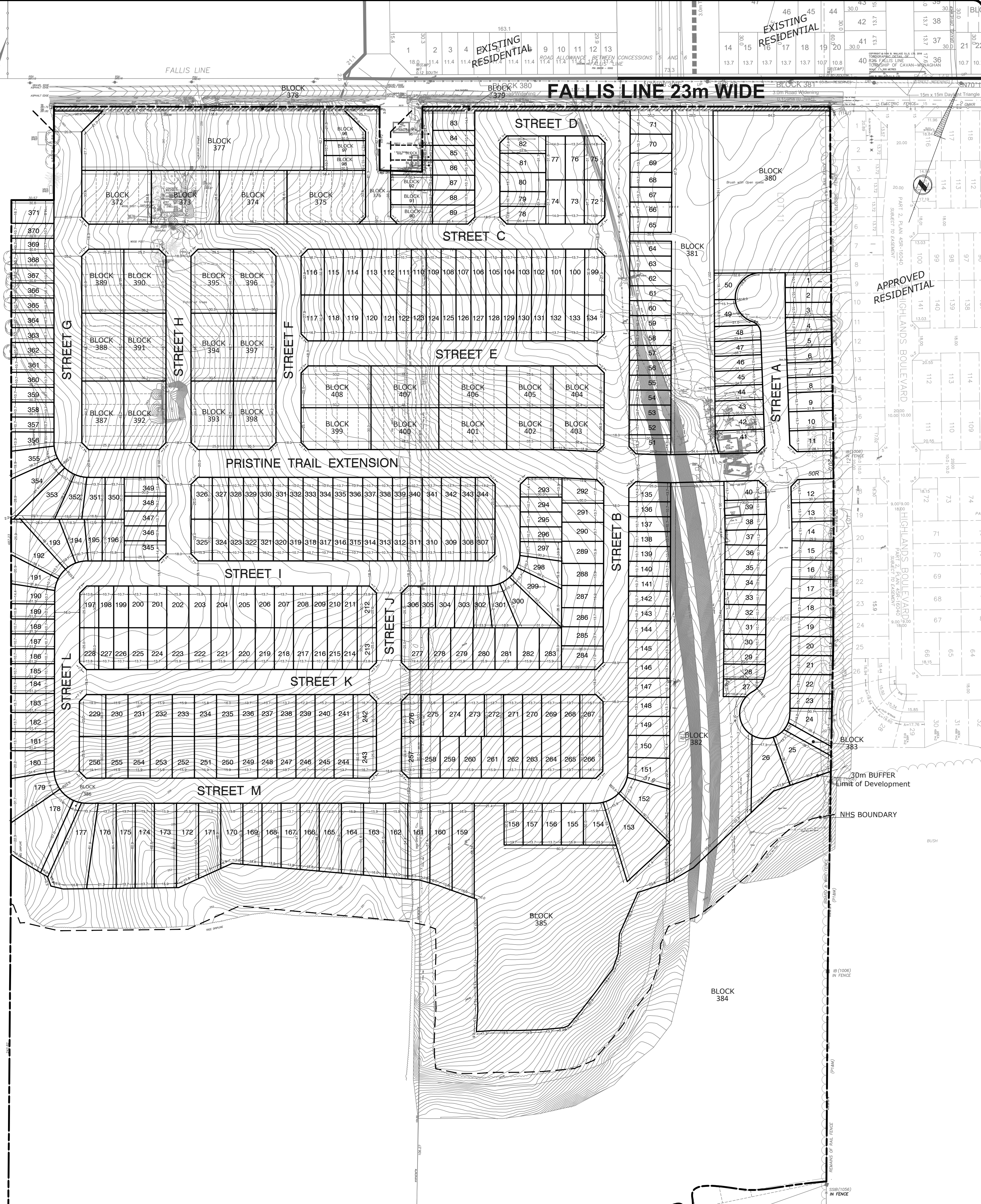


Appendix A

Draft Site Plan

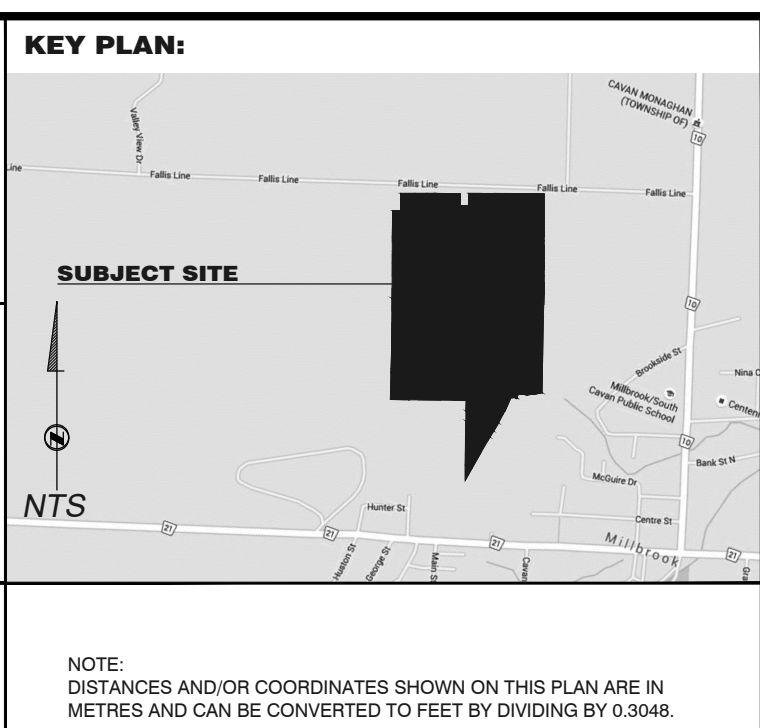


Schedule of Land Use			
	Units	Blocks	Area (ha)
7.62m (24') Street Townhouse	148	372-375, 387-408	3.83
10.7m (35') Single Detached	C 201	1-8, 23, 24, 27-48, 51-68, 72, 75, 78, 79, 83-89, 99, 102-112, 121-131, 134, 135-143, 184-195, 197-199, 209-216, 226-228, 257, 276, 293-302, 305-308, 311-340, 343-349, 352-370	6.93
13.7m (45') Single Detached	B 113	9-22, 25, 49, 50, 69-71, 73, 74, 76, 77, 80-82, 100, 101, 113-120, 132, 133, 144-149, 156-158, 166-169, 174-177, 181-183, 196, 200, 201, 206-208, 217-219, 224, 225, 236-249, 258, 259, 262-273, 284-286, 290-292, 303, 304, 309, 310, 341, 342, 350, 351, 371	5.21
15.9m (52') Single Detached	A 57	150-155, 159-165, 170-173, 178-180, 202-205, 220-223, 229-235, 250-256, 260, 261, 274, 275, 277-283, 287-289	3.51
Medium Density (5-Storey Building)	150	377	0.73
TOTAL	669		20.20
Parkland & Trails		381, 382, 383, 386	2.06
Natural Heritage System		384,	16.31
Stormwater Management Pond		380, 385	2.39
Road Widening		378, 379	0.16
R.O.W.		PRISTINE TRAIL EXTENSION, STREETS A-M	7.68
Future Development		90-98, 376	0.39
TOTAL SUBJECT SITE			49.20

TITLE:
DRAFT PLAN OF SUBDIVISION

LEGAL DESCRIPTION:
DRAFT PLAN OF PROPOSED SUBDIVISION
PART OF LOT 11, CONCESSION 5
(Geographic Village of Milbrook, Township of Cavan)
PART OF LOT 11, CONCESSION 5 (Geographic Township of Cavan)
TOWNSHIP OF CAVAN-MONAGHAN
NORTH MONAGHAN
(COUNTY OF PETERBOROUGH)

787 - 825 Fallis Line West
Township of Cavan Monaghan



SURVEYOR'S CERTIFICATE
I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATE AND CORRECTLY SHOWN IN ACCORDANCE WITH A PLAN OF SURVEY PREPARED BY SURVEYOR COMPANY

David Comery
DAVID COMERY
IBW SURVEYORS
2021/06/08
DATE

OWNER'S CERTIFICATE
I HEREBY AUTHORIZE THE BIGLIERI GROUP LTD. TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE MUNICIPALITY

Saverio Montemarrano
SAVERIO MONTEMARRANO
CS4 DEVELOPMENT
2021/06/08
DATE

REQUIRED INFORMATION
AS REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT R.S.O. 1990.

(a) SEE PLAN
(b) SEE PLAN
(c) SEE KEY MAP
(d) SEE SCHEDULE OF LAND USE
(e) SEE PLAN
(f) SEE PLAN

(g) SEE PLAN
(h) MUNICIPAL WATER AND SEWAGE AVAILABLE
(i) SANDY SILT / SILTY SAND TO CLAYEY SILT / SILTY CLAY
(j) SEE PLAN
(k) MUNICIPAL WATER AND SEWAGE AVAILABLE
(l) SEE PLAN

NOTE: CONTOURS RELATE TO CANADIAN GEODETIC DATUM

REVISIONS

No.	Description	Date	Int.
3			
2			
1	Stormwater Management Pond Revision	21/12/15	JS

PROJECT No.: 20697
DATE: May 16, 2021
SCALE: 1:1500
DRAFTED BY: JS
CHECKED BY: MT

DRAWING No.: **DP-01**

THE BIGLIERI GROUP LTD.
Planning | Development | Project Management | Urban Design
20 Leslie Street, Suite 121, Toronto, Ontario, M4M 1A4
126 Catherine Street North, Hamilton, Ontario, L8R 1J4
(416) 693-9155
thebiglierigroup.com

Appendix B

Traffic Data and Data Projections

Ontario Traffic Inc

Morning Peak Diagram

Specified Period

From: 7:00:00
To: 10:00:00

One Hour Peak

From: 7:30:00
To: 8:30:00

Municipality: Millbrook
Site #: 1710800001
Intersection: County Rd 10 & Fallis Line
TFR File #: 1
Count date: 25-Apr-17

