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## FOUNDER

Joseph W. McMahon, P.E.

July 29, 2020

Mr. Russell Hatton, Chair  
Westtown Township Planning Commission  
1039 Wilmington Pike  
West Chester, PA 19382

RE: **Robinson Tract Residential Development  
Westtown Township, Chester County, PA  
McMahon Project No. 816451.11**

Dear Mr. Russell:

McMahon Associates, Inc. is in receipt of the Township's comment letter, prepared by Albert Federico Consulting, LLC and last revised July 6, 2020, in regards to the *Transportation Impact Study for the Robinson Tract*, prepared by our office and last revised May 15, 2020. The development is proposed to be located on the Crebilly Farm property along the west side of U.S. Route 202 (Wilmington Pike), between West Pleasant Grove Road and Street Road (S.R. 0926), in Westtown Township, Chester County, Pennsylvania. On behalf of the applicant, below is a summary of the outstanding comments in italics, with our responses following each comment.

*Comment #1ai: Table 1 should be updated to identify West Pleasant Grove Road as a Township Collector Roadway {Westtown Township Comprehensive Plan update, page 9-7}  
Status: This comment remains outstanding. Westtown Township identifies West Pleasant Grove as a Collector Road and the Study should be revised accordingly.*

Response: A revised Table 1 is attached which identifies West Pleasant Grove Road as a Collector Roadway that is substandard, as it does not currently meet the Township's design criteria for this classification.

*Comment #1aaii: The section so of the TIS discussing improvements should note that the internal Collector Road provides access to the property.  
Status: The Study has been revised to address this comment.*

Response: No further response required.

*Comment #1aiii: As previously noted, the scope of physical improvements required to provide acceptable sight distance to public roads should be clearly indicated on the plans.*

*Status: This comment remains outstanding. The limits of clearing and/or other improvements required to provide adequate sight distance should be illustrated on the plans to allow the Planning Commission to consider potential impacts. Further, it does not appear that the analyses have been updated to consider required roadway widening.*

**Response:** Sight distance profiles are attached, illustrating both the preliminary horizontal and vertical design with inclusion of the roadway improvements that the applicant is providing. These profiles demonstrate that acceptable sight distance is achieved for all proposed access intersections.

**Comment #1aiv:** *As previously noted, Cost Estimates for necessary improvements to accommodate future traffic should be provided. {§149-804.A(10)}*

*Status: This comment remains outstanding. The Applicant has previously indicated that this information will be provided once there is "concurrency" regarding the scope of improvements.*

**Response:** Section 149-804.A(10) is part of the SALDO and is beyond the scope of conditional use. This information will be provided once there is concurrency regarding the scope of improvements during land development.

**Comment #1v:** *As previously noted, an Implementation Strategy for necessary improvements to accommodate future traffic should be provided. {§149-804.A(11)}*

*Status: This comment remains outstanding. The Applicant has previously indicated that this information will be provided once there is "concurrency" regarding the scope of improvements.*

**Response:** Section 149-804.A(11) is part of the SALDO and is beyond the scope of conditional use. This information will be provided once there is concurrency regarding the scope of improvements during land development.

**Comment #1bi:** *References to Proposed Access Road names should consistent with the Alternative Plan submitted to the Township for consideration.*

**Response:** The study reflects the access naming conventions consistent with the submitted plan. The Alternate Plan was presented by the applicant for discussion purposes with the Planning Commission. The location and operations of all accesses within the study are consistent between the submitted plan and the Alternate Plan.

**Comment #1bii1:** *Verify the capacity analysis inputs for PA Route 926 and New Street, including detector settings and arrival type, to ensure the accuracy of the counter-intuitive results. Of particular note, the average delay for westbound vehicles making left turn and through movements are projected to decrease from 9.9 seconds/vehicle to 0.9 seconds per vehicle, even though the lane group volume increases from 377 vehicles (including right turns) to 406 vehicles per hour (excluding right turns). This improvement in operations appears disproportionate to the additional green time associated with the 49 vehicles assumed to be diverted from the southbound approach.*

**Response:** The decrease in westbound delay noted within the comment above is due to the implementation of signal coordination via interconnection between the PA 926/New Street and PA 926/Bridlewood Boulevard/Collector intersection, which the applicant will implement as required by PennDOT. To clearly demonstrate this, Synchro worksheets are attached for the with-development conditions, both without and with the implementation of the signal coordination while all other inputs remain constant.

*Comment #1bii2i: The future coordination presented for PA Route 926 appears unlikely to be approved by PennDOT. Written confirmation from PennDOT should be provided that the New Street and Connector Road intersections will operate at different cycle lengths than US 202 (90 versus 120 seconds) and not be coordinated with US 202. If confirmation cannot be provided an alternative analysis utilizing a consistent cycle length and coordination with US 202 should be provided.*

**Response:** This comment is incorrect. PennDOT has approved the proposed future signal coordination currently in the study. Per the attached email from Dave Adams, Traffic Signals Section Manager at PennDOT District 6-0, the two signals along PA 926 are to be interconnected by fiber to the US 202 system; however, they are not to be coordination with US 202 from a timing standpoint. No revisions to submitted study are necessary.

*Comment #2ai: The Applicant has indicated that turn lanes will be provided to accommodate post development volumes at the following intersections, but these improvements are not reflected on the submitted plans:*  
*(1) PA Route 926 at New Street*  
*(2) US Route 202 at Pleasant Grove Road*  
*Status: Supplemental exhibits for the improvement of PA Route 926 and New Street have been provided to the Township and PennDOT. US Route 202 and West Pleasant Grove Road remains outstanding.*

**Response:** An exhibit illustrating the provision of a dedicated southbound US 202 right-turn lane at West Pleasant Grove Road is attached. All proposed improvements can be constructed within the PennDOT Right-of-Way.

*Comment #2aai: Additional grading and/or traffic management measures appear warranted to enhance safety at the three accesses proposed to have insufficient sight distance or the exact minimum distance (without considering required roadway widening):*  
*(1) Collector Road at PA Route 926*  
*(2) Road N (previously M) at West Pleasant Grove Road*  
*(3) Collector Road at West Pleasant Grove Road*

*Status: (1) To date the limits of disturbance associated with the Collector Road and PA Route 926 have not been provided. (2) Based on discussions at the Planning Commission Road N may be recommended for Emergency Access only. (3) A separate exhibit (dated June 8, 2020) has been provided for a full roundabout at the Collector Road and West Pleasant Grove Road. Based on the*

*information provided there appear to be very limited impacts to Primary (Steep Slopes) and Secondary resources. These impacts may be further minimized through coordination with the Westminster Presbyterian Church.*

Response: Again, the attached profiles demonstrate that acceptable sight distance is achieved for all proposed access intersections with the applicant's roadway improvements.

