

**PENNSYLVANIA ACT 209
TRANSPORTATION IMPACT FEE STUDY
(Update from November 2005)**

AMITY TOWNSHIP, BERKS COUNTY

Roadway Sufficiency Analysis

AUGUST 13, 2014

**Prepared for:
Amity Township
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INTRODUCTION

Introduction

This *Roadway Sufficiency Analysis* has been prepared in accordance with the requirements set forth in Pennsylvania ACT 209 on behalf of Amity Township, Berks County Pennsylvania. Pennsylvania ACT 209 was signed into law effective December 19, 1990 (amended per ACT 68 of 2002), and amends the Pennsylvania Municipalities Planning Code (Act 247 of 1968) to permit municipalities to access transportation impact fees on new development within their boundaries, provided that they have adopted a municipal transportation impact fee ordinance in accordance with the procedures set forth in the Act.

Impact fees under ACT 209 may only be used for those costs incurred for improvements designated in the adopted transportation capital improvements plan of the municipality that are attributed to new development. The impact fees cannot be used for municipal, non-transportation related capital improvements or for the repair, maintenance, or operation of existing or new municipal transportation capital improvements due to operational or safety deficiencies not related to the new development. The ACT specifically and only applies to, nor restricts, the procedures or powers of the municipality to require on-site transportation improvements to remedy impacts of new development, nor is it intended to replace the municipality's ordinance requirements for submission of traffic impact studies.

All appendices supporting the *Roadway Sufficiency Analysis* referred to in this report are contained in a separate bound document entitled *Pennsylvania ACT 209 Transportation Impact Fee Technical Appendices*, Amity Township, Berks County, dated July 9, 2014.

Process

The process which Amity Township has undertaken includes the completion of the necessary milestones pursuant to the ACT 209 legislation as follows:

1. Appointment of a Transportation Advisory Committee and designation of the geographic area(s) of the municipality that will be subject to the transportation impact fee ordinance. The meeting minutes of the Transportation Advisory Committee are included in Appendix E.
2. Development and Board of Supervisors adoption of the land use assumptions within the Township and the designated geographic area(s), called Transportation Service Areas (TSA), which together with existing development are the subject of a roadway sufficiency analysis and development of a transportation capital improvement plan.
3. Completion and Board of Supervisors adoption of a roadway sufficiency analysis for each TSA, identifying traffic deficiencies and needed improvements attributed to existing traffic, future traffic, future traffic not originating from each service area (i.e. pass-through traffic) and future traffic originating from new development within each service area for a preferred level(s) of service in terms of desired traffic operations during the designated peak hour of study.
4. Development and adoption of a transportation capital improvements plan, including costs, implementation priorities, and funding sources, specifically and separately addressing improvements required to remedy:
 - a. Current traffic deficiencies resulting from existing traffic volumes and capacity limitations;
 - b. Traffic deficiencies attributable to future pass-through traffic after existing deficiencies have been remedied; and

- c. Traffic deficiencies attributable to expected new development within each service area after pass-through traffic and after existing deficiencies have been remedied.
5. Adoption of a Transportation Impact Fee Ordinance based on the total cost of identified transportation improvements attributable to new development within each TSA, to be assessed on a "per trip" basis.

Land Use Assumptions

The Amity Township Transportation Advisory Committee approved the Land Use Assumptions Report (dated June 2014), prepared by LTL Consultants, LTD., on June 18, 2014 at a public hearing. The Board of Supervisors adopted the Land Use Assumptions Report by resolution on June 18, 2014. This procedure was completed in compliance with the ACT 209 requirements for Townships.

The Land Use Assumptions Report (LUAR) provides demographic statistics and projections in order to identify the anticipated development projections through the year 2026. The projections contained in the LUAR assist in the preparation of the Roadway Sufficiency Analysis to assess the transportation infrastructure of the Township to provide a Capital Improvements Plan that helps finance roadway improvements. The demographic statistics and projections are summarized in Table 1.

The Transportation Advisory Committee has established two transportation service areas (TSA) within Amity Township in accordance with the requirements of the ACT 209 legislation, which requires a TSA to be contiguous and measure less than seven square miles. TSA North consists of 6.3 square miles and South consists of 6.0 square miles. The TSA boundaries are illustrated in Figure 3.

TABLE 1: LUAR 2026 Projections		
Land Use Classification	TSA (North)	TSA (South)
Residential	306 Units	56 Units
Office	98,000 SF	185,433 SF
Light Industrial	196,000 SF	288,931 SF
Retail	196,000 SF	192,100 SF

EXISTING TRANSPORTATION NETWORK

Roadway Characteristics

The Amity Township roadway system consists primarily of two lane undivided roadways. Many of the roadways in the northern portions of the Township are narrow two lane rural roads. Major regional access to the Township is provided via US Route 0422 (east/west), SR 0662 (north/south) and SR 0562 (east/west). US Route 0422 is located in the southern portion of the Township, while SR 0562 is in the north. The operating characteristics of each roadway studied as part of the Roadway Sufficiency Analysis are listed in Table 2.

TABLE 2: Existing Transportation Network Summary

Roadway	Roadway Classification	Roadway Ownership	Posted Speed Limit (MPH)
US Route 0422	Principal Arterial	State	45
SR 0562 (Boyertown Pike)	Minor Arterial	State	40
SR 0662 (Old Swede Road)	Major Collector	State	35 to 45
SR 2049 (Old Airport Road)	Minor Collector	State	40
SR 2025 (Limekiln Road/Monocacy Creek Road)	Local Distributor	State	40 to 45
SR 2063 (Pine Forge Road)	Minor Collector	State	40
SR 2057 (Toll Gate Road/Township Line Road)	Minor Collector	State	40
SR 2022 (Ben Franklin Hwy)	Principal Arterial	State	45
SR 2077 (River Bridge Road)	Minor Collector	State	40
Blacksmith Road	Local Distributor	Township	35
Weavertown Road	Local Distributor	Township	40
Morlatton Road	Local Distributor	Township	35

The Transportation Advisory Committee selected 17 intersections to be evaluated and included in the Roadway Sufficiency Analysis and Capital Improvements Plan. The study intersections are shown in Table 3 and illustrated in Figure 1. These intersections were chosen due to their traffic volumes and service capabilities. The roadways not selected are generally classified as local access roadways that provide access to major arterials and collector roadways, but have limited accessibility through the Township.