Weather conditions:
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: County Rd 10 runs N/S

North Leg Total: 392
North Entering: 167
North Peds: 0
Peds Cross: \times

Heavys	0	0	0	0
Trucks	1	7	0	8
Cars	4	155	0	159
Totals	5	162	0	



Heavys	0
Trucks	13
Cars	212
Totals	225

East Leg Total: 0
East Entering: 0
East Peds: 0
Peds Cross: \times

Heavys	0
Trucks	1
Cars	19
Totals	20

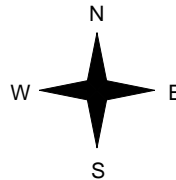


County Rd 10

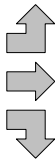
Cars	0	0	0	0
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	0	0	0	0



Fallis Line



Heavys	0
Trucks	1
Cars	9
Totals	10
Heavys	0
Trucks	0
Cars	0
Totals	0
Heavys	0
Trucks	0
Cars	15
Totals	15
Heavys	0
Trucks	1
Cars	24
Totals	24



Private Driveway



Cars	0	0	0	0
Trucks	0	0	0	0
Heavys	0	0	0	0
Totals	0	0	0	0

Peds Cross: \times
West Peds: 0
West Entering: 25
West Leg Total: 45

Cars	170	Cars	15	203	0	218
Trucks	7	Trucks	0	12	0	12
Heavys	0	Heavys	0	0	0	0
Totals	177	Totals	15	215	0	



County Rd 10



Peds Cross: \times
South Peds: 0
South Entering: 230
South Leg Total: 407

Comments

Ontario Traffic Inc

Afternoon Peak Diagram

Specified Period

From: 16:00:00

To: 19:00:00

One Hour Peak

From: 16:30:00

To: 17:30:00

Municipality: Millbrook
Site #: 1710800001
Intersection: County Rd 10 & Fallis Line
TFR File #: 1
Count date: 25-Apr-17

Weather conditions:
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: County Rd 10 runs N/S

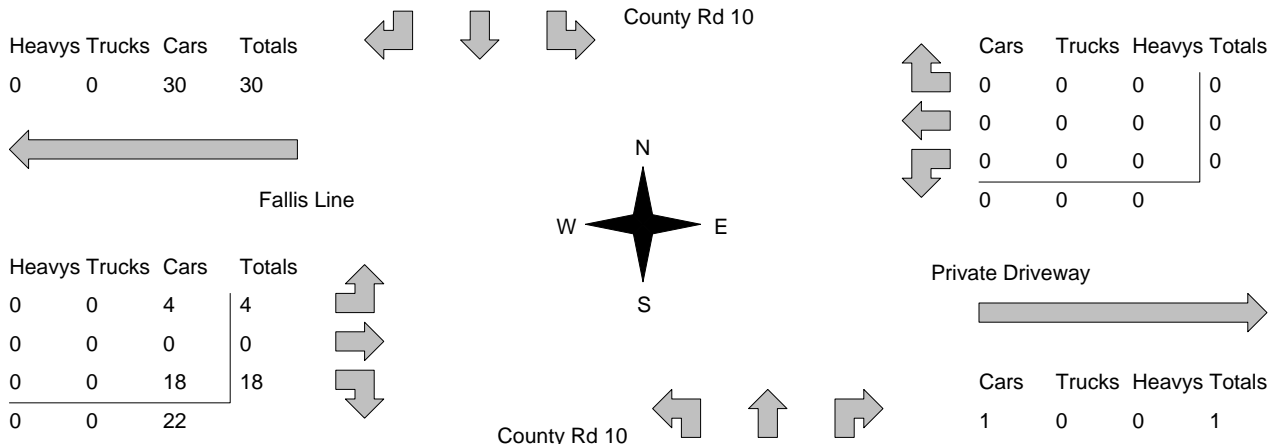
North Leg Total: 415
 North Entering: 241
 North Peds: 0
 Peds Cross: \bowtie

Heavys	0	0	0	0
Trucks	0	4	0	4
Cars	11	226	0	237
Totals	11	230	0	



Heavys	0
Trucks	0
Cars	174
Totals	174

East Leg Total: 1
 East Entering: 0
 East Peds: 0
 Peds Cross: \bowtie



Peds Cross: \bowtie
 West Peds: 0
 West Entering: 22
 West Leg Total: 52

Cars	244	Cars	19	170	1	190
Trucks	4	Trucks	0	0	0	0
Heavys	0	Heavys	0	0	0	0
Totals	248	Totals	19	170	1	

Peds Cross: \bowtie
 South Peds: 0
 South Entering: 190
 South Leg Total: 438

Comments

Ontario Traffic Inc

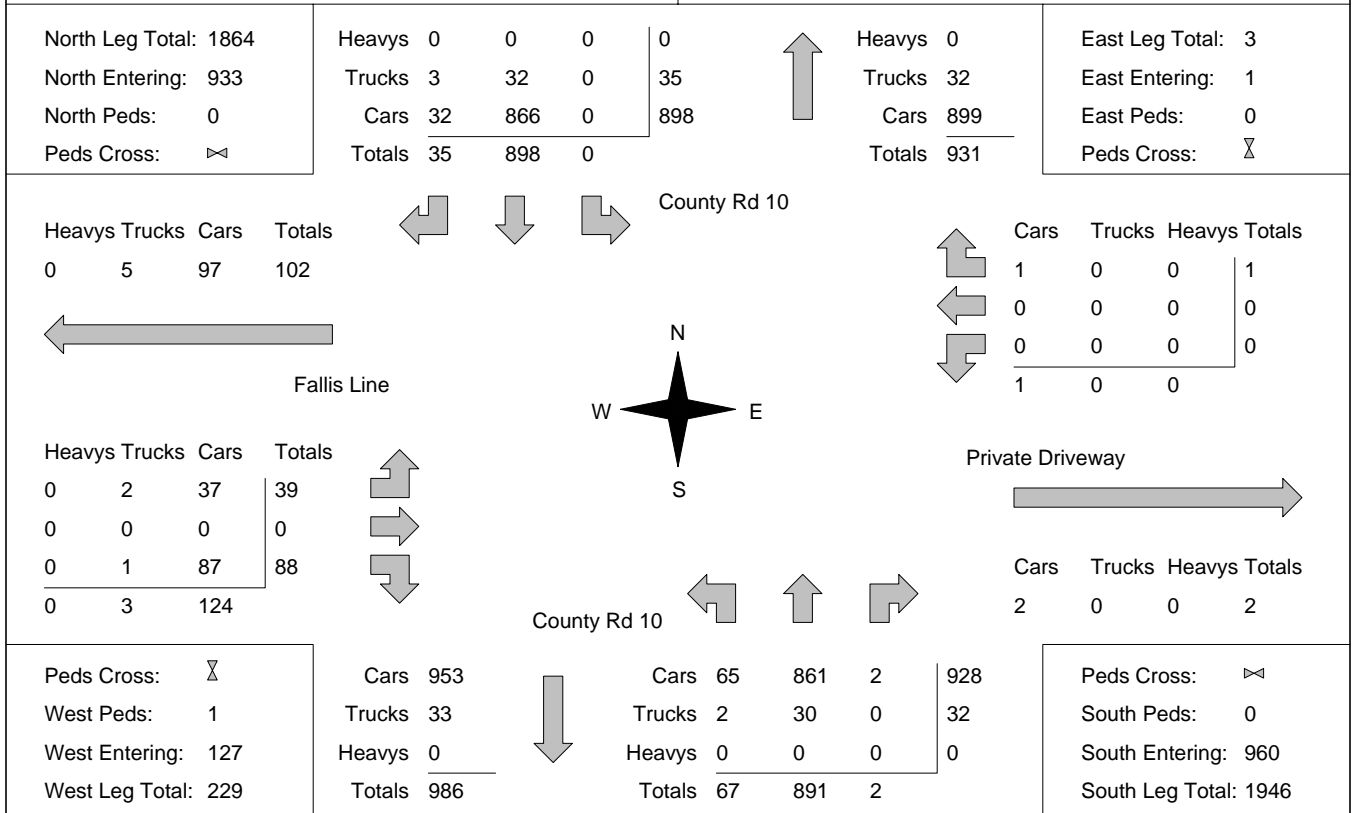
Total Count Diagram

Municipality: Millbrook
Site #: 1710800001
Intersection: County Rd 10 & Fallis Line
TFR File #: 1
Count date: 25-Apr-17

Weather conditions:
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: County Rd 10 runs N/S



Comments

Ontario Traffic Inc Traffic Count Summary

Intersection: County Rd 10 & Fallis Line

Count Date: 25-Apr-17

Municipality: Millbrook

North Approach Totals						North/South Total Approaches	South Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	138	3	141	0	318	8:00:00	13	164	0	177	0
9:00:00	0	128	5	133	0	329	9:00:00	12	184	0	196	0
10:00:00	0	106	5	111	0	259	10:00:00	8	139	1	148	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	0	191	7	198	0	374	17:00:00	16	159	1	176	0
18:00:00	0	215	10	225	0	390	18:00:00	13	152	0	165	0
19:00:00	0	120	5	125	0	223	19:00:00	5	93	0	98	0
Totals:	0	898	35	933	0	1893	67	891	2	960	0	
East Approach Totals						East/West Total Approaches	West Approach Totals					
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds		Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	0	0	0	0	0	20	8:00:00	7	0	13	20	0
9:00:00	0	0	0	0	0	23	9:00:00	12	0	11	23	0
10:00:00	0	0	1	1	0	20	10:00:00	7	0	12	19	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	0	0	0	0	0	17	17:00:00	2	0	15	17	0
18:00:00	0	0	0	0	0	28	18:00:00	5	0	23	28	0
19:00:00	0	0	0	0	0	20	19:00:00	6	0	14	20	1
Totals:	0	0	1	1	0	128	39	0	88	127	1	
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	7:00	8:00	9:00	10:00			16:00	17:00	18:00	19:00		
Crossing Values:	0	7	12	7			0	2	5	6		

Ontario Traffic Inc.