Comment #2aiii: *The design of the internal Collector Road should incorporate suitable traffic calming measures to maintain a 35 mile per hour average travel speed.*  
Status: *This comment remains outstanding. The Applicant has previously requested to defer this until Land Development.*

Response: This comment is beyond the scope of conditional use and pertains to roadway design during land development.

Comment #2aiv: *The following internal roadways should be configured to remove geometric irregularities.*  
Status: *The concept exhibit (dated June 5, 2020) addresses these items.*

Response: No further response needed.

Comment #2av: *Additional facilities should be provided to address non-vehicular connectivity, including:*  
*(1) A perimeter trail around the portion of the site west of the internal Collector Road. {Westtown Township Comprehensive Plan Update, page 9-15}*  
*(2) Connections to existing and planned facilities along Dunvegan Road and within the Arborview neighborhood. {Westtown Township Comprehensive Plan Update, page 9-15}*  
*(3) Sidewalks along proposed roads, including accessible crossings. {§149-916}*  
*(4) Connectivity to pedestrian attractors, including Stetson Middle School, Westminster Presbyterian Church, and the existing retail uses at US Route 202 and PA Route 926. {§149-916}*  
*Status: The submitted materials do not adequately address these comments. The Applicant has represented to the Planning Commission that Stop signs will be used to compensate for these irregular designs. To date no information has been provided documenting that the signs would meet accepted warrants.*  
Status: *The Concept Plan exhibit (dated June 5, 2020) substantially addresses these items.*

Response: No further response needed.

Comment #2avi: *Provisions should be made for future access from the Westminster Presbyterian Church to the internal Collector Road.*  
Status: *This comment remains outstanding. It is noted that the connection should be at a mutually agreed upon location. Based on preliminary conversations with the church, it is understood that a connection to the southern parking area may be considered preferable.*

Response: The applicant is agreeable to a future connection from the Church property to the Collector Road, provided the proposed location meets all applicable ordinances, and the applicant is not responsible for engineering, permitting, approval, or construction costs associated with such a connection.

Comment #2avii: *Provisions should be made for School Bus Stops, including short-term parking for drop-off and pick-up.*  
*Status: This comment remains outstanding.*

Response: School Bus Stops are not required pursuant to Township code. During land development, the applicant will coordinate with the School District on the location of school bus stops.

Comment #2bi: *The conclusion that the project does not adversely impact the intersection of PA Route 926 and New Street is based in part on an assumed corridor coordination which appears unlikely to be approved by PennDOT. As noted above, additional supporting information and analyses should be provided.*

Response: This comment is incorrect. PennDOT has approved the proposed future signal coordination currently in the study. Per the above responses, no revisions to the study are necessary, and therefore, the conclusions regarding PA 926 and New Street remain accurate.

Comment #2bii: *It is anticipated that School buses and other large vehicles will use the intersection of the Collector Road and West Pleasant Grove Road. As such, a full roundabout is considered preferable to a mini-roundabout where vehicles may traverse the central island.*

Response: For the intersection of West Pleasant Grove Road and the Collector Road, the transportation impact study demonstrates that this intersection satisfies industry standard PennDOT traffic operations criteria with stop-control on the Collector Road approach and free-flow on West Pleasant Grove Road. With the proposed stop-control on the Collector Road approach, the intersection operates at highly acceptable LOS A overall, and LOS A or LOS B for all movements, in the future with the development. This traffic control is acceptable for operations and safety since the traffic is accommodated with low delay and since sight distance requirements will be achieved. Additional traffic control would only be considered if the intersection operated with unacceptable delay (LOS F conditions) or if sight distance requirements could not be achieved. It is common that installation of a traffic signal or a roundabout would be considered if these issues were present. Not only are these issues not present at this location, the intersection operates highly acceptably with the proposed stop-control, and a traffic signal is not warranted based on traffic volumes pursuant to PennDOT requirements. While there are not warrants for installation of a roundabout, since it is

most commonly an alternative to traffic signal control, the traffic signal volume warrants are also a guide for the need for a roundabout.

Although not necessary, the applicant offers to install a mini roundabout at the Collector Road/West Pleasant Grove Road intersection, provided the Township acquires any necessary right-of-way for installation. Common site applications for mini roundabouts include residential environments, space-constrained locations, and locations with high delay. Mini roundabouts accommodate school buses and large vehicles by providing a traversable central island. Based on the October 2019 traffic counts during the weekday morning (7-9AM) and weekday afternoon (4-6PM) periods, school buses and large vehicles are only two percent of the total traffic along West Pleasant Grove Road, demonstrating a low occurrence of vehicles that would need to traverse the mini roundabout central island.

There is no reason for traffic operations or safety that require a roundabout, and there is no ordinance requirement or criteria requiring a roundabout at this intersection. The applicant will provide either stop-control on the Collector Road approach or a mini roundabout.

If there are any questions or if additional information is needed, please feel free to contact me at [nkline@mcmahonassociates.com](mailto:nkline@mcmahonassociates.com) or (610) 594-9995.

Sincerely,



Nicole R. Kline-Elsier, P.E., PTOE  
Regional Service Leader - Traffic

NRKE

cc: Robert Pingar, P.E., Westtown Township  
Will Ethridge, Westtown Township  
Andrew Semon, Toll Brothers  
Michael Downs, P.E., Toll Brothers  
Gregg Adelman, Esq., Kaplin Stewart

**Response to Comment 1ai**  
Table 1, page 4

## Existing Transportation Settings and Conditions

Toll Brothers, Inc. proposes a residential development on the Robinson Tract, located along the west side of U.S. Route 202 (Wilmington Pike), between West Pleasant Grove Road and Street Road (S.R. 0926), in Westtown Township, Chester County, Pennsylvania (**Figure 1**). The existing roadways and intersections in the vicinity of the site, which comprise the study area roadway network, are described in this section.

