Convenience Store/Gas Station - VFP (9-15)
(945)

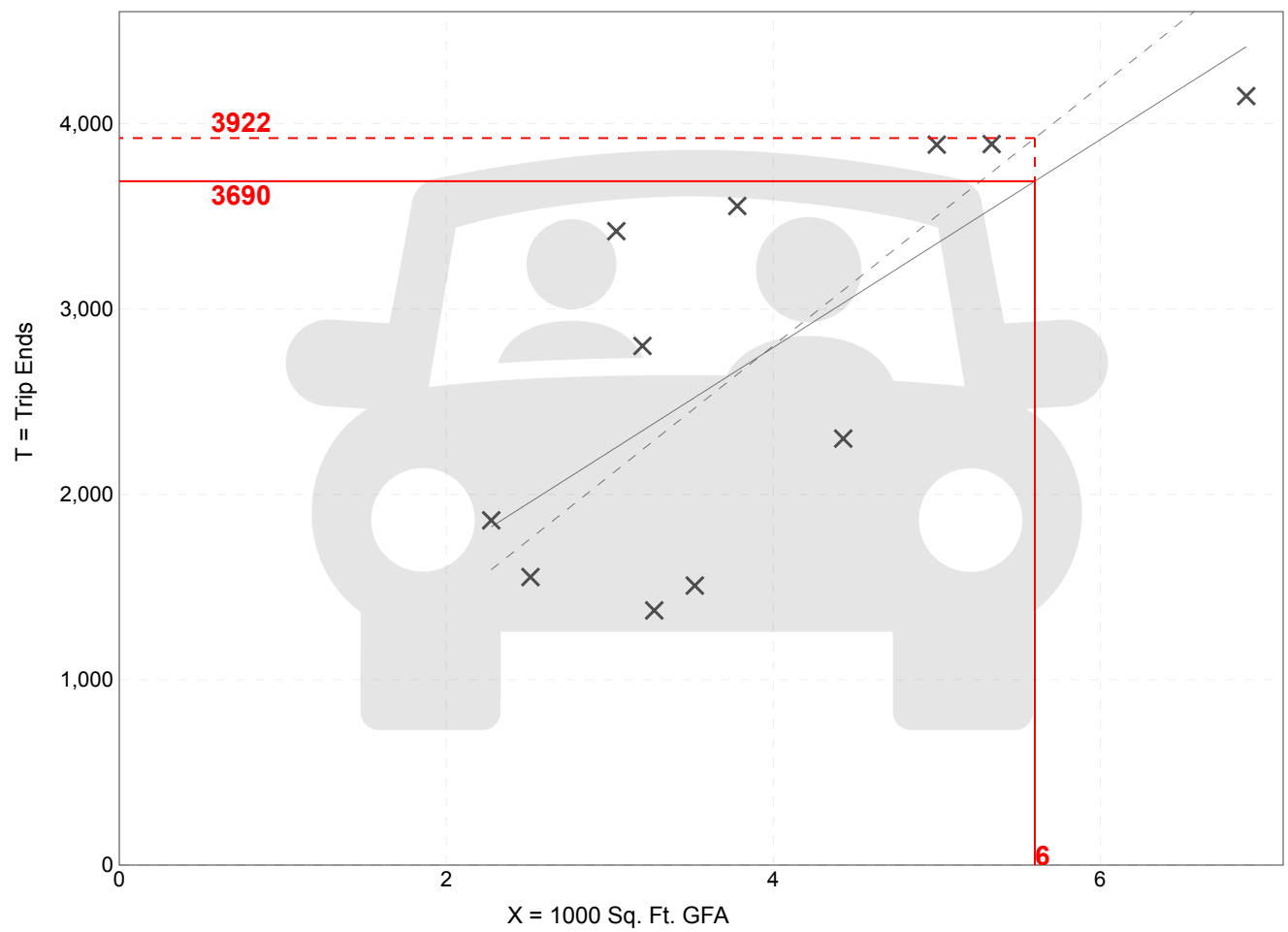
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 11
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
700.43	419.93 - 1125.00	206.44

Data Plot and Equation



× **Study Site** ——— **Fitted Curve** - - - - **Average Rate**

Fitted Curve Equation: T = 560.88(X) + 548.79 **R^2= 0.51**

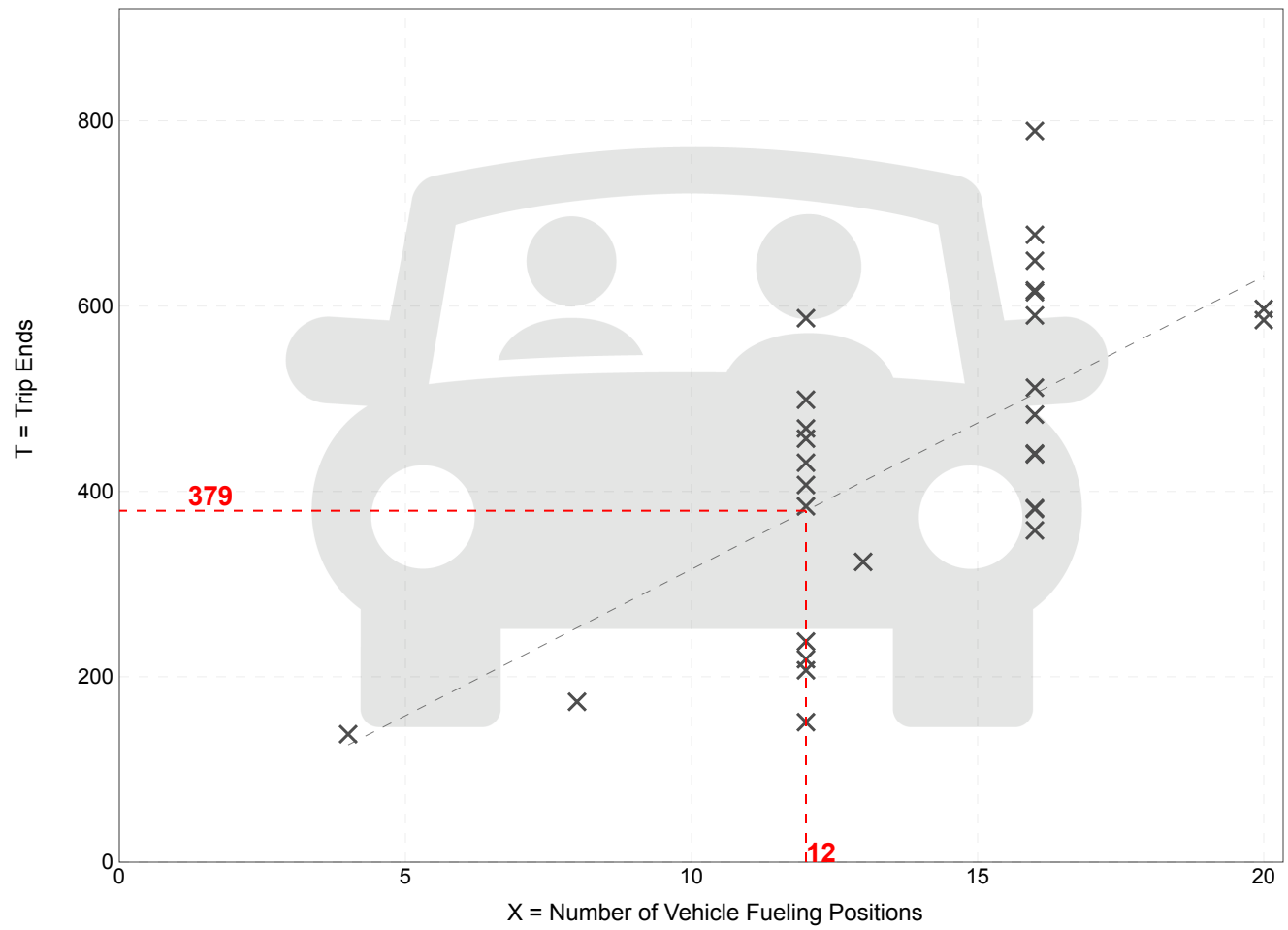
Convenience Store/Gas Station - GFA (5.5-10k)
(945)

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	29
Avg. Num. of Vehicle Fueling Positions:	14
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
31.60	12.58 - 49.31	9.10

Data Plot and Equation



× **Study Site** — — — — **Average Rate**

Fitted Curve Equation: Not Given **R^2= ******

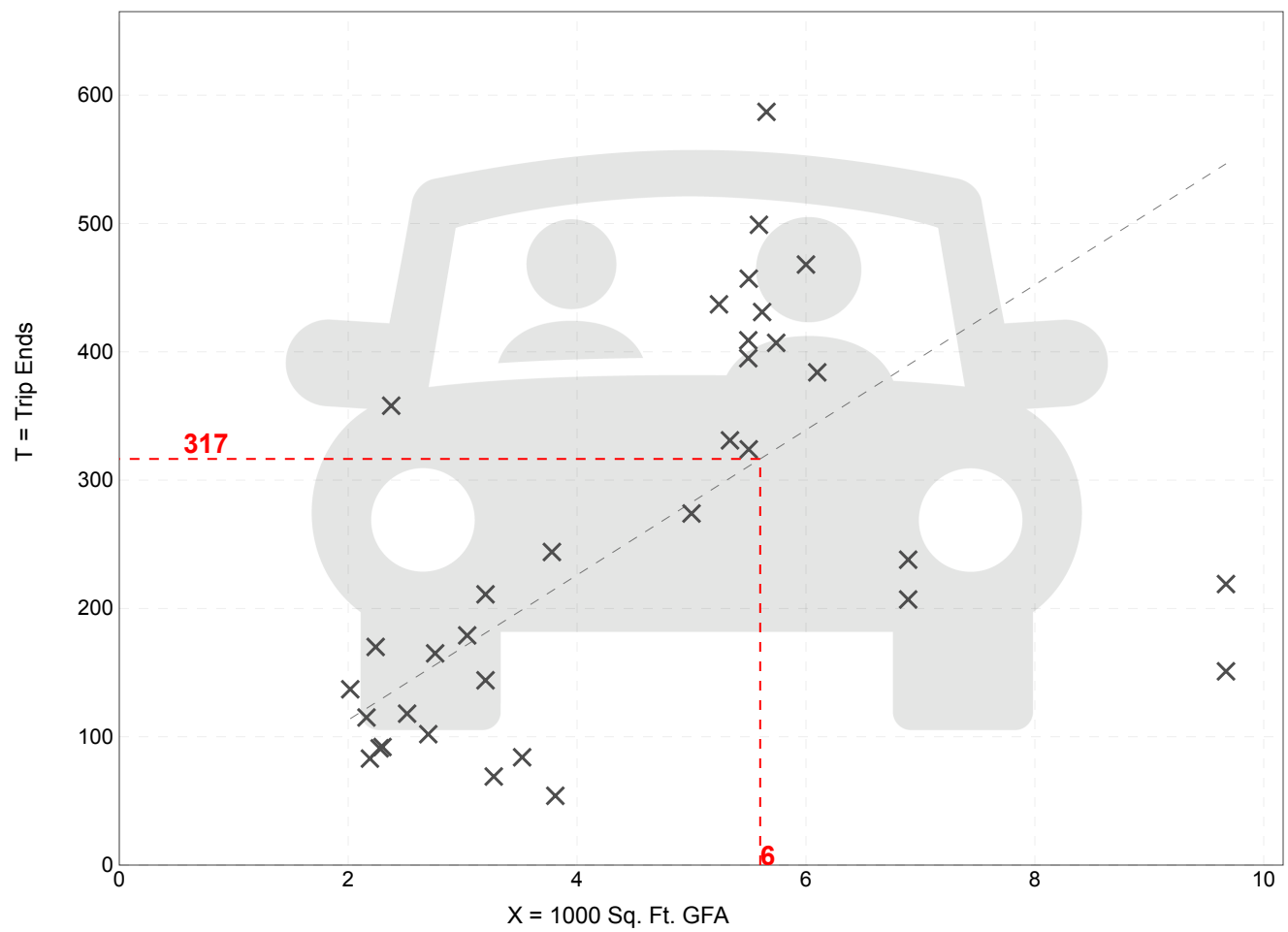
Convenience Store/Gas Station - VFP (9-15)
(945)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	34
Avg. 1000 Sq. Ft. GFA:	4
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
56.52	14.17 - 150.67	27.56

Data Plot and Equation



× **Study Site** — — — — **Average Rate**

Fitted Curve Equation: Not Given **R^2= ******

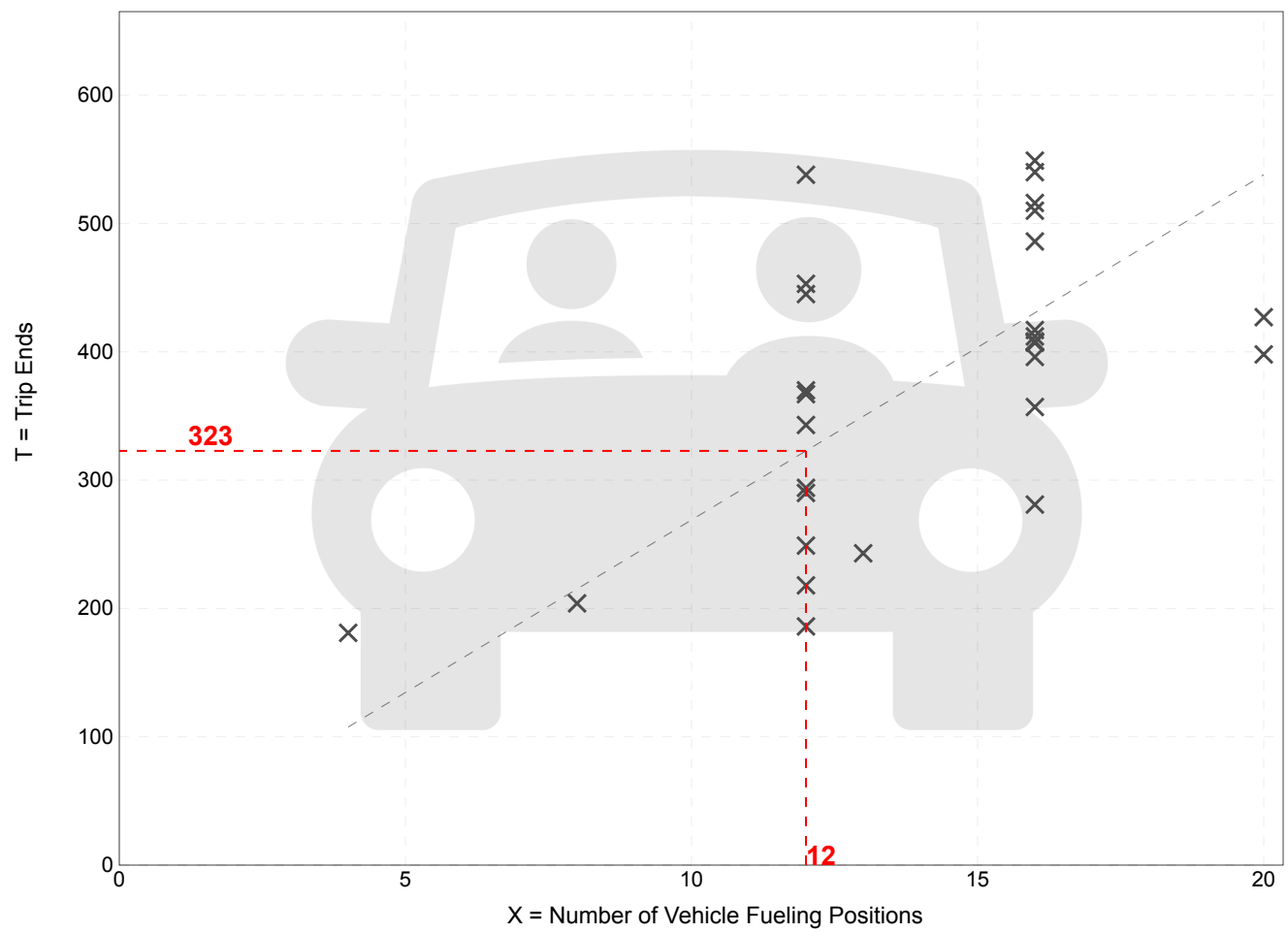
Convenience Store/Gas Station - GFA (5.5-10k)
(945)

Vehicle Trip Ends vs:	**Vehicle Fueling Positions**
On a:	**Weekday,** **Peak Hour of Adjacent Street Traffic,** **One Hour Between 4 and 6 p.m.**
Setting/Location:	**General Urban/Suburban**
Number of Studies:	29
Avg. Num. of Vehicle Fueling Positions:	14
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
26.90	15.50 - 45.25	6.87

Data Plot and Equation



× **Study Site** - - - - **Average Rate**

Fitted Curve Equation: Not Given **R^2= ******

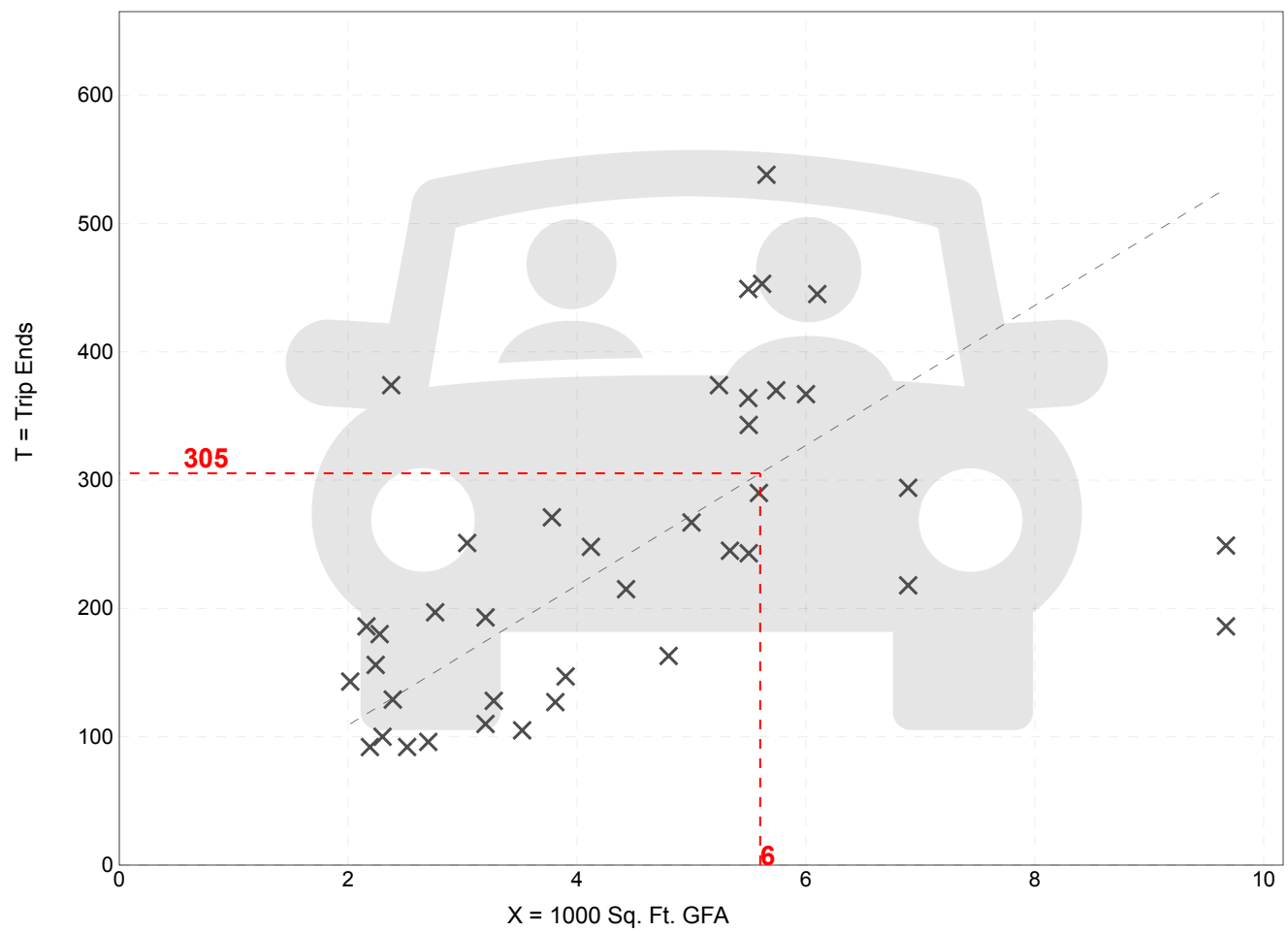
Convenience Store/Gas Station - VFP (9-15)
(945)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	39
Avg. 1000 Sq. Ft. GFA:	4
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
54.52	19.23 - 157.41	23.69

Data Plot and Equation



× **Study Site** — — — — **Average Rate**

Fitted Curve Equation: Not Given **R^2= ******

Convenience Store/Gas Station - GFA (5.5-10k)
(945)

Vehicle Trip Ends vs: **Vehicle Fueling Positions**
On a: **Saturday, Peak Hour of Generator**