Mid-day Peak Diagram

Specified Period

From: 11:00:00
To: 17:00:00

One Hour Peak

From: 12:00:00
To: 13:00:00

Municipality: Millbrook
Site #: 1722900001
Intersection: CR 10 & Fallis Line
TFR File #: 18
Count date: 12-Aug-17

Weather conditions:
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: CR 10 runs N/S

North Leg Total: 382
North Entering: 195
North Peds: 0
Peds Cross: \times

Heavys	0	0	0
Trucks	0	1	1
Cars	10	184	194
Totals	10	185	



Heavys	0
Trucks	0
Cars	187
Totals	187

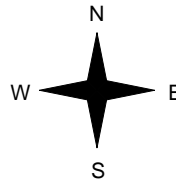
Heavys	0	0	31	Totals
Trucks	0	0	0	
Cars	0	0	31	



CR 10



Fallis Line



Heavys	0	0	7	Totals
Trucks	0	0	0	
Cars	0	0	7	
Totals	0	0	7	

0	0	18	18
0	0	25	



CR 10

Peds Cross: \times
West Peds: 0
West Entering: 25
West Leg Total: 56

Cars	202
Trucks	1
Heavys	0
Totals	203



Cars	21	180	201
Trucks	0	0	0
Heavys	0	0	0
Totals	21	180	

Peds Cross: \times
South Peds: 0
South Entering: 201
South Leg Total: 404

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Millbrook
Site #: 1722900001
Intersection: CR 10 & Fallis Line
TFR File #: 18
Count date: 12-Aug-17

Weather conditions:
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: CR 10 runs N/S

North Leg Total: 2021
 North Entering: 1039
 North Peds: 0
 Peds Cross: ∇

Heavys	0	0	0	0
Trucks	0	9	9	9
Cars	59	971	1030	1030
Totals	59	980		



Heavys	0
Trucks	9
Cars	973
Totals	982

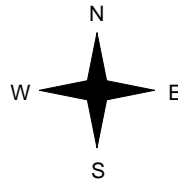
Heavys	0
Trucks	1
Cars	163
Totals	164



CR 10



Fallis Line



Heavys	0
Trucks	0
Cars	48
Totals	48
0	2
0	2
128	176
Totals	130



CR 10



Peds Cross: ∇
 West Peds: 1
 West Entering: 178
 West Leg Total: 342

Cars	1100
Trucks	11
Heavys	0
Totals	1111



Cars	104	925	1031
Trucks	1	9	10
Heavys	0	0	0
Totals	105	934	

Peds Cross: ∇
 South Peds: 0
 South Entering: 1041
 South Leg Total: 2152

Comments

Ontario Traffic Inc. Traffic Count Summary

Intersection: CR 10 & Fallis Line

Count Date: 12-Aug-17

Municipality: Millbrook

North Approach Totals						South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	North/South Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
11:00:00	0	0	0	0	0	0	11:00:00	0	0	0	0	0
12:00:00	0	158	7	165	0	378	12:00:00	24	188	1	213	0
13:00:00	0	185	10	195	0	396	13:00:00	21	180	0	201	0
14:00:00	0	175	12	187	0	340	14:00:00	13	140	0	153	0
15:00:00	0	146	12	158	0	332	15:00:00	16	157	1	174	0
16:00:00	0	166	7	173	0	329	16:00:00	13	143	0	156	0
17:00:00	0	150	11	161	0	305	17:00:00	18	126	0	144	0
Totals:	0	980	59	1039	0	2080		105	934	2	1041	0
East Approach Totals						West Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	East/West Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
11:00:00	0	0	0	0	0	0	11:00:00	0	0	0	0	0
12:00:00	0	0	0	0	0	33	12:00:00	9	0	24	33	1
13:00:00	0	0	0	0	5	25	13:00:00	7	0	18	25	0
14:00:00	0	0	0	0	0	20	14:00:00	10	0	10	20	0
15:00:00	1	0	0	1	0	43	15:00:00	10	0	32	42	0
16:00:00	0	0	0	0	0	26	16:00:00	6	0	20	26	0
17:00:00	0	0	0	0	0	31	17:00:00	6	0	25	31	0
Totals:	1	0	0	1	5	178		48	0	129	177	1
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	11:00	12:00	13:00	14:00		15:00	16:00	17:00	17:00			
Crossing Values:	0	9	7	10		11	6	6	6			

Ontario Traffic Inc.

Count Date: 12-Aug-17 Site #: 1722900001

Interval Time	Passenger Cars - West Approach						Trucks - West Approach						Heavys - West Approach						Pedestrians		
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		West Cross		
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	
11:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15:00	4	4	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30:00	5	1	0	0	11	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45:00	8	3	0	0	16	5	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
12:00:00	9	1	0	0	23	7	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0
12:15:00	11	2	0	0	31	8	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
12:30:00	14	3	0	0	35	4	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
12:45:00	15	1	0	0	36	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
13:00:00	16	1	0	0	41	5	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
13:15:00	17	1	0	0	46	5	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
13:30:00	20	3	0	0	48	2	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
13:45:00	22	2	0	0	50	2	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
14:00:00	26	4	0	0	51	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
14:15:00	28	2	0	0	56	5	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
14:30:00	29	1	0	0	63	7	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
14:45:00	32	3	0	0	68	5	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
15:00:00	36	4	0	0	83	15	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
15:15:00	39	3	0	0	87	4	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
15:30:00	40	1	0	0	93	6	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
15:45:00	42	2	0	0	96	3	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
16:00:00	42	0	0	0	103	7	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
16:15:00	46	4	0	0	110	7	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0
16:30:00	47	1	0	0	115	5	0	0	0	0	2	1	0	0	0	0	0	0	1	0	0
16:45:00	48	1	0	0	124	9	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0
17:00:00	48	0	0	0	127	3	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0
17:00:18	48	0	0	0	128	1	0	0	0	0	2	0	0	0	0	0	0	0	1	0	0

Ontario Traffic Inc

Morning Peak Diagram

Specified Period

From: 7:00:00
To: 10:00:00

One Hour Peak

From: 7:30:00
To: 8:30:00

Municipality: Millbrook
Site #: 1710800002
Intersection: County Rd 10 & Larmer Line
TFR File #: 1
Count date: 25-Apr-17

Weather conditions:
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: County Rd 10 runs N/S

North Leg Total: 404
North Entering: 167
North Peds: 0
Peds Cross: \times

Heavys	0	0	0	0
Trucks	2	6	0	8
Cars	1	153	5	159
Totals	3	159	5	



Heavys	0
Trucks	13
Cars	224
Totals	237

East Leg Total: 34
East Entering: 15
East Peds: 0
Peds Cross: \times

Heavys	0
Trucks	2
Cars	9
Totals	11

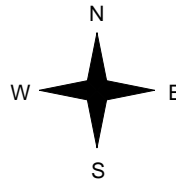


County Rd 10

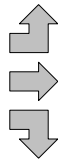
Cars	9	0	0	9
Trucks	2	0	0	2
Heavys	4	0	0	4
Totals	15	0	0	



Larmer Line



Heavys	0
Trucks	0
Cars	23
Totals	23
Heavys	0
Trucks	0
Cars	4
Totals	4
Heavys	0
Trucks	2
Cars	8
Totals	10



Larmer Line



Peds Cross: \times
West Peds: 0
West Entering: 37
West Leg Total: 48

Cars	165
Trucks	8
Heavys	0
Totals	173



County Rd 10

Cars	6	192	10	208
Trucks	0	13	0	13
Heavys	0	0	0	0
Totals	6	205	10	

Peds Cross: \times
South Peds: 0
South Entering: 221
South Leg Total: 394

Comments

Ontario Traffic Inc

Afternoon Peak Diagram

Specified Period

From: 16:00:00

To: 19:00:00

One Hour Peak

From: 16:30:00

To: 17:30:00

Municipality: Millbrook
Site #: 1710800002
Intersection: County Rd 10 & Larmer Line
TFR File #: 1
Count date: 25-Apr-17

Weather conditions:
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: County Rd 10 runs N/S

North Leg Total: 413
 North Entering: 242
 North Peds: 0
 Peds Cross: \bowtie

Heavys	0	0	0	0
Trucks	0	3	0	3
Cars	9	222	8	239
Totals	9	225	8	



Heavys	0
Trucks	2
Cars	169
Totals	171

East Leg Total: 21
 East Entering: 8
 East Peds: 0
 Peds Cross: \bowtie

Heavys	0
Trucks	0
Cars	18
Totals	18

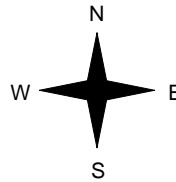


County Rd 10

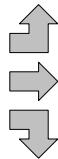
Cars	2	1	0	3
Trucks	1	0	0	1
Heavys	3	1	0	4
Totals	6	2	0	



Larmer Line



Heavys	0
Trucks	0
Cars	3
Totals	3
Heavys	0
Trucks	0
Cars	1
Totals	1
Heavys	0
Trucks	0
Cars	6
Totals	6



Larmer Line



Peds Cross: \bowtie
 West Peds: 0
 West Entering: 10
 West Leg Total: 28

Cars	231
Trucks	4
Heavys	0
Totals	235



County Rd 10

Cars	8	164	4	176
Trucks	0	1	0	1
Heavys	0	0	0	0
Totals	8	165	4	

Peds Cross: \bowtie
 South Peds: 0
 South Entering: 177
 South Leg Total: 412

Comments

Ontario Traffic Inc

Total Count Diagram

Municipality: Millbrook
Site #: 1710800002
Intersection: County Rd 10 & Larmer Line
TFR File #: 1
Count date: 25-Apr-17

Weather conditions:
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: County Rd 10 runs N/S