### Roadway Characteristics

The study area roadway network and characteristics are summarized below in **Table 1**.

**Table 1 - Existing Roadway Characteristics**

Roadway Name (Jurisdiction)	Average Daily Traffic Volumes (vehicles per day)	Roadway Classification		Travel Lanes (per direction)	Posted Speed Limit (mph)
		Smart Transportation <sup>(1)</sup>	PennDOT/ Township <sup>(2)</sup>		
U.S. Route 202 (Wilmington Pike)	47,301 <sup>(3)</sup>	Regional Arterial	Urban – Principal Arterial	2	45
Street Road (S.R. 0926 – PA)	12,952 <sup>(3)</sup>	Community Arterial	Urban – Minor Arterial	1	45
New Street (Local)	5,056 <sup>(3)</sup>	Neighborhood Collector	Urban – Minor Collector	1	35
West Pleasant Grove Road (Local)	n/a	Local Road	Collector Road <sup>(4)</sup>	1	35
Bridlewood Boulevard (Local)	n/a	Local Road	Local Road	1	25

(1) Based on Table 5.1 – Roadway Categories in the PennDOT publication, *Smart Transportation Guidebook*.

(2) Based on the roadway classifications provided on PennDOT’s Traffic Information Repository (TIRe) website and the Westtown Township Comprehensive Plan Update, dated 2019

(3) Based on traffic data from PennDOT’s Traffic Information Repository (TIRe) website.

(4) West Pleasant Grove Road does not currently satisfy Township criteria for a Collector Road per the ordinance definitions. The applicant has committed to half-width widening West Pleasant Grove Road to meet the Township’s Collector Road standards along the applicant’s site frontage.

The following key intersections in the vicinity of the site comprise the study area:

- U.S. Route 202 (Wilmington Pike) and Street Road (S.R. 0926)
- U.S. Route 202 (Wilmington Pike) and Pleasant Grove Road
- U.S. Route 202 (Wilmington Pike) and Skiles Boulevard/Stetson School
- Street Road (S.R. 0926) and Bridlewood Boulevard/Proposed Collector Road
- Street Road (S.R. 0926) and New Street
- New Street and West Pleasant Grove Road
- West Pleasant Grove Road and Proposed Access (Road K)
- West Pleasant Grove Road and Proposed Access (Road M)



**Response to Comment 1aiii**  
**Sight Distance Exhibits**









**Response to Comment 1bii1**  
Synchro Worksheets

**PA 926 and New Street**  
**2030 without Development**  
**(from TIS dated 5/15/2020)**

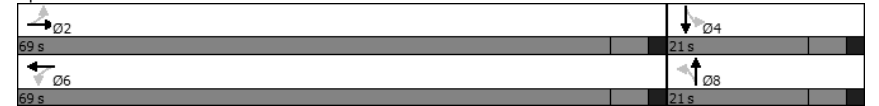
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (vph)	81	660	5	8	330	38	10	105	43	8	130	204
Future Volume (vph)	81	660	5	8	330	38	10	105	43	8	130	204
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%			1%			-2%			1%		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999			0.986			0.963			0.919		
Frt Protected	0.995			0.999			0.997			0.999		
Satd. Flow (prot)	0	1626	0	0	1547	0	0	1586	0	0	1512	0
Frt Permitted	0.914			0.986			0.869			0.992		
Satd. Flow (perm)	0	1493	0	0	1527	0	0	1383	0	0	1502	0
Right Turn on Red	Yes			Yes			No			No		
Satd. Flow (RTOR)	1			16			25			35		
Link Speed (mph)	45			45			714			826		
Link Distance (ft)	819			2436			19.5			16.1		
Travel Time (s)	12.4			36.9			0.97			0.97		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	4%	0%	0%	7%	3%	11%	1%	5%	13%	0%	2%
Adj. Flow (vph)	84	680	5	8	340	39	10	108	44	8	134	210
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	769	0	0	387	0	0	162	0	0	352	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left Thru			Left Thru		
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2			6			8			4		
Detector Phase	2			6			8			4		
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	69.0	69.0		69.0	69.0		21.0	21.0		21.0	21.0	
Total Split (%)	76.7%	76.7%		76.7%	76.7%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	63.0	63.0		63.0	63.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0			-1.0			-1.0		
Total Lost Time (s)	5.0			5.0			5.0			5.0		
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	90
Natural Cycle:	70
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926







Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕			↕			↕	
Traffic Volume (veh/h)	81	660	5	8	330	38	10	105	43	8	130	204
Future Volume (veh/h)	81	660	5	8	330	38	10	105	43	8	130	204
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No			No			No	
Adj Sat Flow, veh/h/ln	1846	1818	1875	1794	1696	1752	1718	1860	1803	1612	1794	1766
Adj Flow Rate, veh/h	84	680	5	8	340	39	10	108	44	8	134	210
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	4	0	0	7	3	11	1	5	13	0	2
Cap, veh/h	146	1104	8	48	1050	118	51	221	86	44	113	171
Arrive On Green	0.70	0.71	0.70	0.70	0.71	0.70	0.17	0.18	0.17	0.17	0.18	0.17
Sat Flow, veh/h	142	1553	11	10	1476	167	48	1244	482	15	637	963
Grp Volume(v), veh/h	769	0	0	387	0	0	162	0	0	352	0	0
Grp Sat Flow(s),veh/h/ln	1707	0	0	1653	0	0	1773	0	0	1615	0	0
Q Serve(g_s), s	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Cycle Q Clear(g_c), s	20.2	0.0	0.0	7.9	0.0	0.0	7.5	0.0	0.0	15.0	0.0	0.0
Prop In Lane	0.11		0.01	0.02		0.10	0.06		0.27	0.02		0.60
Lane Grp Cap(c), veh/h	1239	0	0	1198	0	0	338	0	0	310	0	0
V/C Ratio(X)	0.62	0.00	0.00	0.32	0.00	0.00	0.48	0.00	0.00	1.14	0.00	0.00
Avail Cap(c_a), veh/h	1239	0	0	1198	0	0	338	0	0	310	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.6	0.0	0.0	4.9	0.0	0.0	33.7	0.0	0.0	37.9	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.7	0.0	0.0	1.1	0.0	0.0	92.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.1	0.0	0.0	4.0	0.0	0.0	6.0	0.0	0.0	22.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.0	0.0	0.0	5.6	0.0	0.0	34.7	0.0	0.0	130.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	F	A	A
Approach Vol, veh/h	769		387		162		352					
Approach Delay, s/veh	9.0		5.6		34.7		130.7					
Approach LOS	A		A		C		F					
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	69.0		21.0		69.0		21.0					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	63.0		15.0		63.0		15.0					
Max Q Clear Time (g_c+1), s	22.2		17.0		9.9		9.5					
Green Ext Time (p_c), s	7.6		0.0		3.0		0.2					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	36.4											
HCM 6th LOS	D											