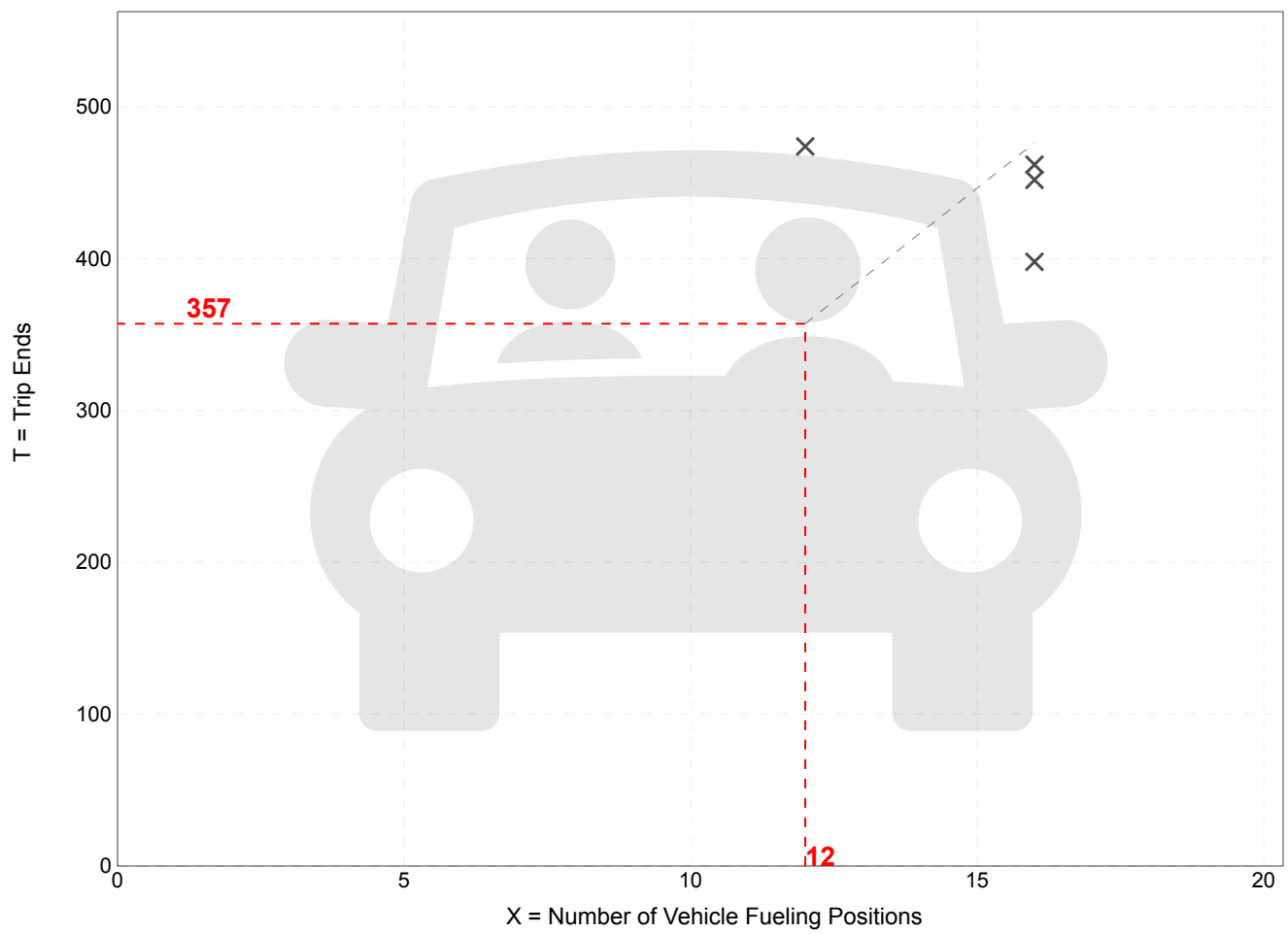
Setting/Location: **General Urban/Suburban**
Number of Studies: 4
Avg. Num. of Vehicle Fueling Positions: 15
Directional Distribution: 49% entering, 51% exiting

Vehicle Trip Generation per Vehicle Fueling Position

Average Rate	Range of Rates	Standard Deviation
29.77	24.88 - 39.50	5.91

Data Plot and Equation

Caution – Small Sample Size



× **Study Site** - - - - **Average Rate**

Fitted Curve Equation: Not Given **R^2= ******

Convenience Store/Gas Station - VFP (9-15)
(945)

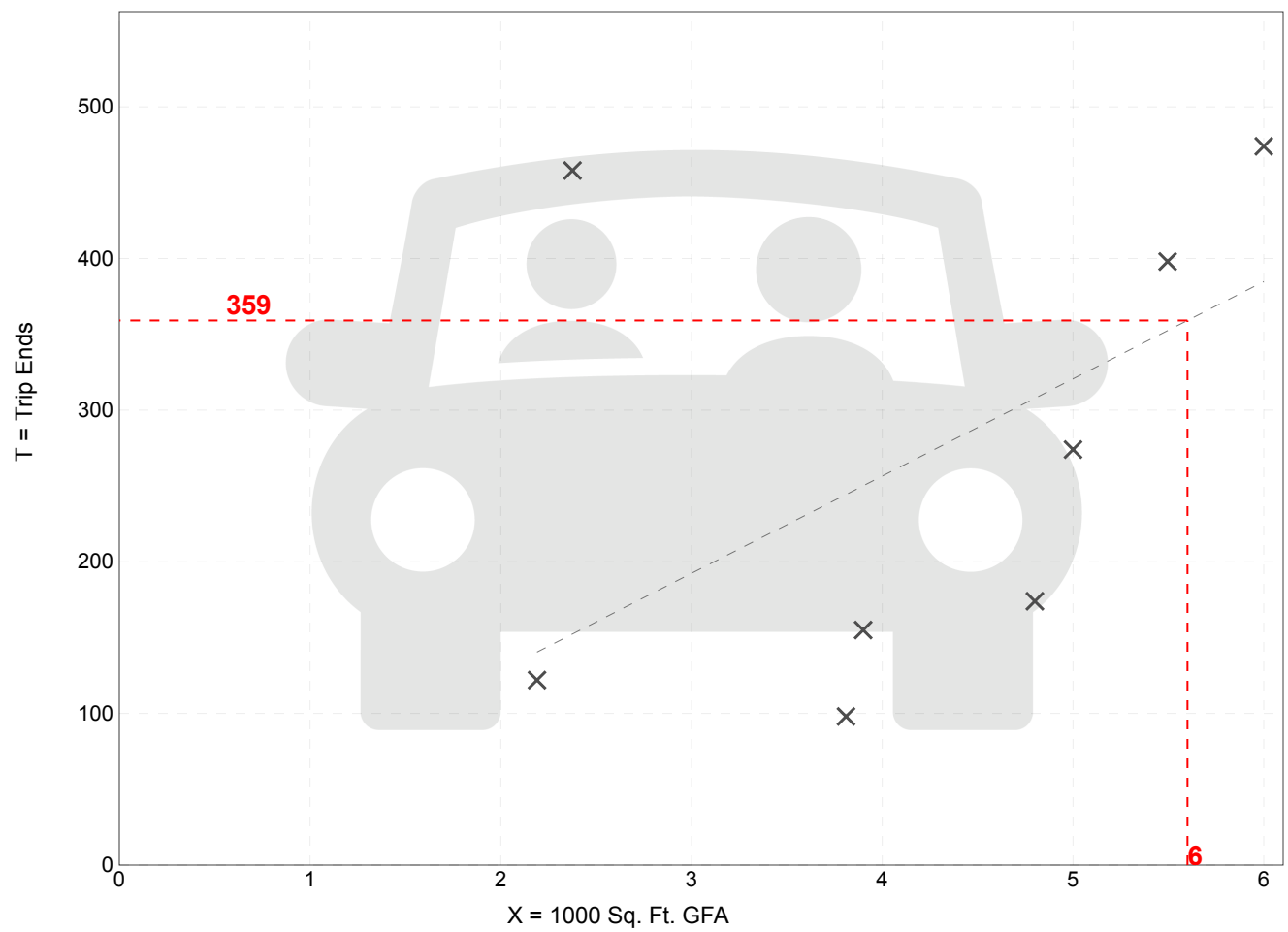
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 8
Avg. 1000 Sq. Ft. GFA: 4
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
64.13	25.72 - 192.76	42.59

Data Plot and Equation



× **Study Site** - - - - **Average Rate**

Fitted Curve Equation: Not Given **R^2= ******

Shopping Plaza (40-150k) - Supermarket - Yes
(821)

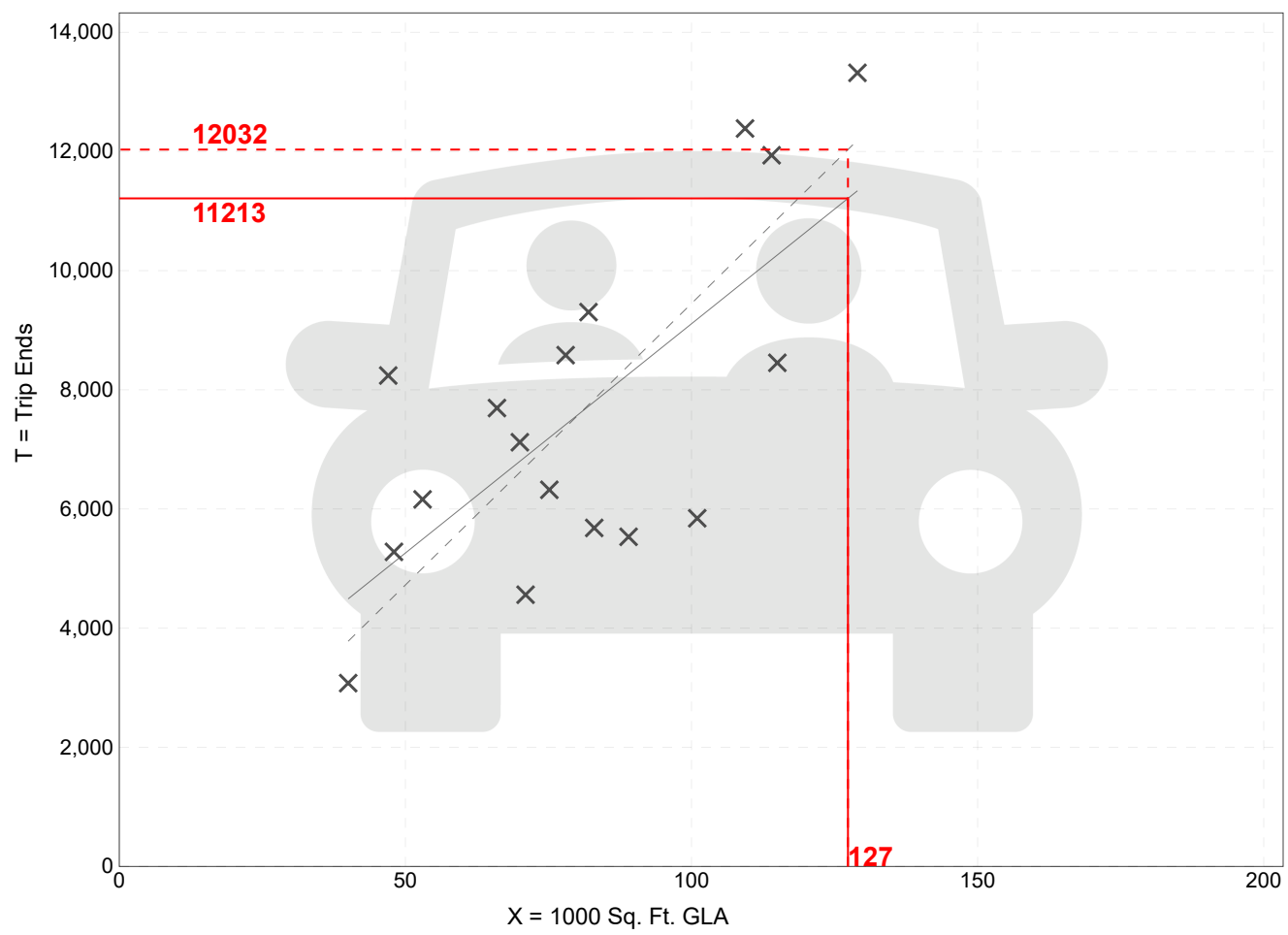
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 17
Avg. 1000 Sq. Ft. GLA: 81
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
94.49	57.86 - 175.32	26.55

Data Plot and Equation



× **Study Site** —— **Fitted Curve** - - - - **Average Rate**

Fitted Curve Equation: T = 76.96(X) + 1412.79 **R^2= 0.50**

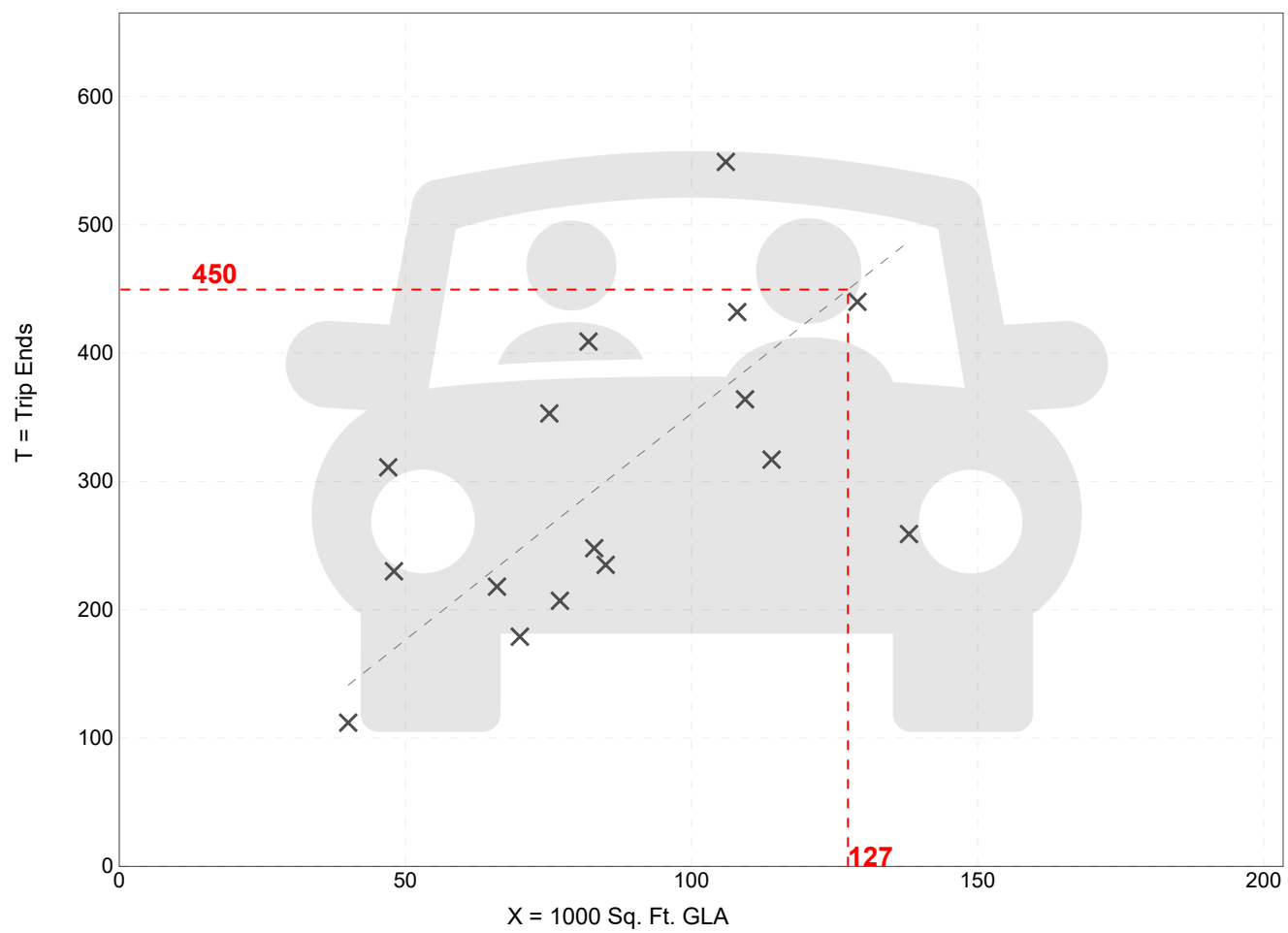
Shopping Plaza (40-150k) - Supermarket - Yes
(821)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	16
Avg. 1000 Sq. Ft. GLA:	86
Directional Distribution:	62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.53	1.88 - 6.62	1.17

Data Plot and Equation



× **Study Site** — — — — **Average Rate**

Fitted Curve Equation: Not Given **R^2= ******

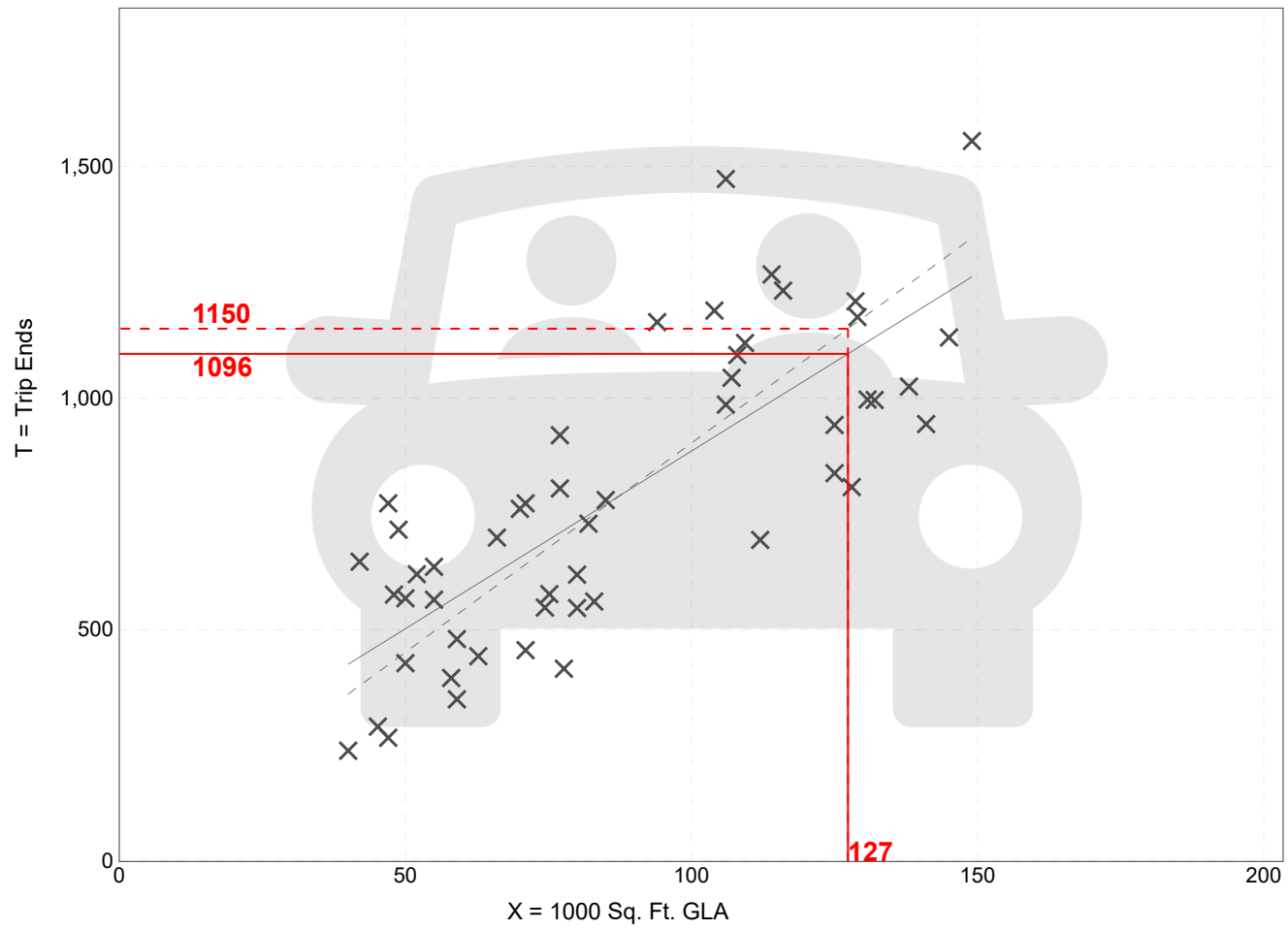
Shopping Plaza (40-150k) - Supermarket - Yes
(821)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	51
Avg. 1000 Sq. Ft. GLA:	87
Directional Distribution:	48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
9.03	5.35 - 16.45	2.37

Data Plot and Equation



× **Study Site** ——— **Fitted Curve** - - - - **Average Rate**

Fitted Curve Equation: T = 7.67(X) + 118.86 **R^2= 0.62**

Shopping Plaza (40-150k) - Supermarket - Yes
(821)

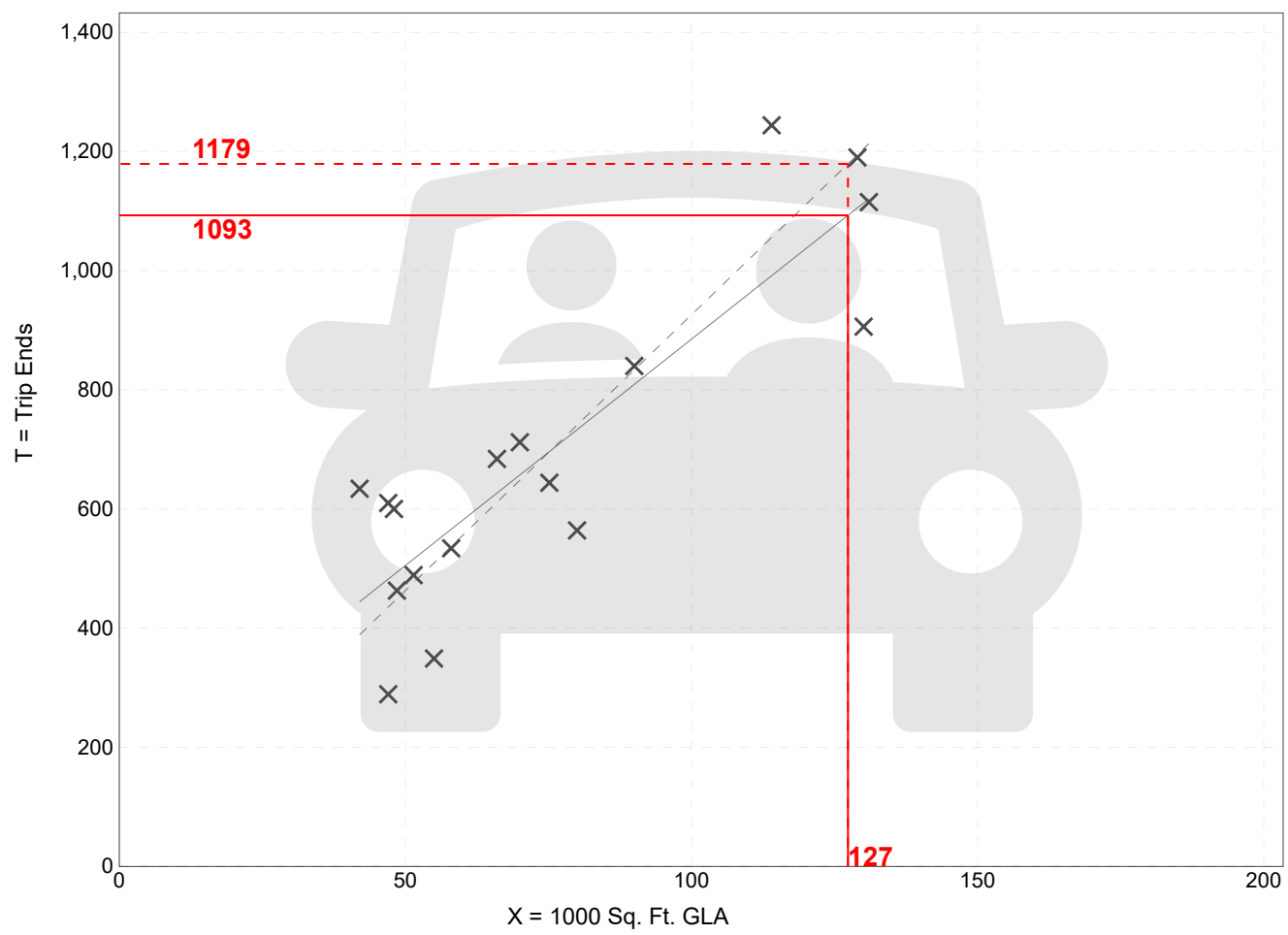
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 17
Avg. 1000 Sq. Ft. GLA: 75
Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
9.26	6.15 - 15.10	2.07