North Leg Total: 1872
 North Entering: 947
 North Peds: 0
 Peds Cross: ∇

Heavys	0	0	0	0
Trucks	4	30	0	34
Cars	39	842	32	913
Totals	43	872	32	



Heavys	1
Trucks	31
Cars	893
Totals	925

East Leg Total: 134
 East Entering: 62
 East Peds: 0
 Peds Cross: ∇

Heavys	0
Trucks	4
Cars	85
Totals	89

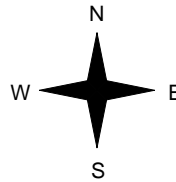


County Rd 10

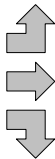
Cars	31	2	0	33
Trucks	7	0	0	7
Heavys	19	3	0	22
Totals	57	5	0	



Larmer Line



Heavys	0
Trucks	1
Cars	54
Totals	55
Heavys	0
Trucks	0
Cars	12
Totals	12
Heavys	0
Trucks	2
Cars	42
Totals	44
Heavys	0
Trucks	3
Cars	108
Totals	111



Larmer Line



County Rd 10



Cars	68	4	0	72
Trucks				
Heavys				
Totals				

Peds Cross: ∇
 West Peds: 0
 West Entering: 111
 West Leg Total: 200

Cars	903	39	808	24	871
Trucks	35	0	28	4	32
Heavys	0	0	1	0	1
Totals	938	39	837	28	



Peds Cross: ∇
 South Peds: 0
 South Entering: 904
 South Leg Total: 1842

Comments

Ontario Traffic Inc

Traffic Count Summary

Intersection: County Rd 10 & Larmer Line					Count Date: 25-Apr-17		Municipality: Millbrook					
North Approach Totals						South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	North/South Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	1	125	5	131	0	300	8:00:00	3	162	4	169	0
9:00:00	6	129	3	138	0	325	9:00:00	6	171	10	187	0
10:00:00	2	113	3	118	0	254	10:00:00	8	124	4	136	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	7	180	6	193	0	358	17:00:00	7	152	6	165	0
18:00:00	8	209	11	228	0	377	18:00:00	7	140	2	149	0
19:00:00	8	116	15	139	0	237	19:00:00	8	88	2	98	0
Totals:	32	872	43	947	0	1851		39	837	28	904	0
East Approach Totals						West Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	East/West Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
7:00:00	0	0	0	0	0	0	7:00:00	0	0	0	0	0
8:00:00	4	1	16	21	0	53	8:00:00	22	2	8	32	0
9:00:00	2	1	3	6	0	36	9:00:00	16	4	10	30	0
10:00:00	1	1	6	8	0	20	10:00:00	4	1	7	12	0
16:00:00	0	0	0	0	0	0	16:00:00	0	0	0	0	0
17:00:00	7	0	5	12	0	26	17:00:00	2	2	10	14	0
18:00:00	2	1	1	4	0	13	18:00:00	2	3	4	9	0
19:00:00	6	3	2	11	0	25	19:00:00	9	0	5	14	0
Totals:	22	7	33	62	0	173		55	12	44	111	0
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	7:00	8:00	9:00	10:00			16:00	17:00	18:00	19:00		
Crossing Values:	0	28	22	6			0	11	7	18		

Ontario Traffic Inc

Count Date: 25-Apr-17 Site #: 1710800002

Interval Time	Passenger Cars - South Approach				Trucks - South Approach				Heavys - South Approach				Pedestrians	
	Left		Right		Left		Right		Left		Right		South	Cross
	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr	Cum	Incr
7:00:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15:00	0	0	24	24	0	0	0	0	1	1	0	0	0	0
7:30:00	1	1	54	30	0	0	0	0	2	1	0	0	0	0
7:45:00	1	0	102	48	1	0	4	4	2	0	0	0	0	0
8:00:00	3	2	155	53	2	1	7	3	2	0	0	0	0	0
8:15:00	5	2	199	44	5	3	11	4	2	0	0	0	0	0
8:30:00	7	2	246	47	10	5	13	2	2	0	0	0	0	0
8:45:00	9	2	286	40	11	1	15	2	2	0	0	0	0	0
9:00:00	9	0	315	29	11	0	18	3	3	1	0	0	0	0
9:15:00	10	1	340	25	12	1	18	0	3	0	0	0	0	0
9:30:00	12	2	364	24	12	0	21	3	3	0	0	0	0	0
9:45:00	14	2	398	34	13	1	23	2	4	1	0	0	0	0
10:00:00	17	3	431	33	14	1	26	3	4	0	0	0	0	0
10:05:45	17	0	431	0	14	0	26	0	4	0	0	0	0	0
16:00:00	17	0	431	0	14	0	26	0	4	0	0	0	0	0
16:15:00	19	2	465	34	14	0	27	1	4	0	0	0	0	0
16:30:00	20	1	504	39	16	2	27	0	4	0	0	0	0	0
16:45:00	23	3	550	46	17	1	27	0	4	0	0	0	0	0
17:00:00	24	1	581	31	20	3	28	1	4	0	0	0	0	0
17:15:00	27	3	640	59	20	0	28	0	4	0	0	0	0	0
17:30:00	28	1	668	28	20	0	28	0	4	0	0	0	0	0
17:45:00	30	2	691	23	22	2	28	0	4	0	0	0	0	0
18:00:00	31	1	721	30	22	0	28	0	4	0	0	0	0	0
18:15:00	32	1	755	34	22	0	28	0	4	0	0	0	0	0
18:30:00	36	4	776	21	23	1	28	0	4	0	0	0	0	0
18:45:00	38	2	793	17	24	1	28	0	4	0	1	1	0	0
19:00:00	39	1	808	15	24	0	28	0	4	0	1	0	0	0
19:05:10	39	0	808	0	24	0	28	0	4	0	1	0	0	0

Ontario Traffic Inc.

Mid-day Peak Diagram

Specified Period

From: 11:00:00
To: 17:00:00

One Hour Peak

From: 12:00:00
To: 13:00:00

Municipality: Millbrook
Site #: 1722900002
Intersection: CR 10 & Larmer Line
TFR File #: 1
Count date: 12-Aug-17

Weather conditions:
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: CR 10 runs N/S

North Leg Total: 385
North Entering: 197
North Peds: 0
Peds Cross: \times

Heavys	0	0	0	0
Trucks	0	2	0	2
Cars	12	179	4	195
Totals	12	181	4	



Heavys	0
Trucks	1
Cars	187
Totals	188

East Leg Total: 30
East Entering: 17
East Peds: 5
Peds Cross: \times

Heavys	0
Trucks	0
Cars	30
Totals	30

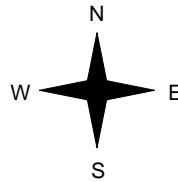


CR 10

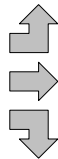
Cars	4	0	0	4
Trucks	6	0	0	6
Heavys	7	0	0	7
Totals	17	0	0	



Larmer Line



Heavys	0		
Trucks	0		
Cars	14		
Totals	14		
0	0	3	3
0	0	10	10
0	0	27	



Larmer Line



Cars	13	0	0	13
Trucks	0	0	0	
Heavys	0	0	0	
Totals	13	0	0	

Peds Cross: \times
West Peds: 0
West Entering: 27
West Leg Total: 57

Cars	196	12	169	6	187
Trucks	2	0	1	0	1
Heavys	0	0	0	0	0
Totals	198	12	170	6	



Peds Cross: \times
South Peds: 0
South Entering: 188
South Leg Total: 386

Comments

Ontario Traffic Inc.

Total Count Diagram

Municipality: Millbrook
Site #: 1722900002
Intersection: CR 10 & Larmer Line
TFR File #: 1
Count date: 12-Aug-17

Weather conditions:
Person(s) who counted:

**** Non-Signalized Intersection ****

Major Road: CR 10 runs N/S

North Leg Total: 2027
 North Entering: 1044
 North Peds: 0
 Peds Cross: \bowtie

Heavys	0	0	0	0
Trucks	0	10	0	10
Cars	59	943	32	1034
Totals	59	953	32	



Heavys	0
Trucks	14
Cars	969
Totals	983

East Leg Total: 169
 East Entering: 85
 East Peds: 5
 Peds Cross: \bowtie

Heavys	0
Trucks	0
Cars	160
Totals	160

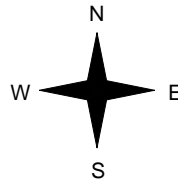


CR 10

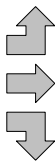
Cars	33	Trucks	2	Heavys	0	Totals	35
Cars	27	Trucks	0	Heavys	0	Totals	27
Cars	22	Trucks	1	Heavys	0	Totals	23
Totals	82	Totals	3	Totals	0		



Larmer Line



Heavys	0
Trucks	0
Cars	75
Totals	75
Heavys	0
Trucks	0
Cars	22
Totals	22
Heavys	0
Trucks	0
Cars	54
Totals	54
Heavys	0
Trucks	0
Cars	151
Totals	151



Larmer Line



Cars	84	Trucks	0	Heavys	0	Totals	84
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Peds Cross: \bowtie
 West Peds: 0
 West Entering: 151
 West Leg Total: 311

