

Morgantown Monongalia MPO
2025 - 2055 Metropolitan Transportation Plan

**Appendix E: Memo on Point
Marion-Stewartstown Intersection**



Memorandum

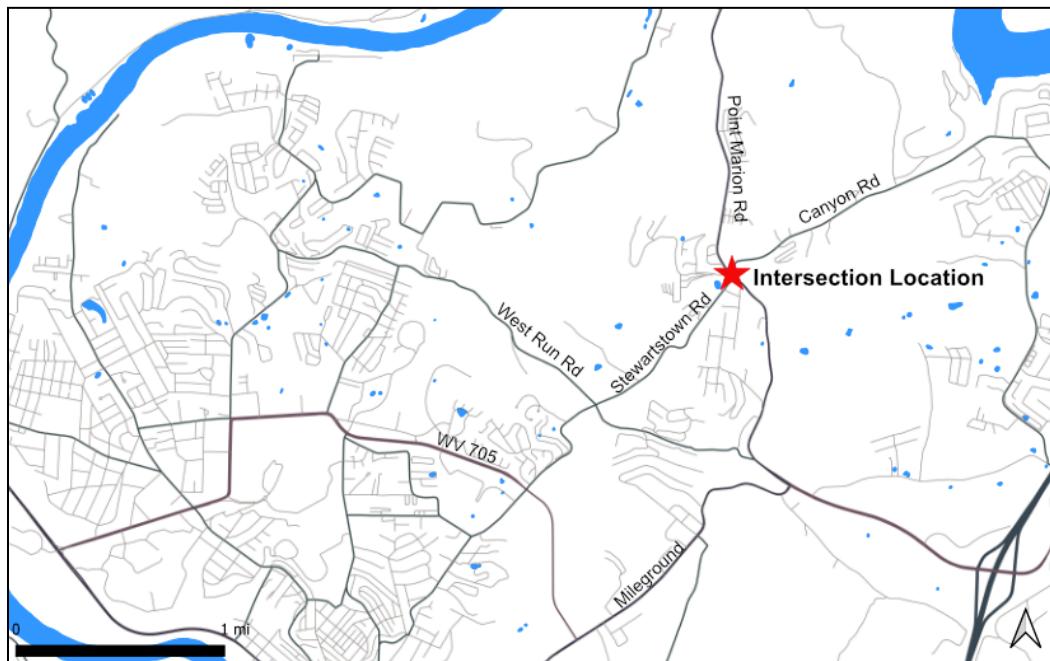
Date: December 30, 2025

To: MMMPO Staff

From: MMMPO Committees

Subject: Point Marion-Stewartstown Intersection Data Collection and Analysis

This memorandum documents observations conducted at the intersection of Point Marion Road and Stewartstown Road/Canyon Road during AM and PM peak periods. MPO staff conducted initial field observations on September 16 and 17, focusing on peak hours, queues, and general conditions in the intersection area. MPO staff did a follow-up traffic count and evaluation on September 30, focusing on traffic delay, movement pattern and signal timing.



Synchro LOS Analysis

Geometrically, the intersection has five legs; however, the signal timing operates as a four-leg intersection. The Farm View Road approach is controlled by the same signal phase as the southeastbound (SEB) approach on Point Marion Road. Due to this configuration, and for the purpose of LOS analysis, traffic volumes from Farm View Road are combined with the SEB volumes on Point Marion Road rather than being analyzed as a separate approach.



The following table summarizes the analysis outcome. A more detailed report of this analysis is attached to the memo as an appendix.

Street Name		Stewartstown Rd	Canyon Rd	Point Marion Rd	
Direction		NB	SB	SEB	NWB
AM Peak	v/c Ration	1.37	0.95	1.37	1.56
	Approach Delay (second)	222	83	199	258
	Approach LOS	F	F	F	F
PM Peak	v/c Ration	1.56	0.36	1.34	1.08
	Approach Delay (second)	299	45	192	87
	Approach LOS	F	D	F	F

Key Findings

AM Peak Hours

- **Peak Hour Times.** The AM Peak hour starts around **6:45 AM** and ends at 7:45 AM. Traffic on the north leg of Point Marion Road experienced backups extending approximately 0.5 - 0.8 miles north of the intersection.
- **Intersection Delay & LOS.** The average delay on the north leg of Point Marion Rd is approximately 3–4 minutes, which far exceeds the Level of Service (LOS) F threshold of 80 seconds.