TABLE 3: Study Intersections

NO.	Intersection	TSA	Current Traffic Control
1	SR 0562 (Boyertown Pike) & SR 2049 (Old Airport Road)	North	Stop
2	SR 2049 (Old Airport Road) & Weavertown Road	North	Stop
3	SR 0662 (Old Swede Road) & Weavertown Road	North	Stop
4	SR 0662 (Old Swede Road) & Blacksmith Road	North	Stop
5	SR 0662 (Old Swede Road) & SR 2063 (Pine Forge Road)	North	Stop
6	SR 0662 (Old Swede Road) & Morlatton Road	North	Stop
7	SR 0662 (Old Swede Road) & SR 2057 (Toll Gate Road)	North	Stop
8	SR 2022 (Ben Franklin Hwy) & SR 2057 (Township Line Road)	North	Stop
9	SR 2022 EB (Ben Franklin Hwy) & SR 0422	South	Free
10	SR 2022 WB (Ben Franklin Hwy) & SR 0422	North	Yield
11	SR 2077 EB (River Bridge Road) & SR 0422	South	Signal
12	SR 2077 WB (River Bridge Road) & SR 0422	South	Signal
13	SR 0662 NB (Old Swede Road) & SR 0422	South	Free
14	SR 0662 SB (Church Lane) & SR 0422	South	Stop
15	SR 2049 EB (Old Airport Road) & SR 0422	South	Signal
16	SR 2049 WB (Old Airport Road) & SR 0422	South	Signal
17	SR 2025 (Limekiln Road/Monocacy Creek Road) & SR 0422	South	Signal

Existing Traffic Volumes

The existing traffic volumes were obtained from turning movement counts conducted in March and April 2014. The traffic count data are included in Appendix A. The existing peak hour intersection volumes are shown on Figure 2. The traffic volumes serve as a basis for the capacity analysis that will identify intersection and roadway improvements.

Transportation Service Areas

The study boundaries were established by the Transportation Advisory Committee to be completely contiguous and limited to seven square miles in accordance with the requirements of the ACT 209. The TSA boundaries are illustrated in Figure 3. A North and South TSA have been determined for evaluation and application of transportation impact fees. Trips generated in one TSA cannot be used in the calculation of an impact fee in another TSA. Therefore, development traffic from one TSA is considered pass-through traffic within the other TSA. The TSA's by intersection is shown in Table 3.

EXISTING TRANSPORTATION CONDITIONS

Existing Analysis Methodology

A capacity analysis was completed based on the methodologies contained in the 2010 Highway Capacity Manual in order to identify the Level of Service (LOS) of each intersection. This standard capacity/level of service analysis technique, which calculates control delay, is more thoroughly described in Appendix B for both signalized and unsignalized intersections and two lane rural and arterial roadway segments, as well as the correlation between average total control delay and the respective levels of service for each intersection and roadway type. LOS is the criterion utilized to evaluate the study intersections and roadways in accordance with standard traffic engineering practice and the ACT 209 legislation.

Preferred Levels of Service

The Transportation Advisory Committee has adopted preferred levels of service for the intersections in the study. The preferred level of service is considered the operational design standard by which each intersection must operate under existing, future pass-through and future development conditions. Any intersections that do not meet this criterion must be mitigated to bring the intersection to a preferred level. The preferred level of service may be waived by the municipality at individual intersections based upon the difficulty in implementing various improvements (i.e. geometric design limitations, topographic limitations, or the unavailability of necessary right-of-way). Table 4 demonstrates the preferred level of service criteria for the purpose of this Roadway Sufficiency Analysis.

Intersection/Roadway Type	TSA (North)	TSA (South)
Signalized	LOS E by movement	LOS E by movement
	LOS E overall	LOS E overall
Unsignalized	LOS E by critical movement	LOS E by critical movement

For signalized intersections, the preferred level of service indicated above applies to individual movements, as well as overall intersection operations. For Unsignalized intersections, the preferred level of service only applies to the critical turning or cross street through movements at the intersection.

Existing Levels of Service

The year 2026 existing weekday afternoon peak hour traffic volumes were analyzed as explained in the analysis methodology section. The volumes included an annual growth factor multiplied by the number of years projected from the existing conditions. The annual growth factor is determined by the Pennsylvania Department of Transportation. The Land Use Assumptions Report assumed a 12-year growth period. The results of the analysis are

illustrated in Figure 4. Detailed capacity/level of service worksheets are contained in Appendix B.

Existing Improvement Program

The recommended mitigation measure to satisfy any level of service deficiencies are described in Table 5. The only intersection with an LOS deficiency in the existing conditions is SR 0422 & SR 0662NB (Old Swede Road). The recommended mitigation measure is to install a NO THRU TRAFFIC sign to improve safety and achieve required levels of service.

TABLE 5: 2026 Existing Condition Improvements		
NO.	Intersection	Recommended Improvement
1	SR 0562 (Boyertown Pike) & SR 2049 (Old Airport Road)	No improvement recommended.
2	SR 2049 (Old Airport Road) & Weavertown Road	No improvement recommended.
3	SR 0662 (Old Swede Road) & Weavertown Road	No improvement recommended.
4	SR 0662 (Old Swede Road) & Blacksmith Road	No improvement recommended.
5	SR 0662 (Old Swede Road) & SR 2063 (Pine Forge Road)	No improvement recommended.
6	SR 0662 (Old Swede Road) & Morlatton Road	No improvement recommended.
7	SR 0662 (Old Swede Road) & SR 2057 (Toll Gate Road)	No improvement recommended.
8	SR 2022 (Ben Franklin Hwy) & SR 2057 (Township Line Road)	No improvement recommended.
9	SR 2022 EB (Ben Franklin Hwy) & SR 0422	No improvement recommended.
10	SR 2022 WB (Ben Franklin Hwy) & SR 0422	No improvement recommended.
11	SR 2077 EB (River Bridge Road) & SR 0422	No improvement recommended.
12	SR 2077 WB (River Bridge Road) & SR 0422	No improvement recommended.
13	SR 0662 NB (Old Swede Road) & SR 0422	Install NO THRU TRAFFIC sign.
14	SR 0662 SB (Church Lane) & SR 0422	No improvement recommended.
15	SR 2049 EB (Old Airport Road) & SR 0422	No improvement recommended.
16	SR 2049 WB (Old Airport Road) & SR 0422	No improvement recommended.
17	SR 2025 (Limekiln Road/Monocacy Creek Road) & SR 0422	No improvement recommended.

FUTURE TRAFFIC CONDITIONS

Future Analysis Methodology

The total traffic volumes for 2026 were determined by calculating one or more of these three components: existing, pass-through and/or development traffic. The existing traffic methodology was explained in the *Existing Transportation Conditions* section. The pass-through traffic includes future development traffic generated from some other designated transportation service area (i.e. traffic generated from within TSA North is considered 'development' traffic in TSA North, but the same traffic is considered 'pass-through' traffic in TSA South). Development traffic is generated by new development based upon the projections in the LUAR. The results of the LUAR are used to determine the trip generation which is distributed to determine the future development.

Trip Generation

The trip generation rates for the Roadway Sufficiency Analysis are based upon data published by the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition. The development type and size were established in the LUAR. The PM peak hour trip generation results are shown in Tables 6 and 7 for the north and south traffic service areas.