Data Plot and Equation



× **Study Site** —— **Fitted Curve** - - - - **Average Rate**

Fitted Curve Equation: T = 7.60(X) + 125.07 **R^2= 0.76**

TRIP GENERATION WORKSHEETS

PHASE 2

Shopping Center (>150k)
(820)

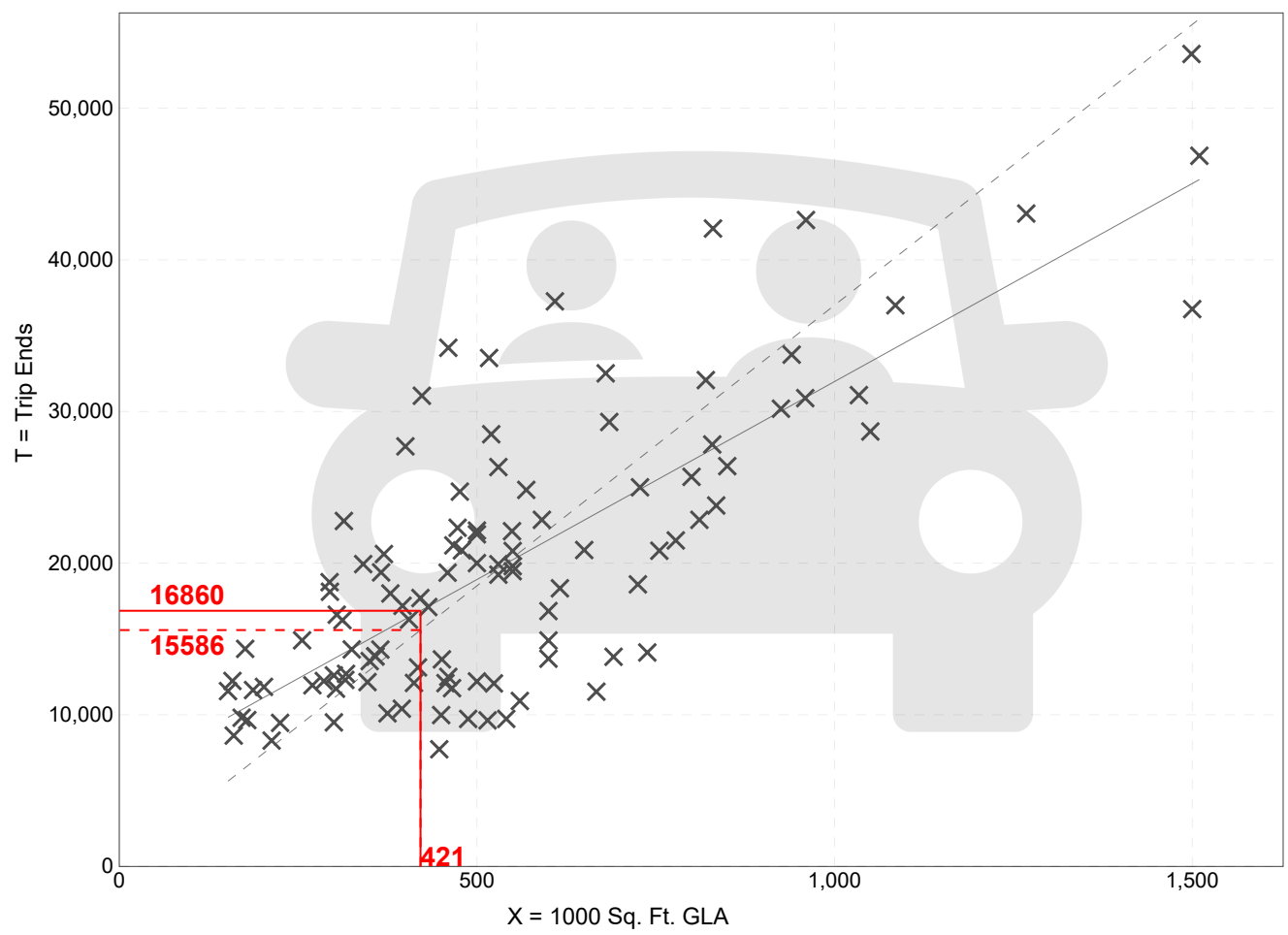
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 108
Avg. 1000 Sq. Ft. GLA: 538
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.01	17.27 - 81.53	12.79

Data Plot and Equation



× **Study Site** —— **Fitted Curve** - - - - **Average Rate**

Fitted Curve Equation: T = 26.11(X) + 5863.73 **R^2= 0.60**

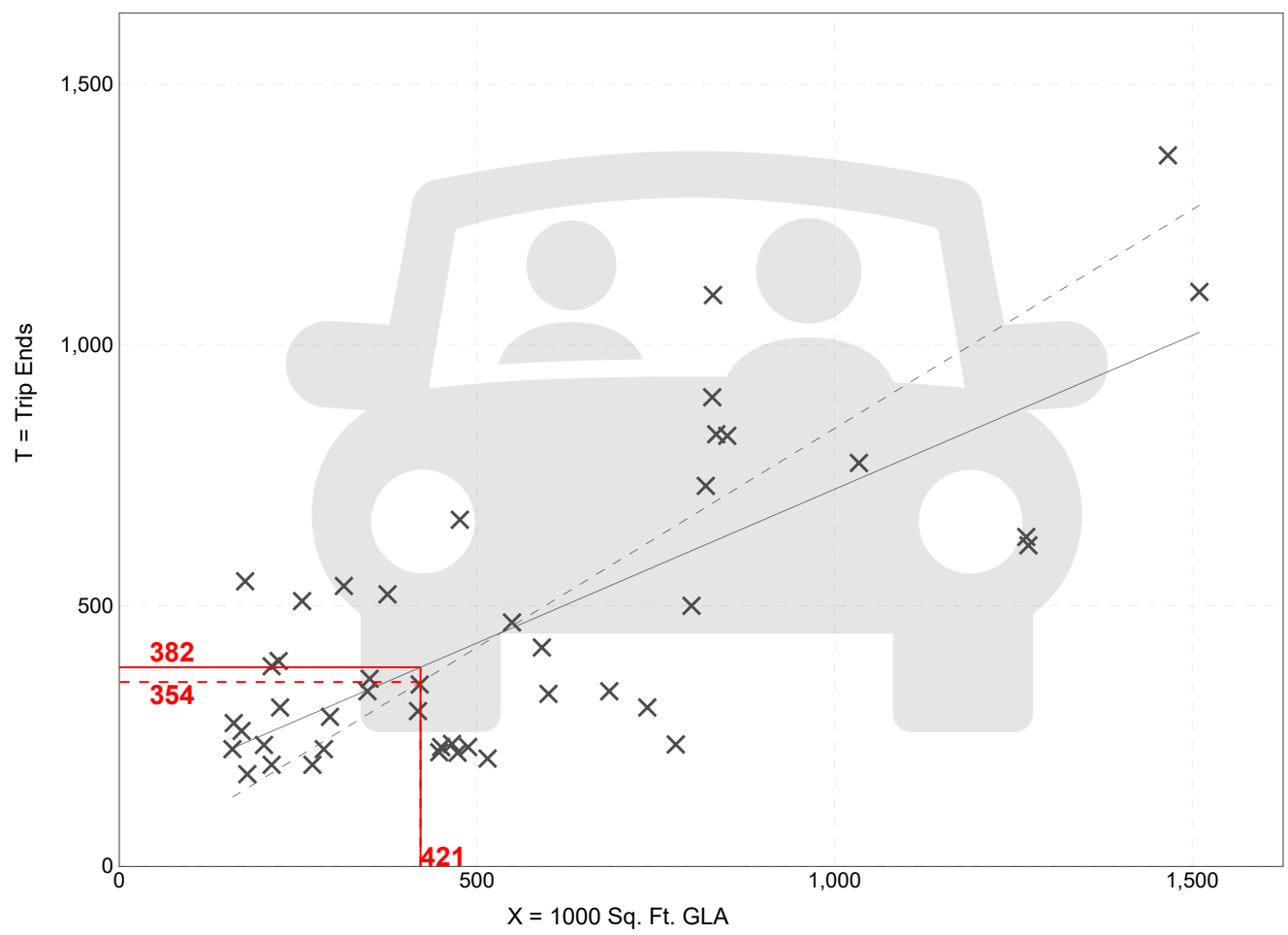
Shopping Center (>150k)
(820)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	44
Avg. 1000 Sq. Ft. GLA:	546
Directional Distribution:	62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.84	0.30 - 3.11	0.42

Data Plot and Equation



× **Study Site** —— **Fitted Curve** - - - - **Average Rate**

Fitted Curve Equation: T = 0.59(X) + 133.55 **R^2= 0.56**

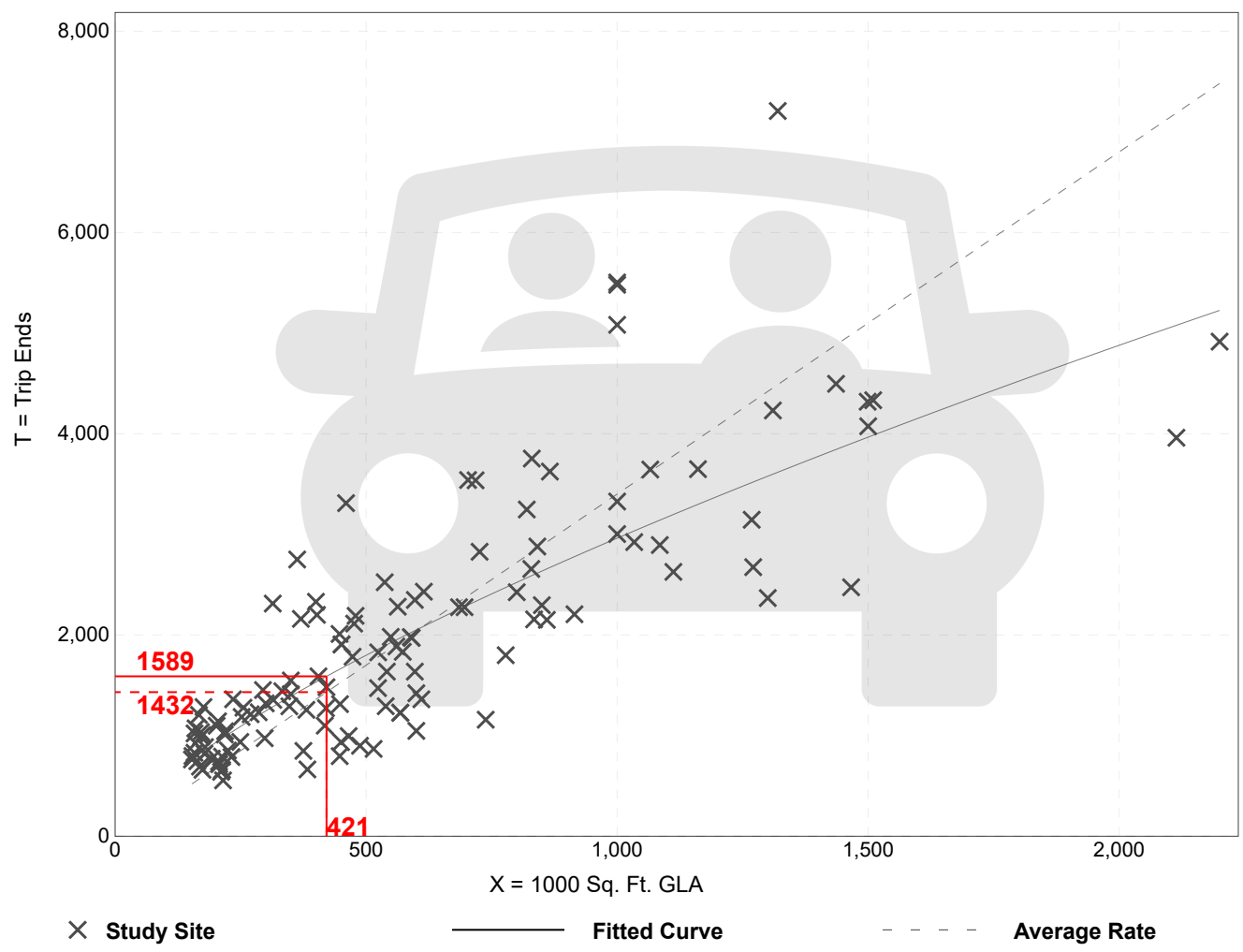
Shopping Center (>150k)
(820)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	126
Avg. 1000 Sq. Ft. GLA:	581
Directional Distribution:	48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.40	1.57 - 7.58	1.26

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.72 Ln(X) + 3.02 **R^2= 0.70**

Shopping Center (>150k)
(820)

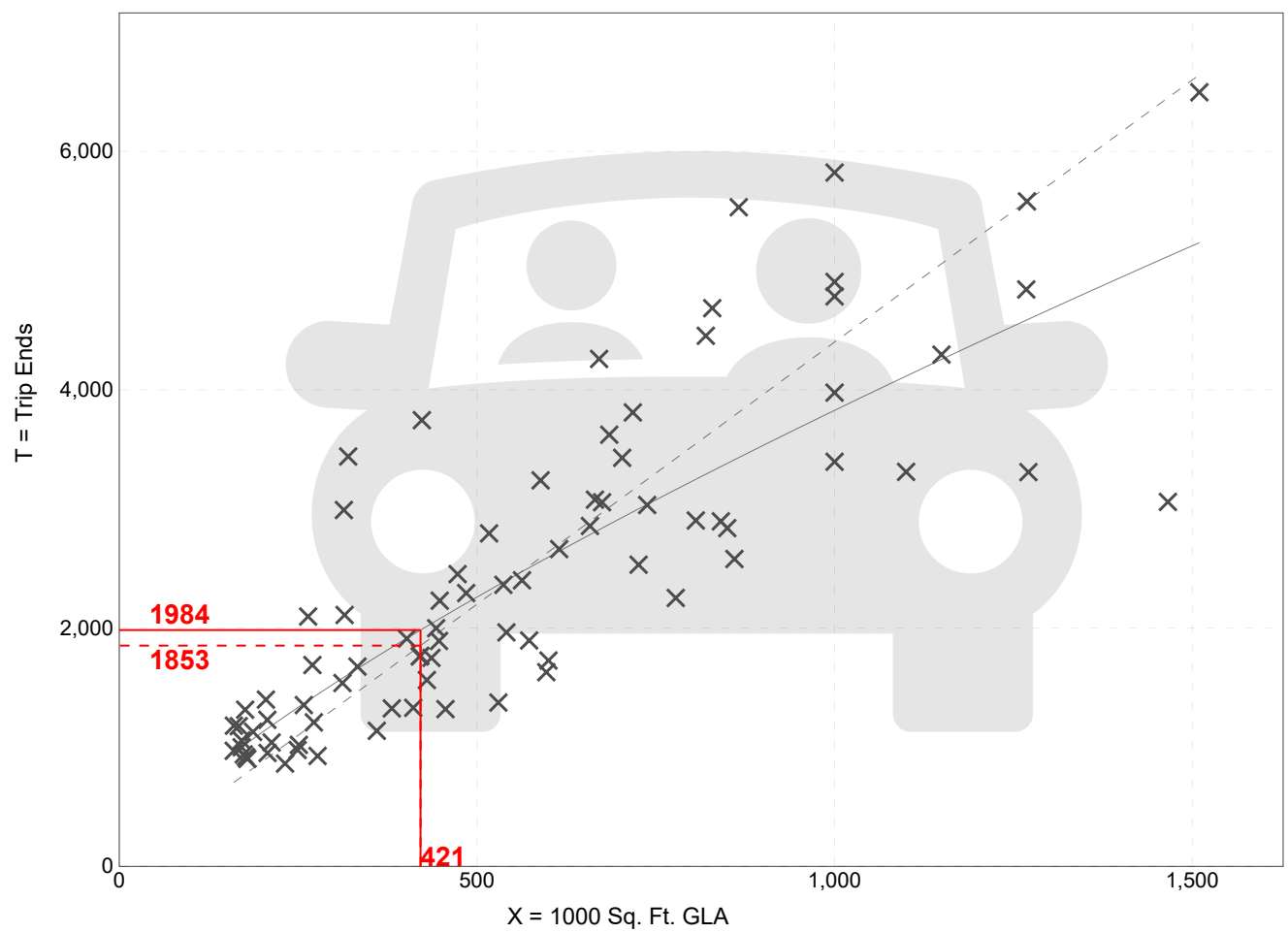
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 81
Avg. 1000 Sq. Ft. GLA: 559
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
4.40	2.09 - 10.75	1.41

Data Plot and Equation



× **Study Site** ——— **Fitted Curve** - - - - **Average Rate**

Fitted Curve Equation: Ln(T) = 0.76 Ln(X) + 3.00 **R^2= 0.75**

TRIP GENERATION WORKSHEETS

PHASE 3

Shopping Plaza (40-150k) - Supermarket - No
(821)

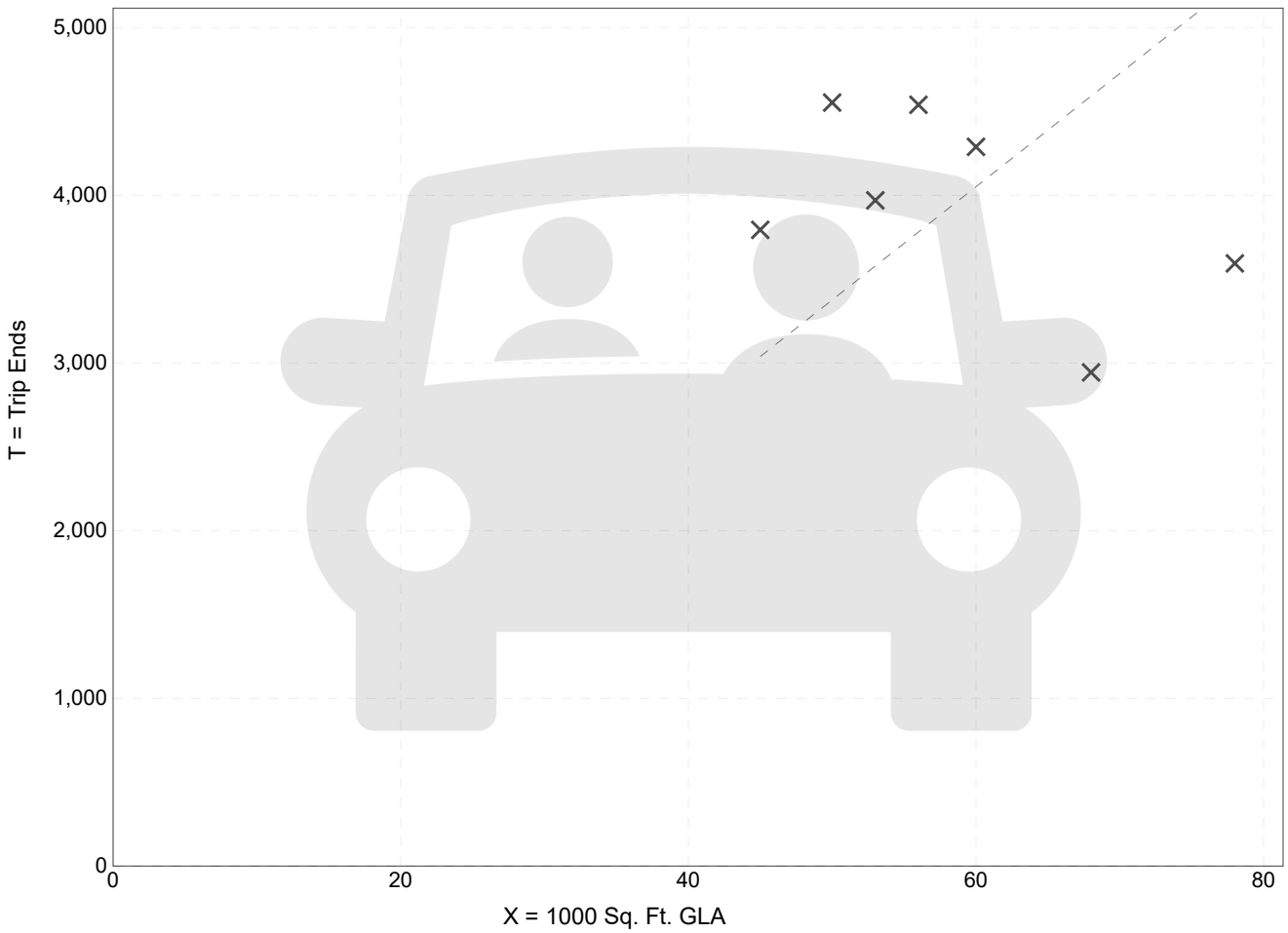
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 7
Avg. 1000 Sq. Ft. GLA: 59
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
67.52	43.29 - 91.06	19.25

Data Plot and Equation



× **Study Site** - - - - **Average Rate**

Fitted Curve Equation: Not Given **R^2= ******

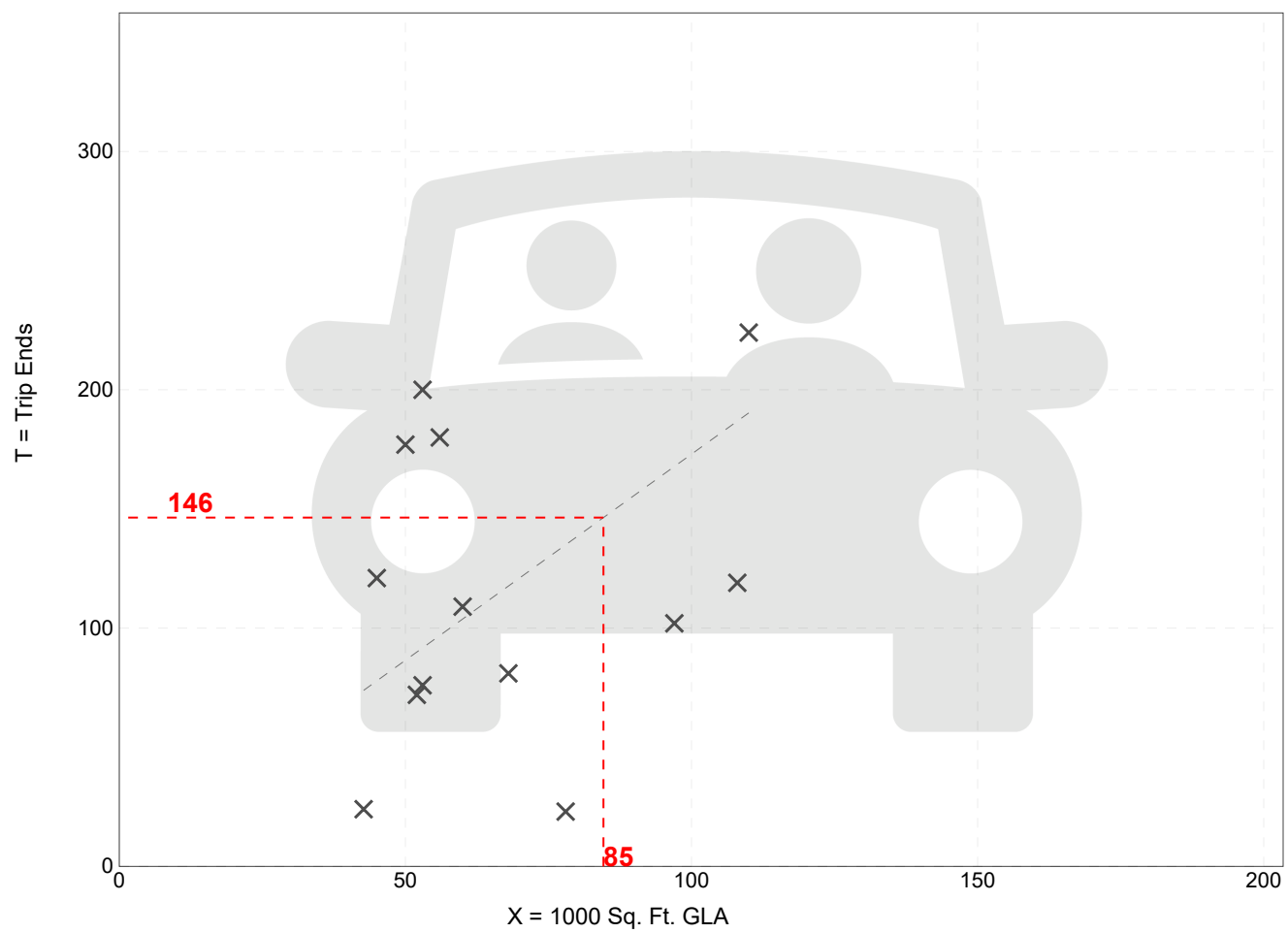
Shopping Plaza (40-150k) - Supermarket - No
(821)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	13
Avg. 1000 Sq. Ft. GLA:	67
Directional Distribution:	62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
1.73	0.29 - 3.77	1.06