Cars	1019
Trucks	11
Heavys	0
Totals	1030



CR 10

Cars	74	861	30	965
Trucks	0	12	0	12
Heavys	0	0	0	0
Totals	74	873	30	

Peds Cross: \bowtie
 South Peds: 0
 South Entering: 977
 South Leg Total: 2007

Comments

Ontario Traffic Inc. Traffic Count Summary

Intersection: CR 10 & Larmer Line

Count Date: 12-Aug-17

Municipality: Millbrook

North Approach Totals						South Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	North/South Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
11:00:00	0	0	0	0	0	0	11:00:00	0	0	0	0	0
12:00:00	2	152	7	161	0	357	12:00:00	7	185	4	196	0
13:00:00	4	181	12	197	0	385	13:00:00	12	170	6	188	0
14:00:00	5	177	9	191	0	336	14:00:00	14	124	7	145	0
15:00:00	8	149	7	164	0	330	15:00:00	15	146	5	166	0
16:00:00	10	154	11	175	0	322	16:00:00	11	128	8	147	0
17:00:00	3	140	13	156	0	289	17:00:00	15	118	0	133	0
Totals:	32	953	59	1044	0	2019		74	871	30	975	0
East Approach Totals						West Approach Totals						
Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds	East/West Total Approaches	Hour Ending	Includes Cars, Trucks, & Heavys				Total Peds
	Left	Thru	Right	Grand Total				Left	Thru	Right	Grand Total	
11:00:00	0	0	0	0	0	0	11:00:00	0	0	0	0	0
12:00:00	0	3	6	9	0	39	12:00:00	17	4	9	30	0
13:00:00	7	6	4	17	5	44	13:00:00	14	3	10	27	0
14:00:00	2	5	7	14	0	41	14:00:00	14	4	9	27	0
15:00:00	4	6	9	19	0	30	15:00:00	5	2	4	11	0
16:00:00	8	4	3	15	0	34	16:00:00	9	1	9	19	0
17:00:00	2	3	6	11	0	46	17:00:00	14	8	13	35	0
Totals:	23	27	35	85	5	234		73	22	54	149	0
Calculated Values for Traffic Crossing Major Street												
Hours Ending:	11:00	12:00	13:00	14:00		15:00	16:00	17:00	17:00			
Crossing Values:	0	21	27	21		15	21	24	24			

File Name: County Road 21 at County Road 10 (Tupper St) July 18, 2018
 Start Date: 7/18/2018
 Start Time: 7:00:00 AM
 Finish Time: 7:00:00 PM

Start Time	CR 10 From North			CR 21 From East			Distillery Street From South			CR 21 From West			Hour Totals	Major Road (CR 21)	Minor Road (CR 10)	Peak Hours			
	Right	Thru	Left	Pedestrians	Right	Thru	Left	Pedestrians	Right	Thru	Left	Pedestrians							
07:00 AM	1	11	0	0	0	0	0	0	0	0	0	0	1	259	159	100	259		
07:15 AM	3	1	11	0	17	7	0	0	0	1	1	1	1	4	9	7	311		
07:30 AM	10	3	11	1	23	7	1	0	0	1	0	0	0	3	14	0	318		
07:45 AM	15	6	12	1	20	13	4	0	0	3	2	1	4	4	2	7:45 - 8:45	320		
08:00 AM	18	1	21	0	24	8	1	0	2	2	0	0	5	17	0	178	316		
08:15 AM	6	1	15	0	14	2	0	0	1	2	1	0	8	9	0	138	316		
08:30 AM	11	3	14	1	20	10	1	0	0	3	0	0	11	4	2		323		
08:45 AM	18	2	16	2	25	7	0	0	0	0	1	0	4	8	0		326		
09:00 AM	7	5	10	0	24	11	1	0	0	1	0	0	6	7	1	185	318		
09:15 AM	10	2	27	2	20	7	1	0	0	5	1	0	8	10	2		337		
09:30 AM	15	1	18	3	8	10	1	1	0	2	0	0	6	18	2		321		
09:45 AM	14	0	10	1	19	11	2	6	0	0	2	0	7	8	1		331		
10:00 AM	13	5	21	4	16	14	0	0	0	0	1	0	6	16	5	191	344		
10:15 AM	9	2	13	4	17	6	0	0	2	1	2	0	4	6	13	153	344		
10:30 AM	15	0	26	0	12	9	1	2	3	0	0	0	8	14	0		259		
10:45 AM	12	2	24	0	18	7	0	0	0	2	0	0	3	8	10		250		
11:00 AM	15	2	22	3	8	8	0	4	1	1	0	0	2	10	14	136	255		
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		257		
11:30 AM	15	2	19	1	17	7	2	0	0	4	0	0	7	10	3		338		
11:45 AM	13	3	20	4	15	9	2	0	0	3	1	1	2	14	9		325		
12:00 PM	13	3	10	0	17	10	1	0	0	4	1	0	7	12	0	169	294		
12:15 PM	10	1	21	2	19	4	0	1	2	6	0	0	3	14	0		297		
12:30 PM	11	2	10	1	10	1	1	0	0	3	0	1	10	16	0		317		
12:45 PM	5	1	16	1	12	6	1	0	0	2	0	0	6	8	0		353		
01:00 PM	9	3	28	0	13	7	2	1	3	6	1	0	2	7	4	202	406		
01:15 PM	11	5	25	1	22	12	0	0	2	3	1	0	5	15	1		417		
01:30 PM	16	1	25	2	18	15	1	1	3	3	0	0	1	10	11		419		
01:45 PM	25	4	25	0	17	10	1	0	0	3	2	0	3	11	12		424		
02:00 PM	12	1	22	3	18	15	2	1	1	3	3	0	2	1	6	15	10	410	410
02:15 PM	13	1	27	1	23	13	0	3	1	2	0	0	2	11	10		424		
02:30 PM	14	4	23	4	20	17	0	0	2	1	1	0	1	15	11		404		
02:45 PM	23	1	15	0	17	13	0	0	2	1	1	0	8	17	2		391		
03:00 PM	20	1	25	0	16	14	3	0	0	4	3	0	2	10	15	408	408		
03:15 PM	17	0	19	3	16	8	1	0	2	2	0	0	0	6	2		406		
03:30 PM	7	4	21	3	18	13	1	0	3	5	3	1	2	9	12		323		
03:45 PM	21	2	28	4	15	9	0	4	5	5	1	0	16	14	3		374		
04:00 PM	21	4	24	0	19	11	0	0	0	3	0	0	1	0	18	11	440	440	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		491		
04:30 PM	17	5	40	5	23	8	4	0	2	8	0	0	16	24	0	4:30 - 5:30	625		
04:45 PM	23	1	65	0	30	20	1	0	2	1	0	0	1	19	19		618		
05:00 PM	24	1	32	4	30	15	3	0	7	8	1	0	2	18	21	279	574		
05:15 PM	22	1	47	1	20	5	0	2	3	7	1	0	12	16	0		515		
05:30 PM	22	1	43	1	23	10	1	0	3	3	1	0	4	15	14		471		
05:45 PM	22	5	38	0	37	8	1	1	1	1	1	0	9	15	1		392		
06:00 PM	13	0	35	1	21	9	0	0	1	3	0	0	8	13	0		329		
06:15 PM	14	3	30	0	21	3	2	0	1	3	1	0	4	7	0		329		
06:30 PM	7	2	15	2	18	2	0	0	0	2	0	0	5	10	4		329		
06:45 PM	9	2	20	2	16	8	2	0	1	3	0	0	5	9	2		329		

Total	4353	2333	2020
Percentage	-----	54%	46%

Pedestrians	208
Cyclists	22

Turning Movement Count (Saturday)

Intersection Location: CR10/Larmer Line
 City: Millbrook
 N/S Street: CR10
 E/W Street: Larmer Line

Period Time: 12:00 noon to 1:00 pm
 Date: Aug 12, 2017
 Controlled: Stop
 Project: 2124-19

Movement Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR			
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks		
12:00 - 12:15	4	0	0	0	1	0	3	0	45	1	2	0	2	0	1	0	0	0	0	0	0	0	47	0	4	0
12:15 - 12:30	2	0	2	0	4	0	2	0	44	0	1	0	1	0	1	0	3	0	1	0	1	0	46	0	4	0
12:30 - 12:45	3	0	1	0	4	0	4	0	42	0	1	0	0	0	2	0	1	0	1	0	1	0	43	1	1	0
12:45 - 1:00	5	0	0	0	1	0	3	0	38	0	2	0	4	0	2	0	0	0	2	0	2	0	43	1	3	0
Peak Hour Volume (Veh/h)	14	0	3	0	10	0	12	0	169	1	6	0	7	0	6	0	4	0	4	0	4	0	179	2	12	0
Percentage Cars & Trucks	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	99.4%	0.6%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	98.9%	1.1%	100.0%	0.0%	
Total Vehicles	14	0	3	0	10	0	12	0	170	1	6	0	7	0	6	0	4	0	4	0	4	0	181	2	12	0

Turning Movement Count (Saturday)

Intersection Location: CR10/Fallis Line
 City: Millbrook
 N/S Street: CR10
 E/W Street: Fallis Line

Period Time: 12:00 noon to 1:00 pm
 Date: Aug 12, 2017
 Controlled: Stop
 Project: 2124-19

Movement Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR		
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	
12:00 - 12:15	2	0	0	0	8	0	4	0	48	0	0	0	0	0	0	0	0	0	0	0	0	44	0	5	0
12:15 - 12:30	3	0	0	0	4	0	7	0	45	0	0	0	0	0	0	0	0	0	0	0	0	51	0	2	0
12:30 - 12:45	1	0	0	0	1	0	3	0	44	0	0	0	0	0	0	0	0	0	0	0	0	45	0	2	0
12:45 - 1:00	1	0	0	0	5	0	7	0	43	0	0	0	0	0	0	0	0	0	0	0	0	44	1	1	0
Peak Hour Volume (Veh/h)	7	0	0	0	18	0	21	0	180	0	0	0	0	0	0	0	0	0	0	0	0	184	1	10	0
Percentage Cars & Trucks	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	99.5%	0.5%	100.0%	0.0%
Total Vehicles	7	0	0	0	18	0	21	0	180	0	0	0	0	0	0	0	0	0	0	0	0	185	1	10	0

Turning Movement Count (Saturday) - From Field Counts

Intersection Location: CR10 / CR21 / Distillery St
 City: Millbrook
 N/S Street: CR10 & Distillery St
 E/W Street: CR21

Period Time: 12:00 noon to 1:00 pm
 Date: July 11, 2020
 Controlled: Stop
 Project: 2124-19