TABLE 6: Trip Generation – TSA North						
Sub-Area	Land Use Code ⁽¹⁾	Description	Size	PM Peak Hour Volumes ⁽²⁾		
				In	Out	Total
1	210	Single Family Detached Housing	26 (Units)	20	11	31
2	210	Single Family Detached Housing	10 (Units)	8	5	13
3	210	Single Family Detached Housing	5 (Units)	4	3	7
6	210	Single Family Detached Housing	254 (Units)	153	90	243
7	210	Single Family Detached Housing	11 (Units)	9	5	14
14	710	General Office Building	98,000 (SF)	32	156	188
14	110	General Light Industrial	196,000 (SF)	23	167	190
14	820	Shopping Center	196,000 (SF)	451	489	940
Total New Trips				700	926	1626

⁽¹⁾ – As defined by the Land Use Assumptions Report.

⁽²⁾ - Exclusive of "pass-by" or "diverted-link" trips.

TABLE 7: Trip Generation – TSA South						
Sub-Area	Land Use Code ⁽¹⁾	Description	Size	PM Peak Hour Volumes ⁽²⁾		
				In	Out	Total
4	210	Single Family Detached Housing	3 (units)	1	1	2
4	110	General Light Industrial	262,667 (SF)	31	225	256
4	710	General Office Building	129,373 (SF)	38	185	223
5	210	Single Family Detached Housing	25 (units)	19	11	30
9	820	Shopping Center	87,556 (SF)	263	285	548
9	710	General Office Building	43,124 (SF)	22	105	127
10	826	Specialty Retail Center	58,806 (SF)	72	91	163
12	826	Specialty Retail Center	22,869 (SF)	33	43	76
13	826	Specialty Retail Center	22,869 (SF)	33	43	76
16	110	General Light Industrial	26,264 (SF)	3	23	26
16	710	General Office Building	12,936 (SF)	16	77	93
17	210	Single Family Detached Housing	22 (Units)	17	10	27
18	210	Single Family Detached Housing	6 (Units)	5	3	8
Total New Trips				553	1102	1655

⁽¹⁾ – As defined by the Land Use Assumptions Report.

⁽²⁾ - Exclusive of "pass-by" or "diverted-link" trips.

Each TSA is estimated to experience a total weekday afternoon peak hour trip generation over the next 12 years due to new development. This information is summarized below and included in the analysis.

TABLE 8: Future Weekday PM Peak Hour Trip Generation by TSA			
Traffic Service Area	Pass-Through Traffic	Development Trips	Total Trips
North	1,655	1,626	3,281
South	1,626	1,655	3,281

Trip Distribution

The vehicular traffic volumes generated by new development over the next 12 years are distributed to the roadway network based on existing travel patterns entering and exiting the Township, as well as the location of specific future development parcels with respect to the study roadway network and other major traffic generators and destinations. The directions of approach and departure are listed below.

Roadway	External Location (to/from)	Arrival/Departure
US Route 422	West of Monocacy Creek Road	26%
US Route 422	East of River Bridge Road	29%
SR 2022	East of US Route 422	11%
SR 0562	West of Limekiln Road	7%
SR 0562	East of Blacksmith Road	7%
SR 0662	North of SR 0562	7%
Weavertown Road	West of SR 2049	2%
Pine Forge Road	East of SR 0662	1%
Toll Gate Road	East of SR 0662	1%
River Bridge Road	South of US Route 0422	5%
Monocacy Creek Road	South of US Route 0422	4%

Programmed Roadway Improvements

There are no planned improvements according to PennDOT's twelve year Transportation Program.

2026 Future Pass-Through Traffic

The traffic generation by new development was generally assigned to the Township roadways and intersections based on the trip distribution assumptions previously described. PennDOT's published data for traffic growth factors for Berks County was referenced to calculate an annual traffic growth of 0.71% per year to apply to the existing weekday PM peak hour traffic volumes to reflect regional traffic growth. South of River Bridge Road was closed at the time of the study; therefore, an estimated trip diversion of 8% was applied to the traffic figures in the eastbound and westbound approaches at River Bridge Road. There are no significant developments expected to contribute to traffic through Amity Township by the surrounding municipalities. There are no planned land development areas in Amity Township at this time. The results are illustrated in Figure 5.

2026 Future Development Traffic

The 2026 future development traffic volumes were determined based on the assignment of the development traffic within each respective transportation area to 2026 future pass-through traffic volumes in that service area as explained in the *Future Analysis Methodology* sections. The results are illustrated in Figure 6.

2026 Future Pass-Through Traffic Level of Service

The 2026 future pass-through traffic volumes were analyzed to determine the capacity/level of service at each intersection in the study. The levels of service are illustrated in Figure 7; a detailed description of the analyses can be found in Appendix C. The results determine the intersections that require mitigation. The analysis indicates that traffic operating conditions at the following intersections will not satisfy the preferred levels of service determined by the Transportation Advisory Committee.

- SR 0662 (Old Swede Road) and Morlatton Road
- SR 2022 (Ben Franklin Hwy) and SR 2057 (Township Line Road)
- SR 0422EB and SR 2077 (River Bridge Road)
- SR 0422WB and SR 2077 (River Bridge Road)
- SR 0422EB and SR 0662NB (Old Swede Road)

2026 Future Pass-Through Improvements Program

The results of the analysis completed for the pass-through traffic volumes that require mitigation are part of the improvements program to resolve the deficient intersections to allow for functional operation levels. The improvements are summarized in Table 10; the levels of service are illustrated in Figure 8. In order to achieve the preferred levels of service at the intersections listed above the following mitigation is recommended.

SR 0662 (Old Swede Road) and Morlatton Road: Signalization of the intersection will be required to safely accommodate the traffic volumes at this intersection. The weekday PM peak hour traffic volumes were consistent with PennDOT's traffic signal warrant criteria.

SR 2022 (Ben Franklin Hwy) and SR 2057 (Township Line Road): Signalization of the intersection will be required to safely accommodate the traffic volumes at this intersection. The weekday PM peak hour traffic volumes were consistent with PennDOT's traffic signal warrant criteria. This intersection has a high level of southbound left truck turning movements.

SR 0422EB and SR 2077 (River Bridge Road): A 50 foot flare is required in the northbound approach to alleviate queuing issues caused by right turn movements.

SR 0422WB and SR 2077 (River Bridge Road): An exclusive left turn lane is required in addition to the existing left/thru lane in the northbound approach to properly move traffic through the intersection.

SR 0422EB and SR 0662NB (Old Swede Road): The installation of a NO THRU TRAFFIC sign is required to improve safety and achieve required levels of service.

