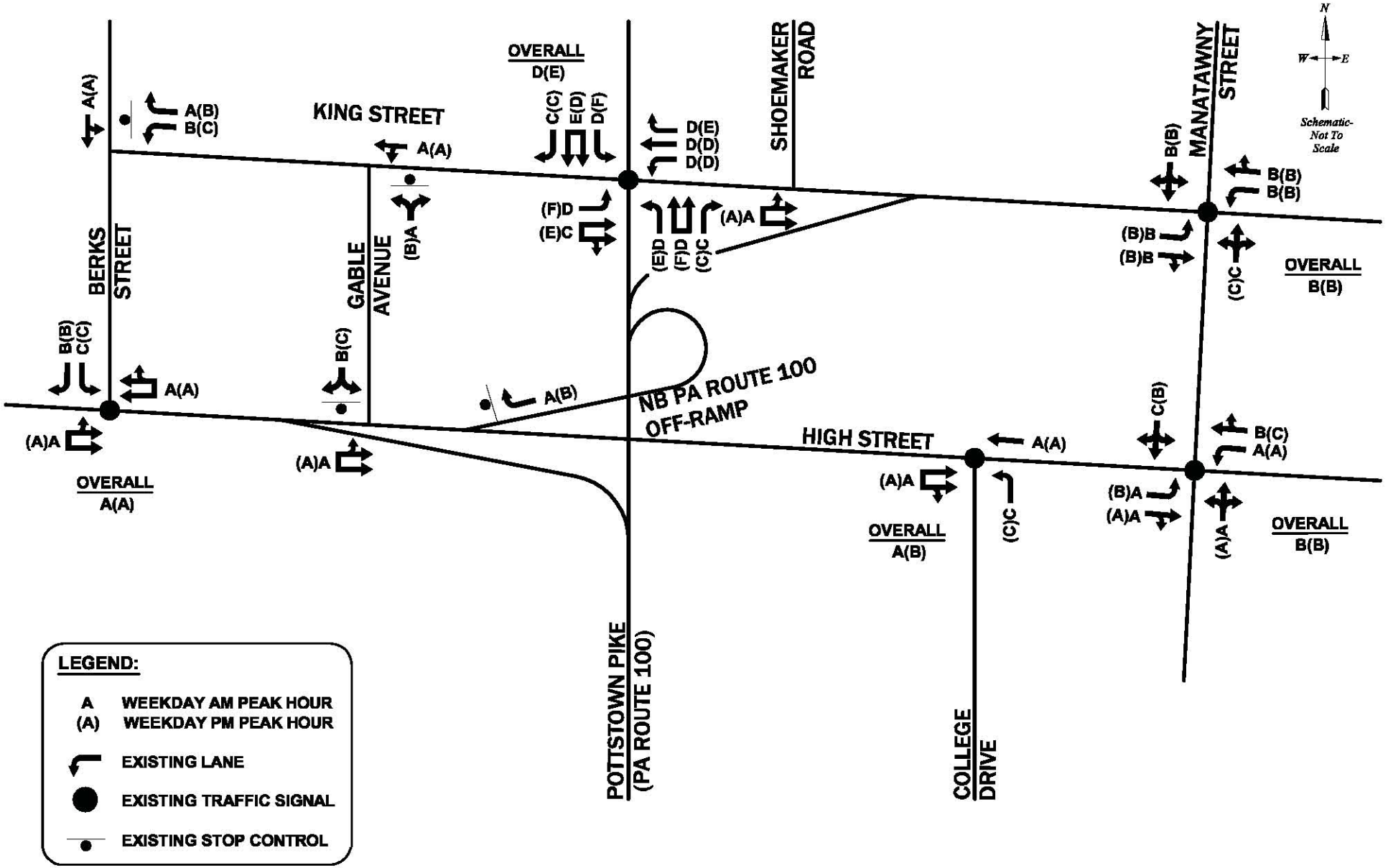
Supplemental Analysis of High Street and King Street Area



HIGH STREET AND KING STREET AREA SUPPLEMENT

Existing Peak Hour Levels of Service

PA ROUTE 100 TRANSPORTATION PLAN

POTTSTOWN BOROUGH, MONTGOMERY COUNTY, PA

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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APPENDIX C

Future Land Use Projections & Trip Generation Data

TRIP GENERATION TABLE

TAZ 2000	Municipality	SUBTAZ	Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
607	North Coventry Township	1	SF Homes (LU 210)									
			Rates	5	DU	48	1	3	4	3	2	5
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			48	1	3	4	3	2	5
			Shopping Center (LU 820)									
			Equations	65236	Sq. Ft.	5,145	74	47	121	227	245	472
			- Pass-By Trips	24	% PM	720	10	7	17	54	59	113
			"New" Trips	34	% SAT	4,425	64	40	104	173	186	359
			General Office (LU 710)									
			7th and 5th Ed. Equations	27312	Sq. Ft.	491	58	8	66	12	59	71
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			491	58	8	66	12	59	71
			General Light Industrial (LU 110)	2	Acres	356	14	3	17	27	98	125
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			356	14	3	17	27	98	125
Total TAZ 607-1 New Trips						5,320	137	54	191	215	345	560
607	North Coventry Township	2	Age Restricted	61	DU	331	5	13	18	15	9	24
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			331	5	13	18	15	9	24
			Shopping Center (LU 820)									
			Rates	5079	Sq. Ft.	218	3	2	5	9	10	19
			- Pass-By Trips	34	% PM	52	1	0	1	3	3	6
			"New" Trips	26	% SAT	166	2	2	4	6	7	13
			General Office (LU 710)									
			7th and 5th Ed. Equations	63728	Sq. Ft.	943	115	16	131	23	110	133
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			943	115	16	131	23	110	133
			General Light Industrial (LU 110)	1	Acres	288	4	1	5	26	93	119
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			288	4	1	5	26	93	119
Total TAZ 607-2 New Trips						1,728	126	32	158	70	219	289
849	Douglas Township	1	SF Homes (LU 210)									
			Equations	14	DU	170	5	14	19	11	7	18
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			170	5	14	19	11	7	18
			Shopping Center (LU 820)									
			Equations	88610	Sq. Ft.	6,278	89	57	146	277	301	578
			- Pass-By Trips	24	% PM	879	12	8	20	67	72	139
			"New" Trips	34	% SAT	5,399	77	49	126	210	229	439
			General Office (LU 710)									
			7th and 5th Ed. Equations	11023	Sq. Ft.	244	28	4	32	6	31	37
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			244	28	4	32	6	31	37
Total TAZ 849-1 New Trips						5,813	110	67	177	227	267	494

Note: Refer to Map for Traffic Analysis Zones

TRIP GENERATION TABLE

TAZ 2000	Municipality	SUBTAZ	Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
	Douglas		SF Homes (LU 210)									
849	Township	2	*Equations*	95	DU	992	19	57	76	64	38	102
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			992	19	57	76	64	38	102
			Townhomes (LU 230)									
			Equations	406	DU	2,112	27	131	158	127	63	190
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			2,112	27	131	158	127	63	190
			Shopping Center (LU 820)									
			Rates	28610	Sq. Ft.	1,228	18	11	29	51	56	107
			- Pass-By Trips	34	% PM	295	4	3	7	17	19	36
			"New" Trips	26	% SAT	933	14	8	22	34	37	71
			General Office (LU 710)									
			7th and 5th Ed. Equations	66136	Sq. Ft.	970	119	16	135	23	114	137
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			970	119	16	135	23	114	137
			General Light Industrial (LU 110)	1	Acres	297	5	1	6	26	94	120
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			297	5	1	6	26	94	120
Total TAZ 849-2 New Trips						5,304	184	213	397	274	346	620
	Douglas		SF Homes (LU 210)									
849	Township	3	*Equations*	145	DU	1,464	28	83	111	94	56	150
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			1,464	28	83	111	94	56	150
			Shopping Center (LU 820)									
			Equations	106358	Sq. Ft.	7,069	99	63	162	313	339	652
			- Pass-By Trips	24	% PM	990	14	9	23	75	81	156
			"New" Trips	34	% SAT	6,079	85	54	139	238	258	496
			General Office (LU 710)									
			7th and 5th Ed. Equations	33068	Sq. Ft.	569	68	9	77	14	68	82
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			569	68	9	77	14	68	82
			General Light Industrial (LU 110)	8	Acres	584	47	10	57	32	113	145
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			584	47	10	57	32	113	145
Total TAZ 849-3 New Trips						8,696	228	156	384	378	495	873
	Pottstown		SF Homes (LU 210)									
857	Borough	1	*Equations*	25	DU	290	7	20	27	20	11	31
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			290	7	20	27	20	11	31
			Townhomes (LU 230)									
			Equations	140	DU	854	12	56	68	53	26	79
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			854	12	56	68	53	26	79
			Shopping Center (LU 820)									
			Rates	2031	Sq. Ft.	87	1	1	2	4	4	8
			- Pass-By Trips	34	% PM	21	0	0	0	2	1	3
			"New" Trips	26	% SAT	66	1	1	2	2	3	5
			General Office (LU 710)									
			7th and 5th Ed. Equations	2934	Sq. Ft.	88	10	1	11	2	12	14
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			88	10	1	11	2	12	14
			General Light Industrial (LU 110)	0	Acres	280	2	1	3	26	92	118
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			280	2	1	3	26	92	118
Total TAZ 857-1 New Trips						1,578	32	79	111	103	144	247

Note: Refer to Map for Traffic Analysis Zones

TRIP GENERATION TABLE

TAZ 2000	Municipality	SUBTAZ	Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
	Pottstown		SF Homes (LU 210)									
859	Borough	1	*Equations*	15	DU	182	5	15	20	12	7	19
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			182	5	15	20	12	7	19
Total TAZ 859-1 New Trips						182	5	15	20	12	7	19
	Pottstown		SF Homes (LU 210)									
859	Borough	2	*Equations*	38	DU	427	9	27	36	28	17	45
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			427	9	27	36	28	17	45
			General Office (LU 710)									
			7th and 5th Ed. Equations	22948	Sq. Ft.	429	51	7	58	11	52	63
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			429	51	7	58	11	52	63
Total TAZ 859-2 New Trips						856	60	34	94	39	69	108
	Pottstown		Shopping Center (LU 820)									
861	Borough	1	*Rates*	301	Sq. Ft.	13	0	0	0	0	1	1
			- Pass-By Trips	34	% PM	3	0	0	0	0	0	0
			"New" Trips	26	% SAT	10	0	0	0	0	1	1
			General Office (LU 710)									
			7th and 5th Ed. Equations	4760	Sq. Ft.	128	14	2	16	3	17	20
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			128	14	2	16	3	17	20
Total TAZ 861-1 New Trips						138	14	2	16	3	18	21
	Pottstown		Shopping Center (LU 820)									
861	Borough	2	*Rates*	602	Sq. Ft.	26	1	0	1	1	1	2
			- Pass-By Trips	34	% PM	6	0	0	0	1	0	1
			"New" Trips	26	% SAT	20	1	0	1	0	1	1
			General Office (LU 710)									
			7th and 5th Ed. Equations	4760	Sq. Ft.	128	14	2	16	3	17	20
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			128	14	2	16	3	17	20
Total TAZ 861-2 New Trips						148	15	2	17	3	18	21
	Pottstown		Shopping Center (LU 820)									
861	Borough	3	*Rates*	2107	Sq. Ft.	90	1	1	2	4	4	8
			- Pass-By Trips	34	% PM	22	0	0	0	2	1	3
			"New" Trips	26	% SAT	68	1	1	2	2	3	5
			General Office (LU 710)									
			7th and 5th Ed. Equations	4760	Sq. Ft.	128	14	2	16	3	17	20
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			128	14	2	16	3	17	20
Total TAZ 861-3 New Trips						196	15	3	18	5	20	25
	Pottstown		SF Homes (LU 210)									
864	Borough	1	*Rates*	8	DU	77	1	5	6	5	3	8
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			77	1	5	6	5	3	8
Total TAZ 864-1 New Trips						77	1	5	6	5	3	8

Note: Refer to Map for Traffic Analysis Zones

TRIP GENERATION TABLE

TAZ 2000	Municipality	SUBTAZ	Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
864	Pottstown Borough	2	SF Homes (LU 210)									
			Equations	18	DU	215	5	17	22	14	9	23
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			215	5	17	22	14	9	23
			Shopping Center (LU 820)									
			Rates	49186	Sq. Ft.	2,111	31	20	51	88	96	184
			- Pass-By Trips	34	% PM	507	7	5	12	30	33	63
			"New" Trips	26	% SAT	1,604	24	15	39	58	63	121
			General Office (LU 710)									
			7th and 5th Ed. Equations	89536	Sq. Ft.	1,225	151	21	172	29	142	171
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			1,225	151	21	172	29	142	171
			General Light Industrial (LU 110)	10	Acres	685	62	13	75	34	120	154
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			685	62	13	75	34	120	154
Total TAZ 864-2 New Trips						3,729	242	66	308	135	334	469
865	Upper Pottsgrove Township	1	SF Homes (LU 210)									
			Equations	18	DU	215	5	17	22	14	9	23
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			215	5	17	22	14	9	23
Total TAZ 865-1 New Trips						215	5	17	22	14	9	23
865	Upper Pottsgrove Township	2	SF Homes (LU 210)									
			Equations	137	DU	1,389	26	79	105	89	53	142
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			1,389	26	79	105	89	53	142
			Shopping Center (LU 820)									
			Rates	7524	Sq. Ft.	323	5	3	8	13	15	28
			- Pass-By Trips	34	% PM	78	1	1	2	5	5	10
			"New" Trips	26	% SAT	245	4	2	6	8	10	18
			General Office (LU 710)									
			7th and 5th Ed. Equations	17681	Sq. Ft.	351	41	6	47	9	43	52
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			351	41	6	47	9	43	52
			General Light Industrial (LU 110)	6	Acres	508	37	7	44	30	108	138
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			508	37	7	44	30	108	138
Total TAZ 865-2 New Trips						2,493	108	94	202	136	214	350
865	Upper Pottsgrove Township	3	SF Homes (LU 210)									
			Equations	55	DU	600	12	36	48	40	23	63
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			600	12	36	48	40	23	63
Total TAZ 865-3 New Trips						600	12	36	48	40	23	63
865	Upper Pottsgrove Township	4	SF Homes (LU 210)									
			Equations	224	DU	2,184	41	125	166	140	82	222
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			2,184	41	125	166	140	82	222
Total TAZ 865-4 New Trips						2,184	41	125	166	140	82	222

Note: Refer to Map for Traffic Analysis Zones

TRIP GENERATION TABLE

TAZ 2000	Municipality	SUBTAZ	Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
	West Pottsgrove		Shopping Center (LU 820)									
866	Township	1	*Rates*	602	Sq. Ft.	26	1	0	1	1	1	2
			- Pass-By Trips	34	% PM	6	0	0	0	1	0	1
			"New" Trips	26	% SAT	20	1	0	1	0	1	1
			General Office (LU 710)									
			7th and 5th Ed. Equations	31902	Sq. Ft.	553	66	9	75	14	66	80
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			553	66	9	75	14	66	80
			General Light Industrial (LU 110)	11	Acres	723	68	14	82	35	122	157
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			723	68	14	82	35	122	157
Total TAZ 866-1 New Trips						1,296	135	23	158	49	189	238
	West Pottsgrove											
866	Township	2	-	-	-		-	-	-	-	-	-
	West Pottsgrove		Shopping Center (LU 820)									
866	Township	3	*Equations*	730417	Sq. Ft.	24,732	315	201	516	1,116	1,210	2,326
			- Pass-By Trips	22	% PM	2,951	38	24	62	245	265	510
			"New" Trips	24	% SAT	21,781	277	177	454	871	945	1,816
			General Office (LU 710)									
			7th and 5th Ed. Equations	7975	Sq. Ft.	190	22	3	25	5	24	29
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			190	22	3	25	5	24	29
			General Light Industrial (LU 110)	7	Acres	567	45	9	54	31	112	143
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			567	45	9	54	31	112	143
Total TAZ 866-3 Trips							382	213	595	1,152	1,346	2,498
Total TAZ 866-3 Pass-by Trips							38	24	62	245	265	510
Total TAZ 866-3 New Trips						22,538	344	189	533	907	1,081	1,988
	West Pottsgrove		SF Homes (LU 210)									
867	Township	1	*Equations*	23	DU	269	6	20	26	18	11	29
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			269	6	20	26	18	11	29
			Shopping Center (LU 820)									
			Rates	677	Sq. Ft.	29	1	0	1	1	2	3
			- Pass-By Trips	34	% PM	7	0	0	0	0	1	1
			"New" Trips	26	% SAT	22	1	0	1	1	1	2
			General Office (LU 710)									
			7th and 5th Ed. Equations	2633	Sq. Ft.	81	9	1	10	2	11	13
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			81	9	1	10	2	11	13
			General Light Industrial (LU 110)	0	Acres	280	2	1	3	26	92	118
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			280	2	1	3	26	92	118
Total TAZ 867-1 New Trips						652	18	22	40	47	115	162
	North Coventry		SF Homes (LU 210)									
1559	Township	1	*Equations*	17	DU	204	5	16	21	14	8	22
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			204	5	16	21	14	8	22
Total TAZ 1559-1 New Trips						204	5	16	21	14	8	22
	North Coventry		SF Homes (LU 210)									
1559	Township	2	*Rates*	1	DU	10	0	1	1	1	0	1
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			10	0	1	1	1	0	1
Total TAZ 1559-2 New Trips						10	0	1	1	1	0	1

Note: Refer to Map for Traffic Analysis Zones

TRIP GENERATION TABLE

TAZ 2000	Municipality	SUBTAZ	Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
	North Coventry		SF Homes (LU 210)									
1559	Township	3	*Rates*	4	DU	38	1	2	3	3	1	4
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			38	1	2	3	3	1	4
			Shopping Center (LU 820)									
			Rates	14202	Sq. Ft.	610	9	6	15	25	28	53
			- Pass-By Trips	34	% PM	146	3	1	4	8	10	18
			"New" Trips	26	% SAT	464	6	5	11	17	18	35
			General Office (LU 710)									
			7th and 5th Ed. Equations	24603	Sq. Ft.	453	54	7	61	11	55	66
			- Pass-By Trips		%	0	0	0	0	0	0	0
			"New" Trips			453	54	7	61	11	55	66
			General Light Industrial (LU 110)	1	Acres	293	4	1	5	26	93	119
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			293	4	1	5	26	93	119
Total TAZ 1559-3 New Trips						1,248	65	15	80	57	167	224
	North Coventry		SF Homes (LU 210)									
1559	Township	4	*Rates*	3	DU	29	0	2	2	2	1	3
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			29	0	2	2	2	1	3
			Shopping Center (LU 820)									
			Rates	14202	Sq. Ft.	610	9	6	15	25	28	53
			- Pass-By Trips	34	% PM	146	3	1	4	8	10	18
			"New" Trips	26	% SAT	464	6	5	11	17	18	35
			General Office (LU 710)									
			7th and 5th Ed. Equations	8201	Sq. Ft.	194	22	3	25	5	24	29
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			194	22	3	25	5	24	29
			General Light Industrial (LU 110)	0	Acres	272	2	0	2	26	92	118
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			272	2	0	2	26	92	118
Total TAZ 1559-4 New Trips						959	30	10	40	50	135	185
	North Coventry		SF Homes (LU 210)									
1559	Township	5	*Rates*	5	DU	48	1	3	4	3	2	5
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			48	1	3	4	3	2	5
Total TAZ 1559-5 New Trips						48	1	3	4	3	2	5
	North Coventry											
1559	Township	6	Age Restricted	203	DU	1,102	18	43	61	51	30	81
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			1,102	18	43	61	51	30	81
			Shopping Center (LU 820)									
			Rates	14202	Sq. Ft.	610	9	6	15	25	28	53
			- Pass-By Trips	34	% PM	146	3	1	4	8	10	18
			"New" Trips	26	% SAT	464	6	5	11	17	18	35
			General Office (LU 710)									
			7th and 5th Ed. Equations	24603	Sq. Ft.	453	54	7	61	11	55	66
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			453	54	7	61	11	55	66
			General Light Industrial (LU 110)	1	Acres	293	4	1	5	26	93	119
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			293	4	1	5	26	93	119
Total TAZ 1559-6 New Trips						2,312	82	56	138	105	196	301
	North Coventry		SF Homes (LU 210)									
1559	Township	7	*Rates*	3	DU	29	0	2	2	2	1	3
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			29	0	2	2	2	1	3
Total TAZ 1559-7 New Trips						29	0	2	2	2	1	3

Note: Refer to Map for Traffic Analysis Zones

TRIP GENERATION TABLE

TAZ 2000	Municipality	SUBTAZ	Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
	North Coventry		SF Homes (LU 210)									
1559	Township	8	*Rates*	4	DU	38	1	2	3	3	1	4
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			38	1	2	3	3	1	4
			Shopping Center (LU 820)									
			Rates	14202	Sq. Ft.	610	9	6	15	25	28	53
			- Pass-By Trips	34	% PM	146	3	1	4	8	10	18
			"New" Trips	26	% SAT	464	6	5	11	17	18	35
			General Office (LU 710)									
			7th and 5th Ed. Equations	24603	Sq. Ft.	453	54	7	61	11	55	66
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			453	54	7	61	11	55	66
			General Light Industrial (LU 110)	1	Acres	293	4	1	5	26	93	119
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			293	4	1	5	26	93	119
Total TAZ 1559-8 New Trips						1,248	65	15	80	57	167	224
	Douglas		SF Homes (LU 210)									
1663	Township	1	*Equations*	23	DU	269	6	20	26	18	11	29
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			269	6	20	26	18	11	29
			Shopping Center (LU 820)									
			Rates	1129	Sq. Ft.	48	1	0	1	2	2	4
			- Pass-By Trips	34	% PM	12	0	0	0	0	1	1
			"New" Trips	26	% SAT	36	1	0	1	2	1	3
			General Office (LU 710)									
			7th and 5th Ed. Equations	2144	Sq. Ft.	69	8	1	9	2	9	11
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			69	8	1	9	2	9	11
			General Light Industrial (LU 110)	0	Acres	280	2	1	3	26	92	118
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			280	2	1	3	26	92	118
Total TAZ 1663-1 New Trips						654	17	22	39	48	113	161
	Douglas		SF Homes (LU 210)									
1663	Township	2	*Equations*	113	DU	1,164	22	67	89	76	44	120
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			1,164	22	67	89	76	44	120
			Age Restricted	54	DU	293	5	11	16	14	8	22
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			293	5	11	16	14	8	22
			Shopping Center (LU 820)									
			Rates	1129	Sq. Ft.	48	1	0	1	2	2	4
			- Pass-By Trips	34	% PM	12	0	0	0	0	1	1
			"New" Trips	26	% SAT	36	1	0	1	2	1	3
			General Office (LU 710)									
			7th and 5th Ed. Equations	4289	Sq. Ft.	118	13	2	15	3	15	18
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			118	13	2	15	3	15	18
			General Light Industrial (LU 110)	0	Acres	280	2	1	3	26	92	118
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			280	2	1	3	26	92	118
Total TAZ 1663-2 New Trips						1,891	43	81	124	121	160	281
	Douglas		SF Homes (LU 210)									
1663	Township	3	*Equations*	24	DU	280	6	20	26	19	11	30
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			280	6	20	26	19	11	30
Total TAZ 1663-3 New Trips						280	6	20	26	19	11	30