Movement Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
12:00 - 12:15	9	0	6	0	1	0	1	0	3	0	0	0	1	0	9	1	20	2	21	0	6	0	15	1
12:15 - 12:30	8	0	6	1	0	0	2	0	2	0	2	0	2	0	9	0	18	1	17	1	3	0	14	1
12:30 - 12:45	8	0	8	0	0	0	1	0	2	0	2	0	1	0	5	0	16	0	18	1	2	0	15	0
12:45 - 1:00	6	0	5	0	0	0	0	0	2	0	1	0	1	0	6	0	15	0	17	0	4	0	13	0
Peak Hour Volume (Veh/h)	31	0	25	1	1	0	2	0	9	0	5	0	5	0	29	1	69	3	73	2	15	0	57	2
Percentage Cars & Trucks	100.0%	0.0%	96.2%	3.8%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	96.7%	3.3%	95.8%	4.2%	97.3%	2.7%	100.0%	0.0%	96.6%	3.4%
Total Vehicles	31		26		1		2		9		5		5		30		72		75		15		59	

Turning Movement Count (Saturday) - From Field Counts

Intersection Location: Fallis Line / Tapley Quarter Line
 City: Millbrook
 N/S Street: Tapley Quarter Line
 E/W Street: Fallis Line

Period Time: 12:00 noon to 1:00 pm
 Date: December 4, 2021
 Controlled: Stop
 Project: 2124-19

Movement Time Period	EBL		EBT		EBR		NBL		NBT		NBR		WBL		WBT		WBR		SBL		SBT		SBR	
	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks	Cars	Trucks
12:00 - 12:15	0	0	0	0	0	0	0	0	9	0	1	0	1	0	0	0	2	0	4	0	7	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	13	0	0	0	1	0	0	0	7	0	6	1	6	1	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	9	0	1	0	1	0	0	0	5	0	8	0	10	0	0	0
12:45 - 1:00	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	7	0	6	0	14	0	0	0
Peak Hour Volume (Veh/h)	0	0	0	0	0	0	0	0	37	0	2	0	3	0	0	0	21	0	24	1	37	1	0	0
Percentage Cars & Trucks	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!	100.0%	0.0%	100.0%	0.0%	100.0%	0.0%	#DIV/0!	#DIV/0!	100.0%	0.0%	96.0%	4.0%	97.4%	2.6%	#DIV/0!	#DIV/0!
Total Vehicles	0		0		0		0		37		2		3		0		21		25		38		0	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / Larmer Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
April	2017	AM	23	4	10	6	205	10	4	2	9	5	159	3	Registered Volumes
April	2017	PM	3	1	6	8	165	4	4	1	3	8	225	9	
August	2017	SAT	14	3	10	12	170	6	7	6	4	4	181	12	
Annual Growth Rate 2.00%															
	2021	AM	25	4	11	6	222	11	4	2	10	5	172	3	Existing Volumes (Projected)
	2021	PM	3	1	6	9	179	4	4	1	3	9	244	10	
	2021	SAT	15	3	11	13	184	6	8	6	4	4	196	13	
		AM	0	0	0	0	103	6	2	0	0	0	34	0	Tower Hills South Trips
		PM	0	0	0	0	67	4	6	0	0	0	115	0	
		SAT	0	0	0	0	81	5	5	0	0	0	94	0	
		AM	0	0	6	3	1	3	4	0	0	0	2	0	Millbrook Community Centre
		PM	0	0	6	6	3	5	4	0	0	0	2	0	
		SAT	0	0	4	3	1	3	3	0	0	0	1	0	
	2021	AM	25	4	17	9	326	20	10	2	10	5	208	3	Total Existing Volumes
	2021	PM	3	1	12	15	249	13	14	1	3	9	361	10	
	2021	SAT	15	3	15	16	266	14	16	6	4	4	291	13	
	2025	AM	27	5	12	7	240	12	5	2	11	6	186	4	Background Volumes (Projected)
	2025	PM	4	1	7	9	193	5	5	1	4	9	264	11	
	2025	SAT	16	4	12	14	199	7	8	7	5	5	212	14	
		AM	0	0	6	3	104	9	6	0	0	0	36	0	Tower Hills South & M. Community Centre
		PM	0	0	6	6	70	9	10	0	0	0	117	0	
		SAT	0	0	4	3	82	8	8	0	0	0	95	0	
		AM	0	0	17	25	194	20	14	0	0	0	68	0	Development "A" & School
		PM	0	0	20	13	122	8	13	0	0	0	204	0	
		SAT	0	0	19	17	178	12	12	0	0	0	191	0	
		AM	0	0	0	0	31	0	0	0	0	0	48	0	Development "B"
		PM	0	0	0	0	65	0	0	0	0	0	27	0	
		SAT	0	0	0	0	60	0	0	0	0	0	61	0	
		AM	0	0	6	2	62	4	3	0	0	0	72	0	Development "C" 100% Commercial 50% Residential
		PM	0	0	3	5	73	4	1	0	0	0	84	0	
		SAT	0	0	7	6	105	6	2	0	0	0	127	0	
	2025	AM	27	5	41	37	631	45	28	2	11	6	410	4	Total Background Volumes 2025
	2025	PM	4	1	36	33	523	26	29	1	4	9	696	11	
	2025	SAT	16	4	42	40	624	33	30	7	5	5	686	14	
	2025	AM	0	0	2	2	81	5	1	0	0	0	25	0	Site Generated Trips 50% of Development
	2025	PM	0	0	3	2	37	2	1	0	0	0	80	0	
	2025	SAT	0	0	4	4	62	3	1	0	0	0	77	0	
	2025	AM	27	5	43	39	712	50	29	2	11	6	435	4	Total Trips 2025
	2025	PM	4	1	39	35	560	28	30	1	4	9	776	11	
	2025	SAT	16	4	46	44	686	36	31	7	5	5	763	14	

Annual Growth Rate 2.00%															
	2030	AM	30	5	13	8	265	13	5	3	12	6	206	4	Background Volumes (Projected)
	2030	PM	4	1	8	10	213	5	5	1	4	10	291	12	
	2030	SAT	18	4	13	16	220	8	9	8	5	5	234	16	
		AM	0	0	6	3	104	9	6	0	0	0	36	0	Tower Hills South & M. Community Centre
		PM	0	0	6	6	70	9	10	0	0	0	117	0	
		SAT	0	0	4	3	82	8	8	0	0	0	95	0	
		AM	0	0	17	25	225	20	14	0	0	0	116	0	Developments "A" + "B"
		PM	0	0	20	13	187	8	13	0	0	0	231	0	
		SAT	0	0	19	17	238	12	12	0	0	0	252	0	
		AM	0	0	6	2	82	6	4	0	0	0	80	0	Development "C" 100% Commercial 100% Residential
		PM	0	0	3	5	84	4	1	0	0	0	104	0	
		SAT	0	0	8	7	121	7	3	0	0	0	148	0	
	2030	AM	30	5	42	38	676	48	29	3	12	6	438	4	Total Background Volumes 2030
	2030	PM	4	1	37	34	554	26	29	1	4	10	743	12	
	2030	SAT	18	4	44	43	661	35	32	8	5	5	729	16	
	2030	AM	0	0	4	5	161	10	2	0	0	0	49	0	Site Generated Trips 100% of Development
	2030	PM	0	0	6	4	74	4	1	0	0	0	159	0	
	2030	SAT	0	0	8	8	125	7	2	0	0	0	154	0	
	2030	AM	30	5	46	43	837	58	31	3	12	6	487	4	Total Trips 2030
	2030	PM	4	1	43	38	628	30	30	1	4	10	902	12	
	2030	SAT	18	4	52	51	786	42	34	8	5	5	883	16	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / Fallis Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
April	2017	AM	10	0	15	15	215	0	0	0	0	0	162	5	Registered Volumes
April	2017	PM	4	0	18	19	170	1	0	0	0	0	230	11	
August	2017	SAT	7	0	18	21	180	0	0	0	0	0	185	10	
Annual Growth Rate 2.00%															
	2021	AM	11	0	16	16	233	0	0	0	0	0	175	5	Existing Volumes (Projected)
	2021	PM	4	0	19	21	184	1	0	0	0	0	249	12	
	2021	SAT	8	0	19	23	195	0	0	0	0	0	200	11	
		AM	109	0	49	16	0	0	0	0	0	0	0	36	Tower Hills South Trips
		PM	71	0	32	55	0	0	0	0	0	0	0	121	
		SAT	86	0	39	45	0	0	0	0	0	0	0	99	
		AM	7	0	0	14	6	0	0	0	0	0	3	0	Millbrook Community Centre
		PM	14	0	0	14	6	0	0	0	0	0	6	1	
		SAT	7	0	0	8	5	0	0	0	0	0	2	0	
	2021	AM	127	0	65	46	239	0	0	0	0	0	178	41	Total Existing Volumes
	2021	PM	89	0	51	90	190	1	0	0	0	0	255	134	
	2021	SAT	101	0	58	76	200	0	0	0	0	0	202	110	
	2025	AM	12	0	18	18	252	0	0	0	0	0	190	6	Background Volumes (Projected)
	2025	PM	5	0	21	22	199	1	0	0	0	0	269	13	
	2025	SAT	8	0	21	25	211	0	0	0	0	0	217	12	
		AM	116	0	49	30	6	0	0	0	0	0	3	36	Tower Hills South & M. Community Centre
		PM	85	0	32	69	6	0	0	0	0	0	6	122	
		SAT	93	0	39	53	5	0	0	0	0	0	2	99	
		AM	70	0	128	95	9	0	0	0	0	0	26	44	Development "A" & School
		PM	35	0	60	86	28	0	0	0	0	0	16	56	
		SAT	47	0	78	82	26	0	0	0	0	0	25	50	
		AM	31	0	25	23	0	0	0	0	0	0	0	48	Development "B"
		PM	77	0	35	31	-12	0	0	0	0	0	-12	39	
		SAT	60	0	58	40	0	0	0	0	0	0	0	61	
		AM	0	5	0	0	23	5	75	11	44	121	-40	0	Development "C" 100% Commercial 50% Residential
		PM	0	14	0	0	35	15	151	7	46	136	-48	0	
		SAT	0	11	0	0	50	11	144	9	68	202	-65	0	
	2025	AM	229	5	220	166	290	5	75	11	44	121	179	134	Total Background Volumes 2025
	2025	PM	202	14	148	208	256	16	151	7	46	136	231	230	
	2025	SAT	208	11	196	200	292	11	144	9	68	202	179	222	
	2025	AM	61	40	33	13	0	7	14	14	27	8	0	20	Site Generated Trips 50% of Development
	2025	PM	29	28	36	45	0	19	16	44	12	25	0	58	
	2025	SAT	49	34	33	32	0	13	14	38	20	24	0	58	
	2025	AM	290	45	253	179	290	12	89	25	71	129	179	154	Total Trips 2025
	2025	PM	231	42	184	253	256	35	167	51	58	161	231	288	
	2025	SAT	257	45	229	232	292	24	158	47	88	226	179	280	