TABLE 10: 2026 Future Pass-Through Condition Improvements

NO.	Intersection	Recommended Improvement
1	SR 0562 (Boyertown Pike) & SR 2049 (Old Airport Road)	No improvement recommended.
2	SR 2049 (Old Airport Road) & Weavertown Road	No improvement recommended.
3	SR 0662 (Old Swede Road) & Weavertown Road	No improvement recommended.
4	SR 0662 (Old Swede Road) & Blacksmith Road	No improvement recommended.
5	SR 0662 (Old Swede Road) & SR 2063 (Pine Forge Road)	No improvement recommended.
6	SR 0662 (Old Swede Road) & Morlatton Road	Signalization.
7	SR 0662 (Old Swede Road) & SR 2057 (Toll Gate Road)	No improvement recommended.
8	SR 2022 (Ben Franklin Hwy) & SR 2057 (Township Line Road)	Signalization.
9	SR 2022 EB (Ben Franklin Hwy) & SR 0422	No improvement recommended.
10	SR 2022 WB (Ben Franklin Hwy) & SR 0422	No improvement recommended.
11	SR 2077 EB (River Bridge Road) & SR 0422	Install a 50 foot flare.
12	SR 2077 WB (River Bridge Road) & SR 0422	Provide a separate left turn lane in the northbound approach.
13	SR 0662 NB (Old Swede Road) & SR 0422	Install NO THRU TRAFFIC sign.
14	SR 0662 SB (Church Lane) & SR 0422	No improvement recommended.
15	SR 2049 EB (Old Airport Road) & SR 0422	No improvement recommended.
16	SR 2049 WB (Old Airport Road) & SR 0422	No improvement recommended.
17	SR 2025 (Limekiln Road/Monocacy Creek Road) & SR 0422	No improvement recommended.

2026 Future Development Traffic Level of Service

The 2026 future development traffic volumes were analyzed to determine the capacity/level of service at each intersection in the study. The levels of service are illustrated in Figure 9; a detailed description of the analyses can be found in Appendix D. The results determine the intersections that require mitigation. The analysis indicates that traffic operating conditions at the following intersections will not satisfy the preferred levels of service determined by the Transportation Advisory Committee.

- SR 0662 (Old Swede Road) and Weavertown Road
- SR 0662 (Old Swede Road) and Blacksmith Road
- SR 0662 (Old Swede Road) and SR 2063 (Pine Forge Road)
- SR 0662 (Old Swede Road) and Morlatton Road
- SR 0662 (Old Swede Road) and SR 2057 (Toll Gate Road)

- SR 2022 (Ben Franklin Hwy) and SR 2057 (Township Line Road)
- SR 0422EB and SR 2077 (River Bridge Road)
- SR 0422WB and SR 2077 (River Bridge Road)
- SR 0422EB and SR 0662NB (Old Swede Road)
- SR 0422 & SR 2025 (Limekiln/Monocacy Road)

2026 Future Development Improvements Program

The results of the analysis completed for the development traffic volumes that require mitigation are part of the improvements program to resolve the deficient intersections to allow for functional operation levels. The improvements are summarized in Table 11; the levels of service are illustrated in Figure 10. In order to achieve the preferred levels of service at the intersections listed above the following mitigation is recommended.

SR 0662 (Old Swede Road) and Weavertown Road/Blacksmith Road: Realign Blacksmith Road to form a single four-leg intersection with Weavertown Road and signalize to achieve required level of service. The weekday PM peak hour traffic volumes were consistent with PennDOT's traffic signal warrant criteria.

SR 0662 (Old Swede Road) and Morlatton Road: Signalization of the intersection will be required to safely accommodate the traffic volumes at this intersection. The weekday PM peak hour traffic volumes were consistent with PennDOT's traffic signal warrant criteria.

SR 0662 (Old Swede Road) and SR 2057 (Toll Gate Road) Signalization of the intersection will be required and realignment of Toll Gate Road to the Nicholson Ave location. Provide exclusive left turn lanes in the northbound, southbound and westbound approaches.

SR 2022 (Ben Franklin Hwy) and SR 2057 (Township Line Road): Signalization of the intersection will be required to safely accommodate the traffic volumes at this intersection. The weekday PM peak hour traffic volumes were consistent with PennDOT's traffic signal warrant criteria. This intersection has a high level of southbound left truck turning movements.

SR 0422EB and SR 2077 (River Bridge Road): An exclusive thru lane is required in addition to the existing thru/right lane in the northbound approach to properly move traffic through the intersection.

SR 0422WB and SR 2077 (River Bridge Road): An exclusive left turn lane is required in addition to the existing left/thru lane in the northbound approach to properly move traffic through the intersection.

SR 0422EB and SR 0662NB (Old Swede Road): The installation of a NO THRU TRAFFIC sign is required to improve safety and achieve required levels of service.

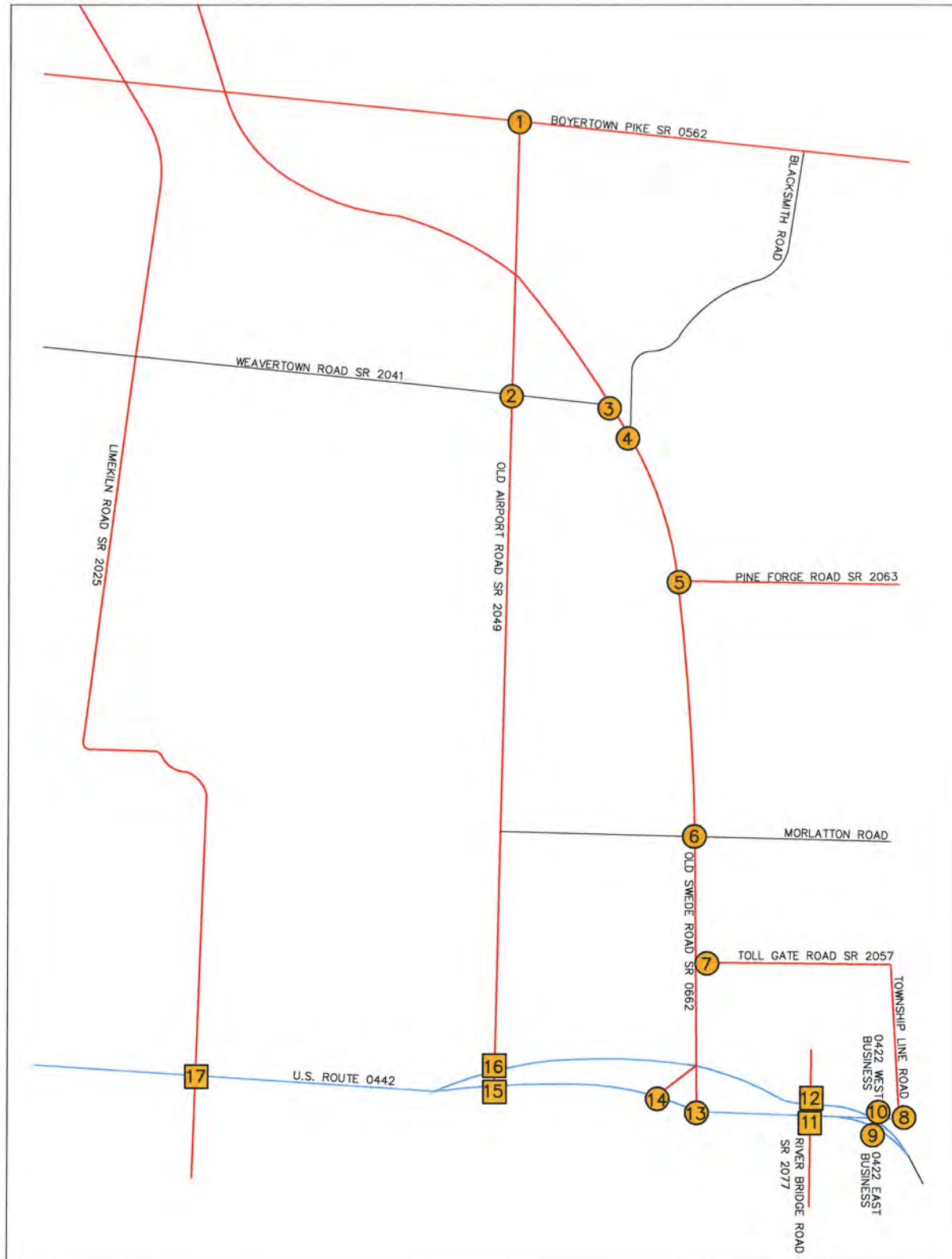
SR 0422 & SR 2025 (Limekiln/Monocacy Road): The modification of signal timings to a protected/prohibited phase is required; in addition to a dual left turn lane in the southbound approach, an exclusive left turn lane in the northbound approach and an exclusive right turn lane in the westbound approach.