Note: Refer to Map for Traffic Analysis Zones

TRIP GENERATION TABLE

TAZ 2000	Municipality	SUBTAZ	Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
	Douglas		SF Homes (LU 210)									
1663	Township	4	*Equations*	42	DU	468	10	29	39	31	18	49
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			468	10	29	39	31	18	49
			Shopping Center (LU 820)									
			Equations	103386	Sq. Ft.	6,940	98	62	160	307	333	640
			- Pass-By Trips	24	% PM	972	13	9	22	74	80	154
			"New" Trips	34	% SAT	5,968	85	53	138	233	253	486
			General Office (LU 710)									
			7th and 5th Ed. Equations	15010	Sq. Ft.	310	36	5	41	8	38	46
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			310	36	5	41	8	38	46
			General Light Industrial (LU 110)	0	Acres	272	2	0	2	26	92	118
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			272	2	0	2	26	92	118
Total TAZ 1663-4 New Trips						7,018	133	87	220	298	401	699
	Pottstown		General Office (LU 710)									
1671	Borough	1	*7th and 5th Ed. Equations*	10157	Sq. Ft.	229	26	4	30	6	28	34
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			229	26	4	30	6	28	34
Total TAZ 1671-1 New Trips						229	26	4	30	6	28	34
	Upper Pottsgrove		SF Homes (LU 210)									
1672	Township	1	*Rates*	7	DU	67	1	4	5	4	3	7
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			67	1	4	5	4	3	7
Total TAZ 1672-1 New Trips						67	1	4	5	4	3	7
	Upper Pottsgrove		SF Homes (LU 210)									
1672	Township	2	*Equations*	76	DU	808	16	47	63	53	31	84
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			808	16	47	63	53	31	84
			Shopping Center (LU 820)									
			Rates	3612	Sq. Ft.	155	2	2	4	7	7	14
			- Pass-By Trips	34	% PM	37	1	0	1	3	2	5
			"New" Trips	26	% SAT	118	1	2	3	4	5	9
			General Office (LU 710)									
			7th and 5th Ed. Equations	27086	Sq. Ft.	488	58	8	66	12	59	71
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			488	58	8	66	12	59	71
			General Light Industrial (LU 110)	3	Acres	381	17	4	21	28	99	127
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			381	17	4	21	28	99	127
Total TAZ 1672-2 New Trips						1,795	92	61	153	97	194	291
	Upper Pottsgrove		SF Homes (LU 210)									
1672	Township	3	*Equations*	115	DU	1,182	22	68	90	77	45	122
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			1,182	22	68	90	77	45	122
Total TAZ 1672-3 New Trips						1,182	22	68	90	77	45	122

Note: Refer to Map for Traffic Analysis Zones

TRIP GENERATION TABLE

TAZ 2000	Municipality	SUBTAZ	Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
1672	Upper Pottsgrove Township	4	SF Homes (LU 210)									
			Equations	101	DU	1,049	20	60	80	68	40	108
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			1,049	20	60	80	68	40	108
			Shopping Center (LU 820)									
			Rates	1204	Sq. Ft.	52	1	0	1	2	3	5
			- Pass-By Trips	34	% PM	12	0	0	0	1	1	2
			"New" Trips	26	% SAT	40	1	0	1	1	2	3
			General Office (LU 710)									
			7th and 5th Ed. Equations	27086	Sq. Ft.	488	58	8	66	12	59	71
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			488	58	8	66	12	59	71
			General Light Industrial (LU 110)	3	Acres	381	17	4	21	28	99	127
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			381	17	4	21	28	99	127
Total TAZ 1672-4 New Trips						1,958	96	72	168	109	200	309
1672	Upper Pottsgrove Township	5	SF Homes (LU 210)									
			Equations	99	DU	1,030	20	59	79	67	39	106
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			1,030	20	59	79	67	39	106
			Shopping Center (LU 820)									
			Rates	1204	Sq. Ft.	52	1	0	1	2	3	5
			- Pass-By Trips	34	% PM	12	0	0	0	1	1	2
			"New" Trips	26	% SAT	40	1	0	1	1	2	3
Total TAZ 1672-5 New Trips						1,070	21	59	80	68	41	109
1672	Upper Pottsgrove Township	6	SF Homes (LU 210)									
			Equations	101	DU	1,049	20	60	80	68	40	108
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			1,049	20	60	80	68	40	108
Total TAZ 1672-6 New Trips						1,049	20	60	80	68	40	108
1910	Colebrookdale Township	1	SF Homes (LU 210)									
			Equations	10	DU	125	4	12	16	8	5	13
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			125	4	12	16	8	5	13
			Shopping Center (LU 820)									
			Rates	245	Sq. Ft.	11	0	0	0	0	1	1
			- Pass-By Trips	34	% PM	3	0	0	0	0	0	0
			"New" Trips	26	% SAT	8	0	0	0	0	1	1
			General Office (LU 710)									
			7th and 5th Ed. Equations	16703	Sq. Ft.	336	40	5	45	8	42	50
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			336	40	5	45	8	42	50
			General Light Industrial (LU 110)	0	Acres	267	1	0	1	26	91	117
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			267	1	0	1	26	91	117
Total TAZ 1910-1 New Trips						736	45	17	62	42	139	181

Note: Refer to Map for Traffic Analysis Zones

TRIP GENERATION TABLE

TAZ 2000	Municipality	SUBTAZ	Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
	Colebrookdale		SF Homes (LU 210)									
1910	Township	2	*Rates*	7	DU	67	1	4	5	4	3	7
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			67	1	4	5	4	3	7
			Shopping Center (LU 820)									
			Rates	245	Sq. Ft.	11	0	0	0	0	1	1
			- Pass-By Trips	34	% PM	3	0	0	0	0	0	0
			"New" Trips	26	% SAT	8	0	0	0	0	1	1
			General Office (LU 710)									
			7th and 5th Ed. Equations	16703	Sq. Ft.	336	40	5	45	8	42	50
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			336	40	5	45	8	42	50
			General Light Industrial (LU 110)	0	Acres	267	1	0	1	26	91	117
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			267	1	0	1	26	91	117
Total TAZ 1910-2 New Trips						678	42	9	51	38	137	175
	Colebrookdale		SF Homes (LU 210)									
1910	Township	3	*Equations*	10	DU	125	4	12	16	8	5	13
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			125	4	12	16	8	5	13
			Shopping Center (LU 820)									
			Rates	734	Sq. Ft.	32	1	0	1	1	2	3
			- Pass-By Trips	34	% PM	8	0	0	0	0	1	1
			"New" Trips	26	% SAT	24	1	0	1	1	1	2
			General Office (LU 710)									
			7th and 5th Ed. Equations	13919	Sq. Ft.	292	34	5	39	7	36	43
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			292	34	5	39	7	36	43
			General Light Industrial (LU 110)	1	Acres	288	4	1	5	26	93	119
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			288	4	1	5	26	93	119
Total TAZ 1910-3 New Trips						729	43	18	61	42	135	177
	Colebrookdale		SF Homes (LU 210)									
1910	Township	4	*Equations*	75	DU	798	15	47	62	52	31	83
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			798	15	47	62	52	31	83
			Age Restricted	75	DU	407	7	16	23	19	11	30
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			407	7	16	23	19	11	30
			Shopping Center (LU 820)									
			Rates	489	Sq. Ft.	21	1	0	1	1	1	2
			- Pass-By Trips	34	% PM	5	0	0	0	1	0	1
			"New" Trips	26	% SAT	16	1	0	1	0	1	1
			General Light Industrial (LU 110)	0	Acres	272	2	0	2	26	92	118
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			272	2	0	2	26	92	118
Total TAZ 1910-4 New Trips						1,493	18	47	65	78	124	202
	Colebrookdale		SF Homes (LU 210)									
1910	Township	5	*Rates*	7	DU	67	1	4	5	4	3	7
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			67	1	4	5	4	3	7
			Shopping Center (LU 820)									
			Rates	2201	Sq. Ft.	94	1	1	2	4	4	8
			- Pass-By Trips	34	% PM	23	0	0	0	2	1	3
			"New" Trips	26	% SAT	71	1	1	2	2	3	5
			General Office (LU 710)									
			7th and 5th Ed. Equations	5568	Sq. Ft.	144	17	2	19	4	18	22
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			144	17	2	19	4	18	22
Total TAZ 1910-5 New Trips						282	19	7	26	10	24	34

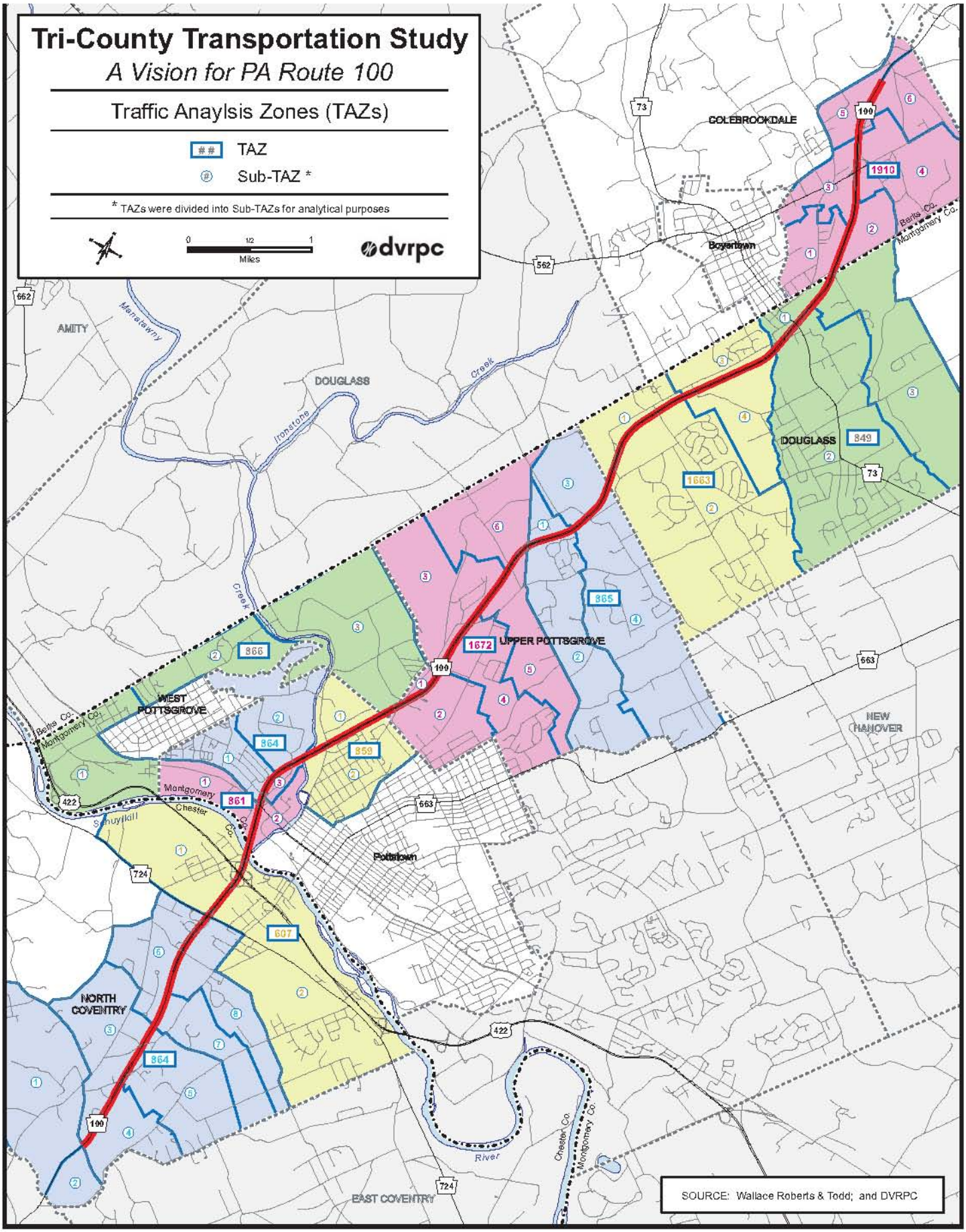
Note: Refer to Map for Traffic Analysis Zones

TRIP GENERATION TABLE

TAZ 2000	Municipality	SUBTAZ	Land Use	Size	Units	Daily	WEEKDAY AM PEAK In	Out	Total	WEEKDAY PM PEAK In	Out	Total
	Colebrookdale		Townhomes (LU 230)									
1910	Township	6	*Equations*	61	DU	422	6	29	35	27	13	40
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			422	6	29	35	27	13	40
			Shopping Center (LU 820)									
			Rates	978	Sq. Ft.	42	1	0	1	2	2	4
			- Pass-By Trips	34	% PM	10	0	0	0	0	1	1
			"New" Trips	26	% SAT	32	1	0	1	2	1	3
			General Office (LU 710)									
			7th and 5th Ed. Equations	2784	Sq. Ft.	85	10	1	11	2	11	13
			- Pass-By Trips	0	%	0	0	0	0	0	0	0
			"New" Trips			85	10	1	11	2	11	13
Total TAZ 1910-6 New Trips						539	17	30	47	31	25	56

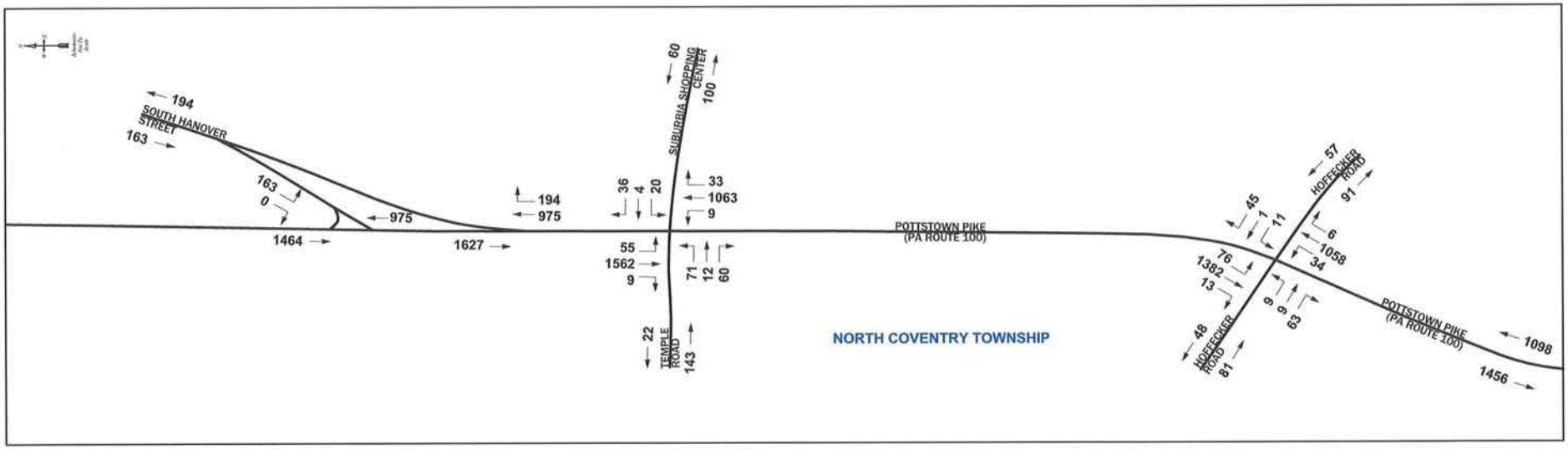
Note: Refer to Map for Traffic Analysis Zones

Map of Traffic Analysis Zones (TAZs)


Tri-County Transportation Study
A Vision for PA Route 100
Traffic Anaylsis Zones (TAZs)
TAZ
Sub-TAZ *
* TAZs were divided into Sub-TAZs for analytical purposes
0 1/2 1
Miles
dvrpc
COLEBROOKDALE
Boyertown
AMITY
DOUGLASS
Manatawny Creek
Ironstone Creek
Berks Co.
Montgomery Co.
1910
849
1663
865
1672
UPPER POTTSGROVE
866
WEST POTTSGROVE
864
859
861
Montgomery Co.
Chester Co.
Schuylkill River
Pottstown
607
NORTH COVENTRY
EAST COVENTRY
NEW HANOVER
73
100
562
663
422
724
SOURCE: Wallace Roberts & Todd; and DVRPC

APPENDIX D

Future Weekday Peak Hour Traffic Volumes



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DELAWARE VALLEY REGIONAL PLANNING COMMISSION

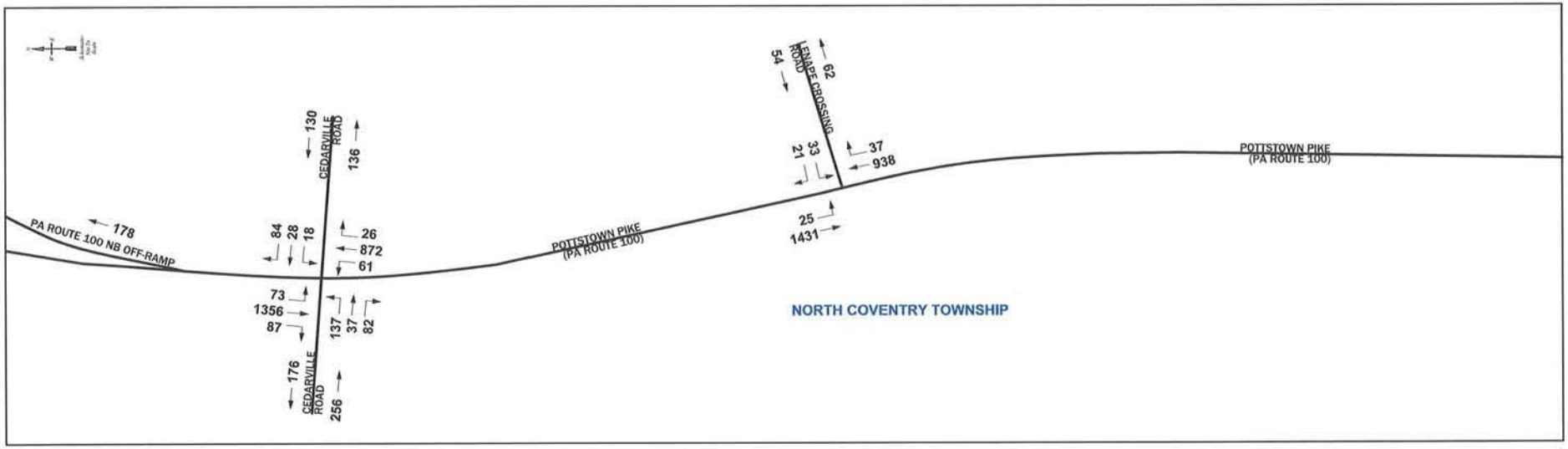
PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

2020 FUTURE WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES

DRWN. BY JMW
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
5/6/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 1 OF 9



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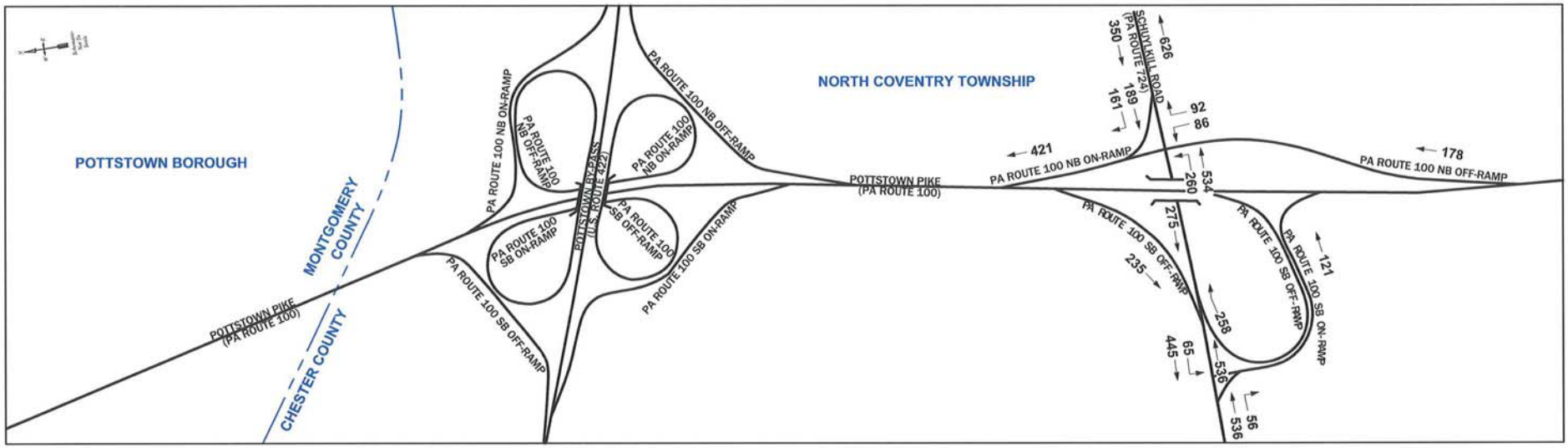
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
5/6/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 2 OF 9



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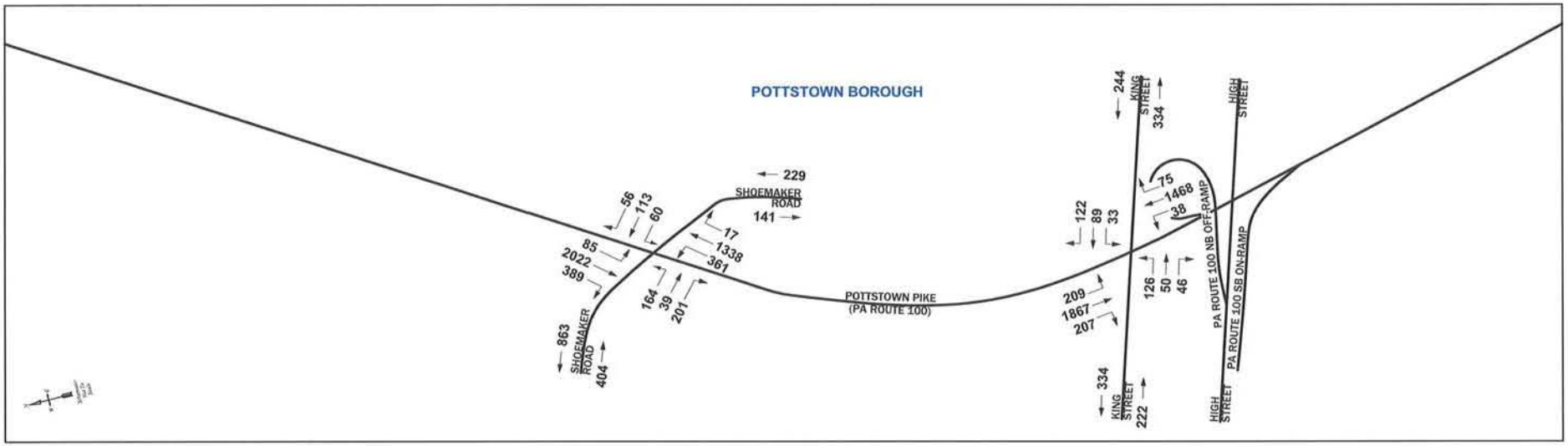
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
5/6/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 3 OF 9



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DRWN. BY JMW
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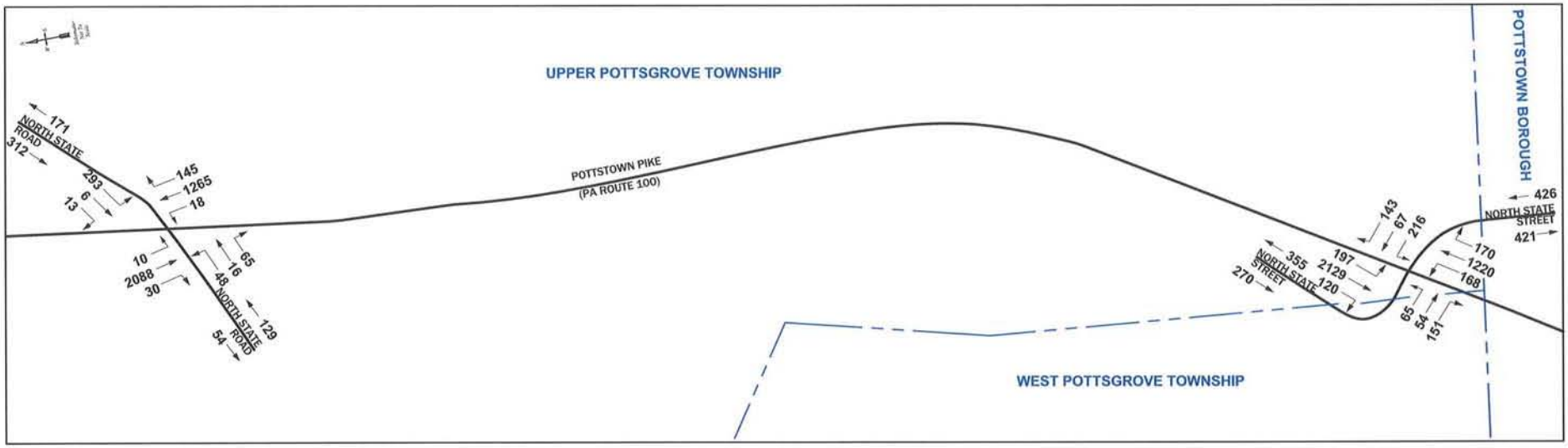
APPRD. BY CJW

