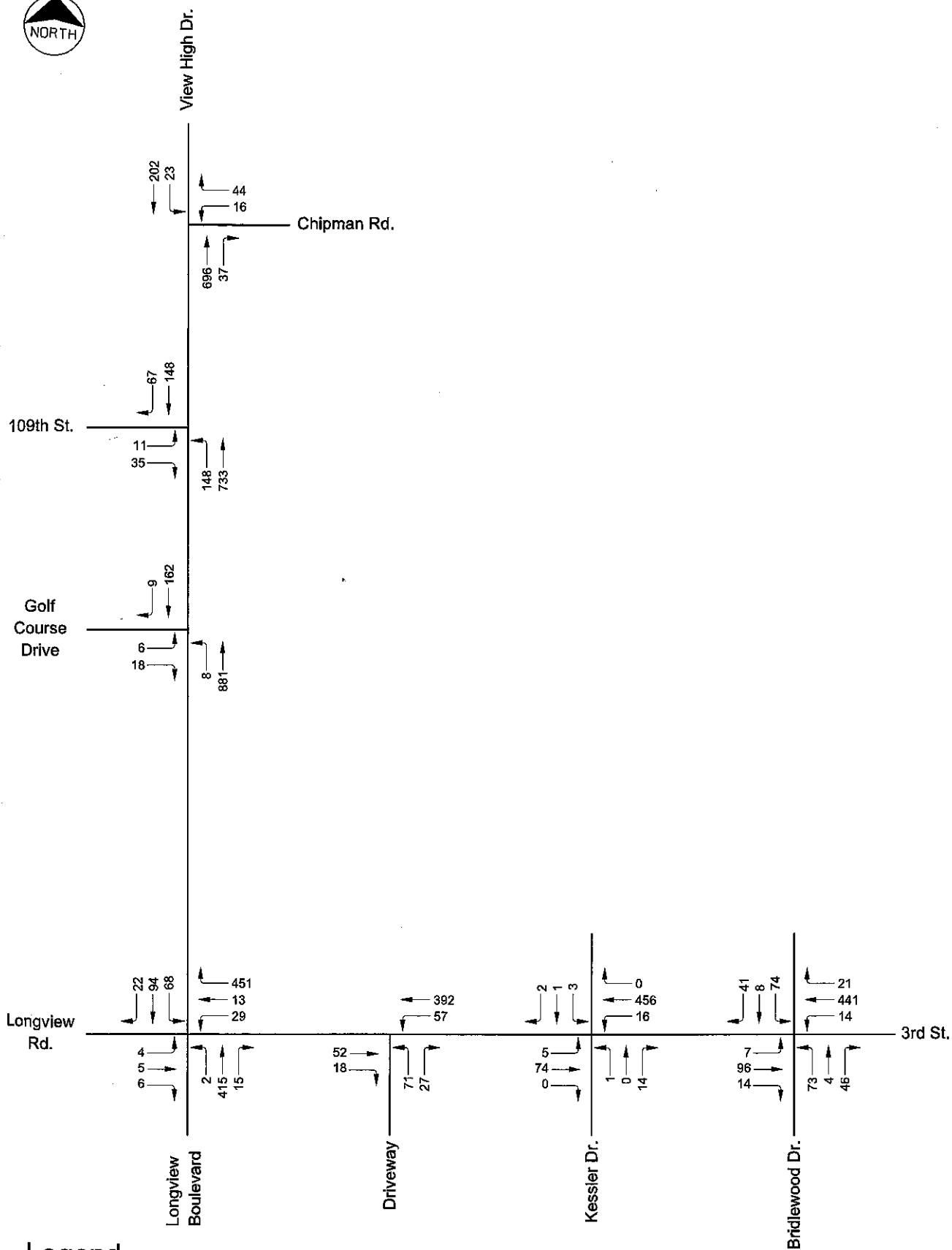


Existing + Approved Conditions

Existing & Approved Studies Traffic Counts



Legend

123 Total Hourly Volume



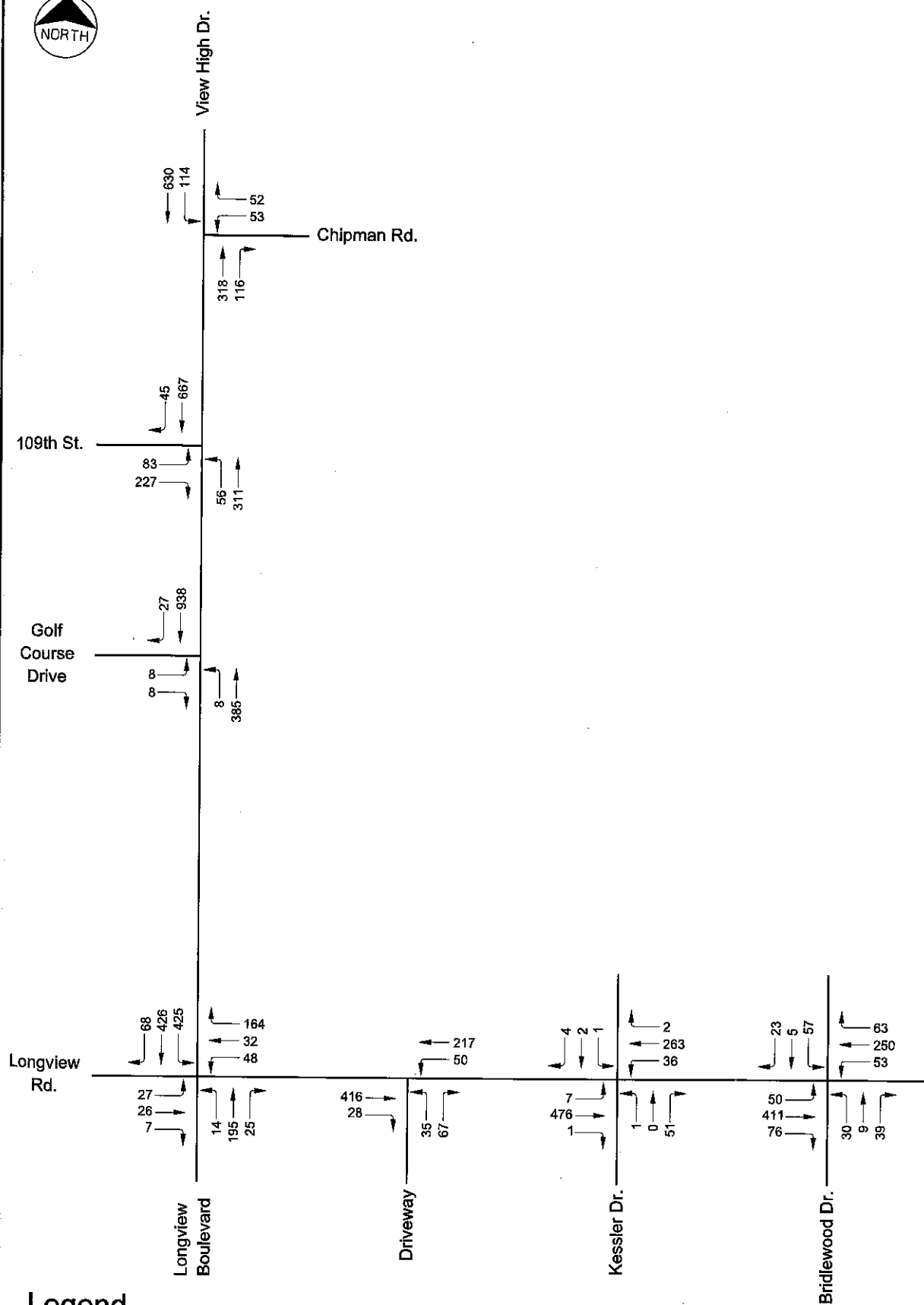
EXISTING A.M. PEAK HOUR TRAFFIC VOLUMES

3rd Street and View High
Traffic Impact Study
Lee's Summit, Missouri

July 2016

No Scale

Figure A-4



EXISTING
P.M. PEAK HOUR TRAFFIC VOLUMES

3rd Street and View High
Traffic Impact Study
Lee's Summit, Missouri

July 2016

No Scale

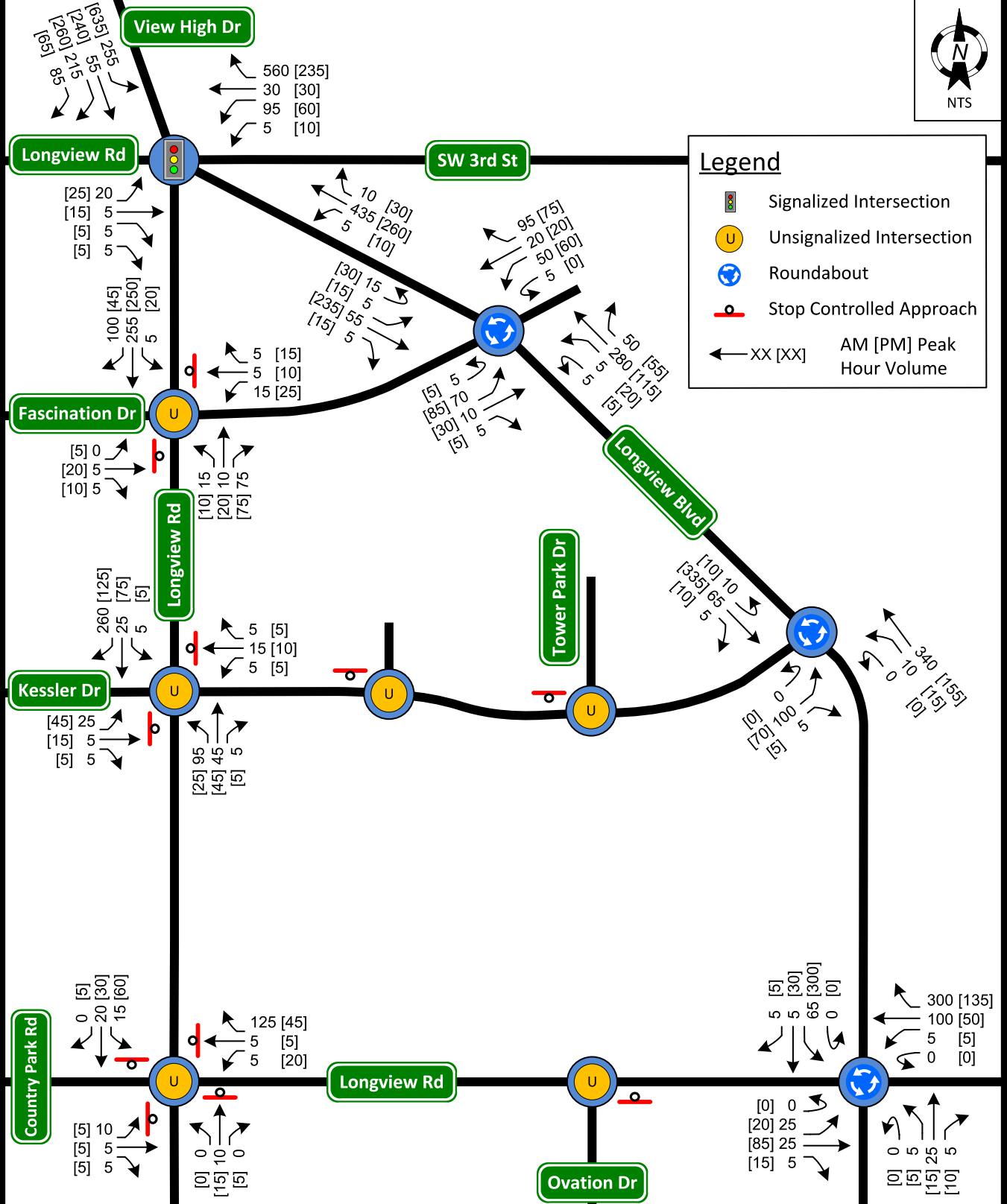
Figure A-5





Legend

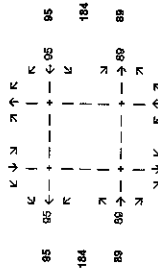
- Signalized Intersection
- Unsignalized Intersection
- Roundabout
- Stop Controlled Approach
- ← XX [XX] AM [PM] Peak Hour Volume



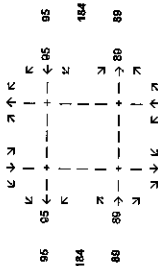
3rd and View High
Lee's Summit, Missouri

Approved Development Trips - New Longview Commercial (unbuilt portions)
A.M. Peak Hour

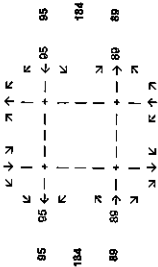
View High Dr. and Chipman Rd.



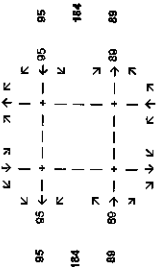
View High Dr. and 109th St.



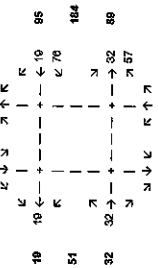
View High Dr. and Site Drive A/Golf Course Dr.



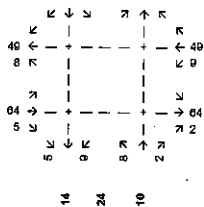
View High Dr. and Site Drive B



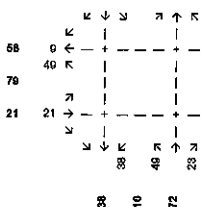
View High Dr. and 3rd St./Longview Rd.



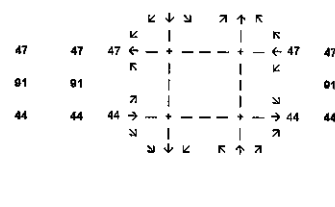
3rd St. and Site Drive C



3rd St. and Kessler Dr.



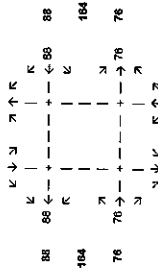
3rd St. and Bridlewood Dr.



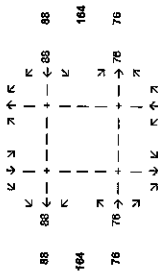
3rd and View High
Lee's Summit, Missouri

Approved Development Trips - New Longview Commercial (unbuilt portions)
P.M. Peak Hour

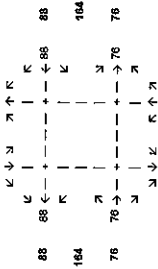
View High Dr. and Chipman Rd.



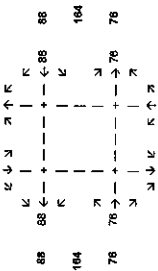
View High Dr. and 109th St.



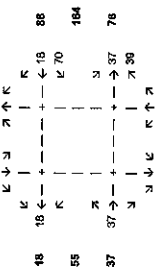
View High Dr. and Site Drive A/Golf Course Dr.



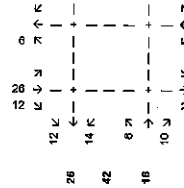
View High Dr. and Site Drive B



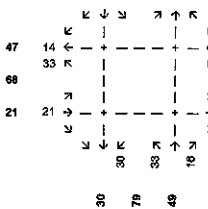
View High Dr. and 3rd St./Longview Rd.



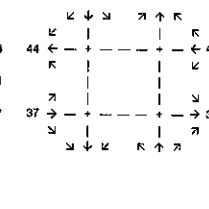
3rd St. and Site Drive C



3rd St. and Kessler Dr.



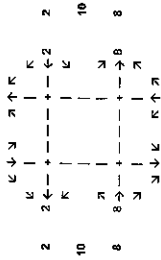
3rd St. and Bridlewood Dr.



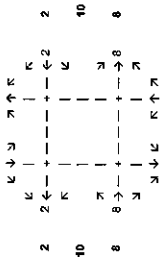
**3rd and View High
Lee's Summit, Missouri**

**Approved Development Trips - Residences at New Longview (10% unbuilt portion)
A.M. Peak Hour**

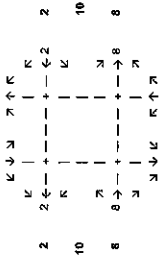
View High Dr. and Chipman Rd.



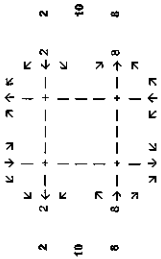
View High Dr. and 109th St.



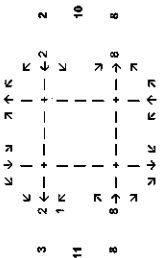
View High Dr. and Site Drive A/Golf Course Dr.



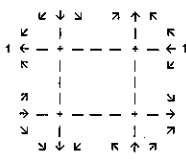
View High Dr. and Site Drive B



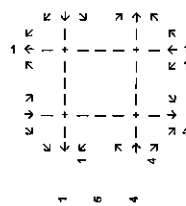
View High Dr. and 3rd St./Longview Rd.



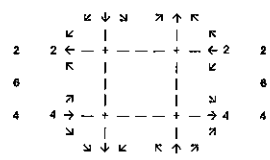
3rd St. and Site Drive C



3rd St. and Kessler Dr.



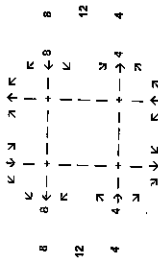
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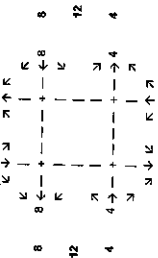
3rd and View High
Lee's Summit, Missouri

Approved Development Trips - Residences at New Longview (10% unbuilt portion)
P.M. Peak Hour

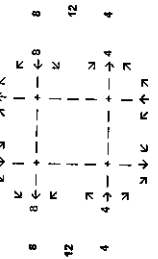
View High Dr. and Chipman Rd.



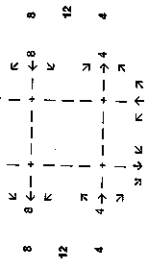
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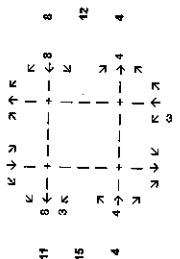
View High Dr. and Site Drive A/Golf Course Dr.



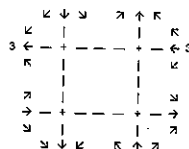
View High Dr. and Site Drive B



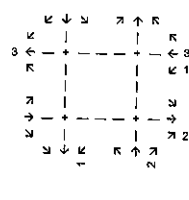
View High Dr. and 3rd St./Longview Rd.



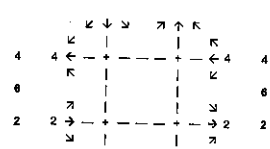
3rd St. and Site Drive C



3rd St. and Kessler Dr.



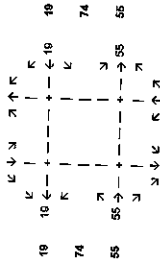
3rd St. and Bridlewood Dr.



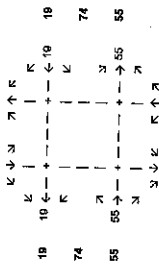
3rd and View High
Lee's Summit, Missouri

Approved Development Trips - Winterset Valley (90% unbuilt portion)
A.M. Peak Hour

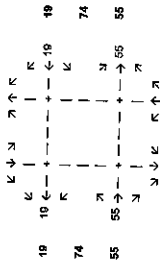
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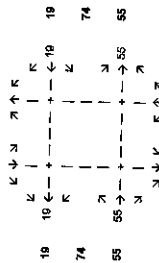
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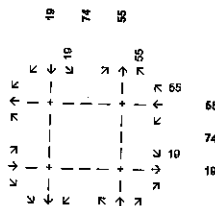
View High Dr. and Site Drive A/Golf Course Dr.



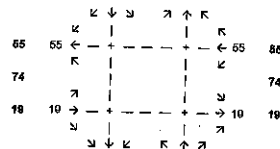
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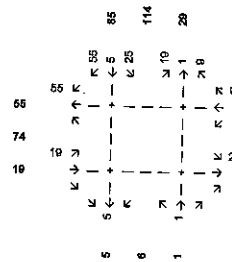
View High Dr. and 3rd St./Longview Rd.



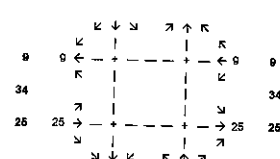
3rd St. and Site Drive C



3rd St. and Kessler Dr.



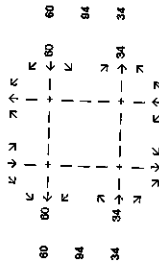
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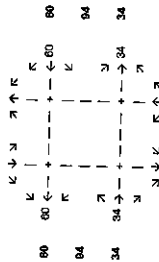
**3rd and View High
Lee's Summit, Missouri**

**Approved Development Trips - Winterset Valley (90% unbuilt portion)
P.M. Peak Hour**

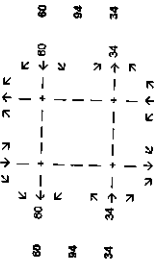
View High Dr. and Chipman Rd.



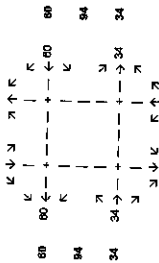
View High Dr. and 109th St.



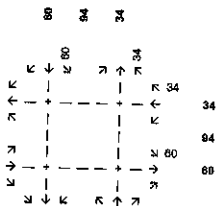
View High Dr. and Site Drive A/Golf Course Dr.



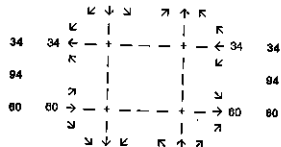
View High Dr. and Site Drive B



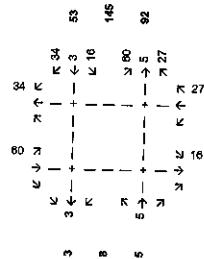
View High Dr. and 3rd St./Longview Rd.



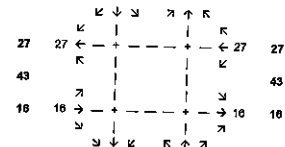
3rd St. and Site Drive C



3rd St. and Kessler Dr.



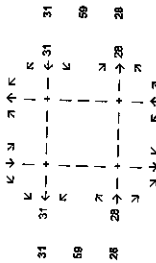
3rd St. and Bridlewood Dr.



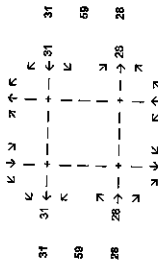
3rd and View High
Lee's Summit, Missouri

Approved Development Trips - Goddard School
A.M. Peak Hour

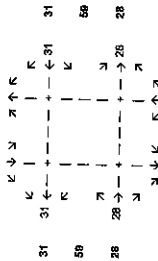
View High Dr. and Chipman Rd.



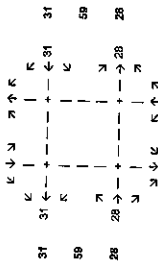
View High Dr. and 109th St.



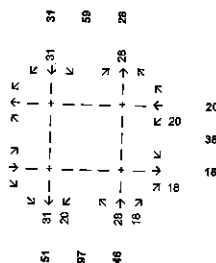
View High Dr. and Site Drive A/Golf Course Dr.



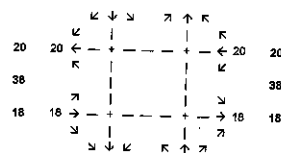
View High Dr. and Site Drive B



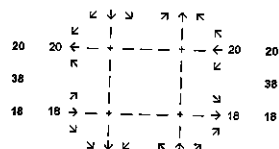
View High Dr. and 3rd St./Longview Rd.



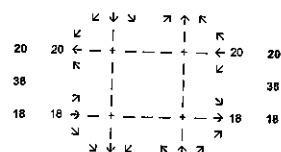
3rd St. and Site Drive C



3rd St. and Kessler Dr.



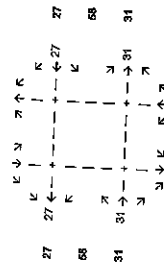
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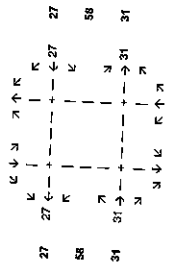
3rd and View High
Lee's Summit, Missouri

Approved Development Trips - Goddard School
P.M. Peak Hour

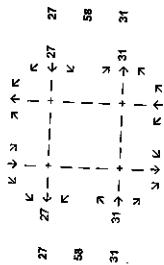
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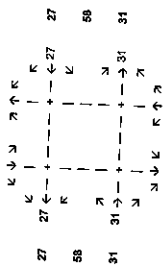
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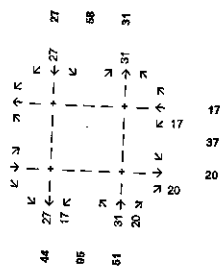
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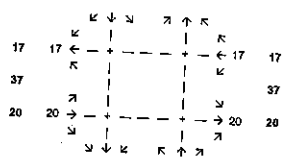
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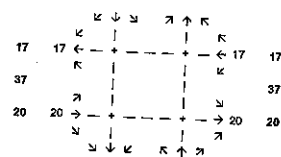
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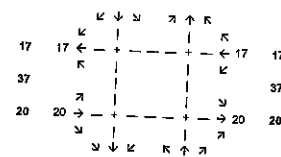
3rd St. and Site Drive C



3rd St. and Kessler Dr.



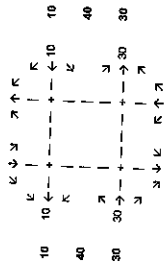
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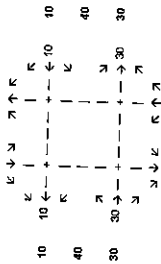
3rd and View High
Lee's Summit, Missouri

Approved Development Trips - Kessler Ridge
A.M. Peak Hour

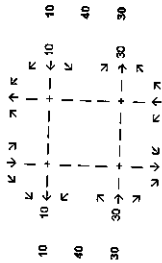
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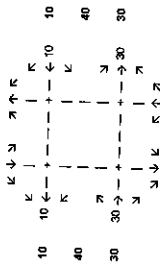
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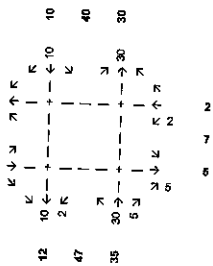
View High Dr. and Site Drive A/Golf Course Dr.



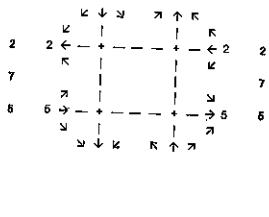
View High Dr. and Site Drive B



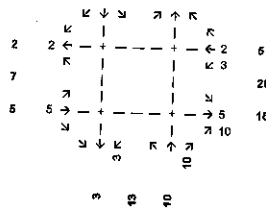
View High Dr. and 3rd St./Longview Rd.



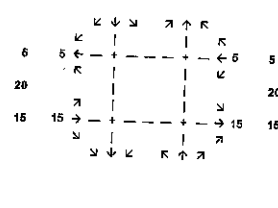
3rd St. and Site Drive C



3rd St. and Kessler Dr.



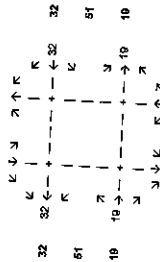
3rd St. and Bridlewood Dr.



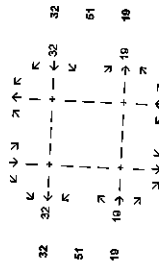
3rd and View High
Lee's Summit, Missouri

Approved Development Trips - Kessler Ridge
P.M. Peak Hour

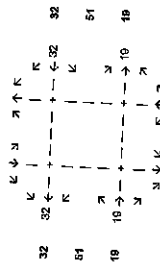
View High Dr. and Chipman Rd.



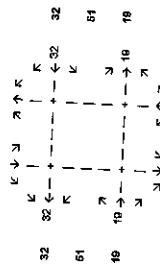
View High Dr. and 109th St.



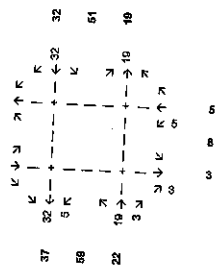
View High Dr. and Site Drive A/Golf Course Dr.



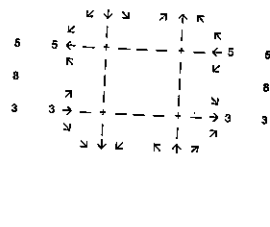
View High Dr. and Site Drive B



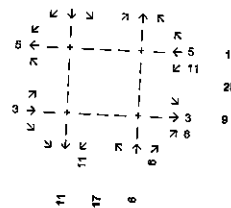
View High Dr. and 3rd St./Longview Rd.



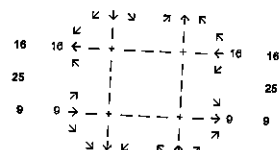
3rd St. and Site Drive C



3rd St. and Kessler Dr.



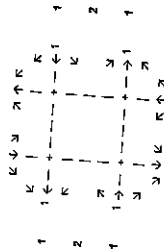
3rd St. and Bridlewood Dr.



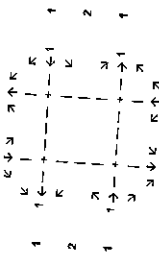
3rd and View High
Lee's Summit, Missouri

Approved Development Trips - Autumn Leaves
A.M. Peak Hour

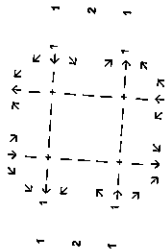
View High Dr. and Chipman Rd.



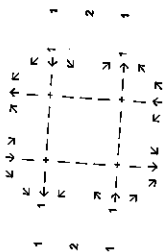
View High Dr. and 109th St.



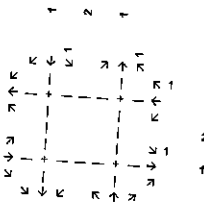
View High Dr. and Site Drive A/Golf Course Dr.



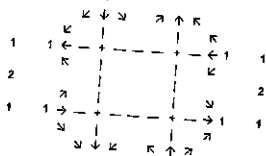
View High Dr. and Site Drive B



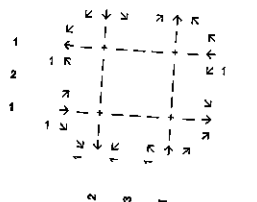
View High Dr. and 3rd St./Longview Rd.



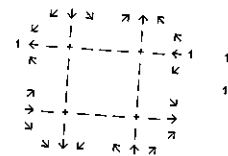
3rd St. and Site Drive C



3rd St. and Kessler Dr.



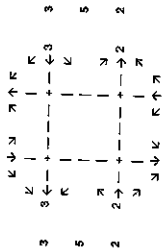
3rd St. and Bridlewood Dr.



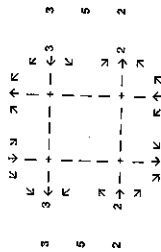
3rd and View High
Lee's Summit, Missouri

Approved Development Trips - Autumn Leaves
P.M. Peak Hour

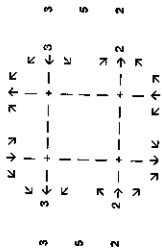
View High Dr. and Chipman Rd.



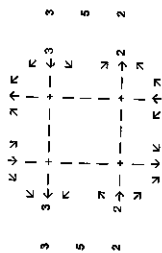
View High Dr. and 109th St.



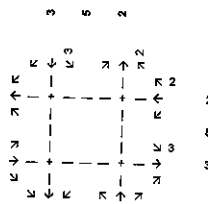
View High Dr. and Site Drive A/Golf Course Dr.



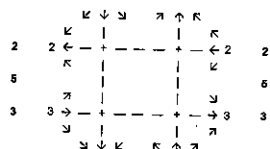
View High Dr. and Site Drive B



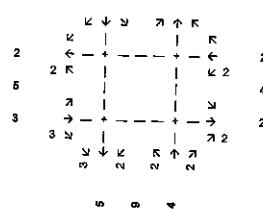
View High Dr. and 3rd St./Longview Rd.



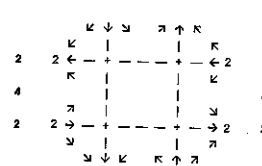
3rd St. and Site Drive C



3rd St. and Kessler Dr.



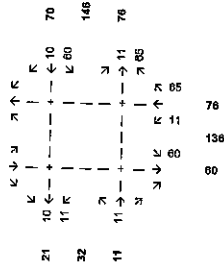
3rd St. and Bridlewood Dr.



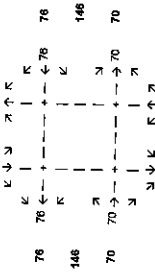
3rd and View High
Lee's Summit, Missouri

Approved Development Trips - Summit Church
P.M. Peak Hour

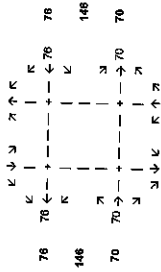
View High Dr. and Chipman Rd.



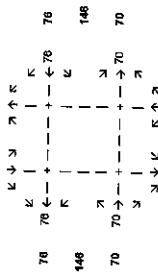
View High Dr. and 109th St.



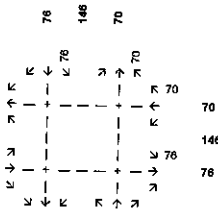
View High Dr. and Site Drive A/Golf Course Dr.



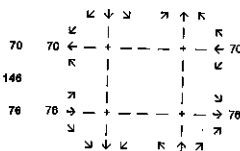
View High Dr. and Site Drive B



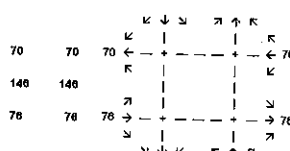
View High Dr. and 3rd St./Longview Rd.



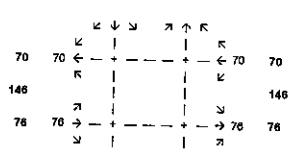
3rd St. and Site Drive C



3rd St. and Kessler Dr.

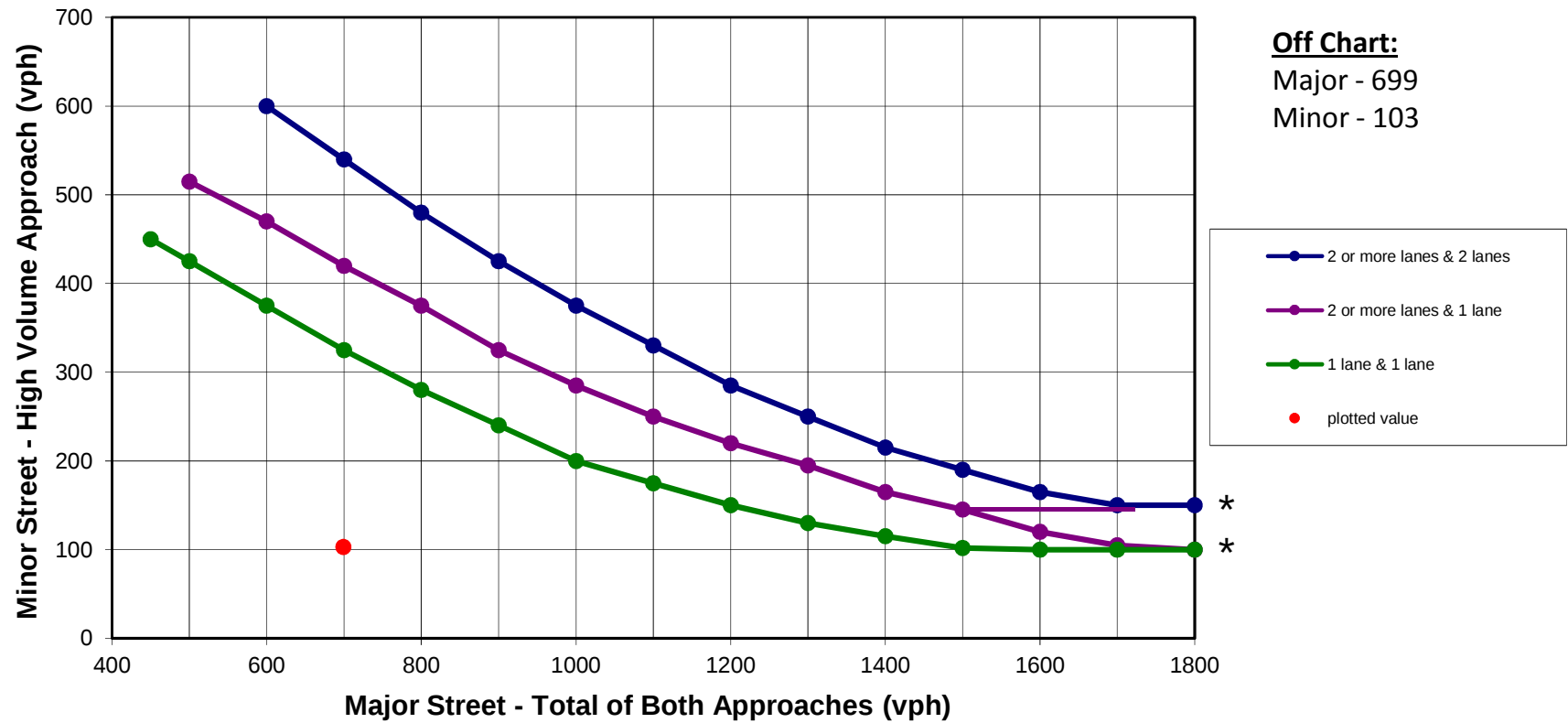


3rd St. and Bridlewood Dr.