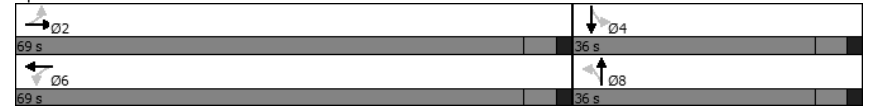
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Volume (vph)	58	677	14	20	325	32	10	89	39	52	176	153
Future Volume (vph)	58	677	14	20	325	32	10	89	39	52	176	153
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%				1%				-2%		1%	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998				0.989				0.962		0.946	
Frt Protected	0.996				0.997				0.996		0.993	
Satd. Flow (prot)	0	1625	0	0	1551	0	0	1581	0	0	1531	0
Frt Permitted	0.940				0.946				0.969		0.939	
Satd. Flow (perm)	0	1534	0	0	1471	0	0	1538	0	0	1447	0
Right Turn on Red			Yes				Yes				No	
Satd. Flow (RTOR)	2				8							
Link Speed (mph)	45				45				25		35	
Link Distance (ft)	819				2436				714		826	
Travel Time (s)	12.4				36.9				19.5		16.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	4%	0%	0%	7%	3%	11%	1%	5%	13%	0%	2%
Adj. Flow (vph)	60	698	14	21	335	33	10	92	40	54	181	158
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	772	0	0	389	0	0	142	0	0	393	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left				Left		Thru		Left		Thru	
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2				6				8		4	
Permitted Phases	2				6				8		4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	69.0	69.0		69.0	69.0		36.0	36.0		36.0	36.0	
Total Split (%)	65.7%	65.7%		65.7%	65.7%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)	63.0	63.0		63.0	63.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0				-1.0				-1.0		-1.0	
Total Lost Time (s)	5.0				5.0				5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary

Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	104.2
Natural Cycle:	80
Control Type:	Semi Act-Uncoordinated

Splits and Phases: 1: New St & Rt 926





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕				↕			↕			↕	
Traffic Volume (veh/h)	58	677	14	20	325	32	10	89	39	52	176	153
Future Volume (veh/h)	58	677	14	20	325	32	10	89	39	52	176	153
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No			No			No	
Adj Sat Flow, veh/h/ln	1846	1818	1875	1794	1696	1752	1718	1860	1803	1612	1794	1766
Adj Flow Rate, veh/h	60	698	14	21	335	33	10	92	40	54	181	158
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	4	0	0	7	3	11	1	5	13	0	2
Cap, veh/h	100	1017	20	67	901	86	52	323	132	86	214	174
Arrive On Green	0.64	0.63	0.62	0.64	0.63	0.62	0.28	0.27	0.26	0.28	0.27	0.26
Sat Flow, veh/h	98	1609	32	46	1424	136	53	1203	493	168	795	647
Grp Volume(v), veh/h	772	0	0	389	0	0	142	0	0	393	0	0
Grp Sat Flow(s),veh/h/ln	1739	0	0	1607	0	0	1749	0	0	1609	0	0
Q Serve(g_s), s	11.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.0	0.0	0.0
Cycle Q Clear(g_c), s	28.4	0.0	0.0	11.3	0.0	0.0	6.4	0.0	0.0	23.6	0.0	0.0
Prop In Lane	0.08		0.02	0.05		0.08	0.07		0.28	0.14		0.40
Lane Grp Cap(c), veh/h	1155	0	0	1069	0	0	526	0	0	489	0	0
V/C Ratio(X)	0.67	0.00	0.00	0.36	0.00	0.00	0.27	0.00	0.00	0.80	0.00	0.00
Avail Cap(c_a), veh/h	1155	0	0	1069	0	0	589	0	0	549	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.9	0.0	0.0	8.9	0.0	0.0	29.5	0.0	0.0	35.7	0.0	0.0
Incr Delay (d2), s/veh	3.1	0.0	0.0	1.0	0.0	0.0	0.3	0.0	0.0	7.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.8	0.0	0.0	6.4	0.0	0.0	5.0	0.0	0.0	15.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.0	0.0	0.0	9.9	0.0	0.0	29.8	0.0	0.0	43.4	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	D	A	A
Approach Vol, veh/h	772				389				142		393	
Approach Delay, s/veh	15.0				9.9				29.8		43.4	
Approach LOS	B				A				C		D	
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	69.0		32.2		69.0		32.2					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	63.0		30.0		63.0		30.0					
Max Q Clear Time (g_c+1), s	30.4		25.6		13.3		8.4					
Green Ext Time (p_c), s	7.3		0.6		3.1		0.4					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			21.6									
HCM 6th LOS			C									