TABLE 11: 2026 Future Development Condition Improvements

NO.	Intersection	Recommended Improvement
1	SR 0562 (Boyertown Pike) & SR 2049 (Old Airport Road)	No improvement recommended.
2	SR 2049 (Old Airport Road) & Weavertown Road	No improvement recommended.
3	SR 0662 (Old Swede Road) & Weavertown Road	Signalization and align Blacksmith Rd to Weavertown Rd.
4	SR 0662 (Old Swede Road) & Blacksmith Road	Signalization and align Blacksmith Rd to Weavertown Rd.
5	SR 0662 (Old Swede Road) & SR 2063 (Pine Forge Road)	Signalization.
6	SR 0662 (Old Swede Road) & Morlatton Road	Signalization.
7	SR 0662 (Old Swede Road) & SR 2057 (Toll Gate Road)	Signalization and align SR 0662 to Nicholson Ave. Provide exclusive left turn lanes in the northbound, southbound and westbound approaches.
8	SR 2022 (Ben Franklin Hwy) & SR 2057 (Township Line Road)	Signalization.
9	SR 2022 EB (Ben Franklin Hwy) & SR 0422	No improvement recommended.
10	SR 2022 WB (Ben Franklin Hwy) & SR 0422	No improvement recommended.
11	SR 2077 EB (River Bridge Road) & SR 0422	Provide exclusive thru lane in northbound approach.
12	SR 2077 WB (River Bridge Road) & SR 0422	Provide exclusive left turn lane in northbound approach.
13	SR 0662 NB (Old Swede Road) & SR 0422	Install NO THRU TRAFFIC sign.
14	SR 0662 SB (Church Lane) & SR 0422	No improvement recommended.
15	SR 2049 EB (Old Airport Road) & SR 0422	No improvement recommended.
16	SR 2049 WB (Old Airport Road) & SR 0422	No improvement recommended.
17	SR 2025 (Limekiln/Monocacy Creek Road) & SR 0422	Modify signal timings to protected/prohibited phasing. Provide exclusive dual left turn lanes in southbound approach, exclusive left turn lane in northbound approach and exclusive right turn lane in westbound approach.



STUDY AREA INTERSECTIONS AND ROADWAYS

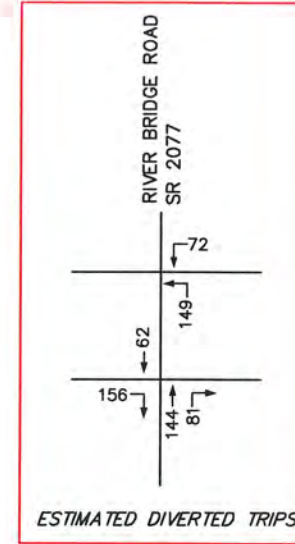
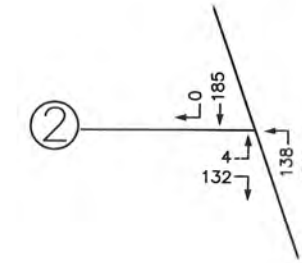
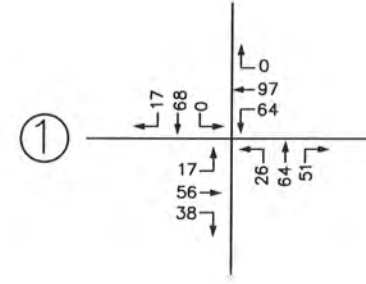
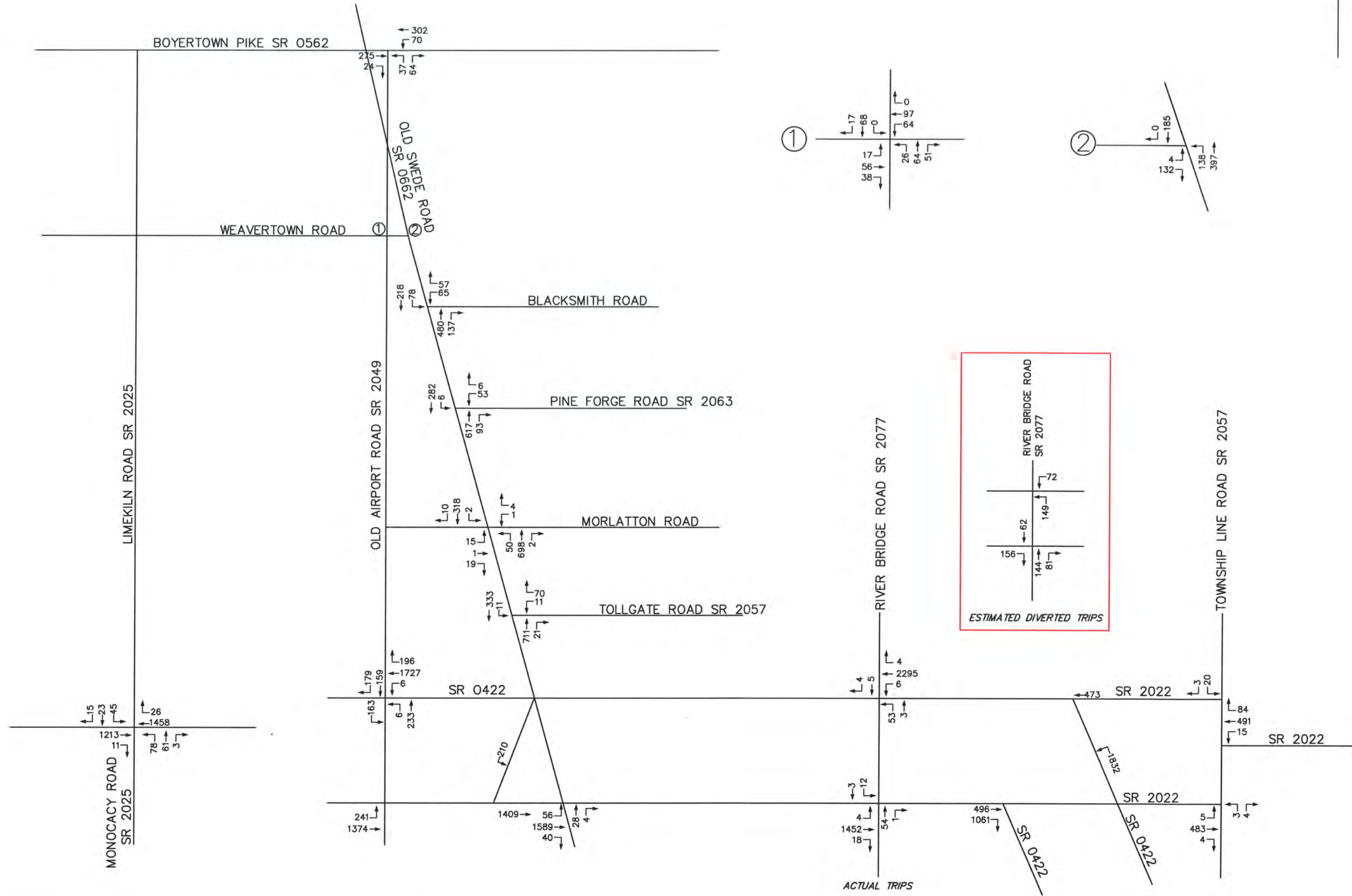