Annual Growth Rate 2.00%															
	2030	AM	13	0	19	19	278	0	0	0	0	0	210	6	Background Volumes (Projected)
	2030	PM	5	0	23	25	220	1	0	0	0	0	298	14	
	2030	SAT	9	0	23	27	233	0	0	0	0	0	239	13	
		AM	116	0	49	30	6	0	0	0	0	0	3	36	Tower Hills South & M. Community Centre
		PM	85	0	32	69	6	0	0	0	0	0	6	122	
		SAT	93	0	39	53	5	0	0	0	0	0	2	99	
		AM	101	0	153	118	9	0	0	0	0	0	26	92	Developments "A" + "B"
		PM	112	0	95	117	16	0	0	0	0	0	4	95	
		SAT	107	0	136	122	26	0	0	0	0	0	25	111	
		AM	0	5	0	0	23	11	87	14	68	130	-40	0	Development "C" 100% Commercial 100% Residential
		PM	0	19	0	0	35	30	166	8	57	156	-48	0	
		SAT	0	12	0	0	50	22	156	11	85	224	-65	0	
	2030	AM	230	5	221	167	316	11	87	14	68	130	199	134	Total Background Volumes 2030
	2030	PM	202	19	150	211	277	31	166	8	57	156	260	231	
	2030	SAT	209	12	198	202	314	22	156	11	85	224	201	223	
	2030	AM	122	81	66	27	0	12	27	29	54	16	0	39	Site Generated Trips 100% of Development
	2030	PM	58	55	73	91	0	39	30	87	25	49	0	117	
	2030	SAT	98	68	66	65	0	27	27	75	41	48	0	116	
	2030	AM	352	86	287	194	316	23	114	43	122	146	199	173	Total Trips 2030
	2030	PM	260	74	223	302	277	70	196	95	82	205	260	348	
	2030	SAT	307	80	264	267	314	49	183	86	126	272	201	339	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / CR21 / Distillery			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
July	2018	AM	34	28	1	2	9	6	6	33	78	62	11	50	Registered Volumes
July	2018	PM	80	65	3	2	24	14	8	48	103	184	8	86	
July	2020	SAT	31	26	1	2	9	5	5	30	72	75	15	59	
Annual Growth Rate 2.00%															
	2021	AM	36	30	1	2	10	6	6	35	83	66	12	53	Existing Volumes (Projected)
	2021	PM	85	69	3	2	25	15	8	51	109	195	8	91	
	2021	SAT	32	27	1	2	9	5	5	31	73	77	15	60	
		AM	5	0	0	0	1	0	0	0	10	25	2	22	Tower Hills South Trips
		PM	21	0	0	0	6	0	0	0	28	21	1	10	
		SAT	13	0	0	0	3	0	0	0	29	20	4	15	
		AM	6	0	0	0	1	0	0	0	13	5	1	4	Millbrook Community Centre
		PM	8	0	0	0	2	0	0	0	10	13	1	6	
		SAT	4	0	0	0	1	0	0	0	8	5	0	4	
	2021	AM	47	30	1	2	12	6	6	35	106	96	15	79	Total Existing Volumes
	2021	PM	114	69	3	2	33	15	8	51	147	229	10	107	
	2021	SAT	49	27	1	2	13	5	5	31	110	102	19	79	
	2025	AM	39	32	1	2	10	7	7	38	90	71	13	57	Background Volumes (Projected)
	2025	PM	92	75	3	2	28	16	9	55	118	211	9	99	
	2025	SAT	34	29	1	2	10	6	6	33	79	83	17	65	
		AM	11	0	0	0	2	0	0	0	23	30	3	26	Tower Hills South & M. Community Centre
		PM	29	0	0	0	8	0	0	0	38	34	2	16	
		SAT	17	0	0	0	4	0	0	0	37	25	4	19	
		AM	29	0	0	0	8	0	0	0	67	77	12	65	Development "A" & School
		PM	46	0	0	0	14	0	0	0	55	50	2	24	
		SAT	31	0	0	0	8	0	0	0	69	53	9	41	
		AM	6	0	0	0	2	0	0	0	15	13	2	11	Development "B"
		PM	8	0	0	0	2	0	0	0	9	15	1	7	
		SAT	12	0	0	0	3	0	0	0	26	30	5	23	
		AM	16	0	0	0	4	0	0	0	36	17	3	15	Development "C" 100% Commercial 50% Residential
		PM	27	0	0	0	8	0	0	0	33	69	3	32	
		SAT	21	0	0	0	6	0	0	0	48	40	7	32	
	2025	AM	102	32	1	2	26	7	7	38	230	208	33	174	Total Background Volumes 2025
	2025	PM	201	75	3	2	60	16	9	55	253	380	17	177	
	2025	SAT	115	29	1	2	30	6	6	33	259	230	42	181	
	2025	AM	6	0	0	0	1	0	0	0	13	24	4	20	Site Generated Trips 50% of Development
	2025	PM	25	0	0	0	7	0	0	0	32	34	2	16	
	2025	SAT	13	0	0	0	3	0	0	0	29	24	5	19	
	2025	AM	108	32	1	2	27	7	7	38	243	232	37	194	Total Trips 2025
	2025	PM	226	75	3	2	67	16	9	55	285	414	19	193	
	2025	SAT	128	29	1	2	33	6	6	33	288	254	47	200	

Annual Growth Rate 2.00%															
	2030	AM	43	36	1	3	11	8	8	42	99	79	14	63	Background Volumes (Projected)
	2030	PM	101	82	4	3	30	18	10	61	131	233	10	109	
	2030	SAT	38	32	1	2	11	6	6	37	88	91	18	72	
		AM	11	0	0	0	2	0	0	0	23	30	3	26	Tower Hills South & M. Community Centre
		PM	29	0	0	0	8	0	0	0	38	34	2	16	
		SAT	17	0	0	0	4	0	0	0	37	25	4	19	
		AM	36	0	0	0	10	0	0	0	81	90	14	75	Developments "A" + "B"
		PM	53	0	0	0	16	0	0	0	64	65	3	31	
		SAT	43	0	0	0	10	0	0	0	95	82	14	64	
		AM	17	0	0	0	5	0	0	0	40	21	4	21	Development "C" 100% Commercial 100% Residential
		PM	33	0	0	0	10	0	0	0	43	78	4	37	
		SAT	25	0	0	0	7	0	0	0	55	46	8	37	
	2030	AM	107	36	1	3	29	8	8	42	243	219	35	186	Total Background Volumes 2030
	2030	PM	217	82	4	3	64	18	10	61	275	411	19	193	
	2030	SAT	123	32	1	2	32	6	6	37	274	245	45	192	
	2030	AM	11	0	0	0	3	0	0	0	25	47	7	39	Site Generated Trips 100% of Development
	2030	PM	50	0	0	0	15	0	0	0	65	68	3	32	
	2030	SAT	26	0	0	0	7	0	0	0	59	48	9	37	
	2030	AM	118	36	1	3	32	8	8	42	268	266	42	225	Total Trips 2030
	2030	PM	267	82	4	3	79	18	10	61	340	479	22	225	
	2030	SAT	149	32	1	2	39	6	6	37	333	293	54	229	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