**PA 926 and New Street**

**2030 with Development without Coordination**

**(For Comparison to Illustrate the Impact of  
Adding Coordination As Required by PennDOT)**

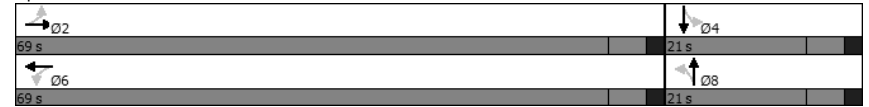
	↖	→	↘	↙	←	↖	↙	↘	↗	↖	↘	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Traffic Volume (vph)	84	663	5	12	393	38	10	106	44	8	133	156
Future Volume (vph)	84	663	5	12	393	38	10	106	44	8	133	156
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%				1%		-2%				1%	
Storage Length (ft)	0		0		150		0		0		0	
Storage Lanes	0		0		0		0		0		0	
Taper Length (ft)	75		75		75		75		75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.988				0.963		0.929	
Flt Protected	0.994				0.999				0.997		0.999	
Satd. Flow (prot)	0	1624	0	0	1550	0	0	1586	0	0	1530	0
Flt Permitted	0.901				0.979				0.910		0.991	
Satd. Flow (perm)	0	1472	0	0	1519	0	0	1448	0	0	1518	0
Right Turn on Red			Yes				Yes				No	
Satd. Flow (RTOR)	1				13				25		35	
Link Speed (mph)	45				45				25		35	
Link Distance (ft)	819				2436				714		826	
Travel Time (s)	12.4				36.9				19.5		16.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	4%	0%	0%	7%	3%	11%	1%	5%	13%	0%	2%
Adj. Flow (vph)	87	684	5	12	405	39	10	109	45	8	137	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	776	0	0	456	0	0	164	0	0	306	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left				Left				Left Thru		Left Thru	
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2				6				8		4	
Permitted Phases	2				6				8		4	
Detector Phase	2				6				8		4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	69.0	69.0		69.0	69.0		21.0	21.0		21.0	21.0	
Total Split (%)	76.7%	76.7%		76.7%	76.7%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	63.0	63.0		63.0	63.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0				-1.0				-1.0		-1.0	

	↖	→	↘	↙	←	↖	↙	↘	↗	↖	↘	↗
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0				5.0				5.0		5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary

Area Type: Other  
Cycle Length: 90  
Actuated Cycle Length: 90  
Natural Cycle: 65  
Control Type: Semi Act-Uncoord

Splits and Phases: 1: New St & Rt 926





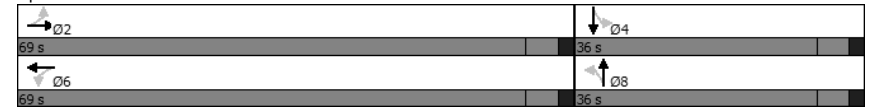
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (veh/h)	84	663	5	12	393	38	10	106	44	8	133	156
Future Volume (veh/h)	84	663	5	12	393	38	10	106	44	8	133	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1846	1818	1875	1794	1696	1752	1718	1860	1803	1612	1794	1766
Adj Flow Rate, veh/h	87	684	5	12	405	39	10	109	45	8	137	161
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	4	0	0	7	3	11	1	5	13	0	2
Cap, veh/h	148	1089	8	52	1062	100	51	220	87	44	134	153
Arrive On Green	0.70	0.71	0.70	0.70	0.71	0.70	0.17	0.18	0.17	0.17	0.18	0.17
Sat Flow, veh/h	146	1532	11	15	1493	141	47	1240	487	17	756	859
Grp Volume(v), veh/h	776	0	0	456	0	0	164	0	0	306	0	0
Grp Sat Flow(s),veh/h/ln	1688	0	0	1650	0	0	1773	0	0	1632	0	0
Q Serve(g_s), s	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Cycle Q Clear(g_c), s	20.9	0.0	0.0	9.9	0.0	0.0	7.6	0.0	0.0	15.0	0.0	0.0
Prop In Lane	0.11		0.01	0.03		0.09	0.06		0.27	0.03		0.53
Lane Grp Cap(c), veh/h	1226	0	0	1196	0	0	338	0	0	313	0	0
V/C Ratio(X)	0.63	0.00	0.00	0.38	0.00	0.00	0.49	0.00	0.00	0.98	0.00	0.00
Avail Cap(c_a), veh/h	1226	0	0	1196	0	0	338	0	0	313	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.7	0.0	0.0	5.2	0.0	0.0	33.7	0.0	0.0	37.7	0.0	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.9	0.0	0.0	1.1	0.0	0.0	44.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.0	0.0	5.0	0.0	0.0	6.1	0.0	0.0	15.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	0.0	0.0	6.1	0.0	0.0	34.8	0.0	0.0	82.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	F	A	A
Approach Vol, veh/h	776				456		164				306	
Approach Delay, s/veh	9.2				6.1		34.8				82.2	
Approach LOS	A				A		C				F	
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	69.0		21.0		69.0		21.0					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	63.0		15.0		63.0		15.0					
Max Q Clear Time (g_c+1), s	22.9		17.0		11.9		9.6					
Green Ext Time (p_c), s	7.8		0.0		3.6		0.2					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay			24.0									
HCM 6th LOS			C									

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Volume (vph)	66	686	14	23	383	32	10	92	43	52	178	104
Future Volume (vph)	66	686	14	23	383	32	10	92	43	52	178	104
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%			1%			-2%			1%		
Storage Length (ft)	0		0	0		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998			0.990			0.960			0.958		
Flt Protected	0.996			0.997			0.997			0.992		
Satd. Flow (prot)	0	1626	0	0	1552	0	0	1579	0	0	1547	0
Flt Permitted	0.925			0.943			0.972			0.931		
Satd. Flow (perm)	0	1510	0	0	1468	0	0	1539	0	0	1452	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)	2			7								
Link Speed (mph)	45			45			25			35		
Link Distance (ft)	819			2436			714			826		
Travel Time (s)	12.4			36.9			19.5			16.1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	4%	0%	0%	7%	3%	11%	1%	5%	13%	0%	2%
Adj. Flow (vph)	68	707	14	24	395	33	10	95	44	54	184	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	789	0	0	452	0	0	149	0	0	345	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left Thru			Left Thru		
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2			6			8			4		
Permitted Phases	2			6			8			8		
Detector Phase	2			6			8			8		
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	69.0	69.0		69.0	69.0		36.0	36.0		36.0	36.0	
Total Split (%)	65.7%	65.7%		65.7%	65.7%		34.3%	34.3%		34.3%	34.3%	
Maximum Green (s)	63.0	63.0		63.0	63.0		30.0	30.0		30.0	30.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0			-1.0			-1.0		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0			5.0			5.0			5.0		
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	

Intersection Summary	
Area Type:	Other
Cycle Length:	105
Actuated Cycle Length:	102.1
Natural Cycle:	80
Control Type:	Semi Act-Uncoord