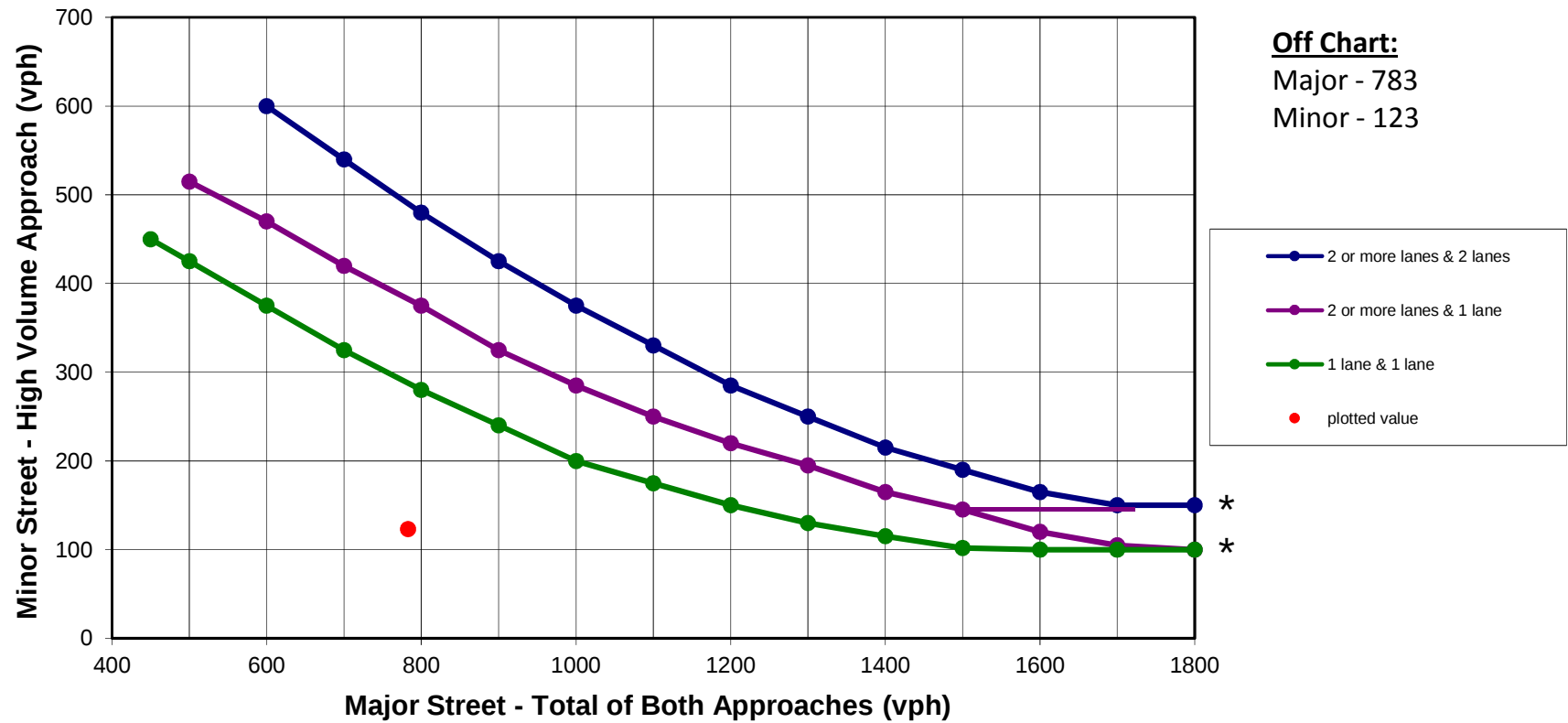
Signal Warrants

Existing + Approved AM Peak Hour Volume Warrant 3rd Street & Kessler Drive



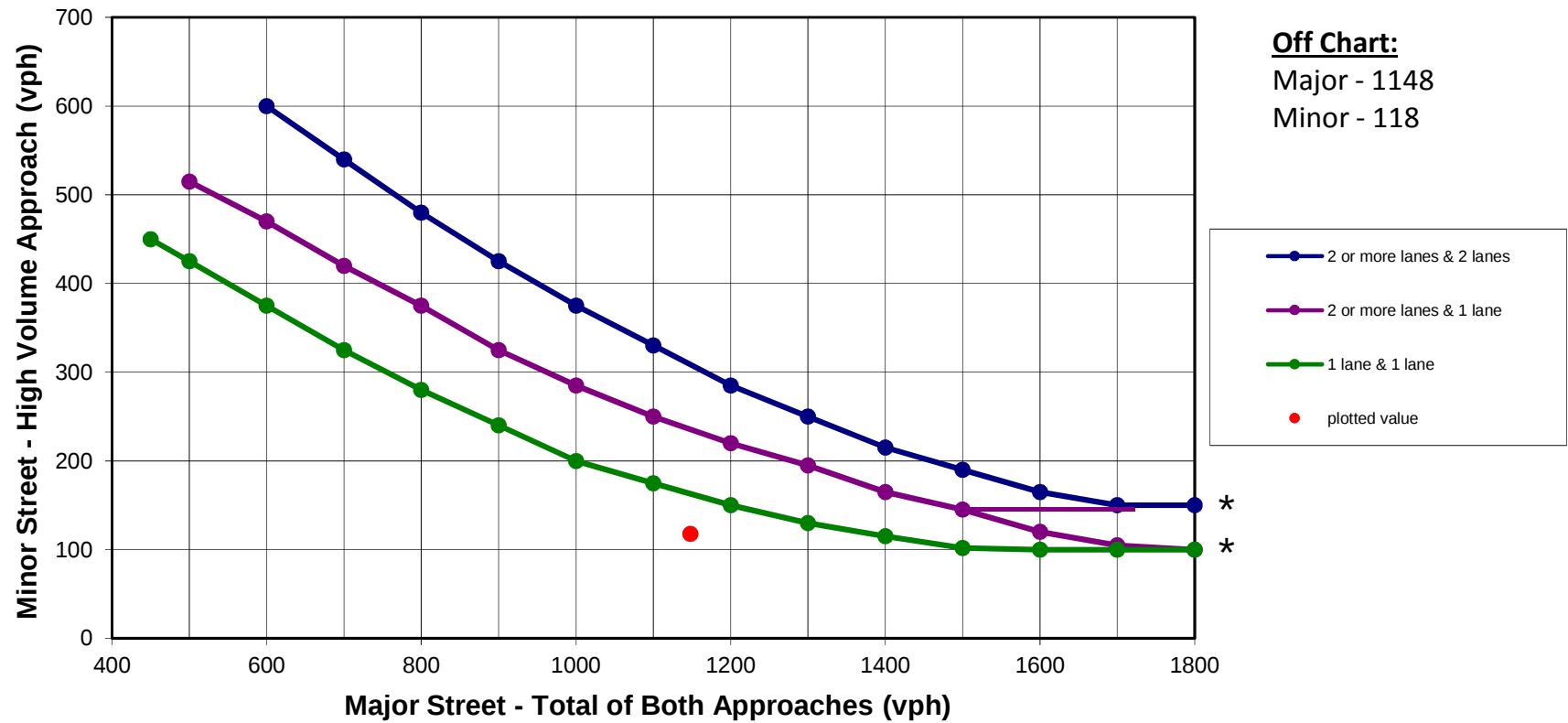
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes

Existing + Approved AM Peak Hour Volume Warrant 3rd Street & Bridlewood Drive



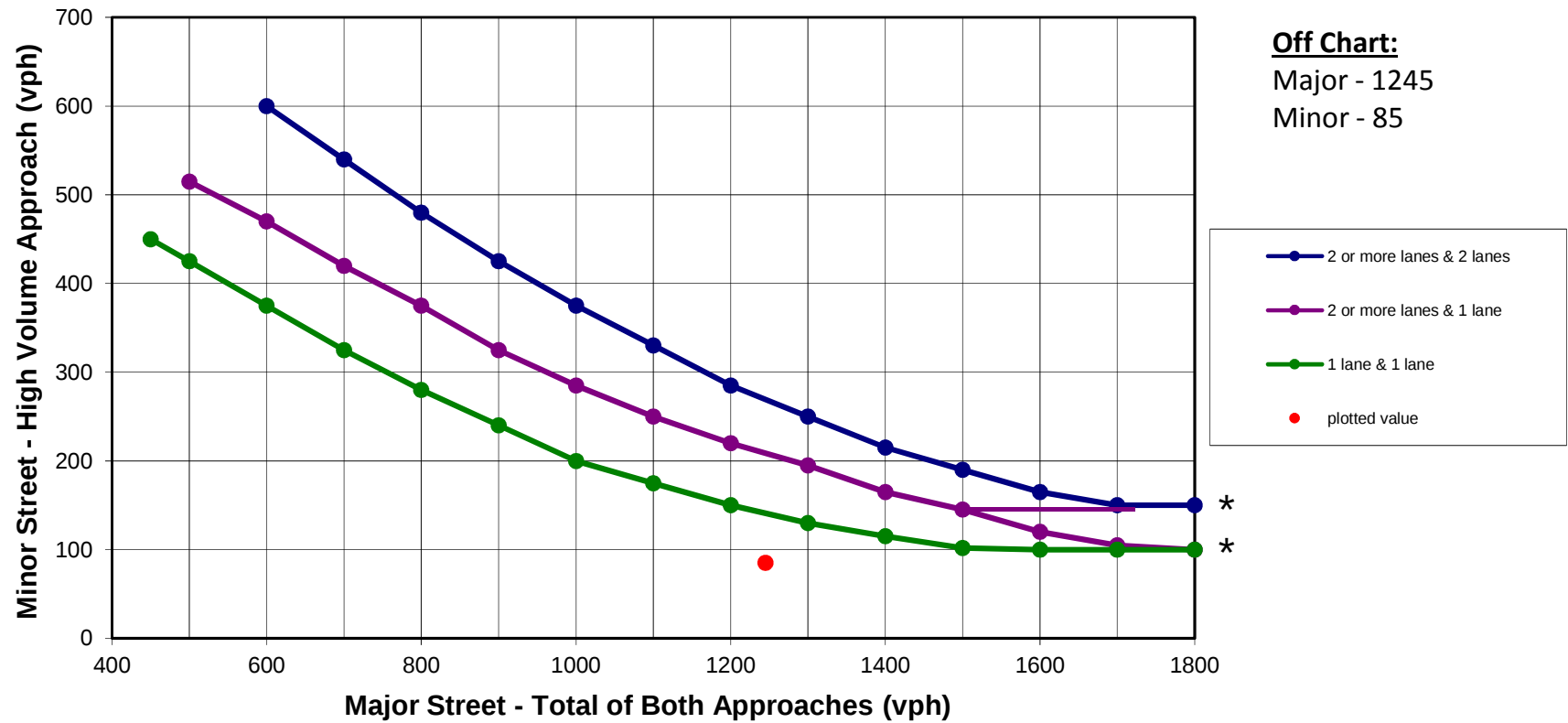
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes

Existing + Approved PM Peak Hour Volume Warrant 3rd Street & Kessler Drive



*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes

Existing + Approved PM Peak Hour Volume Warrant 3rd Street & Bridlewood Drive



*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes

Capacity Analysis

Queues

3: Longview Blvd/View High Dr & Longview Rd/3rd St

9/9/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	5	6	8	67	17	613	3	558	49	193	184	28
v/c Ratio	0.02	0.02	0.02	0.19	0.05	0.44	0.01	0.47	0.07	0.25	0.07	0.02
Control Delay	25.2	25.2	0.0	22.8	22.7	2.7	25.5	15.8	0.2	19.3	7.1	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.2	25.2	0.0	22.8	22.7	2.7	25.5	15.8	0.2	19.3	7.1	0.0
Queue Length 50th (ft)	1	1	0	15	4	2	1	61	0	21	7	0
Queue Length 95th (ft)	10	11	0	53	21	38	8	158	0	62	44	0
Internal Link Dist (ft)	339		579				573		602			
Turn Bay Length (ft)	330	130		250	360		200	175		525	260	
Base Capacity (vph)	409	335	503	682	622	1993	318	2559	1218	1677	3032	1385
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.02	0.10	0.03	0.31	0.01	0.22	0.04	0.12	0.06	0.02
Intersection Summary												

HCM Signalized Intersection Capacity Analysis

3: Longview Blvd/View High Dr & Longview Rd/3rd St

9/9/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	5	6	52	13	564	2	513	38	164	156	22
Future Volume (vph)	4	5	6	52	13	564	2	513	38	164	156	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.92	0.78	0.92	0.78	0.85	0.85	0.78
Adj. Flow (vph)	5	6	8	67	17	613	3	558	49	193	184	28
RTOR Reduction (vph)	0	0	8	0	0	427	0	0	31	0	0	13
Lane Group Flow (vph)	5	6	0	67	17	186	3	558	18	193	184	15
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.9	0.9	0.9	4.3	4.3	14.3	0.9	20.2	20.2	10.0	29.3	29.3
Effective Green, g (s)	0.9	0.9	0.9	4.3	4.3	14.3	0.9	20.2	20.2	10.0	29.3	29.3
Actuated g/C Ratio	0.02	0.02	0.02	0.08	0.08	0.26	0.02	0.36	0.36	0.18	0.53	0.53
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	28	30	25	137	144	970	28	1290	577	619	1871	837
v/s Ratio Prot	0.00	0.00		c0.04	0.01	c0.03	0.00	c0.16		c0.06	0.05	
v/s Ratio Perm			0.00			0.03			0.01			0.01
v/c Ratio	0.18	0.20	0.01	0.49	0.12	0.19	0.11	0.43	0.03	0.31	0.10	0.02
Uniform Delay, d1	26.9	26.9	26.8	24.5	23.8	16.0	26.9	13.3	11.3	19.7	6.5	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	3.3	0.1	2.7	0.4	0.1	1.7	0.2	0.0	0.3	0.0	0.0
Delay (s)	29.9	30.2	26.9	27.2	24.2	16.1	28.5	13.5	11.3	20.0	6.5	6.2
Level of Service	C	C	C	C	C	B	C	B	B	C	A	A
Approach Delay (s)		28.7			17.4			13.4			12.9	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.1			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			55.4			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			52.2%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	202	14	14	525	21	73	4	46	74	8	41
Future Vol, veh/h	7	202	14	14	525	21	73	4	46	74	8	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	220	15	15	571	23	79	4	50	80	9	45
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	593	0	0	235	0	0	562	866	117	740	863	297
Stage 1	-	-	-	-	-	-	242	242	-	613	613	-
Stage 2	-	-	-	-	-	-	320	624	-	127	250	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	979	-	-	1329	-	-	410	290	913	305	291	699
Stage 1	-	-	-	-	-	-	740	704	-	446	481	-
Stage 2	-	-	-	-	-	-	666	476	-	863	699	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	979	-	-	1329	-	-	369	284	913	281	285	699
Mov Cap-2 Maneuver	-	-	-	-	-	-	369	284	-	281	285	-
Stage 1	-	-	-	-	-	-	734	698	-	442	476	-
Stage 2	-	-	-	-	-	-	605	471	-	804	693	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.3			0.2			15.7			21.4		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	469	979	-	-	1329	-	-	351				
HCM Lane V/C Ratio	0.285	0.008	-	-	0.011	-	-	0.381				
HCM Control Delay (s)	15.7	8.7	-	-	7.7	-	-	21.4				
HCM Lane LOS	C	A	-	-	A	-	-	C				
HCM 95th %tile O(veh)	1.2	0	-	-	0	-	-	1.7				

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	118	1	59	488	9	51	1	51	28	6	57
Future Vol, veh/h	24	118	1	59	488	9	51	1	51	28	6	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	100	190	-	-	0	-	95	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	83	25	78	92	78	78	25	78	78	50	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	142	4	76	530	12	65	4	65	36	12	73

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	542	0	0	142	0	0	626	897	71	822	891	271
Stage 1	-	-	-	-	-	-	204	204	-	687	687	-
Stage 2	-	-	-	-	-	-	422	693	-	135	204	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1023	-	-	1438	-	-	369	278	977	266	280	727
Stage 1	-	-	-	-	-	-	779	732	-	403	446	-
Stage 2	-	-	-	-	-	-	580	443	-	854	732	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1023	-	-	1438	-	-	300	255	977	230	257	727
Mov Cap-2 Maneuver	-	-	-	-	-	-	300	255	-	230	257	-
Stage 1	-	-	-	-	-	-	755	710	-	391	422	-
Stage 2	-	-	-	-	-	-	480	420	-	768	710	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.5	0.9	14.8	17.9
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	300	840	1023	-	-	1438	-	-	399
HCM Lane V/C Ratio	0.218	0.083	0.03	-	-	0.053	-	-	0.303
HCM Control Delay (s)	20.3	9.7	8.6	-	-	7.6	-	-	17.9
HCM Lane LOS	C	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.8	0.3	0.1	-	-	0.2	-	-	1.3

Intersection						
Int Delay, s/veh	2.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	159	23	66	520	79	29
Future Vol, veh/h	159	23	66	520	79	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	78	79	92	80	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	189	29	84	565	99	37
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	189	0	639	95
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	450	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1382	-	408	943
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1382	-	383	943
Mov Cap-2 Maneuver	-	-	-	-	383	-
Stage 1	-	-	-	-	824	-
Stage 2	-	-	-	-	572	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1		16.2	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	457	-	-	1382	-	
HCM Lane V/C Ratio	0.297	-	-	0.06	-	
HCM Control Delay (s)	16.2	-	-	7.8	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-	

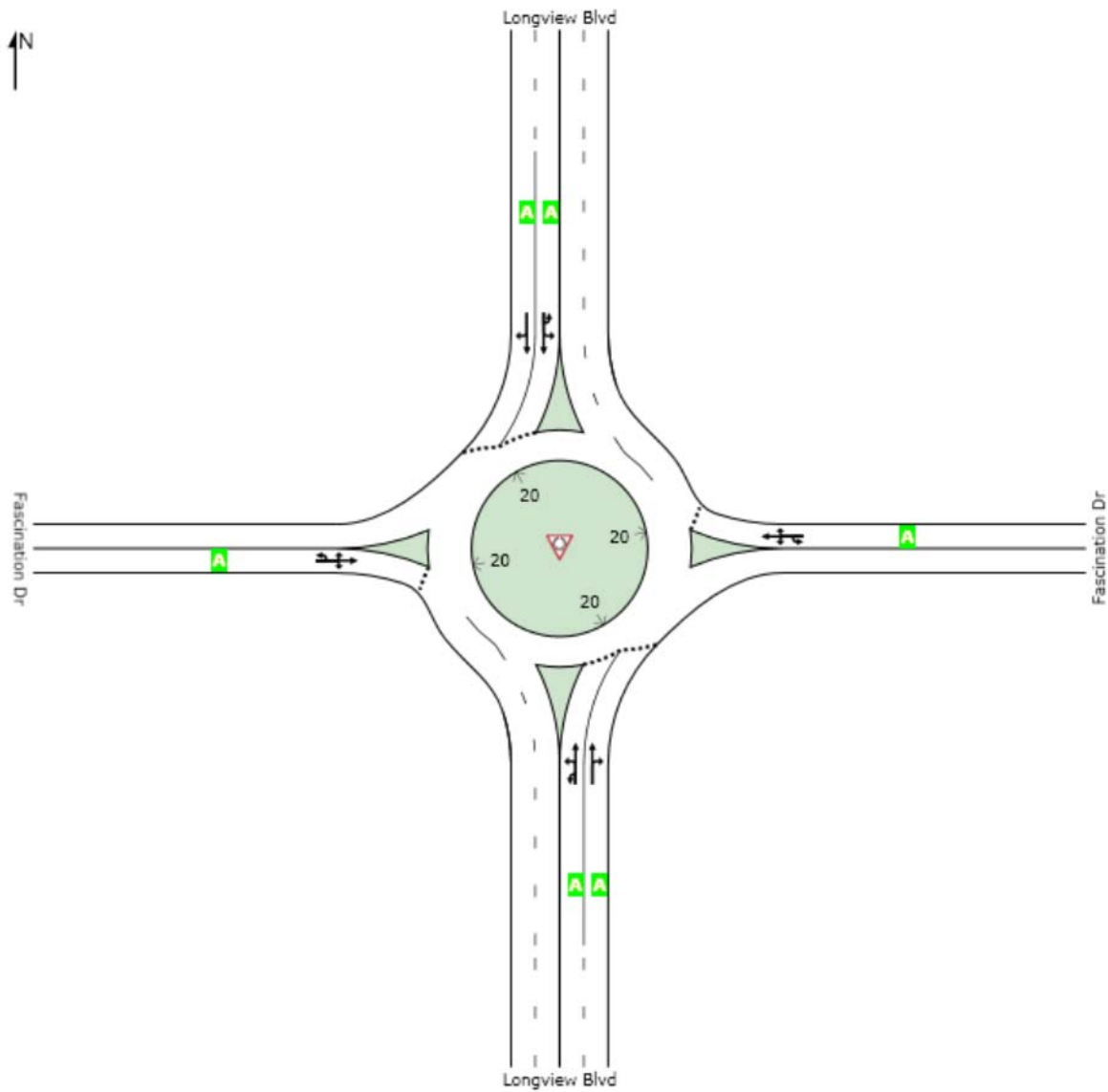
LEVEL OF SERVICE

 **Site: New Longview - Longview Blvd & Fascination Dr**

Existing + Approved AM Conditions
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved Conditions - AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	1	0.0	0.175	11.4	LOS B	1.0	6.9	0.30	0.45	56.3
1	L2	11	0.0	0.175	9.3	LOS A	1.0	6.9	0.30	0.45	55.2
2	T1	485	0.0	0.175	4.6	LOS A	1.0	7.0	0.29	0.44	55.4
3	R2	1	0.0	0.175	4.6	LOS A	1.0	7.0	0.28	0.43	54.0
Approach		498	0.0	0.175	4.7	LOS A	1.0	7.0	0.29	0.44	55.4
East: Kessler Dr											
4u	U	1	0.0	0.005	13.7	LOS B	0.0	0.2	0.60	0.59	53.2
4	L2	1	0.0	0.005	11.6	LOS B	0.0	0.2	0.60	0.59	52.3
5	T1	1	0.0	0.005	7.0	LOS A	0.0	0.2	0.60	0.59	52.3
6	R2	1	0.0	0.005	6.8	LOS A	0.0	0.2	0.60	0.59	51.1
Approach		4	0.0	0.005	9.8	LOS A	0.0	0.2	0.60	0.59	52.2
North: Longview Blvd											
7u	U	11	0.0	0.071	10.9	LOS B	0.4	2.5	0.08	0.44	57.0
7	L2	1	0.0	0.071	8.8	LOS A	0.4	2.5	0.08	0.44	55.9
8	T1	211	0.0	0.071	4.2	LOS A	0.4	2.5	0.08	0.41	56.3
9	R2	5	0.0	0.071	4.2	LOS A	0.4	2.5	0.08	0.39	55.0
Approach		227	0.0	0.071	4.5	LOS A	0.4	2.5	0.08	0.41	56.3
West: Kessler Dr											
10u	U	1	0.0	0.076	11.6	LOS B	0.4	2.7	0.35	0.62	53.1
10	L2	105	0.0	0.076	9.5	LOS A	0.4	2.7	0.35	0.62	52.2
11	T1	1	0.0	0.076	4.9	LOS A	0.4	2.7	0.35	0.62	52.2
12	R2	5	0.0	0.006	5.4	LOS A	0.0	0.2	0.38	0.49	54.0
Approach		113	0.0	0.076	9.3	LOS A	0.4	2.7	0.35	0.62	52.2
All Vehicles		842	0.0	0.175	5.3	LOS A	1.0	7.0	0.24	0.46	55.2

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

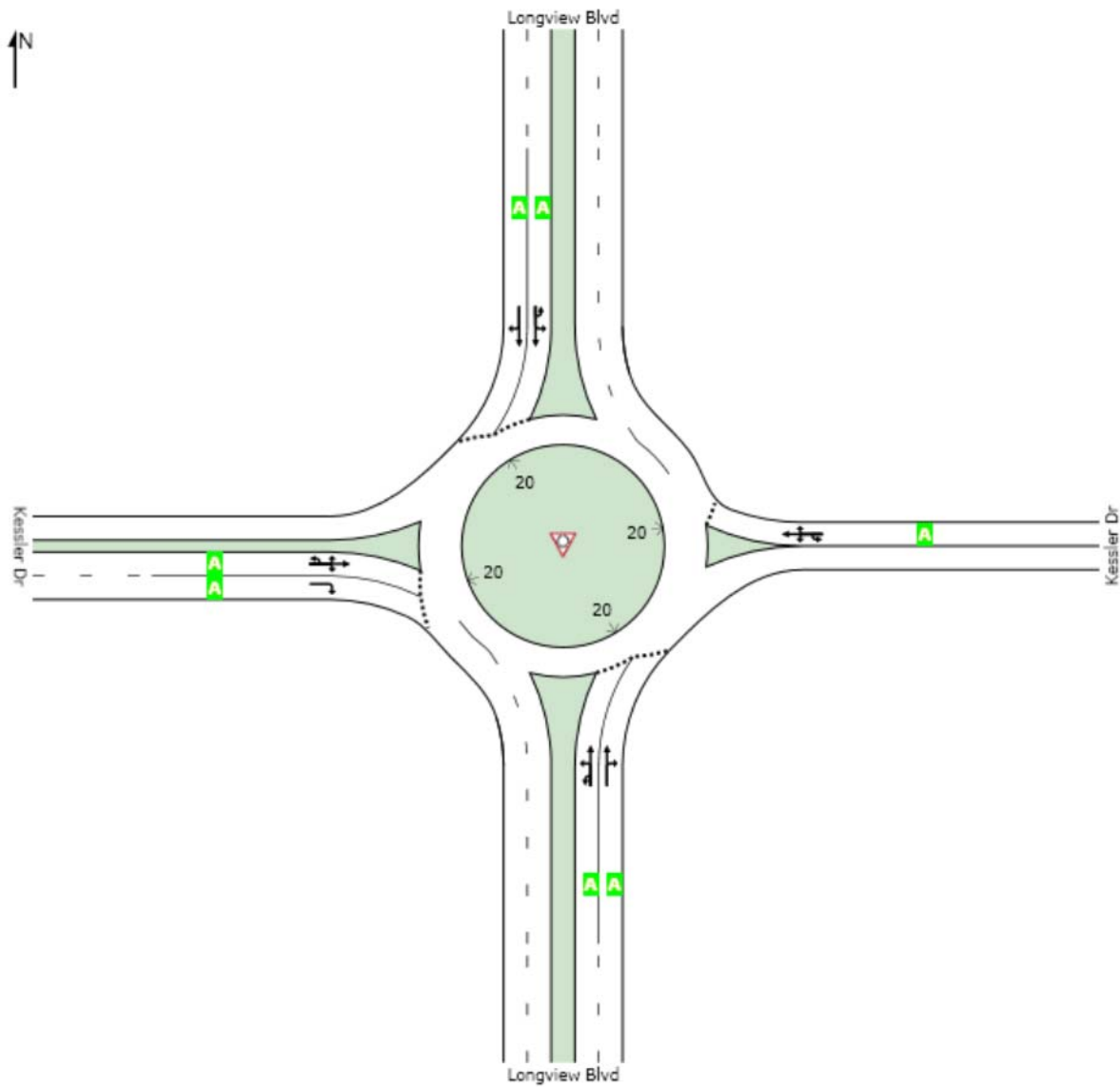
LEVEL OF SERVICE

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved Conditions - AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved Conditions - AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	1	0.0	0.175	11.4	LOS B	1.0	6.9	0.30	0.45	56.3
1	L2	11	0.0	0.175	9.3	LOS A	1.0	6.9	0.30	0.45	55.2
2	T1	485	0.0	0.175	4.6	LOS A	1.0	7.0	0.29	0.44	55.4
3	R2	1	0.0	0.175	4.6	LOS A	1.0	7.0	0.28	0.43	54.0
Approach		498	0.0	0.175	4.7	LOS A	1.0	7.0	0.29	0.44	55.4
East: Kessler Dr											
4u	U	1	0.0	0.005	13.7	LOS B	0.0	0.2	0.60	0.59	53.2
4	L2	1	0.0	0.005	11.6	LOS B	0.0	0.2	0.60	0.59	52.3
5	T1	1	0.0	0.005	7.0	LOS A	0.0	0.2	0.60	0.59	52.3
6	R2	1	0.0	0.005	6.8	LOS A	0.0	0.2	0.60	0.59	51.1
Approach		4	0.0	0.005	9.8	LOS A	0.0	0.2	0.60	0.59	52.2
North: Longview Blvd											
7u	U	11	0.0	0.071	10.9	LOS B	0.4	2.5	0.08	0.44	57.0
7	L2	1	0.0	0.071	8.8	LOS A	0.4	2.5	0.08	0.44	55.9
8	T1	211	0.0	0.071	4.2	LOS A	0.4	2.5	0.08	0.41	56.3
9	R2	5	0.0	0.071	4.2	LOS A	0.4	2.5	0.08	0.39	55.0
Approach		227	0.0	0.071	4.5	LOS A	0.4	2.5	0.08	0.41	56.3
West: Kessler Dr											
10u	U	1	0.0	0.076	11.6	LOS B	0.4	2.7	0.35	0.62	53.1
10	L2	105	0.0	0.076	9.5	LOS A	0.4	2.7	0.35	0.62	52.2
11	T1	1	0.0	0.076	4.9	LOS A	0.4	2.7	0.35	0.62	52.2
12	R2	5	0.0	0.006	5.4	LOS A	0.0	0.2	0.38	0.49	54.0
Approach		113	0.0	0.076	9.3	LOS A	0.4	2.7	0.35	0.62	52.2
All Vehicles		842	0.0	0.175	5.3	LOS A	1.0	7.0	0.24	0.46	55.2

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

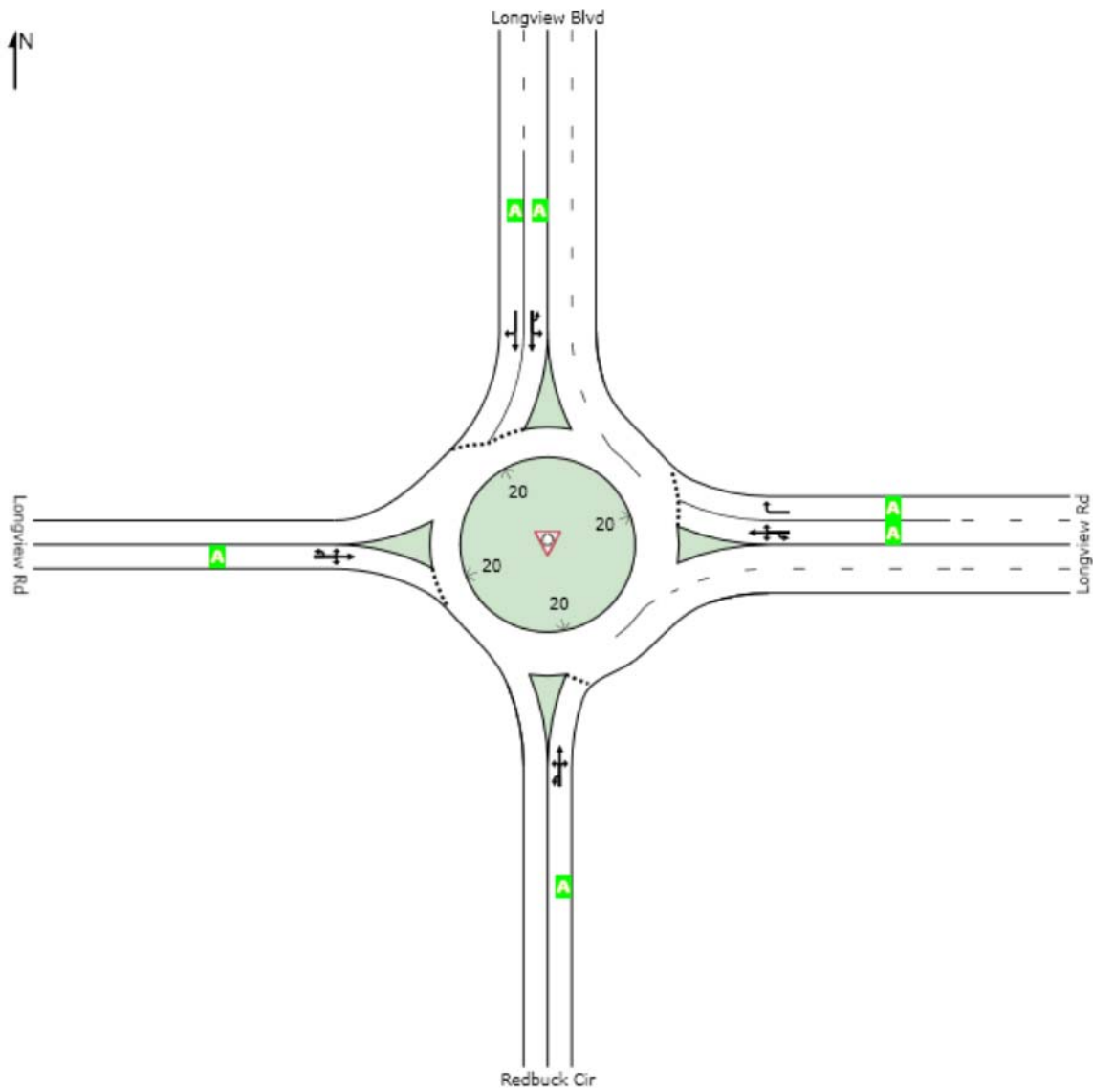
LEVEL OF SERVICE

 **Site: New Longview - Longview Blvd & Longview Rd**

Existing + Approved Conditions - AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Longview Rd**

Existing + Approved Conditions - AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Redbuck Cir											
1u	U	1	0.0	0.042	11.9	LOS B	0.2	1.5	0.40	0.51	55.6
1	L2	5	2.0	0.042	9.9	LOS A	0.2	1.5	0.40	0.51	54.5
2	T1	36	2.0	0.042	5.3	LOS A	0.2	1.5	0.40	0.51	54.6
3	R2	5	2.0	0.042	5.0	LOS A	0.2	1.5	0.40	0.51	53.3
Approach		47	2.0	0.042	5.9	LOS A	0.2	1.5	0.40	0.51	54.5
East: Longview Rd											
4u	U	1	0.0	0.182	11.2	LOS B	1.0	7.2	0.24	0.46	56.8
4	L2	5	2.0	0.182	9.1	LOS A	1.0	7.2	0.24	0.46	55.7
5	T1	105	2.0	0.182	4.5	LOS A	1.0	7.2	0.24	0.46	55.7
6	R2	425	2.0	0.182	4.5	LOS A	1.0	7.3	0.23	0.47	54.4
Approach		537	2.0	0.182	4.5	LOS A	1.0	7.3	0.23	0.47	54.7
North: Longview Blvd											
7u	U	1	0.0	0.127	11.2	LOS B	0.7	4.9	0.27	0.61	53.3
7	L2	189	2.0	0.127	9.2	LOS A	0.7	4.9	0.27	0.61	52.3
8	T1	12	2.0	0.022	4.9	LOS A	0.1	0.7	0.29	0.45	55.6
9	R2	11	2.0	0.022	4.9	LOS A	0.1	0.7	0.29	0.45	54.1
Approach		213	2.0	0.127	8.7	LOS A	0.7	4.9	0.27	0.59	52.5
West: Longview Rd											
10u	U	1	0.0	0.058	11.7	LOS B	0.3	2.1	0.37	0.57	54.6
10	L2	35	2.0	0.058	9.7	LOS A	0.3	2.1	0.37	0.57	53.5
11	T1	26	2.0	0.058	5.1	LOS A	0.3	2.1	0.37	0.57	53.6
12	R2	5	2.0	0.058	4.8	LOS A	0.3	2.1	0.37	0.57	52.3
Approach		67	2.0	0.058	7.5	LOS A	0.3	2.1	0.37	0.57	53.5
All Vehicles		864	2.0	0.182	5.9	LOS A	1.0	7.3	0.26	0.51	54.0

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Queues

3: Longview Blvd/View High Dr & Longview Rd/3rd St

9/9/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	54	52	14	91	42	343	28	318	62	689	555	86
v/c Ratio	0.21	0.20	0.04	0.33	0.15	0.22	0.12	0.41	0.12	0.63	0.26	0.08
Control Delay	33.8	34.2	0.1	33.6	32.1	1.7	34.8	27.4	0.5	22.3	11.1	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.8	34.2	0.1	33.6	32.1	1.7	34.8	27.4	0.5	22.3	11.1	0.7
Queue Length 50th (ft)	21	21	0	36	16	0	11	65	0	129	61	0
Queue Length 95th (ft)	34	34	0	80	42	20	22	121	0	206	133	0
Internal Link Dist (ft)		339			579			573			602	
Turn Bay Length (ft)	330		130	250		360	200		175	525		260
Base Capacity (vph)	303	283	415	370	354	2218	235	1212	677	2064	2600	1201
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.18	0.03	0.25	0.12	0.15	0.12	0.26	0.09	0.33	0.21	0.07
Intersection Summary												

HCM Signalized Intersection Capacity Analysis

3: Longview Blvd/View High Dr & Longview Rd/3rd St

9/9/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	26	7	73	32	309	14	286	48	634	511	68
Future Volume (vph)	27	26	7	73	32	309	14	286	48	634	511	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.50	0.50	0.50	0.80	0.76	0.90	0.50	0.90	0.78	0.92	0.92	0.79
Adj. Flow (vph)	54	52	14	91	42	343	28	318	62	689	555	86
RTOR Reduction (vph)	0	0	13	0	0	211	0	0	46	0	0	41
Lane Group Flow (vph)	54	52	1	91	42	132	28	318	16	689	555	45
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.1	3.8	3.8	6.8	6.5	26.1	2.1	17.7	17.7	19.6	35.2	35.2
Effective Green, g (s)	4.1	3.8	3.8	6.8	6.5	26.1	2.1	17.7	17.7	19.6	35.2	35.2
Actuated g/C Ratio	0.06	0.06	0.06	0.10	0.10	0.38	0.03	0.26	0.26	0.29	0.52	0.52
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	106	104	88	177	178	1276	54	922	412	990	1834	820
v/s Ratio Prot	0.03	c0.03		c0.05	c0.02	0.03	0.02	0.09		c0.20	c0.16	
v/s Ratio Perm			0.00			0.02			0.01			0.03
v/c Ratio	0.51	0.50	0.01	0.51	0.24	0.10	0.52	0.34	0.04	0.70	0.30	0.05
Uniform Delay, d1	30.9	31.1	30.3	29.0	28.4	13.4	32.4	20.4	18.7	21.5	9.3	8.1
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.8	3.7	0.0	2.5	0.7	0.0	8.2	0.2	0.0	2.1	0.1	0.0
Delay (s)	34.7	34.9	30.3	31.5	29.1	13.4	40.6	20.6	18.8	23.6	9.4	8.1
Level of Service	C	C	C	C	C	B	D	C	B	C	A	A
Approach Delay (s)		34.3			18.3			21.7			16.7	
Approach LOS		C			B			C			B	
Intersection Summary												
HCM 2000 Control Delay			18.8			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.52									
Actuated Cycle Length (s)			67.9			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			49.6%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection												
Int Delay, s/veh	9.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	573	76	53	430	63	30	9	39	57	5	23
Future Vol, veh/h	50	573	76	53	430	63	30	9	39	57	5	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	92	80	87	91	80	60	50	77	87	50	60
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	623	95	61	473	79	50	18	51	66	10	38
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	551	0	0	718	0	0	1162	1472	359	1083	1480	276
Stage 1	-	-	-	-	-	-	799	799	-	634	634	-
Stage 2	-	-	-	-	-	-	363	673	-	449	846	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1015	-	-	879	-	-	150	126	638	172	124	721
Stage 1	-	-	-	-	-	-	345	396	-	434	471	-
Stage 2	-	-	-	-	-	-	628	452	-	559	377	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1015	-	-	879	-	-	119	110	638	125	108	721
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	110	-	125	108	-
Stage 1	-	-	-	-	-	-	323	371	-	407	438	-
Stage 2	-	-	-	-	-	-	541	421	-	459	353	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.9			57.7			61		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	179	1015	-	-	879	-	-	170				
HCM Lane V/C Ratio	0.663	0.063	-	-	0.069	-	-	0.67				
HCM Control Delay (s)	57.7	8.8	-	-	9.4	-	-	61				
HCM Lane LOS	F	A	-	-	A	-	-	F				
HCM 95th %tile O(veh)	3.9	0.2	-	-	0.2	-	-	3.9				

Intersection												
Int Delay, s/veh	6.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	596	4	80	372	29	36	5	77	17	5	38
Future Vol, veh/h	67	596	4	80	372	29	36	5	77	17	5	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	100	190	-	-	95	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	92	50	81	90	60	76	50	80	50	50	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	84	648	8	99	413	48	47	10	96	34	10	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	462	0	0	648	0	0	1224	1474	324	1131	1450	231
Stage 1	-	-	-	-	-	-	815	815	-	635	635	-
Stage 2	-	-	-	-	-	-	409	659	-	496	815	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1095	-	-	934	-	-	135	125	672	158	130	771
Stage 1	-	-	-	-	-	-	338	389	-	433	471	-
Stage 2	-	-	-	-	-	-	590	459	-	524	389	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1095	-	-	934	-	-	102	103	672	109	107	771
Mov Cap-2 Maneuver	-	-	-	-	-	-	102	103	-	109	107	-
Stage 1	-	-	-	-	-	-	312	359	-	400	421	-
Stage 2	-	-	-	-	-	-	482	410	-	403	359	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1.6	31.8	38.2
HCM LOS			D	E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	102	442	1095	-	-	934	-	-	198
HCM Lane V/C Ratio	0.464	0.24	0.076	-	-	0.106	-	-	0.468
HCM Control Delay (s)	67.8	15.7	8.6	-	-	9.3	-	-	38.2
HCM Lane LOS	F	C	A	-	-	A	-	-	E
HCM 95th %tile Q(veh)	2	0.9	0.2	-	-	0.4	-	-	2.3

Intersection

Int Delay, s/veh 2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	604	40	64	348	41	77
Future Vol, veh/h	604	40	64	348	41	77
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	78	79	90	76	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	657	51	81	387	54	97