Data Plot and Equation



× **Study Site** - - - - **Average Rate**

Fitted Curve Equation: Not Given **R^2= ******

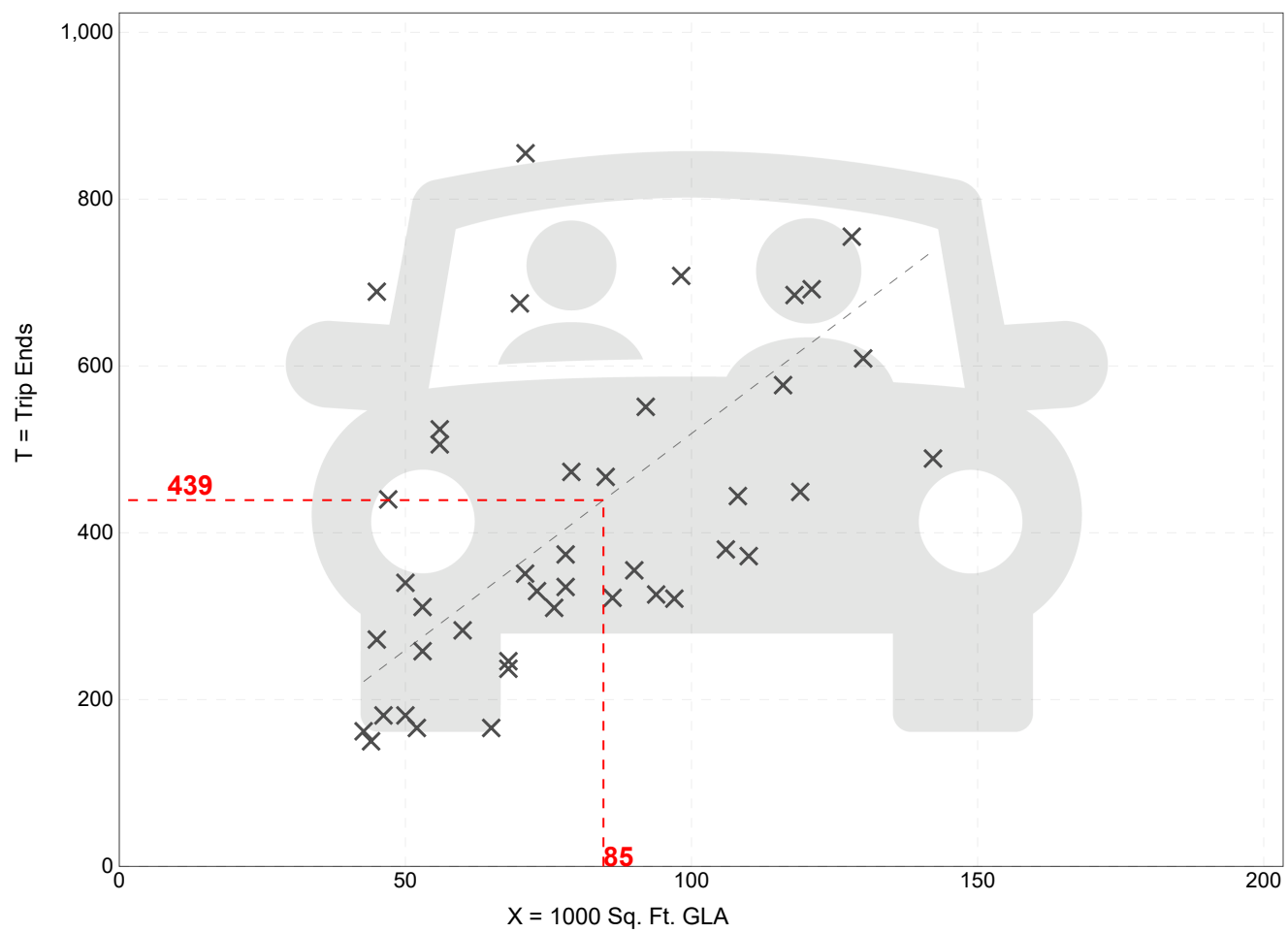
Shopping Plaza (40-150k) - Supermarket - No
(821)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	42
Avg. 1000 Sq. Ft. GLA:	79
Directional Distribution:	49% entering, 51% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
5.19	2.55 - 15.31	2.28

Data Plot and Equation



Study Site — **Average Rate**

Fitted Curve Equation: Not Given — **R^2= ******

Shopping Plaza (40-150k) - Supermarket - No
(821)

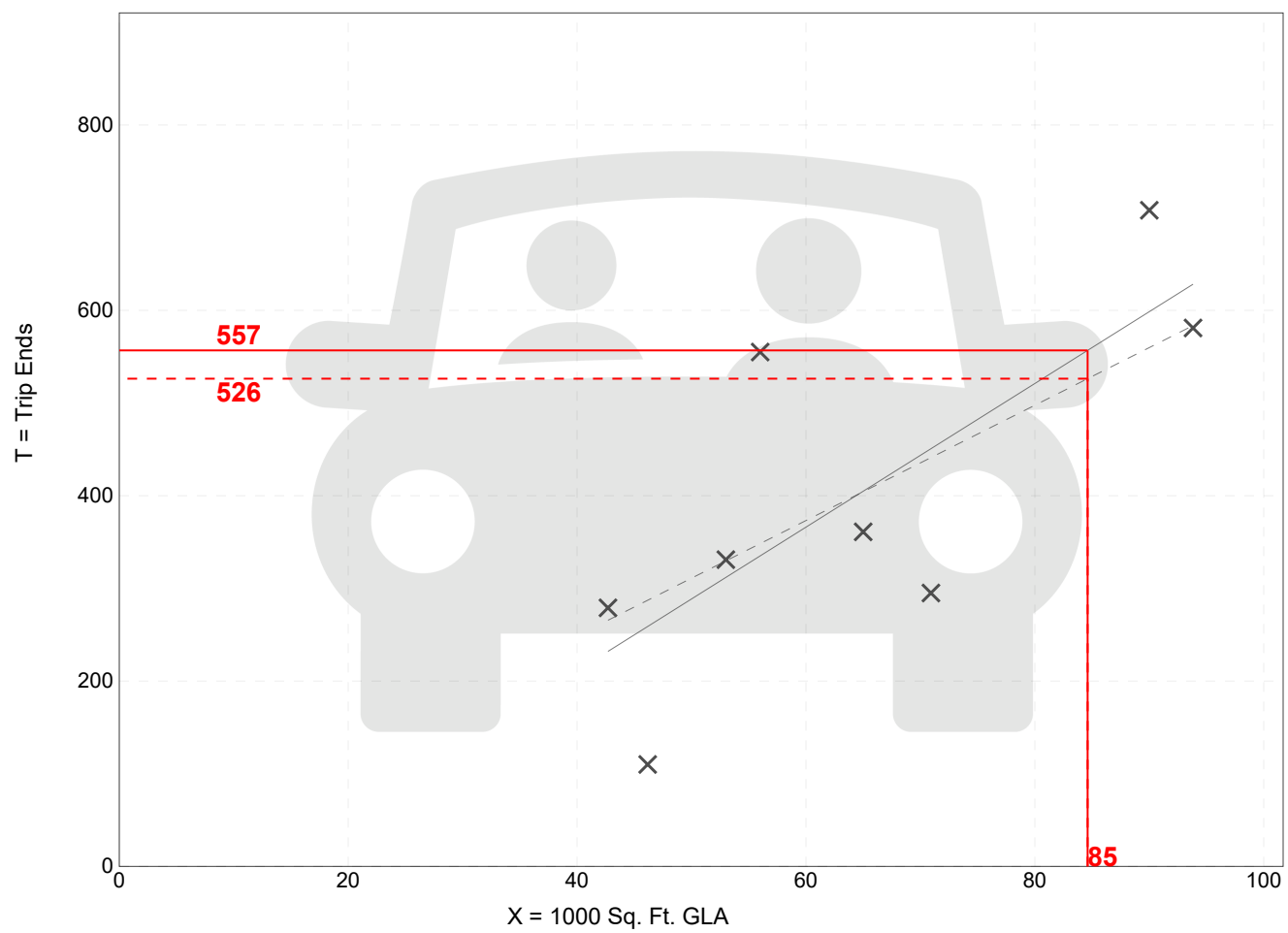
Vehicle Trip Ends vs: **1000 Sq. Ft. GLA**
On a: **Saturday, Peak Hour of Generator**

Setting/Location: **General Urban/Suburban**
Number of Studies: 8
Avg. 1000 Sq. Ft. GLA: 65
Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.22	2.38 - 9.91	2.11

Data Plot and Equation



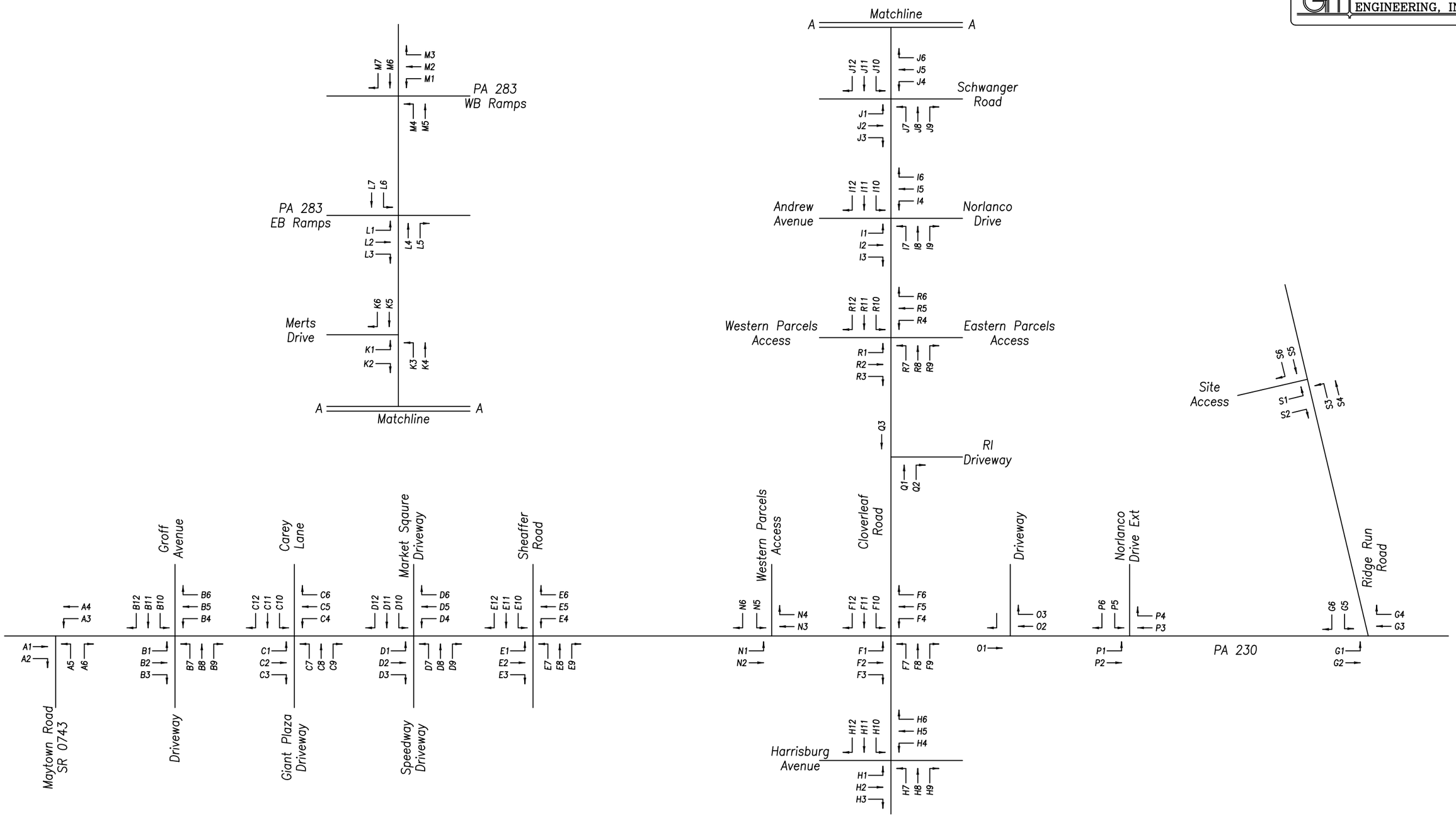
× **Study Site** —— **Fitted Curve** - - - - **Average Rate**

Fitted Curve Equation: T = 7.75(X) - 98.93 **R^2= 0.58**

APPENDIX K

TRAFFIC VOLUME SPREADSHEETS

GROVE MILLER ENGINEERING, INC.



Transportation Impact Study

PENNMARK
PROPERTY

Mount Joy Township, Lancaster Co.

INTERSECTION MOVEMENT KEY

PROJ: 804.02
DATE: 09.27.22
REV:
BY: GEC

TRANSPORTATION IMPACT STUDY for PENNMARK SITE
Mount Joy Township, Lancaster County
GROVE MILLER ENGINEERING, INC.

EVENT	YEAR	GROWTH	FACTOR
COUNT YEAR	2022	0.60%	1.000
PHASE 1 OPENING	2024	0.60%	1.012
PHASE 1 HORIZON	2029	0.60%	1.043
PHASE 2 OPENING	2026	0.60%	1.024
PHASE 2 HORIZON	2031	0.60%	1.055
PHASE 3 OPENING	2028	0.60%	1.037
PHASE 3 HORIZON	2033	0.60%	1.068