Splits and Phases: 1: New St & Rt 926





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (veh/h)	66	686	14	23	383	32	10	92	43	52	178	104
Future Volume (veh/h)	66	686	14	23	383	32	10	92	43	52	178	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1846	1818	1875	1794	1696	1752	1718	1860	1803	1612	1794	1766
Adj Flow Rate, veh/h	68	707	14	24	395	33	10	95	44	54	184	107
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	4	0	0	7	3	11	1	5	13	0	2
Cap, veh/h	113	1038	20	69	952	77	52	284	124	90	223	121
Arrive On Green	0.67	0.66	0.65	0.67	0.66	0.65	0.25	0.24	0.23	0.25	0.24	0.23
Sat Flow, veh/h	110	1578	31	45	1448	118	53	1186	519	195	931	506
Grp Volume(v), veh/h	789	0	0	452	0	0	149	0	0	345	0	0
Grp Sat Flow(s),veh/h/ln	1719	0	0	1611	0	0	1758	0	0	1633	0	0
Q Serve(g_s), s	10.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.7	0.0	0.0
Cycle Q Clear(g_c), s	26.7	0.0	0.0	12.3	0.0	0.0	6.8	0.0	0.0	19.5	0.0	0.0
Prop In Lane	0.09		0.02	0.05		0.07	0.07		0.30	0.16		0.31
Lane Grp Cap(c), veh/h	1188	0	0	1115	0	0	479	0	0	451	0	0
V/C Ratio(X)	0.66	0.00	0.00	0.41	0.00	0.00	0.31	0.00	0.00	0.77	0.00	0.00
Avail Cap(c_a), veh/h	1188	0	0	1115	0	0	613	0	0	577	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.1	0.0	0.0	7.8	0.0	0.0	30.8	0.0	0.0	35.5	0.0	0.0
Incr Delay (d2), s/veh	2.9	0.0	0.0	1.1	0.0	0.0	0.4	0.0	0.0	4.6	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	0.0	0.0	6.6	0.0	0.0	5.3	0.0	0.0	12.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	13.0	0.0	0.0	8.9	0.0	0.0	31.2	0.0	0.0	40.1	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	D	A	A
Approach Vol, veh/h	789		452		149		345					
Approach Delay, s/veh	13.0		8.9		31.2		40.1					
Approach LOS	B		A		C		D					
Timer - Assigned Phs	2		4		6		8					
Phs Duration (G+Y+Rc), s	69.0		28.3		69.0		28.3					
Change Period (Y+Rc), s	6.0		6.0		6.0		6.0					
Max Green Setting (Gmax), s	63.0		30.0		63.0		30.0					
Max Q Clear Time (g_c+1), s	28.7		21.5		14.3		8.8					
Green Ext Time (p_c), s	7.7		0.8		3.7		0.5					
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	18.9											
HCM 6th LOS	B											



**PA 926 and New Street**

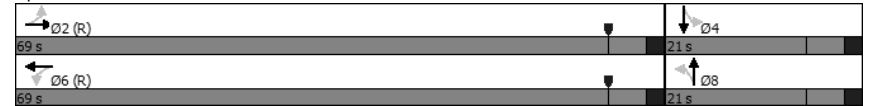
**2030 with Development with Coordination**

**(from TIS dated 5/15/2020)**

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕		↕		↕		↕		↕		↕	
Traffic Volume (vph)	84	663	5	12	393	38	10	106	44	8	133	156
Future Volume (vph)	84	663	5	12	393	38	10	106	44	8	133	156
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%				1%		-2%		1%			
Storage Length (ft)	0		0		150		0		0		0	
Storage Lanes	0		0		0		0		0		0	
Taper Length (ft)	75		75		75		75		75		75	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.999				0.988		0.963				0.929	
Flt Protected	0.994				0.999		0.997				0.999	
Satd. Flow (prot)	0	1624	0	0	1550	0	0	1586	0	0	1530	0
Flt Permitted	0.901				0.979		0.910				0.991	
Satd. Flow (perm)	0	1472	0	0	1519	0	0	1448	0	0	1518	0
Right Turn on Red			Yes				Yes				No	
Satd. Flow (RTOR)	1				13						35	
Link Speed (mph)	45				45		25				35	
Link Distance (ft)	819				2436		714				826	
Travel Time (s)	12.4				36.9		19.5				16.1	
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	4%	0%	0%	7%	3%	11%	1%	5%	13%	0%	2%
Adj. Flow (vph)	87	684	5	12	405	39	10	109	45	8	137	161
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	776	0	0	456	0	0	164	0	0	306	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left		Left		Left Thru		Left Thru		Left Thru		Left Thru	
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2				6		8				4	
Permitted Phases	2				6		8				4	
Detector Phase	2				6		8				4	
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	69.0	69.0		69.0	69.0		21.0	21.0		21.0	21.0	
Total Split (%)	76.7%	76.7%		76.7%	76.7%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	63.0	63.0		63.0	63.0		15.0	15.0		15.0	15.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0				-1.0		-1.0				-1.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0				5.0		5.0				5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Intersection Summary												
Area Type:	Other											
Cycle Length:	90											
Actuated Cycle Length:	90											
Offset:	50 (56%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow											
Natural Cycle:	65											
Control Type:	Actuated-Coordinated											