DATE OF PLAN
5/6/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 4 OF 9



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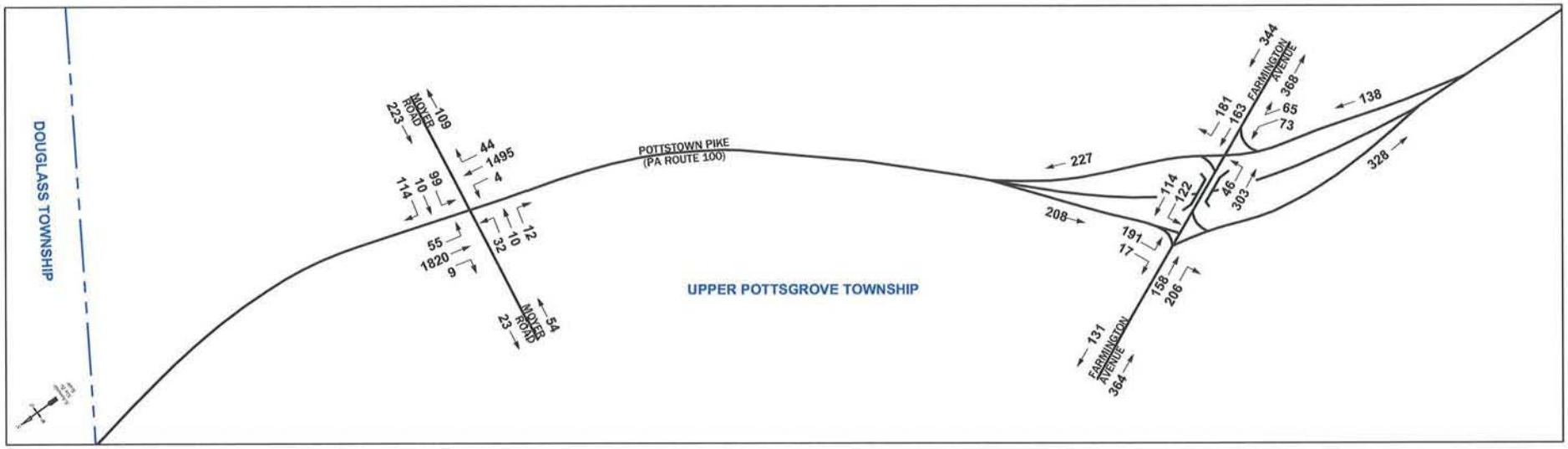
CHESTER, MONTGOMERY AND BERKS COUNTIES

2020 FUTURE WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES

DRWN. BY JMW
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
5/6/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 5 OF 9



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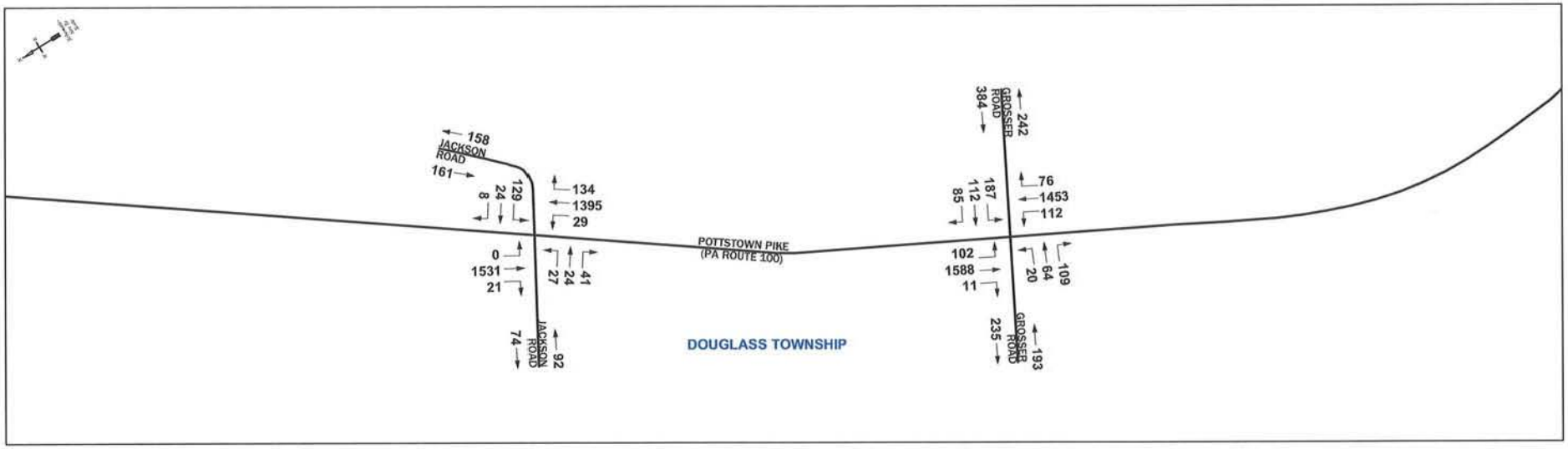
PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

2020 FUTURE WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES

DRWN. BY JMW
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
5/6/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 6 OF 9



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DELAWARE VALLEY REGIONAL PLANNING COMMISSION

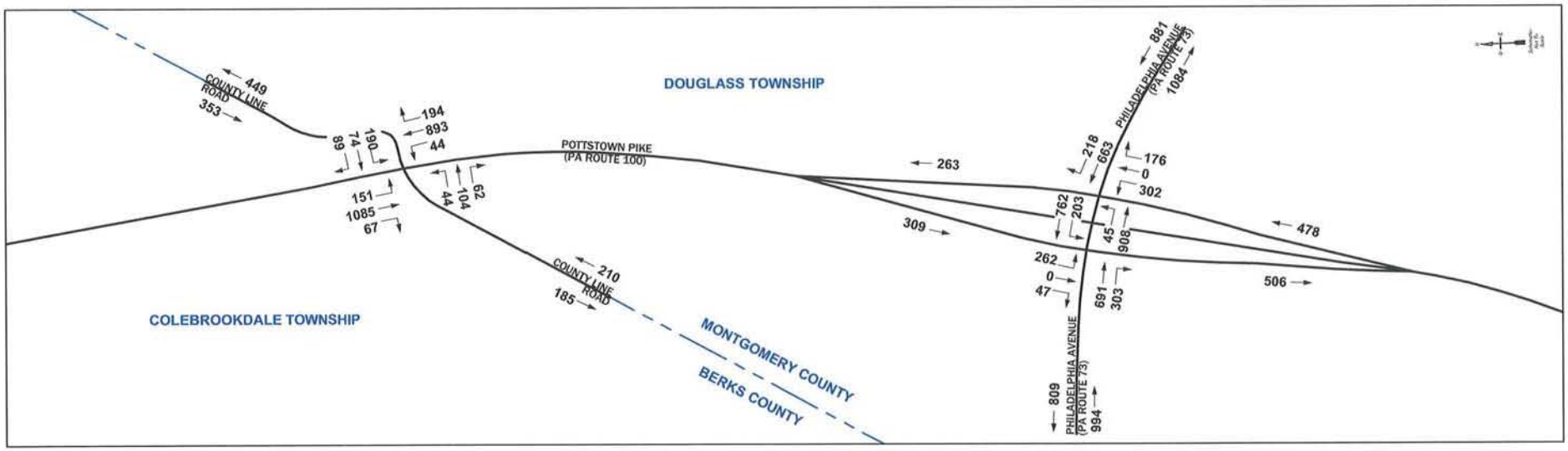
PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

2020 FUTURE WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES

DRWN. BY JMW
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
5/6/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 7 OF 9



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DELAWARE VALLEY REGIONAL PLANNING COMMISSION

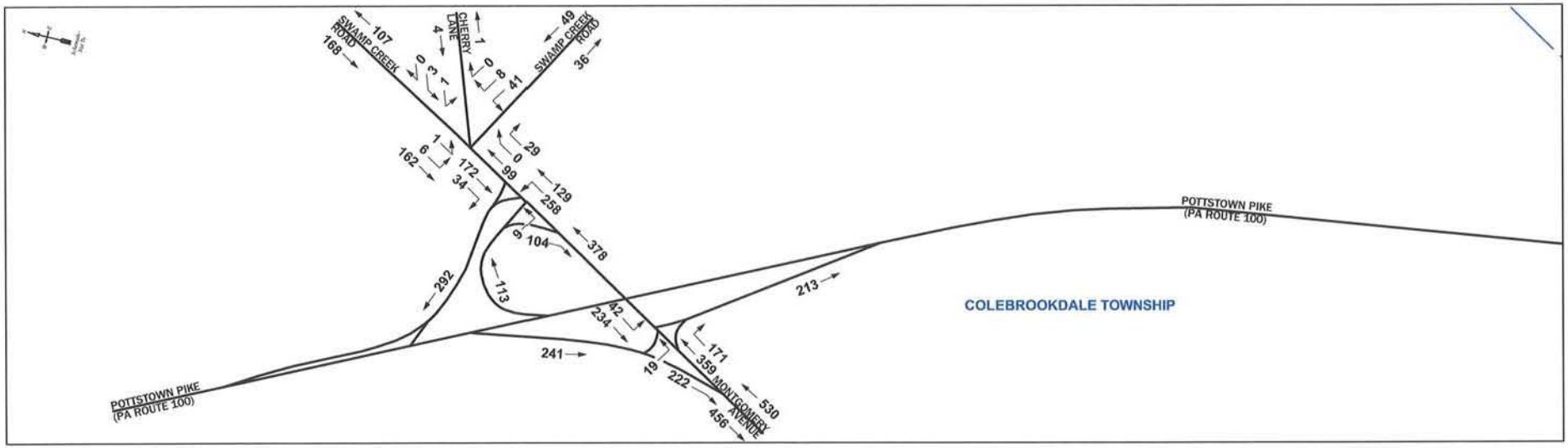
PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

2020 FUTURE WEEKDAY MORNING PEAK HOUR TRAFFIC VOLUMES

DRWN. BY JMW
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
5/6/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 8 OF 9



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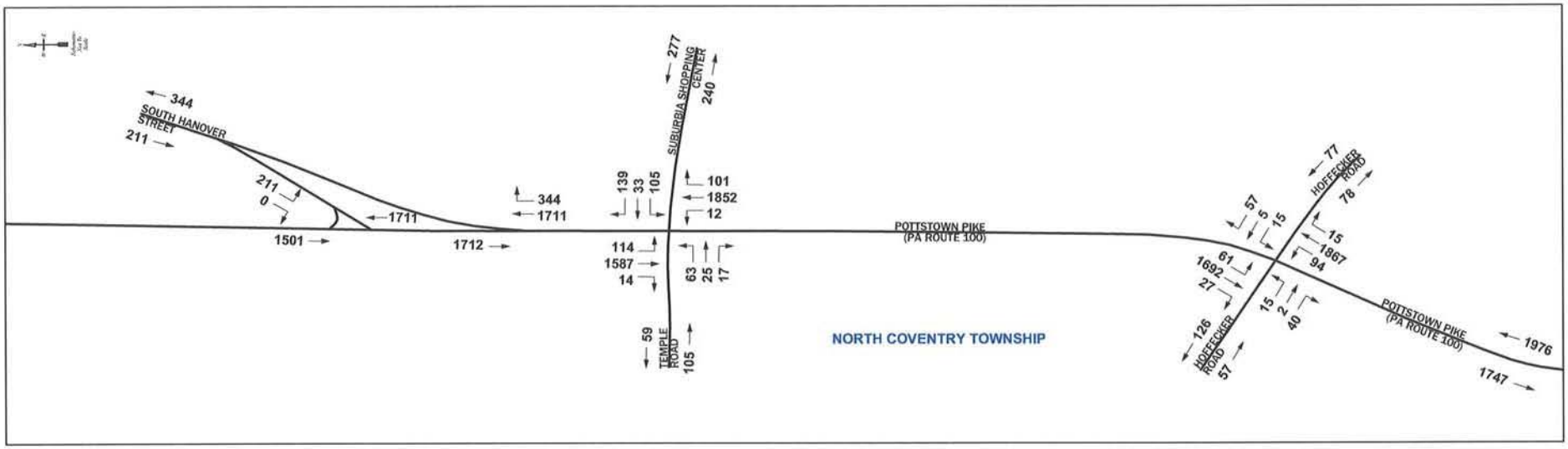
JOB # 807740.11
DWG # 9 OF 9



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5/6/08

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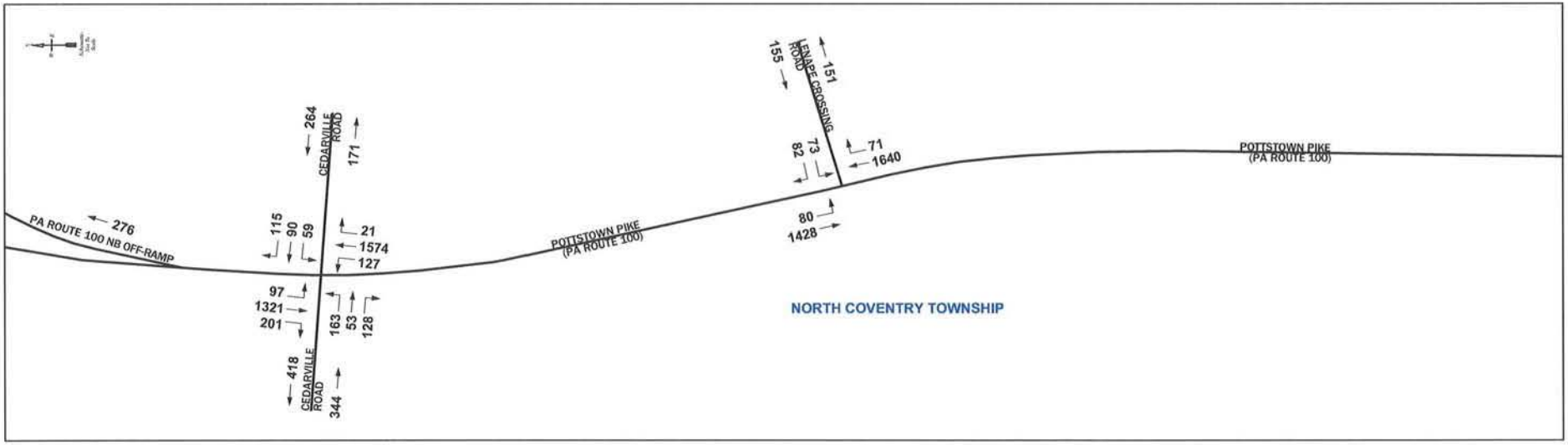
JOB # 807740.11
DWG # 1 OF 9



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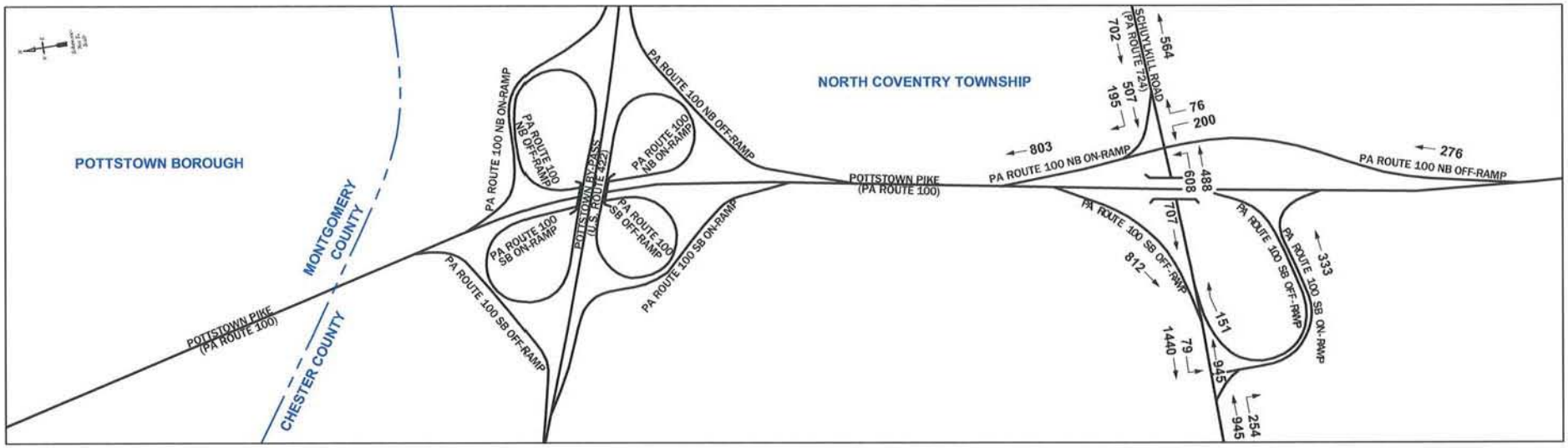
DWG # 2 OF 9



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CHESTER, MONTGOMERY AND BERKS COUNTIES

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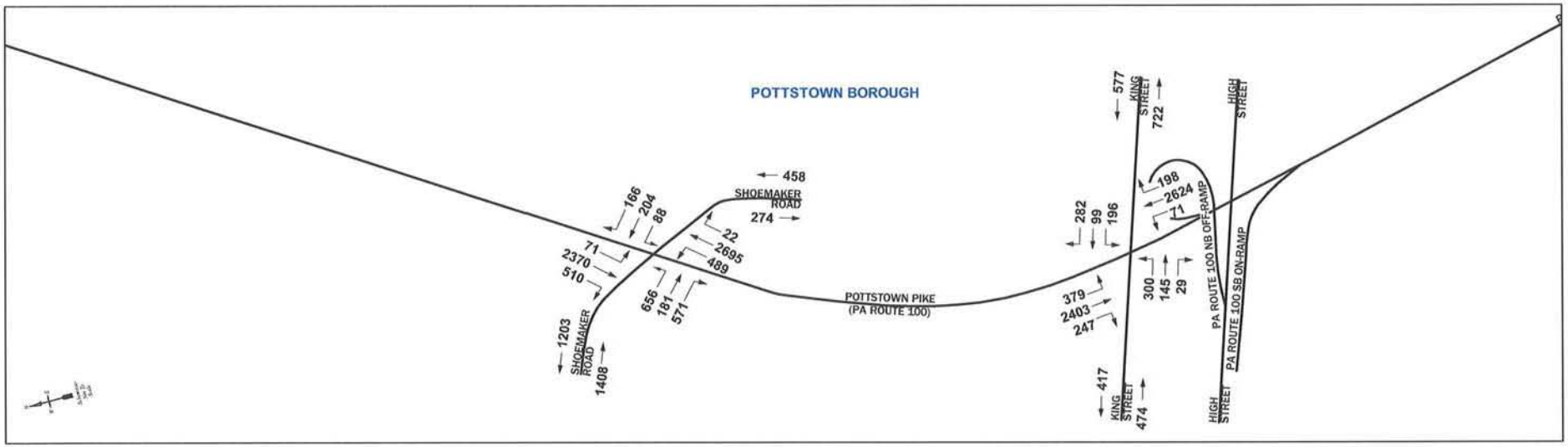
DATE OF PLAN
5/6/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 3 OF 9



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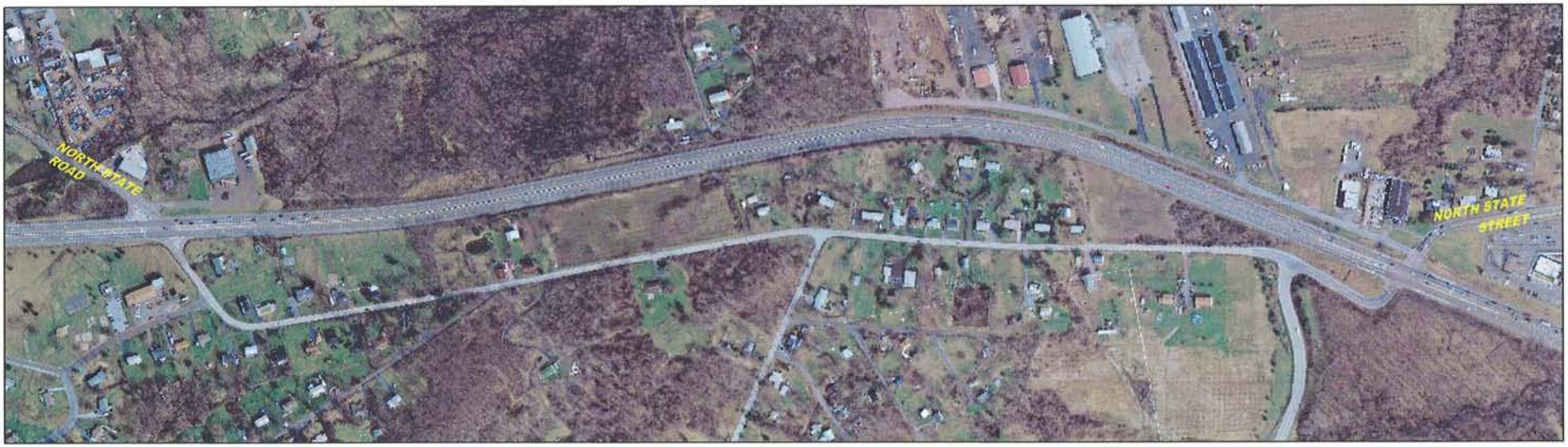
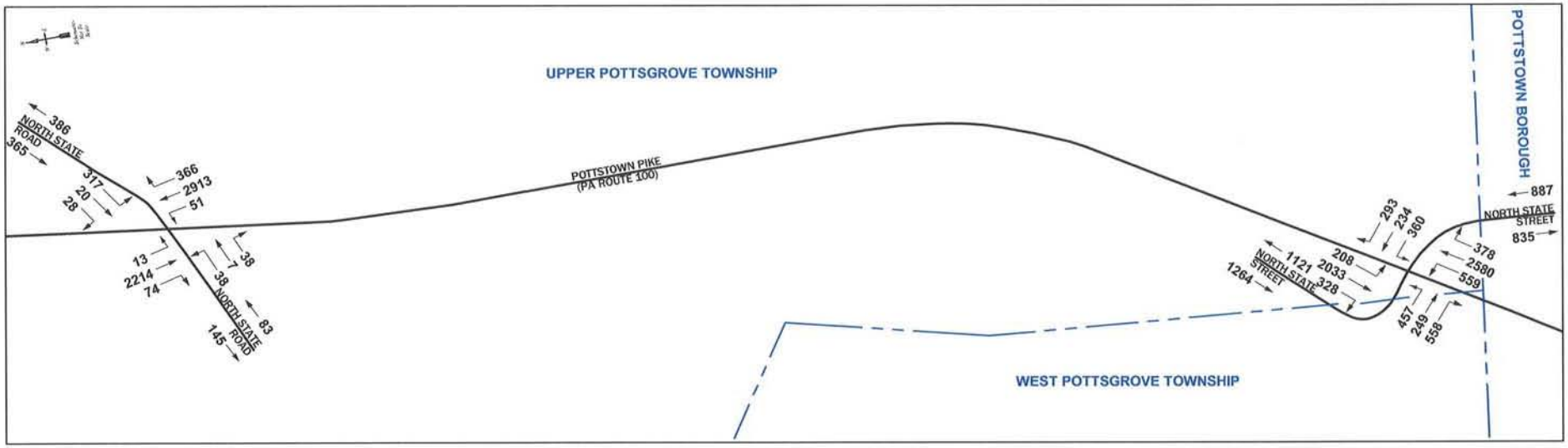
DWG # 4 OF 9