AM

AM PEAK HR

MVMT NO	2022 COUNT VOLUME	2024 PROJ. VOLUME	2029 PROJ. VOLUME	2026 PROJ. VOLUME	2031 PROJ. VOLUME	2028 PROJ. VOLUME	2033 PROJ. VOLUME	MVMT NO	PHASE 1 TRIP DIST. NEW TRIP VOLUMES ENTER = 324 EXIT = 217	PHASE 1 TRIP DIST. PASS-BY VOLUMES ENTER = 144 EXIT = 144	PHASE 2 TRIP DIST. NEW TRIP VOLUMES ENTER = 282 EXIT = 191	PHASE 2 TRIP DIST. PASS-BY VOLUMES ENTER = 144 EXIT = 144	PHASE 3 TRIP DIST. NEW TRIP VOLUMES ENTER = 91 EXIT = 55	PHASE 3 TRIP DIST. PASS-BY VOLUMES ENTER = 0 EXIT = 0	Featherton 2024	Campus Rd 2028	Sheaffer Rd 2028	Westbrooke 2024	Raffens. 2024	MVMT NO	2022 BASE VOLUME	2024 NO BUILD VOLUME	2029 NO BUILD VOLUME	2026 NO BUILD VOLUME	2031 NO BUILD VOLUME	2028 NO BUILD VOLUME	2033 NO BUILD VOLUME	MVMT NO	2024 BUILD VOLUME	2029 BUILD VOLUME	2026 BUILD VOLUME	2031 BUILD VOLUME	2028 BUILD VOLUME	2033 BUILD VOLUME	MVMT NO	PHF	% HV
A-1	386	391	403	395	407	400	412	A-1	46		40		13		3	10	4	2	3	A-1	386	399	411	403	415	422	434	A-1	445	457	443	455	475	487	A-1	0.90	9
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B-1	25	25	26	26	26	26	27	B-1								12	6			B-1	25	25	26	26	26	44	45	B-1	25	26	26	26	44	45	B-1	0.89	8
B-2	550	557	574	563	580	570	587	B-2	59		51		16		3	1		2	3	B-2	550	565	582	571	588	579	596	B-2	624	641	622	639	646	663	B-2		7
B-3	1	1	1	1	1	1	1	B-3												B-3	1	1	1	1	1	1	1	B-3	1	1	1	1	1	1	B-3		0
B-4	0	0	0	0	0	0	0	B-4												B-4	0	0	0	0	0	0	0	B-4	0	0	0	0	0	0	B-4		0
B-5	502	508	523	514	530	520	536	B-5	39		34		10		6	4		7	8	B-5	502	529	544	535	551	545	561	B-5	568	583	569	585	589	605	B-5		9
B-6	40	40	42	41	42	41	43	B-6	5		4		1			6				B-6	40	40	42	41	42	47	49	B-6	45	47	45	46	52	54	B-6		10
B-7	0	0	0	0	0	0	0	B-7												B-7	0	0	0	0	0	0	0	B-7	0	0	0	0	0	0	B-7		0
B-8	0	0	0	0	0	0	0	B-8												B-8	0	0	0	0	0	0	0	B-8	0	0	0	0	0	0	B-8		0
B-9	2	2	2	2	2	2	2	B-9												B-9	2	2	2	2	2	2	2	B-9	2	2	2	2	2	2	B-9		50
B-10	40	40	42	41	42	41	43	B-10	5		5		2			16				B-10	40	40	42	41	42	57	59	B-10	45	47	46	47	64	66	B-10		0
B-11	0	0	0	0	0	0	0	B-11												B-11	0	0	0	0	0	0	0	B-11	0	0	0	0	0	0	B-11		0
B-12	34	34	35	35	36	35	36	B-12								34	19			B-12	34	34	35	35	36	88	89	B-12	34	35	35	36	88	89	B-12		18
C-1	3	3	3	3	3	3	3	C-1												C-1	3	3	3	3	3	3	3	C-1	3	3	3	3	3	3	C-1	0.90	0
C-2	463	469	483	474	489	480	494	C-2	64		56		18		3	17		2	3	C-2	463	477	491	482	497	505	519	C-2	541	555	538	553	579	593	C-2		8
C-3	43	44	45	44	45	45	46	C-3												C-3	43	44	45	44	45	45	46	C-3	44	45	44	45	45	46	C-3		2
C-4	61	62	64	62	64	63	65	C-4												C-4	61	62	64	62	64	63	65	C-4	62	64	62	64	63	65	C-4		2
C-5	434	439	453	445	458	450	464	C-5	44		38		11		6	10		7	8	C-5	434	460	474	466	479	481	495	C-5	504	518	504	517	530	544	C-5		10
C-6	6	6	6	6	6	6	6	C-6												C-6	6	6	6	6	6	6	6	C-6	6	6	6	6	6	6	C-6		0
C-7	100	101	104	102	106	104	107	C-7												C-7	100	101	104	102	106	104	107	C-7	101	104	102	106	104	107	C-7		3
C-8	2	2	2	2	2	2	2	C-8												C-8	2	2	2	2	2	2	2	C-8	2	2	2	2	2	2	C-8		0
C-9	70	71	73	72	74	73	75	C-9												C-9	70	71	73	72	74	73	75	C-9	71	73	72	74	73	75	C-9		4
C-10	4	4	4	4	4	4	4	C-10												C-10	4	4	4	4	4	4	4	C-10	4	4	4	4	4	4	C-10		0
C-11	3	3	3	3	3	3	3	C-11												C-11	3	3	3	3	3	3	3	C-11	3	3	3	3	3	3	C-11		0
C-12	2	2	2	2	2	2	2	C-12												C-12	2	2	2	2	2	2	2	C-12	2	2	2	2	2	2	C-12		0
D-1	25	25	26	26	26	26	27	D-1												D-1	25	25	26	26	26	26	27	D-1	25	26	26	26	26	27	D-1	0.93	0
D-2	391	396	408	400	413	405	418	D-2	64		56		18		3	17		2	3	D-2	391	404	416	408	421	430	443	D-2	468	480	464	477	504	517	D-2		6
D-3	13	13	14	13	14	13	14	D-3												D-3	13	13	14	13	14	13	14	D-3	13	14	13	14	13	14	D-3		0
D-4	5	5	5	5	5	5	5	D-4												D-4	5	5	5	5	5	5	5	D-4	5	5	5	5	5	5	D-4		0
D-5	469	475	489	480	495	486	501	D-5	44		38		11		6	10		7	8	D-5	469	496	510	501	516	517	532	D-5	540	554	539	554	566	581	D-5		11
D-6	12	12	13	12	13	12	13	D-6												D-6	12	12	13	12	13	12	13	D-6	12	13	12	13	12	13	D-6		8
D-7	9	9	9	9	9	9	10	D-7												D-7	9	9	9	9	9	9	10	D-7	9	9	9	9	9	10	D-7		0
D-8	0	0	0	0	0	0	0	D-8												D-8	0	0	0	0	0	0	0	D-8	0	0	0	0	0	0	D-8		0
D-9	14	14	15	14	15	15	15	D-9												D-9	14	14	15	14	15	15	15	D-9	14	15	14	15	15	15	D-9		0
D-10	6	6	6	6	6	6	6	D-10												D-10	6	6	6	6	6	6	6	D-10	6	6	6	6	6	6	D-10		0
D-11	0	0	0	0	0	0	0	D-11												D-11	0	0	0	0	0	0	0	D-11	0	0	0	0	0	0	D-11		0
D-12	8	8	8	8	8	8	9	D-12												D-12	8	8	8	8	8	8	9	D-12	8	8	8	8	8	9	D-12		0
E-1	31	31	32	32	33	32	33	E-1							3	1			3	E-1	31	37	38	38	39	39	40	E-1	37	38	38	39	39	40	E-1	0.93	0
E-2	368	372	384	377	388	381	393	E-2	64		56		18			12		2		E-2	368	374	386	379	390	395	407	E-2	438	450	435	446	469	481	E-2		5
E-3	1	1	1	1	1	1	1	E-3								4				E-3	1	1	1	1	1	5	5	E-3	1	1	1	1	5	5	E-3		100
E-4	10	10	10	10	11	10	11	E-4												E-4	10	10	10	10	11	10	11	E-4	10	10	10	11	10	11	E-4		30
E-5	388	393	405	397	409	402	414	E-5	44		38		11			5		7		E-5	388	400	412	404	416	414	426	E-5	444	456	442	454	463	475	E-5		6
E-6	20	20	21	20	21	21	21	E-6								5	5		4	E-6	20	24	25	24	25	35	35	E-6	24	25	24	25	35	35	E-6		10
E-7	58	59	60	59	61	60	62	E-7								1				E-7	58	59	60	59	61	61	63	E-7	59	60	59	61	61	63	E-7		26
E-8	25	25	26	26	26	26	27	E-8								2	2		1	E-8	25	26	27	27	27	31	32	E-8	26	27	27	27	31	32	E-8		4
E-9	35	35	36	36	37	36	37	E-9												E-9	35	35	36	36	37	36	37	E-9	35	36	36	37	36	37	E-9		9
E-10	17	17	18	17	18	18	18	E-10								16	14		11	E-10	17	28	29	28	29	59	59	E-10	28	29	28	29	59	59	E-10		0
E-11	12	12	13	12	13	12	13	E-11								6	5		3	E-11	12	15	16	15	16	26	27	E-11	15	16	15	16	26	27	E-11		0
E-12	32	32	33	33	34	33	34	E-12							6	4			8	E-12	32	46	47	47	48	51	52	E-12	46	47	47	48	51	52	E-12		6
F-1	259	262	270	265	273	268	277	F-1	13		12		25							F-1	259	262	270	265	273	268	277	F-1	275	283	277	285	305	314	F-1	0.94	8
F-2	173	175	180	177	183	179	185	F-2	51		44		7			21	10	7	8	F-2	173	190	195	192	198	225	231	F-2	241	246	236	242	276	282	F-2		9
F-3	31	31	32	32	33	32	33	F-3					6			7	4	3	3	F-3	31	37	38	38	39	49	50	F-3	37	38	38	39	55	56	F-3		29
F-4	3	3	3	3	3	3	3	F-4	33	16	29	16								F-4	3	3	3	3	3	3	3	F-4	52	52	48	48	48	48	F-4		33
F-5	166	168	173	170	175	172	177	F-5	44	21	38	21	12			8	4	2	3	F-5	166	173	178	175	180	189	194	F-5	238	243	234	239	260	265	F-5		5
F-6	194	196	202	199	205	201	207	F-6					6		1	2	1		1	F-6	194	198	204	201	207	206	212	F-6	198	204	201	207	212	218	F-6		4
F-7	69	70	72	71	73	72	74	F-7					10			2	1	1	1	F-7	69	72	74	73	75	77	79	F-7	72	74	73	75	87	89	F-7		6
F-8	352	356	367	361	371	365	376	F-8	10		8		4		2	4	2		1	F-8	352	359	370	364	374	374	385	F-8	369	380	372	382	386	397	F-8		13
F-9	11	11	11	11	12	11	12	F-9	40		35									F-9	11	11	11	11	12	11	12	F-9	51	51	46	47	46	47	F-9		18
F-10	101	102	105	103	107	105	108	F-10					4		2	5	3		2	F-10	101	106	109	107	111	117	120	F-10	106	109	107	111	121	124	F-10		8
F-11	215	218	224	220	227	223	230	F-11		-16		-16	2		4	8	6		4	F-11	215	226	232	228	235	245	252	F-11	210	216	212	219	231	238	F-11		13
F-12	203	205	212	208	214	210	217	F-12		-21		-21								F-12	203	205	212	208	214	210	217	F-12	184	191	187	193	189	196	F-12		8
G-1	3	3	3	3	3	3	3	G-1												G-1	3	3	3	3	3	3	3	G-1	3	3	3	3	3	3	G-1	0.91	33
G-2	258	261	269	264	272	267	276	G-2	43		28		11		2	21	13	7	10	G-2	258	280	288	283	291	320	329	G-2	323	331	311	319	359	368	G-2		9
G-3	364	368	380	373	384	377	389	G-3	64		42		18		1	8	5	2	4	G-3	364	375	387	380	391	397	409	G-3	439	451	422	433	457	469	G-3		5
G-4	23	23	24	24	24	24	25	G-4			14									G-4	23	23	24	24	24	24	25	G-4	23	24	38	38	38	39	G-4		9
G-5	25	25	26	26	26	26	27	G-5			10									G-5	25	25	26	26	26	26	27	G-5	25	26	36	36	36	37	G-5		4
G-6	3	3	3	3	3	3	3	G-6												G-6	3	3	3	3	3	3	3	G-6	3	3	3	3	3	3	G-6		33
H-1	61	62	64	62	64	63	65	H-1	7		6		2							H-1	61	62	64	62	64	63	65	H-1	69	71	68	70	71	73	H-1	0.96	48
H-2	22	22	23	23	23	23	23	H-2												H-2	22	22	23	23	23	23	23	H-2	22	23	23	23	23	23	H-2		5
H-3	33	33	34	34	35	34	35	H-3												H-3	33	33	34	34	35	34	35	H-3	33	34	34	35	34	35	H-3		21
H-4	6	6	6	6	6	6	6	H-4												H-4	6	6	6	6	6	6	6	H-4	6	6	6	6	6	6	H-4		0
H-5	42	43	44	43	44	44	45	H-5												H-5	42	43	44	43	44	44	45	H-5	43	44	43	44	44	45	H-5		7
H-6	109	110	114	112	115	113	116	H-6	9		8		3							H-6	109	110	114	112	115	113	116	H-6	119	123	120	123	124	127	H-6		4
H-7	45	46	47	46	47	47	48	H-7												H-7	45	46	47	46	47	47	48	H-7	46	47	46	47	47	48	H-7		16
H-8	293	297	306	300	309	304	313	H-8	34		29		9		2	6	3	1	2	H-8	293	302	311	305	314	318	327	H-8	336	345	334	343	356	365	H-8		8
H-9	9	9	9	9	9	9	10	H-9												H-9	9	9	9	9	9	9	10	H-9	9	9	9	9	9	10	H-9		0
H-10	25	25	26	26	26	26	27	H-10	6		6		1							H-10	25	25	26	26	26	26	27	H-10	31	32	32	32	33	34	H-10		32
H-11	151	153	157	155	159	157	161	H-11	22		19		6		4	15	10	3	7	H-11	151	167	171	169	173	196	200	H-11	189	193	188	192	221	225	H-11		15
H-12	71	72	74	73	75	74	76	H-12	5		4		1							H-12	71	72	74	73	75	74	76	H-12	77	79	77	79	79	81	H-12		41
I-1	15	15	16	15	16	16	16	I-1										20		I-1	15	35	36	35	36	36	36	I-1	35	36	35	36	36	36	I-1	0.96	0
I-2	0	0	0	0	0	0	0	I-2												I-2	0	0	0	0	0	0	0	I-2	0	0	0	0	0	0	I-2		0
I-3	16	16	17	16	17	17	17	I-3												I-3	16	16	17	16	17	17	17	I-3	16	17	16	17	17	17	I-3		0
I-4	16	16	17	16	17	17	17	I-4												I-4	16	16	17	16	17	17	17	I-4	16	17	16	17	17	17	I-4		0
I-5	1	1	1	1	1	1	1	I-5												I-5	1	1	1	1	1	1	1	I-5	1	1	1	1	1	1	I-5		0
I-6	9	9	9	9	9	9	10	I-6			26									I-6	9	9	9	9	9	9	10	I-6	9	9	35	35	35	36	I-6		0
I-7	2	2	2	2	2	2	2	I-7												I-7	2	2	2	2	2	2	2	I-7	2	2	2	2	2	2	I-7		50
I-8	748	757	780	766	789	775	799	I-8	97		60		25		3	6	3	2	2	I-8	748	764	787	773	796	791	815	I-8	861	884	833	856	876	900	I-8		10
I-9	7	7	7	7	7	7	7	I-9												I-9	7	7	7	7	7	7	7	I-9	7	7	7	7	7	7	I-9		29
I-10	24	24	25	25	25	25	26	I-10			38									I-10	24	24	25	25	25	25	26	I-10	24	25	63	63	63	64	I-10		0
I-11	528	534	551	541	557	547	564	I-11	146		89		41		6	13	9	1	6	I-11	528	547	564	554	570	582	599	I-11	693	710	643	659	712	729	I-11		9
I-12	1	1	1	1	1	1	1	I-12										6		I-12	1	7	7	7	7	7	7	I-12	7	7	7	7	7	7	I-12		0
J-1	287	290	299	294	303	297	307	J-1							23	50	37		23	J-1	287	336	345	340	349	430	440	J-1	336	345	340	349	430	440	J-1	0.90	2
J-2	19	19	20	19	20	20	20	J-2												J-2	19	19	20	19	20	20	20	J-2	19	20	19	20	20	20	J-2		0
J-3	75	76	78	77	79	78	80	J-3	16		14		5		6	13	9		6	J-3	75	88	90	89	91	112	114	J-3	104	106	103	105	131	133	J-3		5
J-4	8	8	8	8	8	8	9	J-4												J-4	8	8	8	8	8	8	9	J-4	8	8	8	8	8	9	J-4		13
J-5	12	12	13	12	13	12	13	J-5												J-5	12	12	13	12	13	12	13	J-5	12	13	12	13	12	13	J-5		8
J-6	73	74	76	75	77	76	78	J-6												J-6	73	74	76	75	77	76	78	J-6	74	76	75	77	76	78	J-6		1
J-7	26	26	27	27	27	27	28	J-7	10		10		3		3	6	3		2	J-7	26	31	32	32	32	41	42	J-7	41	42	42	42	54	55	J-7		8
J-8	730	739	761	748	770	757	780	J-8	87		76		22					22		J-8	730	761	783	770	792	779	802	J-8	848	870	846	868	877	900	J-8		9
J-9	8	8	8	8	8	8	9	J-9												J-9	8	8	8	8	8	8	9	J-9	8	8	8	8	8	9	J-9		25
J-10	10	10	10	10	11	10	11	J-10												J-10	10	10	10	10	11	10	11	J-10	10	10	10	11	10	11	J-10		0
J-11	485	491	506	497	512	503	518	J-11	130		113		36					7		J-11	485	498	513	504	519	510	525	J-11	628	643	617	632	659	674	J-11		10
J-12	129	131	135	132	136	134	138	J-12							10	26	13		8	J-12	129	149	153	150	154	191	195	J-12	149	153	150	154	191	195	J-12		5
K-1	6	6	6	6	6	6	6	K-1												K-1	6	6	6	6	6	6	6	K-1	6	6	6	6	6	6	K-1	0.90	0
K-2	24	24	25	25	25	25	26	K-2												K-2	24	24	25	25	25	25	26	K-2	24	25	25	25	25	26	K-2		0
K-3	0	0	0	0	0	0	0	K-3												K-3	0	0	0	0	0	0	0	K-3	0	0	0	0	0	0	K-3		0
K-4	1090	1103	1137	1116	1150	1130	1164	K-4	87		76		22		23	50	37	22	23	K-4	1090	1171	1205	1184	1218	1285	1319	K-4	1258	1292	1260	1294	1383	1417	K-4		7
K-5	588	595	613	602	621	609	628	K-5	130		113		36		10	26	13	7	8	K-5	588	620	638	627	646	673	692	K-5	750	768	740	759	822	841	K-5		10
K-6	5	5	5	5	5	5	5	K-6												K-6	5	5	5

PROJ: 804.02
DATE: 09.28.22
REV:
BY: GEC

TRANSPORTATION IMPACT STUDY for PENNMARK SITE
Mount Joy Township, Lancaster County
GROVE MILLER ENGINEERING, INC.

EVENT	YEAR	GROWTH	FACTOR
COUNT YEAR	2022	0.60%	1.000
PHASE 1 OPENING	2024	0.60%	1.012
PHASE 1 HORIZON	2029	0.60%	1.043
PHASE 2 OPENING	2026	0.60%	1.024
PHASE 2 HORIZON	2031	0.60%	1.055
PHASE 3 OPENING	2028	0.60%	1.037
PHASE 3 HORIZON	2033	0.60%	1.068

PM

PM PEAK HR

MVMT NO	2022 COUNT VOLUME	2024 PROJ. VOLUME	2029 PROJ. VOLUME	2026 PROJ. VOLUME	2031 PROJ. VOLUME	2028 PROJ. VOLUME	2033 PROJ. VOLUME	MVMT NO	PHASE 1 TRIP DIST. NEW TRIP VOLUMES ENTER = 356	PHASE 1 TRIP DIST. PASS-BY VOLUMES EXIT = 349	PHASE 2 TRIP DIST. NEW TRIP VOLUMES ENTER = 658	PHASE 2 TRIP DIST. PASS-BY VOLUMES ENTER = 266	PHASE 3 TRIP DIST. NEW TRIP VOLUMES ENTER = 129	PHASE 3 TRIP DIST. PASS-BY VOLUMES ENTER = 86	Featherton 2024	Campus Rd 2028	Sheaffer Rd 2028	Westbrooke 2024	Raffens. 2024	MVMT NO	2022 BASE VOLUME	2024 NO BUILD VOLUME	2029 NO BUILD VOLUME	2026 NO BUILD VOLUME	2031 NO BUILD VOLUME	2028 NO BUILD VOLUME	2033 NO BUILD VOLUME	MVMT NO	2024 BUILD VOLUME	2029 BUILD VOLUME	2026 BUILD VOLUME	2031 BUILD VOLUME	2028 BUILD VOLUME	2033 BUILD VOLUME	MVMT NO	PHF	% HV
A-1	621	628	648	636	655	644	663	A-1	51		93		18		6	31	14	7	9	A-1	621	650	670	658	677	711	730	A-1	701	721	751	770	822	841	A-1	0.91	3
A-2	84	85	88	86	89	87	90	A-2												A-2	84	85	88	86	89	87	90	A-2	85	88	86	89	87	90	A-2		0
A-3	189	191	197	194	199	196	202	A-3	15		28		5			6	3			A-3	189	191	197	194	199	205	211	A-3	206	212	222	227	238	244	A-3		1
A-4	468	474	488	479	494	485	500	A-4	54		100		19		5	18	9	4	5	A-4	468	488	502	493	508	526	541	A-4	542	556	593	608	645	660	A-4		1
A-5	121	122	126	124	128	125	129	A-5												A-5	121	122	126	124	128	125	129	A-5	122	126	124	128	125	129	A-5		1
A-6	123	124	128	126	130	127	131	A-6	13		26		5			10	5			A-6	123	124	128	126	130	142	146	A-6	137	141	152	156	173	177	A-6		1
B-1	27	27	28	28	28	28	29	B-1								37	19			B-1	27	27	28	28	28	84	85	B-1	27	28	28	28	84	85	B-1	0.93	0
B-2	777	786	810	796	820	805	830	B-2	66		119		23		6	4		7	9	B-2	777	808	832	818	842	831	856	B-2	874	898	937	961	973	998	B-2		2
B-3	0	0	0	0	0	0	0	B-3												B-3	0	0	0	0	0	0	0	B-3	0	0	0	0	0	0	B-3		0
B-4	0	0	0	0	0	0	0	B-4												B-4	0	0	0	0	0	0	0	B-4	0	0	0	0	0	0	B-4		0
B-5	926	937	966	948	977	960	989	B-5	69		128		24		5	2		4	5	B-5	926	951	980	962	991	976	1005	B-5	1020	1049	1090	1119	1128	1157	B-5		1
B-6	83	84	87	85	88	86	89	B-6	8		14		3			18				B-6	83	84	87	85	88	104	107	B-6	92	95	99	102	121	124	B-6		0
B-7	1	1	1	1	1	1	1	B-7												B-7	1	1	1	1	1	1	1	B-7	1	1	1	1	1	1	B-7		0
B-8	0	0	0	0	0	0	0	B-8												B-8	0	0	0	0	0	0	0	B-8	0	0	0	0	0	0	B-8		0
B-9	2	2	2	2	2	2	2	B-9												B-9	2	2	2	2	2	2	2	B-9	2	2	2	2	2	2	B-9		0
B-10	29	29	30	30	31	30	31	B-10	6		13		3			11				B-10	29	29	30	30	31	41	42	B-10	35	36	43	44	57	58	B-10		0
B-11	0	0	0	0	0	0	0	B-11												B-11	0	0	0	0	0	0	0	B-11	0	0	0	0	0	0	B-11		0
B-12	47	48	49	48	50	49	50	B-12								22	12			B-12	47	48	49	48	50	83	84	B-12	48	49	48	50	83	84	B-12		4
C-1	14	14	15	14	15	15	15	C-1												C-1	14	14	15	14	15	15	15	C-1	14	15	14	15	15	15	C-1	0.96	0
C-2	583	590	608	597	615	604	623	C-2	72		132		26		6	15		7	9	C-2	583	612	630	619	637	641	660	C-2	684	702	751	769	799	818	C-2		2
C-3	36	36	38	37	38	37	38	C-3												C-3	36	36	38	37	38	37	38	C-3	36	38	37	38	37	38	C-3		0
C-4	149	151	155	153	157	154	159	C-4												C-4	149	151	155	153	157	154	159	C-4	151	155	153	157	154	159	C-4		0
C-5	727	736	758	745	767	754	776	C-5	77		142		27		5	20		4	5	C-5	727	750	772	759	781	788	810	C-5	827	849	901	923	957	979	C-5		1
C-6	17	17	18	17	18	18	18	C-6												C-6	17	17	18	17	18	18	18	C-6	17	18	17	18	18	18	C-6		0
C-7	264	267	275	270	279	274	282	C-7												C-7	264	267	275	270	279	274	282	C-7	267	275	270	279	274	282	C-7		0
C-8	3	3	3	3	3	3	3	C-8												C-8	3	3	3	3	3	3	3	C-8	3	3	3	3	3	3	C-8		0
C-9	114	115	119	117	120	118	122	C-9												C-9	114	115	119	117	120	118	122	C-9	115	119	117	120	118	122	C-9		0
C-10	23	23	24	24	24	24	25	C-10												C-10	23	23	24	24	24	24	25	C-10	23	24	24	24	24	25	C-10		0
C-11	8	8	8	8	8	8	9	C-11												C-11	8	8	8	8	8	8	9	C-11	8	8	8	8	8	9	C-11		0
C-12	16	16	17	16	17	17	17	C-12												C-12	16	16	17	16	17	17	17	C-12	16	17	16	17	17	17	C-12		0
D-1	83	84	87	85	88	86	89	D-1												D-1	83	84	87	85	88	86	89	D-1	84	87	85	88	86	89	D-1	0.95	0
D-2	414	419	432	424	437	429	442	D-2	72		132		26		6	15		7	9	D-2	414	441	454	446	459	466	479	D-2	513	526	578	591	624	637	D-2		2
D-3	1	1	1	1	1	1	1	D-3												D-3	1	1	1	1	1	1	1	D-3	1	1	1	1	1	1	D-3		0
D-4	10	10	10	10	11	10	11	D-4												D-4	10	10	10	10	11	10	11	D-4	10	10	10	11	10	11	D-4		10
D-5	732	741	763	750	772	759	782	D-5	77		142		27		5	20		4	5	D-5	732	755	777	764	786	793	816	D-5	832	854	906	928	962	985	D-5		1
D-6	72	73	75	74	76	75	77	D-6												D-6	72	73	75	74	76	75	77	D-6	73	75	74	76	75	77	D-6		0
D-7	9	9	9	9	9	9	10	D-7												D-7	9	9	9	9	9	9	10	D-7	9	9	9	9	9	10	D-7		0
D-8	2	2	2	2	2	2	2	D-8												D-8	2	2	2	2	2	2	2	D-8	2	2	2	2	2	2	D-8		0
D-9	1	1	1	1	1	1	1	D-9												D-9	1	1	1	1	1	1	1	D-9	1	1	1	1	1	1	D-9		0
D-10	41	41	43	42	43	42	44	D-10												D-10	41	41	43	42	43	42	44	D-10	41	43	42	43	42	44	D-10		0
D-11	3	3	3	3	3	3	3	D-11												D-11	3	3	3	3	3	3	3	D-11	3	3	3	3	3	3	D-11		0
D-12	110	111	115	113	116	114	117	D-12												D-12	110	111	115	113	116	114	117	D-12	111	115	113	116	114	117	D-12		0
E-1	46	47	48	47	49	48	49	E-1							6	4			9	E-1	46	62	63	62	64	67	68	E-1	62	63	62	64	67	68	E-1	0.95	2
E-2	378	383	394	387	399	392	404	E-2	72		132		26			9		7		E-2	378	390	401	394	406	408	420	E-2	462	473	526	538	566	578	E-2		3
E-3	21	21	22	22	22	22	22	E-3								2				E-3	21	21	22	22	22	24	24	E-3	21	22	22	22	24	24	E-3		0
E-4	40	40	42	41	42	41	43	E-4												E-4	40	40	42	41	42	41	43	E-4	40	42	41	42	41	43	E-4		3
E-5	632	640	659	647	667	655	675	E-5	77		142		27			14		4		E-5	632	644	663	651	671	673	693	E-5	721	740	793	813	842	862	E-5		1
E-6	20	20	21	20	21	21	21	E-6								17	14		12	E-6	20	32	33	32	33	64	64	E-6	32	33	32	33	64	64	E-6		0
E-7	90	91	94	92	95	93	96	E-7								4				E-7	90	91	94	92	95	97	100	E-7	91	94	92	95	97	100	E-7		0
E-8	32	32	33	33	34	33	34	E-8								6	5		3	E-8	32	35	36	36	37	47	48	E-8	35	36	36	37	47	48	E-8		3
E-9	29	29	30	30	31	30	31	E-9												E-9	29	29	30	30	31	30	31	E-9	29	30	30	31	30	31	E-9		3
E-10	26	26	27	27	27	27	28	E-10								10	9		7	E-10	26	33	34	34	34	53	54	E-10	33	34	34	34	53	54	E-10		0
E-11	41	41	43	42	43	42	44	E-11								4	3		2	E-11	41	43	45	44	45	51	53	E-11	43	45	44	45	51	53	E-11		2
E-12	82	83	86	84	87	85	88	E-12							5	2			5	E-12	82	93	96	94	97	97	100	E-12	93	96	94	97	97	100	E-12		2
F-1	213	216	222	218	225	221	227	F-1	15		26		60	20						F-1	213	216	222	218	225	221	227	F-1	231	237	244	251	327	333	F-1	0.97	1
F-2	270	273	282	277	285	280	288	F-2	57		106		18			14	7	4	5	F-2	270	282	291	286	294	310	318	F-2	339	348	392	400	434	442	F-2		1
F-3	54	55	56	55	57	56	58	F-3					13			5	2	2	2	F-3	54	59	60	59	61	67	69	F-3	59	60	59	61	80	82	F-3		0
F-4	22	22	23	23	23	23	23	F-4	57	55	107	46								F-4	22	22	23	23	23	23	23	F-4	134	135	176	176	176	176	F-4		5
F-5	279	282	291	286	294	289	298	F-5	77	74	142	61	17			23	10	7	9	F-5	279	298	307	302	310	338	347	F-5	449	458	505	513	558	567	F-5		2
F-6	127	129	132	130	134	132	136	F-6					9		2	7	3		2	F-6	127	133	136	134	138	146	150	F-6	133	136	134	138	155	159	F-6		3
F-7	86	87	90	88	91	89	92	F-7					13			8	4	3	3	F-7	86	93	96	94	97	107	110	F-7	93	96	94	97	120	123	F-7		14
F-8	268	271	279	274	283	278	286	F-8	10		20		6		4	14	7		4	F-8	268	279	287	282	291	307	315	F-8	289	297	302	311	333	341	F-8		7
F-9	17	17	18	17	18	18	18	F-9	43		78									F-9	17	17	18	17	18	18	18	F-9	60	61	95	96	96	96	F-9		6
F-10	212	215	221	217	224	220	226	F-10					9		1	6	2		1	F-10	212	217	223	219	226	230	236	F-10	217	223	219	226	239	245	F-10		1
F-11	338	342	352	346	357	350	361	F-11		-55		-46	7		3	13	4		3	F-11	338	348	358	352	363	373	384	F-11	293	303	306	317	334	345	F-11		4
F-12	284	287	296	291	300	294	303	F-12		-74		-61								F-12	284	287	296	291	300	294	303	F-12	213	222	230	239	233	242	F-12		4
G-1	6	6	6	6	6	6	6	G-1												G-1	6	6	6	6	6	6	6	G-1	6	6	6	6	6	6	G-1	0.96	0
G-2	458	464	478	469	483	475	489	G-2	77		106		27		1	14	9	4	6	G-2	458	475	489	480	494	509	523	G-2	552	566	586	600	642	656	G-2		1
G-3	384	389	400	393	405	398	410	G-3	72		99		26		2	23	13	7	11	G-3	384	409	420	413	425	454	466	G-3	481	492	512	524	579	591	G-3		2
G-4	55	56	57	56	58	57	59	G-4			33									G-4	55	56	57	56	58	57	59	G-4	56	57	89	91	90	92	G-4		2
G-5	37	37	39	38	39	38	40	G-5			36									G-5	37	37	39	38	39	38	40	G-5	37	39	74	75	74	76	G-5		0
G-6	1	1	1	1	1	1	1	G-6												G-6	1	1	1	1	1	1	1	G-6	1	1	1	1	1	1	G-6		0
H-1	76	77	79	78	80	79	81	H-1	7		13		2							H-1	76	77	79	78	80	79	81	H-1	84	86	91	93	94	96	H-1	0.96	48
H-2	80	81	83	82	84	83	85	H-2												H-2	80	81	83	82	84	83	85	H-2	81	83	82	84	83	85	H-2		5
H-3	75	76	78	77	79	78	80	H-3												H-3	75	76	78	77	79	78	80	H-3	76	78	77	79	78	80	H-3		21
H-4	4	4	4	4	4	4	4	H-4												H-4	4	4	4	4	4	4	4	H-4	4	4	4	4	4	4	H-4		0
H-5	50	51	52	51	53	52	53	H-5												H-5	50	51	52	51	53	52	53	H-5	51	52	51	53	52	53	H-5		7
H-6	54	55	56	55	57	56	58	H-6	10		20		4							H-6	54	55	56	55	57	56	58	H-6	65	66	75	77	80	82	H-6		4
H-7	32	32	33	33	34	33	34	H-7												H-7	32	32	33	33	34	33	34	H-7	32	33	33	34	33	34	H-7		16
H-8	241	244	251	247	254	250	257	H-8	36		65		13		4	22	11	3	7	H-8	241	258	265	261	268	297	304	H-8	294	301	326	333	375	382	H-8		8
H-9	6	6	6	6	6	6	6	H-9												H-9	6	6	6	6	6	6	6	H-9	6	6	6	6	6	6	H-9		0
H-10	83	84	87	85	88	86	89	H-10	11		21		4							H-10	83	84	87	85	88	86	89	H-10	95	98	106	109	111	114	H-10		32
H-11	296	300	309	303	312	307	316	H-11	39		72		13		3	18	6	2	5	H-11	296	310	319	313	322	341	350	H-11	349	358	385	394	426	435	H-11		15
H-12	46	47	48	47	49	48	49	H-12	7		14		3							H-12	46	47	48	47	49	48	49	H-12	54	55	61	63	65	66	H-12		41
I-1	4	4	4	4	4	4	4	I-1										11		I-1	4	15	15	15	15	15	15	I-1	15	15	15	15	15	15	I-1	0.95	0
I-2	0	0	0	0	0	0	0	I-2												I-2	0	0	0	0	0	0	0	I-2	0	0	0	0	0	0	I-2		0
I-3	17	17	18	17	18	18	18	I-3												I-3	17	17	18	17	18	18	18	I-3	17	18	17	18	18	18	I-3		0
I-4	60	61	63	61	63	62	64	I-4												I-4	60	61	63	61	63	62	64	I-4	61	63	61	63	62	64	I-4		0
I-5	0	0	0	0	0	0	0	I-5												I-5	0	0	0	0	0	0	0	I-5	0	0	0	0	0	0	I-5		0
I-6	38	38	40	39	40	39	41	I-6			96	19	54							I-6	38	38	40	39	40	39	41	I-6	38	40	154	155	208	210	I-6		0
I-7	16	16	17	16	17	17	17	I-7												I-7	16	16	17	16	17	17	17	I-7	16	17	16	17	17	17	I-7		0
I-8	553	560	577	566	584	573	591	I-8	172		223	-18	60		6	21	10	1	6	I-8	553	573	590	579	597	617	635	I-8	745	762	784	802	882	900	I-8		5
I-9	5	5	5	5	5	5	5	I-9												I-9	5	5	5	5	5	5	5	I-9	5	5	5	5	5	5	I-9		0
I-10	10	10	10	10	11	10	11	I-10			89	30								I-10	10	10	10	10	11	10	11	I-10	10	10	129	130	129	130	I-10		0
I-11	831	841	867	851	877	861	888	I-11	159		207	-30	58		4	19	6	2	4	I-11	831	851	877	861	887	896	923	I-11	1010	1036	1038	1064	1131	1158	I-11		2
I-12	14	14	15	14	15	15	15	I-12										20		I-12	14	34	35	34	35	35	35	I-12	34	35	34	35	35	35	I-12		0
J-1	185	187	193	189	195	192	198	J-1							17	76	24		14	J-1	185	218	224	220	226	323	329	J-1	218	224	220	226	323	329	J-1	0.95	1
J-2	33	33	34	34	35	34	35	J-2												J-2	33	33	34	34	35	34	35	J-2	33	34	34	35	34	35	J-2		0
J-3	68	69	71	70	72	70	73	J-3	18		33		6		4	19	6		4	J-3	68	77	79	78	80	103	106	J-3	95	97	111	113	142	145	J-3		2
J-4	9	9	9	9	9	9	10	J-4												J-4	9	9	9	9	9	9	10	J-4	9	9	9	9	9	10	J-4		11
J-5	40	40	42	41	42	41	43	J-5												J-5	40	40	42	41	42	41	43	J-5	40	42	41	42	41	43	J-5		0
J-6	35	35	36	36	37	36	37	J-6												J-6	35	35	36	36	37	36	37	J-6	35	36	36	37	36	37	J-6		0
J-7	46	47	48	47	49	48	49	J-7	19		35		6		6	21	10		6	J-7	46	59	60	59	61	91	92	J-7	78	79	94	96	132	133	J-7		0
J-8	535	541	558	548	565	555	571	J-8	153		284		54					12		J-8	535	553	570	560	577	567	583	J-8	706	723	844	861	905	921	J-8		4
J-9	13	13	14	13	14	13	14	J-9												J-9	13	13	14	13	14	13	14	J-9	13	14	13	14	13	14	J-9		0
J-10	48	49	50	49	51	50	51	J-10												J-10	48	49	50	49	51	50	51	J-10	49	50	49	51	50	51	J-10		0
J-11	779	788	812	798	822	807	832	J-11	141		263		52					22		J-11	779	810	834	820	844	829	854	J-11	951	975	1083	1107	1144	1169	J-11		2
J-12	267	270	278	273	282	277	285	J-12							23	83	38		26	J-12	267	319	327	322	331	447	455	J-12	319	327	322	331	447	455	J-12		1
K-1	3	3	3	3	3	3	3	K-1												K-1	3	3	3	3	3	3	3	K-1	3	3	3	3	3	3	K-1	0.97	0
K-2	9	9	9	9	9	9	10	K-2												K-2	9	9	9	9	9	9	10	K-2	9	9	9	9	9	10	K-2		0
K-3	8	8	8	8	8	8	9	K-3												K-3	8	8	8	8	8	8	9	K-3	8	8	8	8	8	9	K-3		0
K-4	741	750	773	759	782	768	791	K-4	153		284		54		17	76	24	12	14	K-4	741	793	816	802	825	911	934	K-4	946	969	1086	1109	1249	1272	K-4		3
K-5	1081	1094	1127	1107	1141	1121	1155	K-5	141		263		52		23	83	38	22	26	K-5	1081	1165	1198	1178	1212	1313	1347	K-5	1306	1339	1441	1475	1628	1662	K-5		2
K-6	10	10	10	10	11	10	11	K-6												K-6	10	10	10	10	11	10