PM Peak Hours

- **PM Peak Times.** The PM Peak hours span from 2:30 PM to 6:30 PM.
 - North leg of Point Marion Rd. The congestion extends about 0.5 miles during the peak period from 2:30 PM to 4:00 PM. During peak traffic, it takes up to three full signal cycles for a vehicle to pass through the intersection.
 - South leg of Point Marion Rd. The leg experienced backups of approximately 0.3 miles beginning around 4:30 PM.
 - Stewartstown Road. Traffic on Stewartstown Road began to queue at approximately 4:30 PM, extending 0.3 miles.
- **Intersection Delay & LOS.** All three legs experienced approximately 3-5 minutes delay. which far exceeds the Level of Service (LOS) F threshold of 80 seconds.

Signal Timing Setup

- **Exclusive Phasing.** The intersection is signalized with dedicated green phases for the Canyon Road and Stewartstown Road legs, due to safety considerations caused by the terrain.
- **Actuated Phasing.** The intersection is operated with actuated, uncoordinated traffic signals. During peak hours, signal timing adjusts dynamically to prioritize approaches with higher traffic volumes. For example, the green phase for southbound traffic on Point Marion Road varies between 25 and 55 seconds, depending on traffic conditions. On Canyon Road, the green phase transitions to yellow immediately when no vehicles are detected in the queue.
- **Farm View Road Access.** The northbound approach includes a dedicated left-turn phase serving traffic turning onto Farm View Road. This phase is actuated and activates only when vehicles are present in the left-turn bay. Providing this dedicated movement is essential to ensure access to the high-density residential development on Farm View Road and to prevent left-turn queues from impeding through traffic.

Turning Movement Pattern

- **Canyon Road Approach:** Traffic is primarily through movements (66.7%), with left turns accounting for 22.2% and right turns for 11.1%. Canyon Road functions mainly as a minor arterial through approach with some local left-turn demand.
- **Stewartstown Road Approach:** Stewartstown has a high proportion of left turns (43.6%), with through and right-turn movements both at 28.2%. This reflects a strong turning demand.
- **Point Marion Road Northbound and Southbound Approach:** Both approaches are heavily dominated by through traffic (73.0% - 79%), with left turns at 11.1% and right turns at 15.9%. The strong through demand confirms that Point Marion Road is the primary corridor.

Surrounding Land Use

The observed congestion corresponds with student drop-off and pick-up times at University High School, when parents drive their children. Point Marion Road serves as the primary arterial connecting the school to major urban destinations, including university campuses, hospitals, commercial and employment centers as well as residences along the WV 705 corridor, and southern parts of Morgantown. This intersection is the only access point for traffic from north of Point Marion Rd toward the WV 705 corridor and the Mileground/Cheat Road areas.

Conclusion and Next Step

The intersection functions as a critical link within the eastern portion of the MPO's urban area. During peak periods, operational deficiencies are evident, driven primarily by school-related traffic, constrained intersection capacity, and geometric limitations. Analysis indicates that three of the four approaches (excluding Farm View Road) are currently operating at LOS F during peak periods, an indication of significant delay.

The intersection is controlled by an actuated signal system, which adjusts phase timing in response to traffic volumes. This control strategy has enhanced overall capacity and mitigated congestion to some extent; however, peak-hour volumes exceed the operational limits of signal control.

MPO staff recommend a detailed engineering study to evaluate feasible intersection improvement alternatives, first using designs identified in the 2022-2050 MTP.