LEGEND

	SIGNALIZED INTERSECTION
	STOP CONTROLLED INTERSECTION
	FEDERAL ROADWAY
	STATE ROADWAY
	TOWNSHIP ROADWAY

- | | | |
|--|------------------------------|----------------------------------|
| | SR 0562 (BOYERTOWN PIKE) | SR 2049 (OLD AIRPORT ROAD) |
| | SR 2049 OLD AIRPORT ROAD | WEAVERTOWN ROAD |
| | SR 0662 (OLD SWEDE ROAD) | WEAVERTOWN ROAD |
| | SR 0662 (OLD SWEDE ROAD) | BLACKSMITH ROAD |
| | SR 0662 (OLD SWEDE ROAD) | SR 2063 (PINE FORGE ROAD) |
| | SR 0662 (OLD SWEDE ROAD) | MORLATTON ROAD |
| | SR 0662 (OLD SWEDE ROAD) | SR 2057 (TOLL GATE ROAD) |
| | SR 2022 (BEN FRANKLIN HWY) | SR 2057 (TOWNSHIP LINE ROAD) |
| | SR 2022 E (BEN FRANKLIN HWY) | SR 0422 E |
| | SR 2022 W (BEN FRANKLIN HWY) | SR 0422 W |
| | SR 0422 E | SR 2077 (RIVER BRIDGE ROAD) |
| | SR 0422 W | SR 2077 (RIVER BRIDGE ROAD) |
| | SR 0422 E | SR 0662 N (OLD SWEDE ROAD) |
| | SR 0422 E | SR 0622 S (CHURCH LANE) |
| | SR 0422 E | SR 2049 (OLD AIRPORT ROAD) |
| | SR 0422 W | SR 2049 (OLD AIRPORT ROAD) |
| | SR 0422 | SR 2025 (LIMEKILN/MONOCACY ROAD) |

2026 EXISTING PM PEAK HOUR TRAFFIC VOLUMES



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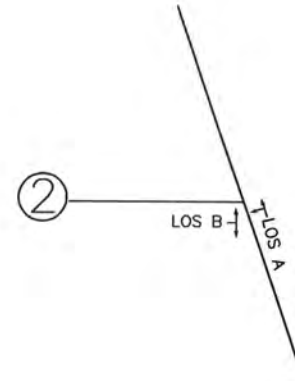
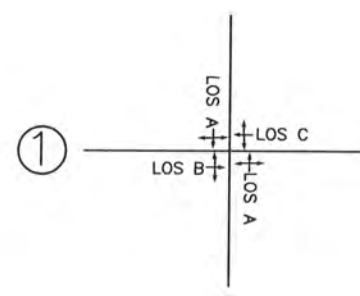
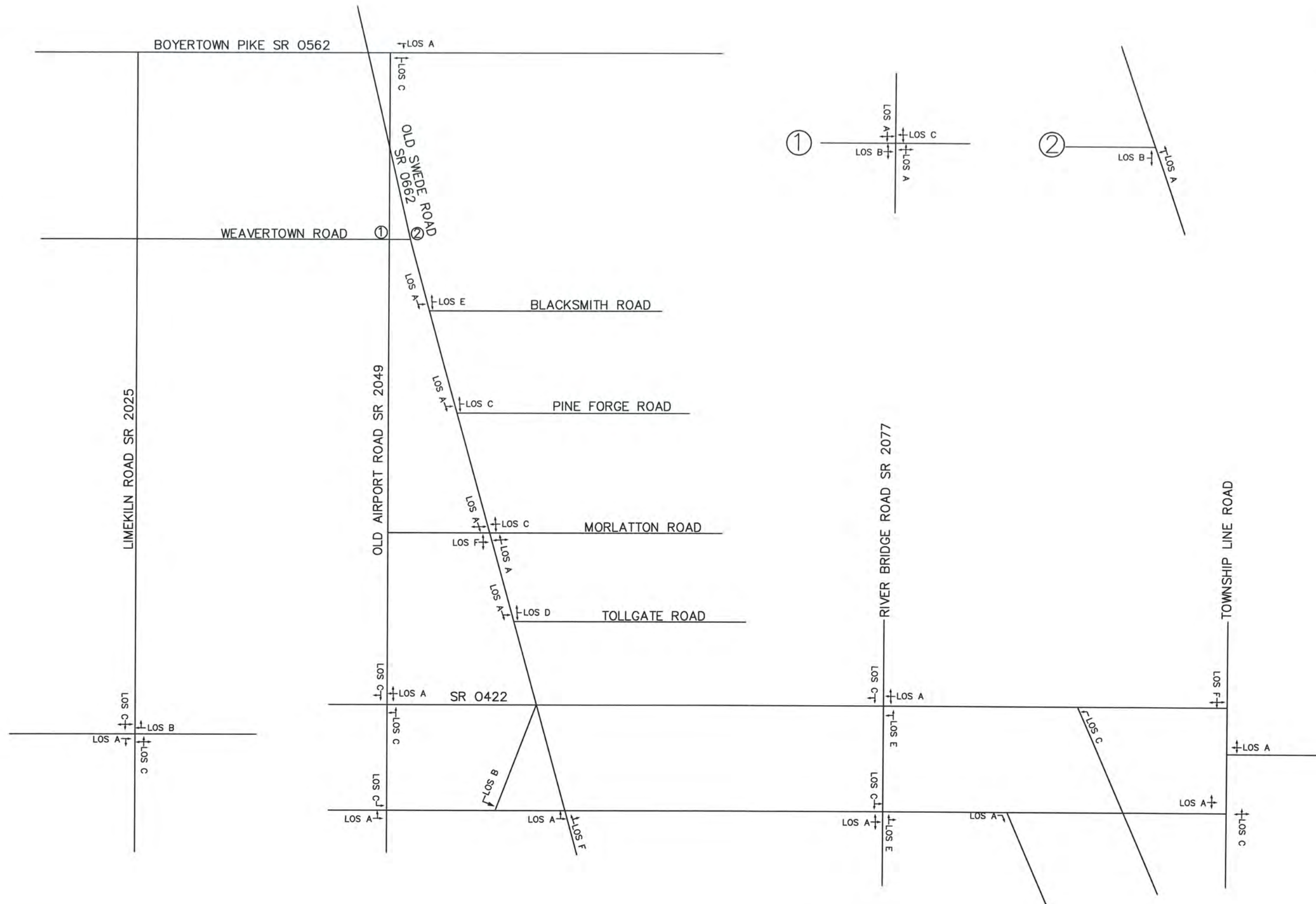
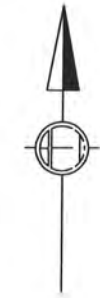
FIGURE 2