Splits and Phases: 1: New St & Rt 926



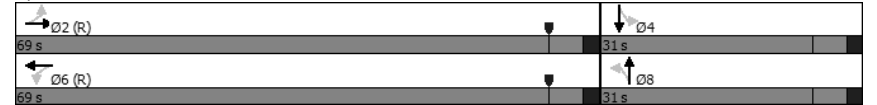


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Volume (veh/h)	84	663	5	12	393	38	10	106	44	8	133	156
Future Volume (veh/h)	84	663	5	12	393	38	10	106	44	8	133	156
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1818	1818	1818	1696	1696	1696	1860	1860	1860	1794	1794	1794
Adj Flow Rate, veh/h	87	684	5	12	405	39	10	109	45	8	137	161
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	4	4	7	7	7	1	1	1	0	0	0
Cap, veh/h	148	1089	8	52	1062	100	51	220	87	44	134	153
Arrive On Green	0.70	0.71	0.70	0.93	0.95	0.93	0.17	0.18	0.17	0.17	0.18	0.17
Sat Flow, veh/h	146	1532	11	15	1493	141	47	1240	487	17	756	859
Grp Volume(v), veh/h	776	0	0	456	0	0	164	0	0	306	0	0
Grp Sat Flow(s),veh/h/ln	1688	0	0	1650	0	0	1773	0	0	1632	0	0
Q Serve(g_s), s	7.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0	0.0
Cycle Q Clear(g_c), s	20.9	0.0	0.0	2.2	0.0	0.0	7.6	0.0	0.0	15.0	0.0	0.0
Prop In Lane	0.11		0.01	0.03		0.09	0.06		0.27	0.03		0.53
Lane Grp Cap(c), veh/h	1226	0	0	1196	0	0	338	0	0	313	0	0
V/C Ratio(X)	0.63	0.00	0.00	0.38	0.00	0.00	0.49	0.00	0.00	0.98	0.00	0.00
Avail Cap(c_a), veh/h	1226	0	0	1196	0	0	338	0	0	313	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.99	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.7	0.0	0.0	0.8	0.0	0.0	33.7	0.0	0.0	37.7	0.0	0.0
Incr Delay (d2), s/veh	2.5	0.0	0.0	0.9	0.0	0.0	1.1	0.0	0.0	44.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.0	0.0	1.2	0.0	0.0	6.1	0.0	0.0	15.9	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	9.2	0.0	0.0	1.7	0.0	0.0	34.8	0.0	0.0	82.2	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	C	A	A	F	A	A
Approach Vol, veh/h	776		456				164		306			
Approach Delay, s/veh	9.2		1.7				34.8		82.2			
Approach LOS	A		A				C		F			
Timer - Assigned Phs	2		4				6		8			
Phs Duration (G+Y+Rc), s	69.0		21.0				69.0		21.0			
Change Period (Y+Rc), s	6.0		6.0				6.0		6.0			
Max Green Setting (Gmax), s	63.0		15.0				63.0		15.0			
Max Q Clear Time (g_c+1), s	22.9		17.0				4.2		9.6			
Green Ext Time (p_c), s	7.8		0.0				3.7		0.2			
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay	22.8											
HCM 6th LOS	C											

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Volume (vph)	66	686	14	23	383	32	10	92	43	52	178	104
Future Volume (vph)	66	686	14	23	383	32	10	92	43	52	178	104
Ideal Flow (vphpl)	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800
Lane Width (ft)	10	10	10	10	10	10	10	10	10	10	10	10
Grade (%)	-2%			1%			-2%			1%		
Storage Length (ft)	0		0	0		150	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.998			0.990			0.960			0.958		
Flt Protected	0.996			0.997			0.997			0.992		
Satd. Flow (prot)	0	1626	0	0	1552	0	0	1579	0	0	1547	0
Flt Permitted	0.925			0.944			0.970			0.928		
Satd. Flow (perm)	0	1510	0	0	1469	0	0	1536	0	0	1448	0
Right Turn on Red			Yes			Yes			No			No
Satd. Flow (RTOR)	2			8			25			35		
Link Speed (mph)	45			45			25			35		
Link Distance (ft)	819			2436			714			826		
Travel Time (s)	12.4			36.9			19.5			16.1		
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	4%	0%	0%	7%	3%	11%	1%	5%	13%	0%	2%
Adj. Flow (vph)	68	707	14	24	395	33	10	95	44	54	184	107
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	789	0	0	452	0	0	149	0	0	345	0
Number of Detectors	1	1		1	1		1	1		1	1	
Detector Template	Left			Left			Left Thru			Left Thru		
Leading Detector (ft)	30	6		30	6		30	35		30	35	
Trailing Detector (ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Position(ft)	-10	0		-10	0		-10	-5		-10	-5	
Detector 1 Size(ft)	40	6		40	6		40	40		40	40	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	2			6			8			4		
Permitted Phases	2			6			8			4		
Detector Phase	2			6			8			4		
Switch Phase												
Minimum Initial (s)	22.0	22.0		22.0	22.0		3.0	3.0		3.0	3.0	
Minimum Split (s)	28.0	28.0		28.0	28.0		9.0	9.0		9.0	9.0	
Total Split (s)	69.0	69.0		69.0	69.0		31.0	31.0		31.0	31.0	
Total Split (%)	69.0%	69.0%		69.0%	69.0%		31.0%	31.0%		31.0%	31.0%	
Maximum Green (s)	63.0	63.0		63.0	63.0		25.0	25.0		25.0	25.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	-1.0			-1.0			-1.0			-1.0		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Total Lost Time (s)	5.0			5.0			5.0			5.0		
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	5.0	5.0		5.0	5.0		3.0	3.0		3.0	3.0	
Minimum Gap (s)	2.0	2.0		2.0	2.0		3.0	3.0		3.0	3.0	
Time Before Reduce (s)	42.0	42.0		42.0	42.0		0.0	0.0		0.0	0.0	
Time To Reduce (s)	21.0	21.0		21.0	21.0		0.0	0.0		0.0	0.0	
Recall Mode	C-Max	C-Max		C-Max	C-Max		None	None		None	None	
Intersection Summary												
Area Type:	Other											
Cycle Length:	100											
Actuated Cycle Length:	100											
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow											
Natural Cycle:	80											
Control Type:	Actuated-Coordinated											