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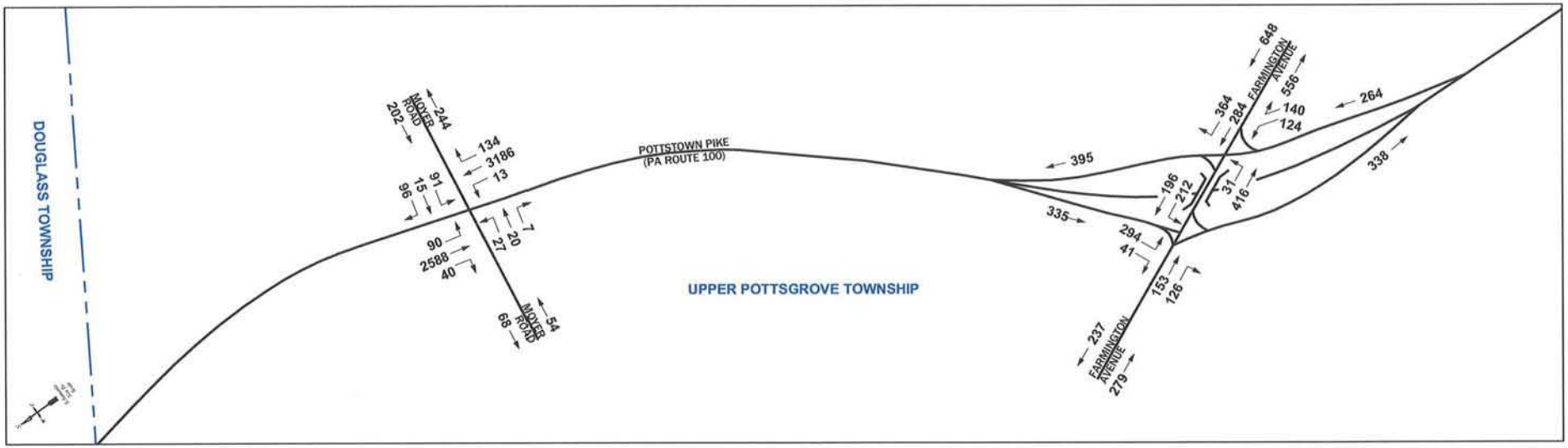
DWG # 5 OF 9



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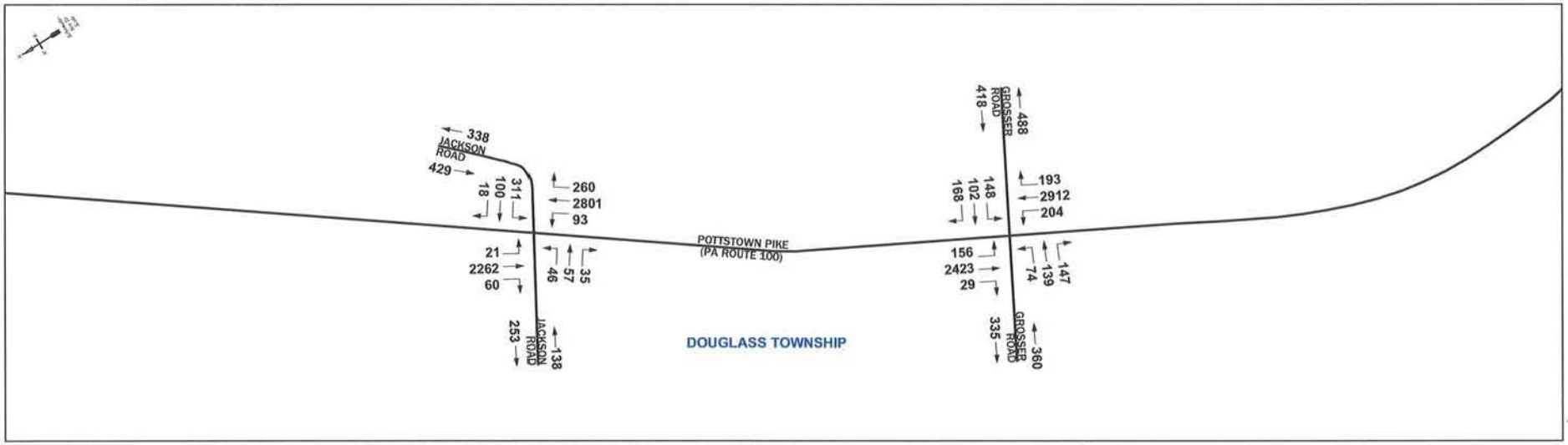
5/6/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 6 OF 9



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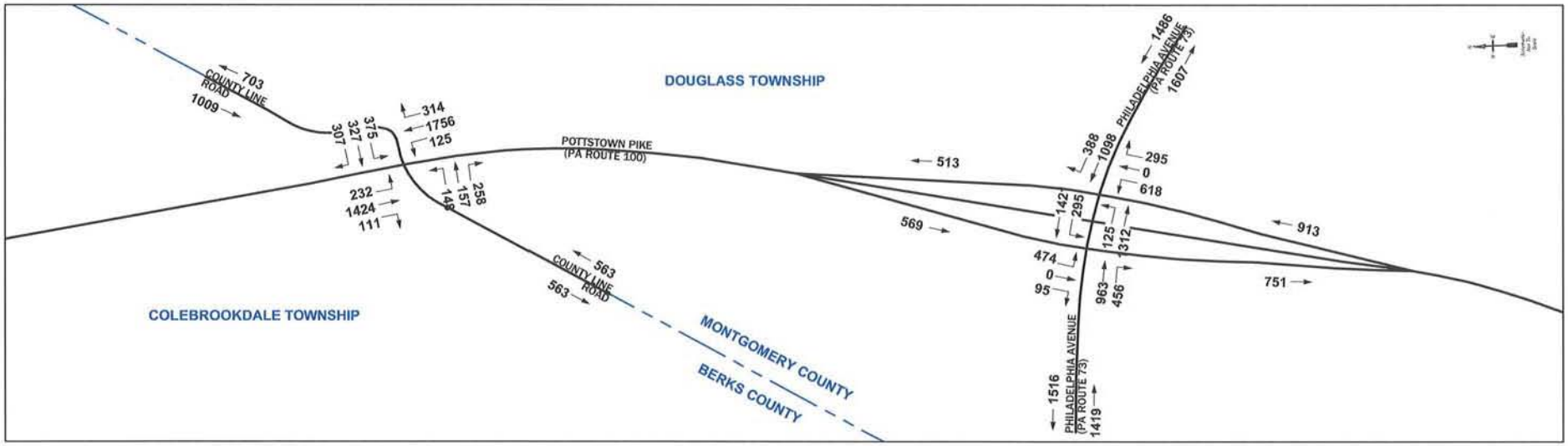
JOB # 807740.11
DWG # 7 OF 9



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PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

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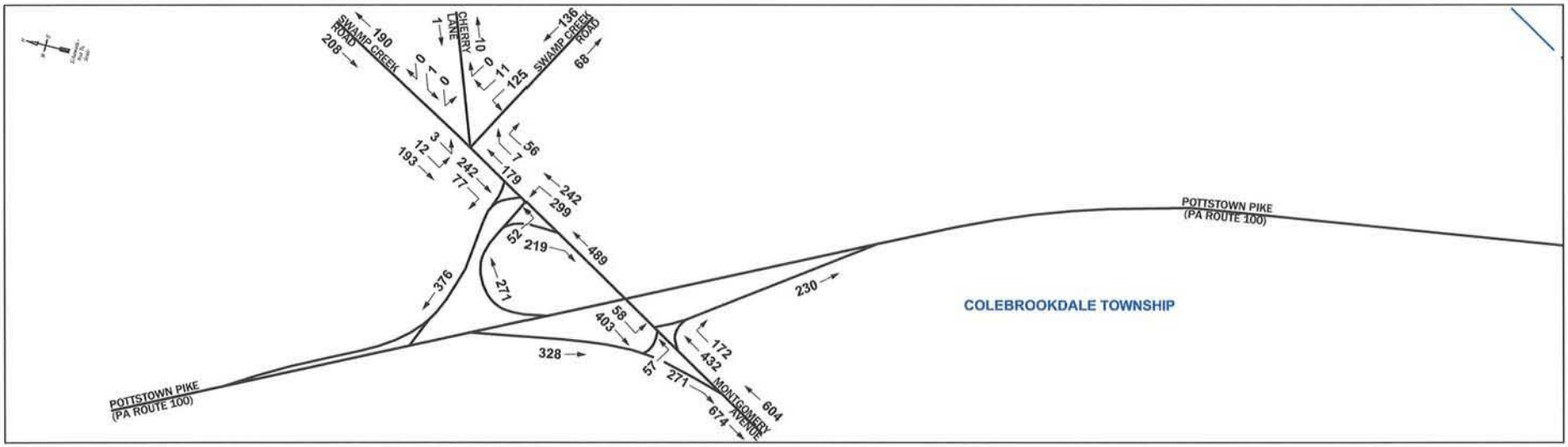
DWG # 8 OF 9



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PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

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JOB # 807740.11
DWG # 9 OF 9

Supplemental Intersections: High Street and King Street Area

2020 Future Weekday Morning Peak Hour Traffic Volumes

Map prepared by McMahon Transportation Engineers and Planners

Delaware Valley Regional Planning Commission
PA Route 100 Transportation Plan

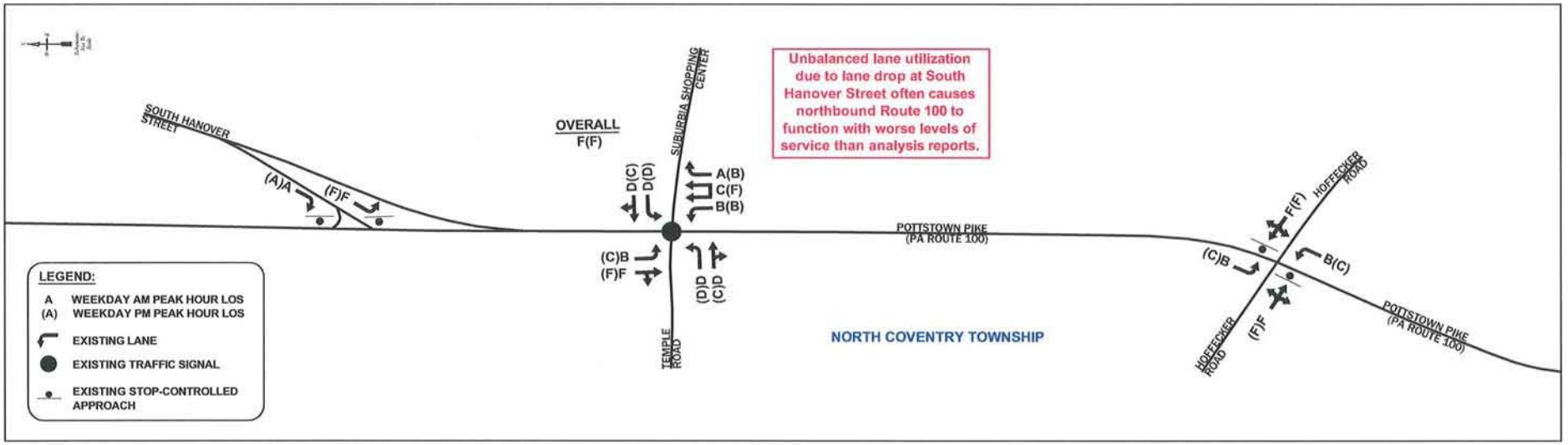
2020 Future Weekday Afternoon Peak Hour Traffic Volumes

Map prepared by McMahon Transportation Engineers and Planners

Delaware Valley Regional Planning Commission
PA Route 100 Transportation Plan

APPENDIX E

Future Levels of Service Without Improvements



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DELAWARE VALLEY REGIONAL PLANNING COMMISSION

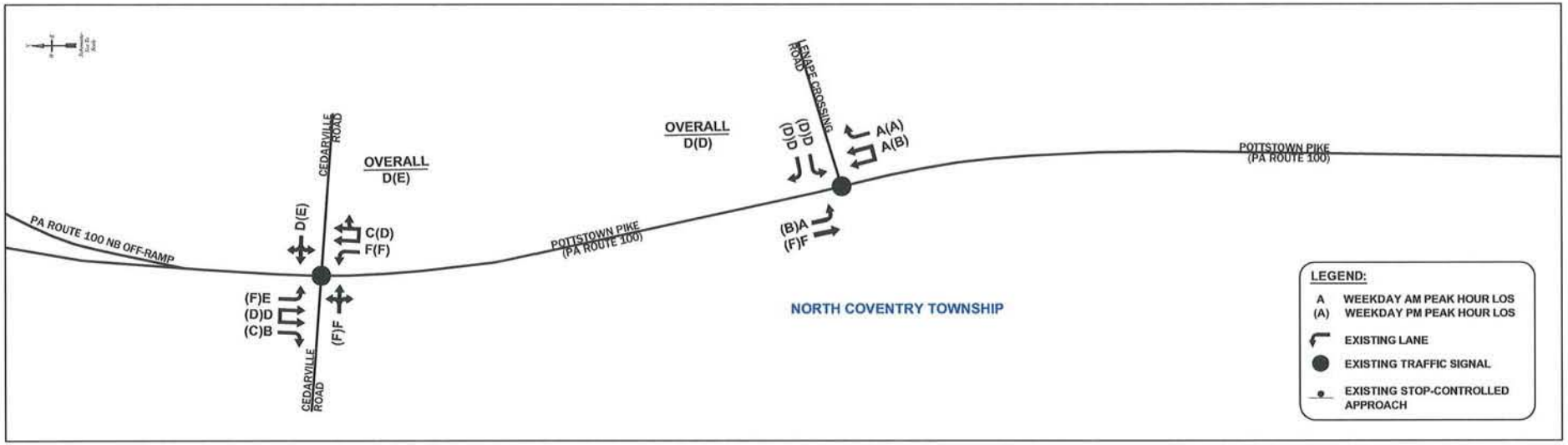
PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

FUTURE "DO NOTHING" LEVELS OF SERVICE

DRWN. BY JMW
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
6/25/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 1 OF 9



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DELAWARE VALLEY REGIONAL PLANNING COMMISSION

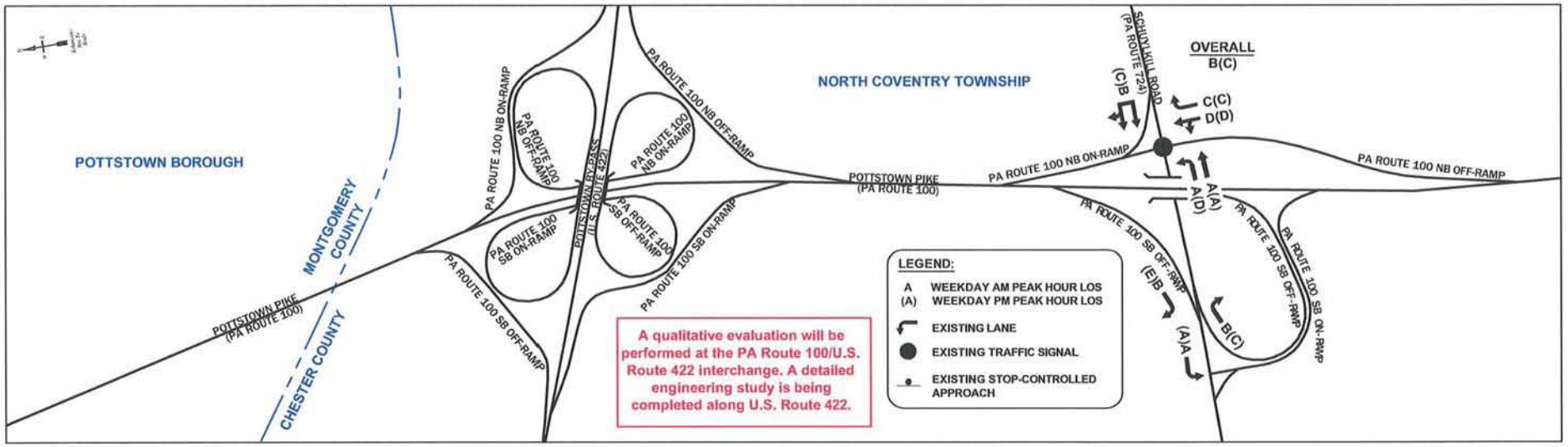
PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

FUTURE "DO NOTHING" LEVELS OF SERVICE

DRWN. BY JMW
CHKD. BY CJW
APPRD. BY CJW

DATE OF PLAN
6/25/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 2 OF 9



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PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

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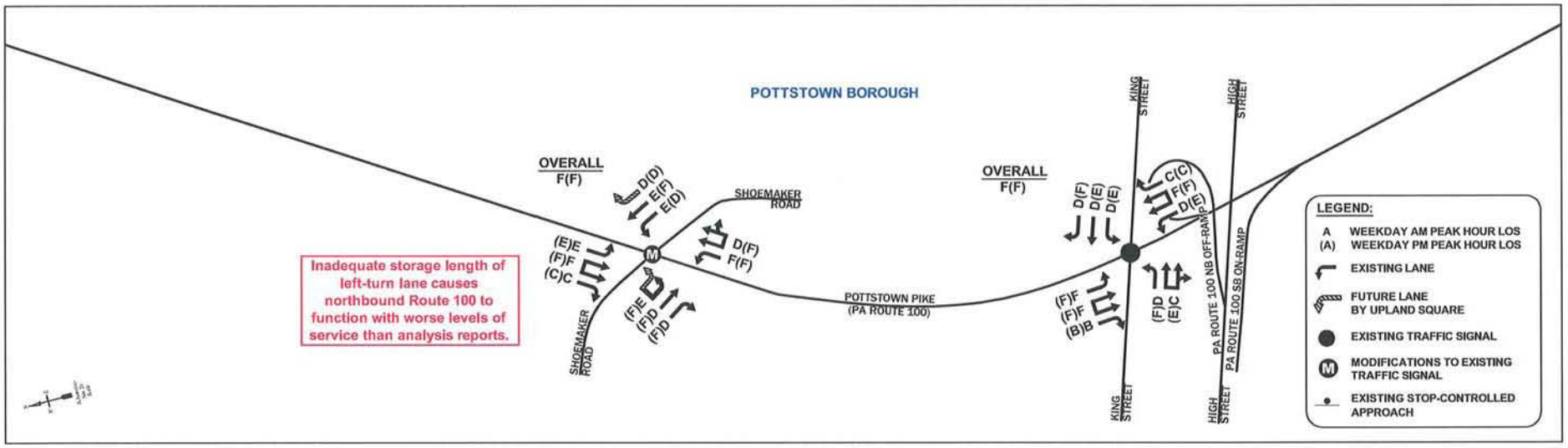
APPRD. BY CJW

DATE OF PLAN
6/25/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 3 OF 9



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CHESTER, MONTGOMERY AND BERKS COUNTIES

FUTURE "DO NOTHING" LEVELS OF SERVICE

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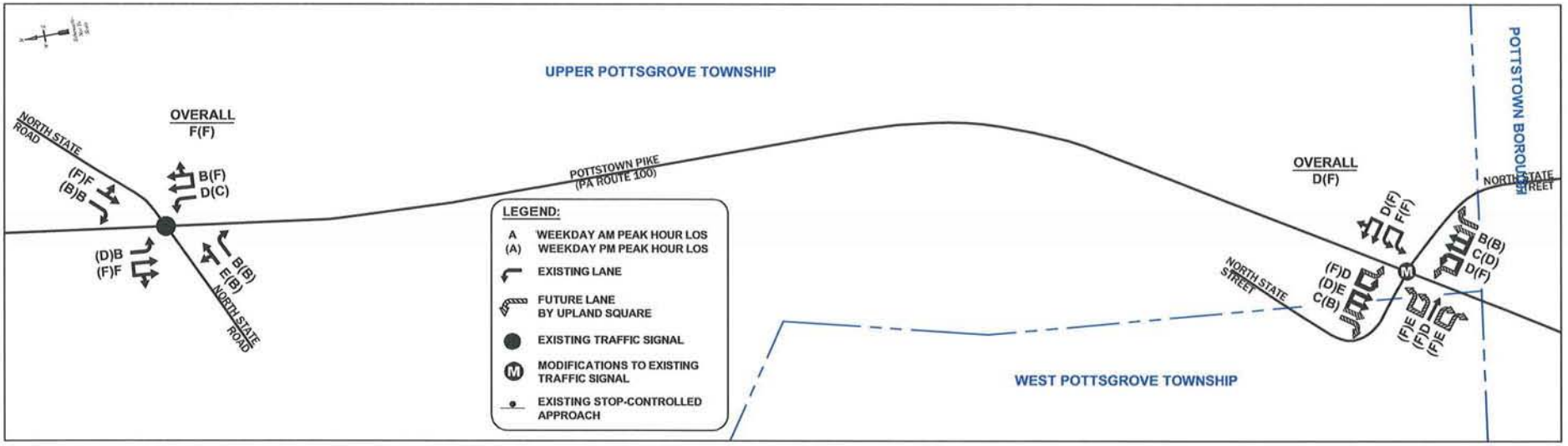
SCALE: 1" = 400'
JOB # 807740.11
DWG # 4 OF 9



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CHESTER, MONTGOMERY AND BERKS COUNTIES

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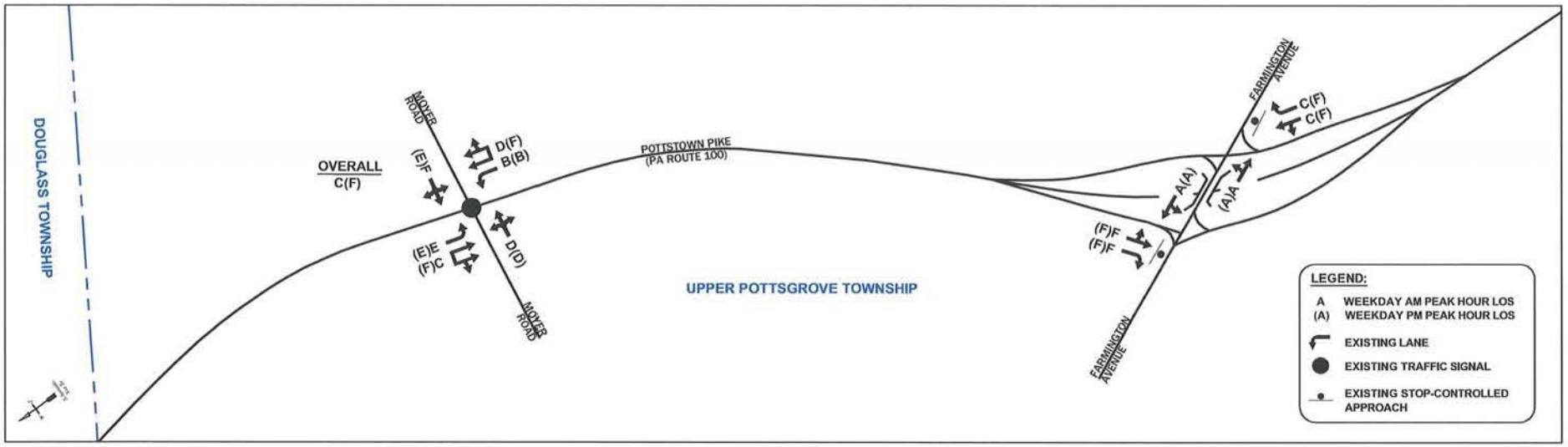
DWG # 5 OF 9



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CHESTER, MONTGOMERY AND BERKS COUNTIES

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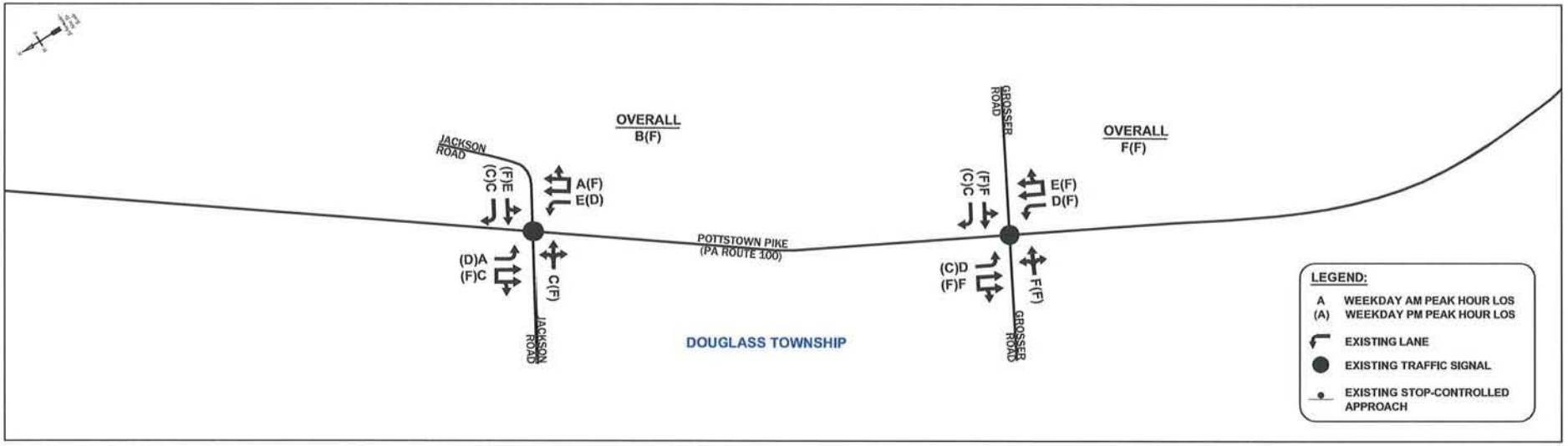

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DELAWARE VALLEY REGIONAL PLANNING COMMISSION

PA ROUTE 100 TRANSPORTATION PLAN
CHESTER, MONTGOMERY AND BERKS COUNTIES

FUTURE "DO NOTHING" LEVELS OF SERVICE

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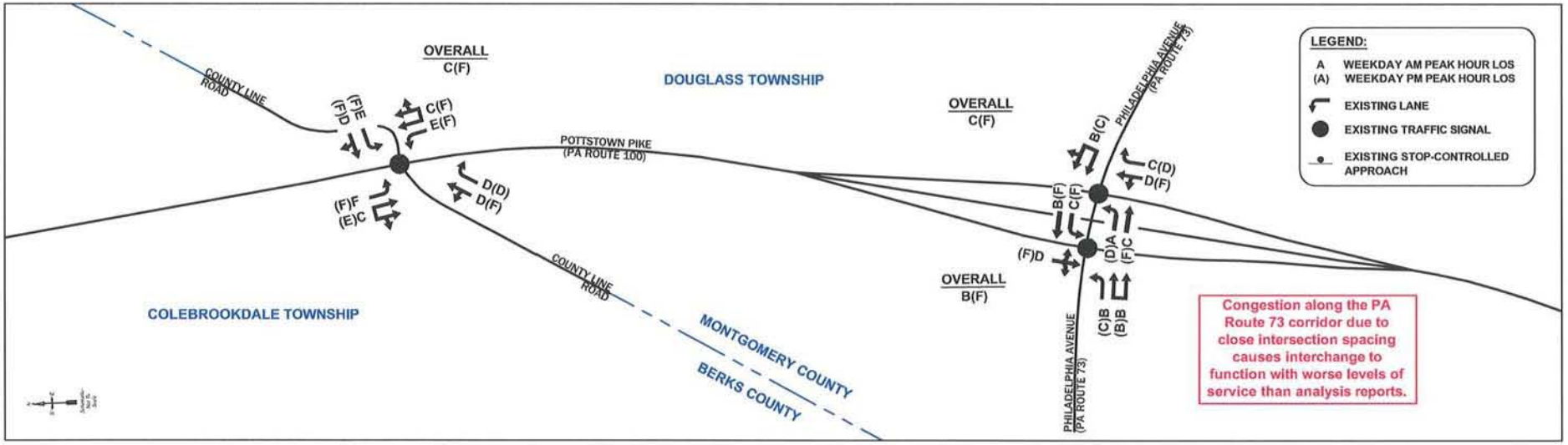
DWG # 7 OF 9



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CHESTER, MONTGOMERY AND BERKS COUNTIES

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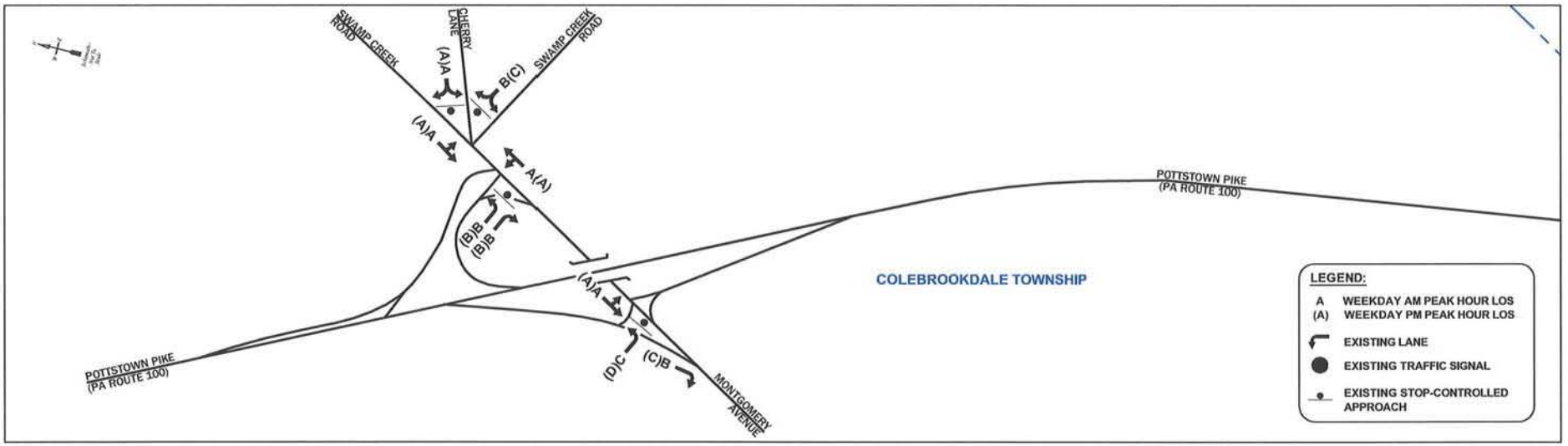

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CHESTER, MONTGOMERY AND BERKS COUNTIES

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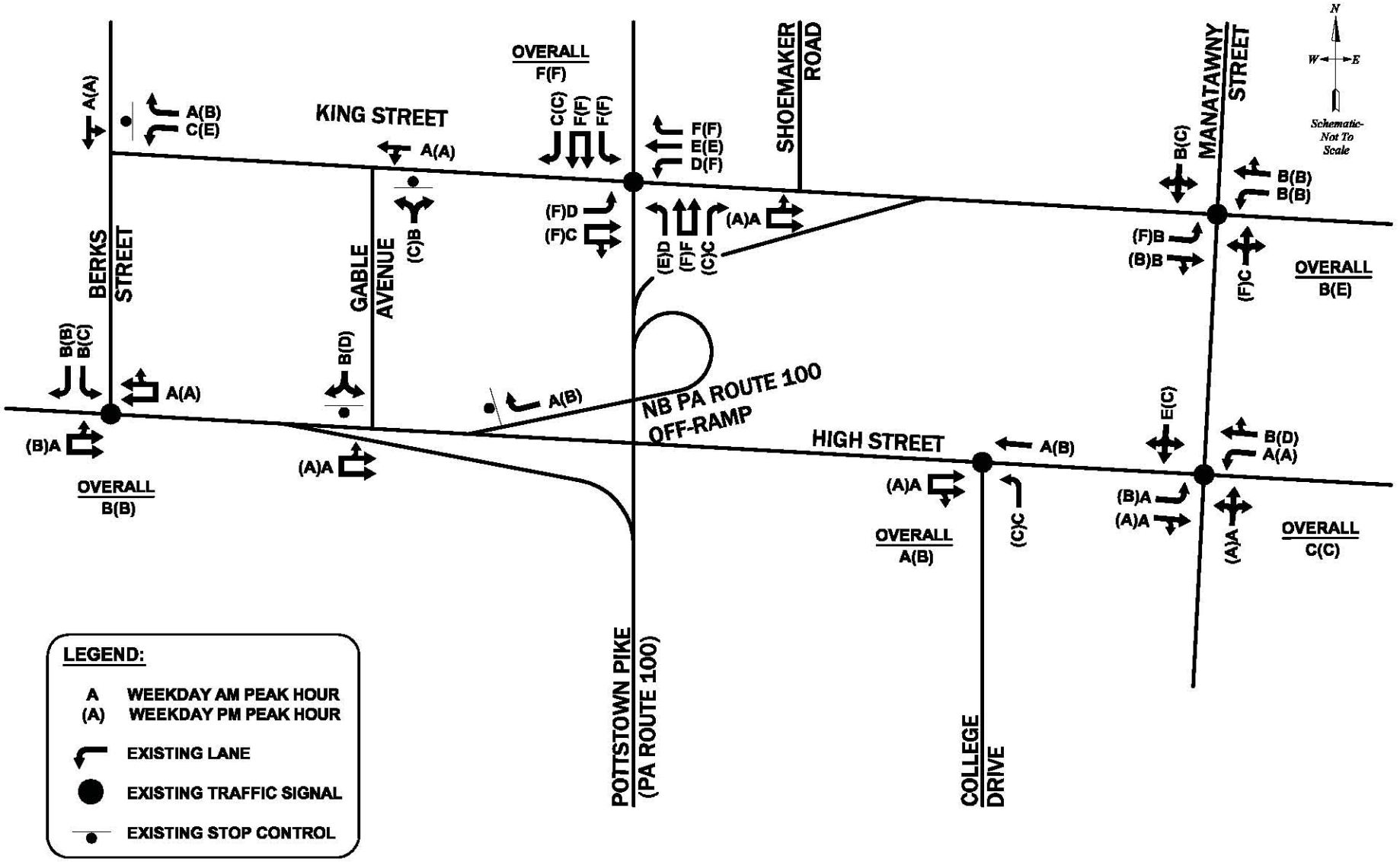
APPRD. BY CJW

DATE OF PLAN
6/25/08

SCALE: 1" = 400'
JOB # 807740.11
DWG # 9 OF 9

Supplemental analysis of the High Street and King Street Area



LEGEND:

- A / (A) — WEEKDAY AM PEAK HOUR / WEEKDAY PM PEAK HOUR
- EXISTING LANE
- EXISTING TRAFFIC SIGNAL
- EXISTING STOP CONTROL

HIGH STREET AND KING STREET AREA SUPPLEMENT

2020 Future "Do Nothing" Peak Hour Levels of Service

PA ROUTE 100 TRANSPORTATION PLAN

POTTSTOWN BOROUGH, MONTGOMERY COUNTY, PA

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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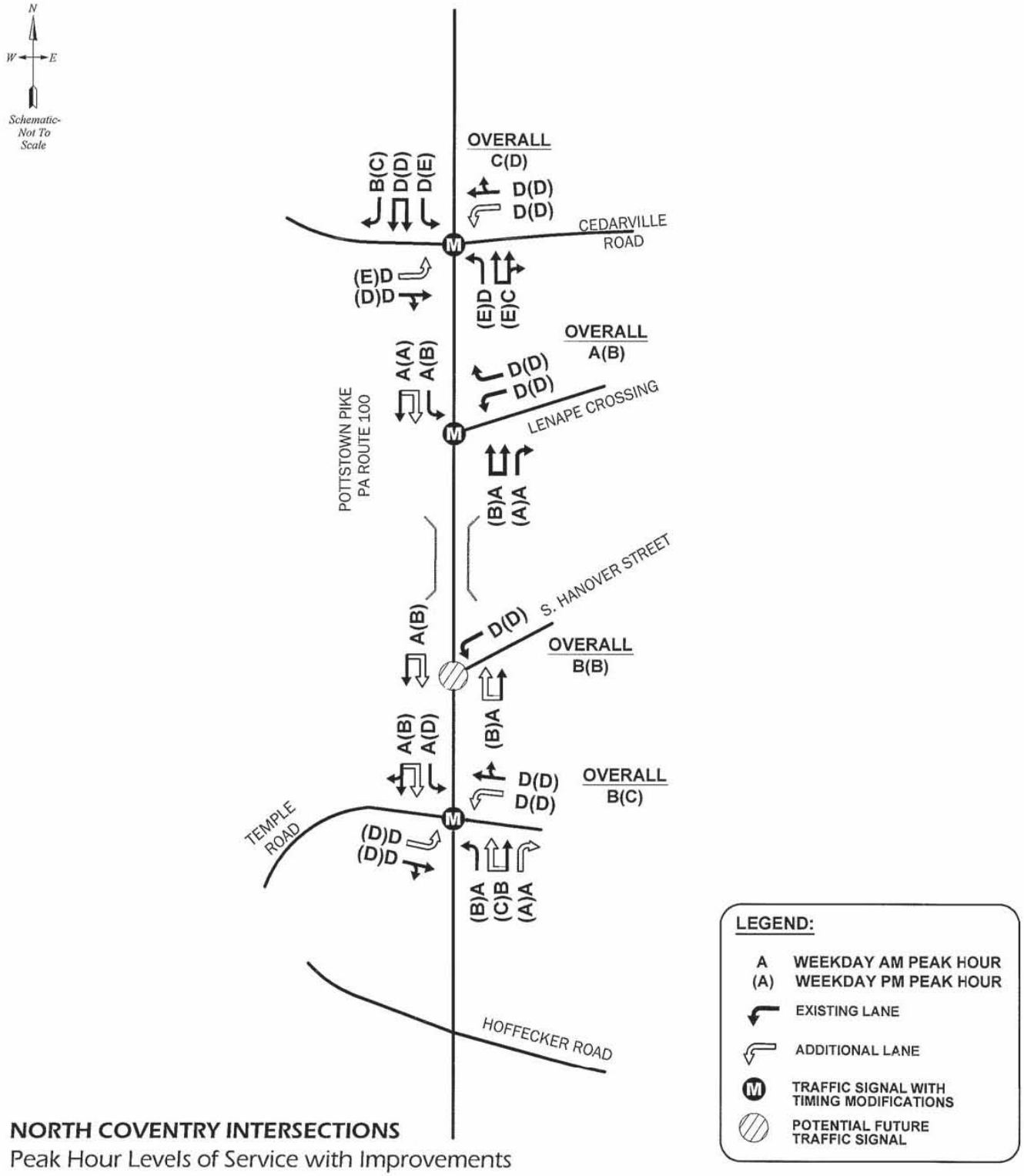
APPENDIX F

Future Levels of Service With Improvements - Various Scenarios



NORTH COVENTRY INTERSECTIONS

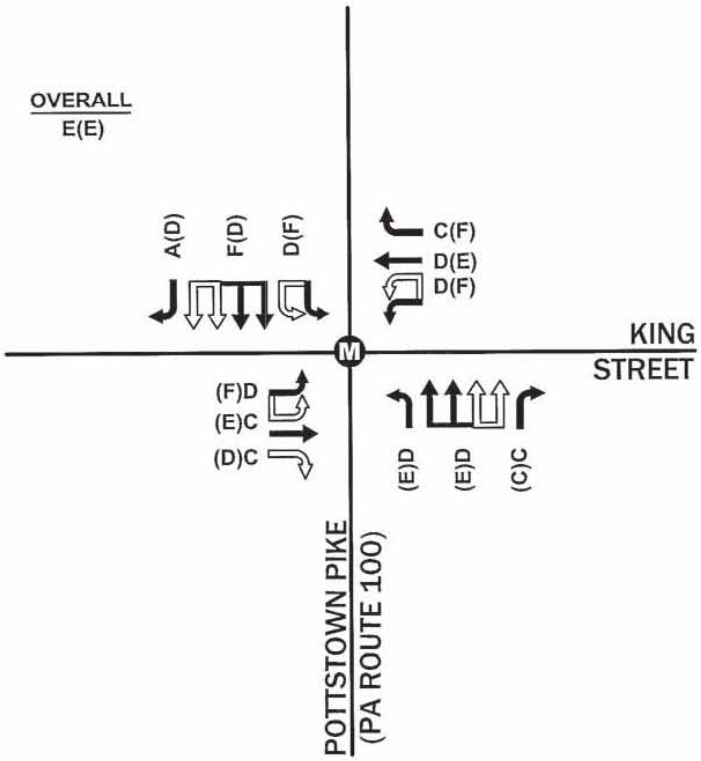
Peak Hour Levels of Service with Improvements

PA ROUTE 100 TRANSPORTATION PLAN

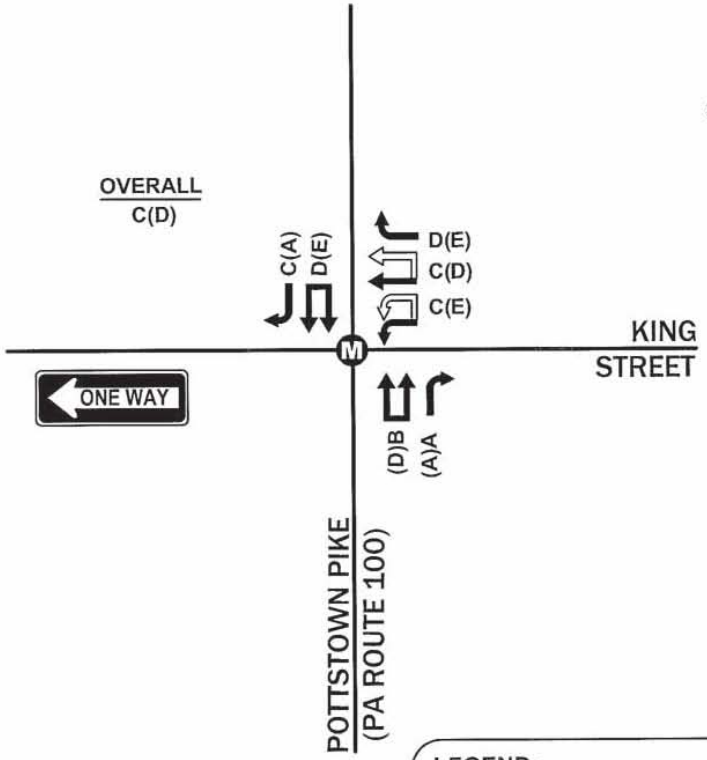
CHESTER, MONTGOMERY, AND BERKS COUNTIES, PA

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

CONVENTIONAL IMPROVEMENTS



ALTERNATIVE IMPROVEMENTS: MOVEMENT RESTRICTIONS



SCHEMATIC-
NOT TO
SCALE

LEGEND:

- A — WEEKDAY AM PEAK HOUR
- (A) — WEEKDAY PM PEAK HOUR
- EXISTING LANE
- FUTURE LANE
- M — TRAFFIC SIGNAL WITH TIMING MODIFICATIONS

KING STREET

Peak Hour Levels of Service With Improvements

PA ROUTE 100 TRANSPORTATION PLAN

CHESTER, MONTGOMERY, AND BERKS COUNTIES, PA

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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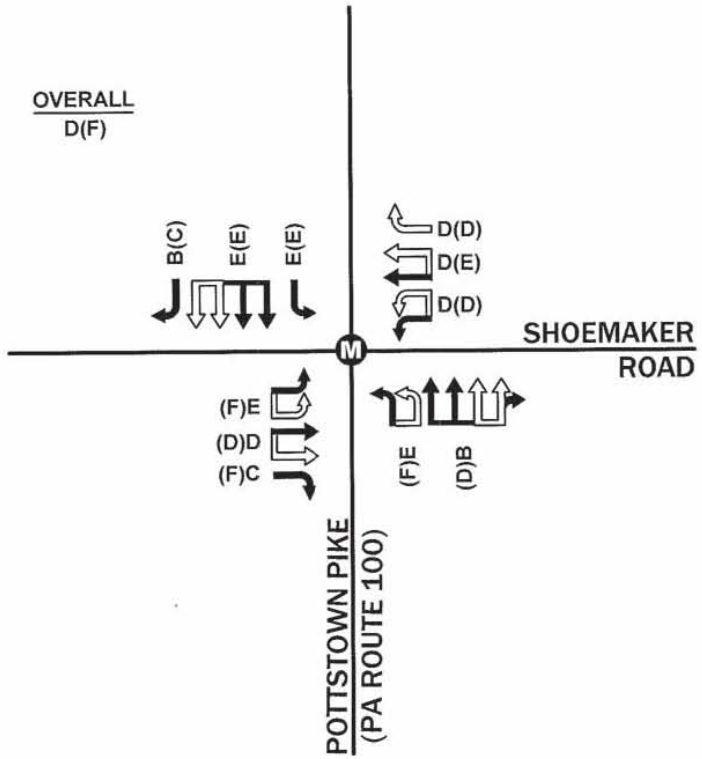
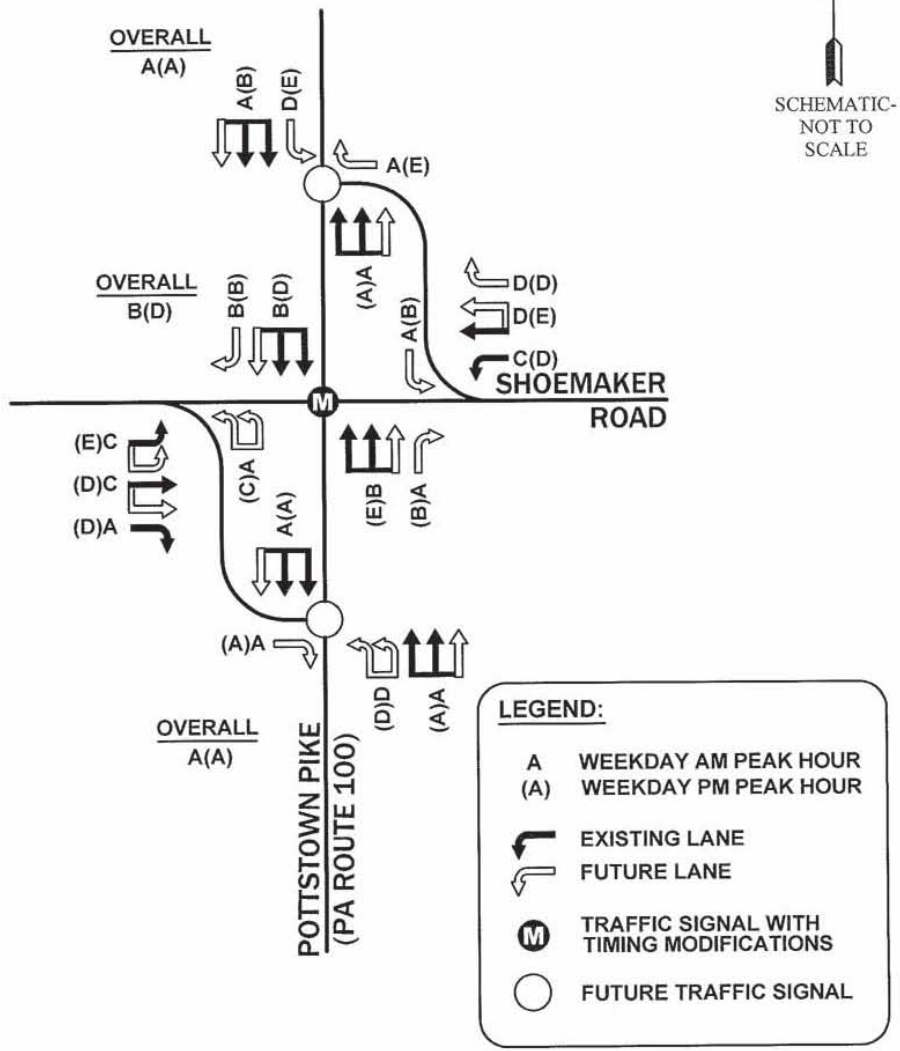
CONVENTIONAL IMPROVEMENTS



ALTERNATIVE IMPROVEMENTS: CONTINUOUS FLOW INTERSECTION



SCHEMATIC-
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SCALE

SHOEMAKER ROAD

Peak Hour Levels of Service With Improvements

PA ROUTE 100 TRANSPORTATION PLAN

CHESTER, MONTGOMERY, AND BERKS COUNTIES, PA

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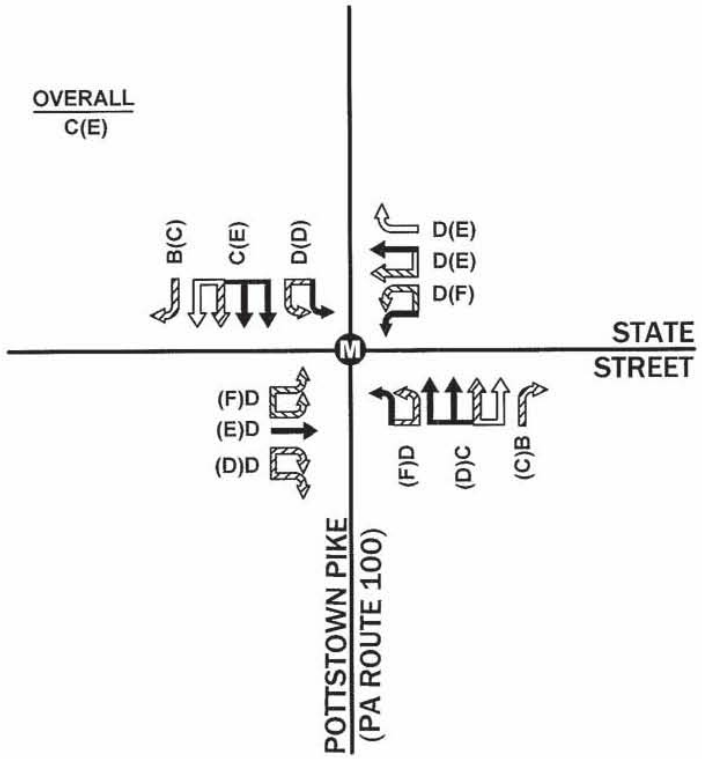
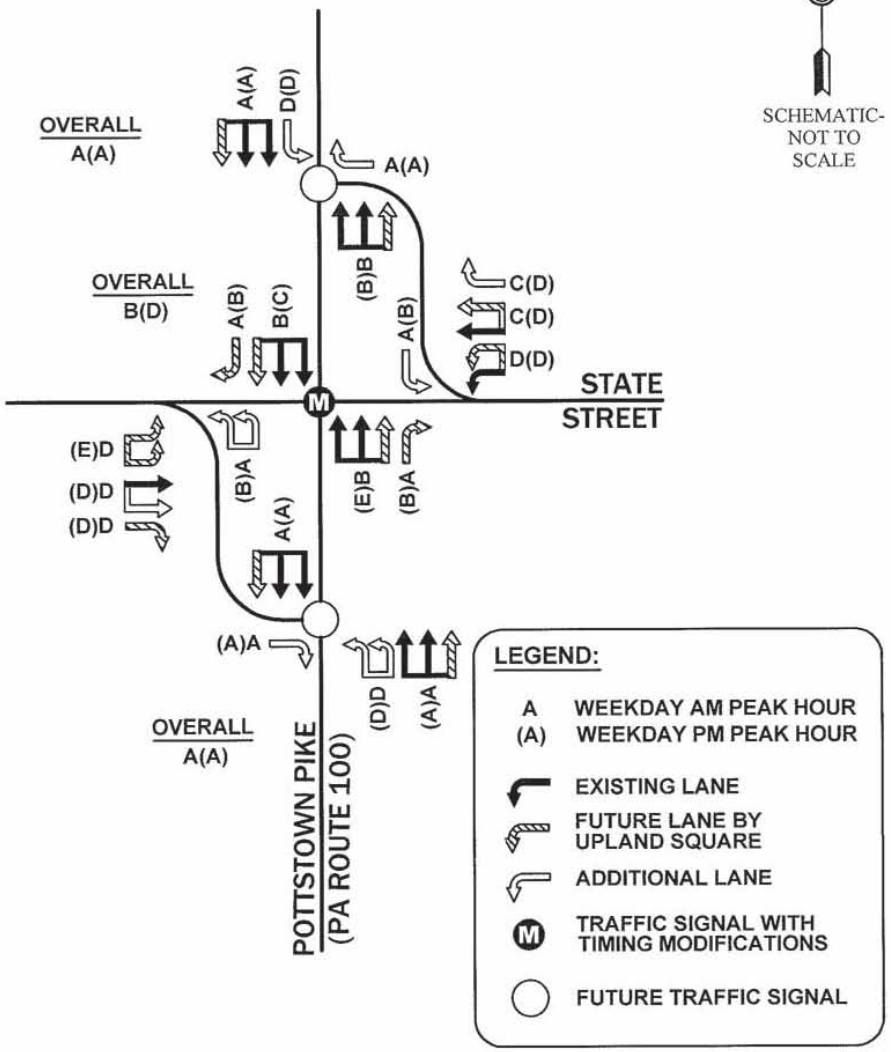
(1/11/10) I:\eng\807740\12\Dwg\Figures\Shoemaker Improvements.dwg

CONVENTIONAL IMPROVEMENTS



ALTERNATIVE IMPROVEMENTS: CONTINUOUS FLOW INTERSECTION



STATE STREET

Peak Hour Levels of Service With Improvements

PA ROUTE 100 TRANSPORTATION PLAN

CHESTER, MONTGOMERY, AND BERKS COUNTIES, PA

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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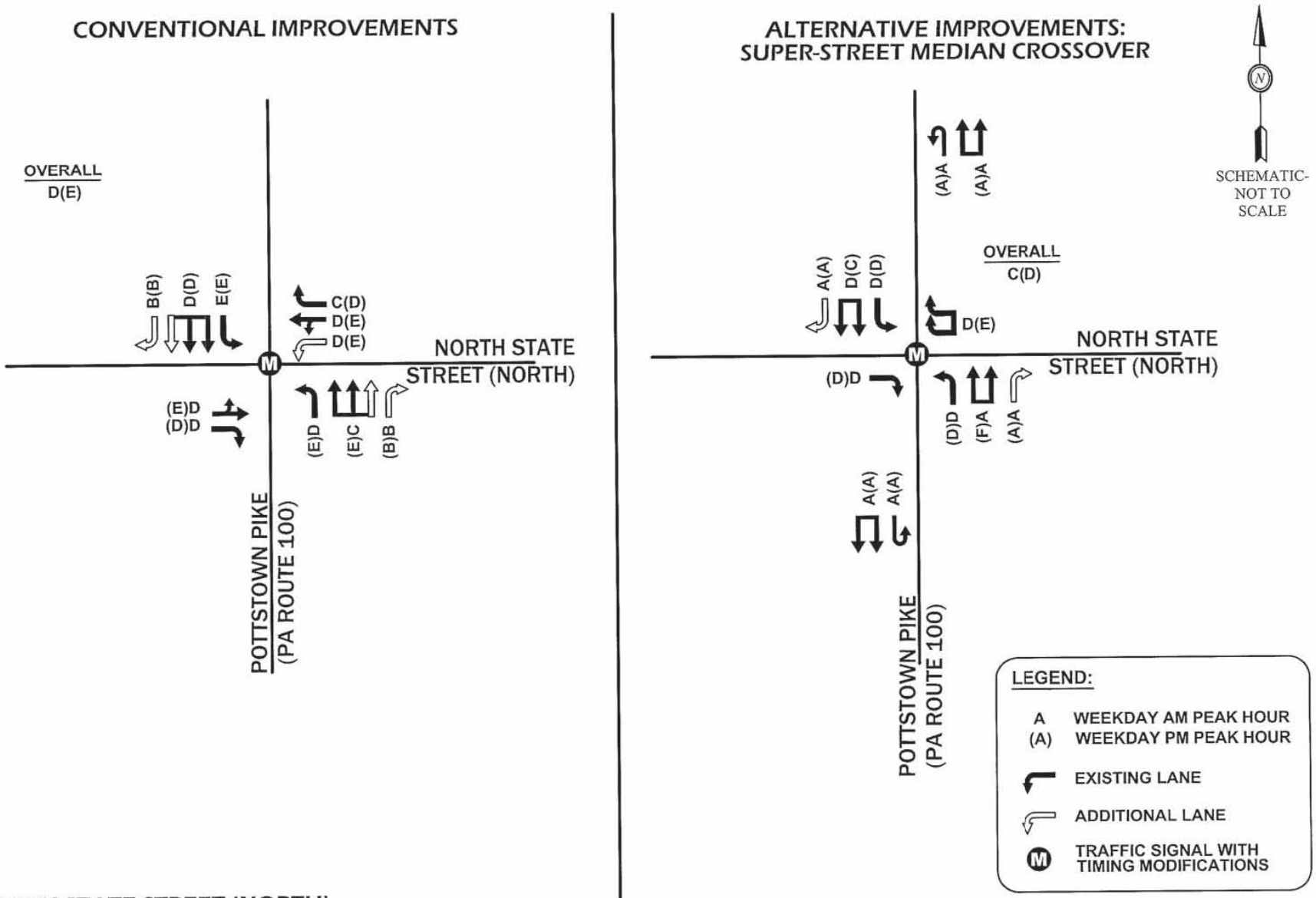

NORTH STATE STREET (NORTH)

Peak Hour Levels of Service With Improvements

PA ROUTE 100 TRANSPORTATION PLAN

CHESTER, MONTGOMERY, AND BERKS COUNTIES, PA

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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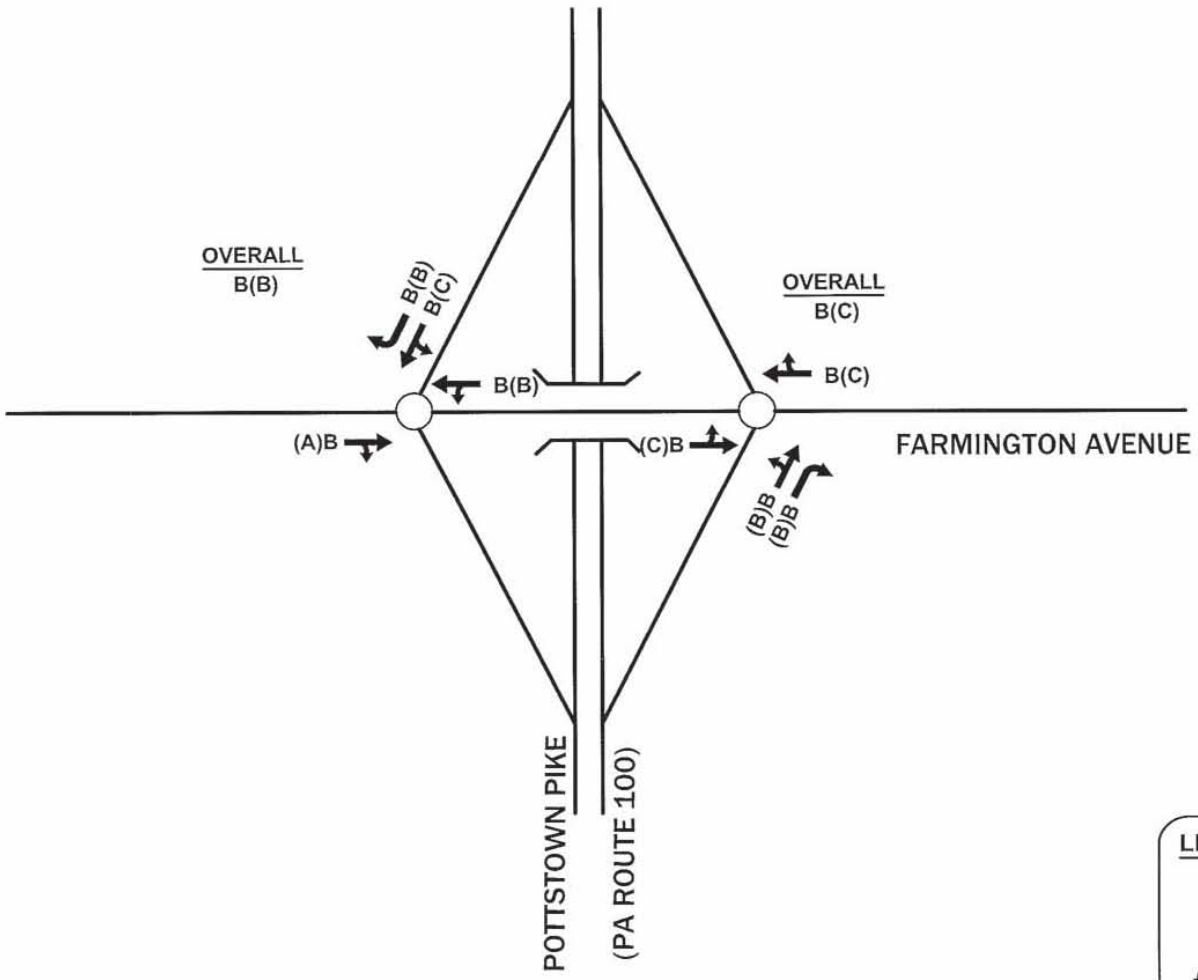

SCHEMATIC-
NOT TO
SCALE

LEGEND:

A	WEEKDAY AM PEAK HOUR
(A)	WEEKDAY PM PEAK HOUR
	EXISTING LANE
	FUTURE LANE
	FUTURE TRAFFIC SIGNAL

FARMINGTON AVENUE

Peak Hour Levels of Service With Improvements

PA ROUTE 100 TRANSPORTATION PLAN

CHESTER, MONTGOMERY, AND BERKS COUNTIES, PA

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

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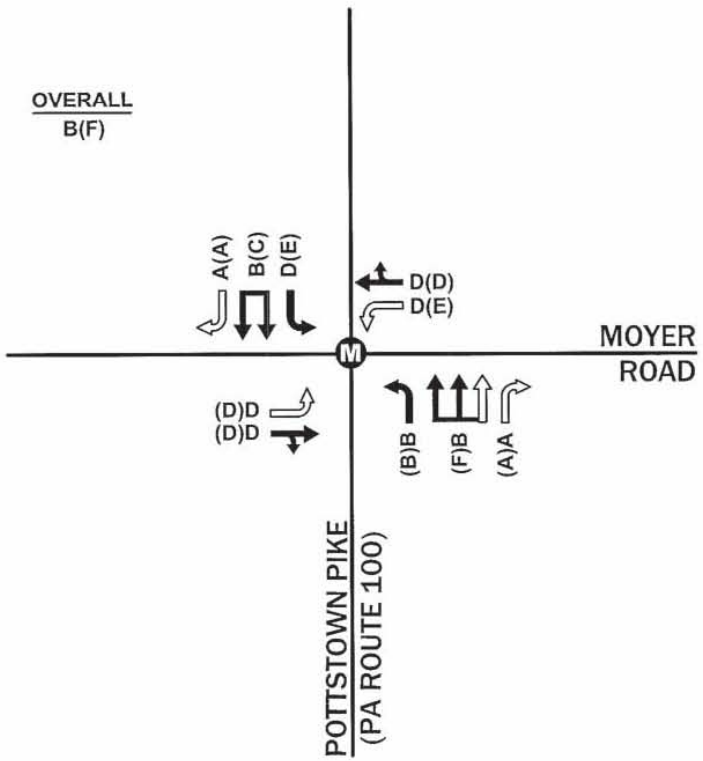
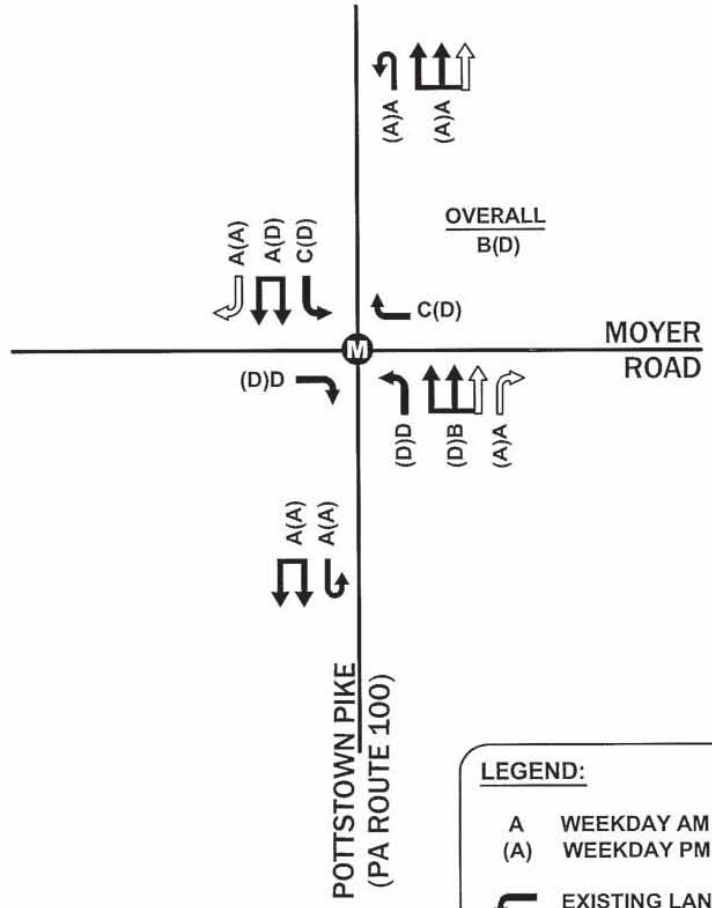
CONVENTIONAL IMPROVEMENTS



ALTERNATIVE IMPROVEMENTS: SUPER-STREET MEDIAN CROSSOVER



SCHEMATIC-
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SCALE

LEGEND:

A	WEEKDAY AM PEAK HOUR
(A)	WEEKDAY PM PEAK HOUR
	EXISTING LANE
	ADDITIONAL LANE
M	TRAFFIC SIGNAL WITH TIMING MODIFICATIONS

MOYER ROAD

Peak Hour Levels of Service With Improvements

PA ROUTE 100 TRANSPORTATION PLAN

CHESTER, MONTGOMERY, AND BERKS COUNTIES, PA

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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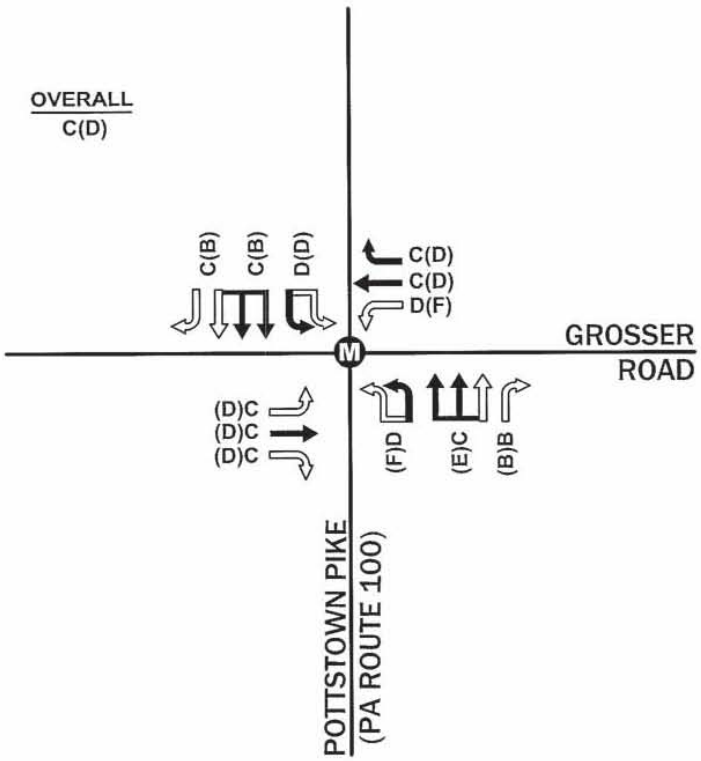
CONVENTIONAL IMPROVEMENTS



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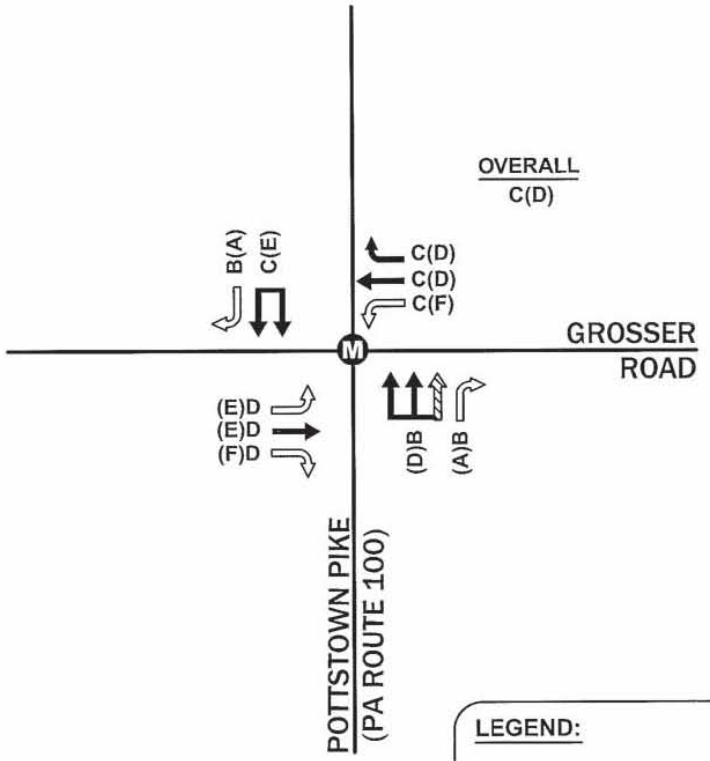

SCHEMATIC-
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SCALE

LEGEND:

A	WEEKDAY AM PEAK HOUR
(A)	WEEKDAY PM PEAK HOUR
	EXISTING LANE
	PLAN FOR FUTURE LANE
	ADDITIONAL LANE
M	TRAFFIC SIGNAL WITH TIMING MODIFICATIONS