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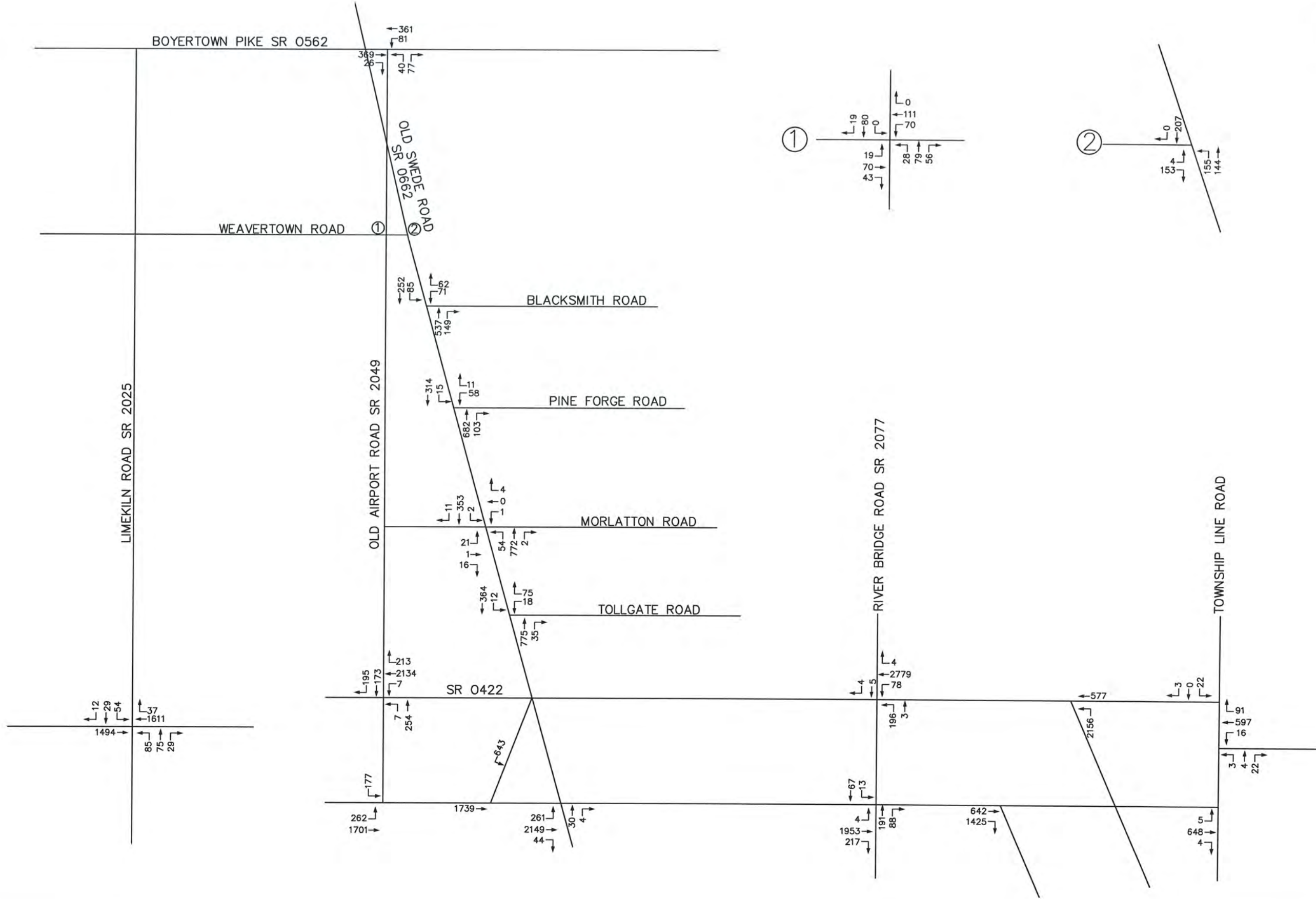
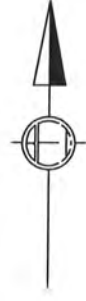
DATE

EXISTING PM PEAK HOUR TRAFFIC VOLUMES - LEVELS OF SERVICE



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		PHONE 610-678-3071		PHONE 610-678-3071		PHONE 610-678-3071	
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		AMITY ACT 209		AMITY ACT 209		AMITY ACT 209	
		FIGURE 4		FIGURE 4		FIGURE 4	
		EXISTING PM PEAK HOUR TRAFFIC VOLUMES LEVELS OF SERVICE		EXISTING PM PEAK HOUR TRAFFIC VOLUMES LEVELS OF SERVICE		EXISTING PM PEAK HOUR TRAFFIC VOLUMES LEVELS OF SERVICE	
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		DATE		DATE		DATE	
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2026 FUTURE DEVELOPMENT TRAFFIC VOLUMES