Splits and Phases: 1: New St & Rt 926





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	66	686	14	23	383	32	10	92	43	52	178	104
Future Volume (veh/h)	66	686	14	23	383	32	10	92	43	52	178	104
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1818	1818	1818	1696	1696	1696	1860	1860	1860	1794	1794	1794
Adj Flow Rate, veh/h	68	707	14	24	395	33	10	95	44	54	184	107
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	4	4	4	7	7	7	1	1	1	0	0	0
Cap, veh/h	113	1049	20	68	962	78	51	278	122	88	219	119
Arrive On Green	0.67	0.66	0.65	1.00	1.00	1.00	0.25	0.24	0.23	0.25	0.24	0.23
Sat Flow, veh/h	111	1577	30	46	1446	118	53	1184	518	197	930	507
Grp Volume(v), veh/h	789	0	0	452	0	0	149	0	0	345	0	0
Grp Sat Flow(s),veh/h/ln	1718	0	0	1610	0	0	1755	0	0	1634	0	0
Q Serve(g_s), s	10.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	13.1	0.0	0.0
Cycle Q Clear(g_c), s	26.8	0.0	0.0	0.0	0.0	0.0	7.0	0.0	0.0	20.1	0.0	0.0
Prop In Lane	0.09		0.02	0.05		0.07	0.07		0.30	0.16		0.31
Lane Grp Cap(c), veh/h	1199	0	0	1124	0	0	469	0	0	442	0	0
V/C Ratio(X)	0.66	0.00	0.00	0.40	0.00	0.00	0.32	0.00	0.00	0.78	0.00	0.00
Avail Cap(c_a), veh/h	1199	0	0	1124	0	0	511	0	0	482	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	0.97	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	10.0	0.0	0.0	0.0	0.0	0.0	32.0	0.0	0.0	36.9	0.0	0.0
Incr Delay (d2), s/veh	2.8	0.0	0.0	1.0	0.0	0.0	0.4	0.0	0.0	7.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	0.0	0.0	0.6	0.0	0.0	5.5	0.0	0.0	13.5	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	12.8	0.0	0.0	1.0	0.0	0.0	32.4	0.0	0.0	44.3	0.0	0.0
LnGrp LOS	B	A	A	A	A	A	C	A	A	D	A	A
Approach Vol, veh/h		789			452			149			345	
Approach Delay, s/veh		12.8			1.0			32.4			44.3	
Approach LOS		B			A			C			D	
Timer - Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		71.5		28.5		71.5		28.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		63.0		25.0		63.0		25.0				
Max Q Clear Time (g_c+1), s		28.8		22.1		2.5		9.0				
Green Ext Time (p_c), s		7.7		0.4		3.7		0.4				
<b>Intersection Summary</b>												
HCM 6th Ctrl Delay				17.7								
HCM 6th LOS				B								

**Response to Comment 1bii2i**  
PA 926 PennDOT Response

## Kline, Nicole

---

**From:** Adams, David L <davidadams@pa.gov>  
**Sent:** Thursday, July 23, 2020 8:59 AM  
**To:** Drew E. Sirianni  
**Cc:** Patel, Ashwin; Kline, Nicole  
**Subject:** RE: [External] FW: Robinson Tract (EPS 196830) - PA 926 Signal Coordination Question

We would expect that the 2 signals on Route 926 be interconnected by fiber to the Route 202 backbone and communications set up with MaxView software in the District Office. However, we would not expect them to be coordinated with Route 202 from a timing standpoint.

**David L. Adams, P.E.** | Traffic Signals Section Manager  
PA Department of Transportation | Engineering District 6-0  
7000 Geerdes Boulevard | King of Prussia, PA 19406  
Phone: 610.205.6576 | Fax: 610.205.6598  
[www.dot.state.pa.us](http://www.dot.state.pa.us)

---

**From:** Drew E. Sirianni <DSirianni@Pennoni.com>  
**Sent:** Wednesday, July 22, 2020 12:59 PM  
**To:** Adams, David L <davidadams@pa.gov>  
**Cc:** Patel, Ashwin <ASHPATEL@pa.gov>; Kline, Nicole <nkline@mcmahonassociates.com>  
**Subject:** [External] FW: Robinson Tract (EPS 196830) - PA 926 Signal Coordination Question

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Dave,

I don't think you saw this yet, but I feel like we should consult with you. Please see the inquiry below from McMahon about the signal work for this project.

### Drew E. Sirianni, PE, PTOE

#### Pennoni

1900 Market St, Suite 300 | Philadelphia, PA 19103  
**Direct:** +1 (215) 254-7893 | **Mobile:** +1 (267) 822-7908  
[www.pennoni.com](http://www.pennoni.com) | [DSirianni@Pennoni.com](mailto:DSirianni@Pennoni.com)

---

**From:** Kline, Nicole <[nkline@mcmahonassociates.com](mailto:nkline@mcmahonassociates.com)>  
**Sent:** Wednesday, July 15, 2020 8:51 AM  
**To:** Patel, Ashwin <[ASHPATEL@pa.gov](mailto:ASHPATEL@pa.gov)>; Drew E. Sirianni <[DSirianni@Pennoni.com](mailto:DSirianni@Pennoni.com)>  
**Subject:** Robinson Tract (EPS 196830) - PA 926 Signal Coordination Question

Morning Ashwin and Drew, I hope all is well! We are continuing to work through the conditional use process in Westtown Township for the Robinson Tract (Crebilly Farm) development for Toll Brothers. A question came up in Al Federico's latest Township review letter that we wanted to confirm with PennDOT. Based on prior PennDOT comments,

our TIS includes the provision of interconnection between the PA 926/New Street and PA 926/Bridlewood Blvd/Proposed Connector Road traffic signals.

In his latest Township review letter, AI has questioned whether these two PA 926 traffic signals need to be incorporated into the US 202 signal system. Ashwin, can you please confirm if these two PA 926 signals are to be interconnected and remain their own system, or if PennDOT will require them to be added to the US 202 signal system? With the long cycle lengths for the US 202 corridor, we do not believe incorporating the PA 926 signals into that system would result in the best operations. We do not believe that was the intent based on previous PennDOT comments, but want to confirm what you are looking for specifically.

I have attached our latest with-development Synchro files, in case it is useful to have them at hand while reviewing this question. We are looking to resubmit to the Township at the end of this week, if information on this question can be provided. Let me know if a call would be helpful to discuss.

Thanks!

**Nicole R. Kline-Elsier, P.E., PTOE** | Regional Service Leader – Traffic  
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D: 484.872.2277  
835 Springdale Drive, suite 200  
Exton, PA 19341  
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[www.mcmahonassociates.com](http://www.mcmahonassociates.com)



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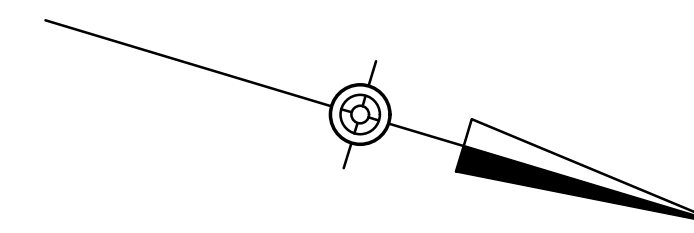


**Response to Comment 2ai**  
US 202 and West Pleasant Grove Concept

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DISTRICT	COUNTY	ROUTE	SECTION	SHEET
6-0	CHESTER	-	-	1 OF 1
WESTTOWN TOWNSHIP				
REVISION NUMBER	REVISIONS	DATE	BY	



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	PROPOSED ASPHALT PAVEMENT
	EXISTING UTILITY POLE
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**DRAFT**

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