Lanes, Volumes, Timings

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12/30/2025

	↑	↑	↔	↓	↓	↔	↔	↔	↓	↔	↑	↑
Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	132	88	99	34	180	38	57	780	160	95	680	125
Future Volume (vph)	132	88	99	34	180	38	57	780	160	95	680	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		8%			10%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	0			0			0			0		0
Satd. Flow (prot)	0	1679	0	0	1722	0	0	1816	0	0	1818	0
Flt Permitted		0.745			0.870			0.875			0.688	
Satd. Flow (perm)	0	1276	0	0	1509	0	0	1594	0	0	1257	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		20			8			14			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		239			1035			1443			2605	
Travel Time (s)		5.4			23.5			32.8			59.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	347	0	0	274	0	0	1084	0	0	978	0
Turn Type	Perm	NA										
Protected Phases		8			4			5			5	
Permitted Phases	8			4			5			5		
Total Split (s)	23.0	23.0		23.0	23.0		53.5	53.5		53.5	53.5	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Act Effct Green (s)		18.5			18.5			49.0			49.0	
Actuated g/C Ratio		0.19			0.19			0.49			0.49	
v/c Ratio		1.37			0.95			1.37			1.56	
Control Delay		222.2			83.4			199.0			285.8	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		222.2			83.4			199.0			285.8	
LOS		F			F			F			F	
Approach Delay		222.2			83.4			199.0			285.8	
Approach LOS		F			F			F			F	
Queue Length 50th (ft)		~284			169			~916			~889	
Queue Length 95th (ft)		#461			#331			#1167			#1132	
Internal Link Dist (ft)		159			955			1363			2525	
Turn Bay Length (ft)												
Base Capacity (vph)		253			287			792			625	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	

Lanes, Volumes, Timings

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Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Reduced v/c Ratio		1.37			0.95				1.37			1.56

Intersection Summary

Area Type: Other

Cycle Length: 99.5

Actuated Cycle Length: 99.5

Offset: 0 (0%), Referenced to phase 2: and 6:, Start of Green

Control Type: Prewired

Maximum v/c Ratio: 1.56

Intersection Signal Delay: 221.8

Intersection LOS: F

Intersection Capacity Utilization 118.1%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1:



Lanes, Volumes, Timings

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12/30/2025

Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Lane Configurations												
Traffic Volume (vph)	193	256	75	17	45	23	59	750	78	25	750	60
Future Volume (vph)	193	256	75	17	45	23	59	750	78	25	750	60
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		8%			10%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0	0	
Storage Lanes	0		0	0		0	0		0	0	0	
Taper Length (ft)	0			0			0			0		
Satd. Flow (prot)	0	1723	0	0	1687	0	0	1835	0	0	1842	0
Flt Permitted		0.840			0.835			0.813			0.950	
Satd. Flow (perm)	0	1474	0	0	1423	0	0	1496	0	0	1752	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6			12			5			4	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		239			1035			1443			2605	
Travel Time (s)		5.4			23.5			32.8			59.2	
Confl. Peds. (#/hr)												
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Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	570	0	0	92	0	0	964	0	0	907	0
Turn Type	Perm	NA		Perm	NA		D.Pm	NA		Perm	NA	
Protected Phases		8			4						6	
Permitted Phases	8			4			6	6		6		
Total Split (s)	36.5	36.5		27.0	27.0		67.0	67.0		67.0	67.0	
Total Lost Time (s)		4.5			4.5			4.5			4.5	
Act Effct Green (s)		32.0			22.5			62.5			62.5	
Actuated g/C Ratio		0.25			0.17			0.48			0.48	
v/c Ratio		1.56			0.36			1.34			1.08	
Control Delay		299.4			45.9			192.8			87.6	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		299.4			45.9			192.8			87.6	
LOS		F			D			F			F	
Approach Delay		299.4			45.9			192.8			87.6	
Approach LOS		F			D			F			F	
Queue Length 50th (ft)		~682			60			~1067			~855	
Queue Length 95th (ft)		#910			116			#1326			#1110	
Internal Link Dist (ft)		159			955			1363			2525	
Turn Bay Length (ft)												
Base Capacity (vph)		365			255			719			841	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	

Lanes, Volumes, Timings

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12/30/2025



Lane Group	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR
Reduced v/c Ratio		1.56			0.36			1.34			1.08	

Intersection Summary

Area Type: Other

Cycle Length: 130.5

Actuated Cycle Length: 130.5

Offset: 0 (0%), Referenced to phase 2: and 6:NWSE, Start of Green

Control Type: Pretimed

Maximum v/c Ratio: 1.56

Intersection Signal Delay: 173.8

Intersection LOS: F

Intersection Capacity Utilization 113.8%

ICU Level of Service H

Analysis Period (min) 15

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

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Splits and Phases: 1:

