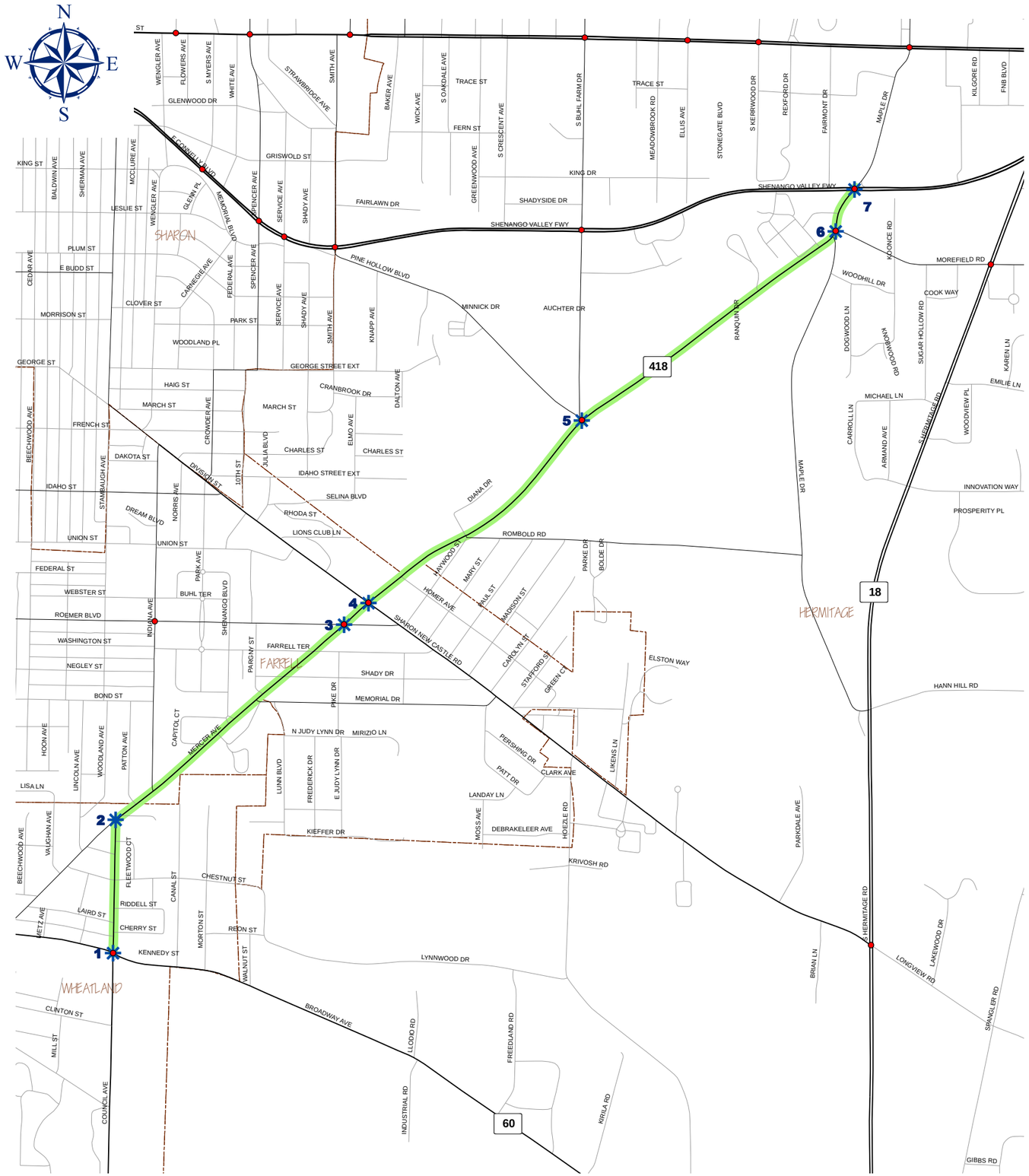
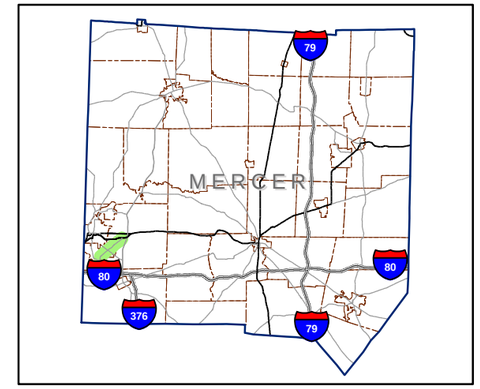
MCRPC Mercer County Regional Planning Commission

PERFORMANCE MONITORING DETAILS

CMP Corridor #307

- Corridor / Node Map
- Field Reconnaissance Worksheet
- Travel Time Summary (Corridor Overview)
- Travel Time Summary (Average Data / Direction 1 at Peak)
- Travel Time Summary (Average Data / Direction 2 at Peak)





Detail 1 - County Location (N.T.S.)

LEGEND

- Interstate
- US Route
- PA Route
- Other State Route
- Local Road
- Municipal Boundary
- Traffic Signal
- Traffic Beacon
- CMP Monitoring Corridor

Corridor Nodes, PA 418 @:

- 7, US 62, Shenango Valley Fwy
- 6, Morefield Rd, Maple Dr
- 5, S Buhl Farm Dr (SR 3025)
- 4, PA 518, Sharon New Castle Rd
- 3, Roemer Blvd (SR 3006)
- 2, Mercer Ave, Council Ave
- 1, PA 60 (Future PA 760), Broadway Ave

0 750 1,500 3,000 Feet

Mercer County CMP

PA 418 (Wheatland to Hermitage)

CMP Corridor / Node Map

Mercer County Regional Planning Commission "Planning for Livable Communities"

MCRPC

Corridor #307

Revised 04/27/10

SECTION 1: ROUTE IDENTIFICATION

A	**CMP Identification #:**	#307
B	**Route (General Area):**	PA 418 (Wheatland to Hermitage)
C	**Specific Limit 1 (South / West):**	PA 60 / Future PA 760 (Wheatland Boro)
D	**Specific Limit 2 (North / East):**	US 62 (City of Hermitage)
E	**Affected Municipalities:**	Wheatland, Farrell, Hermitage
F	**Total Corridor Length (Miles):**	2.8 Miles
G	**Federal Functional Class:**	Minor Arterial
H	**PennDOT Traffic Pattern Group:**	TPG 5 (Urban - Minor Arterials, Collectors, Local Roads)
I	**Typical # of Travel Lanes:**	2-Lane (1 NB + 1 SB)
J	**Typical Posted Speed Limit(s):**	35 mph (some small segments of 25 mph (NB) or 45 mph (SB) near northern junction w/ US 62)

SECTION 2: SPECIAL USES OR CONSIDERATIONS

A	**Transit**	☒	SVSS Southern Route
B	**Pedestrian / Bicycle**	☒	Small segment of local bike route at southern end of corridor
C	**Heavy Freight (Truck / Rail)**	☐	
D	**Emergency Detour**	☐	
E	**Tourism / Recreation / Special Events**	☐	
F	**Community Concerns**	☒	Primarily residential area
G	**Growth Corridor**	☐	
H	**Other:**	☐	
I	**Other:**	☐	

SECTION 3: ISSUES OR CONCERNS (RECURRING CONGESTION)

A	Roadway Capacity	☐	
B	Roadway Bottlenecks	☐	
C	Signalized Intersection Operations	☒	Potential delays during school-related peaks; signal progression through closely-spaced nodes 3-4
D	Unsignalized Intersection Operations	☐	
E	Access or Access Control	☐	
F	Existing or Future Development	☐	
G	Other:	☐	
H	Other:	☐	

SECTION 4: ISSUES OR CONCERNS (NON-RECURRING CONGESTION)

A	Crashes and Related Delays	☐	
B	Incident Management	☐	
C	Special Events	☐	
D	Construction Activities	☐	
E	Weather or Environmental Factors	☐	
F	Other:	☐	
G	Other:	☐	

SECTION 5: ISSUES OR CONCERNS (SAFETY-RELATED OR ISOLATED "HOT-SPOTS")

A	Other:	☐	
B	Other:	☐	
C	Other:	☐	

SECTION 6: SEGMENT INVENTORY

Segment Breakpoints			Segment Data					Multimodal Uses				Adjacent Land Uses								
ID	Intersection / Location	Type of Control	Length (Mi)	Speed Limit (MPH)	# Lanes ↓	# Lanes ↑	Turn Lane(s)	Parking	Transit	% Sidewalk ↓	% Sidewalk ↑	Residential	Commercial	Industrial	Educational	Religious	Health / EMS	Government	Land Use Context [1]	Transportation Context [2]
7	US 62, Shenango Valley Fwy	Actuated																		
			0.1	25	1	1	☒	☐	☐	0%	0%	☒	☐	☐	☐	☒	☐	☐	2	3
6	Morefield Rd / Maple Dr	Semi-Act																		
			0.8	35-45	1	1	☒	☐	☐	0%	0%	☒	☐	☐	☐	☒	☒	☐	2	3
5	S Buhl Farm Dr (SR 3025)	Semi-Act																		
			0.7	35	1	1	☐	☐	☒	0%	0%	☒	☐	☒	☐	☐	☐	☐	2	3
4	PA 518, Sharon-New Castle Rd	Pretimed																		
			0.1	35	1	1	☐	☐	☐	0%	25%	☒	☒	☐	☒	☐	☐	☐	2	3
3	Roemer Blvd (SR 3006)	Semi-Act																		
			0.7	35	1	1	☐	☐	☒	50%	0%	☒	☐	☐	☐	☒	☐	☐	2	3
2	Mercer Ave / Council Ave	SSSC																		
			0.3	35	1	1	☒	☐	☒	0%	0%	☒	☒	☐	☐	☐	☐	☐	2	3
1	PA 60 (Future PA 760), Broadway Ave	Semi-Act																		

[1] ***Land Use Context***: ***1*** *(Rural Places),* ***2*** *(Suburban Neighborhood),* ***3*** *(Suburban Corridor),* ***4*** *(Suburban Center),* ***5*** *(Town / Village Neighborhood),* ***6*** *(Town Center),* ***7*** *(Urban Core)*

[2] ***Transportation Context***: ***1*** *(Interstate),* ***2*** *(Regional Arterial),* ***3*** *(Community Arterial),* ***4*** *(Community Collector),* ***5*** *(Neighborhood Collector),* ***6*** *(Local Road / Street)*

SECTION 6: SEGMENT INVENTORY (CONTINUED)

Segment Breakpoints			Segment Data					Multimodal Uses				Adjacent Land Uses								
ID	Intersection / Location	Type of Control	Length (Mi)	Speed Limit (MPH)	# Lanes ↓	# Lanes ↑	Turn Lane(s)	Parking	Transit	% Sidewalk ↓	% Sidewalk ↑	Residential	Commercial	Industrial	Educational	Religious	Health / EMS	Government	Land Use Context [1]	Transportation Context [2]
		--																		
							☐	☐	☐	--	--	☐	☐	☐	☐	☐	☐	☐	--	--
		--																		
							☐	☐	☐	--	--	☐	☐	☐	☐	☐	☐	☐	--	--
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							☐	☐	☐	--	--	☐	☐	☐	☐	☐	☐	☐	--	--
		--																		

[1] ***Land Use Context***: ***1*** *(Rural Places),* ***2*** *(Suburban Neighborhood),* ***3*** *(Suburban Corridor),* ***4*** *(Suburban Center),* ***5*** *(Town / Village Neighborhood),* ***6*** *(Town Center),* ***7*** *(Urban Core)*

[2] ***Transportation Context***: ***1*** *(Interstate),* ***2*** *(Regional Arterial),* ***3*** *(Community Arterial),* ***4*** *(Community Collector),* ***5*** *(Neighborhood Collector),* ***6*** *(Local Road / Street)*

SECTION 7: ADDITIONAL FIELD OBSERVATIONS, COMMENTS, OR CONCERNS

Where applicable, reference notes by segment (1-2, 2-1, etc.):

- Some platoons of traffic were observed, but typically no congestion.

- Mixture of various land uses throughout corridor.

- Some passing zones provided on the northern end of the corridor.

- Farrell HS located in vicinity of Nodes #3 and #4.

- Small piece of local bike route signed at the southern end of the corridor near Council Ave.

- Efficient signal progression is important through closely-spaced Nodes 3 (Roemer Blvd) and 4 (PA 518)

SECTION 7: ADDITIONAL FIELD OBSERVATIONS, COMMENTS, OR CONCERNS (CONTINUED)

Where applicable, reference notes by segment (1-2, 2-1, etc.):

SECTION 8: PHOTO LOG (CORRIDOR "TYPICAL" SEGMENTS, CRITICAL INTERSECTIONS, "HOT-SPOT" CONCERNS, ETC.)

Photo # / Description:
NB approaching #1 (PA 60, Broadway Ave)

Photo # / Description:
Segment 1-2 (NB) upgrade; utility work

Photo # / Description:
NB approaching #2 (Mercer Ave)

Photo # / Description:
Segment 2-3 (NB) just north of Node #2

Photo # / Description:
Segment 3-2 (SB) view from Ferrell Terrace

Photo # / Description:
Segment 2-3 (NB) view from Ferrell Terrace

SECTION 8: PHOTO LOG (CONTINUED)

Photo # / Description:
NB approaching #4 (PA 518)

Photo # / Description:
Segment 4-5 (NB) typical section

Photo # / Description:
NB approaching #5 (S Buhl Farm Dr)

Photo # / Description:

Photo # / Description:

Photo # / Description:

CONGESTION MANAGEMENT PROCESSES
Travel Time Summary (Corridor Overview)

Corridor: **#307 / PA 418 (Wheatland to Hermitage)**
Direction Both
Scenario: Fall / Winter 2009

Corridor Summary by Peak / by Direction:

Corridor Description				Travel Time & Delay					Speed & Stops		
Roadway	**Direction** (Peak)	**Length** (Miles)	**Running Time** (Min)	**Travel Time** (Min)	**Delay** (Min)	**Delay Rate** (Min / Mile)	**Delay Ratio** (%)	**Total Delay** (veh-hr)	**Avg Speed** (mph)	**Stops** (#)	**Stop Rate** (# / Mile)
PA 418	NB (AM)	2.8	4.1	5.0	1.0	0.4	20%	6	33	2.0	0.7
	NB (Midday)	2.8	4.1	5.3	1.3	0.5	25%	5	31	3.0	1.1
	NB (PM)	2.8	4.1	6.3	2.2	0.8	35%	12	26	5.0	1.8
PA 418	SB (AM)	2.8	4.0	5.6	1.6	0.6	28%	6	29	3.0	1.1
	SB (Midday)	2.8	4.0	6.5	2.4	0.9	38%	11	26	2.5	0.9
	SB (PM)	2.8	4.0	5.4	1.3	0.5	25%	6	31	1.7	0.6

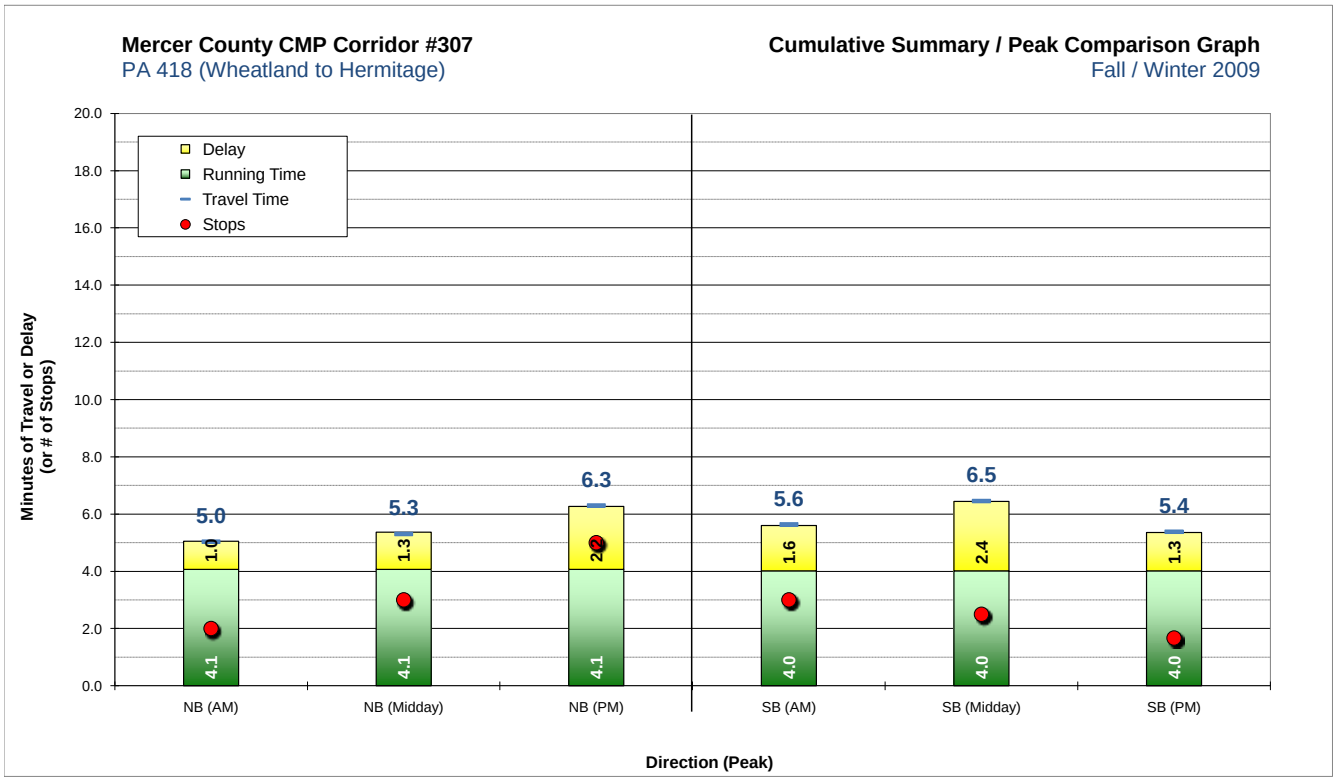
Bi-Directional Segment Summary for "Typical" Peak Period:

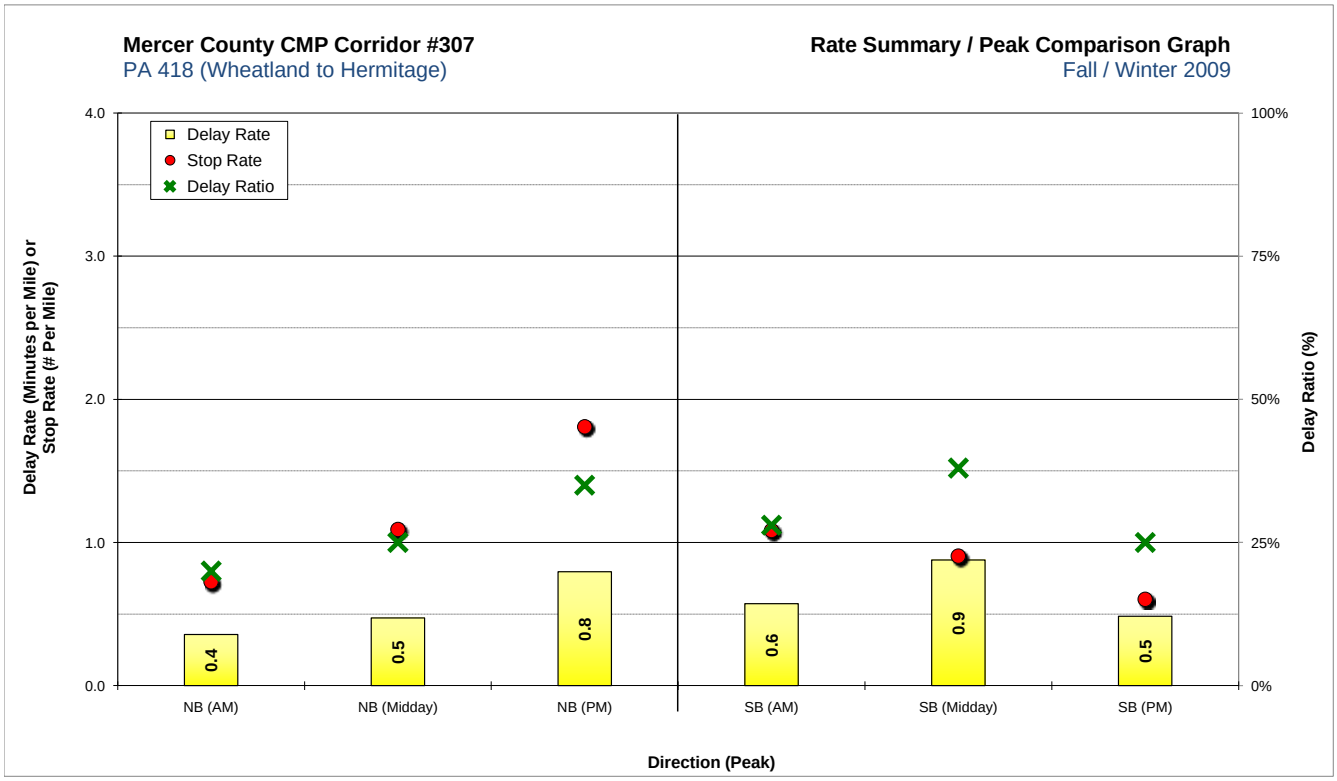
"Typical" Peak Period =	***Weekday PM Peak***			
Segment ADT Estimates =	**3,500**	to	**11,100**	(veh / day; bi-directional total
Segment Peak Hour Volume Estimates =	**390**	to	**1,000**	(veh / hr; bi-directional total)

Segment Description				Travel Time & Delay					Speed & Stops		
GIS Segment ID	**Limit 1**	**Limit 2**	**Length** (Min)	**Travel Time** (Min)	**Delay** (Min)	**Delay Rate** (Min / Mile)	**Delay Ratio** (%)	**Total Delay** (veh-hr)	**Avg Speed** (mph)	**Posted Speed** (mph)	**Stops** (#)
307,001,002	PA 60 / 760	Mercer	0.33	0.9	0.4	1.2	45%	3	23	35	1.3
307,002,003	Mercer	Roemer	0.75	1.6	0.5	0.7	31%	3	29	35	1.0
307,003,004	Roemer	PA 518	0.08	0.4	0.3	3.6	70%	3	17	35	0.3
307,004,005	PA 518	Buhl Farm	0.70	1.4	0.3	0.5	25%	5	32	35	1.0
307,005,006	Buhl Farm	Morefield	0.78	1.4	0.2	0.3	16%	1	34	35	0.7
307,006,007	Morefield	US 62	0.13	0.9	0.7	5.8	81%	4	12	25	0.7
Corridor Summary	**PA 60 / 760**	**US 62**	**2.8**	**6.3**	**2.2**	**0.8**	**35%**	**19**	**26**	**35**	**5.0**

CONGESTION MANAGEMENT PROCESSES
Travel Time Summary (Corridor Overview)

Corridor: #307 / PA 418 (Wheatland to Hermitage)
Direction Both
Scenario: Fall / Winter 2009





CONGESTION MANAGEMENT PROCESSES
Travel Time Summary (Average Data)

Corridor: #307 / PA 418 (Wheatland to Hermitage)
Direction NB
Scenario: Weekday PM Peak, Fall / Winter 2009

Notes / Definitions / Abbreviations

* Units vary as indicated in tables below
* Summary Table 1 indicates feet, seconds
* Summary Table 2 indicates miles, minutes

* BLUE = Input Data via manual direct entry
* RED = Input Data via formula or worksheet reference updates
* BLACK = Data automatically calculated

NID = Node ID Number
Dir = Direction of Travel

TT_{avg} = Average Field-measured Travel Time (from Previous Node)
CTT_{avg} = Average Field-measured Travel Time (Cumulative)

TL = Travel Distance (from Previous Node)
CTL = Travel Distance (Cumulative)

Delay = Travel Delay (from Previous Node) = TT - RT_{DS}
CD = Travel Delay (Cumulative)

DPM = Equivalent Travel Delay Rate per Mile (from Previous Node)
CDPM = Equivalent Travel Delay Rate per Mile (Cumulative)

RT_{PLS} = "No Stop" Running Time @ Posted Speed (from Previous Node)
CRT_{PLS} = "No Stop" Running Time @ Posted Speed (Cumulative)

RT_{DS} = "No Stop" Running Time @ Design Speed (from Previous Node)
CRT_{DS} = "No Stop" Running Time @ Design Speed (Cumulative)

AS = Actual Average Speed (from Previous Node)
CAS = Actual Average Speed (Cumulative)

DS = Design Speed (or assumed Free-Flow Speed)
PLS = Posted Speed Limit

Stops = Number of Stops below 5 mph (from Previous Node)
Cstops = Number of Stops below 5 mph (Cumulative)

Summary Table: Average Travel Time Data / Calculations (feet, seconds, mph)

Intersection / Link Data			Travel Time (sec)		Travel Length (feet)		Travel Delay (sec)		Delay Rate (sec / mile)		Running Time (sec @ DS)		Running Time (sec @ PLS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	NID	Dir	TT_{avg}	CTT_{avg}	TL	CTL	Delay	CD	DPM	CDPM	RT_{DS}	CRT_{DS}	RT_{PLS}	CRT_{PLS}	AS	CAS	DS	PLS	Stops	CStops
PA 60 (Future PA 760) (#1)	1	NB	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	0	0
to Mercer Ave / Council Ave (#2)	2	NB	54	54	1,740	1,740	24	24	73	73	29	29	34	34	23	23	40	35	1	1
to Roemer Blvd (SR 3006) (#3)	3	NB	97	151	3,956	5,696	30	54	40	50	67	96	77	111	29	26	40	35	1	2
to PA 518, Sharon-New Castle Rd (#4)	4	NB	15	166	428	6,124	8	62	103	54	7	103	8	119	22	26	40	35	0	3
to S Buhl Farm Dr (SR 3025) (#5)	5	NB	77	243	3,700	9,824	14	77	20	41	62	165	72	191	33	28	40	35	1	4
to Morefield Rd / Maple Dr (#6)	6	NB	83	326	4,131	13,955	13	90	17	34	70	235	80	272	34	29	40	35	1	4
to US 62, Shenango Valley Fwy (#7)	7	NB	52	378	647	14,602	42	132	345	48	9	244	11	283	12	26	45	40	1	5
Corridor Average			**378**		**14,602**		**132**		**48**		**244**		**283**		**26.4**		**Varies**		**5.0**	

Summary Table: Average Travel Time Data / Calculations (miles, minutes, mph)

Intersection / Link Data			Travel Time (min)		Travel Length (mile)		Travel Delay (min)		Delay Rate (min / mile)		Running Time (min @ DS)		Running Time (min @ PLS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	NID	Dir	TT_{avg}	CTT_{avg}	TL	CTL	Delay	CD	DPM	CDPM	RT	CRT	RT_{PLS}	CRT_{PLS}	AS	CAS	DS	PLS	Stops	CStops
PA 60 (Future PA 760) (#1)	1	NB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					0	0
to Mercer Ave / Council Ave (#2)	2	NB	0.9	0.9	0.3	0.3	0.4	0.4	1.2	1.2	0.5	0.5	0.6	0.6	23	23	40	35	1	1
to Roemer Blvd (SR 3006) (#3)	3	NB	1.6	2.5	0.7	1.1	0.5	0.9	0.7	0.8	1.1	1.6	1.3	1.8	29	26	40	35	1	2
to PA 518, Sharon-New Castle Rd (#4)	4	NB	0.3	2.8	0.1	1.2	0.1	1.0	1.7	0.9	0.1	1.7	0.1	2.0	22	26	40	35	0	3
to S Buhl Farm Dr (SR 3025) (#5)	5	NB	1.3	4.1	0.7	1.9	0.2	1.3	0.3	0.7	1.0	2.8	1.2	3.2	33	28	40	35	1	4
to Morefield Rd / Maple Dr (#6)	6	NB	1.4	5.4	0.8	2.6	0.2	1.5	0.3	0.6	1.2	3.9	1.3	4.5	34	29	40	35	1	4
to US 62, Shenango Valley Fwy (#7)	7	NB	0.9	6.3	0.1	2.8	0.7	2.2	5.8	0.8	0.2	4.1	0.2	4.7	12	26	45	40	1	5
Corridor Average			**6.3**		**2.8**		**2.2**		**0.8**		**4.1**		**4.7**		**26.4**		**Varies**		**5.0**	

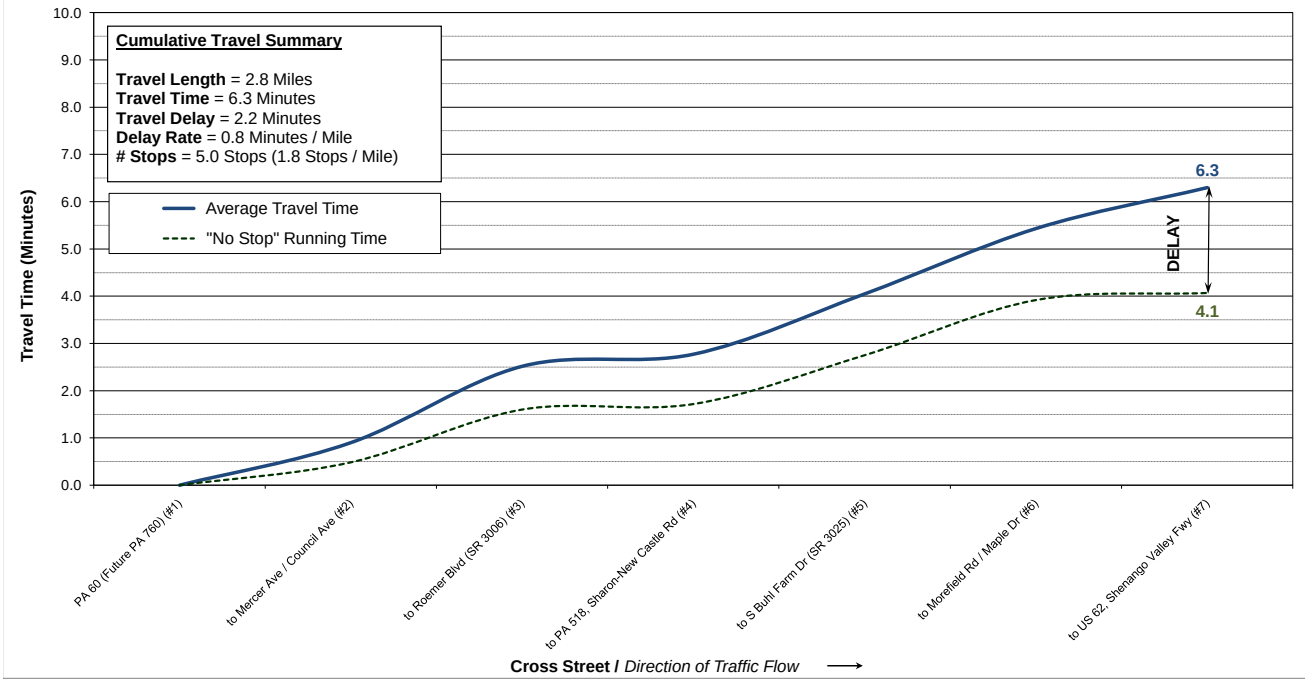
1.8 (stops/mi)

CONGESTION MANAGEMENT PROCESSES
Travel Time Summary (Average Data)

Corridor:	**#307 / PA 418 (Wheatland to Hermitage)**
Direction	NB
Scenario:	Weekday PM Peak, Fall / Winter 2009

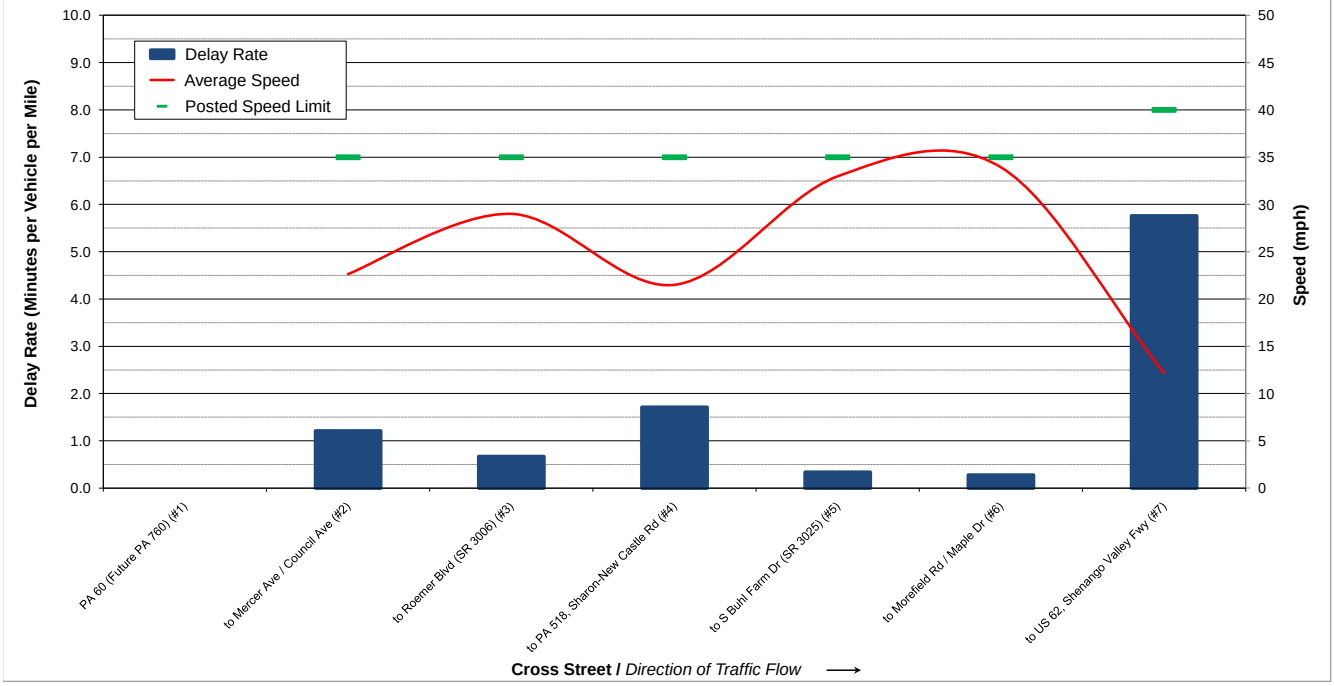
Mercer County CMP Corridor #307
PA 418 (Wheatland to Hermitage)

Cumulative Travel Time Graph
Fall / Winter 2009 - Weekday PM Peak (NB)



Mercer County CMP Corridor #307
PA 418 (Wheatland to Hermitage)

Segment Speed & Delay Graph
Fall / Winter 2009 - Weekday PM Peak (NB)



CONGESTION MANAGEMENT PROCESSES
Travel Time Summary (Average Data)

Corridor: #307 / PA 418 (Wheatland to Hermitage)
Direction SB
Scenario: Weekday PM Peak, Fall / Winter 2009

Notes / Definitions / Abbreviations

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TT_{avg} = Average Field-measured Travel Time (from Previous Node)
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TL = Travel Distance (from Previous Node)
CTL = Travel Distance (Cumulative)

Delay = Travel Delay (from Previous Node) = TT - RT_{DS}
CD = Travel Delay (Cumulative)

DPM = Equivalent Travel Delay Rate per Mile (from Previous Node)
CDPM = Equivalent Travel Delay Rate per Mile (Cumulative)

RT_{PLS} = "No Stop" Running Time @ Posted Speed (from Previous Node)
CRT_{PLS} = "No Stop" Running Time @ Posted Speed (Cumulative)

RT_{DS} = "No Stop" Running Time @ Design Speed (from Previous Node)
CRT_{DS} = "No Stop" Running Time @ Design Speed (Cumulative)

AS = Actual Average Speed (from Previous Node)
CAS = Actual Average Speed (Cumulative)

DS = Design Speed (or assumed Free-Flow Speed)
PLS = Posted Speed Limit

Stops = Number of Stops below 5 mph (from Previous Node)
Cstops = Number of Stops below 5 mph (Cumulative)

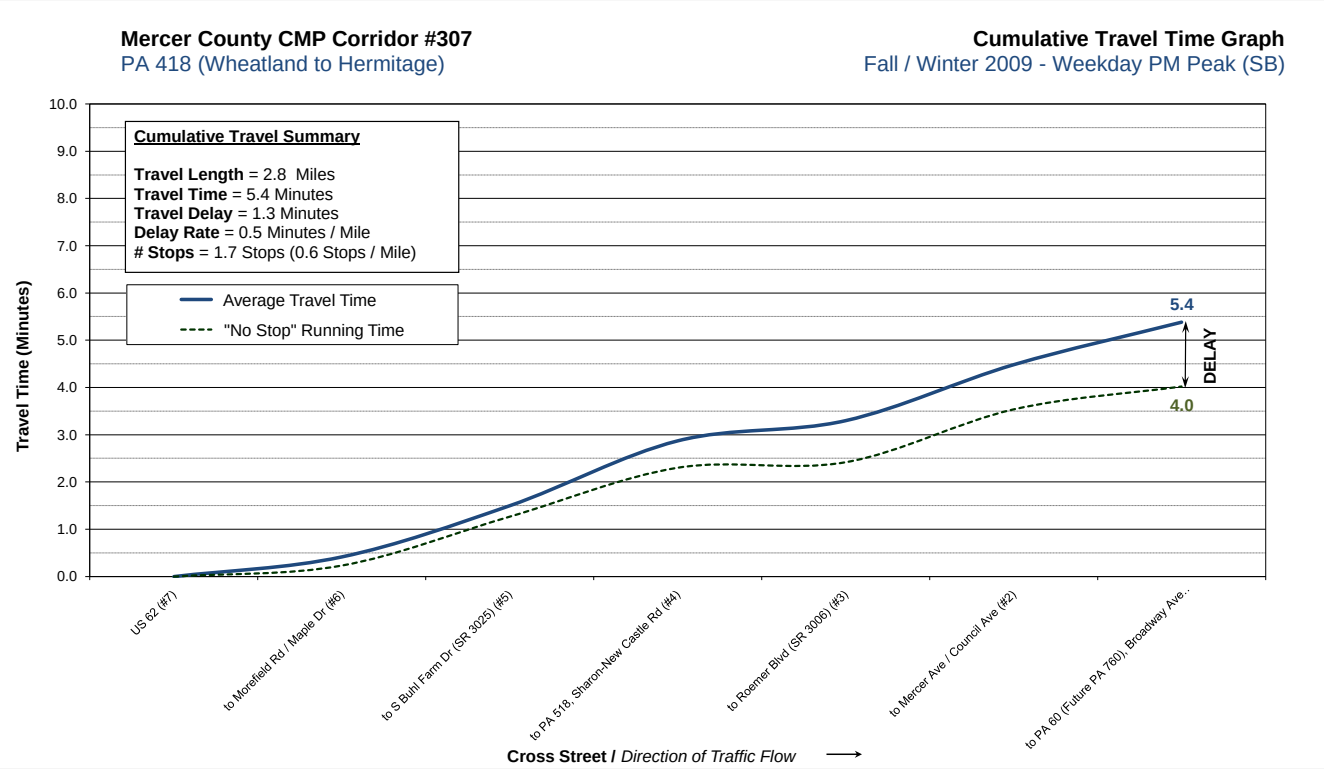
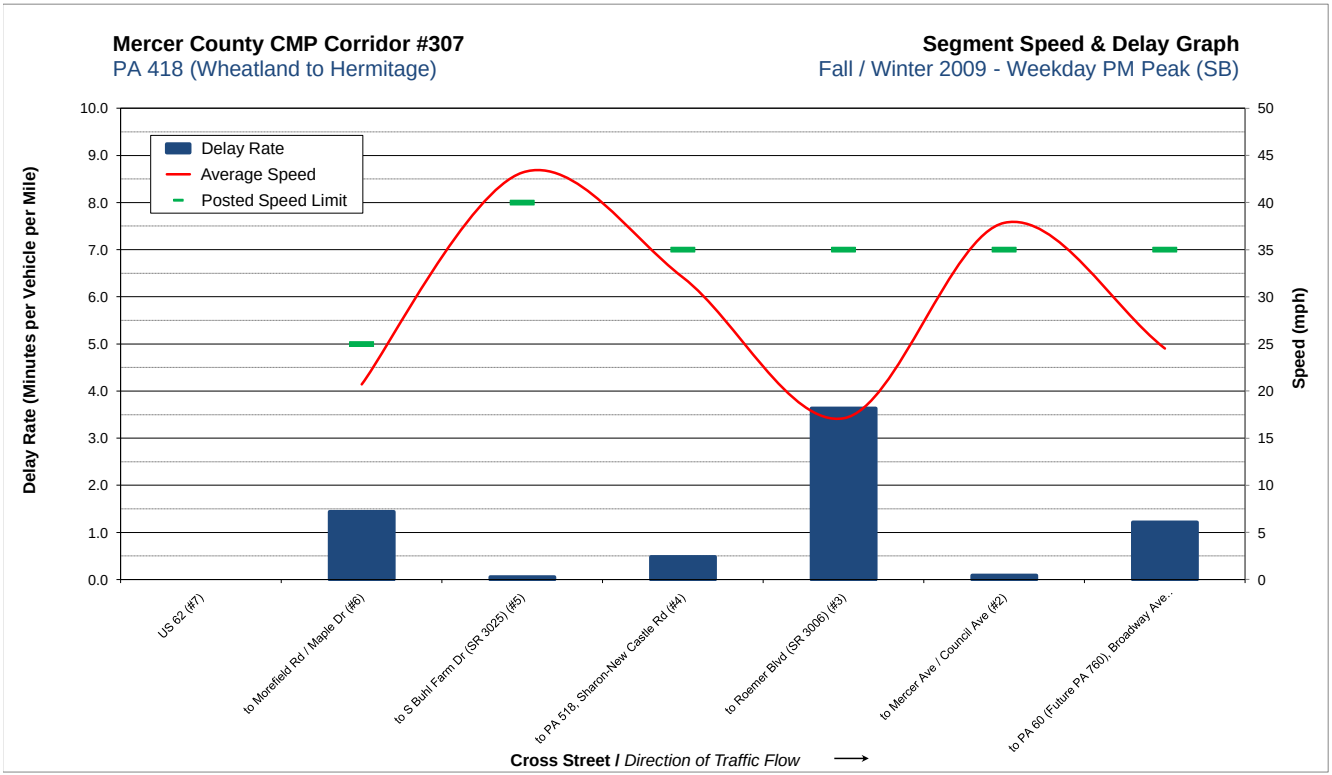
Summary Table: Average Travel Time Data / Calculations (feet, seconds, mph)