PROJ: 804.02
DATE: 09.28.22
REV:
BY: GEC

TRANSPORTATION IMPACT STUDY for PENNMARK SITE
Mount Joy Township, Lancaster County
GROVE MILLER ENGINEERING, INC.

EVENT	YEAR	GROWTH	FACTOR
COUNT YEAR	2022	0.60%	1.000
PHASE 1 OPENING	2024	0.60%	1.012
PHASE 1 HORIZON	2029	0.60%	1.043
PHASE 2 OPENING	2026	0.60%	1.024
PHASE 2 HORIZON	2031	0.60%	1.055
PHASE 3 OPENING	2028	0.60%	1.037
PHASE 3 HORIZON	2033	0.60%	1.068

SAT

SAT PEAK HR

MVMT NO	2022 COUNT VOLUME	2024 PROJ. VOLUME	2029 PROJ. VOLUME	2026 PROJ. VOLUME	2031 PROJ. VOLUME	2028 PROJ. VOLUME	2033 PROJ. VOLUME	MVMT NO	PHASE 1 TRIP DIST. NEW TRIP VOLUMES ENTER = 445 EXIT = 434	PHASE 1 TRIP DIST. PASS-BY VOLUMES ENTER = 287 EXIT = 284	PHASE 2 TRIP DIST. NEW TRIP VOLUMES ENTER = 990 EXIT = 921	PHASE 2 TRIP DIST. PASS-BY VOLUMES ENTER = 217 EXIT = 213	PHASE 3 TRIP DIST. NEW TRIP VOLUMES ENTER = 200 EXIT = 184	PHASE 3 TRIP DIST. PASS-BY VOLUMES ENTER = 90 EXIT = 83	Featherton 2024	Campus Rd 2028	Sheaffer Rd 2028	Westbrooke 2024	Raffens. 2024	MVMT NO	2022 BASE VOLUME	2024 NO BUILD VOLUME	2029 NO BUILD VOLUME	2026 NO BUILD VOLUME	2031 NO BUILD VOLUME	2028 NO BUILD VOLUME	2033 NO BUILD VOLUME	MVMT NO	2024 BUILD VOLUME	2029 BUILD VOLUME	2026 BUILD VOLUME	2031 BUILD VOLUME	2028 BUILD VOLUME	2033 BUILD VOLUME	MVMT NO	PHF	% HV
A-1	603	610	629	618	636	625	644	A-1	62		138		28							A-1	603	610	629	618	636	625	644	A-1	672	691	756	774	791	810	A-1	0.99	1
A-2	81	82	84	83	85	84	87	A-2												A-2	81	82	84	83	85	84	87	A-2	82	84	83	85	84	87	A-2		0
A-3	128	130	133	131	135	133	137	A-3	17		37		7							A-3	128	130	133	131	135	133	137	A-3	147	150	168	172	177	181	A-3		0
A-4	513	519	535	525	541	532	548	A-4	61		129		26							A-4	513	519	535	525	541	532	548	A-4	580	596	654	670	687	703	A-4		1
A-5	87	88	91	89	92	90	93	A-5												A-5	87	88	91	89	92	90	93	A-5	88	91	89	92	90	93	A-5		0
A-6	123	124	128	126	130	127	131	A-6	18		40		8							A-6	123	124	128	126	130	127	131	A-6	142	146	166	170	175	179	A-6		1
B-1	16	16	17	16	17	17	17	B-1												B-1	16	16	17	16	17	17	17	B-1	16	17	16	17	17	17	B-1	0.96	0
B-2	784	793	818	803	827	813	837	B-2	80		178		36							B-2	784	793	818	803	827	813	837	B-2	873	898	981	1005	1027	1051	B-2		1
B-3	0	0	0	0	0	0	0	B-3												B-3	0	0	0	0	0	0	0	B-3	0	0	0	0	0	0	B-3		0
B-4	1	1	1	1	1	1	1	B-4												B-4	1	1	1	1	1	1	1	B-4	1	1	1	1	1	1	B-4		0
B-5	802	812	836	821	846	831	857	B-5	78		166		33							B-5	802	812	836	821	846	831	857	B-5	890	914	987	1012	1030	1056	B-5		1
B-6	99	100	103	101	104	103	106	B-6	9		18		4							B-6	99	100	103	101	104	103	106	B-6	109	112	119	122	125	128	B-6		0
B-7	0	0	0	0	0	0	0	B-7												B-7	0	0	0	0	0	0	0	B-7	0	0	0	0	0	0	B-7		0
B-8	0	0	0	0	0	0	0	B-8												B-8	0	0	0	0	0	0	0	B-8	0	0	0	0	0	0	B-8		0
B-9	1	1	1	1	1	1	1	B-9												B-9	1	1	1	1	1	1	1	B-9	1	1	1	1	1	1	B-9		0
B-10	47	48	49	48	50	49	50	B-10	9		20		4							B-10	47	48	49	48	50	49	50	B-10	57	58	68	70	73	74	B-10		0
B-11	0	0	0	0	0	0	0	B-11												B-11	0	0	0	0	0	0	0	B-11	0	0	0	0	0	0	B-11		0
B-12	35	35	36	36	37	36	37	B-12												B-12	35	35	36	36	37	36	37	B-12	35	36	36	37	36	37	B-12		0
C-1	21	21	22	22	22	22	22	C-1												C-1	21	21	22	22	22	22	22	C-1	21	22	22	22	22	22	C-1	0.95	0
C-2	553	560	577	566	584	573	591	C-2	89		198		40							C-2	553	560	577	566	584	573	591	C-2	649	666	764	782	811	829	C-2		1
C-3	48	49	50	49	51	50	51	C-3												C-3	48	49	50	49	51	50	51	C-3	49	50	49	51	50	51	C-3		0
C-4	150	152	156	154	158	155	160	C-4												C-4	150	152	156	154	158	155	160	C-4	152	156	154	158	155	160	C-4		0
C-5	644	652	672	660	680	668	688	C-5	87		184		37							C-5	644	652	672	660	680	668	688	C-5	739	759	844	864	889	909	C-5		1
C-6	15	15	16	15	16	16	16	C-6												C-6	15	15	16	15	16	16	16	C-6	15	16	15	16	16	16	C-6		0
C-7	251	254	262	257	265	260	268	C-7												C-7	251	254	262	257	265	260	268	C-7	254	262	257	265	260	268	C-7		0
C-8	3	3	3	3	3	3	3	C-8												C-8	3	3	3	3	3	3	3	C-8	3	3	3	3	3	3	C-8		0
C-9	157	159	164	161	166	163	168	C-9												C-9	157	159	164	161	166	163	168	C-9	159	164	161	166	163	168	C-9		0
C-10	34	34	35	35	36	35	36	C-10												C-10	34	34	35	35	36	35	36	C-10	34	35	35	36	35	36	C-10		0
C-11	4	4	4	4	4	4	4	C-11												C-11	4	4	4	4	4	4	4	C-11	4	4	4	4	4	4	C-11		0
C-12	14	14	15	14	15	15	15	C-12												C-12	14	14	15	14	15	15	15	C-12	14	15	14	15	15	15	C-12		0
D-1	105	106	109	108	111	109	112	D-1												D-1	105	106	109	108	111	109	112	D-1	106	109	108	111	109	112	D-1	0.93	0
D-2	501	507	522	513	529	519	535	D-2	89		198		40							D-2	501	507	522	513	529	519	535	D-2	596	611	711	727	757	773	D-2		1
D-3	12	12	13	12	13	12	13	D-3												D-3	12	12	13	12	13	12	13	D-3	12	13	12	13	12	13	D-3		0
D-4	4	4	4	4	4	4	4	D-4												D-4	4	4	4	4	4	4	4	D-4	4	4	4	4	4	4	D-4		0
D-5	627	635	654	642	662	650	670	D-5	87		184		37							D-5	627	635	654	642	662	650	670	D-5	722	741	826	846	871	891	D-5		1
D-6	65	66	68	67	69	67	69	D-6												D-6	65	66	68	67	69	67	69	D-6	66	68	67	69	67	69	D-6		0
D-7	9	9	9	9	9	9	10	D-7												D-7	9	9	9	9	9	9	10	D-7	9	9	9	9	9	10	D-7		0
D-8	3	3	3	3	3	3	3	D-8												D-8	3	3	3	3	3	3	3	D-8	3	3	3	3	3	3	D-8		0
D-9	10	10	10	10	11	10	11	D-9												D-9	10	10	10	10	11	10	11	D-9	10	10	10	11	10	11	D-9		0
D-10	60	61	63	61	63	62	64	D-10												D-10	60	61	63	61	63	62	64	D-10	61	63	61	63	62	64	D-10		0
D-11	38	38	40	39	40	39	41	D-11												D-11	38	38	40	39	40	39	41	D-11	38	40	39	40	39	41	D-11		0
D-12	125	127	130	128	132	130	134	D-12												D-12	125	127	130	128	132	130	134	D-12	127	130	128	132	130	134	D-12		0
E-1	53	54	55	54	56	55	57	E-1												E-1	53	54	55	54	56	55	57	E-1	54	55	54	56	55	57	E-1	0.95	2
E-2	479	485	499	491	505	497	512	E-2	89		198		40							E-2	479	485	499	491	505	497	512	E-2	574	588	689	703	735	750	E-2		1
E-3	23	23	24	24	24	24	25	E-3												E-3	23	23	24	24	24	24	25	E-3	23	24	24	24	24	25	E-3		0
E-4	20	20	21	20	21	21	21	E-4												E-4	20	20	21	20	21	21	21	E-4	20	21	20	21	21	21	E-4		0
E-5	512	518	534	524	540	531	547	E-5	87		184		37							E-5	512	518	534	524	540	531	547	E-5	605	621	708	724	752	768	E-5		0
E-6	13	13	14	13	14	13	14	E-6												E-6	13	13	14	13	14	13	14	E-6	13	14	13	14	13	14	E-6		0
E-7	65	66	68	67	69	67	69	E-7												E-7	65	66	68	67	69	67	69	E-7	66	68	67	69	67	69	E-7		2
E-8	23	23	24	24	24	24	25	E-8												E-8	23	23	24	24	24	24	25	E-8	23	24	24	24	24	25	E-8		0
E-9	17	17	18	17	18	18	18	E-9												E-9	17	17	18	17	18	18	18	E-9	17	18	17	18	18	18	E-9		0
E-10	15	15	16	15	16	16	16	E-10												E-10	15	15	16	15	16	16	16	E-10	15	16	15	16	16	16	E-10		0
E-11	20	20	21	20	21	21	21	E-11												E-11	20	20	21	20	21	21	21	E-11	20	21	20	21	21	21	E-11		0
E-12	73	74	76	75	77	76	78	E-12												E-12	73	74	76	75	77	76	78	E-12	74	76	75	77	76	78	E-12		0
F-1	199	201	208	204	210	206	213	F-1	18		40		83	19						F-1	199	201	208	204	210	206	213	F-1	219	226	244	250	348	355	F-1	0.98	2
F-2	284	287	296	291	300	294	303	F-2	71		158		25							F-2	284	287	296	291	300	294	303	F-2	358	367	449	458	477	486	F-2		0
F-3	54	55	56	55	57	56	58	F-3					18							F-3	54	55	56	55	57	56	58	F-3	55	56	55	57	74	76	F-3		0
F-4	26	26	27	27	27	27	28	F-4	65	34	138	25								F-4	26	26	27	27	27	27	28	F-4	125	126	190	190	190	191	F-4		4
F-5	305	309	318	312	322	316	326	F-5	87	46	184	34	27							F-5	305	309	318	312	322	316	326	F-5	442	451	530	540	561	571	F-5		0
F-6	133	135	139	136	140	138	142	F-6					13							F-6	133	135	139	136	140	138	142	F-6	135	139	136	140	151	155	F-6		2
F-7	69	70	72	71	73	72	74	F-7					20							F-7	69	70	72	71	73	72	74	F-7	70	72	71	73	92	94	F-7		0
F-8	161	163	168	165	170	167	172	F-8	13		30		10							F-8	161	163	168	165	170	167	172	F-8	176	181	195	200	207	212	F-8		5
F-9	14	14	15	14	15	15	15	F-9	53		118									F-9	14	14	15	14	15	15	15	F-9	67	68	132	133	133	133	F-9		0
F-10	124	125	129	127	131	129	132	F-10					12							F-10	124	125	129	127	131	129	132	F-10	125	129	127	131	141	144	F-10		4
F-11	170	172	177	174	179	176	182	F-11		-34		-25	9							F-11	170	172	177	174	179	176	182	F-11	138	143	149	154	160	166	F-11		5
F-12	177	179	185	181	187	183	189	F-12		-46		-34								F-12	177	179	185	181	187	183	189	F-12	133	139	147	153	149	155	F-12		0
G-1	3	3	3	3	3	3	3	G-1												G-1	3	3	3	3	3	3	3	G-1	3	3	3	3	3	3	G-1	0.96	0
G-2	382	387	398	391	403	396	408	G-2	87		138		37							G-2	382	387	398	391	403	396	408	G-2	474	485	529	541	571	583	G-2		1
G-3	416	421	434	426	439	431	444	G-3	89		148		40							G-3	416	421	434	426	439	431	444	G-3	510	523	574	587	619	632	G-3		1
G-4	33	33	34	34	35	34	35	G-4			50									G-4	33	33	34	34	35	34	35	G-4	33	34	84	85	84	85	G-4		0
G-5	31	31	32	32	33	32	33	G-5			46									G-5	31	31	32	32	33	32	33	G-5	31	32	78	79	78	79	G-5		0
G-6	3	3	3	3	3	3	3	G-6												G-6	3	3	3	3	3	3	3	G-6	3	3	3	3	3	3	G-6		0
H-1	37	37	39	38	39	38	40	H-1	9		19		4							H-1	37	37	39	38	39	38	40	H-1	46	48	57	58	61	63	H-1	0.96	8
H-2	48	49	50	49	51	50	51	H-2												H-2	48	49	50	49	51	50	51	H-2	49	50	49	51	50	51	H-2		4
H-3	32	32	33	33	34	33	34	H-3												H-3	32	32	33	33	34	33	34	H-3	32	33	33	34	33	34	H-3		0
H-4	15	15	16	15	16	16	16	H-4												H-4	15	15	16	15	16	16	16	H-4	15	16	15	16	16	16	H-4		0
H-5	32	32	33	33	34	33	34	H-5												H-5	32	32	33	33	34	33	34	H-5	32	33	33	34	33	34	H-5		3
H-6	46	47	48	47	49	48	49	H-6	13		30		6							H-6	46	47	48	47	49	48	49	H-6	60	61	77	79	84	85	H-6		0
H-7	19	19	20	19	20	20	20	H-7												H-7	19	19	20	19	20	20	20	H-7	19	20	19	20	20	20	H-7		5
H-8	172	174	179	176	182	178	184	H-8	44		99		20							H-8	172	174	179	176	182	178	184	H-8	218	223	275	281	297	303	H-8		2
H-9	7	7	7	7	7	7	7	H-9												H-9	7	7	7	7	7	7	7	H-9	7	7	7	7	7	7	H-9		0
H-10	24	24	25	25	25	25	26	H-10	13		28		5							H-10	24	24	25	25	25	25	26	H-10	37	38	53	53	58	59	H-10		0
H-11	175	177	182	179	185	181	187	H-11	43		92		18							H-11	175	177	182	179	185	181	187	H-11	220	225	271	277	291	297	H-11		2
H-12	33	33	34	34	35	34	35	H-12	9		18		4							H-12	33	33	34	34	35	34	35	H-12	42	43	52	53	56	57	H-12		9
I-1	5	5	5	5	5	5	5	I-1												I-1	5	5	5	5	5	5	5	I-1	5	5	5	5	5	5	I-1	0.95	0
I-2	1	1	1	1	1	1	1	I-2												I-2	1	1	1	1	1	1	1	I-2	1	1	1	1	1	1	I-2		0
I-3	12	12	13	12	13	12	13	I-3												I-3	12	12	13	12	13	12	13	I-3	12	13	12	13	12	13	I-3		0
I-4	23	23	24	24	24	24	25	I-4												I-4	23	23	24	24	24	24	25	I-4	23	24	24	24	24	25	I-4		0
I-5	0	0	0	0	0	0	0	I-5												I-5	0	0	0	0	0	0	0	I-5	0	0	0	0	0	0	I-5		0
I-6	7	7	7	7	7	7	7	I-6			125	17								I-6	7	7	7	7	7	7	7	I-6	7	7	149	149	149	149	I-6		0
I-7	15	15	16	15	16	16	16	I-7												I-7	15	15	16	15	16	16	16	I-7	15	16	15	16	16	16	I-7		0
I-8	468	474	488	479	494	485	500	I-8	195		290	-18	83							I-8	468	474	488	479	494	485	500	I-8	669	683	751	766	840	855	I-8		3
I-9	7	7	7	7	7	7	7	I-9												I-9	7	7	7	7	7	7	7	I-9	7	7	7	7	7	7	I-9		0
I-10	11	11	11	11	12	11	12	I-10			134	18								I-10	11	11	11	11	12	11	12	I-10	11	11	163	164	163	164	I-10		0
I-11	487	493	508	499	514	505	520	I-11	201		312	-18	90							I-11	487	493	508	499	514	505	520	I-11	694	709	793	808	889	904	I-11		2
I-12	7	7	7	7	7	7	7	I-12												I-12	7	7	7	7	7	7	7	I-12	7	7	7	7	7	7	I-12		0
J-1	149	151	155	153	157	154	159	J-1												J-1	149	151	155	153	157	154	159	J-1	151	155	153	157	154	159	J-1	0.95	1
J-2	23	23	24	24	24	24	25	J-2												J-2	23	23	24	24	24	24	25	J-2	23	24	24	24	24	25	J-2		0
J-3	52	53	54	53	55	54	56	J-3	22		50		10							J-3	52	53	54	53	55	54	56	J-3	75	76	103	105	114	116	J-3		2
J-4	11	11	11	11	12	11	12	J-4												J-4	11	11	11	11	12	11	12	J-4	11	11	11	12	11	12	J-4		0
J-5	21	21	22	22	22	22	22	J-5												J-5	21	21	22	22	22	22	22	J-5	21	22	22	22	22	22	J-5		0
J-6	32	32	33	33	34	33	34	J-6												J-6	32	32	33	33	34	33	34	J-6	32	33	33	34	33	34	J-6		3
J-7	29	29	30	30	31	30	31	J-7	21		46		9							J-7	29	29	30	30	31	30	31	J-7	50	51	76	77	85	86	J-7		0
J-8	440	445	459	451	464	456	470	J-8	174		369		74							J-8	440	445	459	451	464	456	470	J-8	619	633	820	833	899	913	J-8		3
J-9	8	8	8	8	8	8	9	J-9												J-9	8	8	8	8	8	8	9	J-9	8	8	8	8	8	9	J-9		0
J-10	19	19	20	19	20	20	20	J-10												J-10	19	19	20	19	20	20	20	J-10	19	20	19	20	20	20	J-10		5
J-11	419	424	437	429	442	434	447	J-11	179		396		80							J-11	419	424	437	429	442	434	447	J-11	603	616	825	838	910	923	J-11		1
J-12	177	179	185	181	187	183	189	J-12												J-12	177	179	185	181	187	183	189	J-12	179	185	181	187	183	189	J-12		0
K-1	6	6	6	6	6	6	6	K-1												K-1	6	6	6	6	6	6	6	K-1	6	6	6	6	6	6	K-1	0.94	17
K-2	11	11	11	11	12	11	12	K-2												K-2	11	11	11	11	12	11	12	K-2	11	11	11	12	11	12	K-2		0
K-3	13	13	14	13	14	13	14	K-3												K-3	13	13	14	13	14	13	14	K-3	13	14	13	14	13	14	K-3		0
K-4	596	603	621	610	629	618	637	K-4	174		369		74							K-4	596	603	621	610	629	618	637	K-4	777	795	979	998	1061	1080	K-4		3
K-5	594	601	619	608	627	616	634	K-5	179		396		80							K-5	594	601	619	608	627	616	634	K-5	780	798	1004	1023	1092	1110	K-5		1
K-6	3	3	3	3	3	3	3	K-6												K-6	3	3	3	3	3	3	3	K-6	3	3	3	3	3	3	K-6		33
L-1	23	23	24	24	24	24	25	L-1												L-1	23	23	24	24	24	24	25	L-1	23	24	24	24	24	25	L-1	0.93	13
L-2	0	0	0	0	0	0	0	L-2												L-2	0	0	0	0	0	0	0	L-2	0	0	0	0	0	0	L-2		0
L-3	205	207	214	210	216	212	219	L-3	62		139		28							L-3	205	207	214	210	216	212	219	L-3	269	276	349	355	379	386	L-3		2
L-4	282	285	294	289	298	292

Greg Creasy

From: Noles, Dean T <dnoles@pa.gov>
Sent: Friday, May 13, 2022 10:53 AM
To: Greg Creasy
Cc: Kinard, Eric W; PD, District 8-0 Signals
Subject: RE: Pennmark Property - Mount Joy Township, Lancaster County

Greg,

The revised trip distribution is acceptable. You may proceed with the TIS.

Thank you,
Dean Noles | Traffic Control Specialist
PA Department of Transportation| PennDOT Engineering District 8-0
2140 Herr Street | Harrisburg PA 17103-1699
Phone: 717.772.0976 | Fax: 717.705.0375
www.PennDOT.pa.gov

From: Greg Creasy <gcreasy@grovemiller.com>
Sent: Monday, May 2, 2022 2:03 PM
To: PD, District 8-0 Signals <RA-pdDist80Signals@pa.gov>
Cc: Kinard, Eric W <ekinard@pa.gov>; Noles, Dean T <dnoles@pa.gov>
Subject: [External] Pennmark Property - Mount Joy Township, Lancaster County

ATTENTION: *This email message is from an external sender. Do not open links or attachments from unknown sources. To report suspicious email, forward the message as an attachment to CWOPA_SPAM@pa.gov.*

Attached is the revised Trip Distribution Documentation Submission for the referenced project. Also attached is a response letter for the comments received regarding the initial submission. Please review the attached documentation.

Please call with any questions.

Thank you.

Gregory E. Creasy, P.E.
President
Senior Traffic Engineer
Grove Miller Engineering, Inc.
4800 Linglestown Road, Suite 307
Harrisburg, PA 17112
Phone: (717) 545-3636
www.grovemiller.com

GROVE MILLER
ENGINEERING, INC.

GREGORY E. CREASY, P.E., Principal Traffic Engineer
JAY E. STATES, P.E., Principal Traffic Engineer

4800 Linglestown Road, Suite 307
Harrisburg, PA 17112
Telephone: (717) 545-3636
www.grovemiller.com

April 29, 2022

Mr. Eric W. Kinard
Signal and Congestion Management Supervisor
PennDOT District 8-0
2140 Herr Street
Harrisburg, PA 17103-1699

Re: Trip Distribution Documenationa Submission Comment Response
Pennmark Property
Mount Joy Township, Lancaster County

Dear Mr. Kinard:

We have received the Department's comments on the Trip Distribution Documentation Submission for the referenced development. We are providing this letter and Revised TIS Scoping Application to respond to the comments.

Our responses to the comments, provided point-by-point, are as follows.

Trip Distribution Documentation Submission

Comment: *Provide additional information regarding the trip distribution percentages shown for roadways not considered in the retail gravity model, such as Maytown Road (SR 0743), the PA-283 ramps, Groff Avenue, Harrisburg Avenue, and Schwanger Road.*

Response: Additional discussion was added to the Non-Residential Land Use Distribution/ Assignment Methodology Section of the Trip Distribution Memo to detail how the gravity model trip distributions were further broken down to these intersection roadways.

Comment: *Clarify which intersection counts are being utilized in the analysis of existing traffic patterns as shown on the trip distribution methodology documentation figure. Additionally, clarify the source of the volumes used for pass-by trip distribution along Cloverleaf Road as they do not seem consistent with the count data.*

Response: The traffic volumes used in the analysis of existing traffic patterns in the Trip Distribution Methodology Documentation figure are the thru volumes on the particular roadway at the location where the volumes are depicted on the figure.

The source of displayed traffic volumes used for the pass-by trip distribution along Cloverleaf Road are the southbound thru volumes on Cloverleaf Road leaving the intersection of Cloverleaf Road/Andrew Avenue/Norlanco Drive and the northbound thru volumes on Cloverleaf Road arriving at the intersection of Cloverleaf Road/Andrew/Avenue/Norlanco Drive.

Comment: *Provide trip distribution percentages for each site driveway, and to clarify the trip distribution must be provided consistent with the final driveway configuration proposed (i.e., RI only or eliminated secondary access to SR 0230).*

Response: Figures depicting the trip distribution percentages at each site driveway for each of the new and pass-by trip distributions are provided in the revised submission.

We respectfully request the Department's approval of the Revised Trip Distribution Documentation Submission. Please call our office if you have any questions or need additional information.

Sincerely,

Gregory E. Creasy, P.E.
Senior Traffic Engineer

Attachment

GEC/me
G:\804_02\corres\penndot trip dist comment response.wpd

GROVE MILLER
ENGINEERING, INC.

GREGORY E. CREASY, P.E., Principal Traffic Engineer
JAY E. STATES, P.E., Principal Traffic Engineer

4800 Linglestown Road, Suite 307
Harrisburg, PA 17112
Telephone: (717) 545-3636
www.grovemiller.com

TRIP DISTRIBUTION MEMO

TO: Eric Kinard, PennDOT District 8-0 Traffic Unit

FROM: Gregory E. Creasy, P.E.

DATE: Revsied April 29, 2022

RE: Pennmark Property
Trip Distribution Documentation Submission
Mount Joy Township, Lancaster County

As indicated during the TIS Scoping Application process, trip distribution calculations and trip distribution assignments are being provided for the subject development now that the extensive trip generation calculations are approved. Please review the attached documentation and back-up data.

Phase 2 Residential Land Use Distribution/Assignment Methodology
The apartment units proposed as part of Phase 2 of the development project will be located to the east of the Norlanco Drive extension to the north and east of the Phase 2 commercial lots along SR 0230. A gravity model, based upon place of employment data for the residence zip code, was developed to assign trips to the local roadway network. Since there are multiple access locations for the subject development, the assignment percentages were developed taking into account relative travel times, most logical travel paths given the site layout, and surrounding roadway volumes/conditions. Documentation for the gravity model and trip assignments is provided in the attachments.

Non-Residential Land Use Distribution/Assignment Methodology
The new trip distribution/assignment methodology for the non-residential land uses in Phases 1, 2, and 3 was developed in a multi-step process. First, a gravity model was developed based upon the population of surrounding municipalities. Given that this project will consist of smaller land uses and lots and is not projected to have a major anchor land use, it will not be a major regional shopping drawing trips from long distances. There are also several major retail centers to the east in the Lancaster area to serve customers in the larger population centers farther from this development site. For these reasons, the gravity model was developed using projected travel times to/from the site of 15 minutes or less.

The second step in the process was to analyze existing traffic volumes on SR 0230 and Cloverleaf Road adjacent to the site. The directional distributions of traffic volumes entering and exiting the access locations for the proposed development were calculated to determine local travel patterns.

For the third step in the process, the directional distribution of local traffic was compared and contrasted to the trip distribution percentages calculated using the gravity model. The trip distribution percentages used for the trip assignment were developed using a balance of the two methodologies.

The final step in the process was to distribute traffic onto roadways not specifically addressed with the gravity model (e.g. Maytown Road, PA 283 Ramps, Groff Avenue, Harrisburg Avenue, etc). Trips were distributed onto these roadways based upon the existing turning movement counts at their intersections with SR 0230 or Cloverleaf Road. In the cases where there were a small number (less than 10) of trips going through the intersection on SR 0230 it was assumed that all the traffic would be thru movements on SR 0230.

Documentation of the new trip distribution methodologies and assignments is provided in the attachments.

The pass-by trip distributions and assignments were calculated using the directional distribution of existing traffic volumes on SR 0230 and Cloverleaf Road along the site frontages. Documentation of the pass-by trip assignment methodology and assignments is provided in the attachments.

GEC/me
FILE: G:\804_02\analyses\Trip Distribution Submission\Revised April 2022\cover memo.wpd

ManageEngine
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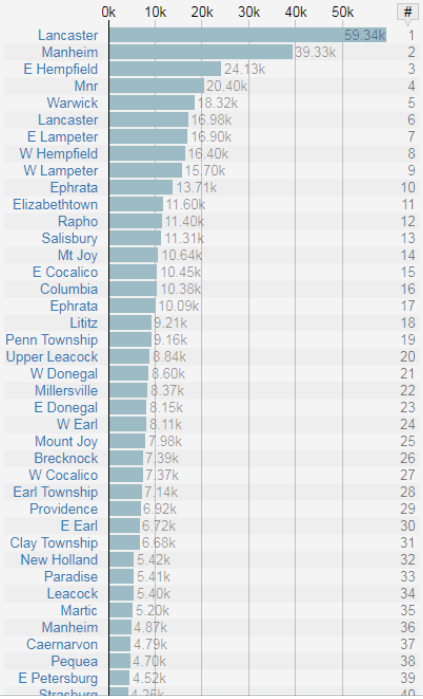
Population by County Subdivision in Lancaster County

There are 60 county subdivisions in Lancaster County. This section compares the 50 most populous of those to each other. The least populous of the compared county subdivisions has a population of 3,249.

Total Population by County Subdivision

#9

Scope: population of selected county subdivisions in Lancaster County

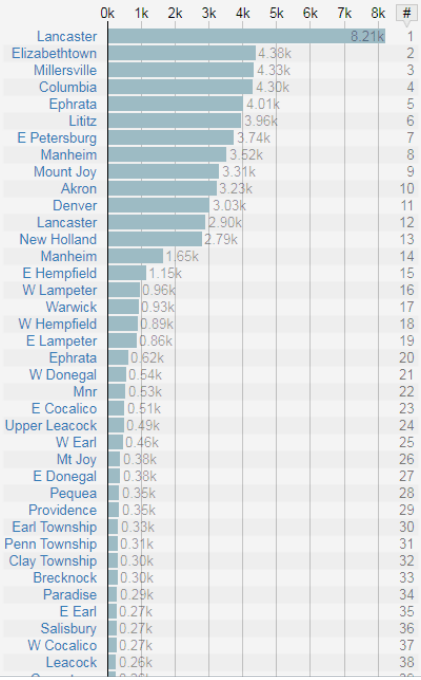


Population Density by County Subdivision

#10

People per square mile (excluding waters).

Scope: population of selected county subdivisions in Lancaster County



Lancaster County, Pennsylvania (County)

533,110
196,171

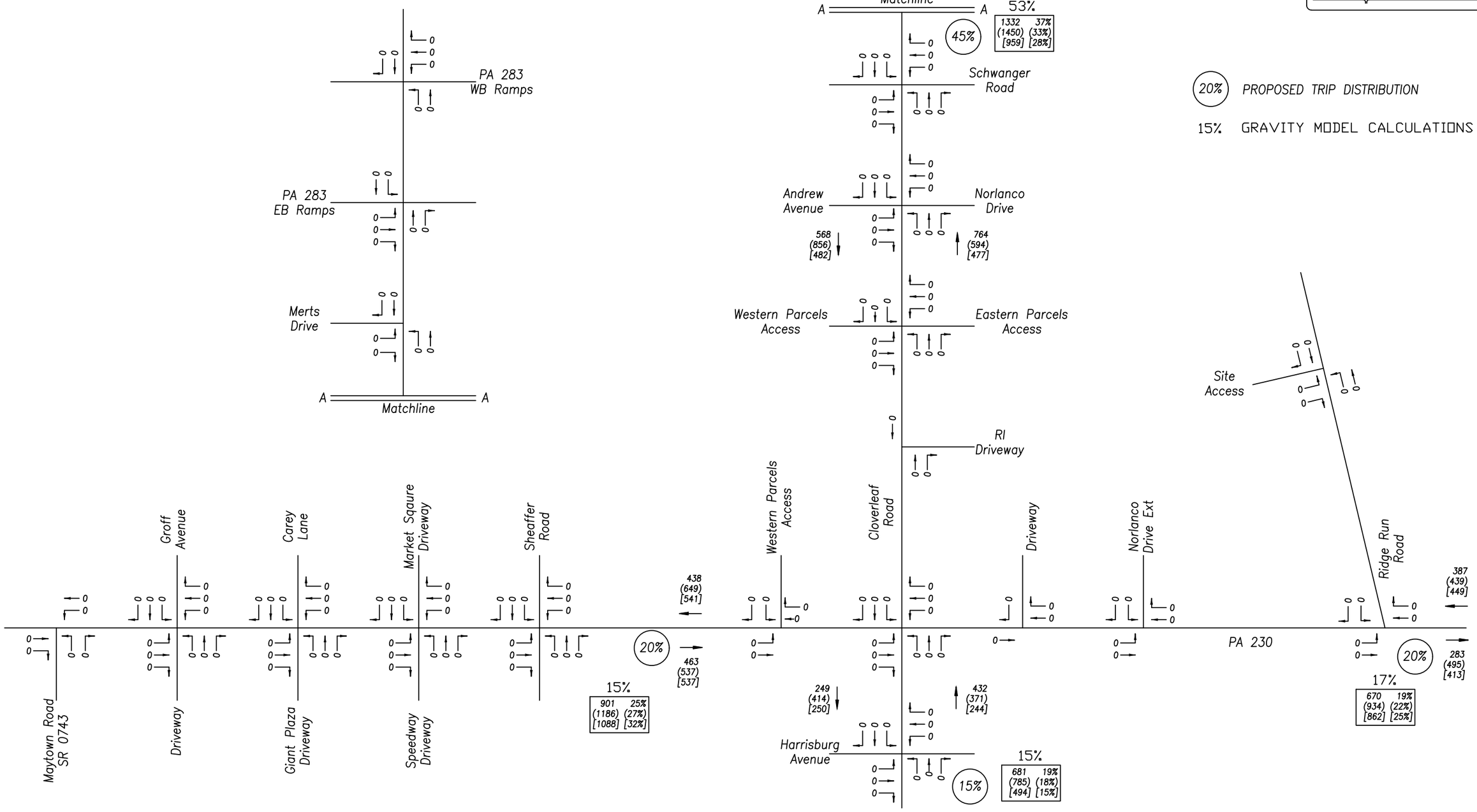
Overview
Population
County Subdivision Map
Tract Map
Block Group Map
By Place
By County Subdivision
In Pennsylvania
In the United States
Definitions
More Maps
Age and Sex
Race and Ethnicity
Household Types
Marital Status
National Origin
Ancestry
Languages
Household Income
Employment Status
Food Stamps
Occupations
Industries
Sectors
Educational Attainment
School Enrollment

GRAVITY MODEL FOR RETAIL USES
Source: statisticalatlas.com

r

Municipality	POPULATION	TRAVEL TIME (min)	POP * TT	PROPORTION	PROPORTION AS %	LIKELY TO/FROM ROUTE RT 230 W	RT 230 E	Cloverleaf N	Colebrook S	TRIP DISTRBUTION RT 230 W	RT 230 E	Cloverleaf N	Colebrook S
E. Hempfield Township	24130	13	313690	0.375	37.5	0.0	0.2	0.8	0.0	0.00	7.51	30.02	0.00
Elizabethtown Borough	11600	8	92800	0.111	11.1	0.8	0.0	0.2	0.0	8.88	0.00	2.22	0.00
Rapho Township	11400	15	171000	0.205	20.5	0.0	0.0	1.0	0.0	0.00	0.00	20.46	0.00
Mt. Joy Township	10640	1	10640	0.013	1.3	0.3	0.2	0.5	0.0	0.38	0.25	0.64	0.00
W. Donegal Township	8600	11	94600	0.113	11.3	0.5	0.0	0.0	0.5	5.66	0.00	0.00	5.66
E. Donegal Township	8150	9	73350	0.088	8.8	0.0	0.0	0.0	1.0	0.00	0.00	0.00	8.78
Mount Joy Borough	7980	10	79800	0.095	9.5	0.0	1.0	0.0	0.0	0.00	9.55	0.00	0.00
Total	82500		835880	1.00									
									SUM (100)	14.92	17.31	53.34	14.44

GROVE MILLER ENGINEERING, INC.