GROSSER ROAD

Peak Hour Levels of Service With Improvements

PA ROUTE 100 TRANSPORTATION PLAN

CHESTER, MONTGOMERY, AND BERKS COUNTIES, PA

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

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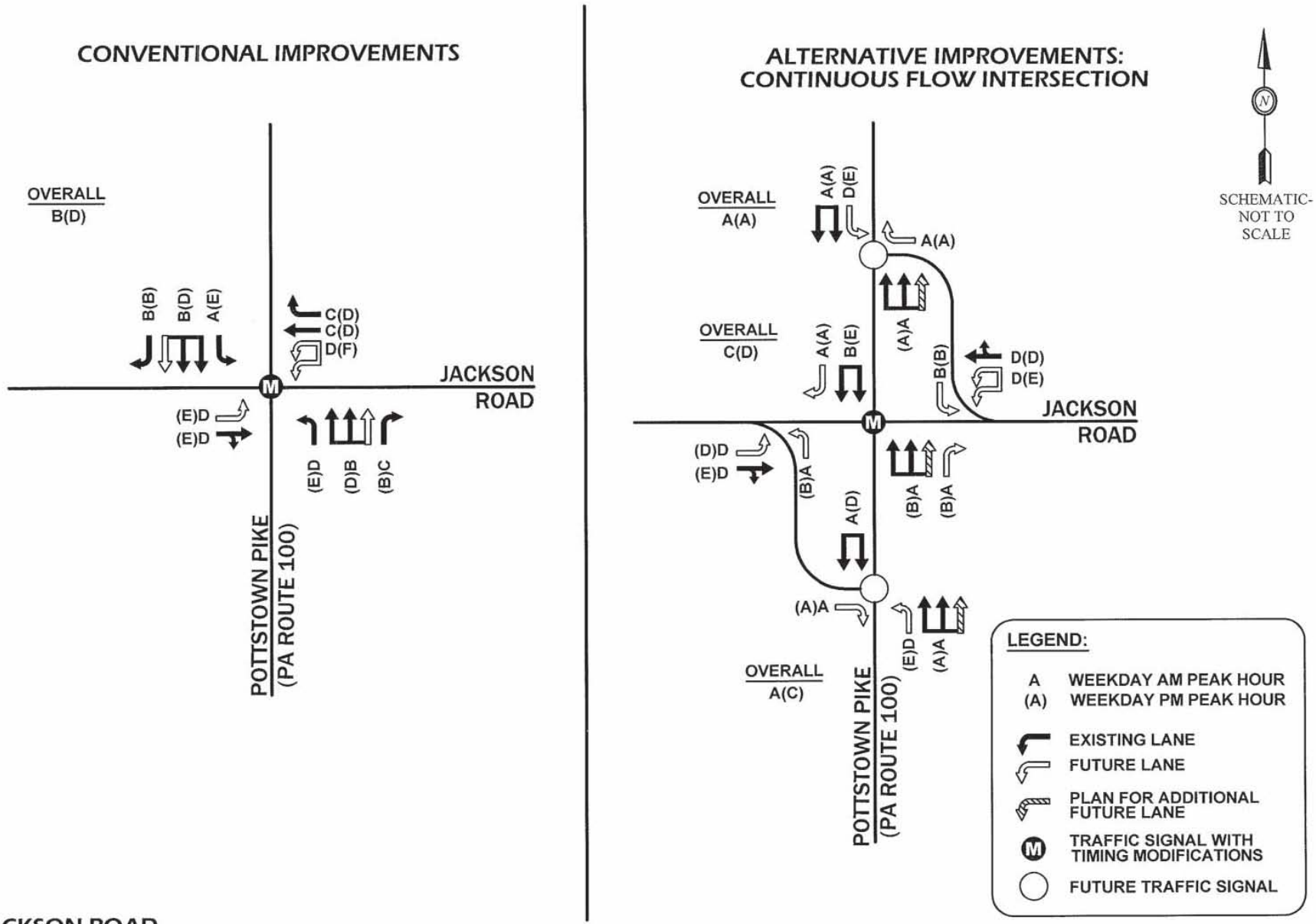

JACKSON ROAD

Peak Hour Levels of Service With Improvements

PA ROUTE 100 TRANSPORTATION PLAN

CHESTER, MONTGOMERY, AND BERKS COUNTIES, PA

McMAHON
TRANSPORTATION ENGINEERS & PLANNERS

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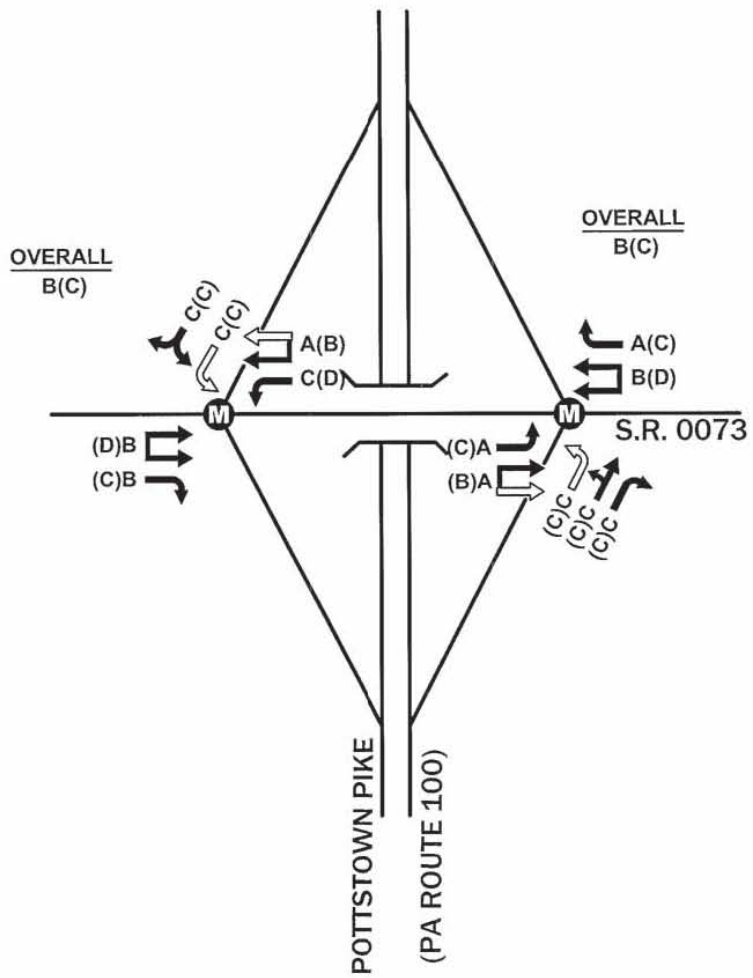
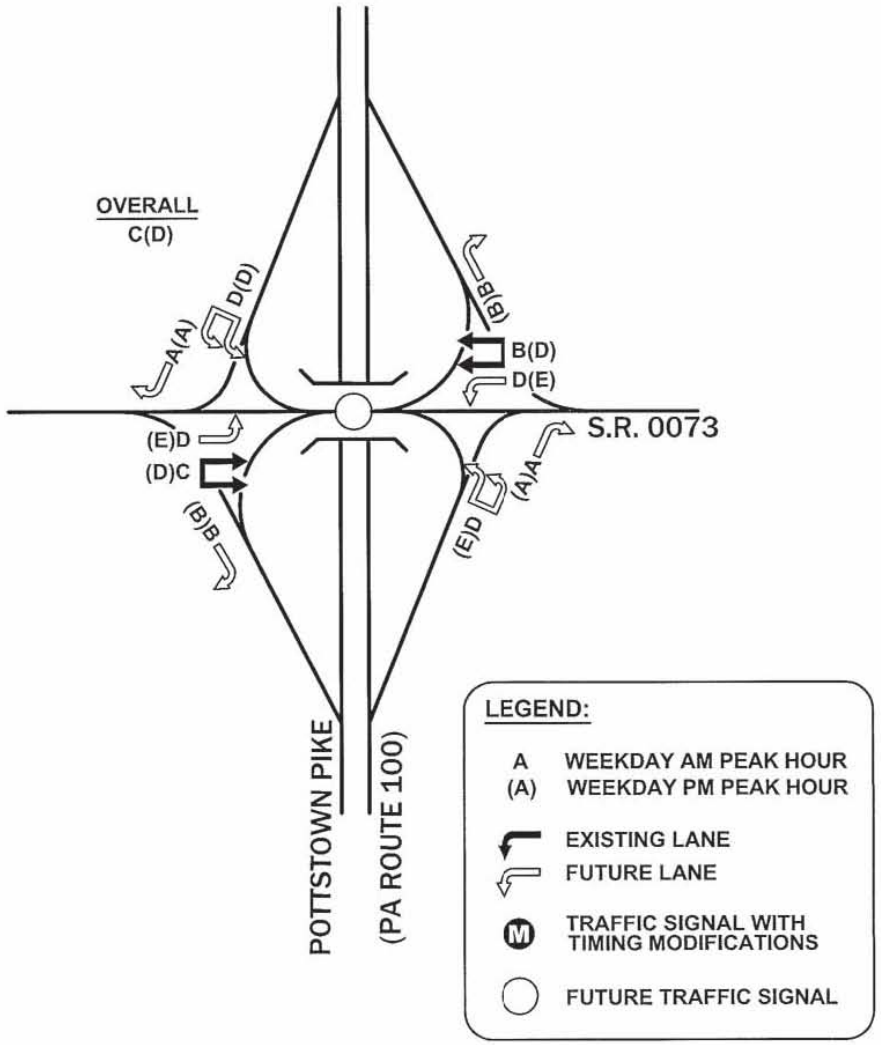
CONVENTIONAL IMPROVEMENTS



ALTERNATIVE IMPROVEMENTS: SINGLE POINT URBAN INTERCHANGE



S.R. 0073

Peak Hour Levels of Service With Improvements

PA ROUTE 100 TRANSPORTATION PLAN

POTTSTOWN BOROUGH, MONTGOMERY COUNTY, PA

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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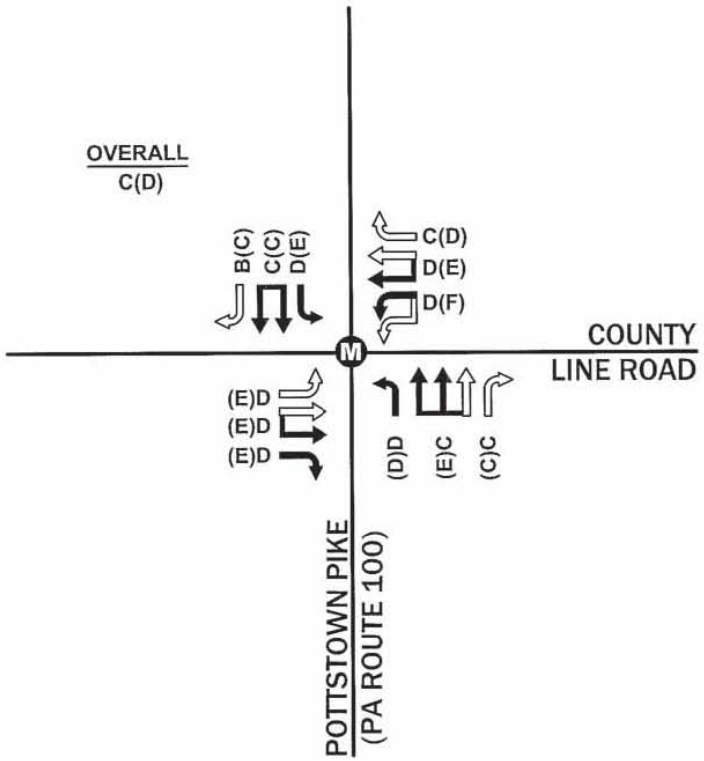
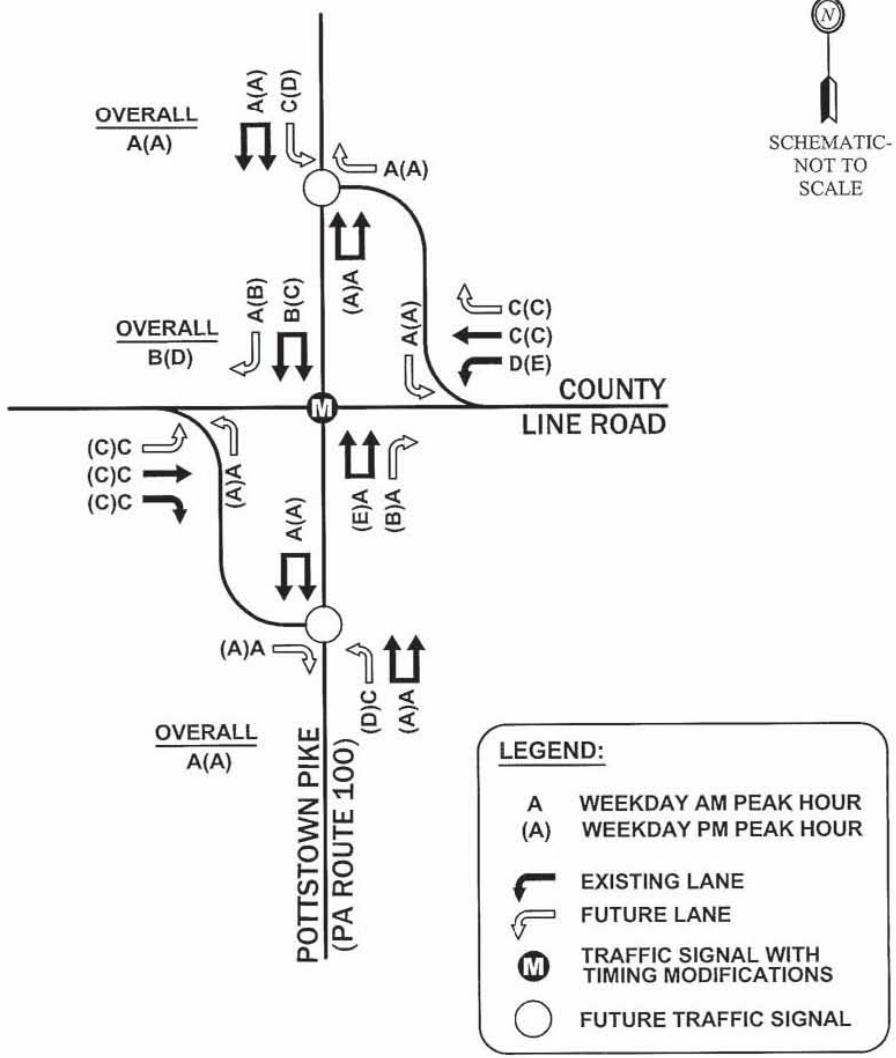
CONVENTIONAL IMPROVEMENTS



ALTERNATIVE IMPROVEMENTS: CONTINUOUS FLOW INTERSECTION



SCHEMATIC-
NOT TO
SCALE

LEGEND:

- A — WEEKDAY AM PEAK HOUR
- (A) — WEEKDAY PM PEAK HOUR
- EXISTING LANE
- FUTURE LANE
- TRAFFIC SIGNAL WITH TIMING MODIFICATIONS
- FUTURE TRAFFIC SIGNAL

COUNTY LINE ROAD

Peak Hour Levels of Service With Improvements

PA ROUTE 100 TRANSPORTATION PLAN

CHESTER, MONTGOMERY, AND BERKS COUNTIES, PA

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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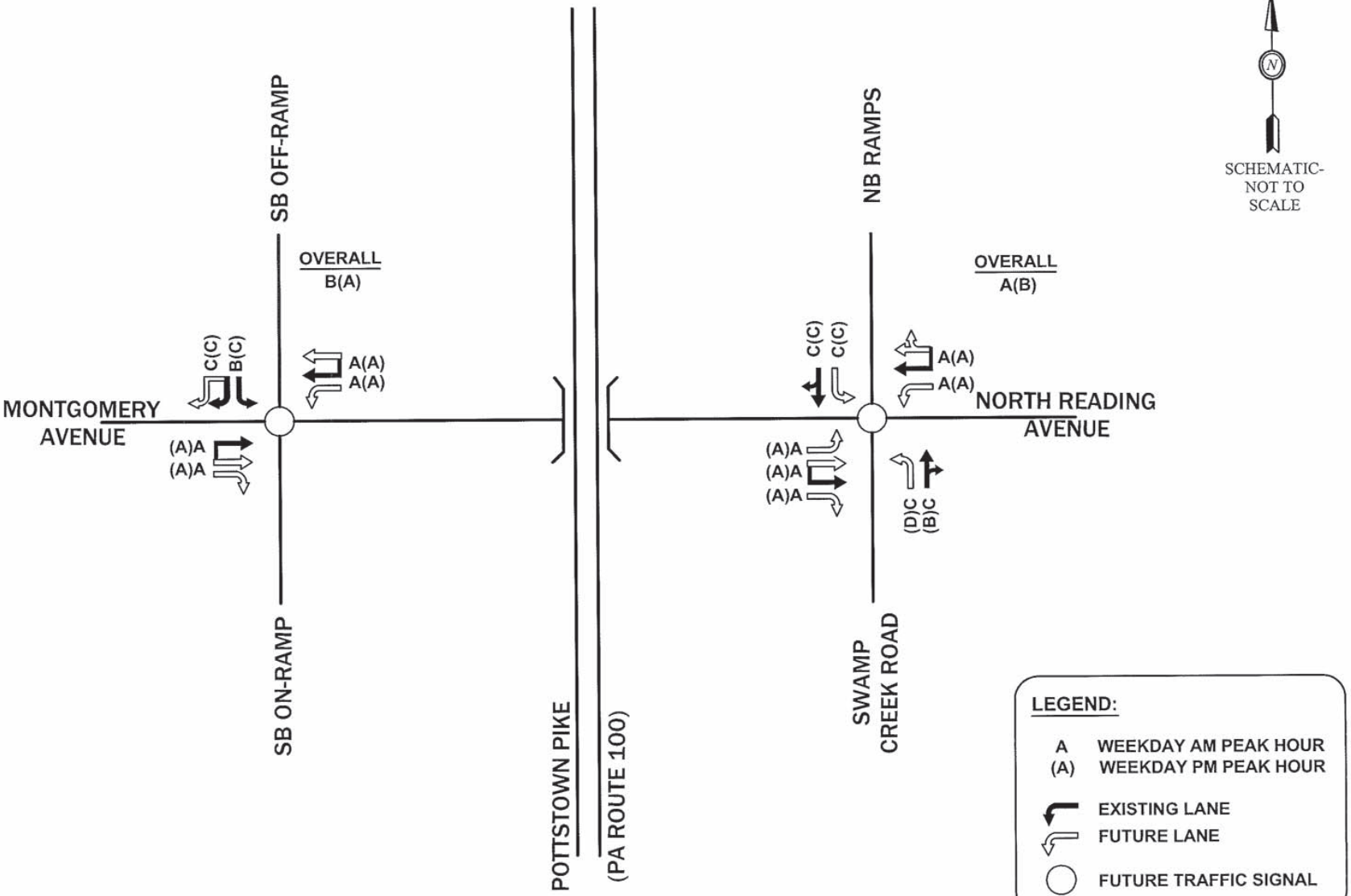

MONTGOMERY AVENUE/SWAMP CREEK ROAD INTERCHANGE

Peak Hour Levels of Service With Improvements

PA ROUTE 100 TRANSPORTATION PLAN

CHESTER, MONTGOMERY, AND BERKS COUNTIES, PA

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

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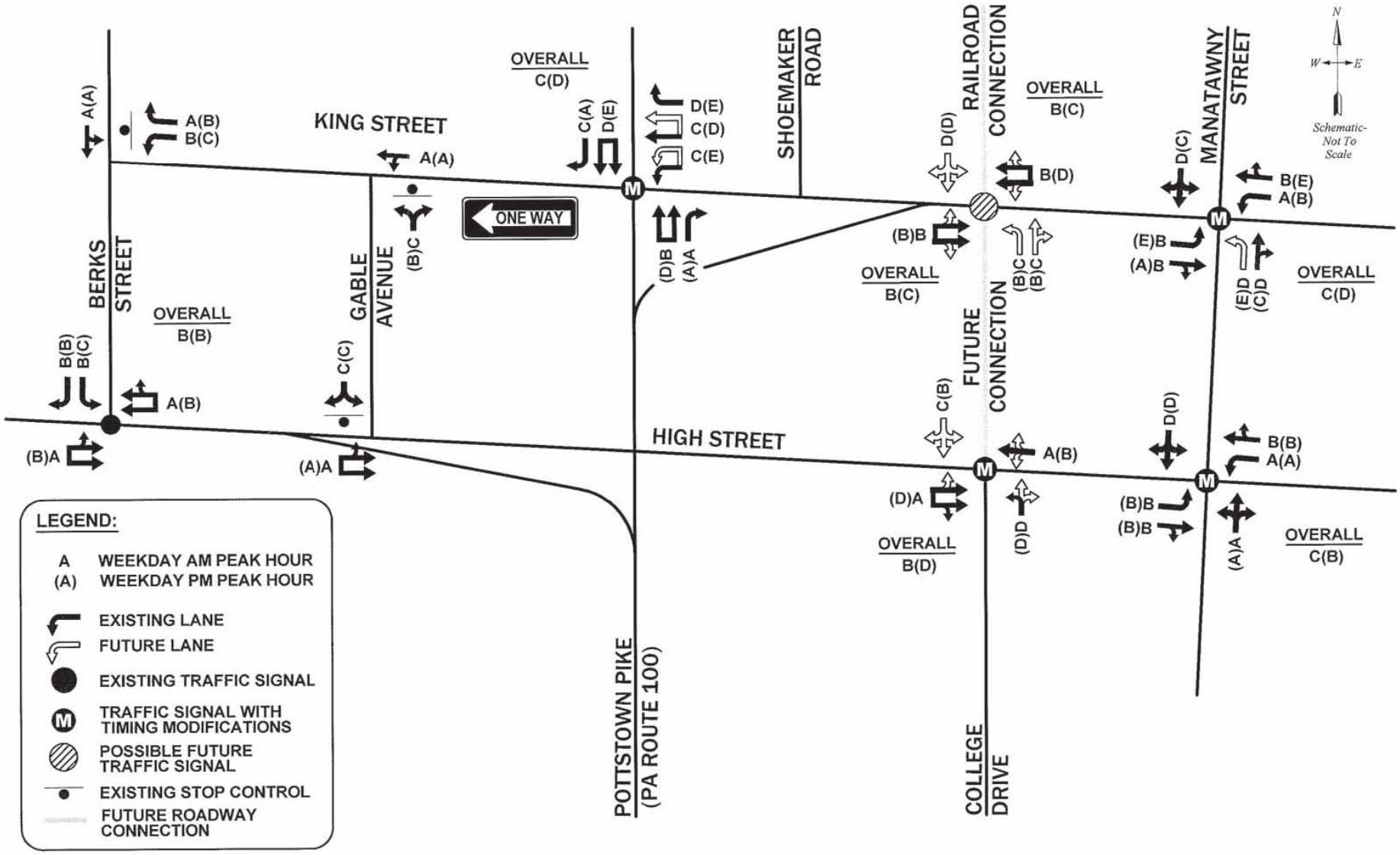
Supplemental Intersections: High Street and King Street Area