Intersection / Link Data			Travel Time (sec)		Travel Length (feet)		Travel Delay (sec)		Delay Rate (sec / mile)		Running Time (sec @ DS)		Running Time (sec @ PLS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	NID	Dir	TT_{avg}	CTT_{avg}	TL	CTL	Delay	CD	DPM	CDPM	RT_{DS}	CRT_{DS}	RT_{PLS}	CRT_{PLS}	AS	CAS	DS	PLS	Stops	CStops
US 62 (#7)	7	SB	0	0	0	0	0	0	0	0	0	0	0	0	-	-	-	-	0	0
to Morefield Rd / Maple Dr (#6)	6	SB	25	25	671	671	11	11	87	87	14	14	18	18	21	21	30	25	0	0
to S Buhl Farm Dr (SR 3025) (#5)	5	SB	65	90	4,105	4,776	3	14	3	15	62	76	70	88	43	37	45	40	0	0
to PA 518, Sharon-New Castle Rd (#4)	4	SB	82	172	3,698	8,474	20	34	29	21	62	138	72	160	32	34	40	35	0	1
to Roemer Blvd (SR 3006) (#3)	3	SB	26	198	436	8,910	18	52	218	31	7	145	9	169	17	32	40	35	0	1
to Mercer Ave / Council Ave (#2)	2	SB	71	269	3,920	12,831	4	56	5	23	67	212	76	245	38	33	40	35	0	1
to PA 60 (Future PA 760), Broadway Ave (#1)	1	SB	54	323	1,762	14,593	24	80	73	29	29	241	34	280	25	31	40	35	1	2
Corridor Average			**323**		**14,593**		**80**		**29**		**241**		**280**		**31.1**		**Varies**		**1.7**	

Summary Table: Average Travel Time Data / Calculations (miles, minutes, mph)

Intersection / Link Data			Travel Time (min)		Travel Length (mile)		Travel Delay (min)		Delay Rate (min / mile)		Running Time (min @ DS)		Running Time (min @ PLS)		Travel Speeds (mph)		Speed Limits (mph)		Stops (# of)	
Node	NID	Dir	TT_{avg}	CTT_{avg}	TL	CTL	Delay	CD	DPM	CDPM	RT	CRT	RT_{PLS}	CRT_{PLS}	AS	CAS	DS	PLS	Stops	CStops
US 62 (#7)	7	SB	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					0	0
to Morefield Rd / Maple Dr (#6)	6	SB	0.4	0.4	0.1	0.1	0.2	0.2	1.4	1.4	0.2	0.2	0.3	0.3	21	21	30	25	0	0
to S Buhl Farm Dr (SR 3025) (#5)	5	SB	1.1	1.5	0.8	0.9	0.0	0.2	0.1	0.3	1.0	1.3	1.2	1.5	43	37	45	40	0	0
to PA 518, Sharon-New Castle Rd (#4)	4	SB	1.4	2.9	0.7	1.6	0.3	0.6	0.5	0.4	1.0	2.3	1.2	2.7	32	34	40	35	0	1
to Roemer Blvd (SR 3006) (#3)	3	SB	0.4	3.3	0.1	1.7	0.3	0.9	3.6	0.5	0.1	2.4	0.1	2.8	17	32	40	35	0	1
to Mercer Ave / Council Ave (#2)	2	SB	1.2	4.5	0.7	2.4	0.1	0.9	0.1	0.4	1.1	3.5	1.3	4.1	38	33	40	35	0	1
to PA 60 (Future PA 760), Broadway Ave (#1)	1	SB	0.9	5.4	0.3	2.8	0.4	1.3	1.2	0.5	0.5	4.0	0.6	4.7	25	31	40	35	1	2
Corridor Average			**5.4**		**2.8**		**1.3**		**0.5**		**4.0**		**4.7**		**31.1**		**Varies**		**1.7**	

0.6 (stops/mi)

CONGESTION MANAGEMENT PROCESSES
Travel Time Summary (Average Data)

Corridor: #307 / PA 418 (Wheatland to Hermitage)
Direction SB
Scenario: Weekday PM Peak, Fall / Winter 2009