Transportation Impact Study

PENNMARK PROPERTY

Mount Joy Township, Lancaster Co.

TRIP DISTRIBUTION METHODOLOGY DOCUMENTATION

APPENDIX L

CAPACITY AND QUEUE ANALYSIS WORKSHEETS

Headway Adjustment Calculations

Project #: 804.02
Municipality: Mt. Joy Township
County: Lancaster

Date: 4/19/2022
Conducted By: GEC
Company Name: GME

Intersection: SR 0230/Groff Ave
Major Street: SR 0230 (EB/WB)
Minor Street: Groff Avenue (SB)/driveway (NB)

Critical Headway:

$t_{c,x} = t_{c,base} + t_{c,HV} P_{HV} + t_{c,G} G - t_{3,LT}$

$t_{c,x}$ = critical headway for movement x(s)

$t_{c,base}$ = base critical headway (provided by PENNDOT)

$t_{c,HV}$ = heavy vehicle adjustment factor; 1.0 if major street has one (1) lane, 2.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

$t_{c,g}$ = grade adjustment (0.1 for minor street right turns, otherwise 0.

G = percent grade integer (e.g., -2 for 2% down grade)
$t_{3,LT}$ = geometric adjustment (0.7 for minor street left turn movements at three-leg intersections, 0.0 otherwi

Follow-Up Headway:

$t_{f,x} = t_{f,base} + t_{f,HV} P_{HV}$

$t_{f,x}$ = critical headway for movement x(s)

$t_{f,base}$ = base critical headway (provided by PENNDOT)

$t_{f,HV}$ = heavy vehicle adjustment factor; 0.9 if major street has one (1) lane, 1.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

AM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0.08	0	0	0	0.5	0	0	0.18
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-3	6	-2	-2	-2	-3	-3	-3
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3.8	5.5	6.7	6.1	6.5	6.5	5.9	6.1

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0.08	0	0	0	0.5	0	0	0.18
	3.1	3.0	3.0	4.0	3.6	3.0	4.0	3.3

PM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0	0	0	0	0	0	0	0.04
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-3	6	-2	-2	-2	-3	-3	-3
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3.7	5.5	6.7	6.1	6.0	6.5	5.9	5.9

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0	0	0	0	0	0	0	0.04
	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

SAT PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0	0	0	0	0	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-3	6	-2	-2	-2	-3	-3	-3
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	3.7	5.5	6.7	6.1	6.0	6.5	5.9	5.9

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0	0	0	0	0	0	0	0
	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

Headway Adjustment Calculations

Project #: 804.02
Municipality: Mt. Joy Township
County: Lancaster

Date: 4/19/2022
Conducted By: GEC
Company Name: GME

Intersection: SR 0230/Ridge Run Road
Major Street: SR 0230 (EB/WB)
Minor Street: Ridge Run Road (SB)

Critical Headway:

$t_{c,x} = t_{c,base} + t_{c,HV} P_{HV} + t_{c,G} G - t_{3,LT}$

$t_{c,x}$ = critical headway for movement x(s)

$t_{c,base}$ = base critical headway (provided by PENNDOT)

$t_{c,HV}$ = heavy vehicle adjustment factor; 1.0 if major street has one (1) lane, 2.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

$t_{c,g}$ = grade adjustment (0.1 for minor street right turns, otherwise 0.

G = percent grade integer (e.g., -2 for 2% down grade)
$t_{3,LT}$ = geometric adjustment (0.7 for minor street left turn movements at three-leg intersections, 0.0 otherwi

Follow-Up Headway:

$t_{f,x} = t_{f,base} + t_{f,HV} P_{HV}$

$t_{f,x}$ = critical headway for movement x(s)

$t_{f,base}$ = base critical headway (provided by PENNDOT)

$t_{f,HV}$ = heavy vehicle adjustment factor; 0.9 if major street has one (1) lane, 1.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

AM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0.33	0	0	0	0	0.04	0	0.33
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-1	0	0	0	0	2	2	2
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
$t_{c,x}$	4.4	4.3	7.1	6.5	6.2	6.8	6.9	6.7

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0.33	0	0	0	0	0.04	0	0.33
$t_{f,x}$	3.3	3.0	3.0	4.0	3.1	3.0	4.0	3.4

PM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0	0	0	0	0	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-1	0	0	0	0	2	2	2
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
$t_{c,x}$	4.1	4.3	7.1	6.5	6.2	6.8	6.9	6.4

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0	0	0	0	0	0	0	0
$t_{f,x}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

SAT PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0	0	0	0	0	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-1	0	0	0	0	2	2	2
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
$t_{c,x}$	4.1	4.3	7.1	6.5	6.2	6.8	6.9	6.4

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0	0	0	0	0	0	0	0
$t_{f,x}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

Headway Adjustment Calculations

Project #: 804.02
Municipality: Mt. Joy Township
County: Lancaster

Date: 4/19/2022
Conducted By: GEC
Company Name: GME

Intersection: Cloverleaf Road/Merts Drive
Major Street: Cloverleaf Road (NB/SB)
Minor Street: Merts Drive (EB)

Critical Headway:

$t_{c,x} = t_{c,base} + t_{c,HV} P_{HV} + t_{c,G} G - t_{3,LT}$

$t_{c,x}$ = critical headway for movement x(s)

$t_{c,base}$ = base critical headway (provided by PENNDOT)

$t_{c,HV}$ = heavy vehicle adjustment factor; 1.0 if major street has one (1) lane, 2.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

$t_{c,g}$ = grade adjustment (0.1 for minor street right turns, otherwise 0.

G = percent grade integer (e.g., -2 for 2% down grade)
$t_{3,LT}$ = geometric adjustment (0.7 for minor street left turn movements at three-leg intersections, 0.0 otherwi

Follow-Up Headway:

$t_{f,x} = t_{f,base} + t_{f,HV} P_{HV}$

$t_{f,x}$ = critical headway for movement x(s)

$t_{f,base}$ = base critical headway (provided by PENNDOT)

$t_{f,HV}$ = heavy vehicle adjustment factor; 0.9 if major street has one (1) lane, 1.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

AM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0	0	0	0	0	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-2	0	0	0	0	0	0	0
$t_{3,LT}$	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
	3.9	4.3	6.4	6.5	6.2	7.1	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0	0	0	0	0	0	0	0
	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

PM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0	0	0	0	0	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-2	0	0	0	0	0	0	0
$t_{3,LT}$	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
	3.9	4.3	6.4	6.5	6.2	7.1	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0	0	0	0	0	0	0	0
	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

SAT PEAK HOUR

CRITICAL HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0	0	0.17	0	0	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-2	0	0	0	0	0	0	0
$t_{3,LT}$	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
	3.9	4.3	6.6	6.5	6.2	7.1	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0	0	0.17	0	0	0	0	0
	3.0	3.0	3.2	4.0	3.1	3.0	4.0	3.1

Headway Adjustment Calculations

Project #: 804.02
Municipality: Mt. Joy Township
County: Lancaster

Date: 4/19/2022
Conducted By: GEC
Company Name: GME

Intersection: Cloverleaf Road/PA 283 EB Ramps
Major Street: Cloverleaf Road (NB/SB)
Minor Street: PA Route 283 EB Ramps (EB)

Critical Headway:

$t_{c,x} = t_{c,base} + t_{c,HV} P_{HV} + t_{c,G} G - t_{3,LT}$

$t_{c,x}$ = critical headway for movement x(s)

$t_{c,base}$ = base critical headway (provided by PENNDOT)

$t_{c,HV}$ = heavy vehicle adjustment factor; 1.0 if major street has one (1) lane, 2.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

$t_{c,g}$ = grade adjustment (0.1 for minor street right turns, otherwise 0.

G = percent grade integer (e.g., -2 for 2% down grade)
$t_{3,LT}$ = geometric adjustment (0.7 for minor street left turn movements at three-leg intersections, 0.0 otherwi

Follow-Up Headway:

$t_{f,x} = t_{f,base} + t_{f,HV} P_{HV}$

$t_{f,x}$ = critical headway for movement x(s)

$t_{f,base}$ = base critical headway (provided by PENNDOT)

$t_{f,HV}$ = heavy vehicle adjustment factor; 0.9 if major street has one (1) lane, 1.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

AM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0	0.11	0.16	0	0.09	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	0	-2	-3	-3	-3	0	0	0
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4.3	4.0	6.7	5.9	6.0	7.1	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0	0.11	0.16	0	0.09	0	0	0
	3.0	3.1	3.1	4.0	3.2	3.0	4.0	3.1

PM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0	0.06	0.19	0	0.01	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	0	-2	-3	-3	-3	0	0	0
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4.3	4.0	6.7	5.9	5.9	7.1	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0	0.06	0.19	0	0.01	0	0	0
	3.0	3.1	3.2	4.0	3.1	3.0	4.0	3.1

SAT PEAK HOUR

CRITICAL HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0	0	0.13	0	0.02	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	0	-2	-3	-3	-3	0	0	0
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	4.3	3.9	6.6	5.9	5.9	7.1	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0	0	0.13	0	0.02	0	0	0
	3.0	3.0	3.1	4.0	3.1	3.0	4.0	3.1

Headway Adjustment Calculations

Project #: 804.02
Municipality: Mt. Joy Township
County: Lancaster

Date: 4/19/2022
Conducted By: GEC
Company Name: GME

Intersection: SR 0230/Western Parcels Access
Major Street: SR 0230 (EB/WB)
Minor Street: Western Parcels Access (SB)

Critical Headway:

$t_{c,x} = t_{c,base} + t_{c,HV} P_{HV} + t_{c,G} G - t_{3,LT}$

$t_{c,x}$ = critical headway for movement x(s)

$t_{c,base}$ = base critical headway (provided by PENNDOT)

$t_{c,HV}$ = heavy vehicle adjustment factor; 1.0 if major street has one (1) lane, 2.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

$t_{c,g}$ = grade adjustment (0.1 for minor street right turns, otherwise 0.

G = percent grade integer (e.g., -2 for 2% down grade)
$t_{3,LT}$ = geometric adjustment (0.7 for minor street left turn movements at three-leg intersections, 0.0 otherwi

Follow-Up Headway:

$t_{f,x} = t_{f,base} + t_{f,HV} P_{HV}$

$t_{f,x}$ = critical headway for movement x(s)

$t_{f,base}$ = base critical headway (provided by PENNDOT)

$t_{f,HV}$ = heavy vehicle adjustment factor; 0.9 if major street has one (1) lane, 1.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

AM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	1	0	0	0	0	2	2	2
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
	4.5	4.3	7.1	6.5	6.2	6.8	6.9	6.4

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

PM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	1	0	0	0	0	2	2	2
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
	4.5	4.3	7.1	6.5	6.2	6.8	6.9	6.4

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

SAT PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	1	0	0	0	0	2	2	2
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
	4.5	4.3	7.1	6.5	6.2	6.8	6.9	6.4

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

Headway Adjustment Calculations

Project #: 804.02
Municipality: Mt. Joy Township
County: Lancaster

Date: 4/19/2022
Conducted By: GEC
Company Name: GME

Intersection: SR 0230/Norlanco Drive Extension
Major Street: SR 0230 (EB/WB)
Minor Street: Norlanco Drive Extension (SB)

Critical Headway:

$t_{c,x} = t_{c,base} + t_{c,HV} P_{HV} + t_{c,G} G - t_{3,LT}$

$t_{c,x}$ = critical headway for movement x(s)

$t_{c,base}$ = base critical headway (provided by PENNDOT)

$t_{c,HV}$ = heavy vehicle adjustment factor; 1.0 if major street has one (1) lane, 2.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

$t_{c,g}$ = grade adjustment (0.1 for minor street right turns, otherwise 0.

G = percent grade integer (e.g., -2 for 2% down grade)
$t_{3,LT}$ = geometric adjustment (0.7 for minor street left turn movements at three-leg intersections, 0.0 otherwi

Follow-Up Headway:

$t_{f,x} = t_{f,base} + t_{f,HV} P_{HV}$

$t_{f,x}$ = critical headway for movement x(s)

$t_{f,base}$ = base critical headway (provided by PENNDOT)

$t_{f,HV}$ = heavy vehicle adjustment factor; 0.9 if major street has one (1) lane, 1.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

AM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	1	0	0	0	0	0	0	0
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
t_c	4.5	4.3	7.1	6.5	6.2	6.4	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
t_f	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

PM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	1	0	0	0	0	0	0	0
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
t_c	4.5	4.3	7.1	6.5	6.2	6.4	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
t_f	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

SAT PEAK HOUR

CRITICAL HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	1	0	0	0	0	0	0	0
$t_{3,LT}$	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0
t_c	4.5	4.3	7.1	6.5	6.2	6.4	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left EB	Major Street Left WB	Minor Street Left NB	Minor Street Thru NB	Minor Street Right NB	Minor Street Left SB	Minor Street Thru SB	Minor Street Right SB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0.02	0	0	0	0	0.02	0.02	0.02
t_f	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

Headway Adjustment Calculations

Project #: 804.02
Municipality: Mt. Joy Township
County: Lancaster

Date: 4/19/2022
Conducted By: GEC
Company Name: GME

Intersection: Cloverleaf Road/Eastern Parcels Access
Major Street: Cloverleaf Road (NB/SB)
Minor Street: Eastern Parcels Access (WB)

Critical Headway:

$t_{c,x} = t_{c,base} + t_{c,HV}P_{HV} + t_{c,G}G - t_{3,LT}$

$t_{c,x}$ = critical headway for movement x(s)
$t_{c,base}$ = base critical headway (provided by PENNDOT)
$t_{c,HV}$ = heavy vehicle adjustment factor; 1.0 if major street has one (1) lane, 2.0 if major street has two (2) or more lanes
P_{HV} = proportion of heavy vehicles (%/100)
$t_{c,g}$ = grade adjustment (0.1 for minor street right turns, otherwise 0.2)
G = percent grade integer (e.g., -2 for 2% down grade)
$t_{3,LT}$ = geometric adjustment (0.7 for minor street left turn movements at three-leg intersections, 0.0 otherwise)

Follow-Up Headway:

$t_{f,x} = t_{f,base} + t_{f,HV}P_{HV}$

$t_{f,x}$ = critical headway for movement x(s)
$t_{f,base}$ = base critical headway (provided by PENNDOT)
$t_{f,HV}$ = heavy vehicle adjustment factor; 0.9 if major street has one (1) lane, 1.0 if major street has two (2) or more lanes
P_{HV} = proportion of heavy vehicles (%/100)

AM PEAK HOUR

CRITICAL HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{c,base}$	4.3	$t_{c,base}$	4.3	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2
$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0
P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0	P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0.02
$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1
G	0	G	-2	G	0	G	0	G	0	G	0	G	0	G	0
$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.7	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0
$t_{c,x}$	4.3	**$t_{c,x}$**	3.9	**$t_{c,x}$**	7.1	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2	**$t_{c,x}$**	6.4	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2

FOLLOW-UP HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1
$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9
P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0	P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0.02
$t_{f,x}$	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1

PM PEAK HOUR

CRITICAL HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{c,base}$	4.3	$t_{c,base}$	4.3	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2
$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0
P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0	P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0.02
$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1
G	0	G	-2	G	0	G	0	G	0	G	0	G	0	G	0
$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.7	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0
$t_{c,x}$	4.3	**$t_{c,x}$**	3.9	**$t_{c,x}$**	7.1	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2	**$t_{c,x}$**	6.4	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2

FOLLOW-UP HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1
$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9
P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0	P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0.02
$t_{f,x}$	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1

SAT PEAK HOUR

CRITICAL HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{c,base}$	4.3	$t_{c,base}$	4.3	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2
$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0
P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0	P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0.02
$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1
G	0	G	-2	G	0	G	0	G	0	G	0	G	0	G	0
$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.7	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0
$t_{c,x}$	4.3	**$t_{c,x}$**	3.9	**$t_{c,x}$**	7.1	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2	**$t_{c,x}$**	6.4	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2

FOLLOW-UP HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1
$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9
P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0	P_{HV}	0	P_{HV}	0.02	P_{HV}	0	P_{HV}	0.02
$t_{f,x}$	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1

Headway Adjustment Calculations

Project #: 804.02
Municipality: Mt. Joy Township
County: Lancaster

Date: 4/19/2022
Conducted By: GEC
Company Name: GME

Intersection: Cloverleaf Road/Eastern Parcels Access/Western Parcels Access
Major Street: Cloverleaf Road (NB/SB)
Minor Street: Eastern Parcels Access (WB)/Western Parcels Access (EB)

Critical Headway:

$t_{c,x} = t_{c,base}+t_{c,HV}P_{HV}+t_{c,G}G-t_{3,LT}$

$t_{c,x}$ = critical headway for movement x(s)
$t_{c,base}$ = base critical headway (provided by PENNDOT)
$t_{c,HV}$ = heavy vehicle adjustment factor; 1.0 if major street has one (1) lane, 2.0 if major street has two (2) or more lanes
P_{HV} = proportion of heavy vehicles (%/100)
$t_{c,g}$ = grade adjustment (0.1 for minor street right turns, otherwise 0.2)
G = percent grade integer (e.g., -2 for 2% down grade)
$t_{3,LT}$ = geometric adjustment (0.7 for minor street left turn movements at three-leg intersections, 0.0 otherwise)

Follow-Up Headway:

$t_{f,x} = t_{f,base}+t_{f,HV}P_{HV}$

$t_{f,x}$ = critical headway for movement x(s)
$t_{f,base}$ = base critical headway (provided by PENNDOT)
$t_{f,HV}$ = heavy vehicle adjustment factor; 0.9 if major street has one (1) lane, 1.0 if major street has two (2) or more lanes
P_{HV} = proportion of heavy vehicles (%/100)

AM PEAK HOUR

CRITICAL HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{c,base}$	4.3	$t_{c,base}$	4.3	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2
$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0
P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02
$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1
G	2	G	-2	G	0	G	0	G	0	G	0	G	0	G	0
$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0
$t_{c,x}$	4.7	**$t_{c,x}$**	3.9	**$t_{c,x}$**	7.1	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2	**$t_{c,x}$**	7.1	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2

FOLLOW-UP HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1
$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9
P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02
$t_{f,x}$	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1

PM PEAK HOUR

CRITICAL HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{c,base}$	4.3	$t_{c,base}$	4.3	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2
$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0
P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02
$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1
G	2	G	-2	G	0	G	0	G	0	G	0	G	0	G	0
$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0
$t_{c,x}$	4.7	**$t_{c,x}$**	3.9	**$t_{c,x}$**	7.1	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2	**$t_{c,x}$**	7.1	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2

FOLLOW-UP HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1
$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9
P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02
$t_{f,x}$	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1

SAT PEAK HOUR

CRITICAL HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{c,base}$	4.3	$t_{c,base}$	4.3	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2	$t_{c,base}$	7.1	$t_{c,base}$	6.5	$t_{c,base}$	6.2
$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0	$t_{c,HV}$	1.0
P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02
$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1	$t_{c,g}$	0.2	$t_{c,g}$	0.2	$t_{c,g}$	0.1
G	2	G	-2	G	0	G	0	G	0	G	0	G	0	G	0
$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0	$t_{3,LT}$	0.0
$t_{c,x}$	4.7	**$t_{c,x}$**	3.9	**$t_{c,x}$**	7.1	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2	**$t_{c,x}$**	7.1	**$t_{c,x}$**	6.5	**$t_{c,x}$**	6.2

FOLLOW-UP HEADWAY

Major Street Left NB		Major Street Left SB		Minor Street Left EB		Minor Street Thru EB		Minor Street Right EB		Minor Street Left WB		Minor Street Thru WB		Minor Street Right WB	
$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1	$t_{f,base}$	3.0	$t_{f,base}$	4.0	$t_{f,base}$	3.1
$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9	$t_{f,HV}$	0.9
P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02	P_{HV}	0.02
$t_{f,x}$	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1	**$t_{f,x}$**	3.0	**$t_{f,x}$**	4.0	**$t_{f,x}$**	3.1

Headway Adjustment Calculations

Project #: 804.02
Municipality: Mt. Joy Township
County: Lancaster

Date: 4/19/2022
Conducted By: GEC
Company Name: GME

Intersection: Ridge Run Road/Site Access
Major Street: Ridge Run Road (NB/SB)
Minor Street: Site Access (EB)

Critical Headway:

$t_{c,x} = t_{c,base} + t_{c,HV} P_{HV} + t_{c,G} G - t_{3,LT}$

$t_{c,x}$ = critical headway for movement x(s)

$t_{c,base}$ = base critical headway (provided by PENNDOT)

$t_{c,HV}$ = heavy vehicle adjustment factor; 1.0 if major street has one (1) lane, 2.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

$t_{c,g}$ = grade adjustment (0.1 for minor street right turns, otherwise 0.

G = percent grade integer (e.g., -2 for 2% down grade)
$t_{3,LT}$ = geometric adjustment (0.7 for minor street left turn movements at three-leg intersections, 0.0 otherwi

Follow-Up Headway:

$t_{f,x} = t_{f,base} + t_{f,HV} P_{HV}$

$t_{f,x}$ = critical headway for movement x(s)

$t_{f,base}$ = base critical headway (provided by PENNDOT)

$t_{f,HV}$ = heavy vehicle adjustment factor; 0.9 if major street has one (1) lane, 1.0 if major street has two (2) or more lane

P_{HV} = proportion of heavy vehicles (%/100)

AM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0.02	0	0.02	0	0.02	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-3	0	0	0	0	0	0	0
$t_{3,LT}$	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
t_c	3.7	4.3	6.4	6.5	6.2	7.1	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0.02	0	0.02	0	0.02	0	0	0
t_f	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

PM PEAK HOUR

CRITICAL HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0.02	0	0.02	0	0.02	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-3	0	0	0	0	0	0	0
$t_{3,LT}$	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
t_c	3.7	4.3	6.4	6.5	6.2	7.1	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0.02	0	0.02	0	0.02	0	0	0
t_f	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1

SAT PEAK HOUR

CRITICAL HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{c,base}$	4.3	4.3	7.1	6.5	6.2	7.1	6.5	6.2
$t_{c,HV}$	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
P_{HV}	0.02	0	0.02	0	0.02	0	0	0
$t_{c,g}$	0.2	0.2	0.2	0.2	0.1	0.2	0.2	0.1
G	-3	0	0	0	0	0	0	0
$t_{3,LT}$	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0
t_c	3.7	4.3	6.4	6.5	6.2	7.1	6.5	6.2

FOLLOW-UP HEADWAY

	Major Street Left NB	Major Street Left SB	Minor Street Left EB	Minor Street Thru EB	Minor Street Right EB	Minor Street Left WB	Minor Street Thru WB	Minor Street Right WB
$t_{f,base}$	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1
$t_{f,HV}$	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
P_{HV}	0.02	0	0.02	0	0.02	0	0	0
t_f	3.0	3.0	3.0	4.0	3.1	3.0	4.0	3.1