CORRIDOR SUPPLEMENT

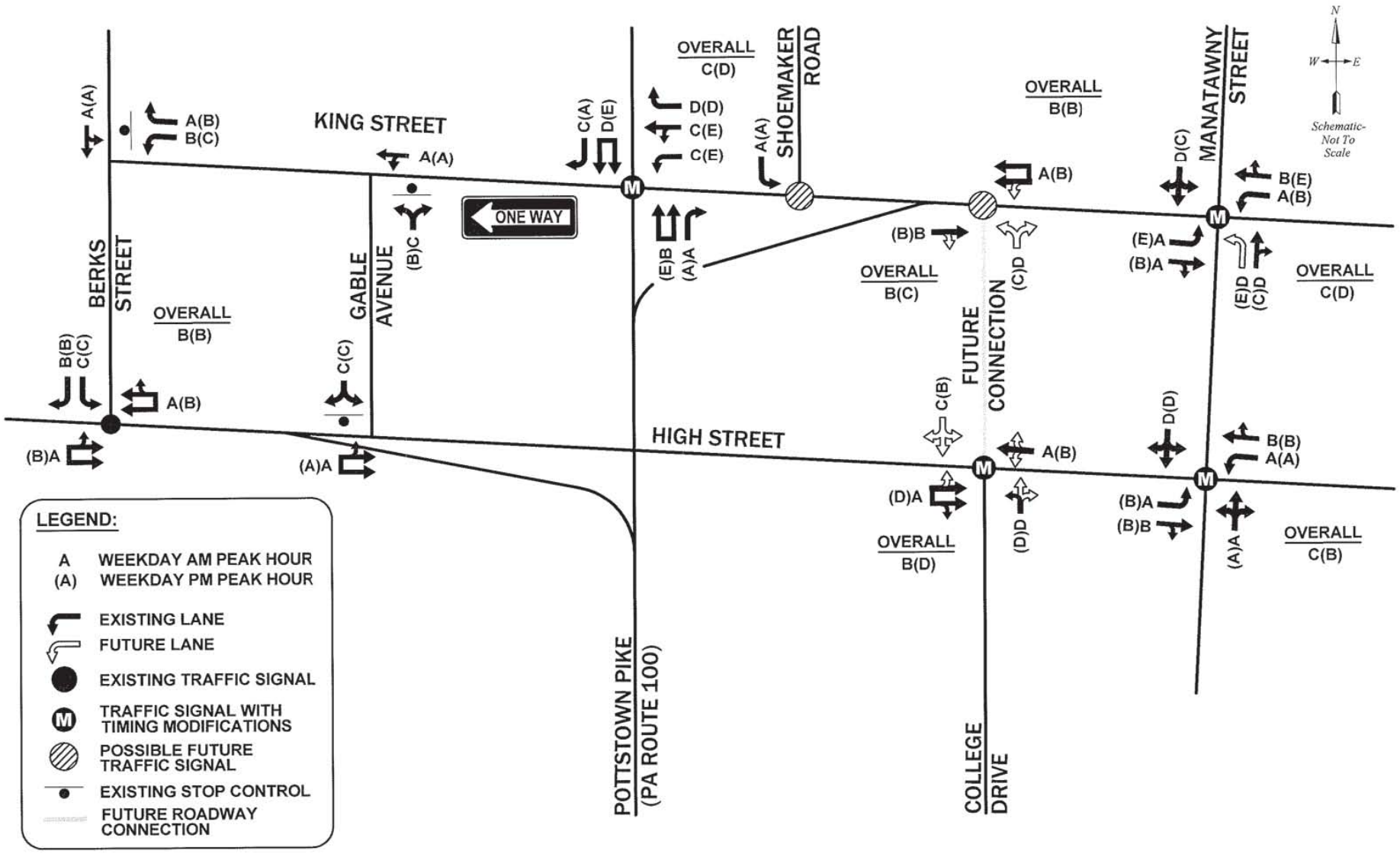
2020 Future Peak Hour Levels of Service With Improvements
With the Railroad Roadway Connection

PA ROUTE 100 TRANSPORTATION PLAN

POTTSTOWN BOROUGH, MONTGOMERY COUNTY, PA

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

(1/11/10) I:\eng\807740\12\Dwg\Figures\WITH IMPROVEMENTS LOS - With Railroad Connection.dwg



CORRIDOR SUPPLEMENT

2020 Future Peak Hour Levels of Service With Improvements
Without the Railroad Roadway Connection

PA ROUTE 100 TRANSPORTATION PLAN

POTTSTOWN BOROUGH, MONTGOMERY COUNTY, PA

McMAHON TRANSPORTATION ENGINEERS & PLANNERS

(1/11/10) I:\eng\807740\12\Dwg\Figures\WITH IMPROVEMENTS LOS - Without Railroad Connection.dwg

APPENDIX G

Alternative Evaluation Matrices

Alternatives Evaluation Matrix
Southern Segment

Segment/ Intersection	Build Option	Improvement Summary (Report Reference)	Measures of Effectiveness		Impacts				Cost Opinion	Comments
			Traffic Operations	Multi-Modal Accommodation	Property/Right-of-Way	Structures	Surface Utilities	Potential Environmental Considerations		
Southern Segment (Section)	Gateway/ Alternative Improvements	Table 9 Figure 15	- N/A	Provide sidewalks, trails, high-visibility crosswalks along corridor.	Required Right-of-Way: 6.0 acres (between Hoffecker Road and Cedarville Road)	----	32 Utility Poles (between Hoffecker Road and Cedarville Road)	----	$15 to $20 million	Some measures of effectiveness, as noted, were considered for the entire PA Route 100 Corridor and PA Route 724 Corridor, and were obtained from the *Northern Chester County Gateway Master Plan* . For example, the corridor cost includes cost for study intersections improvements.
Intersection @ Hoffecker Road	Gateway/ Alternative Improvements	Table 9 Figure 15	- AM LOS: B - PM LOS: C	Sidewalks, high-visibility crosswalks.	----	----	----	----	----	
Intersection @ Temple Road	Gateway/ Alternative Improvements	Table 9 Figure 15	- AM LOS: B - PM LOS: C	Sidewalks, high-visibility crosswalks.	----	----	----	----	----	
Intersection @ S. Hanover Street	Gateway/ Alternative Improvements	Table 9	- N/A	Off-corridor trail linkage.	----	Widen bridge over Neiman Road for travel lanes.	----	WR	----	
Intersection @ Lenape Crossing Road	Gateway/ Alternative Improvements	Table 9 Figure 15	- AM LOS: A - PM LOS: B	Sidewalk or trail, high-visibility crosswalks.	----	----	----	WR, CR (future park)	----	
Intersection @ Cedarville Road	Gateway/ Alternative Improvements	Table 9 Figure 15	- AM LOS: C - PM LOS: D	Sidewalk and/or trail, high-visibility crosswalks, pedestrian refuge island.	----	----	----	----	----	
PA Route 724	Gateway/ Alternative Improvements	Table 9 Figure 15	- N/A	Sidewalks along PA Route 724 and off-road trail/sidewalk to link to Cedarville Road.	Required Right-of-Way: <1.0 acres	Widen Bridge over PA Route 724 for deceleration lane. Reconfigure SB off-ramp to WB PA Route 724.	----	WR	$9 to $10 million	

RC - river/stream crossing
WR - water resources, wetlands
CR - cultural resources

McMahon has prepared this evaluation and preliminary opinion of costs based on the conceptual layout plans provided in this study. In no way should this estimate be considered a final cost estimate. The estimated costs are subject to change based on final engineering design, field conditions, local or regional differences, changes to the design and/or changes to the unit costs. Final costs are dependant on actual bids from contractors. McM will not be held responsible for any discrepancies between this cost estimate and bid costs. This estimate includes only approximate quantities and costs for utility relocations and right-of-way acquisition.

TOTAL GATEWAY/ALTERNATIVE IMPROVEMENTS	**$24 to $30 million**

Alternatives Evaluation Matrix
Pottstown Segment

Mid-block Segment/ Intersection	Build Option	Improvement Summary (Report Reference)	Measures of Effectiveness		Impacts				Cost Opinion	Comments
			Traffic Operations	Multi-Modal Accommodation	Property/Right-of-Way	Structures	Surface Utilities	Potential Environmental Considerations		
Pottstown Segment: King Street to Shoemaker Road	Conventional Improvements	Table 11	----	See intersections below. Non-vehicular accommodations not provided directly along PA Route 100.	Required Right-of-Way: 2.6 acres	----	8 Utility Poles	----	$2.5 to $3 million	Cost opinions for segments assume costs associated with widening corridor for additional through lanes, while intersection improvements are listed below at each intersection.
	Alternative Improvements	Table 13	----	See intersections below. Non-vehicular accommodations not provided directly along PA Route 100.	Required Right-of-Way: 0 acres*	----	----	----	$0	* Additional right-of-way required if Colebrookdale Spur Rail Line is utilized for College Drive Extension.
Pottstown Segment: Shoemaker Road to State Street (southern)	Conventional Improvements	Table 11	----	See intersections below. Non-vehicular accommodations not provided directly along PA Route 100.	Required Right-of-Way: 7 acres	Widen bridge over Manatawny Creek and Manatawny Street.	8 Utility Poles	----	$30 to $35 million	Cost opinions for segments assume costs associated with widening corridor for additional through lanes, while intersection improvements are listed below at each intersection.
	Alternative Improvements	Table 13	----	See intersections below. Non-vehicular accommodations not provided directly along PA Route 100.	Required Right-of-Way: 4.6 acres	Widen bridge over Manatawny Creek and Manatawny Street.	----	----	$25 to $30 million	
Segment: State Street (S) to Grosser Road	Conventional Improvements	Table 11	----	See intersections below. Non-vehicular accommodations not provided directly along PA Route 100.	Required Right-of-Way: 16.3 acres	Widen bridge over Pine Ford Road Culvert	4 Utility Poles	WR, CR	$30 to $35 million	Cost opinions for segments assume costs associated with widening corridor for additional through lanes, while intersection improvements are listed below at each intersection. Under conventional improvement scenario, costs assume widening of Farmington Avenue Interchange to accommodate the additional PA Route 100 through lanes.
	Alternative Improvements	Table 13	----	See intersections below. Non-vehicular accommodations not provided directly along PA Route 100.	Required Right-of-Way: 11.4 acres	Culvert	4 Utility Poles	WR, CR	$14 to $15 million	
Intersection @ King Street	Conventional Improvements	Table 11 Figure 12	- AM LOS: E - PM LOS: E	Existing sidewalks, crosswalk. Pedestrian crossings more challenging with larger intersection.	Required Right-of-Way: 2.0 acres	Widen bridge over High Street.	6 Utility Poles (At Intersection)	CR (John Potts Park)	$35 to $40 million	
	Alternative Improvements	Table 13 Figures 12 & 15	- AM LOS: C - PM LOS: D	Smaller intersection better accommodates pedestrian crossings.	Required Right-of-Way: 0 acres*	----	6 Utility Poles (At Intersection)	CR (John Potts Park)	$500,000 to $750,000	Includes traffic signalization/upgrades at High Street/Gable Avenue, High Street/Manatawny Street, and King Street/Manatawny Street, as well as a northbound left-turn lane at King Street/Manatawny Street.
Intersection @ Shoemaker Road	Conventional Improvements	Table 11 Figure 13	- AM LOS: D - PM LOS: F (82.9)	Existing sidewalks, crosswalk. Pedestrian crossings more challenging with larger intersection.	Required Right-of-Way: 2 acres	Widen bridge over Manatawny Road.	8 Utility Poles	CR (John Potts Park)	$2 to $2.5 million	
	Alternative Improvements	Table 13 Figures 13 & 15	- AM LOS: B - PM LOS: D	CFI configuration can accommodate pedestrian crossings; provide sidewalks.	Required Right-of-Way: 2.5 acres	Need for widening of bridge over Manatawny Road to be determined.	8 Utility Poles	CR (John Potts Park)	$3 to $3.5 million	Need for widening of bridge over Manatawny Road to be determined based on detailed design of improvements, or if Colebrookdale Rail Spur is used for College Drive Extension.
Intersection @ State Street (southern)	Conventional Improvements	Table 11 Figure 14	- AM LOS: D - PM LOS: F (101.9)	No pedestrian facilities and crossings are banned.	Required Right-of-Way: 1.3 acres	----	4 Utility Poles	See intersection descriptions	$1.5 to $2 million	Assumes improvements completed in conjunction with the Upland Square development are existing.
	Alternative Improvements	Table 13 Figures 14 & 16	- AM LOS: B - PM LOS: D	CFI configuration can accommodate pedestrian crossings; provide sidewalks.	Required Right-of-Way: 2.0 acres	----	4 Utility Poles	----	$2 to $2.5 million	
Intersection @ State Street (northern)	Conventional Improvements	Table 11	- AM LOS: D - PM LOS: E	No pedestrian facilities and crossings are banned.	*Right-of-way included in segment summary.*	----	----	WR, CR (park)	*See segment costs.*	
	Alternative Improvements	Table 13	- AM LOS: C - PM LOS: D	Superstreet Median Crossover Intersections can accommodate crossings in two stages with separate signal phase.	Required Right-of-Way: 0.3 acres	----	----	WR, CR (park)	$1 to $1.5 million	
Interchange @ Farmington Avenue	Conventional Improvements	Table 11	NB RAMPS/SB Ramps: - AM LOS: B/C - PM LOS: B/B	No pedestrian facilities are provided along PA Route 100 or Farmington Avenue today. Provide pedestrian/bicycle facilities in future, as feasible, including pedestrian crosswalks.	*Right-of-way included in segment summary.*	----	----	----	$250,000	Additional through lane recommended for consistency with adjacent segments (cost for Route 100 widening included in segment summary above). Potential widening of Farmington Avenue bridge for turn lanes not included in this cost.
	Alternative Improvements	Table 13	NB RAMPS/SB Ramps: - AM LOS: B/C - PM LOS: B/B		Required Right-of-Way: 0 acres	----	----	----	$250,000	Potential widening of Farmington Avenue bridge for turn lanes not included in this cost.
Intersection @ Moyer Road	Conventional Improvements	Table 11	- AM LOS: B - PM LOS: E	No pedestrian facilities and crossings are banned.	*Right-of-way included in segment summary.*	----	----	WR	*See segment costs.*	
	Alternative Improvements	Table 13	- AM LOS: C - PM LOS: E	Superstreet Median Crossover Intersections can accommodate crossings in two stages with separate signal phase.	Required Right-of-Way: 0.3 acres	----	----	WR	$1 to $1.5 million	

RC - river/stream crossing
WR - water resources, wetlands
CR - cultural resources

McMahon has prepared this evaluation and preliminary opinion of costs based on the conceptual layout plans provided in this study. In no way should this estimate be considered a final cost estimate. The estimated costs are subject to change based on final engineering design, field conditions, local or regional differences, changes to the design and/or changes to the unit costs. Final costs are dependant on actual bids from contractors. McM will not be held responsible for any discrepancies between this cost estimate and bid costs. This estimate includes only approximate quantities and costs for utility relocations and right-of-way acquisition.

TOTAL CONVENTIONAL IMPROVEMENTS	**$101.25 to $117.75 million**
TOTAL ALTERNATIVE IMPROVEMENTS	**$46.75 to $55 million**

Alternatives Evaluation Matrix
Northern Segment

Mid-block Segment/ Intersection	Build Option	Improvement Summary (Report Reference)	Measures of Effectiveness		Impacts				Construction Cost	Comments
			Traffic Operations	Multi-Modal Accommodation	Property/Right-of-Way	Structures	Surface Utilities	Potential Environmental Considerations		
Segment: Grosser Road to Jackson Road	**Conventional Improvements**	**Table 15**	----		Required Right-of-Way: 1.7 acres	----	----	WR, CR	$2 to $2.5 million	
	Alternative Improvements	**Table 17**	----		Required Right-of-Way: 0.8 acres	----	----	WR, CR	$1 to $1.5 million	
Segment: Jackson Road to PA Route 73	**Conventional Improvements**	**Table 15**	----		Required Right-of-Way: 4.9 acres	Culvert	4 Utility Poles	WR, CR	$6 to $6.5 million	
	Alternative Improvements	**Table 17**	----		Required Right-of-Way: 0 acres	----	----	WR, CR	----	
Segment: Route 73 to County Line Road	**Conventional Improvements**	**Table 15**	----		Required Right-of-Way: 2.5 acres	Culvert	4 Utility Poles	WR, CR	$3 to $3.5 million	
	Alternative Improvements	**Table 17**	**----**		**----**	----	----	WR, CR	----	
Intersection @ Grosser Road	**Conventional Improvements**	**Table 15 Figure 17**	- AM LOS: C - PM LOS: D	No pedestrian facilities and crossings are banned.	Required Right-of-Way: 0.9 acres	Culvert	2 Utility Poles	WR, NS, CR	$1.5 to $2 million	
	Alternative Improvements	**Table 17 Figures 17 & 21**	- AM LOS: A - PM LOS: D	Potential pedestrian refuge area may be provided as left-turn lanes no longer provided along PA Route 100.	Required Right-of-Way: 1.1 acres	Culvert	2 Utility Poles	WR, CR	$1 to $1.5 million	
Intersection @ Jackson Road	**Conventional Improvements**	**Table 15 Figure 18**	- AM LOS: B - PM LOS: D	No pedestrian facilities and crossings are banned.	Required Right-of-Way: 1.8 acres	Culvert	10 Utility Poles	WR, NS, CR	$2 to $2.5 million	
	Alternative Improvements	**Table 17 Figures 18 & 21**	- AM LOS: B - PM LOS: D	CFI configuration can accommodate pedestrian crossings; provide sidewalks.	Required Right-of-Way: 2.2 acres	Culvert	10 Utility Poles	WR, CR	$3 to $3.5 million	
Interchange @ PA Route 73	**Conventional Improvements**	**Table 15 Figure 19**	- AM LOS: B - PM LOS: C	Sidewalk is provided along PA Route 73 currently.	Required Right-of-Way: 0.9 acres	Reconstruct/widen PA Route 73 overpass for additional through lanes. Culvert	10 Utility Poles	CR	$60 to $70 million	Costs include improvements to PA Route 73 to transition additional lanes just beyond bridge structure. Other studies have indicated that the capacity improvements needed along the bridge should be carried further along the PA Route 73, which would increase construction costs.
	Alternative Improvements	**Table 17 Figures 19 & 21**	- AM LOS: C - PM LOS: D	SPUI configuration requires separate pedestrian signal phase.	----	Reconstruct PA Route 73 Interchange for SPUI. Culvert		CR	$65 to $75 million	Cost approximated based on recent SPUI project in Williamsport, Pennsylvania (PennDOT District 3-0).
Intersection @ County Line Road	**Conventional Improvements**	**Table 15 Figure 20**	- AM LOS: C - PM LOS: D	No pedestrian facilities and crossings are banned.	Required Right-of-Way: 4.9 acres Required Right-of-Way for Holly Road: 1.7 acres	Culvert	2 Utility Poles	WR, CR	$5.5 to $6 million	Includes realignment of Holly Road behind the proposed Giant Shopping Center property to intersection County Line Road away from PA Route 100.
	Alternative Improvements	**Table 17 Figure 20**	- AM LOS: B - PM LOS: D	CFI configuration can accommodate pedestrian crossings; provide sidewalks.	Required Right-of-Way: 2.5 acres Required Right-of-Way for Holly Road: 1.7 acres	Culvert	4 Utility Poles	WR, CR	$4 to $5 million	
Interchange @ Montgomery Avenue	**Conventional (Act 209) Improvements**	**Table 15**	NB RAMPS/SB Ramps: - AM LOS: A/B - PM LOS: B/A	Provide sidewalks along Montgomery Avenue in addition to Act 209 improvements.	Required Right-of-Way: 2.5 acres	Widen Bridge over Montgomery Ave	----	WR	$8.5 to $9 million	Costs as contained in the *Colebrookdale Township Roadway Sufficiency Analysis and Transportation Capital Improvement Plan,* August 2005.

RC - river/stream crossing
WR - water resources, wetlands
CR - cultural resources

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TOTAL CONVENTIONAL IMPROVEMENTS	**$88.5 to $102 million**
TOTAL ALTERNATIVE IMPROVEMENTS*	**$82.5 to $95.5 million**

* - Includes costs when only Convential Improvements have been identified.

APPENDIX H

Technical Appendix

This envelope contains a CD that includes the ***TECHNICAL APPENDIX***. If the CD is missing, please contact the DVRPC staff listed on the publication abstract to obtain a copy.

Publication Title: **Tri-County Transportation Study: A Vision for PA Route 100**

Publication Number: 08092

Date Published: December 2010

Geographic Area Covered: North Coventry Township in Chester County, Douglass Township, Pottstown Borough, Upper Pottsgrove Township, and West Pottsgrove Township in Montgomery County, and Boyertown Borough, and Colebrookdale Township in Berks County

Key Words: PA Route 100, transportation, traffic study, Tri-county, development, corridor study, transportation improvement alternatives, limited access, traffic volumes, level of service, LOS, continuous flow intersection, CFI, single-point urban interchange, SPUI, traffic operations

Abstract: The transportation challenge facing many communities along PA Route 100 is how to best manage their transportation network as the surrounding area develops. As a result of current and anticipated development, weekday commuter rush hour traffic has the potential to increase by as much as 50 percent to 150 percent along various segments of the study corridor. Regrettably, very few of the study intersections can accommodate such drastic traffic growth, resulting in severe congestion along most of the corridor.

The purpose of this study is to create an effective and sustainable plan to accommodate future traffic volumes resulting from intense development potential, improve safety and mobility along the corridor, provide for multiple modes of travel as practical, and promote smart growth practices.

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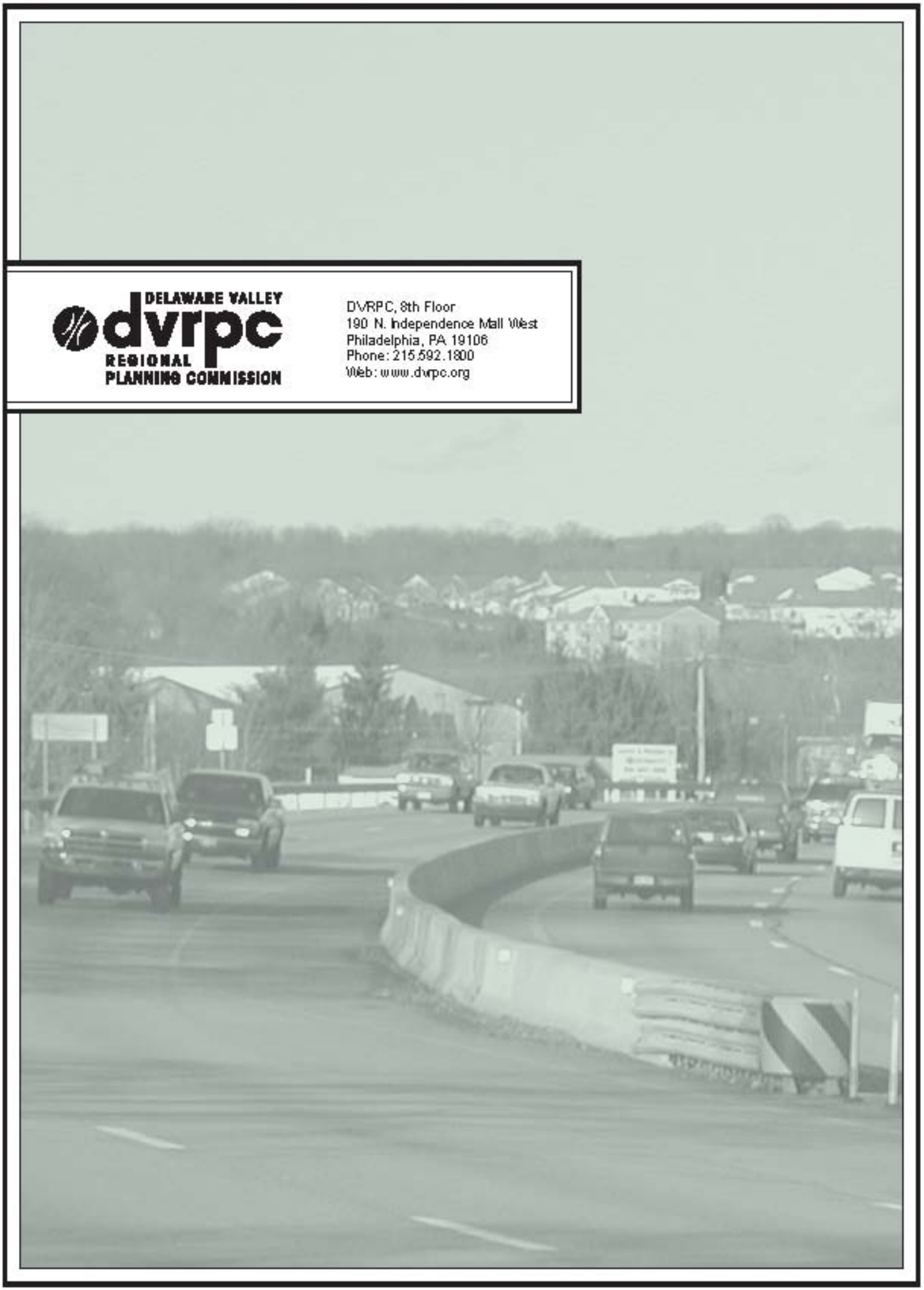

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