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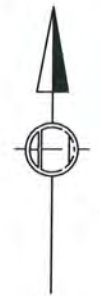
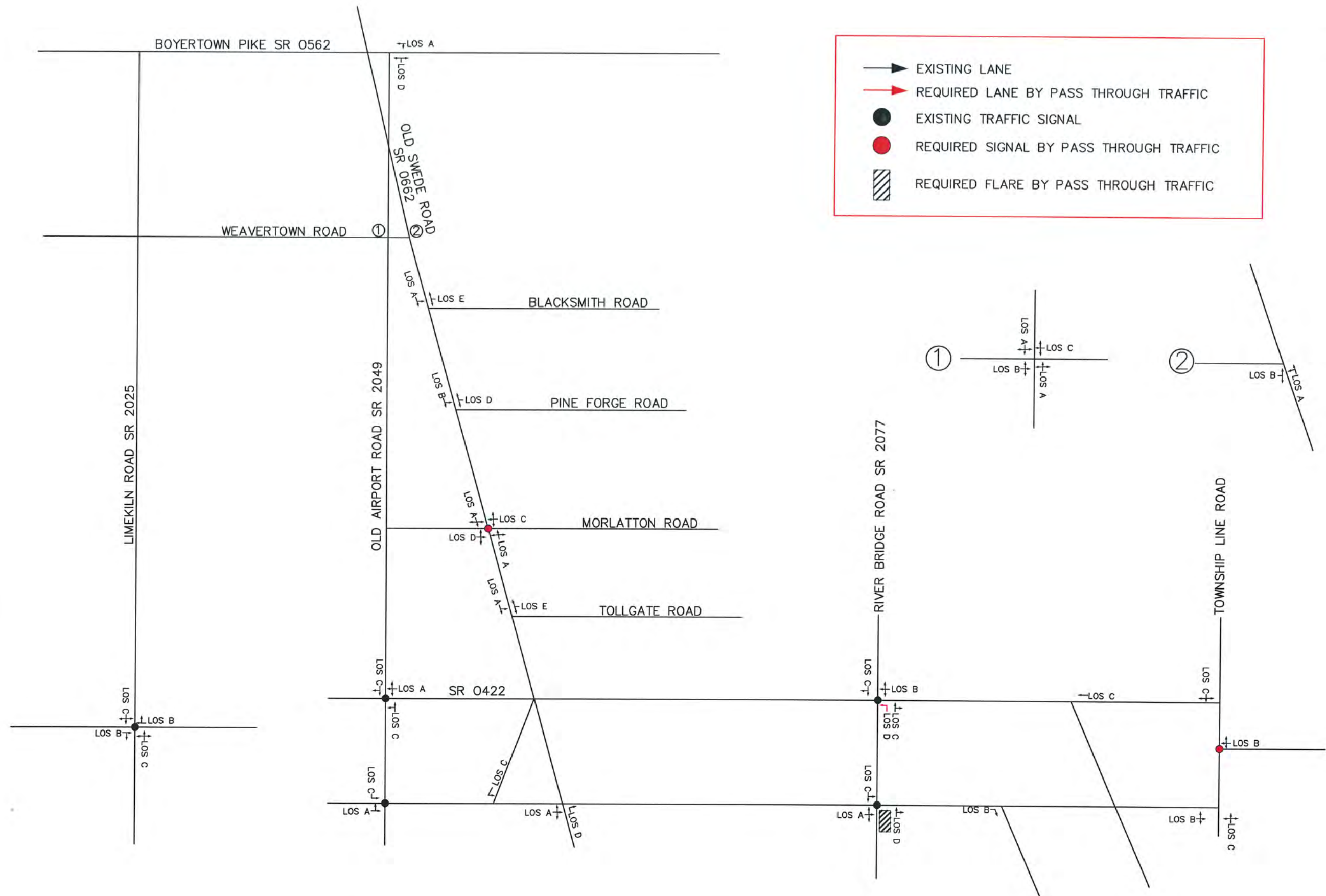
2026 FUTURE DEVELOPMENT TRAFFIC VOLUMES
 FIGURE 6



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2026 FUTURE PASS-THROUGH WITH IMPROVEMENTS - LEVELS OF SERVICE

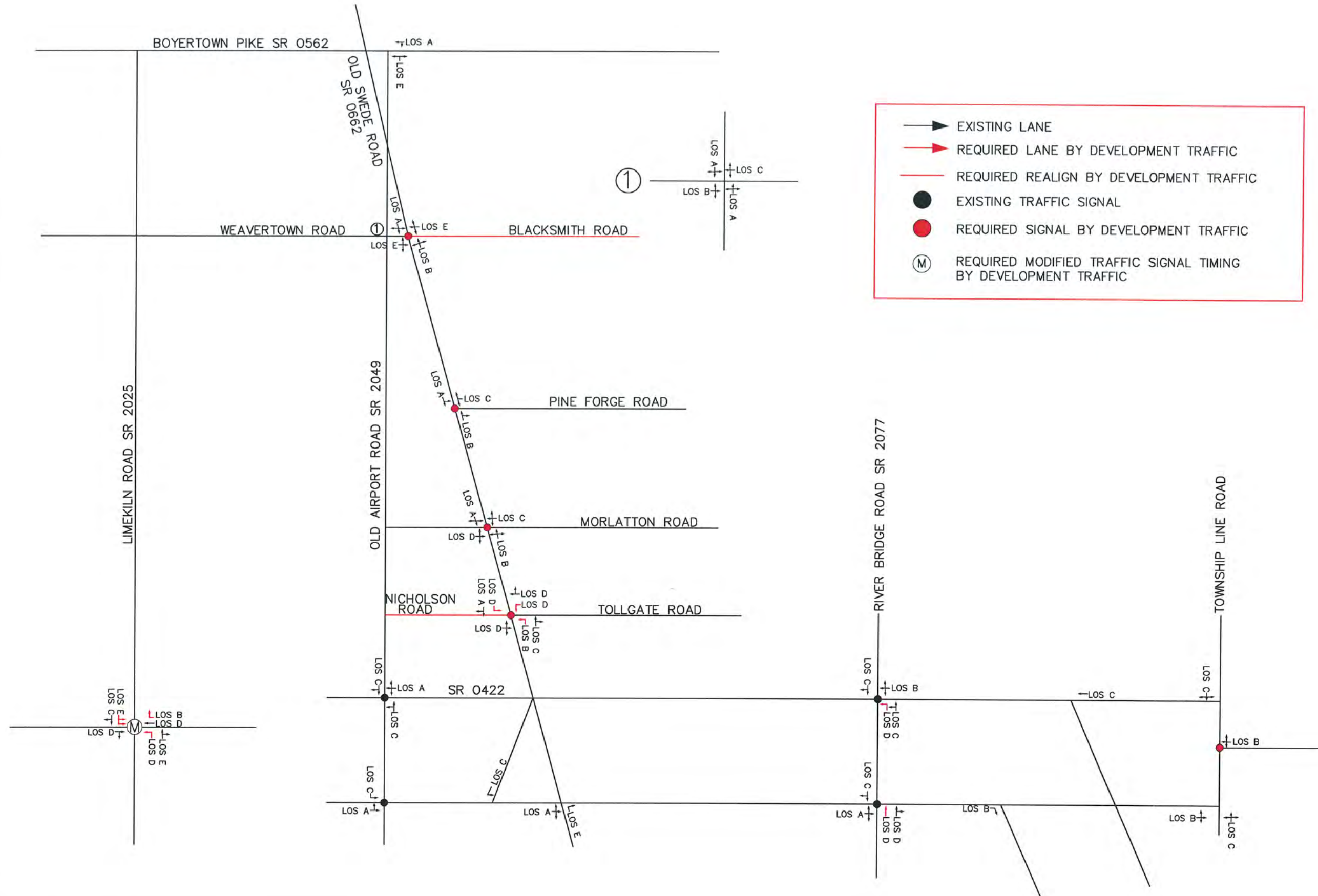


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2026 FUTURE PASS-THROUGH WITH IMPROVEMENTS
 FIGURE 8

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2026 FUTURE DEVELOPMENT WITH IMPROVEMENTS - LEVELS OF SERVICE



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