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	1012
Stage 1	-	-	657
Stage 2	-	-	355
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	926	236
Stage 1	-	-	477
Stage 2	-	-	681
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	926	215
Mov Cap-2 Maneuver	-	-	215
Stage 1	-	-	477
Stage 2	-	-	621

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	20.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	382	-	-	926	-
HCM Lane V/C Ratio	0.396	-	-	0.087	-
HCM Control Delay (s)	20.5	-	-	9.3	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.9	-	-	0.3	-

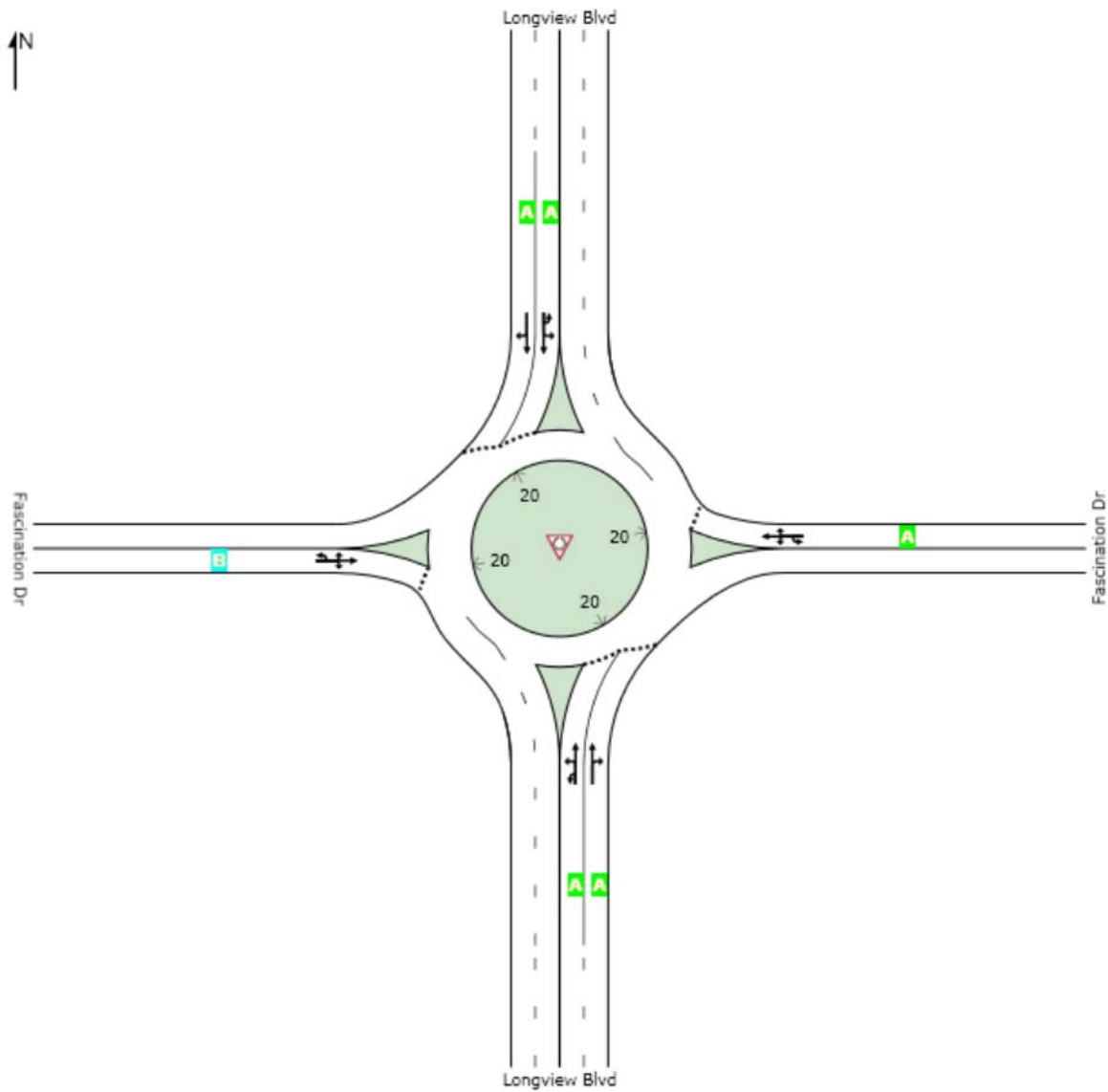
LEVEL OF SERVICE

Site: New Longview - Longview Blvd & Fascination Dr

Existing + Approved Conditions - PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	B	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Fascination Dr**

Existing + Approved Conditions - PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	5	0.0	0.123	11.6	LOS B	0.7	4.9	0.37	0.50	55.6
1	L2	21	2.0	0.123	9.5	LOS A	0.7	4.9	0.37	0.50	54.5
2	T1	241	2.0	0.123	4.8	LOS A	0.7	5.0	0.36	0.49	54.9
3	R2	58	2.0	0.123	4.8	LOS A	0.7	5.0	0.35	0.47	53.8
Approach		325	2.0	0.123	5.2	LOS A	0.7	5.0	0.36	0.49	54.7
East: Fascination Dr											
4u	U	1	0.0	0.164	12.9	LOS B	0.9	6.4	0.53	0.66	54.6
4	L2	63	2.0	0.164	10.8	LOS B	0.9	6.4	0.53	0.66	53.5
5	T1	21	2.0	0.164	6.2	LOS A	0.9	6.4	0.53	0.66	53.6
6	R2	79	2.0	0.164	6.0	LOS A	0.9	6.4	0.53	0.66	52.3
Approach		164	2.0	0.164	7.9	LOS A	0.9	6.4	0.53	0.66	53.0
North: Longview Blvd											
7u	U	32	0.0	0.218	11.4	LOS B	1.3	9.3	0.32	0.49	55.7
7	L2	16	2.0	0.218	9.3	LOS A	1.3	9.3	0.32	0.49	54.6
8	T1	554	2.0	0.218	4.6	LOS A	1.3	9.5	0.31	0.46	55.1
9	R2	16	2.0	0.218	4.6	LOS A	1.3	9.5	0.30	0.43	53.9
Approach		617	1.9	0.218	5.1	LOS A	1.3	9.5	0.31	0.46	55.1
West: Fascination Dr											
10u	U	5	0.0	0.163	14.8	LOS B	1.0	6.8	0.68	0.77	52.1
10	L2	89	2.0	0.163	12.8	LOS B	1.0	6.8	0.68	0.77	51.1
11	T1	32	2.0	0.163	8.2	LOS A	1.0	6.8	0.68	0.77	51.2
12	R2	5	2.0	0.163	7.9	LOS A	1.0	6.8	0.68	0.77	50.0
Approach		132	1.9	0.163	11.6	LOS B	1.0	6.8	0.68	0.77	51.1
All Vehicles		1238	1.9	0.218	6.2	LOS A	1.3	9.5	0.39	0.53	54.2

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

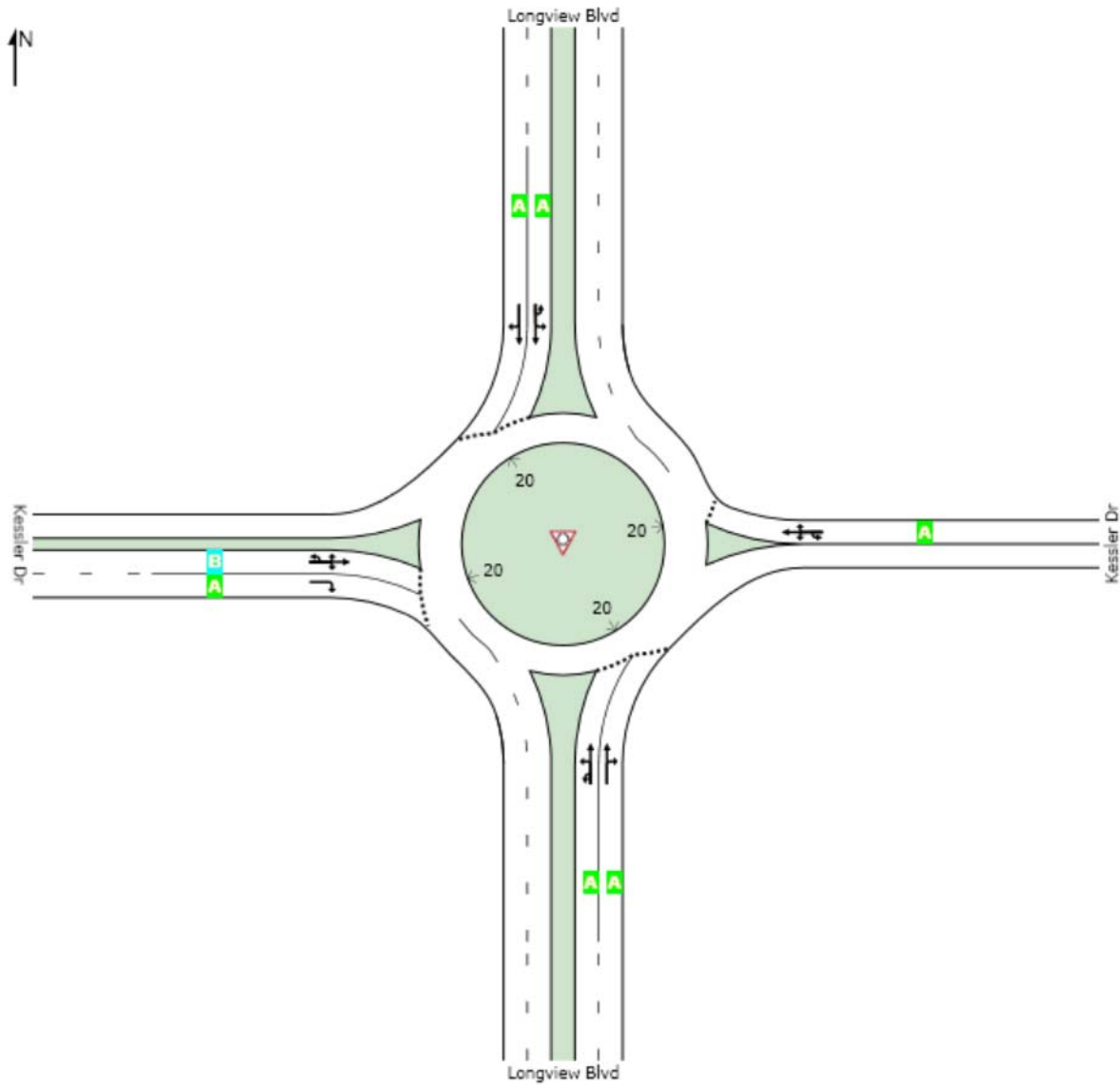
LEVEL OF SERVICE

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved Conditions - PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	B	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved Conditions - PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	1	0.0	0.105	11.2	LOS B	0.6	4.2	0.26	0.45	56.3
1	L2	16	2.0	0.105	9.1	LOS A	0.6	4.2	0.26	0.45	55.2
2	T1	283	2.0	0.105	4.5	LOS A	0.6	4.3	0.25	0.42	55.5
3	R2	1	2.0	0.105	4.5	LOS A	0.6	4.3	0.24	0.41	54.2
Approach		301	2.0	0.105	4.7	LOS A	0.6	4.3	0.25	0.43	55.4
East: Kessler Dr											
4u	U	1	0.0	0.004	12.4	LOS B	0.0	0.1	0.47	0.56	54.0
4	L2	1	2.0	0.004	10.4	LOS B	0.0	0.1	0.47	0.56	53.0
5	T1	1	2.0	0.004	5.8	LOS A	0.0	0.1	0.47	0.56	53.0
6	R2	1	2.0	0.004	5.6	LOS A	0.0	0.1	0.47	0.56	51.8
Approach		4	1.5	0.004	8.5	LOS A	0.0	0.1	0.47	0.56	53.0
North: Longview Blvd											
7u	U	11	0.0	0.183	10.9	LOS B	1.0	7.3	0.11	0.41	57.2
7	L2	1	2.0	0.183	8.8	LOS A	1.0	7.3	0.11	0.41	56.0
8	T1	564	2.0	0.183	4.2	LOS A	1.0	7.3	0.11	0.40	56.2
9	R2	11	2.0	0.183	4.2	LOS A	1.0	7.3	0.10	0.39	54.8
Approach		586	2.0	0.183	4.3	LOS A	1.0	7.3	0.11	0.40	56.2
West: Kessler Dr											
10u	U	1	0.0	0.068	13.2	LOS B	0.4	2.7	0.57	0.68	52.3
10	L2	74	2.0	0.068	11.1	LOS B	0.4	2.7	0.57	0.68	51.4
11	T1	1	2.0	0.068	6.5	LOS A	0.4	2.7	0.57	0.68	51.4
12	R2	5	2.0	0.007	7.7	LOS A	0.0	0.3	0.59	0.57	52.4
Approach		81	2.0	0.068	10.9	LOS B	0.4	2.7	0.57	0.68	51.5
All Vehicles		973	2.0	0.183	5.0	LOS A	1.0	7.3	0.19	0.43	55.5

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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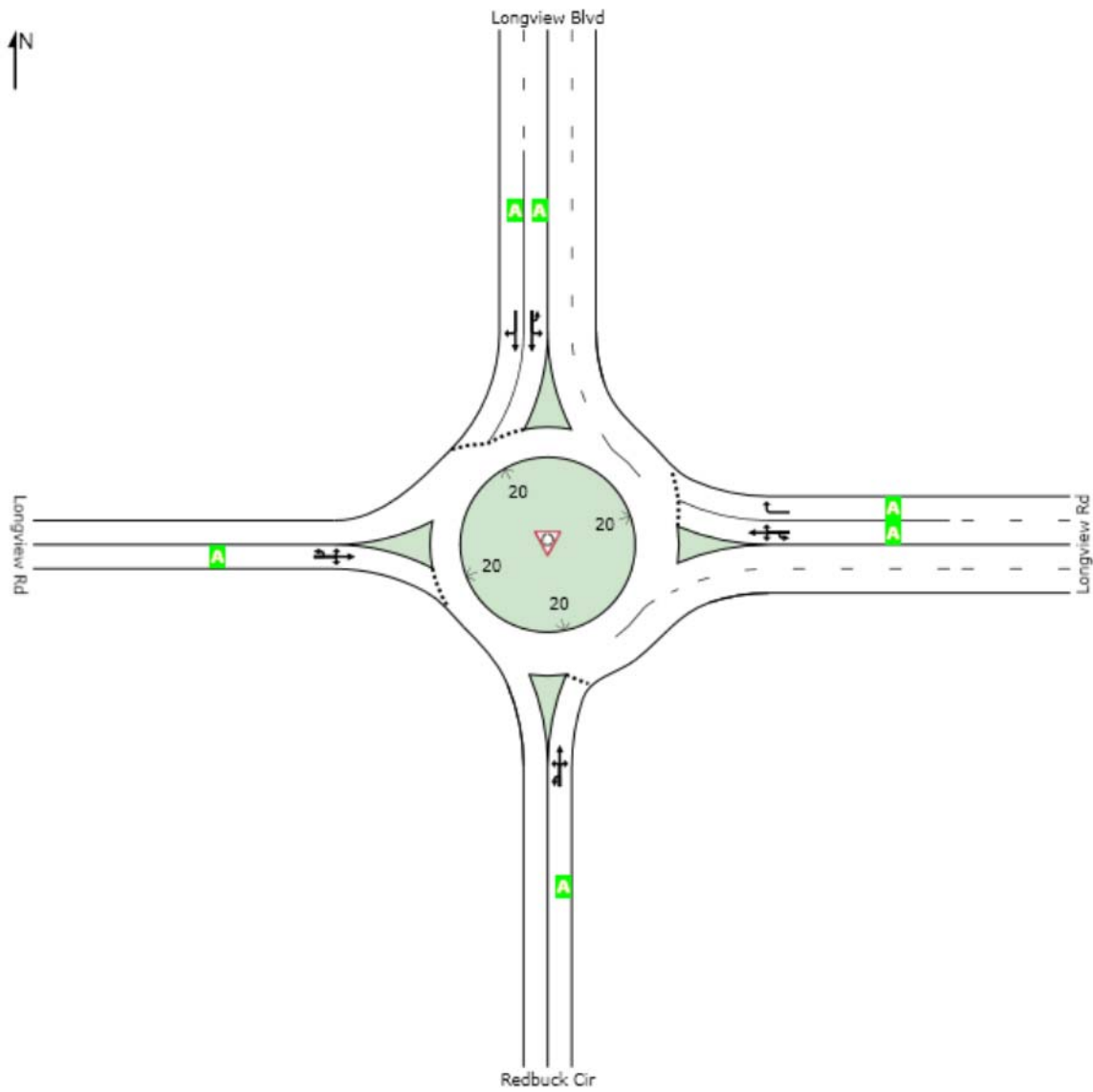
LEVEL OF SERVICE

Site: New Longview - Longview Blvd & Longview Rd

Existing + Approved Conditions - PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY



Site: New Longview - Longview Blvd & Longview Rd

Existing + Approved Conditions - PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Redbuck Cir											
1u	U	1	0.0	0.052	14.2	LOS B	0.3	2.0	0.63	0.65	54.3
1	L2	5	2.0	0.052	12.2	LOS B	0.3	2.0	0.63	0.65	53.3
2	T1	26	2.0	0.052	7.6	LOS A	0.3	2.0	0.63	0.65	53.4
3	R2	11	2.0	0.052	7.4	LOS A	0.3	2.0	0.63	0.65	52.1
Approach		43	2.0	0.052	8.3	LOS A	0.3	2.0	0.63	0.65	53.1
East: Longview Rd											
4u	U	1	0.0	0.101	11.1	LOS B	0.5	3.8	0.21	0.46	56.8
4	L2	5	2.0	0.101	9.0	LOS A	0.5	3.8	0.21	0.46	55.7
5	T1	53	2.0	0.101	4.4	LOS A	0.5	3.8	0.21	0.46	55.8
6	R2	238	2.0	0.101	4.4	LOS A	0.5	3.9	0.21	0.47	54.4
Approach		297	2.0	0.101	4.5	LOS A	0.5	3.9	0.21	0.47	54.7
North: Longview Blvd											
7u	U	1	0.0	0.317	11.1	LOS B	2.0	14.5	0.23	0.60	53.4
7	L2	516	2.0	0.317	9.0	LOS A	2.0	14.5	0.23	0.60	52.4
8	T1	42	2.0	0.046	4.6	LOS A	0.2	1.6	0.22	0.41	55.8
9	R2	6	2.0	0.046	4.6	LOS A	0.2	1.6	0.22	0.41	54.3
Approach		565	2.0	0.317	8.6	LOS A	2.0	14.5	0.23	0.59	52.7
West: Longview Rd											
10u	U	1	0.0	0.160	14.0	LOS B	0.9	6.4	0.62	0.69	54.1
10	L2	35	2.0	0.160	12.0	LOS B	0.9	6.4	0.62	0.69	53.0
11	T1	89	2.0	0.160	7.3	LOS A	0.9	6.4	0.62	0.69	53.1
12	R2	16	2.0	0.160	7.1	LOS A	0.9	6.4	0.62	0.69	51.9
Approach		141	2.0	0.160	8.5	LOS A	0.9	6.4	0.62	0.69	52.9
All Vehicles		1046	2.0	0.317	7.4	LOS A	2.0	14.5	0.29	0.57	53.3

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Existing + Approved + Phase 1 Conditions

Land Use: 444

Movie Theater with Matinee

Independent Variables with One Observation

The following trip generation data are for independent variables with only one observation. This information is shown in this table only; there are no related plots for these data.

Users are cautioned to use data with care because of the small sample size.

<u>Independent Variable</u>	<u>Trip Generation Rate</u>	<u>Size of Independent Variable</u>	<u>Number of Studies</u>	<u>Directional Distribution</u>
1,000 Square Feet Gross Floor Area				
Friday P.M. Peak Hour of Generator	26.70	31	1	56% entering, 44% exiting
Saturday	99.28	28	1	50% entering, 50% exiting
Sunday	81.90	28	1	50% entering, 50% exiting
Sunday Peak Hour of Generator	10.75	28	1	Not available

Movie Screens

Weekday P.M. Peak Hour of Generator	37.83	6	1	52% entering, 48% exiting
Friday	348.33	6	1	50% entering, 50% exiting

Seats

Friday P.M. Peak Hour of Generator	0.36	2,250	1	56% entering, 44% exiting
Saturday	2.24	1,236	1	50% entering, 50% exiting
Sunday	1.85	1,236	1	50% entering, 50% exiting
Sunday Peak Hour of Generator	0.24	1,236	1	Not available

Movie Theater with Matinee (444)

Average Vehicle Trip Ends vs: Movie Screens
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

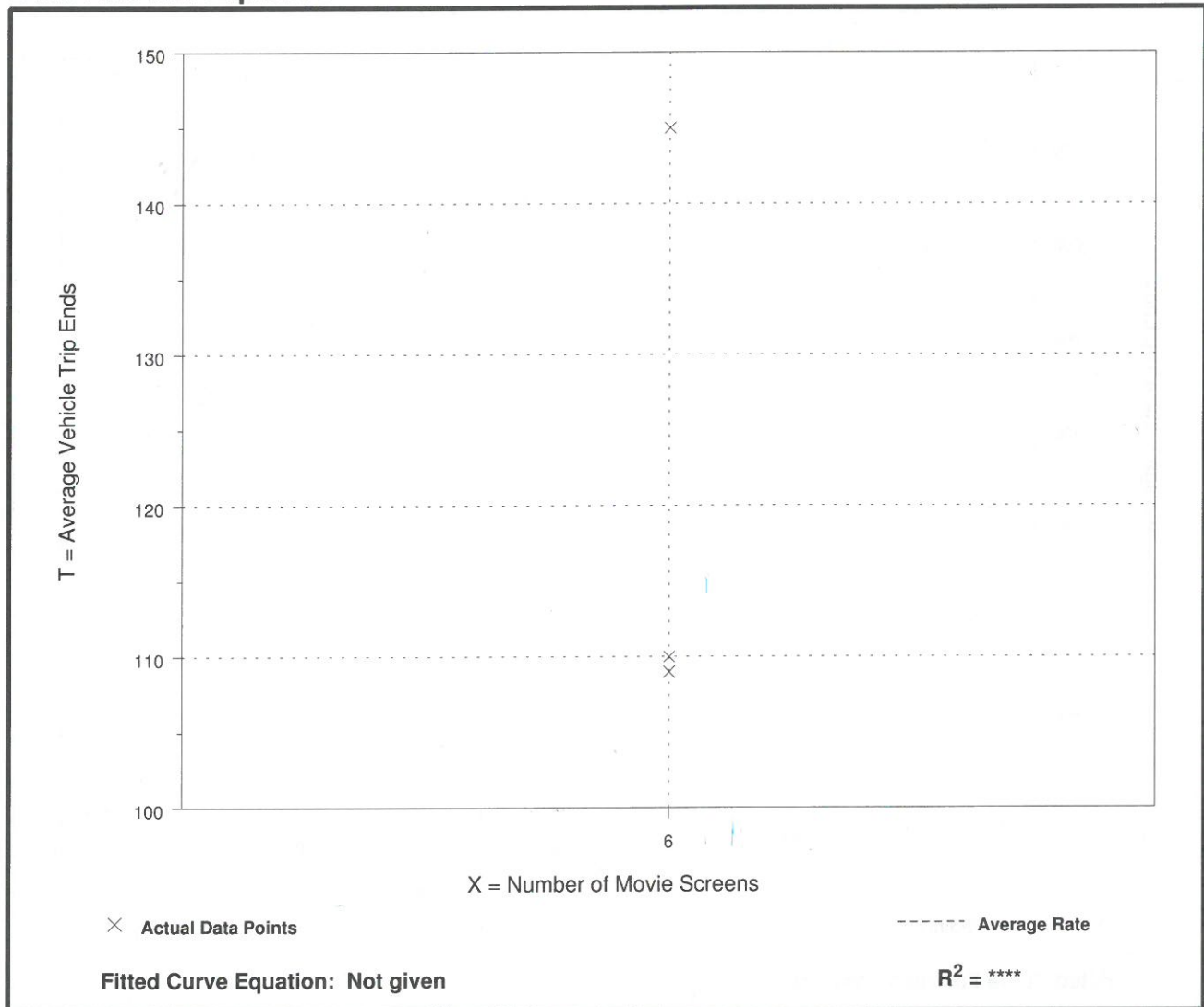
Number of Studies: 3
 Average Number of Movie Screens: 6
 Directional Distribution: 40% entering, 60% exiting

Trip Generation per Movie Screen

Average Rate	Range of Rates	Standard Deviation
20.22	18.17 - 24.17	5.11

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Land Use: 223

Mid-Rise Apartment

Description

Mid-rise apartments are apartments (rental dwelling units) in rental buildings that have between three and 10 levels (floors). Apartment (Land Use 220), low-rise apartment (Land Use 221) and high-rise apartment (Land Use 222) are related uses.

Additional Data

The peak hour of the generator typically coincided with the peak hour of the adjacent street traffic.

The sites were surveyed in the late 1980s in Montgomery County, Maryland.

Source Number

321

Mid-Rise Apartment (223)

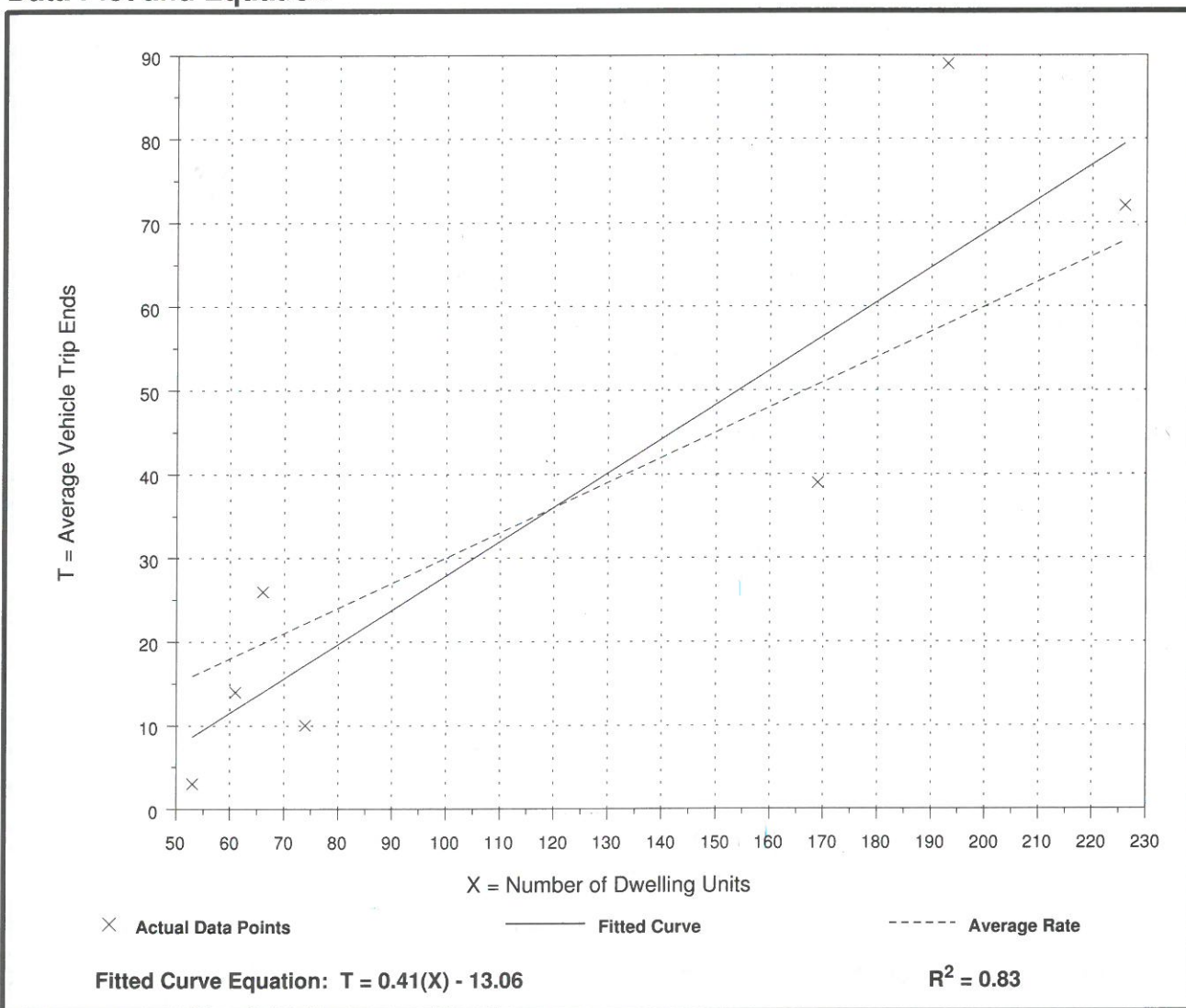
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 7
 Avg. Number of Dwelling Units: 120
 Directional Distribution: 31% entering, 69% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.30	0.06 - 0.46	0.56

Data Plot and Equation



Mid-Rise Apartment (223)

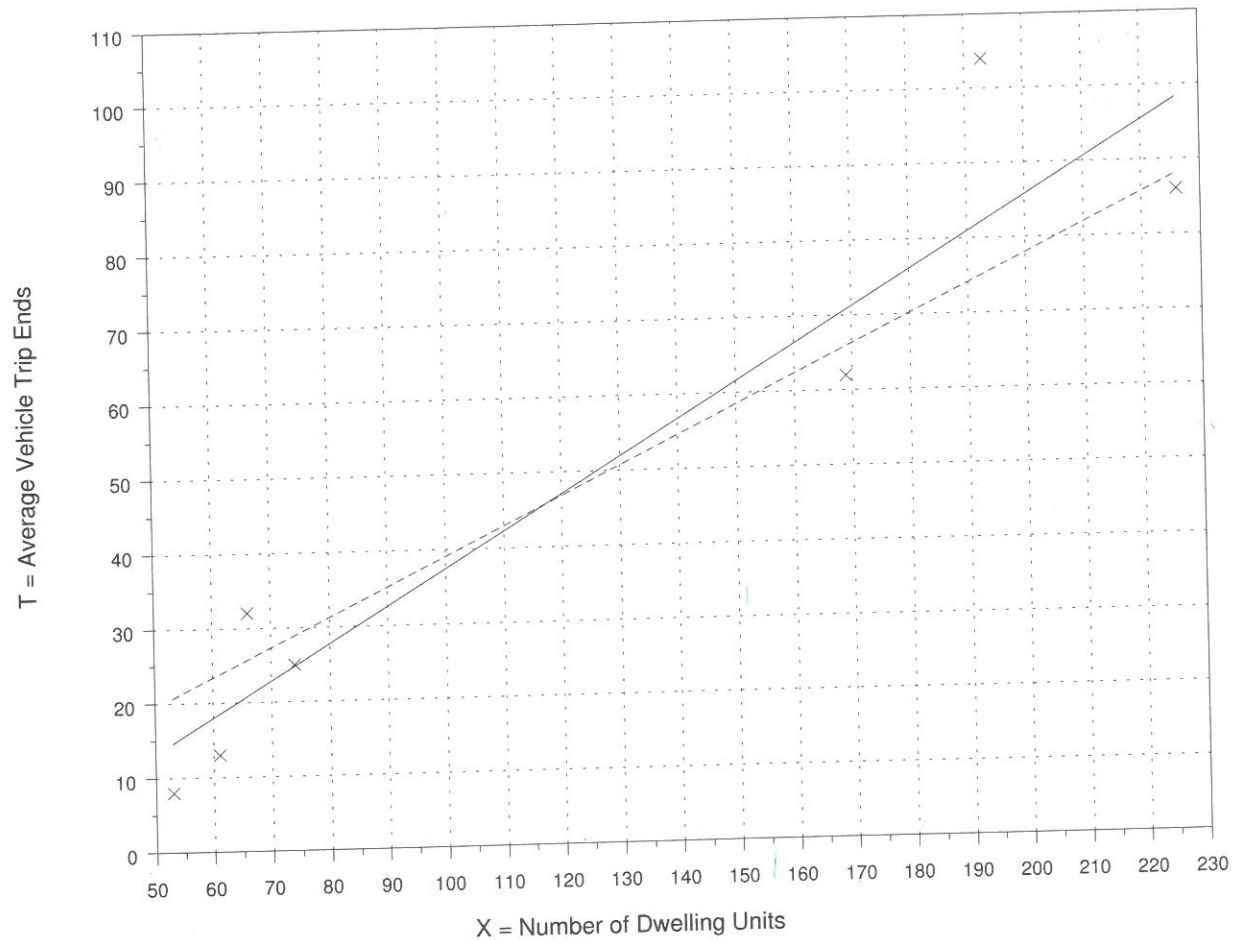
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 7
 Avg. Number of Dwelling Units: 120
 Directional Distribution: 58% entering, 42% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.39	0.15 - 0.54	0.63

Data Plot and Equation



Land Use: 231

Low-Rise Residential Condominium/Townhouse

Description

Low-rise residential condominiums/townhouses are units located in buildings that have one or two levels (floors). **Both condominiums and townhouses are included in this land use.** Residential condominium/townhouse (Land Use 230), high-rise residential condominium/townhouse (Land Use 232) and luxury condominium/townhouse (Land Use 233) are related land uses.

Additional Data

The peak hour of the generator typically coincided with the peak hour of the adjacent street traffic.

The sites were surveyed between the late 1970s and the 2000s throughout the United States.

Source Numbers

187, 192, 305, 306, 571

Low-Rise Residential Condominium/Townhouse (231)

Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

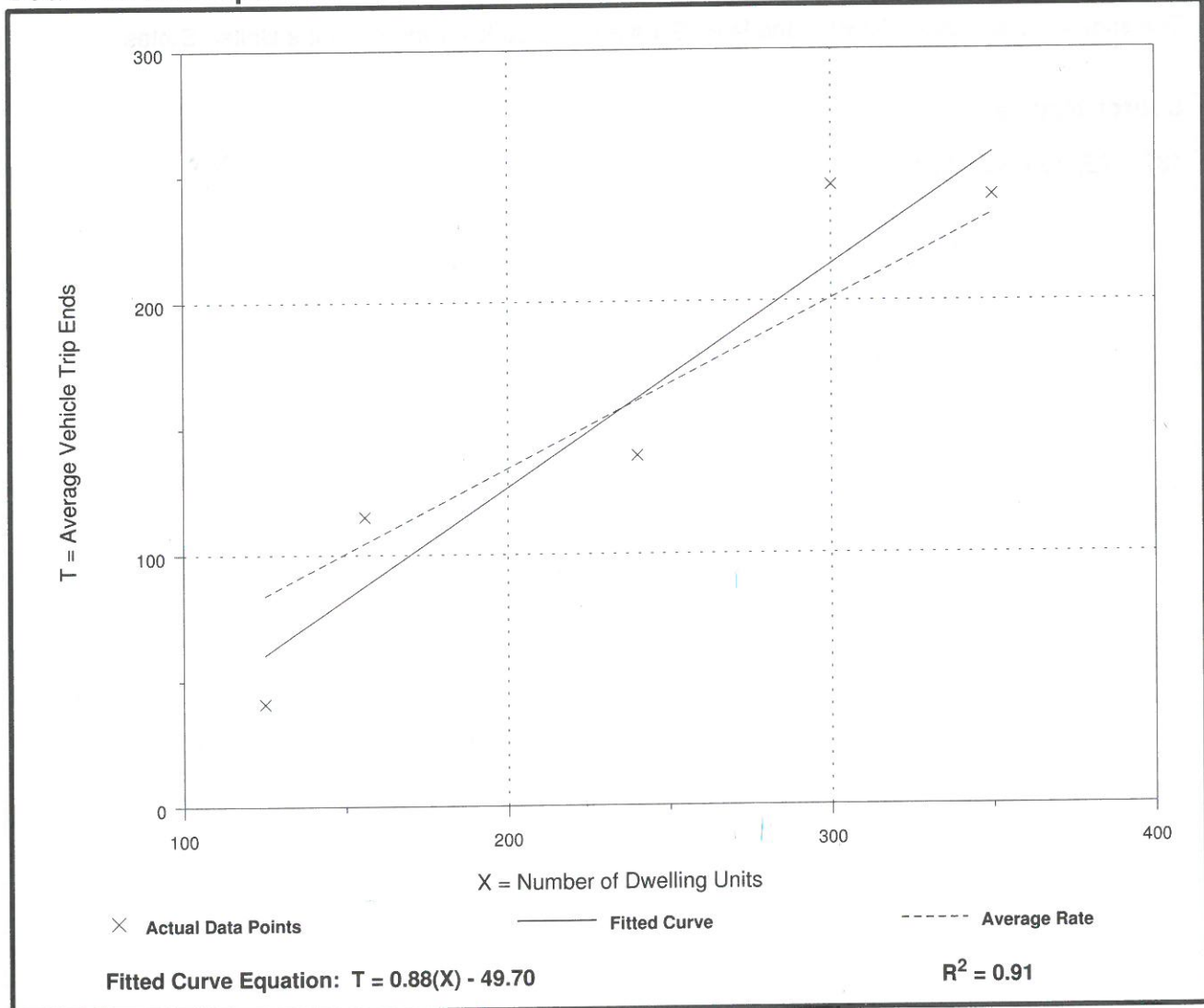
Number of Studies: 5
Avg. Number of Dwelling Units: 234
Directional Distribution: 25% entering, 75% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.67	0.33 - 0.82	0.83

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Low-Rise Residential Condominium/Townhouse (231)

Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

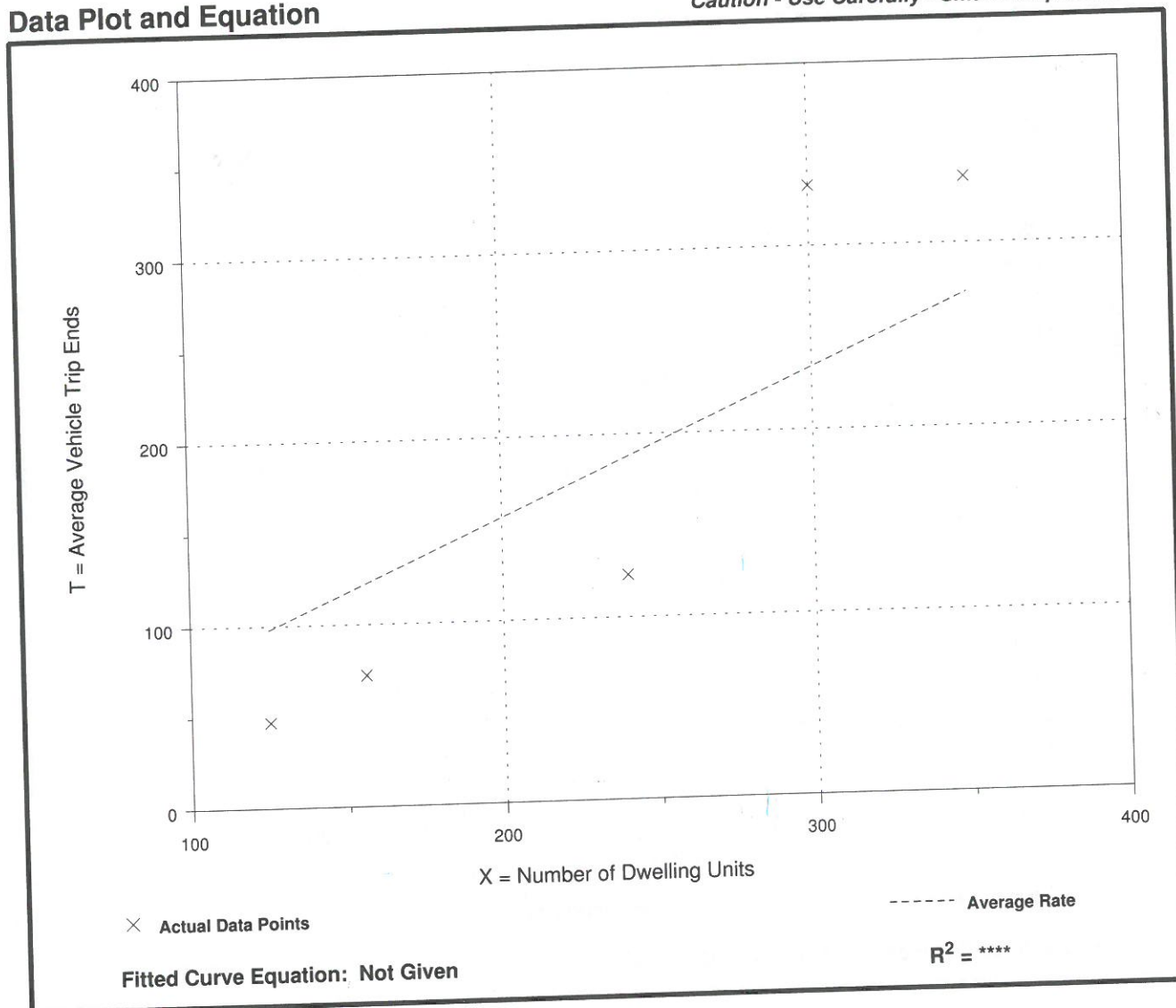
Number of Studies: 5
Avg. Number of Dwelling Units: 234
Directional Distribution: 58% entering, 42% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.78	0.38 - 1.11	0.93

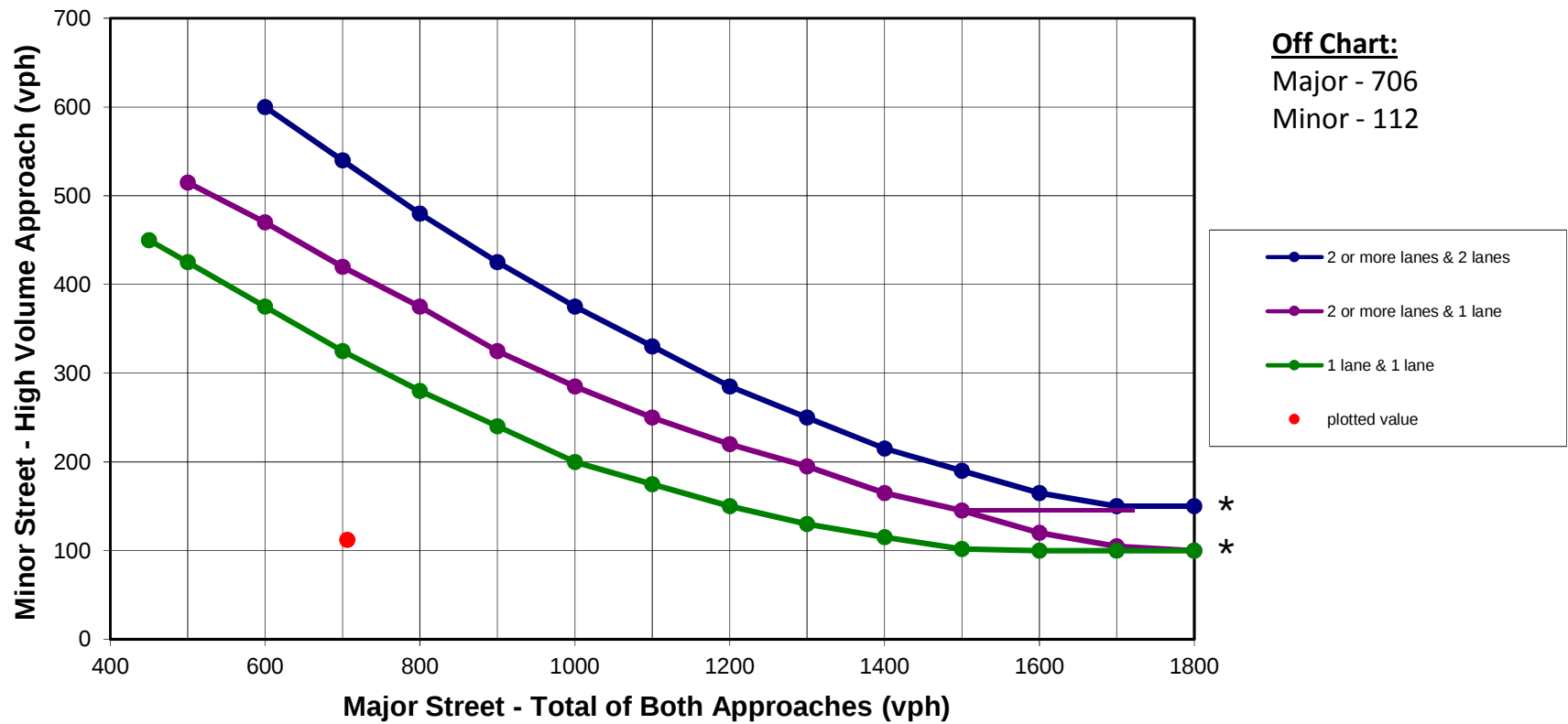
Data Plot and Equation

Caution - Use Carefully - Small Sample Size



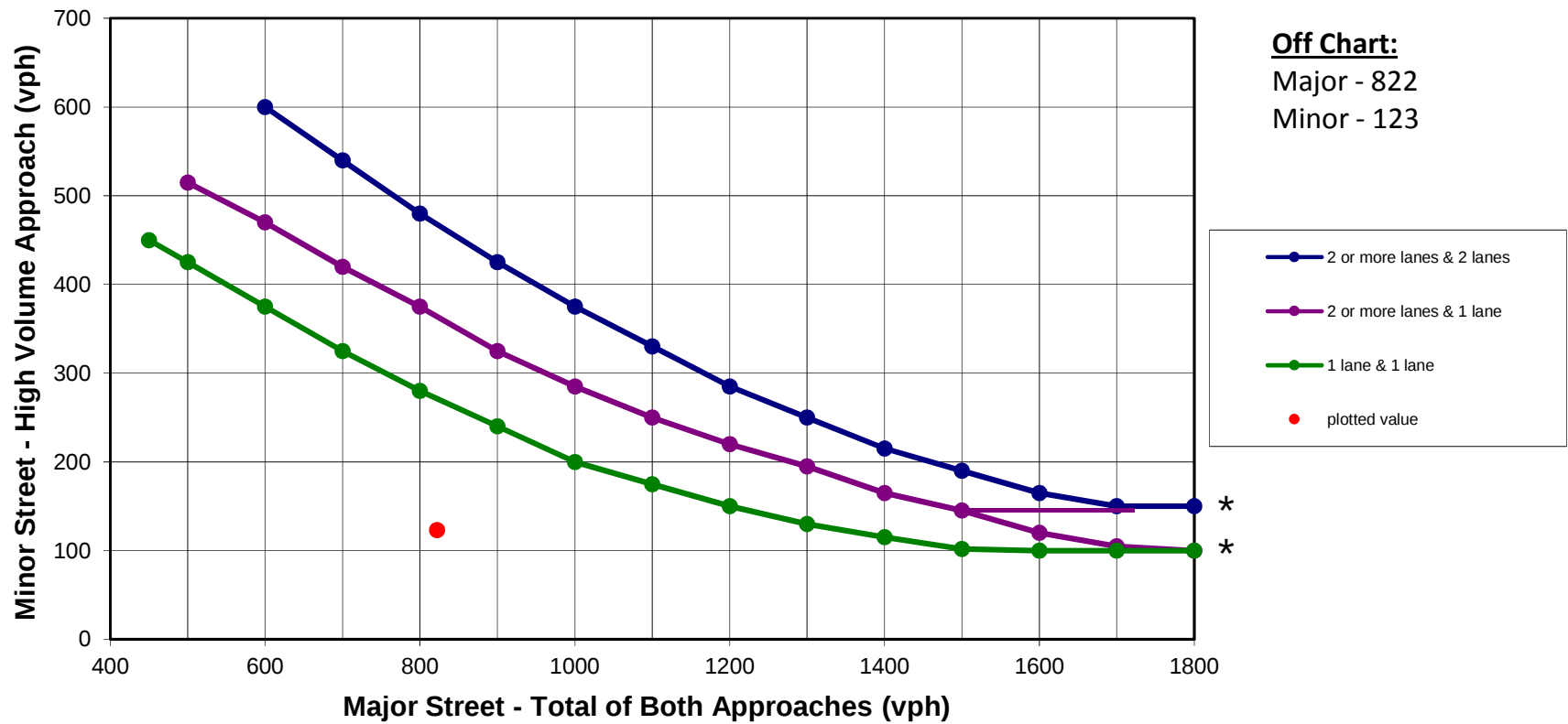
Signal Warrants

Existing + Approved + Phase 1 AM Peak Hour Volume Warrant 3rd Street & Kessler Drive

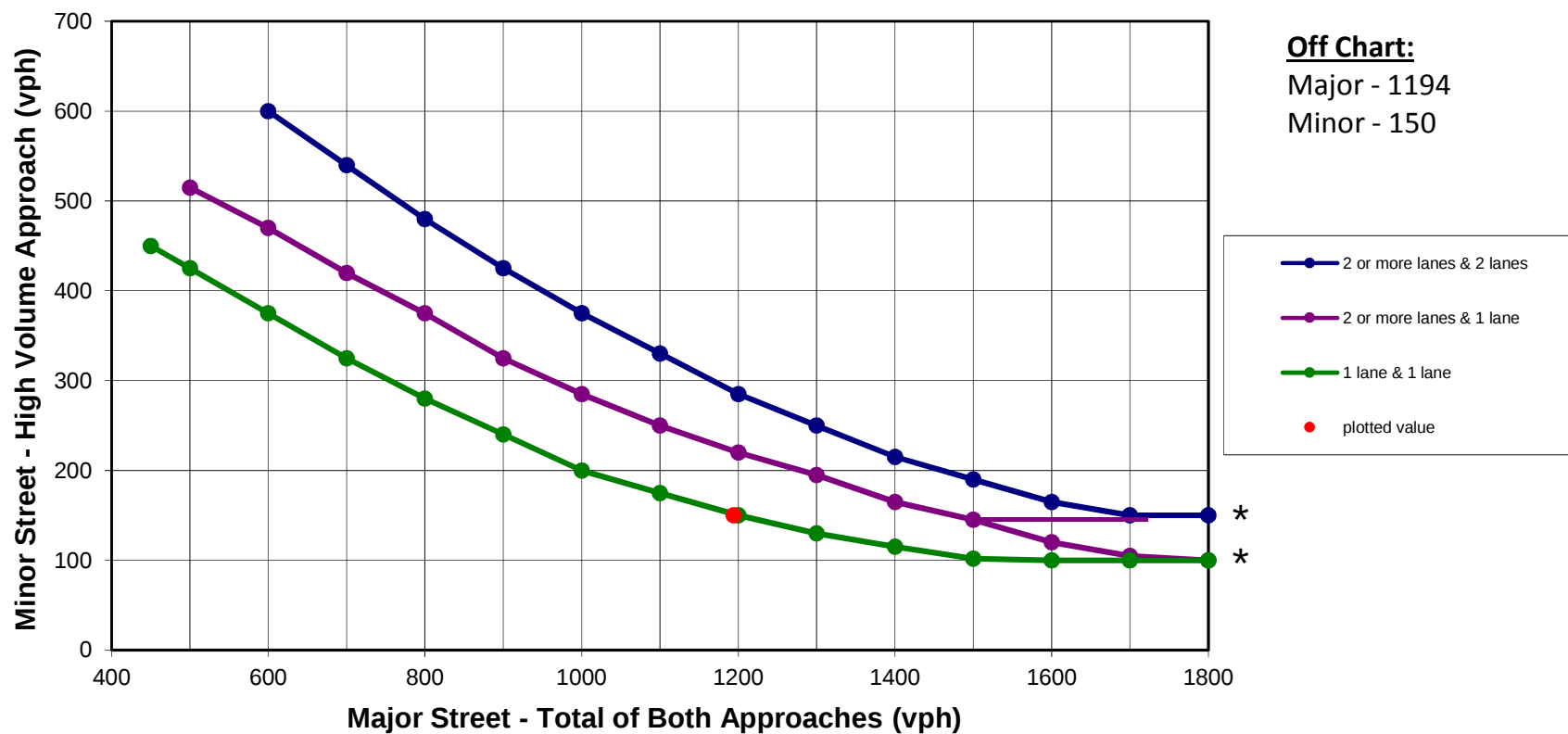


*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes

Existing + Approved + Phase 1 AM Peak Hour Volume Warrant 3rd Street & Bridlewood Drive

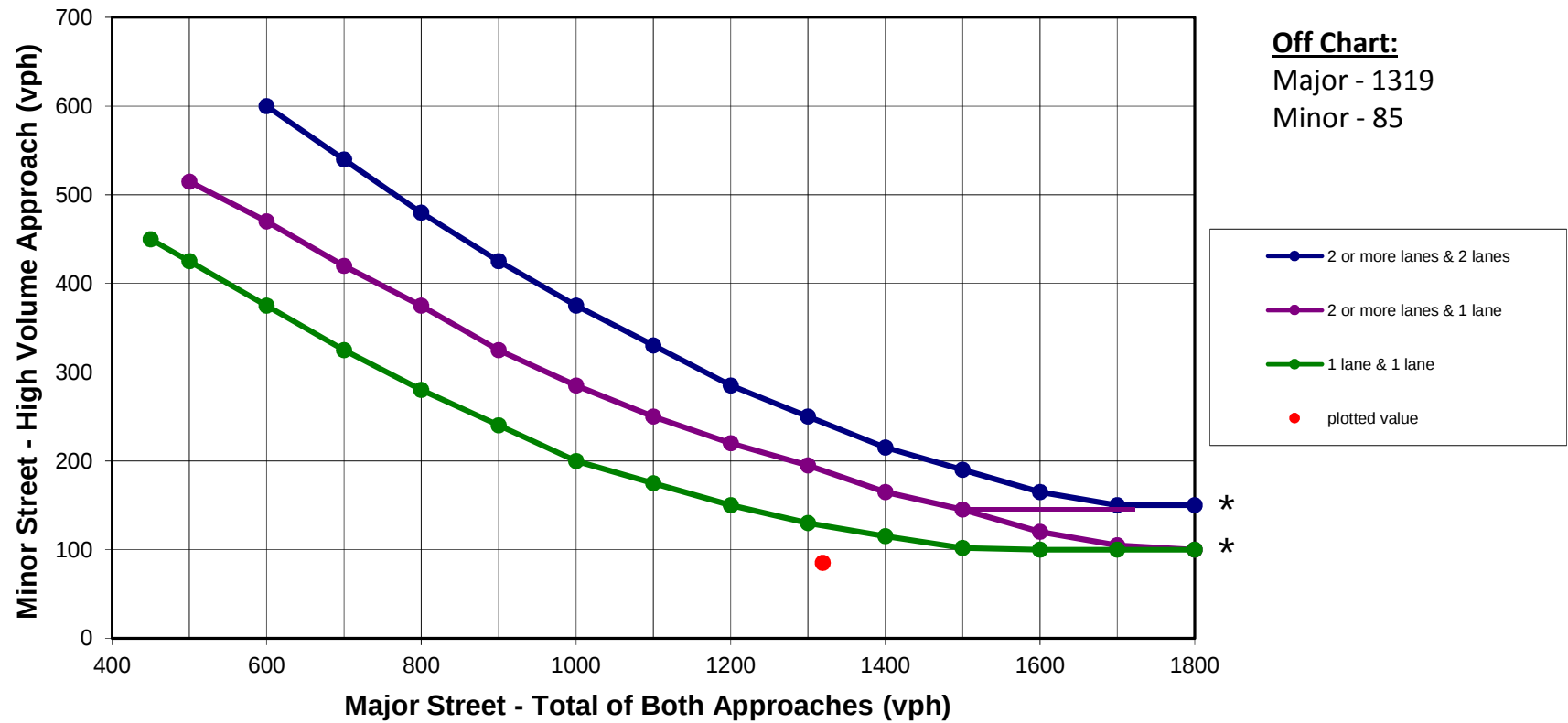


Existing + Approved + Phase 1 PM Peak Hour Volume Warrant 3rd Street & Kessler Drive



*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes

Existing + Approved + Phase 1 PM Peak Hour Volume Warrant 3rd Street & Bridlewood Drive



*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes

Capacity Analysis

HCM Signalized Intersection Capacity Analysis

3: Longview Blvd/View High Dr & Longview Rd/3rd St

9/9/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	5	6	52	13	566	2	521	40	165	159	22
Future Volume (vph)	4	5	6	52	13	566	2	521	40	165	159	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.92	0.78	0.92	0.78	0.85	0.85	0.78
Adj. Flow (vph)	5	6	8	67	17	615	3	566	51	194	187	28
RTOR Reduction (vph)	0	0	8	0	0	422	0	0	32	0	0	13
Lane Group Flow (vph)	5	6	0	67	17	193	3	566	19	194	187	15
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.9	0.9	0.9	4.4	4.4	14.5	0.9	20.3	20.3	10.1	29.5	29.5
Effective Green, g (s)	0.9	0.9	0.9	4.4	4.4	14.5	0.9	20.3	20.3	10.1	29.5	29.5
Actuated g/C Ratio	0.02	0.02	0.02	0.08	0.08	0.26	0.02	0.36	0.36	0.18	0.53	0.53
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	28	30	25	139	147	975	28	1289	576	622	1874	838
v/s Ratio Prot	0.00	0.00		c0.04	0.01	c0.04	0.00	c0.16		c0.06	0.05	
v/s Ratio Perm			0.00			0.03			0.01			0.01
v/c Ratio	0.18	0.20	0.01	0.48	0.12	0.20	0.11	0.44	0.03	0.31	0.10	0.02
Uniform Delay, d1	27.0	27.0	27.0	24.6	23.8	16.1	27.0	13.4	11.4	19.8	6.5	6.2
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.0	3.3	0.1	2.6	0.4	0.1	1.7	0.2	0.0	0.3	0.0	0.0
Delay (s)	30.1	30.3	27.0	27.2	24.2	16.2	28.7	13.6	11.4	20.1	6.5	6.2
Level of Service	C	C	C	C	C	B	C	B	B	C	A	A
Approach Delay (s)		28.9			17.4			13.5			12.9	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.1			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.42									
Actuated Cycle Length (s)			55.7			Sum of lost time (s)			20.0			
Intersection Capacity Utilization												

Intersection												
Int Delay, s/veh	4.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	229	14	14	537	21	73	4	46	74	8	41
Future Vol, veh/h	7	229	14	14	537	21	73	4	46	74	8	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	249	15	15	584	23	79	4	50	80	9	45
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	607	0	0	264	0	0	599	909	132	768	905	303
Stage 1	-	-	-	-	-	-	272	272	-	626	626	-
Stage 2	-	-	-	-	-	-	327	637	-	142	279	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	967	-	-	1297	-	-	385	273	893	291	275	693
Stage 1	-	-	-	-	-	-	711	683	-	439	475	-
Stage 2	-	-	-	-	-	-	660	470	-	846	678	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	967	-	-	1297	-	-	346	268	893	267	270	693
Mov Cap-2 Maneuver	-	-	-	-	-	-	346	268	-	267	270	-
Stage 1	-	-	-	-	-	-	705	677	-	435	470	-
Stage 2	-	-	-	-	-	-	599	465	-	787	672	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.2			16.6			22.6		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	443	967	-	-	1297	-	-	336				
HCM Lane V/C Ratio	0.302	0.008	-	-	0.012	-	-	0.398				
HCM Control Delay (s)	16.6	8.8	-	-	7.8	-	-	22.6				
HCM Lane LOS	C	A	-	-	A	-	-	C				
HCM 95th %tile O(veh)	1.3	0	-	-	0	-	-	1.8				

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	120	2	63	488	9	53	1	58	28	6	57
Future Vol, veh/h	24	120	2	63	488	9	53	1	58	28	6	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	100	190	-	-	95	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	83	25	78	92	78	78	25	78	78	50	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	145	8	81	530	12	68	4	74	36	12	73

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	542	0	0	145	0	0	639	910	72	834	904	271
Stage 1	-	-	-	-	-	-	206	206	-	698	698	-
Stage 2	-	-	-	-	-	-	433	704	-	136	206	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1023	-	-	1435	-	-	361	273	975	261	275	727
Stage 1	-	-	-	-	-	-	777	730	-	397	440	-
Stage 2	-	-	-	-	-	-	571	438	-	853	730	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1023	-	-	1435	-	-	293	250	975	223	252	727
Mov Cap-2 Maneuver	-	-	-	-	-	-	293	250	-	223	252	-
Stage 1	-	-	-	-	-	-	753	708	-	385	415	-
Stage 2	-	-	-	-	-	-	471	413	-	760	708	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	1	14.9	18.3
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	293	849	1023	-	-	1435	-	-	391
HCM Lane V/C Ratio	0.232	0.092	0.03	-	-	0.056	-	-	0.309
HCM Control Delay (s)	21	9.7	8.6	-	-	7.7	-	-	18.3
HCM Lane LOS	C	A	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.9	0.3	0.1	-	-	0.2	-	-	1.3

Intersection						
Int Delay, s/veh	2.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	162	23	66	522	79	29
Future Vol, veh/h	162	23	66	522	79	29
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	78	79	92	80	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	193	29	84	567	99	37
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	193	0	644	96
Stage 1	-	-	-	-	193	-
Stage 2	-	-	-	-	451	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	1378	-	405	942
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	609	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1378	-	380	942
Mov Cap-2 Maneuver	-	-	-	-	380	-
Stage 1	-	-	-	-	821	-
Stage 2	-	-	-	-	572	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1		16.3	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	454	-	-	1378	-	
HCM Lane V/C Ratio	0.299	-	-	0.061	-	
HCM Control Delay (s)	16.3	-	-	7.8	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	1.2	-	-	0.2	-	

Intersection						
Int Delay, s/veh	4.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	70	0	0	9	5	66
Future Vol, veh/h	70	0	0	9	5	66
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	0	0	10	5	72
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	51	41	77	0	-	0
Stage 1	41	-	-	-	-	-
Stage 2	10	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	958	1030	1522	-	-	-
Stage 1	981	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	958	1030	1522	-	-	-
Mov Cap-2 Maneuver	958	-	-	-	-	-
Stage 1	981	-	-	-	-	-
Stage 2	1013	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1522	-	958	-	-	
HCM Lane V/C Ratio	-	-	0.079	-	-	
HCM Control Delay (s)	0	-	9.1	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	571	6	0	246
Future Vol, veh/h	0	13	571	6	0	246
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	621	7	0	267
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	314	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	682	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	682	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	10.4		0		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	- 682	-			
HCM Lane V/C Ratio	-	- 0.021	-			
HCM Control Delay (s)	-	- 10.4	-			
HCM Lane LOS	-	- B	-			
HCM 95th %tile Q(veh)	-	- 0.1	-			

Intersection						
Int Delay, s/veh	0					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	584	0	0	246
Future Vol, veh/h	0	0	584	0	0	246
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	635	0	0	267
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	317	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	679	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	679	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	0		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	-	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-	-
HCM Control Delay (s)	-	-	0	-	-	-
HCM Lane LOS	-	-	A	-	-	-
HCM 95th %tile O(veh)	-	-	-	-	-	-

Intersection						
Int Delay, s/veh	5.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	1	0	0	1	4
Future Vol, veh/h	9	1	0	0	1	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	1	0	0	1	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	3	3	5	0	-	0
Stage 1	3	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1019	1081	1616	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1019	1081	1616	-	-	-
Mov Cap-2 Maneuver	1019	-	-	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.6	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1616	-	1025	-	-	
HCM Lane V/C Ratio	-	-	0.011	-	-	
HCM Control Delay (s)	0	-	8.6	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0	-	-	

Intersection												
Int Delay, s/veh	0											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	70	0	0	66	0	0	0	0	0	0	0
Future Vol, veh/h	0	70	0	0	66	0	0	0	0	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	76	0	0	72	0	0	0	0	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	72	0	0	76	0	0	148	148	76	148	148	72
Stage 1	-	-	-	-	-	-	76	76	-	72	72	-
Stage 2	-	-	-	-	-	-	72	72	-	76	76	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1528	-	-	1523	-	-	820	743	985	820	743	990
Stage 1	-	-	-	-	-	-	933	832	-	938	835	-
Stage 2	-	-	-	-	-	-	938	835	-	933	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1528	-	-	1523	-	-	820	743	985	820	743	990
Mov Cap-2 Maneuver	-	-	-	-	-	-	820	743	-	820	743	-
Stage 1	-	-	-	-	-	-	933	832	-	938	835	-
Stage 2	-	-	-	-	-	-	938	835	-	933	832	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1528	-	-	1523	-	-	-				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	-				
HCM Control Delay (s)	0	0	-	-	0	-	-	0				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-	-				

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	70	0	0	66	0	0	0	0	0	0	89
Future Vol, veh/h	0	70	0	0	66	0	0	0	0	0	0	89
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	76	0	0	72	0	0	0	0	0	0	97
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	72	0	0	76	0	0	196	148	76	148	148	72
Stage 1	-	-	-	-	-	-	76	76	-	72	72	-
Stage 2	-	-	-	-	-	-	120	72	-	76	76	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1528	-	-	1523	-	-	763	743	985	820	743	990
Stage 1	-	-	-	-	-	-	933	832	-	938	835	-
Stage 2	-	-	-	-	-	-	884	835	-	933	832	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1528	-	-	1523	-	-	688	743	985	820	743	990
Mov Cap-2 Maneuver	-	-	-	-	-	-	688	743	-	820	743	-
Stage 1	-	-	-	-	-	-	933	832	-	938	835	-
Stage 2	-	-	-	-	-	-	798	835	-	933	832	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0			0			9		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	-	1528	-	-	1523	-	-	990				
HCM Lane V/C Ratio	-	-	-	-	-	-	-	0.098				
HCM Control Delay (s)	0	0	-	-	0	-	-	9				
HCM Lane LOS	A	A	-	-	A	-	-	A				
HCM 95th %tile O(veh)	-	0	-	-	0	-	-	0.3				

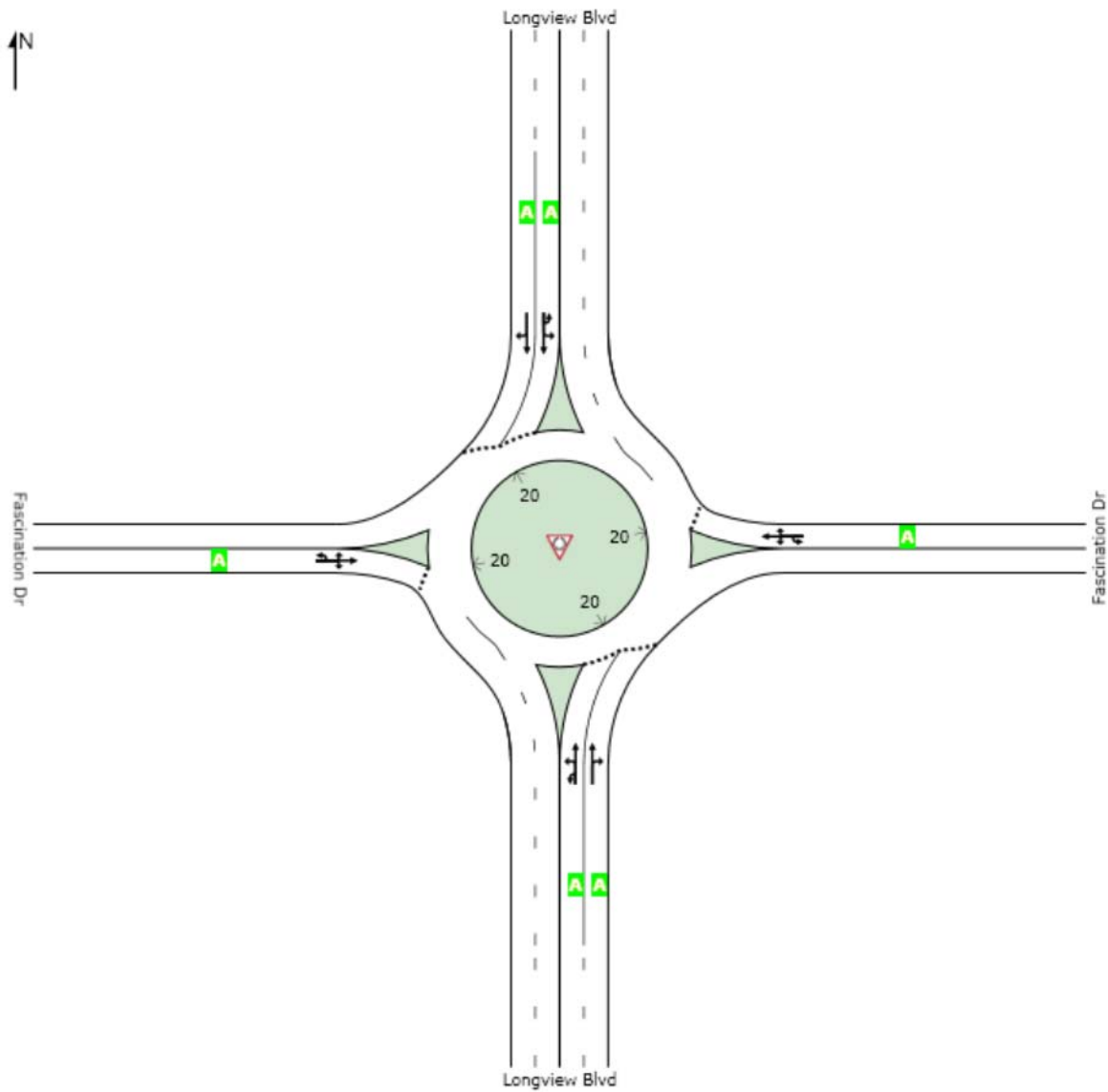
LEVEL OF SERVICE

Site: New Longview - Longview Blvd & Fascination Dr

Existing + Approved + Phase 1 - AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Fascination Dr**

Existing + Approved + Phase 1 - AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	8	0.0	0.185	11.4	LOS B	1.1	7.5	0.30	0.45	56.2
1	L2	5	2.0	0.185	9.3	LOS A	1.1	7.5	0.30	0.45	55.1
2	T1	458	2.0	0.185	4.6	LOS A	1.1	7.7	0.29	0.45	55.3
3	R2	53	2.0	0.185	4.6	LOS A	1.1	7.7	0.29	0.44	54.0
Approach		524	2.0	0.185	4.8	LOS A	1.1	7.7	0.29	0.45	55.2
East: Fascination Dr											
4u	U	5	0.0	0.203	14.1	LOS B	1.2	8.4	0.64	0.73	53.9
4	L2	53	2.0	0.203	12.1	LOS B	1.2	8.4	0.64	0.73	52.9
5	T1	21	2.0	0.203	7.4	LOS A	1.2	8.4	0.64	0.73	53.0
6	R2	100	2.0	0.203	7.2	LOS A	1.2	8.4	0.64	0.73	51.7
Approach		179	1.9	0.203	8.9	LOS A	1.2	8.4	0.64	0.73	52.3
North: Longview Blvd											
7u	U	16	0.0	0.078	11.2	LOS B	0.4	3.0	0.27	0.48	55.7
7	L2	5	2.0	0.078	9.2	LOS A	0.4	3.0	0.27	0.48	54.6
8	T1	193	2.0	0.078	4.5	LOS A	0.4	3.1	0.26	0.44	55.2
9	R2	5	2.0	0.078	4.5	LOS A	0.4	3.1	0.25	0.41	54.1
Approach		219	1.9	0.078	5.1	LOS A	0.4	3.1	0.26	0.44	55.2
West: Fascination Dr											
10u	U	5	0.0	0.086	12.1	LOS B	0.4	3.1	0.43	0.64	53.3
10	L2	74	2.0	0.086	10.1	LOS B	0.4	3.1	0.43	0.64	52.3
11	T1	11	2.0	0.086	5.5	LOS A	0.4	3.1	0.43	0.64	52.4
12	R2	5	2.0	0.086	5.2	LOS A	0.4	3.1	0.43	0.64	51.2
Approach		95	1.9	0.086	9.4	LOS A	0.4	3.1	0.43	0.64	52.3
All Vehicles		1017	1.9	0.203	6.0	LOS A	1.2	8.4	0.36	0.51	54.4

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

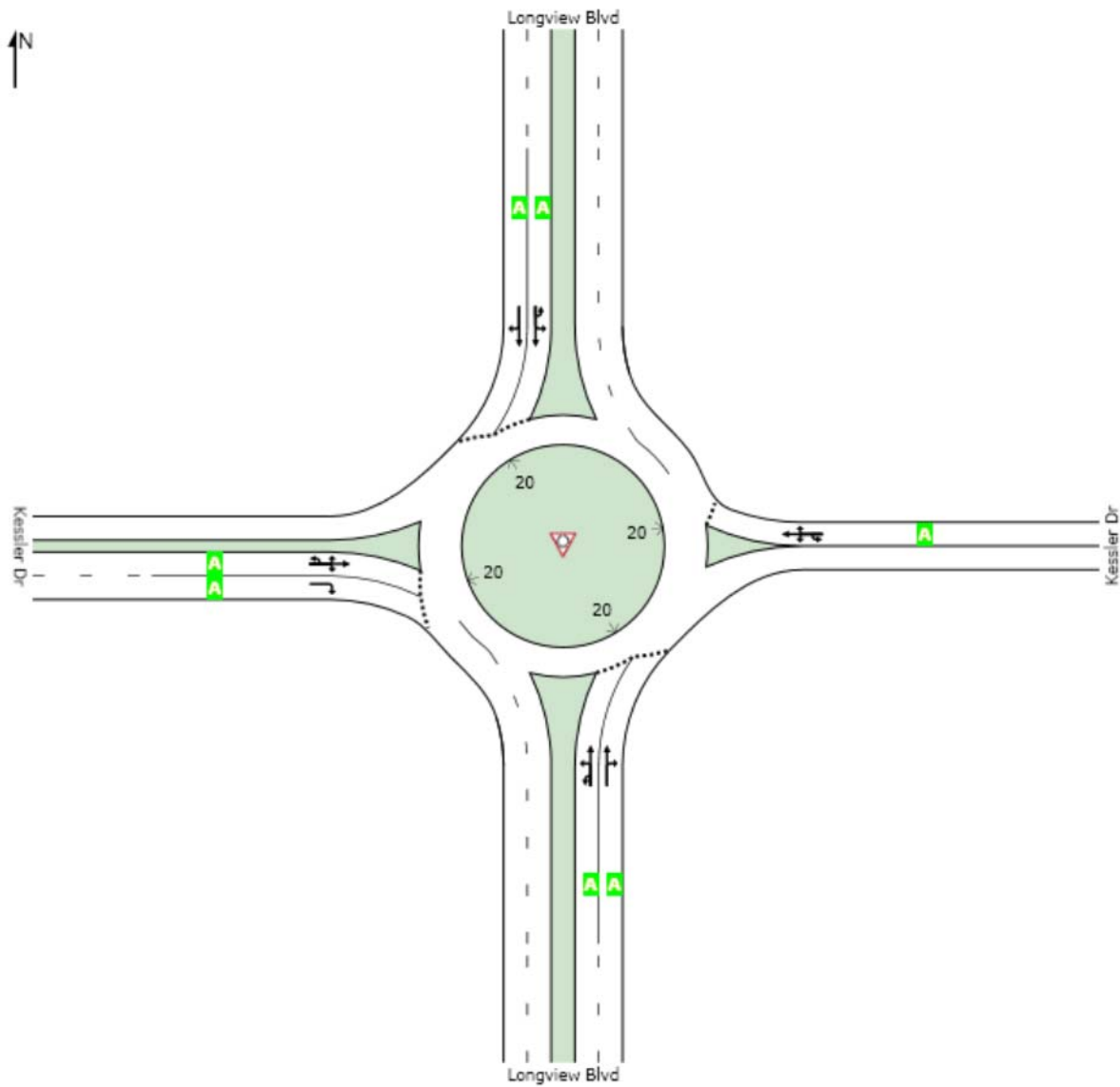
LEVEL OF SERVICE

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved + Phase 1 - AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved + Phase 1 - AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	1	0.0	0.176	11.4	LOS B	1.0	6.9	0.30	0.45	56.3
1	L2	11	0.0	0.176	9.3	LOS A	1.0	6.9	0.30	0.45	55.2
2	T1	487	0.0	0.176	4.6	LOS A	1.0	7.1	0.30	0.44	55.4
3	R2	1	0.0	0.176	4.6	LOS A	1.0	7.1	0.29	0.43	54.0
Approach		500	0.0	0.176	4.7	LOS A	1.0	7.1	0.30	0.44	55.4
East: Kessler Dr											
4u	U	1	0.0	0.005	13.8	LOS B	0.0	0.2	0.60	0.59	53.2
4	L2	1	0.0	0.005	11.7	LOS B	0.0	0.2	0.60	0.59	52.3
5	T1	1	0.0	0.005	7.1	LOS A	0.0	0.2	0.60	0.59	52.3
6	R2	1	0.0	0.005	6.8	LOS A	0.0	0.2	0.60	0.59	51.1
Approach		4	0.0	0.005	9.8	LOS A	0.0	0.2	0.60	0.59	52.2
North: Longview Blvd											
7u	U	14	0.0	0.073	10.9	LOS B	0.4	2.6	0.08	0.45	56.8
7	L2	1	0.0	0.073	8.8	LOS A	0.4	2.6	0.08	0.45	55.8
8	T1	214	0.0	0.073	4.2	LOS A	0.4	2.6	0.08	0.42	56.2
9	R2	5	0.0	0.073	4.2	LOS A	0.4	2.6	0.08	0.39	55.0
Approach		234	0.0	0.073	4.6	LOS A	0.4	2.6	0.08	0.42	56.2
West: Kessler Dr											
10u	U	1	0.0	0.077	11.6	LOS B	0.4	2.7	0.35	0.62	53.0
10	L2	105	0.0	0.077	9.5	LOS A	0.4	2.7	0.35	0.62	52.1
11	T1	1	0.0	0.077	4.9	LOS A	0.4	2.7	0.35	0.62	52.2
12	R2	5	0.0	0.006	5.5	LOS A	0.0	0.2	0.38	0.49	54.0
Approach		113	0.0	0.077	9.3	LOS A	0.4	2.7	0.35	0.62	52.2
All Vehicles		851	0.0	0.176	5.3	LOS A	1.0	7.1	0.25	0.46	55.1

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

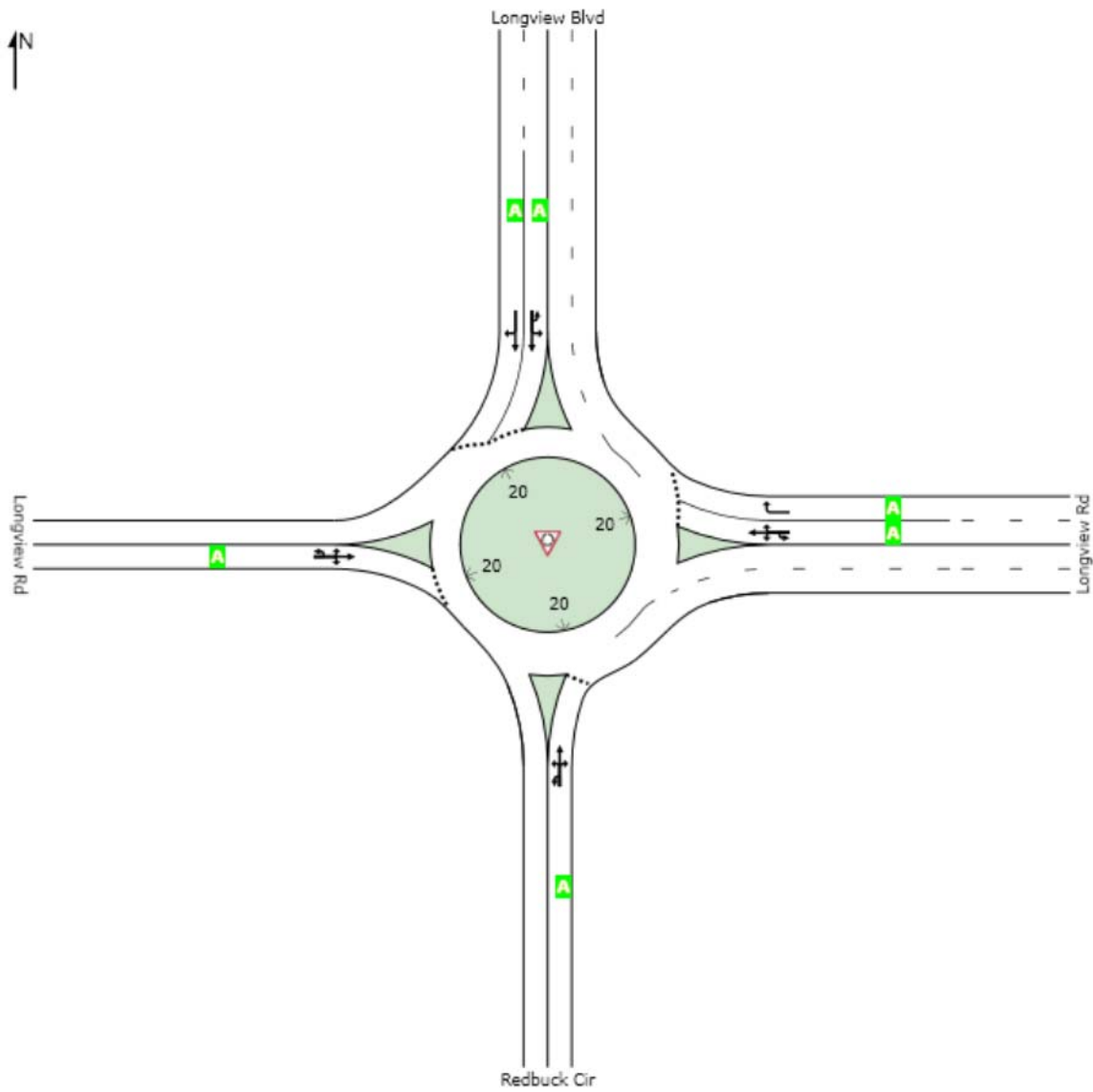
LEVEL OF SERVICE

Site: New Longview - Longview Blvd & Longview Rd

Existing + Approved + Phase 1 - AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Longview Rd**

Existing + Approved + Phase 1 - AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Redbuck Cir											
1u	U	1	0.0	0.043	11.9	LOS B	0.2	1.5	0.40	0.51	55.6
1	L2	5	2.0	0.043	9.9	LOS A	0.2	1.5	0.40	0.51	54.5
2	T1	36	2.0	0.043	5.3	LOS A	0.2	1.5	0.40	0.51	54.6
3	R2	5	2.0	0.043	5.0	LOS A	0.2	1.5	0.40	0.51	53.3
Approach		47	2.0	0.043	5.9	LOS A	0.2	1.5	0.40	0.51	54.4
East: Longview Rd											
4u	U	1	0.0	0.183	11.2	LOS B	1.0	7.2	0.24	0.46	56.8
4	L2	5	2.0	0.183	9.1	LOS A	1.0	7.2	0.24	0.46	55.7
5	T1	105	2.0	0.183	4.5	LOS A	1.0	7.2	0.24	0.46	55.7
6	R2	427	2.0	0.183	4.5	LOS A	1.0	7.3	0.23	0.47	54.4
Approach		539	2.0	0.183	4.5	LOS A	1.0	7.3	0.23	0.47	54.7
North: Longview Blvd											
7u	U	1	0.0	0.130	11.2	LOS B	0.7	5.0	0.27	0.61	53.3
7	L2	194	2.0	0.130	9.2	LOS A	0.7	5.0	0.27	0.61	52.3
8	T1	12	2.0	0.022	4.9	LOS A	0.1	0.7	0.29	0.45	55.6
9	R2	11	2.0	0.022	4.9	LOS A	0.1	0.7	0.29	0.45	54.1
Approach		217	2.0	0.130	8.7	LOS A	0.7	5.0	0.27	0.59	52.5
West: Longview Rd											
10u	U	1	0.0	0.059	11.8	LOS B	0.3	2.1	0.37	0.57	54.5
10	L2	35	2.0	0.059	9.7	LOS A	0.3	2.1	0.37	0.57	53.5
11	T1	26	2.0	0.059	5.1	LOS A	0.3	2.1	0.37	0.57	53.6
12	R2	5	2.0	0.059	4.9	LOS A	0.3	2.1	0.37	0.57	52.3
Approach		67	2.0	0.059	7.6	LOS A	0.3	2.1	0.37	0.57	53.4
All Vehicles		871	2.0	0.183	5.9	LOS A	1.0	7.3	0.26	0.51	54.0

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: F:\2016\2501-3000\016-2608\40-Design\Reports\SIDRA\Existing + App + P1 - AM.sip6

Queues

3: Longview Blvd/View High Dr & Longview Rd/3rd St

9/9/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	54	52	14	91	42	350	28	357	67	704	576	86
v/c Ratio	0.21	0.20	0.04	0.33	0.15	0.23	0.12	0.45	0.13	0.64	0.26	0.08
Control Delay	34.8	35.3	0.1	34.7	33.1	1.7	35.8	27.8	0.5	22.7	10.9	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.8	35.3	0.1	34.7	33.1	1.7	35.8	27.8	0.5	22.7	10.9	0.7
Queue Length 50th (ft)	22	21	0	37	17	0	11	75	0	136	64	0
Queue Length 95th (ft)	35	34	0	82	44	21	22	136	0	216	137	0
Internal Link Dist (ft)	339			579			573			602		
Turn Bay Length (ft)	330		130	250		360	200		175	525		260
Base Capacity (vph)	298	279	412	365	349	2192	232	1195	671	2036	2563	1186
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.18	0.19	0.03	0.25	0.12	0.16	0.12	0.30	0.10	0.35	0.22	0.07
Intersection Summary												

HCM Signalized Intersection Capacity Analysis

3: Longview Blvd/View High Dr & Longview Rd/3rd St

9/9/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	26	7	73	32	315	14	321	52	648	530	68
Future Volume (vph)	27	26	7	73	32	315	14	321	52	648	530	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.50	0.50	0.50	0.80	0.76	0.90	0.50	0.90	0.78	0.92	0.92	0.79
Adj. Flow (vph)	54	52	14	91	42	350	28	357	67	704	576	86
RTOR Reduction (vph)	0	0	13	0	0	215	0	0	49	0	0	41
Lane Group Flow (vph)	54	52	1	91	42	135	28	357	18	704	576	45
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.0	3.7	3.7	6.8	6.5	26.7	2.1	18.4	18.4	20.2	36.5	36.5
Effective Green, g (s)	4.0	3.7	3.7	6.8	6.5	26.7	2.1	18.4	18.4	20.2	36.5	36.5
Actuated g/C Ratio	0.06	0.05	0.05	0.10	0.09	0.39	0.03	0.27	0.27	0.29	0.53	0.53
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	102	99	84	174	175	1278	53	942	421	1003	1869	836
v/s Ratio Prot	0.03	c0.03		c0.05	c0.02	0.03	0.02	c0.10		c0.21	0.16	
v/s Ratio Perm			0.00			0.02			0.01			0.03
v/c Ratio	0.53	0.53	0.01	0.52	0.24	0.11	0.53	0.38	0.04	0.70	0.31	0.05
Uniform Delay, d1	31.6	31.8	31.0	29.6	29.0	13.6	33.0	20.7	18.8	21.8	9.2	7.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	4.9	5.0	0.0	2.8	0.7	0.0	9.2	0.3	0.0	2.2	0.1	0.0
Delay (s)	36.5	36.8	31.0	32.4	29.7	13.6	42.2	20.9	18.9	24.0	9.3	7.9
Level of Service	D	D	C	C	C	B	D	C	B	C	A	A
Approach Delay (s)		36.0			18.5			22.0			16.8	
Approach LOS		D			B			C			B	
Intersection Summary												
HCM 2000 Control Delay			19.1			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.54									
Actuated Cycle Length (s)			69.1			Sum of lost time (s)			20.0			

Intersection												
Int Delay, s/veh	11											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	614	76	53	463	63	30	9	39	57	5	23
Future Vol, veh/h	50	614	76	53	463	63	30	9	39	57	5	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	92	80	87	91	80	60	50	77	87	50	60
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	667	95	61	509	79	50	18	51	66	10	38
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	588	0	0	762	0	0	1224	1552	381	1141	1561	294
Stage 1	-	-	-	-	-	-	843	843	-	670	670	-
Stage 2	-	-	-	-	-	-	381	709	-	471	891	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	983	-	-	846	-	-	135	112	617	156	111	702
Stage 1	-	-	-	-	-	-	325	378	-	413	454	-
Stage 2	-	-	-	-	-	-	613	435	-	542	359	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	983	-	-	846	-	-	106	97	617	111	96	702
Mov Cap-2 Maneuver	-	-	-	-	-	-	106	97	-	111	96	-
Stage 1	-	-	-	-	-	-	304	353	-	386	421	-
Stage 2	-	-	-	-	-	-	525	404	-	441	336	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.9			73.7			77.9		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	160	983	-	-	846	-	-	152				
HCM Lane V/C Ratio	0.742	0.065	-	-	0.072	-	-	0.749				
HCM Control Delay (s)	73.7	8.9	-	-	9.6	-	-	77.9				
HCM Lane LOS	F	A	-	-	A	-	-	F				
HCM 95th %tile O(veh)	4.6	0.2	-	-	0.2	-	-	4.6				

Intersection												
Int Delay, s/veh	8.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	606	7	103	382	29	37	5	108	17	5	38
Future Vol, veh/h	67	606	7	103	382	29	37	5	108	17	5	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	100	190	-	-	95	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	92	50	81	90	60	76	50	80	50	50	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	84	659	14	127	424	48	49	10	135	34	10	49

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	473	0	0	659	0	0	1298	1553	329	1205	1529	236
Stage 1	-	-	-	-	-	-	826	826	-	703	703	-
Stage 2	-	-	-	-	-	-	472	727	-	502	826	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1085	-	-	925	-	-	119	112	667	140	116	766
Stage 1	-	-	-	-	-	-	332	385	-	394	438	-
Stage 2	-	-	-	-	-	-	542	427	-	520	385	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1085	-	-	925	-	-	86	89	667	86	92	766
Mov Cap-2 Maneuver	-	-	-	-	-	-	86	89	-	86	92	-
Stage 1	-	-	-	-	-	-	306	355	-	363	378	-
Stage 2	-	-	-	-	-	-	426	368	-	372	355	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	2	35.2	52.8
HCM LOS			E	F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	86	461	1085	-	-	925	-	-	163
HCM Lane V/C Ratio	0.566	0.315	0.077	-	-	0.137	-	-	0.569
HCM Control Delay (s)	91.3	16.4	8.6	-	-	9.5	-	-	52.8
HCM Lane LOS	F	C	A	-	-	A	-	-	F
HCM 95th %tile Q(veh)	2.5	1.3	0.2	-	-	0.5	-	-	3

Intersection						
Int Delay, s/veh	3.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	611	51	74	349	46	83
Future Vol, veh/h	611	51	74	349	46	83
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	78	79	90	76	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	664	65	94	388	61	105
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	664	0	1045	332
Stage 1	-	-	-	-	664	-
Stage 2	-	-	-	-	381	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	921	-	224	664
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	660	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	921	-	201	664
Mov Cap-2 Maneuver	-	-	-	-	201	-
Stage 1	-	-	-	-	474	-
Stage 2	-	-	-	-	593	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.8		23.2	
HCM LOS					C	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	360	-	-	921	-	
HCM Lane V/C Ratio	0.46	-	-	0.102	-	
HCM Control Delay (s)	23.2	-	-	9.4	-	
HCM Lane LOS	C	-	-	A	-	
HCM 95th %tile Q(veh)	2.3	-	-	0.3	-	

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	108	2	0	42	21	94
Future Vol, veh/h	108	2	0	42	21	94
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	117	2	0	46	23	102
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	120	74	125	0	-	0
Stage 1	74	-	-	-	-	-
Stage 2	46	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	876	988	1462	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	876	988	1462	-	-	-
Mov Cap-2 Maneuver	876	-	-	-	-	-
Stage 1	949	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.7	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1462	-	878	-	-	
HCM Lane V/C Ratio	-	-	0.136	-	-	
HCM Control Delay (s)	0	-	9.7	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.5	-	-	

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	101	12	1	93	1	11	10	5	0	21	0
Future Vol, veh/h	0	101	12	1	93	1	11	10	5	0	21	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	110	13	1	101	1	12	11	5	0	23	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	102	0	0	123	0	0	231	220	116	228	227	102
Stage 1	-	-	-	-	-	-	116	116	-	104	104	-
Stage 2	-	-	-	-	-	-	115	104	-	124	123	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1490	-	-	1464	-	-	724	678	936	727	672	953
Stage 1	-	-	-	-	-	-	889	800	-	902	809	-
Stage 2	-	-	-	-	-	-	890	809	-	880	794	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1490	-	-	1464	-	-	705	677	936	713	671	953
Mov Cap-2 Maneuver	-	-	-	-	-	-	705	677	-	713	671	-
Stage 1	-	-	-	-	-	-	889	800	-	902	808	-
Stage 2	-	-	-	-	-	-	864	808	-	863	794	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.1			10.1			10.6		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	728	1490	-	-	1464	-	-	671				
HCM Lane V/C Ratio	0.039	-	-	-	0.001	-	-	0.034				
HCM Control Delay (s)	10.1	0	-	-	7.5	0	-	10.6				
HCM Lane LOS	B	A	-	-	A	A	-	B				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0.1				

Intersection												
Int Delay, s/veh	0.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	106	0	4	90	0	5	0	4	0	0	0
Future Vol, veh/h	0	106	0	4	90	0	5	0	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	115	0	4	98	0	5	0	4	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	98	0	0	115	0	0	222	222	115	224	222	98
Stage 1	-	-	-	-	-	-	115	115	-	107	107	-
Stage 2	-	-	-	-	-	-	107	107	-	117	115	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1495	-	-	1474	-	-	734	677	937	732	677	958
Stage 1	-	-	-	-	-	-	890	800	-	898	807	-
Stage 2	-	-	-	-	-	-	898	807	-	888	800	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1495	-	-	1474	-	-	732	675	937	727	675	958
Mov Cap-2 Maneuver	-	-	-	-	-	-	732	675	-	727	675	-
Stage 1	-	-	-	-	-	-	890	800	-	898	805	-
Stage 2	-	-	-	-	-	-	895	805	-	884	800	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.3			9.5			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	811	1495	-	-	1474	-	-	-				
HCM Lane V/C Ratio	0.012	-	-	-	0.003	-	-	-				
HCM Control Delay (s)	9.5	0	-	-	7.5	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	-				

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	24	359	10	0	611
Future Vol, veh/h	0	24	359	10	0	611
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	26	390	11	0	664
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	201	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	806	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	806	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	9.6		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	- 806	-			
HCM Lane V/C Ratio	-	- 0.032	-			
HCM Control Delay (s)	-	- 9.6	-			
HCM Lane LOS	-	- A	-			
HCM 95th %tile Q(veh)	-	- 0.1	-			

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	359	14	0	611
Future Vol, veh/h	0	10	359	14	0	611
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	390	15	0	664
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	203	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	804	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	804	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	9.5		0		0	
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	- 804	-			
HCM Lane V/C Ratio	-	- 0.014	-			
HCM Control Delay (s)	-	- 9.5	-			
HCM Lane LOS	-	- A	-			
HCM 95th %tile Q(veh)	-	- 0	-			

Intersection

Int Delay, s/veh 3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	9	1	18	4	19
Future Vol, veh/h	24	9	1	18	4	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	26	10	1	20	4	21

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	37	15	25	0	-	0
Stage 1	15	-	-	-	-	-
Stage 2	22	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	975	1065	1589	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	974	1065	1589	-	-	-
Mov Cap-2 Maneuver	974	-	-	-	-	-
Stage 1	1008	-	-	-	-	-
Stage 2	1000	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1589	-	997	-	-
HCM Lane V/C Ratio	0.001	-	0.036	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

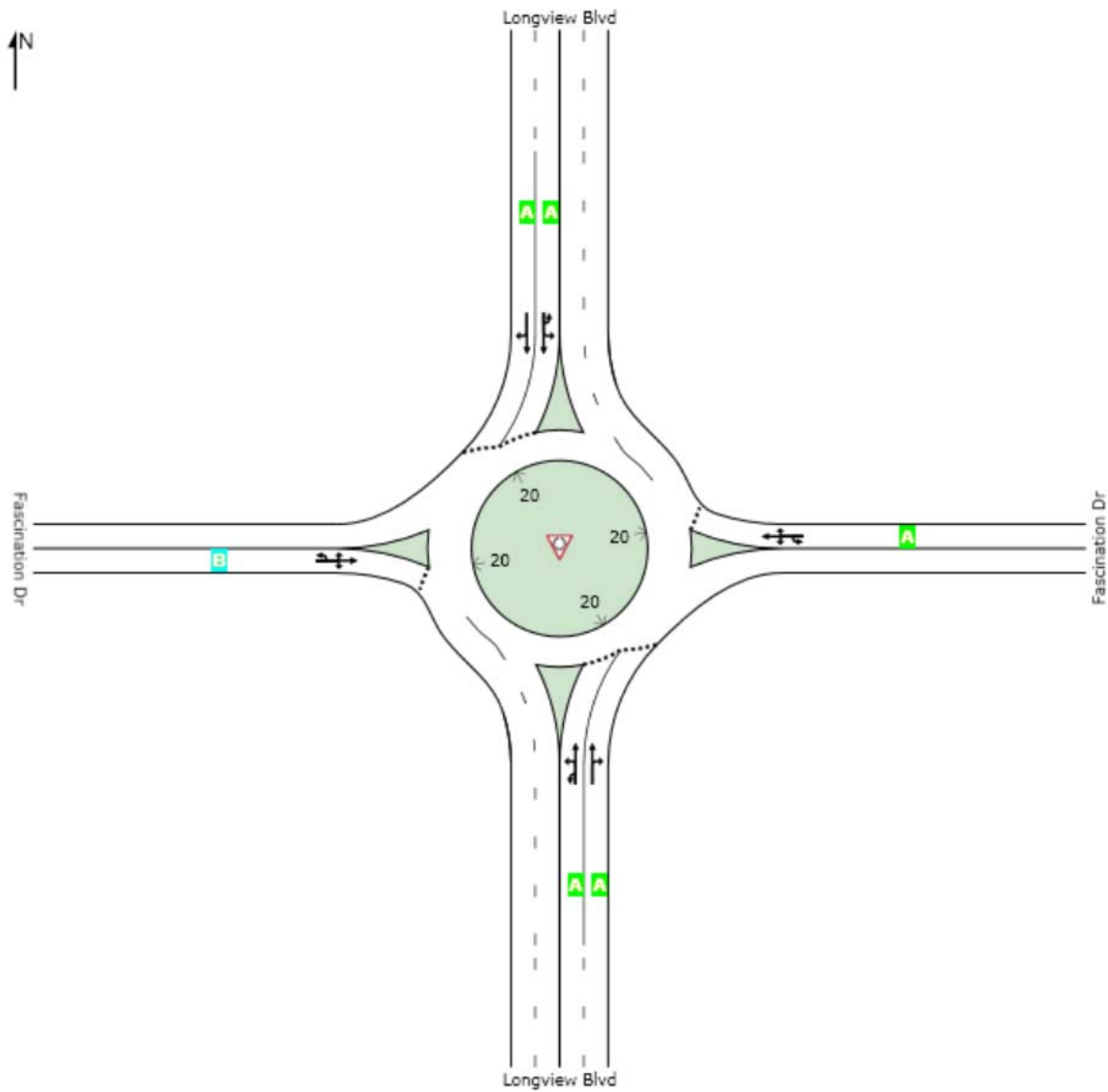
LEVEL OF SERVICE

Site: New Longview - Longview Blvd & Fascination Dr

Existing + Approved + Phase 1 - PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	B	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Fascination Dr**

Existing + Approved + Phase 1 - PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	6	0.0	0.137	11.7	LOS B	0.8	5.5	0.38	0.51	55.5
1	L2	21	2.0	0.137	9.6	LOS A	0.8	5.5	0.38	0.51	54.4
2	T1	273	2.0	0.137	4.9	LOS A	0.8	5.6	0.38	0.49	54.8
3	R2	58	2.0	0.137	4.9	LOS A	0.8	5.6	0.37	0.48	53.7
Approach		358	2.0	0.137	5.3	LOS A	0.8	5.6	0.38	0.49	54.6
East: Fascination Dr											
4u	U	1	0.0	0.185	13.1	LOS B	1.0	7.4	0.56	0.68	54.5
4	L2	68	2.0	0.185	11.1	LOS B	1.0	7.4	0.56	0.68	53.4
5	T1	22	2.0	0.185	6.4	LOS A	1.0	7.4	0.56	0.68	53.5
6	R2	88	2.0	0.185	6.2	LOS A	1.0	7.4	0.56	0.68	52.2
Approach		180	2.0	0.185	8.1	LOS A	1.0	7.4	0.56	0.68	52.8
North: Longview Blvd											
7u	U	32	0.0	0.227	11.4	LOS B	1.4	9.8	0.33	0.50	55.5
7	L2	29	2.0	0.227	9.4	LOS A	1.4	9.8	0.33	0.50	54.4
8	T1	560	2.0	0.227	4.7	LOS A	1.4	10.0	0.32	0.47	55.0
9	R2	16	2.0	0.227	4.7	LOS A	1.4	10.0	0.31	0.44	53.8
Approach		637	1.9	0.227	5.2	LOS A	1.4	10.0	0.32	0.47	54.9
West: Fascination Dr											
10u	U	5	0.0	0.167	15.0	LOS B	1.0	7.0	0.70	0.78	51.9
10	L2	89	2.0	0.167	13.0	LOS B	1.0	7.0	0.70	0.78	50.9
11	T1	32	2.0	0.167	8.4	LOS A	1.0	7.0	0.70	0.78	51.0
12	R2	5	2.0	0.167	8.2	LOS A	1.0	7.0	0.70	0.78	49.9
Approach		132	1.9	0.167	11.8	LOS B	1.0	7.0	0.70	0.78	50.9
All Vehicles		1306	1.9	0.227	6.3	LOS A	1.4	10.0	0.41	0.54	54.1

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

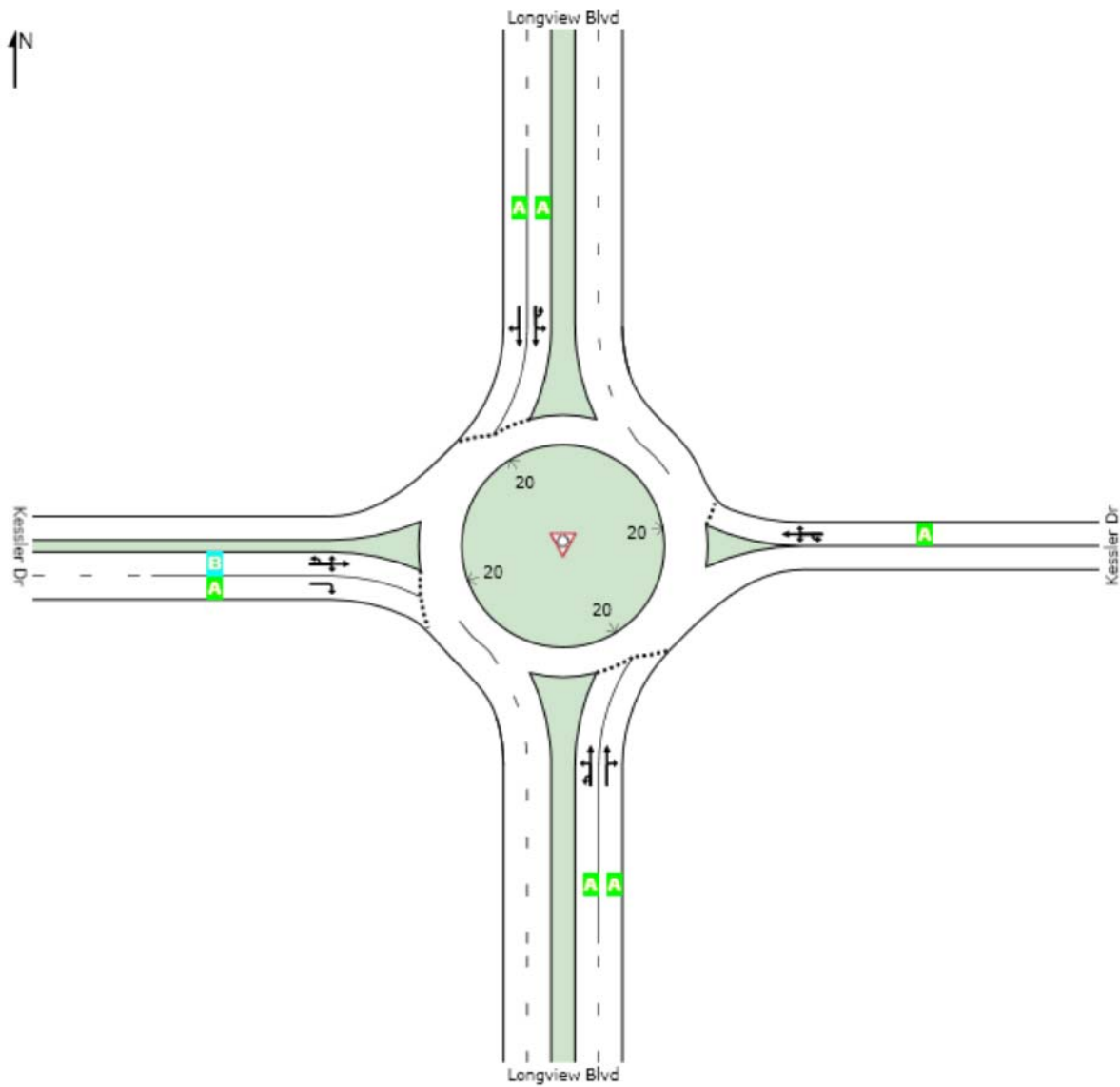
LEVEL OF SERVICE

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved + Phase 1 - PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	B	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved + Phase 1 - PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	1	0.0	0.111	11.2	LOS B	0.6	4.4	0.27	0.45	56.2
1	L2	16	2.0	0.111	9.2	LOS A	0.6	4.4	0.27	0.45	55.1
2	T1	297	2.0	0.111	4.5	LOS A	0.6	4.5	0.26	0.43	55.4
3	R2	1	2.0	0.111	4.5	LOS A	0.6	4.5	0.26	0.41	54.1
Approach		315	2.0	0.111	4.7	LOS A	0.6	4.5	0.26	0.43	55.4
East: Kessler Dr											
4u	U	1	0.0	0.015	12.6	LOS B	0.1	0.5	0.49	0.61	53.6
4	L2	9	2.0	0.015	10.6	LOS B	0.1	0.5	0.49	0.61	52.5
5	T1	1	2.0	0.015	6.0	LOS A	0.1	0.5	0.49	0.61	52.6
6	R2	3	2.0	0.015	5.7	LOS A	0.1	0.5	0.49	0.61	51.4
Approach		15	1.9	0.015	9.4	LOS A	0.1	0.5	0.49	0.61	52.4
North: Longview Blvd											
7u	U	17	0.0	0.190	10.9	LOS B	1.1	7.6	0.14	0.42	57.0
7	L2	1	2.0	0.190	8.9	LOS A	1.1	7.6	0.14	0.42	55.8
8	T1	573	2.0	0.190	4.2	LOS A	1.1	7.7	0.13	0.41	56.1
9	R2	12	2.0	0.190	4.3	LOS A	1.1	7.7	0.13	0.39	54.7
Approach		602	1.9	0.190	4.4	LOS A	1.1	7.7	0.13	0.41	56.1
West: Kessler Dr											
10u	U	1	0.0	0.071	13.3	LOS B	0.4	2.9	0.59	0.69	52.3
10	L2	76	2.0	0.071	11.3	LOS B	0.4	2.9	0.59	0.69	51.3
11	T1	1	2.0	0.071	6.7	LOS A	0.4	2.9	0.59	0.69	51.4
12	R2	5	2.0	0.007	7.9	LOS A	0.0	0.3	0.60	0.58	52.3
Approach		83	2.0	0.071	11.0	LOS B	0.4	2.9	0.59	0.68	51.4
All Vehicles		1015	2.0	0.190	5.1	LOS A	1.1	7.7	0.21	0.44	55.4

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

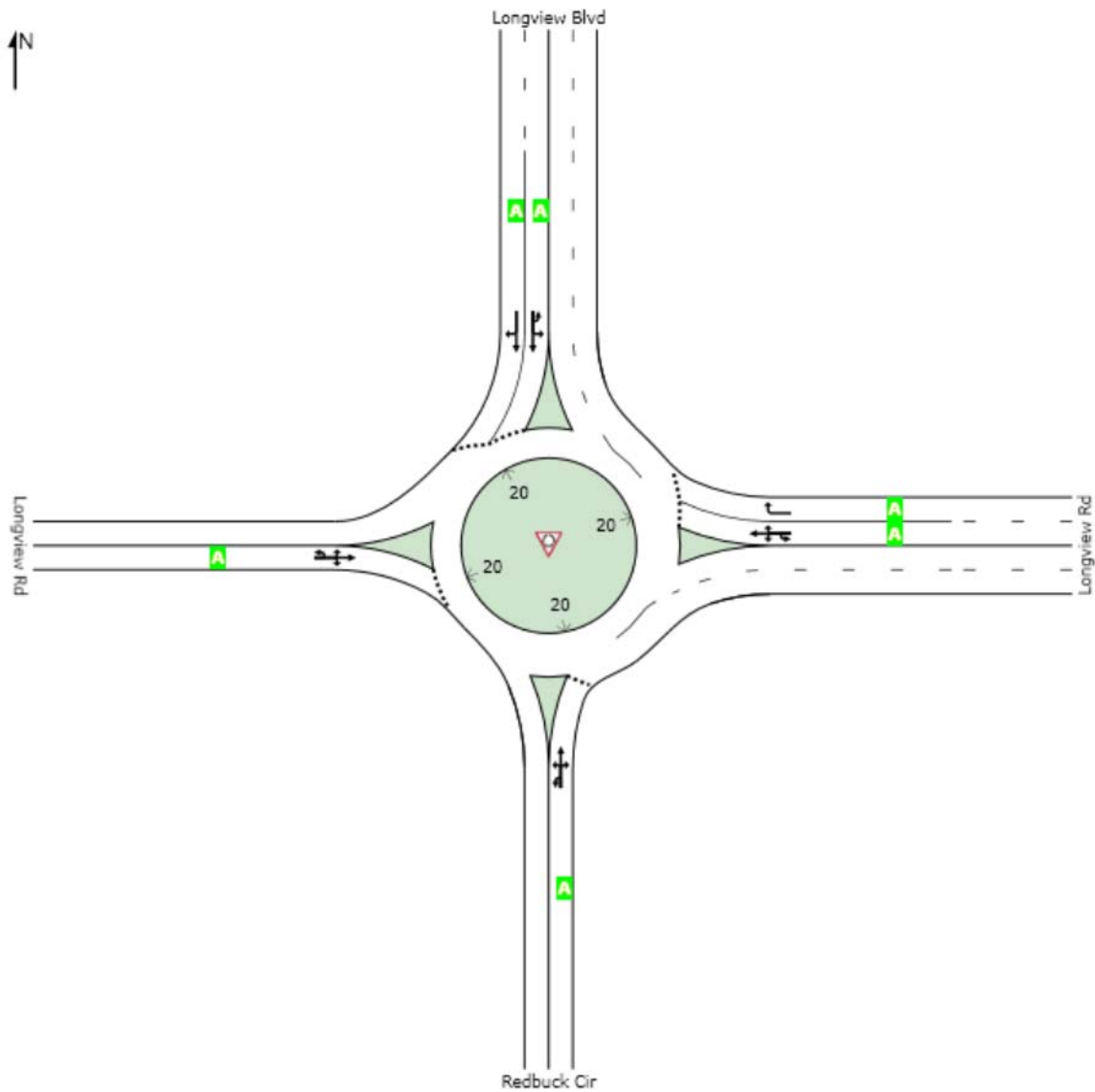
LEVEL OF SERVICE

Site: New Longview - Longview Blvd & Longview Rd

Existing + Approved + Phase 1 - PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Longview Rd**

Existing + Approved + Phase 1 - PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Redbuck Cir											
1u	U	1	0.0	0.053	14.4	LOS B	0.3	2.1	0.64	0.65	54.3
1	L2	5	2.0	0.053	12.4	LOS B	0.3	2.1	0.64	0.65	53.2
2	T1	26	2.0	0.053	7.7	LOS A	0.3	2.1	0.64	0.65	53.3
3	R2	11	2.0	0.053	7.5	LOS A	0.3	2.1	0.64	0.65	52.1
Approach		43	2.0	0.053	8.4	LOS A	0.3	2.1	0.64	0.65	53.0
East: Longview Rd											
4u	U	1	0.0	0.106	11.1	LOS B	0.6	4.0	0.22	0.46	56.8
4	L2	5	2.0	0.106	9.0	LOS A	0.6	4.0	0.22	0.46	55.7
5	T1	53	2.0	0.106	4.4	LOS A	0.6	4.0	0.22	0.46	55.8
6	R2	252	2.0	0.106	4.4	LOS A	0.6	4.1	0.21	0.47	54.4
Approach		311	2.0	0.106	4.5	LOS A	0.6	4.1	0.21	0.47	54.7
North: Longview Blvd											
7u	U	1	0.0	0.327	11.1	LOS B	2.1	15.1	0.23	0.60	53.4
7	L2	532	2.0	0.327	9.0	LOS A	2.1	15.1	0.23	0.60	52.4
8	T1	42	2.0	0.048	4.6	LOS A	0.2	1.6	0.22	0.42	55.8
9	R2	8	2.0	0.048	4.6	LOS A	0.2	1.6	0.22	0.42	54.3
Approach		583	2.0	0.327	8.6	LOS A	2.1	15.1	0.23	0.59	52.7
West: Longview Rd											
10u	U	1	0.0	0.163	14.1	LOS B	0.9	6.6	0.63	0.70	54.0
10	L2	36	2.0	0.163	12.1	LOS B	0.9	6.6	0.63	0.70	52.9
11	T1	89	2.0	0.163	7.5	LOS A	0.9	6.6	0.63	0.70	53.0
12	R2	16	2.0	0.163	7.2	LOS A	0.9	6.6	0.63	0.70	51.8
Approach		142	2.0	0.163	8.6	LOS A	0.9	6.6	0.63	0.70	52.9
All Vehicles		1079	2.0	0.327	7.5	LOS A	2.1	15.1	0.29	0.57	53.3

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Existing + Approved + Full Build Conditions

Medical-Dental Office Building (720)

Average Vehicle Trip Ends vs: Employees
On a: Weekday

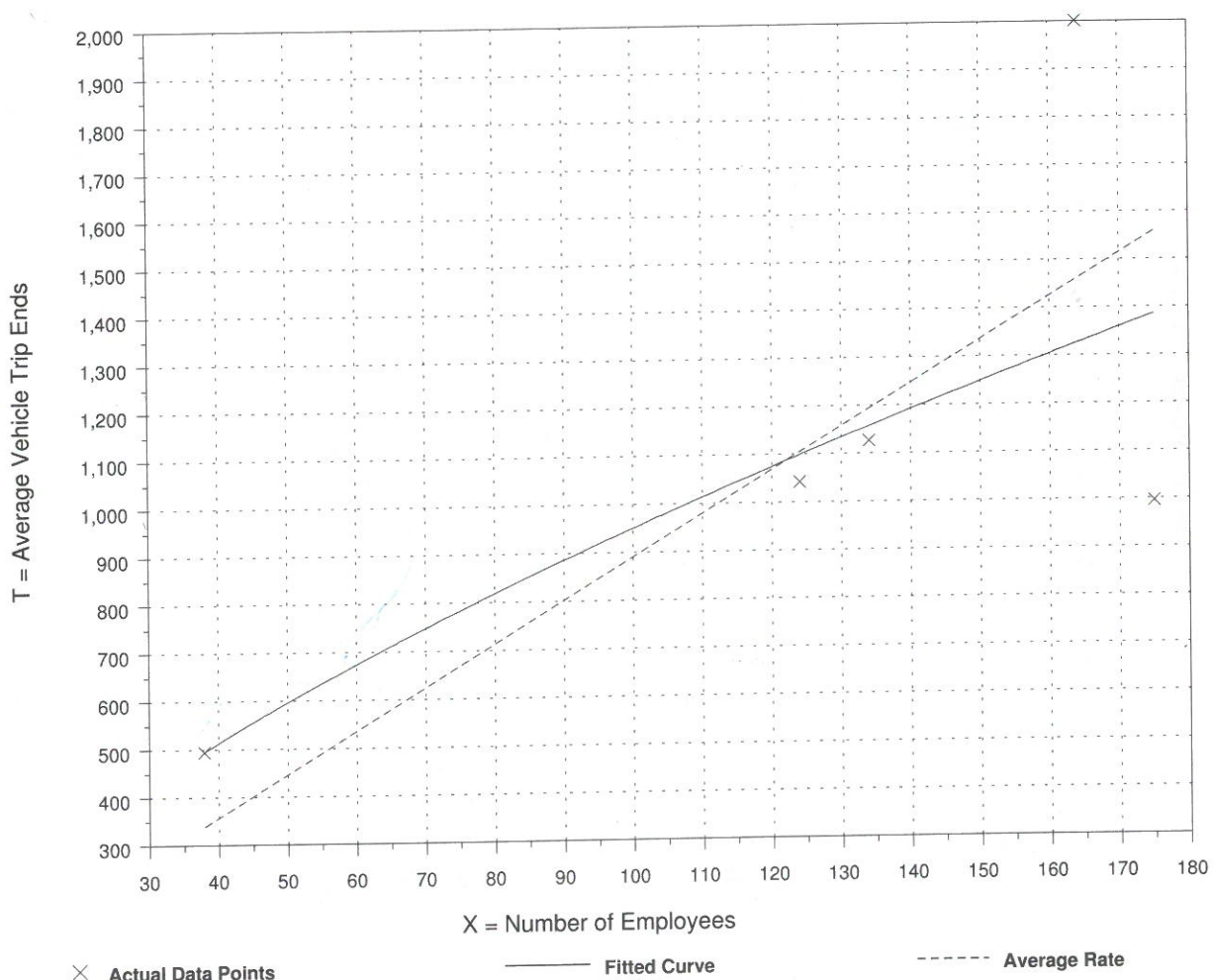
Number of Studies: 5
Avg. Number of Employees: 127
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
8.91	5.69 - 13.03	3.95

Data Plot and Equation

Caution - Use Carefully - Small Sample Size



Fitted Curve Equation: $\ln(T) = 0.67 \ln(X) + 3.76$

$R^2 = 0.72$

Medical-Dental Office Building (720)

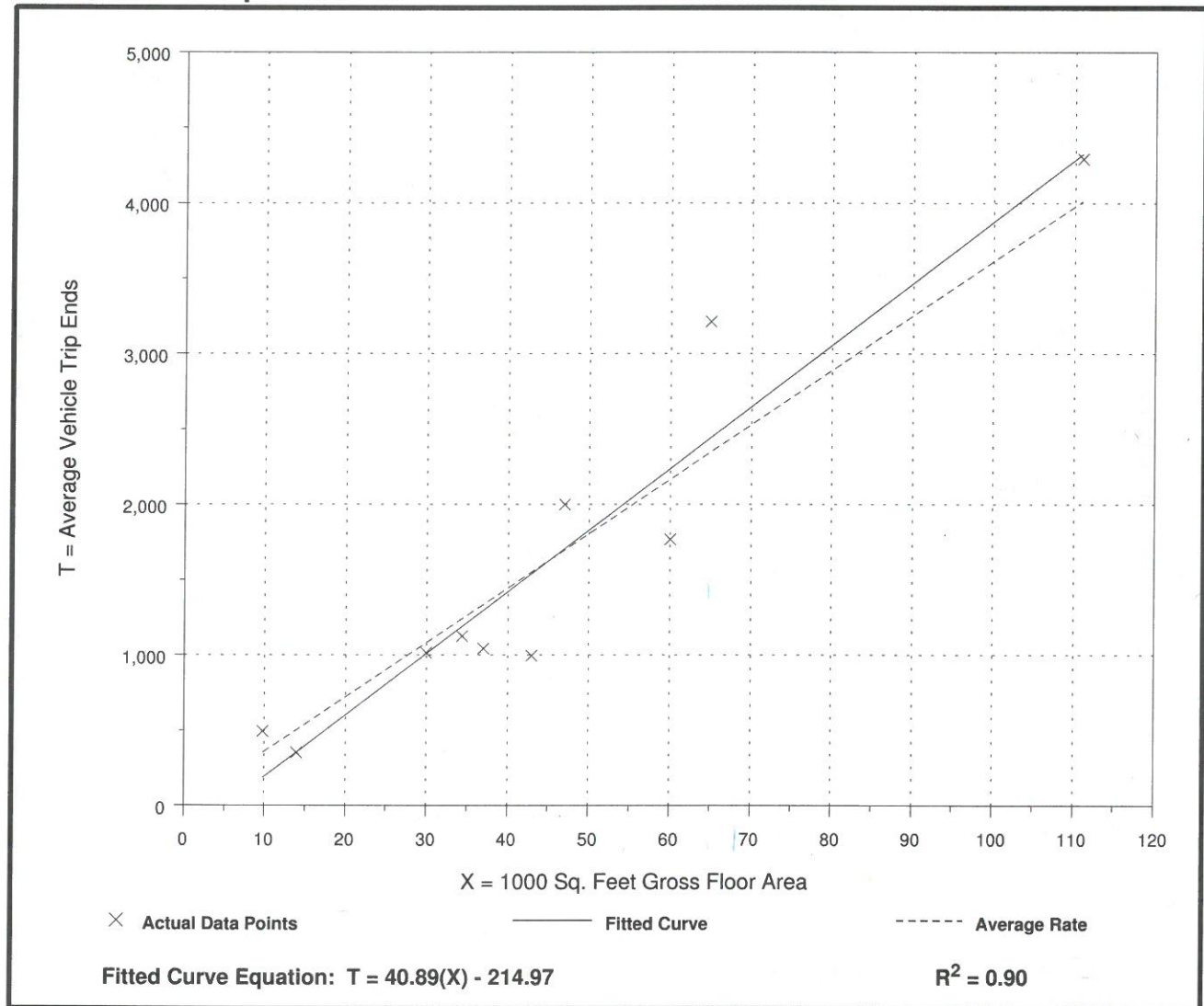
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday

Number of Studies: 10
Average 1000 Sq. Feet GFA: 45
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
36.13	23.16 - 50.51	10.18

Data Plot and Equation



Medical-Dental Office Building (720)

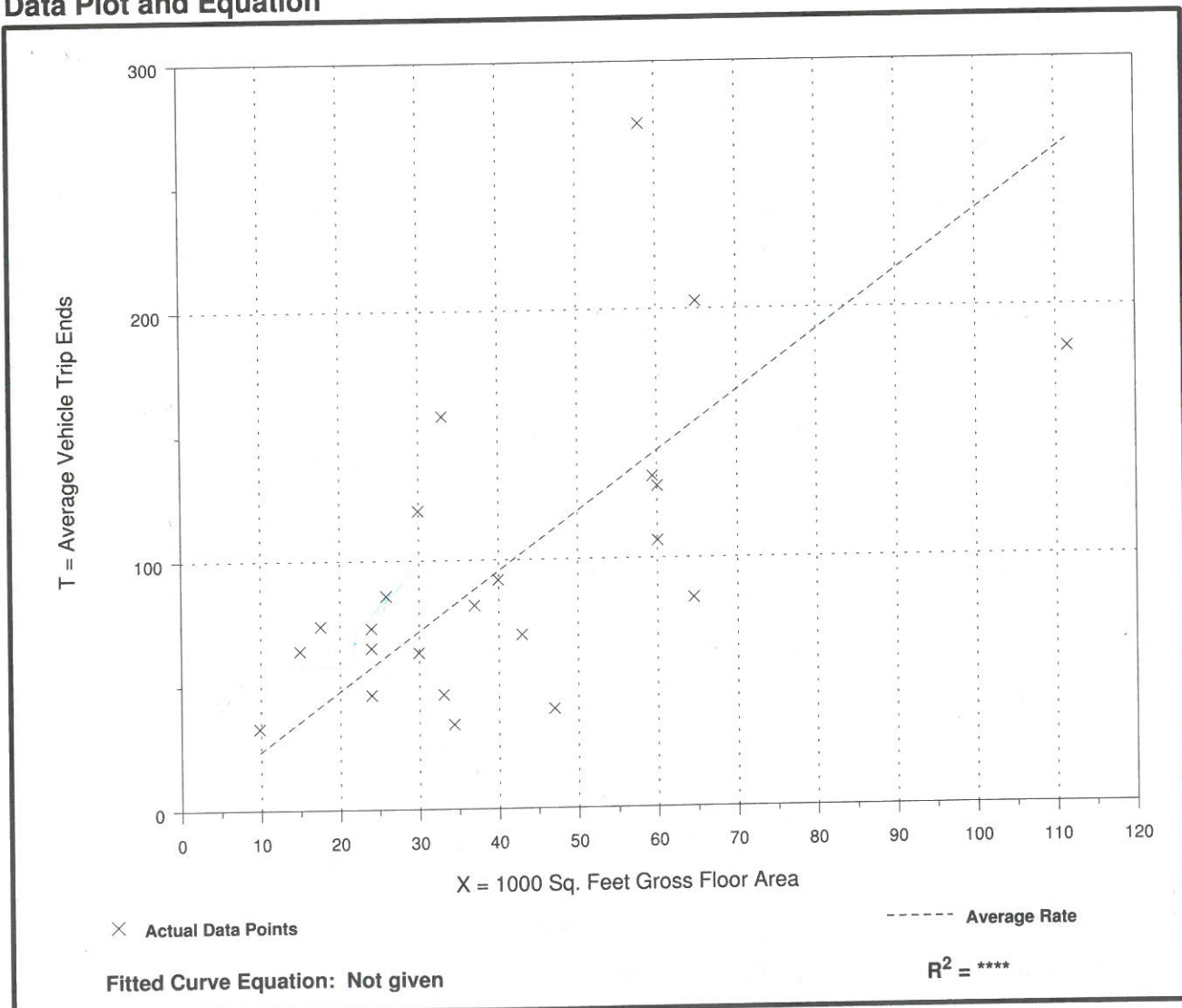
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 23
 Average 1000 Sq. Feet GFA: 41
 Directional Distribution: 79% entering, 21% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
2.39	0.85 - 4.79	1.89

Data Plot and Equation



Medical-Dental Office Building (720)

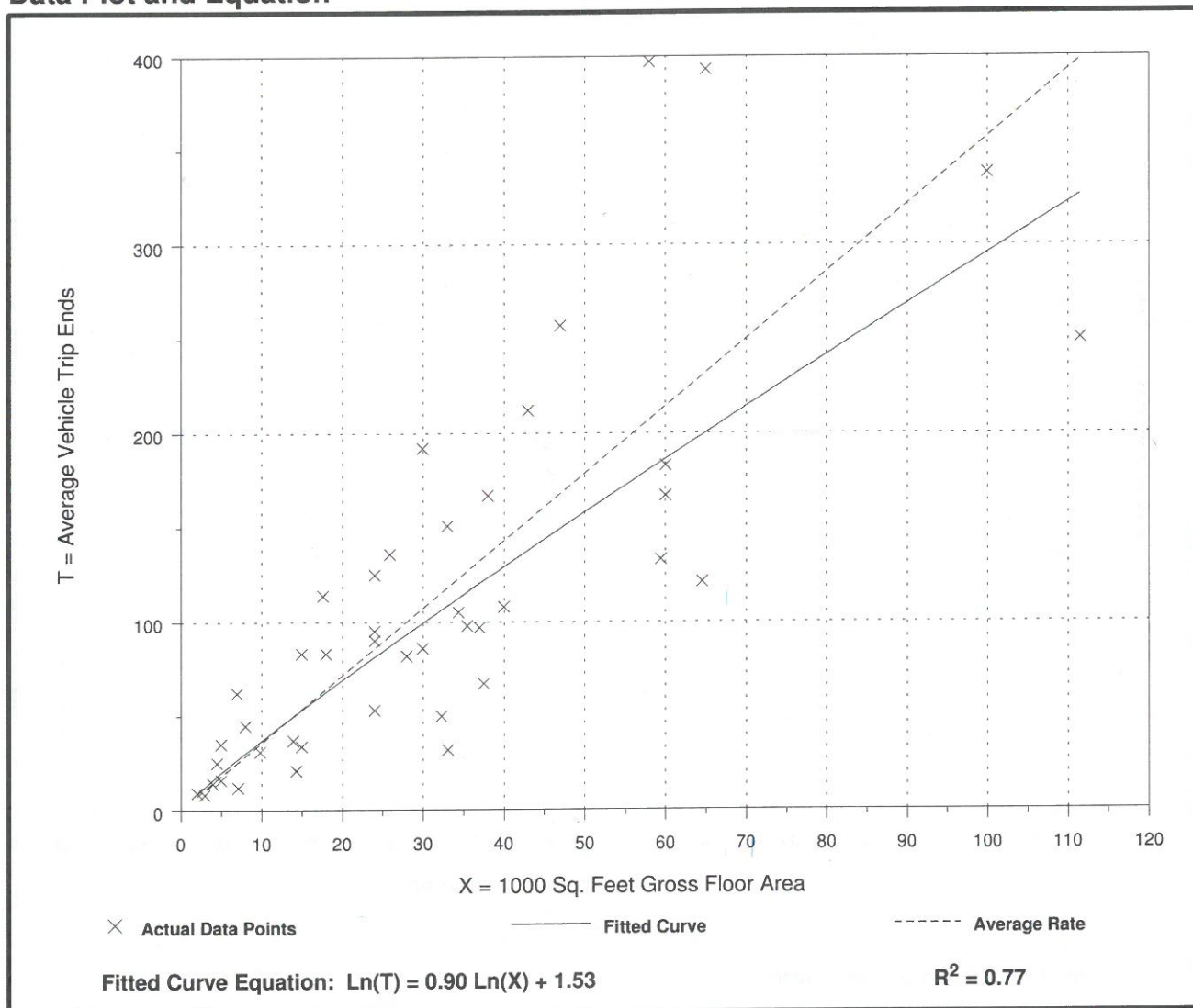
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 43
Average 1000 Sq. Feet GFA: 31
Directional Distribution: 28% entering, 72% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
3.57	0.97 - 8.86	2.47

Data Plot and Equation



Land Use: 710

General Office Building

Description

A general office building houses multiple tenants; it is a location where affairs of businesses, commercial or industrial organizations, or professional persons or firms are conducted. An office building or buildings may contain a mixture of tenants including professional services, insurance companies, investment brokers and tenant services, such as a bank or savings and loan institution, a restaurant or cafeteria and service retail facilities. Corporate headquarters building (Land Use 714), single tenant office building (Land Use 715), office park (Land Use 750), research and development center (Land Use 760) and business park (Land Use 770) are related uses.

If information is known about individual buildings, it is suggested that the general office building category be used rather than office parks when estimating trip generation for one or more office buildings in a single development. The office park category is more general and should be used when a breakdown of individual or different uses is not known. If the general office building category is used and if additional buildings, such as banks, restaurants, or retail stores, are included in the development, the development should be treated as a multiuse project. On the other hand, if the office park category is used, internal trips are already reflected in the data and do not need to be considered.

When the buildings are interrelated (defined by shared parking facilities or the ability to easily walk between buildings) or house one tenant, it is suggested that the total area or employment of all the buildings be used for calculating the trip generation. When the individual buildings are isolated and not related to one another, it is suggested that trip generation be calculated for each building separately and then summed.

Additional Data

Average weekday transit trip ends—

Transit service was either nonexistent or negligible at the majority of the sites surveyed in this land use. Users may wish to modify trip generation rates presented in this land use to reflect the presence of public transit, carpools and other transportation demand management (TDM) strategies. Information has not been analyzed to document the impacts of TDM measures on the total trip generation of a site. See the ITE *Trip Generation Handbook*, Second Edition for additional information on this topic.

The average building occupancy varied considerably within the studies for which occupancy data were provided. For buildings with occupancy rates reported, the average occupied gross leasable area was 88 percent.

Some of the regression curves plotted for this land use may produce illogical trip-end estimates for small office buildings. When the proposed site size is significantly smaller than the average-sized facility published in this report, caution should be used when applying these statistics. For more information, please refer to Chapter 3, "Guidelines for Estimating Trip Generation," of the ITE *Trip Generation Handbook*, Second Edition.

In some regions, peaking may occur earlier or later and may last somewhat longer than the traditional 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. peak period time frames.

The sites were surveyed between the 1960s and the 2000s throughout the United States.

Trip Characteristics

The trip generation for the A.M. and P.M. peak hours of the generator typically coincided with the peak hours of the adjacent street traffic; therefore, only one A.M. peak hour and one P.M. peak hour, which represent both the peak hour of the generator and the peak hour of the adjacent street traffic, are shown for general office buildings.

Source Numbers

2, 5, 20, 21, 51, 53, 54, 72, 88, 89, 92, 95, 98, 100, 159, 161, 172, 175, 178, 183, 184, 185, 189, 193, 207, 212, 217, 247, 253, 257, 260, 262, 279, 295, 297, 298, 300, 301, 302, 303, 304, 321, 322, 323, 324, 327, 404, 407, 408, 418, 419, 423, 562, 734

General Office Building (710)

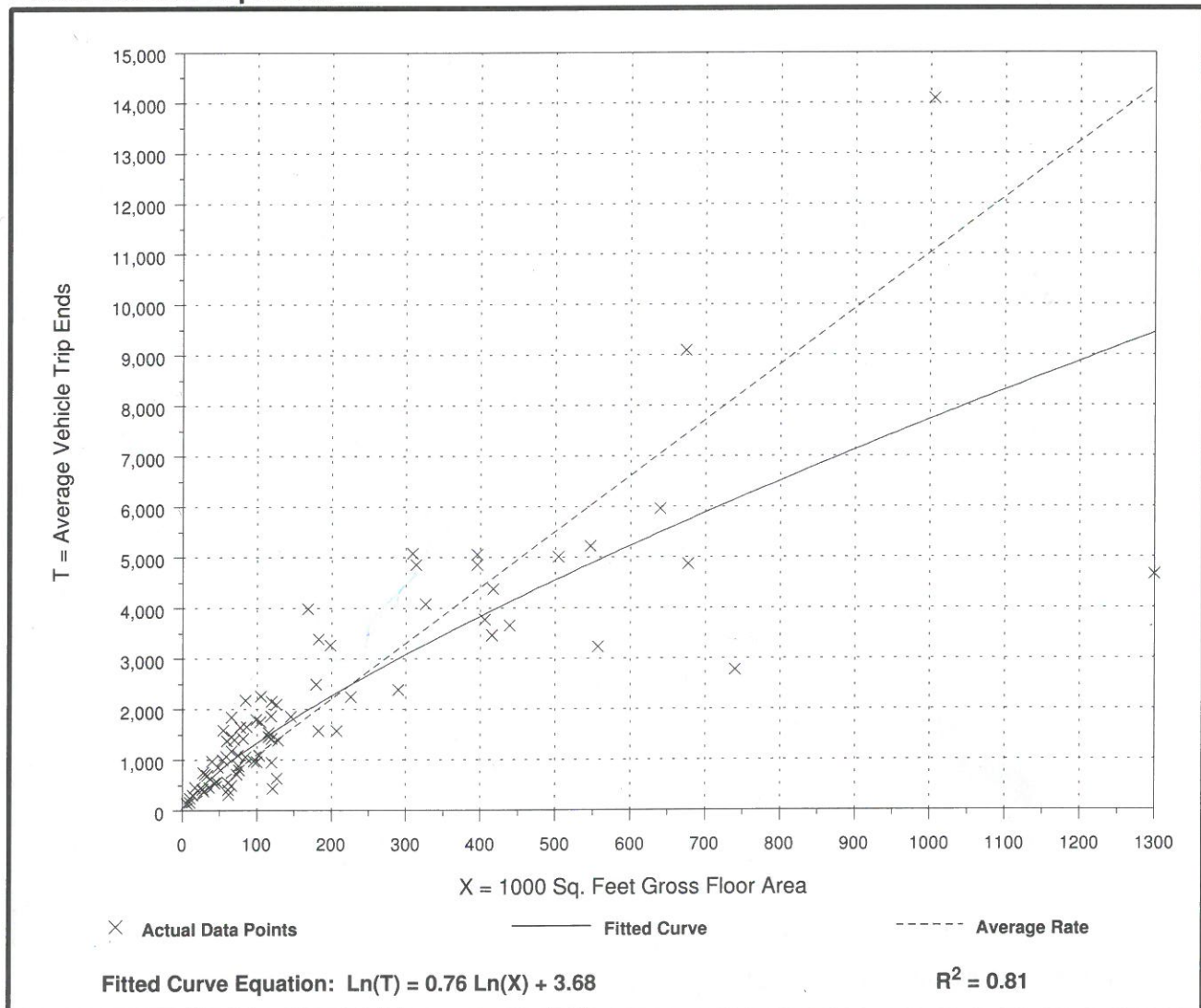
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday

Number of Studies: 79
Average 1000 Sq. Feet GFA: 197
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
11.03	3.58 - 28.80	6.15

Data Plot and Equation



General Office Building (710)

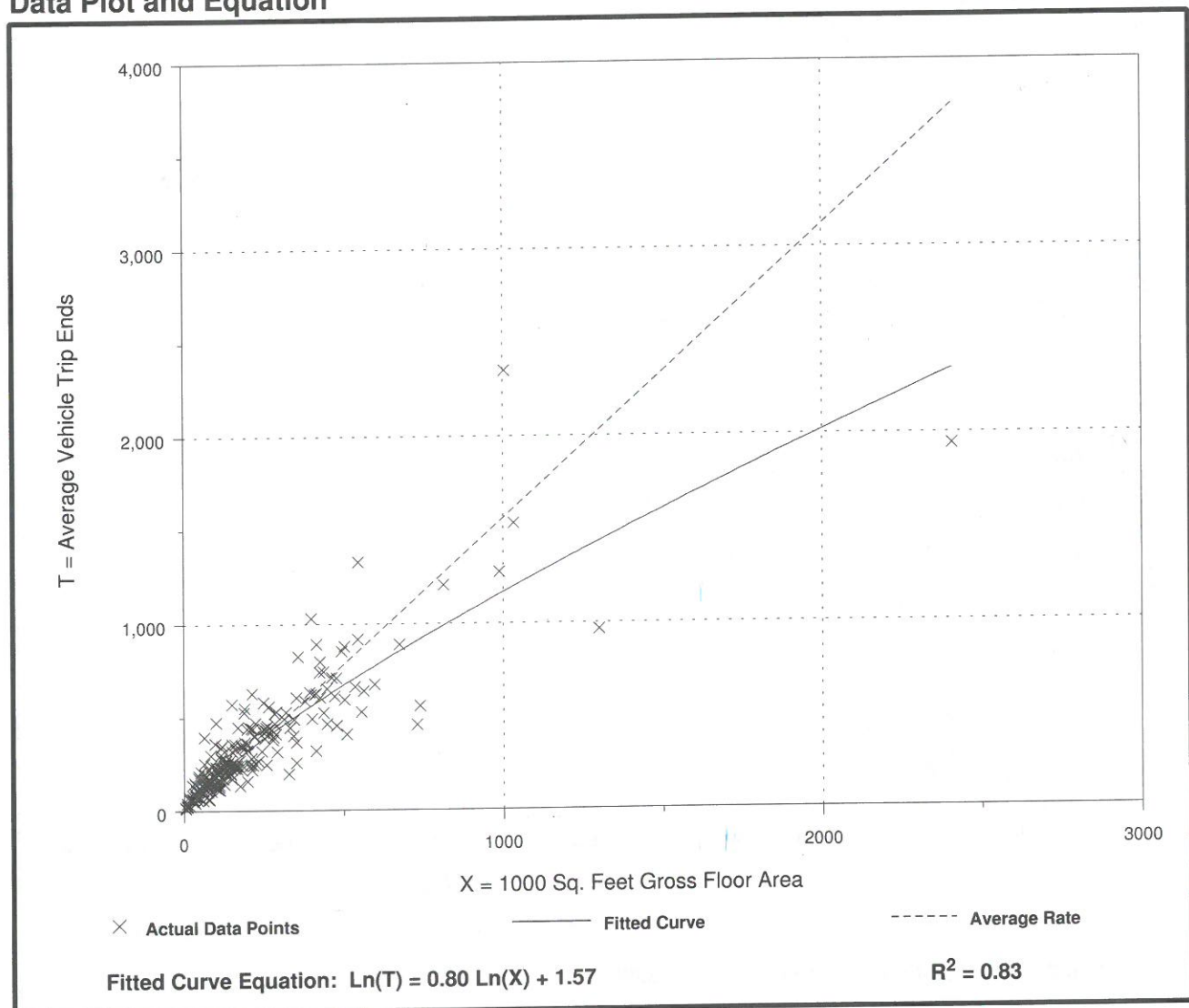
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
A.M. Peak Hour

Number of Studies: 218
 Average 1000 Sq. Feet GFA: 222
 Directional Distribution: 88% entering, 12% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.56	0.60 - 5.98	1.40

Data Plot and Equation



General Office Building (710)

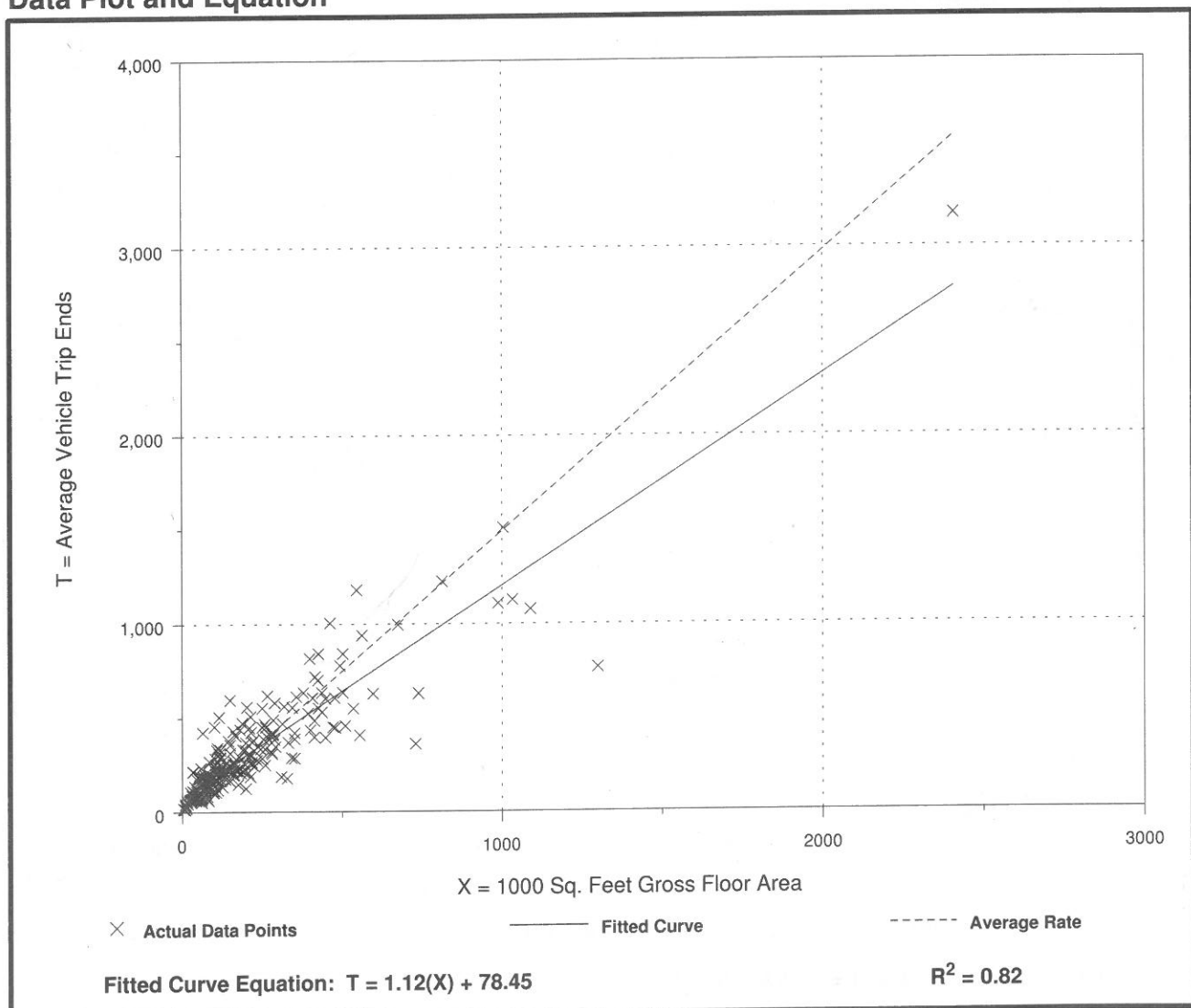
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
P.M. Peak Hour

Number of Studies: 236
 Average 1000 Sq. Feet GFA: 215
 Directional Distribution: 17% entering, 83% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
1.49	0.49 - 6.39	1.37

Data Plot and Equation



Land Use: 932

High-Turnover (Sit-Down) Restaurant

Description

This land use consists of sit-down, full-service eating establishments with typical duration of stay of approximately one hour. This type of restaurant is usually moderately priced and frequently belongs to a restaurant chain. Generally, these restaurants serve lunch and dinner; they may also be open for breakfast and are sometimes open 24 hours per day. These restaurants typically do not take reservations. Patrons commonly wait to be seated, are served by a waiter/waitress, order from menus and pay for their meal after they eat. Some facilities contained within this land use may also contain a bar area for serving food and alcoholic drinks. Quality restaurant (Land Use 931), fast-food restaurant without drive-through window (Land Use 933), fast-food restaurant with drive-through window (Land Use 934) and fast-food restaurant with drive-through window and no indoor seating (Land Use 935) are related uses.

Additional Data

Users should exercise caution when applying statistics during the A.M. peak periods, as the sites contained in the database for this land use may or may not be open for breakfast. In cases where it was confirmed that the sites were not open for breakfast, data for the A.M. peak hour of the adjacent street traffic were removed from the database.

Information on approximate hourly variation in high-turnover (sit-down) restaurant traffic is shown in the following table. It should be noted, however, that the information contained in this table is based on a limited sample size. Therefore, caution should be exercised when applying the data. Also, some information provided in the table may conflict with the results obtained by applying the average rate or regression equations. When this occurs, it is suggested that the results from the average rate or regression equations be used, as they are based on a larger number of studies.

Hourly Variation in High-Turnover (Sit-Down) Restaurant Traffic						
Time	Average Weekday ^a		Average Saturday ^b		Average Sunday ^c	
	Percent of 24-Hour Entering Traffic	Percent of 24-Hour Exiting Traffic	Percent of 24-Hour Entering Traffic	Percent of 24-Hour Exiting Traffic	Percent of 24-Hour Entering Traffic	Percent of 24-Hour Exiting Traffic
6 a.m.–7 a.m.	1.5	0.8	0.9	0.6	0.1	0.4
7 a.m.–8 a.m.	3.0	1.7	2.2	1.0	0.9	1.3
8 a.m.–9 a.m.	3.6	2.3	4.1	2.8	1.7	0.1
9 a.m.–10 a.m.	4.1	2.7	4.1	3.5	1.4	1.2
10 a.m.–11 a.m.	3.3	3.2	4.6	3.7	2.3	4.2
11 a.m.–12 p.m.	7.4	3.8	4.6	4.0	5.5	2.6
12 p.m.–1 p.m.	8.6	6.6	5.1	3.6	8.8	3.9
1 p.m.–2 p.m.	4.8	8.6	4.4	4.3	6.6	8.2
2 p.m.–3 p.m.	3.2	5.5	3.8	4.3	5.9	5.1
3 p.m.–4 p.m.	3.0	4.0	3.6	3.5	8.7	7.2
4 p.m.–5 p.m.	5.6	4.5	4.5	4.0	10.0	8.4
5 p.m.–6 p.m.	9.7	4.6	7.1	4.3	12.4	10.5
6 p.m.–7 p.m.	10.7	7.9	9.9	6.7	11.3	10.0
7 p.m.–8 p.m.	9.5	9.0	8.5	7.3	8.7	9.3
8 p.m.–9 p.m.	7.7	9.0	8.1	8.5	5.9	8.0
9 p.m.–10 p.m.	4.9	8.6	6.5	7.3	4.2	7.5
10 p.m.–6 a.m.	9.4	17.2	18.0	30.6	5.6	12.1

Sites ranged in size from 4,500 to 21,000 square feet gross floor area

^a Source numbers – 13, 88, 126, 507 and The Traffic Group, Inc.; based on seven studies

^b Source numbers – 13, 88, 126 and The Traffic Group, Inc.; based on five studies

^c Source numbers – 13, 88 and 126; based on three studies

Vehicle occupancy ranged from 1.39 to 1.69 persons per automobile on an average weekday. The average for the sites surveyed was approximately 1.52.

Five sites submitted for inclusion in this land use indicated the presence of an on-site pick-up window. From the limited data sample, it does not appear that the presence of a pick-up window had a significant impact on trip generation.

The outdoor seating area is not included in the overall gross floor area. Therefore, the number of seats may be a more reliable independent variable on which to establish trip generation rates for facilities having significant outdoor seating.

The sites were surveyed between the 1960s and the 2000s throughout the United States.

Source Numbers

2, 4, 5, 72, 90, 100, 126, 269, 275, 280, 300, 301, 305, 338, 340, 341, 358, 384, 424, 432, 437, 438, 444, 507, 555, 577, 589, 617, 618, 728

High-Turnover (Sit-Down) Restaurant (932)

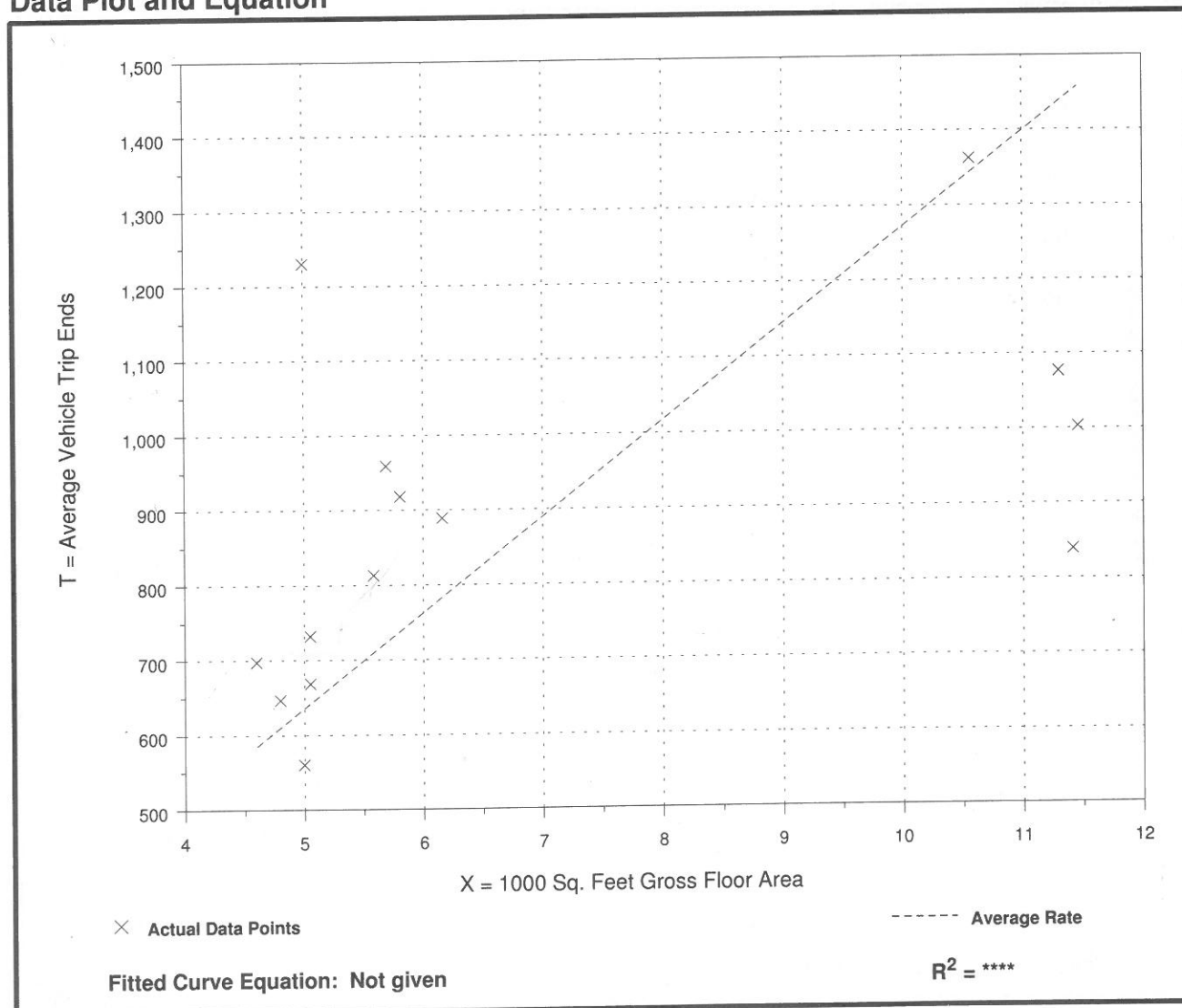
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday

Number of Studies: 14
Average 1000 Sq. Feet GFA: 7
Directional Distribution: 50% entering, 50% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
127.15	73.51 - 246.00	41.77

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant (932)

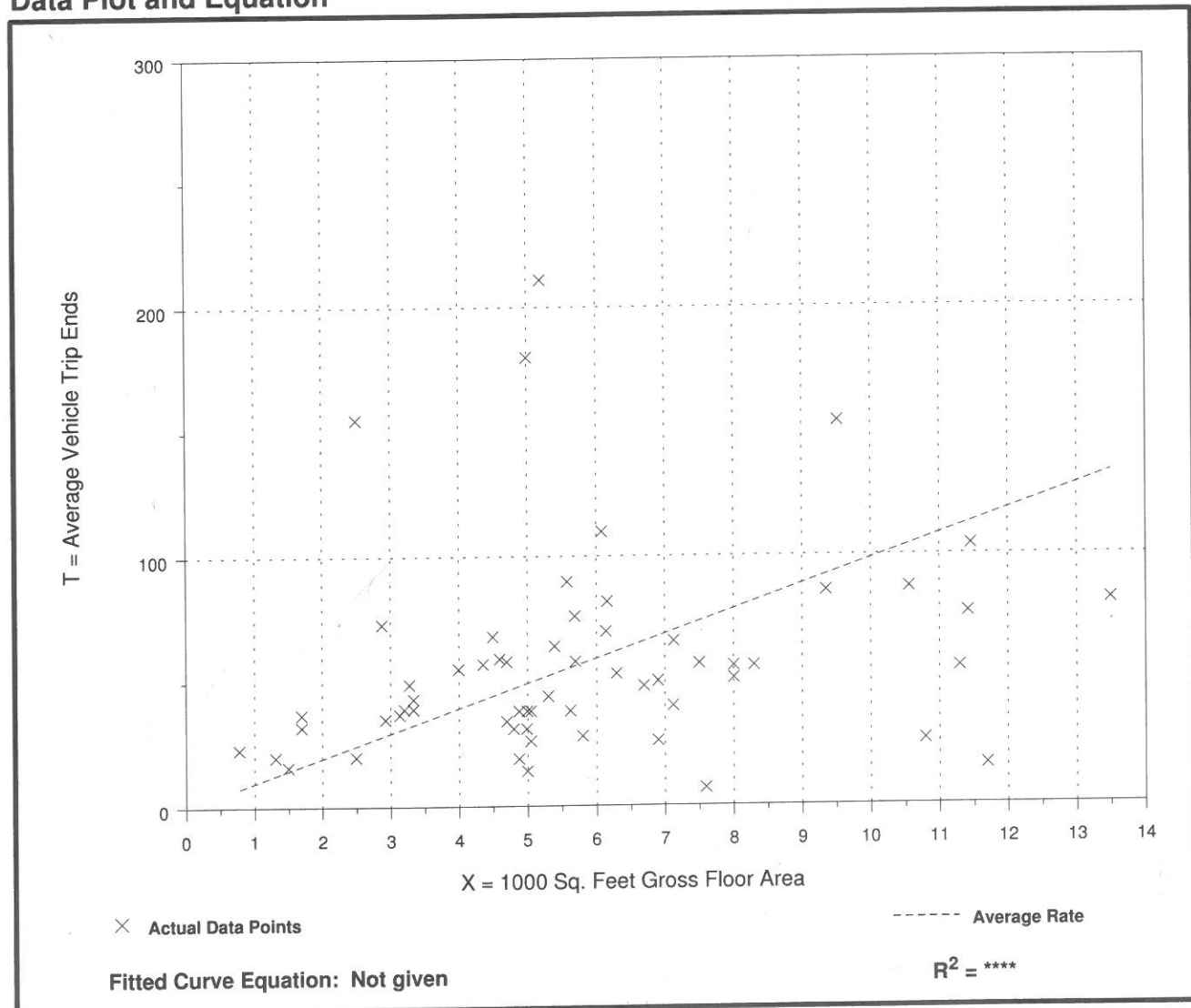
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.

Number of Studies: 60
Average 1000 Sq. Feet GFA: 6
Directional Distribution: 60% entering, 40% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

Average Rate	Range of Rates	Standard Deviation
9.85	0.92 - 62.00	8.54

Data Plot and Equation



High-Turnover (Sit-Down) Restaurant (932)

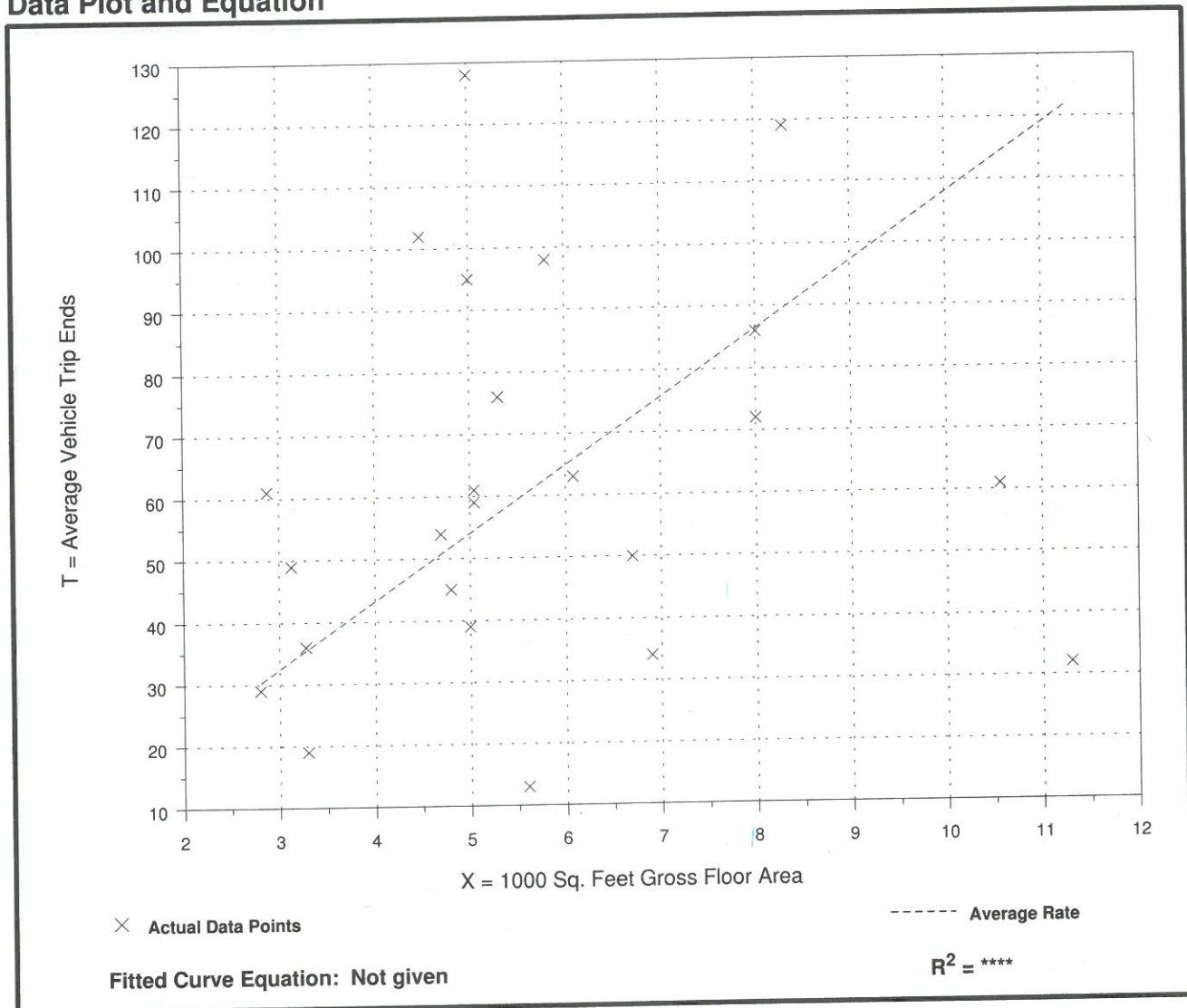
Average Vehicle Trip Ends vs: 1000 Sq. Feet Gross Floor Area
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Number of Studies: 24
Average 1000 Sq. Feet GFA: 6
Directional Distribution: 55% entering, 45% exiting

Trip Generation per 1000 Sq. Feet Gross Floor Area

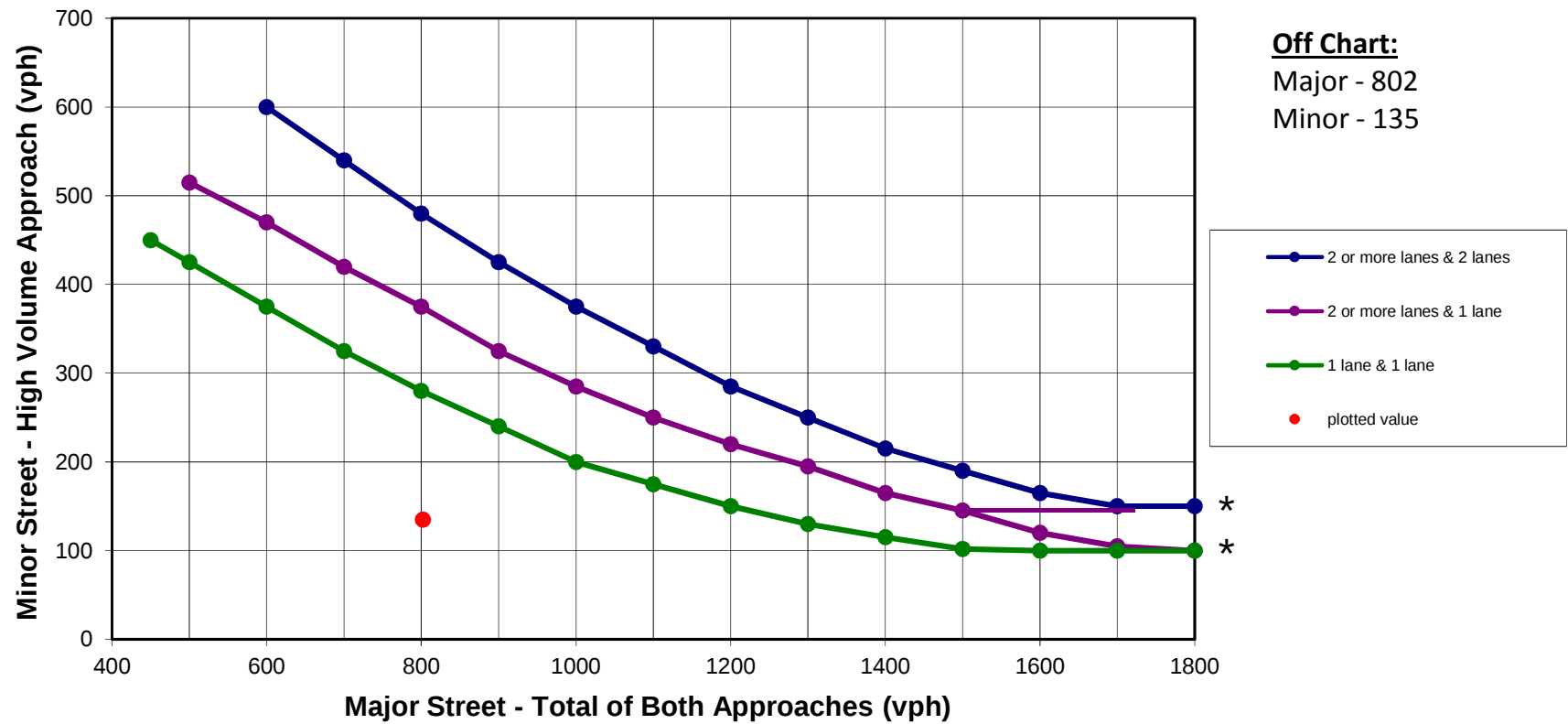
Average Rate	Range of Rates	Standard Deviation
10.81	2.32 - 25.60	6.59

Data Plot and Equation



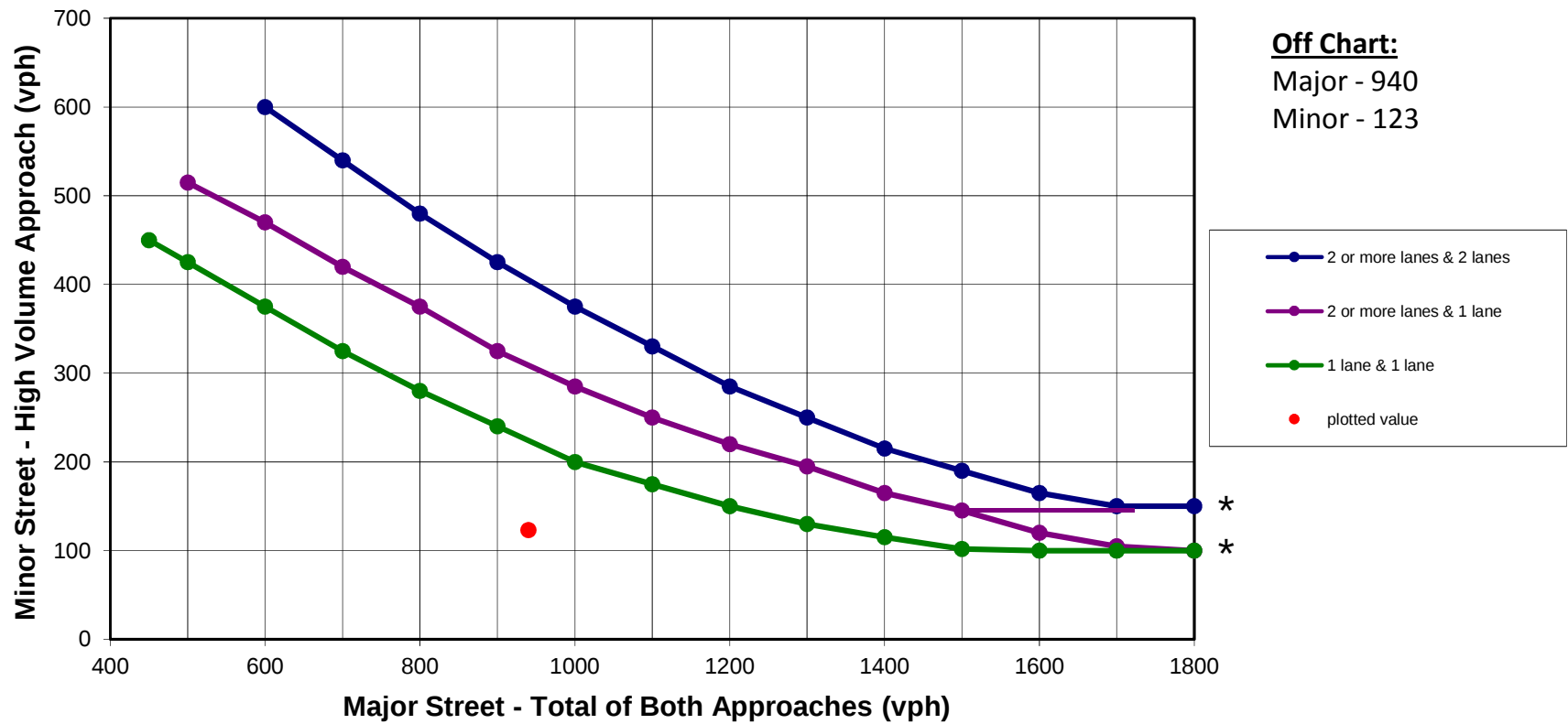
Signal Warrants

Existing + Approved + Full Build AM Peak Hour Volume Warrant 3rd Street & Kessler Drive



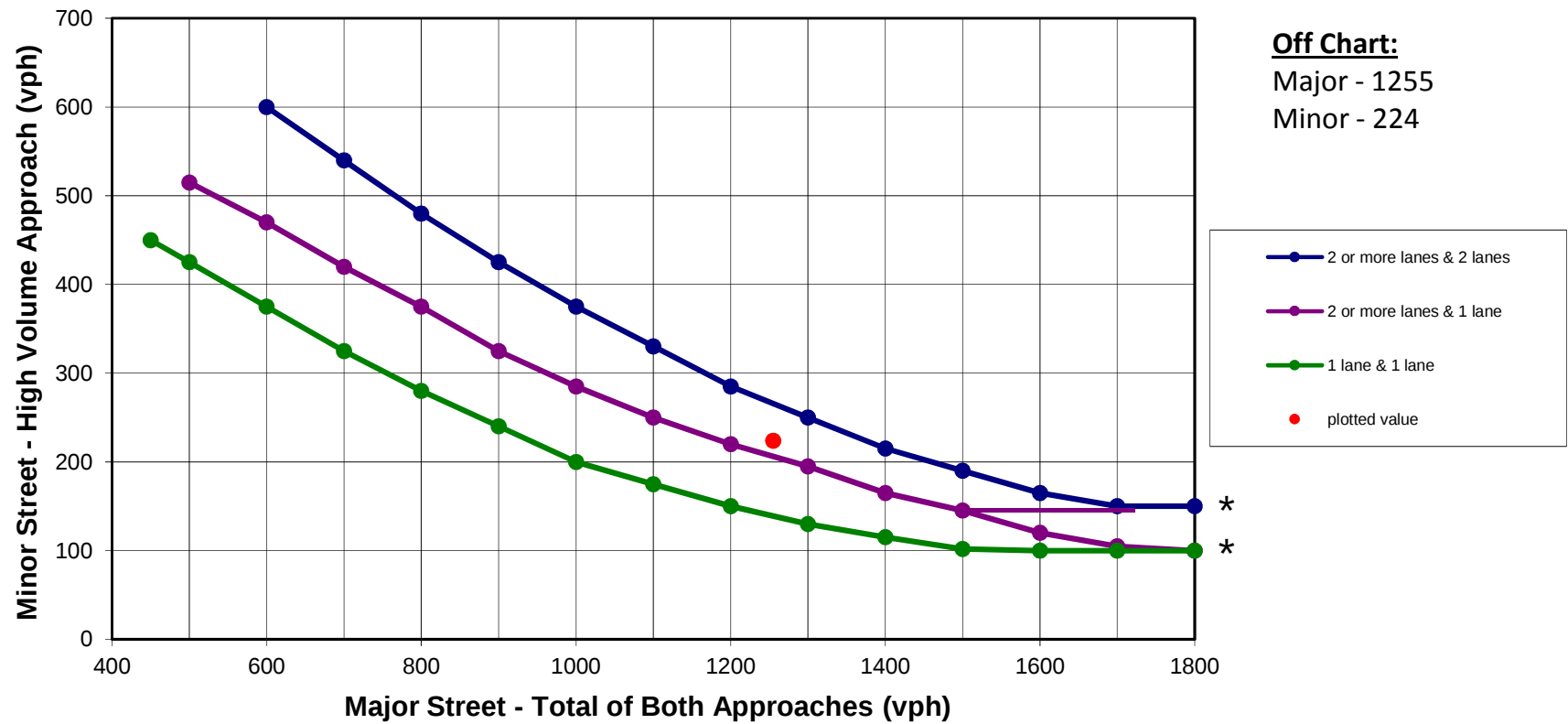
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes

Existing + Approved + Full Build AM Peak Hour Volume Warrant 3rd Street & Bridlewood Drive



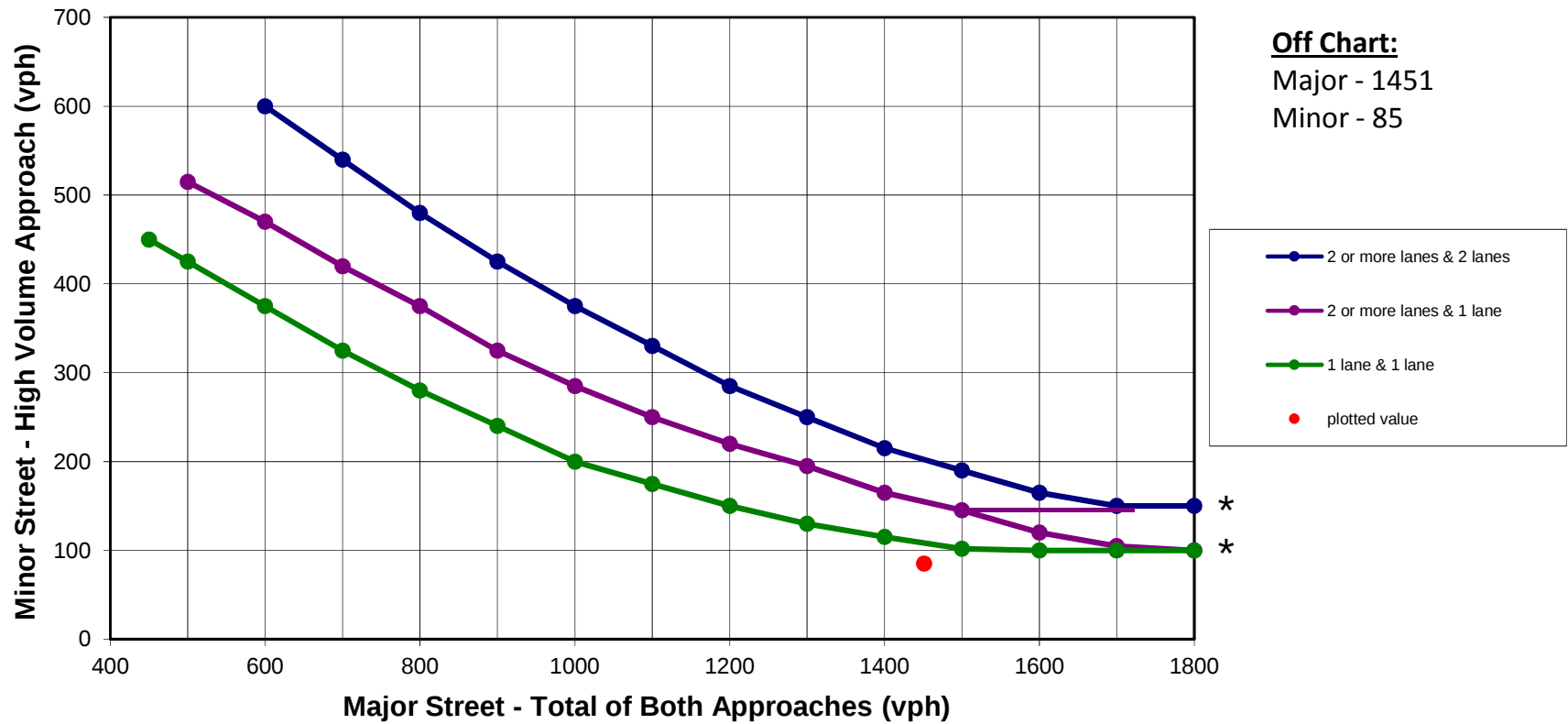
*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes

Existing + Approved + Full Build PM Peak Hour Volume Warrant 3rd Street & Kessler Drive



*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes

Existing + Approved + Full Build PM Peak Hour Volume Warrant 3rd Street & Bridlewood Drive



*Note: 150 vph applies as the lower threshold volume for a minor street approach with two or more lanes

Capacity Analysis

Queues

3: Longview Blvd/View High Dr & Longview Rd/3rd St

9/9/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	5	6	8	67	17	620	3	592	53	226	261	28
v/c Ratio	0.02	0.02	0.02	0.20	0.05	0.44	0.01	0.50	0.07	0.28	0.10	0.02
Control Delay	26.8	26.6	0.0	24.1	23.8	3.0	27.0	16.5	0.2	19.5	6.7	0.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.8	26.6	0.0	24.1	23.8	3.0	27.0	16.5	0.2	19.5	6.7	0.0
Queue Length 50th (ft)	1	1	0	15	4	4	1	67	0	25	11	0
Queue Length 95th (ft)	10	12	0	55	21	43	8	172	0	73	60	0
Internal Link Dist (ft)	339			579			573			602		
Turn Bay Length (ft)	330		130	250		360	200		175	525		260
Base Capacity (vph)	394	322	495	656	599	1933	306	2485	1191	1612	2965	1359
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.01	0.02	0.02	0.10	0.03	0.32	0.01	0.24	0.04	0.14	0.09	0.02
Intersection Summary												

HCM Signalized Intersection Capacity Analysis

3: Longview Blvd/View High Dr & Longview Rd/3rd St

9/9/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	5	6	52	13	570	2	545	41	192	222	22
Future Volume (vph)	4	5	6	52	13	570	2	545	41	192	222	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.92	0.78	0.92	0.78	0.85	0.85	0.78
Adj. Flow (vph)	5	6	8	67	17	620	3	592	53	226	261	28
RTOR Reduction (vph)	0	0	8	0	0	405	0	0	34	0	0	13
Lane Group Flow (vph)	5	6	0	67	17	215	3	592	19	226	261	15
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	0.9	0.9	0.9	4.4	4.4	15.5	0.9	20.9	20.9	11.1	31.1	31.1
Effective Green, g (s)	0.9	0.9	0.9	4.4	4.4	15.5	0.9	20.9	20.9	11.1	31.1	31.1
Actuated g/C Ratio	0.02	0.02	0.02	0.08	0.08	0.27	0.02	0.36	0.36	0.19	0.54	0.54
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	27	29	24	135	143	997	27	1290	577	665	1920	859
v/s Ratio Prot	0.00	0.00		c0.04	0.01	c0.04	0.00	c0.17		c0.07	0.07	
v/s Ratio Perm			0.00			0.04			0.01			0.01
v/c Ratio	0.19	0.21	0.01	0.50	0.12	0.22	0.11	0.46	0.03	0.34	0.14	0.02
Uniform Delay, d1	27.8	27.8	27.8	25.4	24.6	16.2	27.8	13.9	11.7	19.9	6.5	6.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	3.3	3.5	0.1	2.9	0.4	0.1	1.8	0.3	0.0	0.3	0.0	0.0
Delay (s)	31.1	31.4	27.8	28.2	25.0	16.3	29.6	14.1	11.7	20.2	6.5	6.1
Level of Service	C	C	C	C	C	B	C	B	B	C	A	A
Approach Delay (s)		29.8			17.6			14.0			12.5	
Approach LOS		C			B			B			B	
Intersection Summary												
HCM 2000 Control Delay			15.1									
HCM 2000 Volume to Capacity ratio			0.45									
Actuated Cycle Length (s)			57.3									
Intersection Capacity Utilization			53.3%									
Analysis Period (min)			15									
c Critical Lane Group												

Intersection												
Int Delay, s/veh	5.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	257	14	14	627	21	73	4	46	74	8	41
Future Vol, veh/h	7	257	14	14	627	21	73	4	46	74	8	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	279	15	15	682	23	79	4	50	80	9	45

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	704	0	0	295	0	0	678	1037	147	880	1033	352
Stage 1	-	-	-	-	-	-	302	302	-	723	723	-
Stage 2	-	-	-	-	-	-	376	735	-	157	310	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	890	-	-	1263	-	-	338	230	873	241	231	644
Stage 1	-	-	-	-	-	-	682	663	-	384	429	-
Stage 2	-	-	-	-	-	-	617	424	-	829	658	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	890	-	-	1263	-	-	301	225	873	220	226	644
Mov Cap-2 Maneuver	-	-	-	-	-	-	301	225	-	220	226	-
Stage 1	-	-	-	-	-	-	676	657	-	381	424	-
Stage 2	-	-	-	-	-	-	556	419	-	769	652	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	18.8	28.8
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	393	890	-	-	1263	-	-	282
HCM Lane V/C Ratio	0.34	0.009	-	-	0.012	-	-	0.474
HCM Control Delay (s)	18.8	9.1	-	-	7.9	-	-	28.8
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.5	0	-	-	0	-	-	2.4

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	24	126	2	117	524	9	54	1	80	28	6	57
Future Vol, veh/h	24	126	2	117	524	9	54	1	80	28	6	57
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	100	190	-	-	95	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	83	25	78	92	78	78	25	78	78	50	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	31	152	8	150	570	12	69	4	103	36	12	73

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	581	0	0	152	0	0	804	1094	76	1014	1088	291
Stage 1	-	-	-	-	-	-	213	213	-	875	875	-
Stage 2	-	-	-	-	-	-	591	881	-	139	213	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	989	-	-	1426	-	-	274	213	970	193	214	706
Stage 1	-	-	-	-	-	-	769	725	-	310	365	-
Stage 2	-	-	-	-	-	-	460	363	-	850	725	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	989	-	-	1426	-	-	210	185	970	152	185	706
Mov Cap-2 Maneuver	-	-	-	-	-	-	210	185	-	152	185	-
Stage 1	-	-	-	-	-	-	745	702	-	300	327	-
Stage 2	-	-	-	-	-	-	355	325	-	732	702	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.4	1.6	18	25
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	210	837	989	-	-	1426	-	-	299
HCM Lane V/C Ratio	0.33	0.127	0.031	-	-	0.105	-	-	0.405
HCM Control Delay (s)	30.4	9.9	8.8	-	-	7.8	-	-	25
HCM Lane LOS	D	A	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	1.4	0.4	0.1	-	-	0.4	-	-	1.9

Intersection

Int Delay, s/veh 3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	163	50	102	523	82	34
Future Vol, veh/h	163	50	102	523	82	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	78	79	92	80	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	194	64	129	568	103	44

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	736
Stage 1	-	-	194
Stage 2	-	-	542
Critical Hdwy	-	4.14	6.84
Critical Hdwy Stg 1	-	-	5.84
Critical Hdwy Stg 2	-	-	5.84
Follow-up Hdwy	-	2.22	3.52
Pot Cap-1 Maneuver	-	1377	354
Stage 1	-	-	820
Stage 2	-	-	547
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1377	321
Mov Cap-2 Maneuver	-	-	321
Stage 1	-	-	820
Stage 2	-	-	496

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	19.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	399	-	-	1377	-
HCM Lane V/C Ratio	0.366	-	-	0.094	-
HCM Control Delay (s)	19.1	-	-	7.9	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	1.6	-	-	0.3	-

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	79	0	0	23	32	93
Future Vol, veh/h	79	0	0	23	32	93
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	86	0	0	25	35	101
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	110	85	136	0	-	0
Stage 1	85	-	-	-	-	-
Stage 2	25	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	887	974	1448	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	998	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	887	974	1448	-	-	-
Mov Cap-2 Maneuver	887	-	-	-	-	-
Stage 1	938	-	-	-	-	-
Stage 2	998	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.5	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1448	-	887	-	-	
HCM Lane V/C Ratio	-	-	0.097	-	-	
HCM Control Delay (s)	0	-	9.5	-	-	
HCM Lane LOS	A	-	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	13	610	6	0	256
Future Vol, veh/h	0	13	610	6	0	256
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	663	7	0	278
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	335	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	661	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	661	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	10.6		0		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	- 661	-			
HCM Lane V/C Ratio	-	- 0.021	-			
HCM Control Delay (s)	-	- 10.6	-			
HCM Lane LOS	-	- B	-			
HCM 95th %tile Q(veh)	-	- 0.1	-			

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	19	595	28	0	256
Future Vol, veh/h	0	19	595	28	0	256
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	21	647	30	0	278
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	339	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	657	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	657	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	10.7		0		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	- 657	-			
HCM Lane V/C Ratio	-	- 0.031	-			
HCM Control Delay (s)	-	- 10.7	-			
HCM Lane LOS	-	- B	-			
HCM 95th %tile Q(veh)	-	- 0.1	-			

Intersection

Int Delay, s/veh 4.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	4	2	0	1	31
Future Vol, veh/h	23	4	2	0	1	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	4	2	0	1	34

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	22	18	35	0	-	0
Stage 1	18	-	-	-	-	-
Stage 2	4	-	-	-	-	-
Critical Hdwy	7.12	6.22	4.12	-	-	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	990	1061	1576	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	1018	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	989	1061	1576	-	-	-
Mov Cap-2 Maneuver	989	-	-	-	-	-
Stage 1	1000	-	-	-	-	-
Stage 2	1017	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	7.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1576	-	999	-	-
HCM Lane V/C Ratio	0.001	-	0.029	-	-
HCM Control Delay (s)	7.3	0	8.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	74	51	17	76	0	8	0	5	0	0	0
Future Vol, veh/h	0	74	51	17	76	0	8	0	5	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	80	55	18	83	0	9	0	5	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	83	0	0	136	0	0	228	228	108	231	256	83
Stage 1	-	-	-	-	-	-	108	108	-	120	120	-
Stage 2	-	-	-	-	-	-	120	120	-	111	136	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1514	-	-	1448	-	-	727	671	946	724	648	976
Stage 1	-	-	-	-	-	-	897	806	-	884	796	-
Stage 2	-	-	-	-	-	-	884	796	-	894	784	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1514	-	-	1448	-	-	720	662	946	713	640	976
Mov Cap-2 Maneuver	-	-	-	-	-	-	720	662	-	713	640	-
Stage 1	-	-	-	-	-	-	897	806	-	884	786	-
Stage 2	-	-	-	-	-	-	873	786	-	889	784	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			1.4			9.6			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	793	1514	-	-	1448	-	-	-				
HCM Lane V/C Ratio	0.018	-	-	-	0.013	-	-	-				
HCM Control Delay (s)	9.6	0	-	-	7.5	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.1	0	-	-	0	-	-	-				

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	108	38	10	73	1	10	7	4	13	50	89
Future Vol, veh/h	0	108	38	10	73	1	10	7	4	13	50	89
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	117	41	11	79	1	11	8	4	14	54	97
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	80	0	0	159	0	0	315	240	138	246	261	80
Stage 1	-	-	-	-	-	-	138	138	-	102	102	-
Stage 2	-	-	-	-	-	-	177	102	-	144	159	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1518	-	-	1420	-	-	638	661	910	708	644	980
Stage 1	-	-	-	-	-	-	865	782	-	904	811	-
Stage 2	-	-	-	-	-	-	825	811	-	859	766	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1518	-	-	1420	-	-	534	656	910	694	639	980
Mov Cap-2 Maneuver	-	-	-	-	-	-	534	656	-	694	639	-
Stage 1	-	-	-	-	-	-	865	782	-	904	805	-
Stage 2	-	-	-	-	-	-	688	805	-	847	766	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.9			11			10.6		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	621	1518	-	-	1420	-	-	809				
HCM Lane V/C Ratio	0.037	-	-	-	0.008	-	-	0.204				
HCM Control Delay (s)	11	0	-	-	7.6	0	-	10.6				
HCM Lane LOS	B	A	-	-	A	A	-	B				
HCM 95th %tile O(veh)	0.1	0	-	-	0	-	-	0.8				

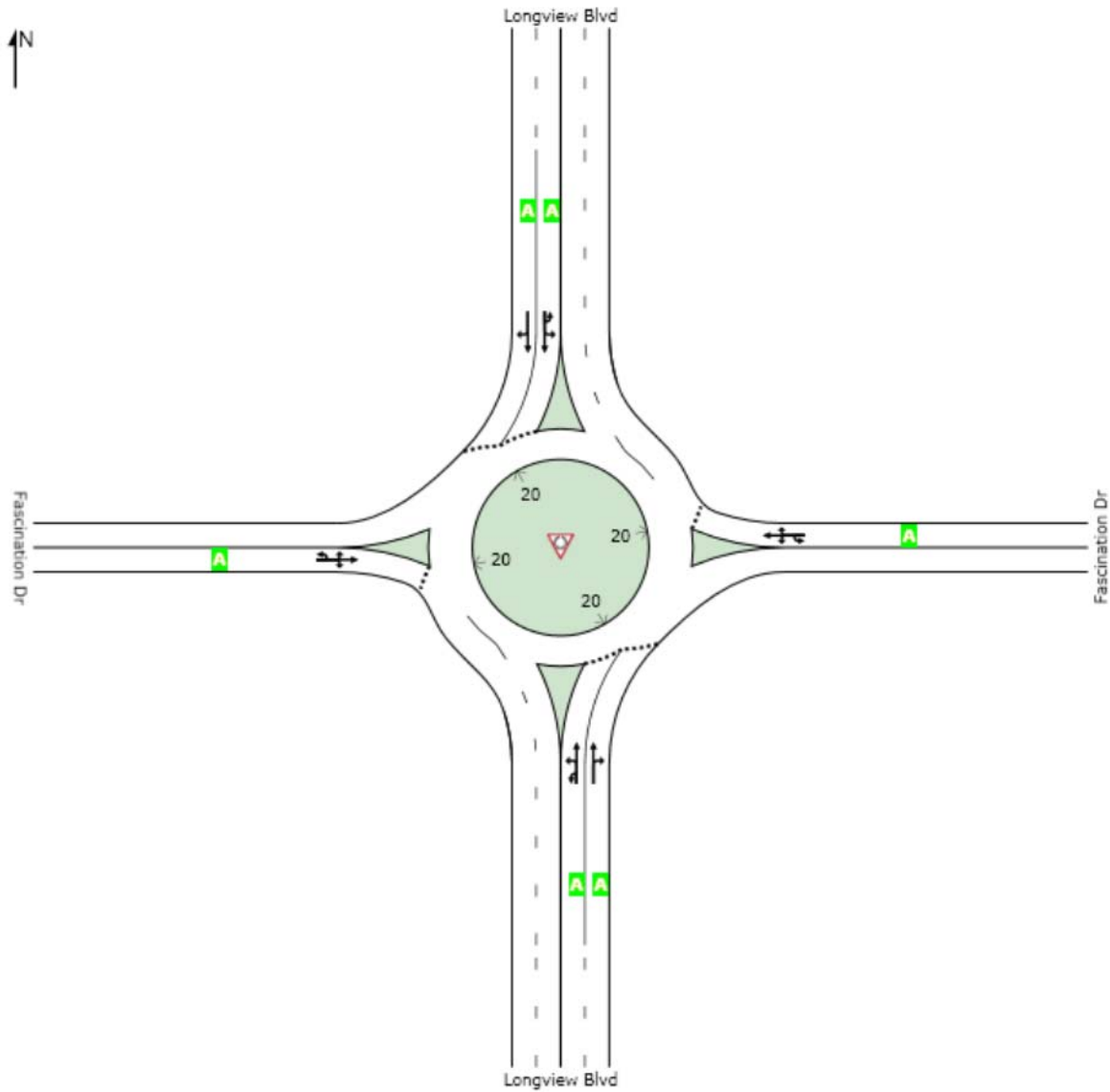
LEVEL OF SERVICE

Site: New Longview - Longview Blvd & Fascination Dr

Existing + Approved + Full Build - AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Fascination Dr**

Existing + Approved + Full Build - AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	8	0.0	0.209	11.7	LOS B	1.2	8.4	0.38	0.49	55.8
1	L2	5	2.0	0.209	9.7	LOS A	1.2	8.4	0.38	0.49	54.7
2	T1	478	2.0	0.209	4.9	LOS A	1.2	8.6	0.37	0.49	55.0
3	R2	64	2.0	0.209	4.9	LOS A	1.2	8.6	0.36	0.48	53.7
Approach		556	2.0	0.209	5.1	LOS A	1.2	8.6	0.37	0.49	54.8
East: Fascination Dr											
4u	U	5	0.0	0.230	14.3	LOS B	1.4	9.8	0.67	0.75	53.7
4	L2	63	2.0	0.230	12.3	LOS B	1.4	9.8	0.67	0.75	52.7
5	T1	22	2.0	0.230	7.7	LOS A	1.4	9.8	0.67	0.75	52.7
6	R2	106	2.0	0.230	7.4	LOS A	1.4	9.8	0.67	0.75	51.5
Approach		197	1.9	0.230	9.2	LOS A	1.4	9.8	0.67	0.75	52.1
North: Longview Blvd											
7u	U	16	0.0	0.102	11.3	LOS B	0.6	4.1	0.29	0.57	54.3
7	L2	72	2.0	0.102	9.2	LOS A	0.6	4.1	0.29	0.57	53.2
8	T1	193	2.0	0.102	4.5	LOS A	0.6	4.2	0.28	0.46	54.9
9	R2	5	2.0	0.102	4.6	LOS A	0.6	4.2	0.28	0.42	54.0
Approach		285	1.9	0.102	6.1	LOS A	0.6	4.2	0.28	0.49	54.4
West: Fascination Dr											
10u	U	5	0.0	0.094	12.5	LOS B	0.5	3.5	0.48	0.66	53.2
10	L2	74	2.0	0.094	10.5	LOS B	0.5	3.5	0.48	0.66	52.2
11	T1	13	2.0	0.094	5.9	LOS A	0.5	3.5	0.48	0.66	52.3
12	R2	5	2.0	0.094	5.6	LOS A	0.5	3.5	0.48	0.66	51.1
Approach		97	1.9	0.094	9.7	LOS A	0.5	3.5	0.48	0.66	52.2
All Vehicles		1135	1.9	0.230	6.4	LOS A	1.4	9.8	0.41	0.55	54.0

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

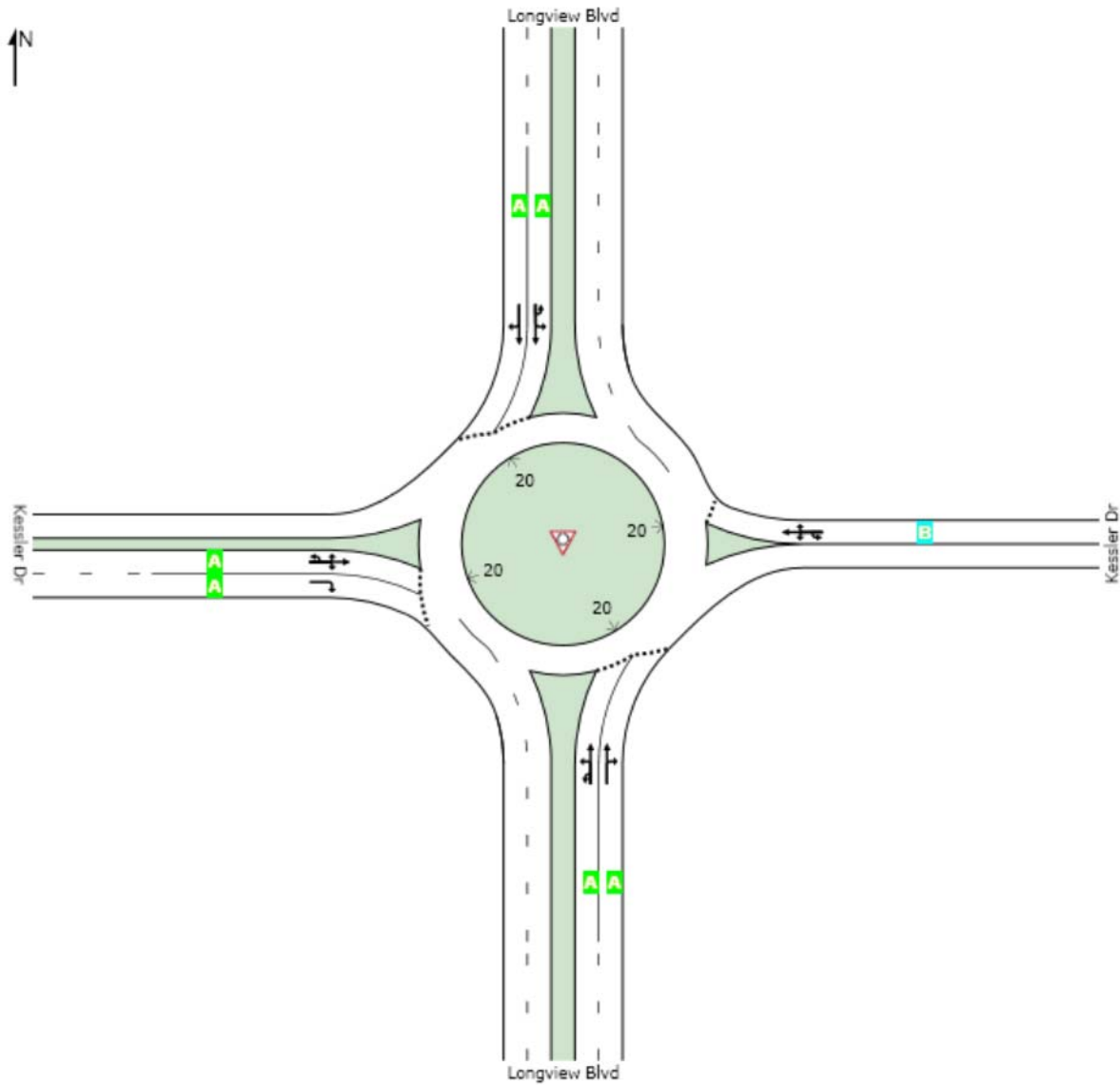
LEVEL OF SERVICE

Site: New Longview - Longview Blvd & Kessler Dr

Existing + Approved + Full Build - AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	B	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved + Full Build - AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	1	0.0	0.190	11.4	LOS B	1.1	7.6	0.31	0.45	56.2
1	L2	11	0.0	0.190	9.3	LOS A	1.1	7.6	0.31	0.45	55.2
2	T1	524	0.0	0.190	4.6	LOS A	1.1	7.7	0.31	0.44	55.3
3	R2	2	0.0	0.190	4.6	LOS A	1.1	7.7	0.30	0.43	54.0
Approach		538	0.0	0.190	4.7	LOS A	1.1	7.7	0.31	0.44	55.3
East: Kessler Dr											
4u	U	1	0.0	0.009	14.1	LOS B	0.0	0.3	0.63	0.63	52.4
4	L2	4	0.0	0.009	12.0	LOS B	0.0	0.3	0.63	0.63	51.6
5	T1	1	0.0	0.009	7.4	LOS A	0.0	0.3	0.63	0.63	51.6
6	R2	1	0.0	0.009	7.2	LOS A	0.0	0.3	0.63	0.63	50.5
Approach		7	0.0	0.009	11.0	LOS B	0.0	0.3	0.63	0.63	51.5
North: Longview Blvd											
7u	U	14	0.0	0.077	10.9	LOS B	0.4	2.7	0.09	0.44	56.8
7	L2	1	0.0	0.077	8.8	LOS A	0.4	2.7	0.09	0.44	55.8
8	T1	223	0.0	0.077	4.2	LOS A	0.4	2.7	0.09	0.42	56.2
9	R2	6	0.0	0.077	4.2	LOS A	0.4	2.7	0.09	0.39	55.0
Approach		244	0.0	0.077	4.6	LOS A	0.4	2.7	0.09	0.42	56.2
West: Kessler Dr											
10u	U	1	0.0	0.080	11.6	LOS B	0.4	2.8	0.36	0.63	53.0
10	L2	109	0.0	0.080	9.6	LOS A	0.4	2.8	0.36	0.63	52.1
11	T1	1	0.0	0.080	4.9	LOS A	0.4	2.8	0.36	0.63	52.1
12	R2	5	0.0	0.006	5.5	LOS A	0.0	0.2	0.39	0.50	53.9
Approach		117	0.0	0.080	9.4	LOS A	0.4	2.8	0.36	0.62	52.2
All Vehicles		906	0.0	0.190	5.3	LOS A	1.1	7.7	0.26	0.46	55.1

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Project: F:\2016\2501-3000\016-2608\40-Design\Reports\SIDRA\Existing + App + P1 - AM.sip6

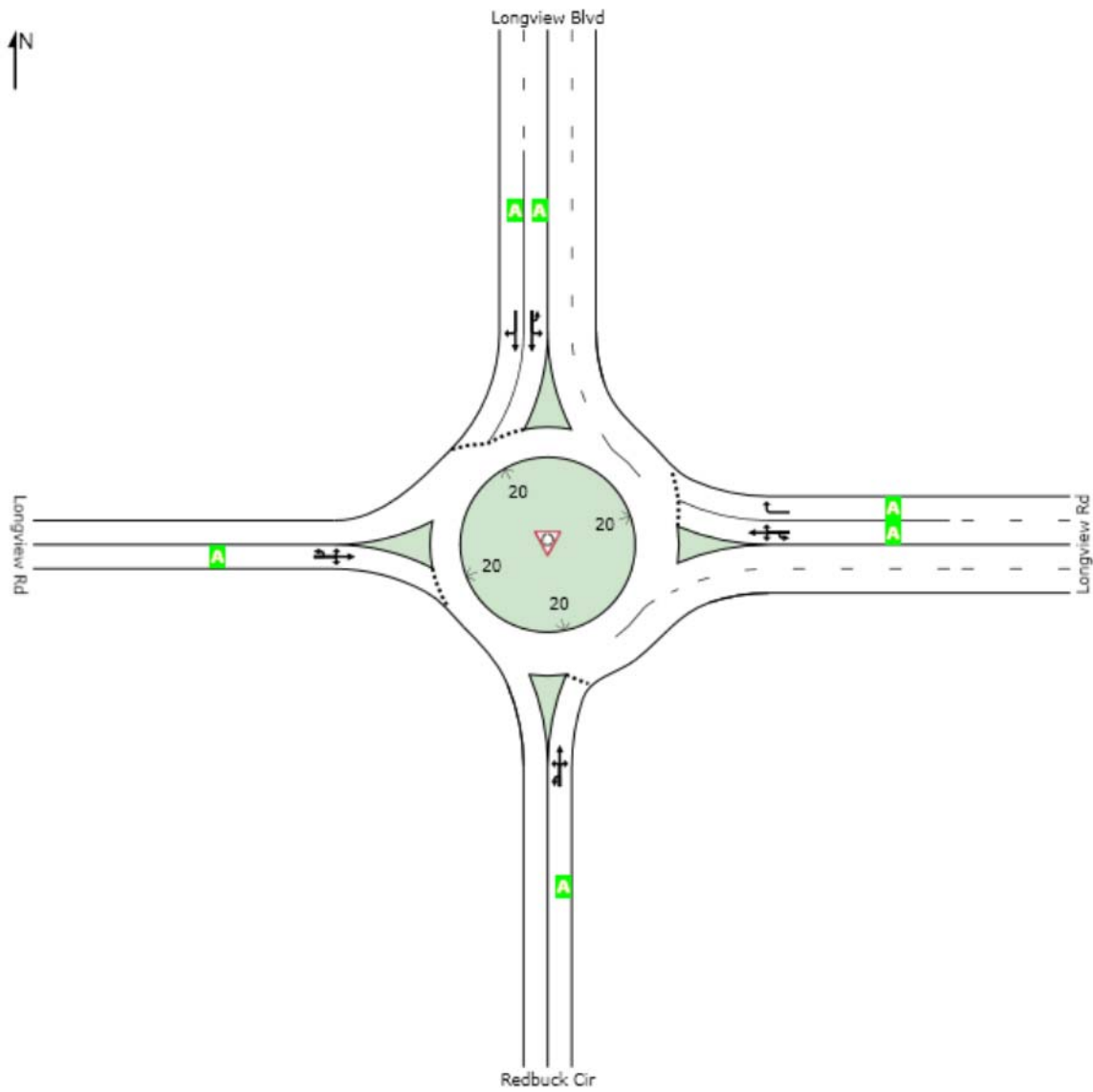
LEVEL OF SERVICE

 **Site: New Longview - Longview Blvd & Longview Rd**

Existing + Approved + Full Build - AM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

Site: New Longview - Longview Blvd & Longview Rd

Existing + Approved + Full Build - AM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Redbuck Cir											
1u	U	1	0.0	0.043	12.0	LOS B	0.2	1.5	0.41	0.52	55.5
1	L2	5	2.0	0.043	10.0	LOS A	0.2	1.5	0.41	0.52	54.4
2	T1	36	2.0	0.043	5.4	LOS A	0.2	1.5	0.41	0.52	54.5
3	R2	5	2.0	0.043	5.1	LOS A	0.2	1.5	0.41	0.52	53.2
Approach		47	2.0	0.043	6.0	LOS A	0.2	1.5	0.41	0.52	54.4
East: Longview Rd											
4u	U	1	0.0	0.195	11.2	LOS B	1.1	7.8	0.25	0.46	56.8
4	L2	5	2.0	0.195	9.1	LOS A	1.1	7.8	0.25	0.46	55.6
5	T1	105	2.0	0.195	4.5	LOS A	1.1	7.8	0.25	0.46	55.7
6	R2	462	2.0	0.195	4.5	LOS A	1.1	7.9	0.24	0.47	54.3
Approach		574	2.0	0.195	4.6	LOS A	1.1	7.9	0.24	0.47	54.6
North: Longview Blvd											
7u	U	1	0.0	0.138	11.2	LOS B	0.7	5.3	0.27	0.61	53.3
7	L2	205	2.0	0.138	9.2	LOS A	0.7	5.3	0.27	0.61	52.3
8	T1	12	2.0	0.023	4.9	LOS A	0.1	0.8	0.29	0.45	55.6
9	R2	12	2.0	0.023	4.9	LOS A	0.1	0.8	0.29	0.45	54.1
Approach		229	2.0	0.138	8.8	LOS A	0.7	5.3	0.27	0.59	52.5
West: Longview Rd											
10u	U	1	0.0	0.063	11.8	LOS B	0.3	2.3	0.38	0.58	54.4
10	L2	39	2.0	0.063	9.8	LOS A	0.3	2.3	0.38	0.58	53.4
11	T1	26	2.0	0.063	5.1	LOS A	0.3	2.3	0.38	0.58	53.4
12	R2	5	2.0	0.063	4.9	LOS A	0.3	2.3	0.38	0.58	52.2
Approach		72	2.0	0.063	7.7	LOS A	0.3	2.3	0.38	0.58	53.3
All Vehicles		922	2.0	0.195	5.9	LOS A	1.1	7.9	0.27	0.51	54.0

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Queues

3: Longview Blvd/View High Dr & Longview Rd/3rd St

9/9/2016

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	54	52	14	91	42	364	28	443	71	717	608	86
v/c Ratio	0.22	0.21	0.04	0.34	0.15	0.24	0.13	0.54	0.14	0.63	0.27	0.08
Control Delay	36.0	36.5	0.1	35.9	34.2	1.7	37.0	29.0	0.5	23.2	10.7	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.0	36.5	0.1	35.9	34.2	1.7	37.0	29.0	0.5	23.2	10.7	0.6
Queue Length 50th (ft)	23	22	0	39	17	0	12	98	0	146	68	0
Queue Length 95th (ft)	35	34	0	83	44	21	23	170	0	222	145	0
Internal Link Dist (ft)	339			579			573			602		
Turn Bay Length (ft)	330		130	250		360	200		175	525		260
Base Capacity (vph)	287	269	405	351	336	2154	223	1150	653	1992	2502	1162
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.19	0.03	0.26	0.13	0.17	0.13	0.39	0.11	0.36	0.24	0.07
Intersection Summary												

HCM Signalized Intersection Capacity Analysis

3: Longview Blvd/View High Dr & Longview Rd/3rd St

9/9/2016

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	27	26	7	73	32	328	14	399	55	660	559	68
Future Volume (vph)	27	26	7	73	32	328	14	399	55	660	559	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	0.88	1.00	0.95	1.00	0.97	0.95	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00	0.85
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (prot)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00	1.00
Satd. Flow (perm)	1770	1863	1583	1770	1863	2787	1770	3539	1583	3433	3539	1583
Peak-hour factor, PHF	0.50	0.50	0.50	0.80	0.76	0.90	0.50	0.90	0.78	0.92	0.92	0.79
Adj. Flow (vph)	54	52	14	91	42	364	28	443	71	717	608	86
RTOR Reduction (vph)	0	0	13	0	0	221	0	0	52	0	0	39
Lane Group Flow (vph)	54	52	1	91	42	143	28	443	19	717	608	47
Turn Type	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8	1	5	2		1	6	
Permitted Phases			4			8			2			6
Actuated Green, G (s)	4.1	3.7	3.7	6.9	6.5	27.9	2.1	19.2	19.2	21.4	38.5	38.5
Effective Green, g (s)	4.1	3.7	3.7	6.9	6.5	27.9	2.1	19.2	19.2	21.4	38.5	38.5
Actuated g/C Ratio	0.06	0.05	0.05	0.10	0.09	0.39	0.03	0.27	0.27	0.30	0.54	0.54
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lane Grp Cap (vph)	101	96	82	171	170	1287	52	954	426	1031	1913	855
v/s Ratio Prot	0.03	c0.03		c0.05	c0.02	0.03	0.02	c0.13		c0.21	0.17	
v/s Ratio Perm			0.00			0.02			0.01			0.03
v/c Ratio	0.53	0.54	0.01	0.53	0.25	0.11	0.54	0.46	0.04	0.70	0.32	0.05
Uniform Delay, d1	32.6	32.9	32.0	30.6	30.1	13.8	34.1	21.7	19.2	22.0	9.1	7.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2	5.4	6.1	0.0	3.2	0.8	0.0	10.3	0.4	0.0	2.1	0.1	0.0
Delay (s)	38.0	39.0	32.1	33.8	30.8	13.8	44.4	22.1	19.3	24.1	9.2	7.8
Level of Service	D	D	C	C	C	B	D	C	B	C	A	A
Approach Delay (s)		37.7			18.9			22.9			16.7	
Approach LOS		D			B			C			B	
Intersection Summary												
HCM 2000 Control Delay			19.4			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			71.2			Sum of lost time (s)			20.0			
Intersection Capacity Utilization			53.1%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

Intersection												
Int Delay, s/veh	16.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	705	76	53	504	63	30	9	39	57	5	23
Future Vol, veh/h	50	705	76	53	504	63	30	9	39	57	5	23
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	155	-	-	155	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	92	80	87	91	80	60	50	77	87	50	60
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	64	766	95	61	554	79	50	18	51	66	10	38
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	633	0	0	861	0	0	1346	1696	431	1235	1705	316
Stage 1	-	-	-	-	-	-	942	942	-	715	715	-
Stage 2	-	-	-	-	-	-	404	754	-	520	990	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	946	-	-	776	-	-	110	92	573	133	90	680
Stage 1	-	-	-	-	-	-	283	340	-	388	433	-
Stage 2	-	-	-	-	-	-	594	415	-	507	323	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	946	-	-	776	-	-	84	79	573	90	77	680
Mov Cap-2 Maneuver	-	-	-	-	-	-	84	79	-	90	77	-
Stage 1	-	-	-	-	-	-	264	317	-	362	399	-
Stage 2	-	-	-	-	-	-	504	382	-	406	301	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.6			0.9			121.5			124.2		
HCM LOS							F			F		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	130	946	-	-	776	-	-	125				
HCM Lane V/C Ratio	0.913	0.068	-	-	0.079	-	-	0.911				
HCM Control Delay (s)	121.5	9.1	-	-	10	-	-	124.2				
HCM Lane LOS	F	A	-	-	B	-	-	F				
HCM 95th %tile Q(veh)	6	0.2	-	-	0.3	-	-	5.9				

Intersection												
Int Delay, s/veh	13											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	67	626	7	128	398	29	40	5	179	17	5	38
Future Vol, veh/h	67	626	7	128	398	29	40	5	179	17	5	38
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	175	-	100	190	-	-	95	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	92	50	81	90	60	76	50	80	50	50	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	84	680	14	158	442	48	53	10	224	34	10	49
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	491	0	0	680	0	0	1390	1655	340	1295	1630	245
Stage 1	-	-	-	-	-	-	848	848	-	782	782	-
Stage 2	-	-	-	-	-	-	542	807	-	513	848	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1069	-	-	908	-	-	102	97	656	120	101	755
Stage 1	-	-	-	-	-	-	322	376	-	353	403	-
Stage 2	-	-	-	-	-	-	492	392	-	512	376	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1069	-	-	908	-	-	70	74	656	58	77	755
Mov Cap-2 Maneuver	-	-	-	-	-	-	70	74	-	58	77	-
Stage 1	-	-	-	-	-	-	297	346	-	325	333	-
Stage 2	-	-	-	-	-	-	369	324	-	302	346	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.9			2.4			41.8			99.9		
HCM LOS							E			F		
Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1			
Capacity (veh/h)	70	491	1069	-	-	908	-	-	119			
HCM Lane V/C Ratio	0.752	0.476	0.078	-	-	0.174	-	-	0.779			
HCM Control Delay (s)	143.8	18.8	8.7	-	-	9.8	-	-	99.9			
HCM Lane LOS	F	C	A	-	-	A	-	-	F			
HCM 95th %tile Q(veh)	3.5	2.5	0.3	-	-	0.6	-	-	4.5			

Intersection						
Int Delay, s/veh	4.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑	↑	↑	↑↑	↑	
Traffic Vol, veh/h	614	63	90	352	56	100
Future Vol, veh/h	614	63	90	352	56	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	185	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	78	79	90	76	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	667	81	114	391	74	127
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	667	0	1090	334
Stage 1	-	-	-	-	667	-
Stage 2	-	-	-	-	423	-
Critical Hdwy	-	-	4.14	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	-	-	2.22	-	3.52	3.32
Pot Cap-1 Maneuver	-	-	919	-	210	662
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	629	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	919	-	184	662
Mov Cap-2 Maneuver	-	-	-	-	184	-
Stage 1	-	-	-	-	472	-
Stage 2	-	-	-	-	551	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.1		30	
HCM LOS					D	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	338	-	-	919	-	
HCM Lane V/C Ratio	0.593	-	-	0.124	-	
HCM Control Delay (s)	30	-	-	9.5	-	
HCM Lane LOS	D	-	-	A	-	
HCM 95th %tile Q(veh)	3.6	-	-	0.4	-	

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	137	2	0	87	34	106
Future Vol, veh/h	137	2	0	87	34	106
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	149	2	0	95	37	115
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	190	95	152	0	-	0
Stage 1	95	-	-	-	-	-
Stage 2	95	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	799	962	1429	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	799	962	1429	-	-	-
Mov Cap-2 Maneuver	799	-	-	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	929	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.5	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1429	-	801	-	-	
HCM Lane V/C Ratio	-	-	0.189	-	-	
HCM Control Delay (s)	0	-	10.5	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.7	-	-	

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	119	30	6	115	5	47	33	18	6	43	0
Future Vol, veh/h	0	119	30	6	115	5	47	33	18	6	43	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	129	33	7	125	5	51	36	20	7	47	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	130	0	0	162	0	0	310	289	146	314	303	128
Stage 1	-	-	-	-	-	-	146	146	-	141	141	-
Stage 2	-	-	-	-	-	-	164	143	-	173	162	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1455	-	-	1417	-	-	642	621	901	639	610	922
Stage 1	-	-	-	-	-	-	857	776	-	862	780	-
Stage 2	-	-	-	-	-	-	838	779	-	829	764	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1455	-	-	1417	-	-	602	618	901	595	607	922
Mov Cap-2 Maneuver	-	-	-	-	-	-	602	618	-	595	607	-
Stage 1	-	-	-	-	-	-	857	776	-	862	776	-
Stage 2	-	-	-	-	-	-	784	775	-	774	764	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.4			11.7			11.5		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	647	1455	-	-	1417	-	-	606				
HCM Lane V/C Ratio	0.165	-	-	-	0.005	-	-	0.088				
HCM Control Delay (s)	11.7	0	-	-	7.6	0	-	11.5				
HCM Lane LOS	B	A	-	-	A	A	-	B				
HCM 95th %tile O(veh)	0.6	0	-	-	0	-	-	0.3				

Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	119	24	11	95	0	31	0	20	0	0	0
Future Vol, veh/h	0	119	24	11	95	0	31	0	20	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	129	26	12	103	0	34	0	22	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	103	0	0	155	0	0	269	269	142	280	282	103
Stage 1	-	-	-	-	-	-	142	142	-	127	127	-
Stage 2	-	-	-	-	-	-	127	127	-	153	155	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1489	-	-	1425	-	-	684	637	906	672	627	952
Stage 1	-	-	-	-	-	-	861	779	-	877	791	-
Stage 2	-	-	-	-	-	-	877	791	-	849	769	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1489	-	-	1425	-	-	679	631	906	651	621	952
Mov Cap-2 Maneuver	-	-	-	-	-	-	679	631	-	651	621	-
Stage 1	-	-	-	-	-	-	861	779	-	877	784	-
Stage 2	-	-	-	-	-	-	869	784	-	829	769	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			0.8			10.2			0		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	753	1489	-	-	1425	-	-	-				
HCM Lane V/C Ratio	0.074	-	-	-	0.008	-	-	-				
HCM Control Delay (s)	10.2	0	-	-	7.5	0	-	0				
HCM Lane LOS	B	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	-				

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	84	365	23	0	646
Future Vol, veh/h	0	84	365	23	0	646
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	91	397	25	0	702
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	211	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	794	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	794	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.1	0		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	- 794	-			
HCM Lane V/C Ratio	-	- 0.115	-			
HCM Control Delay (s)	-	- 10.1	-			
HCM Lane LOS	-	- B	-			
HCM 95th %tile Q(veh)	-	- 0.4	-			

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	10	378	14	0	646
Future Vol, veh/h	0	10	378	14	0	646
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	411	15	0	702
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	-	213	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.94	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.32	-	-	-	-
Pot Cap-1 Maneuver	0	792	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	792	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.6	0		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBT			
Capacity (veh/h)	-	- 792	-			
HCM Lane V/C Ratio	-	- 0.014	-			
HCM Control Delay (s)	-	- 9.6	-			
HCM Lane LOS	-	- A	-			
HCM 95th %tile Q(veh)	-	- 0	-			

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	69	18	2	18	4	32
Future Vol, veh/h	69	18	2	18	4	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	75	20	2	20	4	35
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	46	22	39	0	-	0
Stage 1	22	-	-	-	-	-
Stage 2	24	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	964	1055	1571	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	999	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	963	1055	1571	-	-	-
Mov Cap-2 Maneuver	963	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	998	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.1	0.7		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1571	-	981	-	-	
HCM Lane V/C Ratio	0.001	-	0.096	-	-	
HCM Control Delay (s)	7.3	0	9.1	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

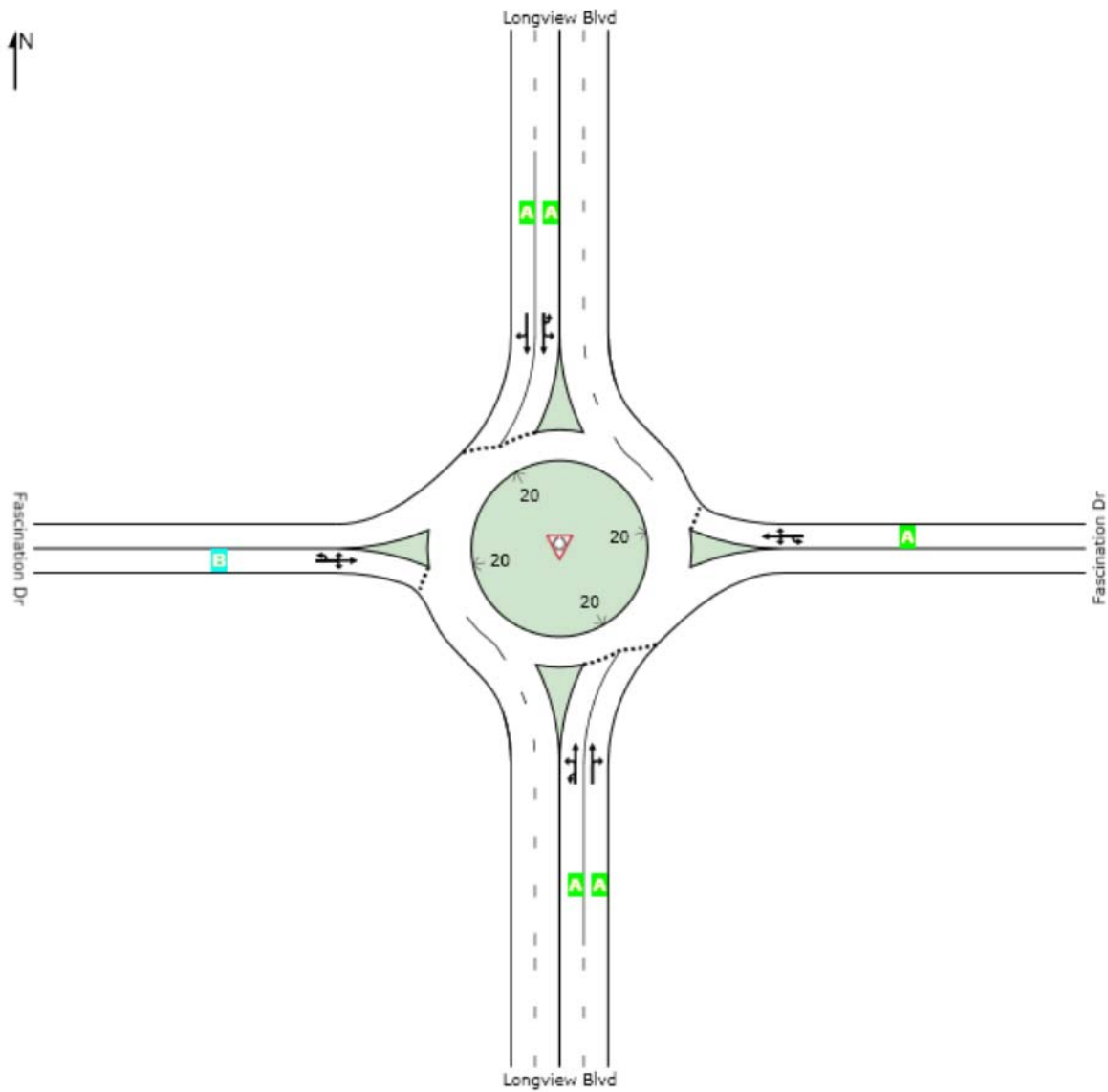
LEVEL OF SERVICE

Site: New Longview - Longview Blvd & Fascination Dr

Existing + Approved + Full Build - PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	B	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Fascination Dr**

Existing + Approved + Full Build - PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	6	0.0	0.168	11.8	LOS B	1.0	6.8	0.42	0.53	55.4
1	L2	21	2.0	0.168	9.8	LOS A	1.0	6.8	0.42	0.53	54.3
2	T1	336	2.0	0.168	5.1	LOS A	1.0	7.0	0.41	0.51	54.7
3	R2	64	2.0	0.168	5.0	LOS A	1.0	7.0	0.40	0.50	53.5
Approach		427	2.0	0.168	5.4	LOS A	1.0	7.0	0.41	0.51	54.5
East: Fascination Dr											
4u	U	1	0.0	0.261	13.7	LOS B	1.6	11.1	0.63	0.73	53.8
4	L2	105	2.0	0.261	11.7	LOS B	1.6	11.1	0.63	0.73	52.8
5	T1	24	2.0	0.261	7.0	LOS A	1.6	11.1	0.63	0.73	52.9
6	R2	111	2.0	0.261	6.8	LOS A	1.6	11.1	0.63	0.73	51.7
Approach		241	2.0	0.261	9.0	LOS A	1.6	11.1	0.63	0.73	52.3
North: Longview Blvd											
7u	U	32	0.0	0.248	11.6	LOS B	1.6	11.0	0.40	0.54	55.0
7	L2	60	2.0	0.248	9.6	LOS A	1.6	11.0	0.40	0.54	53.9
8	T1	560	2.0	0.248	4.9	LOS A	1.6	11.4	0.38	0.50	54.6
9	R2	16	2.0	0.248	4.8	LOS A	1.6	11.4	0.38	0.47	53.6
Approach		667	1.9	0.248	5.6	LOS A	1.6	11.4	0.39	0.50	54.5
West: Fascination Dr											
10u	U	5	0.0	0.180	15.7	LOS B	1.1	7.8	0.74	0.81	51.4
10	L2	89	2.0	0.180	13.7	LOS B	1.1	7.8	0.74	0.81	50.5
11	T1	33	2.0	0.180	9.1	LOS A	1.1	7.8	0.74	0.81	50.5
12	R2	5	2.0	0.180	8.9	LOS A	1.1	7.8	0.74	0.81	49.4
Approach		133	1.9	0.180	12.5	LOS B	1.1	7.8	0.74	0.81	50.5
All Vehicles		1468	1.9	0.261	6.7	LOS A	1.6	11.4	0.47	0.57	53.8

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

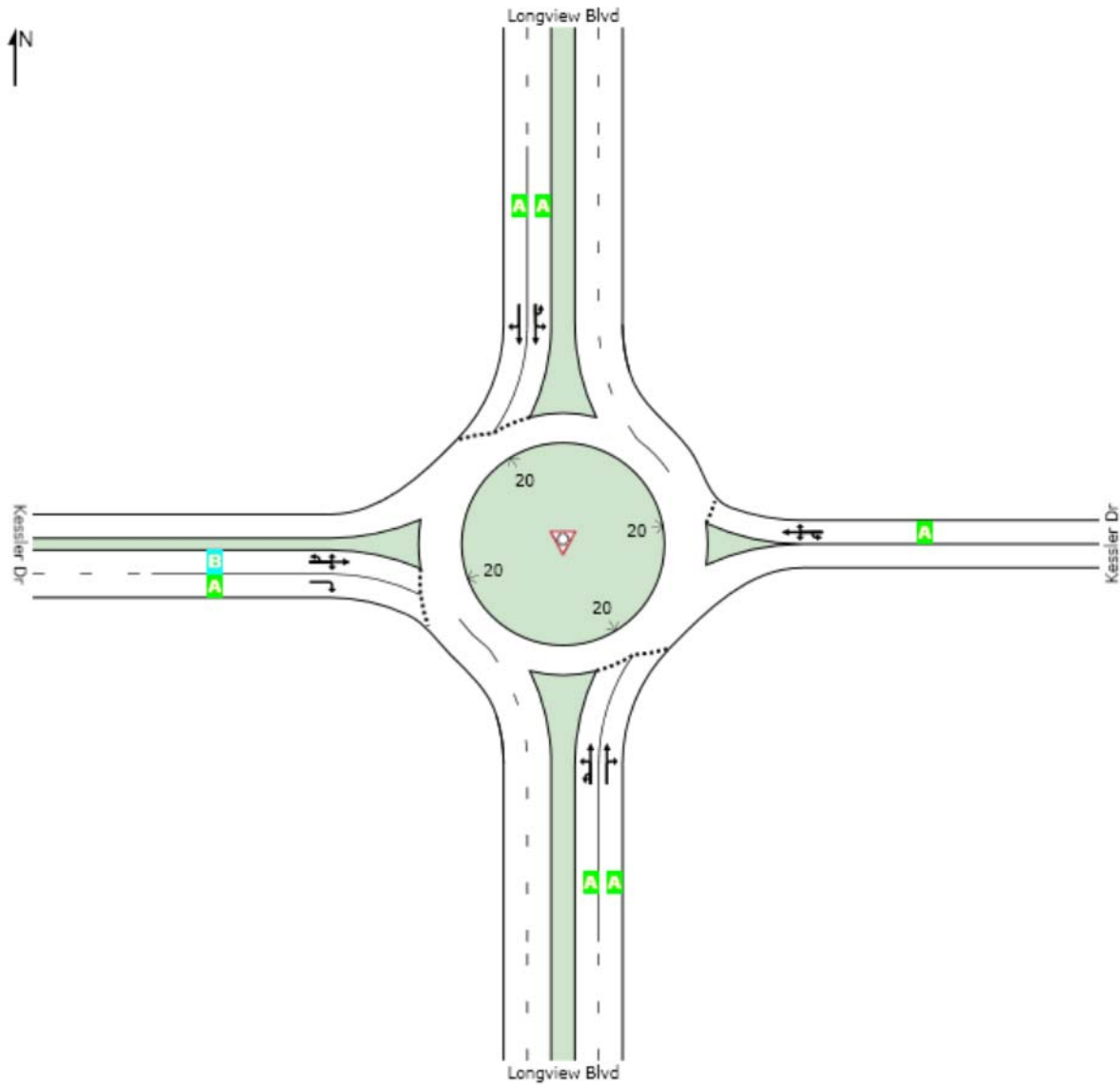
LEVEL OF SERVICE

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved + Full Build - PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	B	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Kessler Dr**

Existing + Approved + Full Build - PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Longview Blvd											
1u	U	1	0.0	0.118	11.2	LOS B	0.7	4.7	0.27	0.45	56.2
1	L2	16	2.0	0.118	9.2	LOS A	0.7	4.7	0.27	0.45	55.1
2	T1	315	2.0	0.118	4.5	LOS A	0.7	4.8	0.27	0.43	55.4
3	R2	2	2.0	0.118	4.5	LOS A	0.7	4.8	0.26	0.41	54.1
Approach		334	2.0	0.118	4.7	LOS A	0.7	4.8	0.27	0.43	55.4
East: Kessler Dr											
4u	U	1	0.0	0.025	12.8	LOS B	0.1	0.9	0.51	0.64	53.1
4	L2	19	2.0	0.025	10.7	LOS B	0.1	0.9	0.51	0.64	52.1
5	T1	1	2.0	0.025	6.1	LOS A	0.1	0.9	0.51	0.64	52.2
6	R2	3	2.0	0.025	5.9	LOS A	0.1	0.9	0.51	0.64	51.0
Approach		24	1.9	0.025	10.0	LOS A	0.1	0.9	0.51	0.64	52.0
North: Longview Blvd											
7u	U	17	0.0	0.205	11.0	LOS B	1.2	8.5	0.17	0.42	56.8
7	L2	1	2.0	0.205	8.9	LOS A	1.2	8.5	0.17	0.42	55.7
8	T1	604	2.0	0.205	4.3	LOS A	1.2	8.6	0.16	0.41	55.9
9	R2	17	2.0	0.205	4.3	LOS A	1.2	8.6	0.15	0.40	54.6
Approach		639	1.9	0.205	4.5	LOS A	1.2	8.6	0.16	0.41	55.9
West: Kessler Dr											
10u	U	1	0.0	0.075	13.6	LOS B	0.4	3.1	0.62	0.70	52.1
10	L2	78	2.0	0.075	11.5	LOS B	0.4	3.1	0.62	0.70	51.2
11	T1	1	2.0	0.075	6.9	LOS A	0.4	3.1	0.62	0.70	51.2
12	R2	5	2.0	0.008	8.2	LOS A	0.0	0.3	0.62	0.59	52.1
Approach		85	2.0	0.075	11.3	LOS B	0.4	3.1	0.62	0.69	51.2
All Vehicles		1082	2.0	0.205	5.2	LOS A	1.2	8.6	0.24	0.44	55.3

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

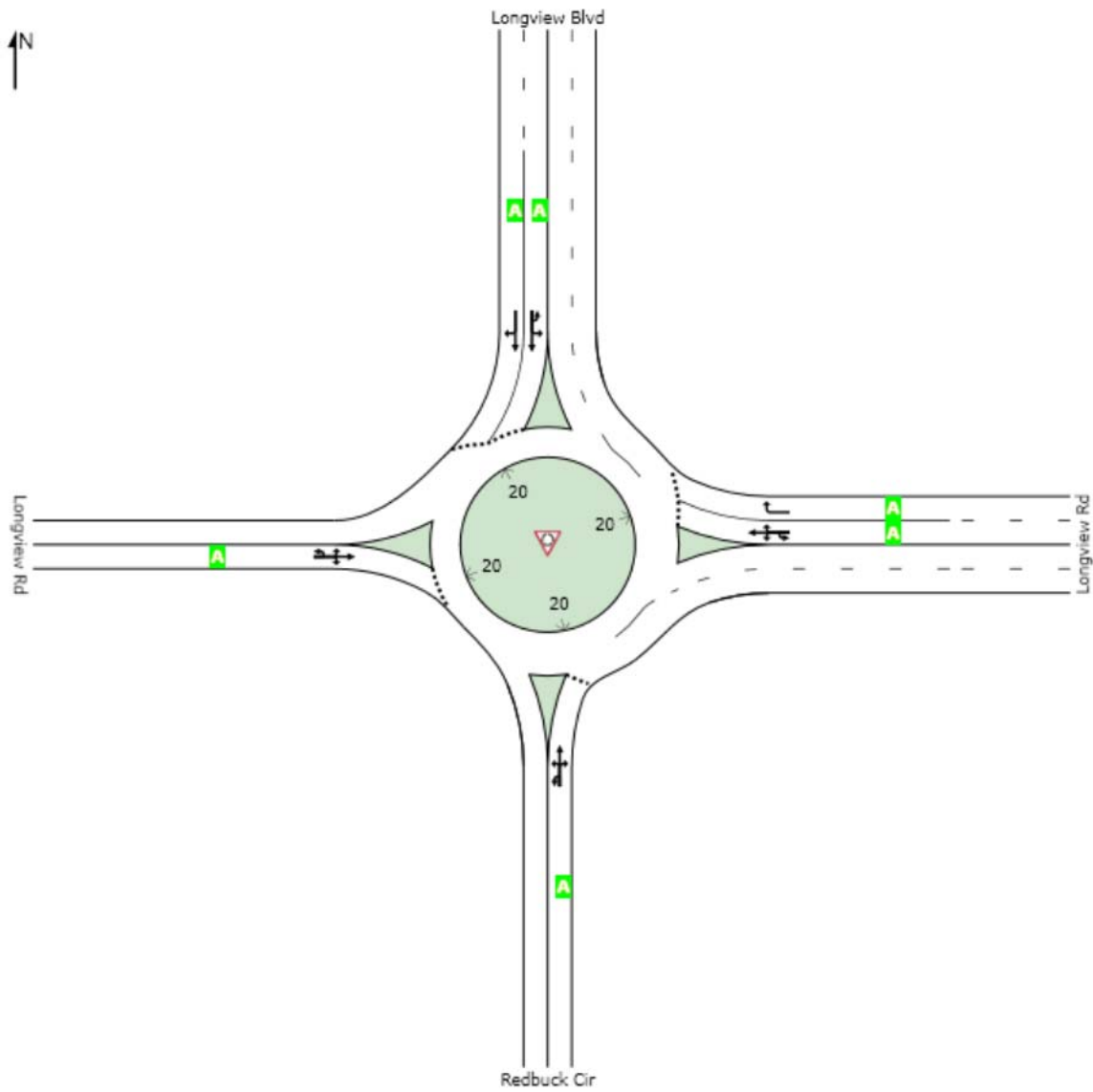
LEVEL OF SERVICE

Site: New Longview - Longview Blvd & Longview Rd

Existing + Approved + Full Build - PM
Roundabout

All Movement Classes

	South	East	North	West	Intersection
LOS	A	A	A	A	A



Level of Service (LOS) Method: Delay (HCM 2000).
Roundabout LOS Method: Same as Signalised Intersections.
Lane LOS values are based on average delay per lane.
Intersection and Approach LOS values are based on average delay for all lanes.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

MOVEMENT SUMMARY

 **Site: New Longview - Longview Blvd & Longview Rd**

Existing + Approved + Full Build - PM
Roundabout

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Redbuck Cir											
1u	U	1	0.0	0.055	14.7	LOS B	0.3	2.2	0.66	0.66	54.1
1	L2	5	2.0	0.055	12.7	LOS B	0.3	2.2	0.66	0.66	53.1
2	T1	26	2.0	0.055	8.0	LOS A	0.3	2.2	0.66	0.66	53.1
3	R2	11	2.0	0.055	7.8	LOS A	0.3	2.2	0.66	0.66	51.9
Approach		43	2.0	0.055	8.7	LOS A	0.3	2.2	0.66	0.66	52.8
East: Longview Rd											
4u	U	1	0.0	0.112	11.1	LOS B	0.6	4.3	0.22	0.46	56.8
4	L2	5	2.0	0.112	9.1	LOS A	0.6	4.3	0.22	0.46	55.7
5	T1	53	2.0	0.112	4.4	LOS A	0.6	4.3	0.22	0.46	55.8
6	R2	268	2.0	0.112	4.4	LOS A	0.6	4.4	0.21	0.47	54.4
Approach		327	2.0	0.112	4.5	LOS A	0.6	4.4	0.22	0.47	54.6
North: Longview Blvd											
7u	U	1	0.0	0.348	11.1	LOS B	2.3	16.5	0.23	0.60	53.4
7	L2	567	2.0	0.348	9.0	LOS A	2.3	16.5	0.23	0.60	52.4
8	T1	42	2.0	0.053	4.6	LOS A	0.3	1.8	0.22	0.42	55.8
9	R2	14	2.0	0.053	4.6	LOS A	0.3	1.8	0.22	0.42	54.3
Approach		624	2.0	0.348	8.6	LOS A	2.3	16.5	0.23	0.59	52.7
West: Longview Rd											
10u	U	1	0.0	0.170	14.4	LOS B	1.0	6.9	0.65	0.72	53.8
10	L2	38	2.0	0.170	12.4	LOS B	1.0	6.9	0.65	0.72	52.8
11	T1	89	2.0	0.170	7.8	LOS A	1.0	6.9	0.65	0.72	52.8
12	R2	16	2.0	0.170	7.5	LOS A	1.0	6.9	0.65	0.72	51.6
Approach		144	2.0	0.170	9.0	LOS A	1.0	6.9	0.65	0.72	52.7
All Vehicles		1139	2.0	0.348	7.5	LOS A	2.3	16.5	0.30	0.57	53.2

Level of Service (LOS) Method: Delay (HCM 2000).

Roundabout LOS Method: Same as Signalised Intersections.

Vehicle movement LOS values are based on average delay per movement

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.