Fallis Line / Tapley Quarter Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
December	2021	AM	0	0	0	0	37	2	2	0	56	14	19	0	Registered Volumes
December	2021	PM	0	0	0	0	40	2	1	0	22	61	56	0	
December	2021	SAT	0	0	0	0	37	2	3	0	21	25	38	0	
Annual Growth Rate 2.00%															
	2025	AM	0	0	0	0	43	2	2	0	66	16	22	0	Background Volumes (Projected)
	2025	PM	0	0	0	0	47	2	1	0	26	71	66	0	
	2025	SAT	0	0	0	0	43	2	4	0	25	29	45	0	
		AM	0	0	0	0	0	2	1	0	25	14	0	0	Development "A" & School
		PM	0	0	0	0	0	1	1	0	12	18	0	0	
		SAT	0	0	0	0	0	1	2	0	16	18	0	0	
		AM	0	0	0	0	0	1	0	0	2	5	0	0	Development "B"
		PM	0	0	0	0	0	0	0	0	9	3	0	0	
		SAT	0	0	0	0	0	0	0	0	4	6	0	0	
		AM	0	0	0	0	0	0	0	0	11	5	0	0	Development "C" 100% Commercial 50% Residential
		PM	0	0	0	0	0	0	0	0	7	14	0	0	
		SAT	0	0	0	0	0	0	1	0	8	11	0	0	
	2025	AM	0	0	0	0	43	5	3	0	104	41	22	0	Total Background Volumes 2025
	2025	PM	0	0	0	0	47	3	2	0	54	107	66	0	
	2025	SAT	0	0	0	0	43	4	7	0	52	64	45	0	
	2025	AM	0	0	0	0	0	0	0	0	15	2	0	0	Site Generated Trips 50% of Development
	2025	PM	0	0	0	0	0	0	0	0	3	15	0	0	
	2025	SAT	0	0	0	0	0	0	1	0	5	7	0	0	
	2025	AM	0	0	0	0	43	5	3	0	119	43	22	0	Total Trips 2025
	2025	PM	0	0	0	0	47	3	2	0	57	122	66	0	
	2025	SAT	0	0	0	0	43	4	8	0	57	71	45	0	
Annual Growth Rate 2.00%															
	2030	AM	0	0	0	0	44	2	2	0	67	17	23	0	Background Volumes (Projected)
	2030	PM	0	0	0	0	48	2	1	0	26	73	67	0	
	2030	SAT	0	0	0	0	44	2	4	0	25	30	45	0	
		AM	0	0	0	0	0	3	1	0	27	19	0	0	Developments "A" + "B"
		PM	0	0	0	0	0	1	1	0	21	21	0	0	
		SAT	0	0	0	0	0	2	3	0	19	23	0	0	
		AM	0	0	0	0	0	0	0	0	14	5	0	0	Development "C" 100% Commercial 100% Residential
		PM	0	0	0	0	0	0	0	0	8	19	0	0	
		SAT	0	0	0	0	0	0	1	0	10	12	0	0	
	2030	AM	0	0	0	0	44	5	3	0	108	41	23	0	Total Background Volumes 2030
	2030	PM	0	0	0	0	48	3	2	0	55	113	67	0	
	2030	SAT	0	0	0	0	44	4	7	0	54	65	45	0	
	2030	AM	0	0	0	0	0	0	1	0	28	3	0	0	Site Generated Trips 100% of Development
	2030	PM	0	0	0	0	0	1	0	0	6	28	0	0	
	2030	SAT	0	0	0	0	0	1	2	0	10	13	0	0	
	2030	AM	0	0	0	0	44	5	4	0	136	44	23	0	Total Trips 2030
	2030	PM	0	0	0	0	48	4	2	0	61	141	67	0	
	2030	SAT	0	0	0	0	44	5	9	0	64	78	45	0	

















Appendix C

Synchro Reports

Existing Conditions Year 2021




















HCM Unsignalized Intersection Capacity Analysis
 3: Larmer Line & CR10

Existing Volumes - 2021
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	25	4	17	10	2	10	9	326	20	5	208	3
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	4	18	11	2	11	10	354	22	5	226	3
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	635	634	228	644	625	365	229			376		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	635	634	228	644	625	365	229			376		
tC, single (s)	7.1	6.5	6.4	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.5	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	99	98	97	99	98	99			100		
cM capacity (veh/h)	380	392	769	370	396	680	1339			1182		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	50	24	386	235								
Volume Left	27	11	10	5								
Volume Right	18	11	22	3								
cSH	469	470	1339	1182								
Volume to Capacity	0.11	0.05	0.01	0.00								
Queue Length 95th (m)	2.7	1.2	0.2	0.1								
Control Delay (s)	13.6	13.1	0.3	0.2								
Lane LOS	B	B	A	A								
Approach Delay (s)	13.6	13.1	0.3	0.2								
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.7									
Intersection Capacity Utilization			33.0%		ICU Level of Service					A		
Analysis Period (min)			15									










HCM Unsignalized Intersection Capacity Analysis
6: Fallis Line & CR10

Existing Volumes - 2021
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	127	0	65	0	0	0	46	239	0	0	178	41
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	138	0	71	0	0	0	50	260	0	0	193	45
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)			4									
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	553	553	193	589	598	260	238			260		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	553	553	193	589	598	260	238			260		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	68	100	92	100	100	100	96			100		
cM capacity (veh/h)	431	424	848	374	400	779	1329			1305		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	209	0	50	260	193	45						
Volume Left	138	0	50	0	0	0						
Volume Right	71	0	0	0	0	45						
cSH	651	1700	1329	1700	1305	1700						
Volume to Capacity	0.32	0.00	0.04	0.15	0.00	0.03						
Queue Length 95th (m)	10.5	0.0	0.9	0.0	0.0	0.0						
Control Delay (s)	14.7	0.0	7.8	0.0	0.0	0.0						
Lane LOS	B	A	A									
Approach Delay (s)	14.7	0.0	1.3		0.0							
Approach LOS	B	A										
Intersection Summary												
Average Delay			4.6									
Intersection Capacity Utilization			39.0%		ICU Level of Service				A			
Analysis Period (min)			15									



















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Existing Volumes - 2021
 AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	2	56	37	2	14	19
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	61	40	2	15	21
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	92	41			42	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	92	41			42	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	100	94			99	
cM capacity (veh/h)	898	1016			1493	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	63	42	36			
Volume Left	2	0	15			
Volume Right	61	2	0			
cSH	1011	1700	1493			
Volume to Capacity	0.06	0.02	0.01			
Queue Length 95th (m)	1.5	0.0	0.2			
Control Delay (s)	8.8	0.0	3.2			
Lane LOS	A		A			
Approach Delay (s)	8.8	0.0	3.2			
Approach LOS	A					
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			18.7%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Existing Volumes - 2021
 AM Peak Hour

















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	47	30	1	6	35	106	2	12	6	96	15	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	33	1	7	38	115	2	13	7	104	16	86
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	85	160	22	104	102							
Volume Left (vph)	51	7	2	104	0							
Volume Right (vph)	1	115	7	0	86							
Hadj (s)	0.18	-0.36	-0.13	0.55	-0.54							
Departure Headway (s)	4.8	4.2	4.7	5.6	4.5							
Degree Utilization, x	0.11	0.19	0.03	0.16	0.13							
Capacity (veh/h)	702	808	713	608	753							
Control Delay (s)	8.4	8.2	7.8	8.5	7.0							
Approach Delay (s)	8.4	8.2	7.8	7.8								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.0									
HCM Level of Service			A									
Intersection Capacity Utilization			34.9%	ICU Level of Service	A							
Analysis Period (min)			15									

Intersection: 12: King St (CR21) & CR10

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	14.4	17.9	11.9	16.1	13.2
Average Queue (m)	10.2	11.5	5.9	11.6	10.3
95th Queue (m)	14.9	20.2	14.5	16.9	14.9
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				4	3
Queuing Penalty (veh)				4	3




















HCM Unsignalized Intersection Capacity Analysis
 3: Larmer Line & CR10

Existing Volumes - 2021
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	3	1	12	14	1	3	15	249	13	9	361	10
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	1	13	15	1	3	16	271	14	10	392	11
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	732	735	398	741	733	278	403			285		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	732	735	398	741	733	278	403			285		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	100	98	95	100	100	99			99		
cM capacity (veh/h)	329	339	652	319	340	761	1155			1277		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	17	20	301	413								
Volume Left	3	15	16	10								
Volume Right	13	3	14	11								
cSH	525	355	1155	1277								
Volume to Capacity	0.03	0.06	0.01	0.01								
Queue Length 95th (m)	0.8	1.3	0.3	0.2								
Control Delay (s)	12.1	15.7	0.6	0.3								
Lane LOS	B	C	A	A								
Approach Delay (s)	12.1	15.7	0.6	0.3								
Approach LOS	B	C										
Intersection Summary												
Average Delay			1.1									
Intersection Capacity Utilization			32.4%		ICU Level of Service					A		
Analysis Period (min)			15									










HCM Unsignalized Intersection Capacity Analysis
6: Fallis Line & CR10

Existing Volumes - 2021
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	89	0	51	0	0	0	90	190	1	0	255	134
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	97	0	55	0	0	0	98	207	1	0	277	146
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)			4									
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	679	680	277	708	826	207	423			208		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	679	680	277	708	826	207	423			208		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	72	100	93	100	100	100	91			100		
cM capacity (veh/h)	341	341	762	303	281	833	1136			1363		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	152	0	98	208	277	146						
Volume Left	97	0	98	0	0	0						
Volume Right	55	0	0	1	0	146						
cSH	537	1700	1136	1700	1363	1700						
Volume to Capacity	0.28	0.00	0.09	0.12	0.00	0.09						
Queue Length 95th (m)	8.8	0.0	2.1	0.0	0.0	0.0						
Control Delay (s)	16.2	0.0	8.5	0.0	0.0	0.0						
Lane LOS	C	A	A									
Approach Delay (s)	16.2	0.0	2.7		0.0							
Approach LOS	C	A										
Intersection Summary												
Average Delay			3.7									
Intersection Capacity Utilization			38.4%		ICU Level of Service					A		
Analysis Period (min)			15									



















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Existing Volumes - 2021
 PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	1	22	40	2	61	56
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	24	43	2	66	61
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	238	45			46	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	238	45			46	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			96	
cM capacity (veh/h)	718	1017			1543	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	25	46	127			
Volume Left	1	0	66			
Volume Right	24	2	0			
cSH	999	1700	1543			
Volume to Capacity	0.03	0.03	0.04			
Queue Length 95th (m)	0.6	0.0	1.0			
Control Delay (s)	8.7	0.0	4.0			
Lane LOS	A		A			
Approach Delay (s)	8.7	0.0	4.0			
Approach LOS	A					
Intersection Summary						
Average Delay			3.7			
Intersection Capacity Utilization			23.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Existing Volumes - 2021
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	114	69	3	8	51	147	2	33	15	229	10	107
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	124	75	3	9	55	160	2	36	16	249	11	116
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	202	224	54	249	127							
Volume Left (vph)	124	9	2	249	0							
Volume Right (vph)	3	160	16	0	116							
Hadj (s)	0.15	-0.39	-0.14	0.53	-0.61							
Departure Headway (s)	5.5	5.0	5.6	6.3	5.1							
Degree Utilization, x	0.31	0.31	0.09	0.43	0.18							
Capacity (veh/h)	607	670	559	549	668							
Control Delay (s)	11.0	10.3	9.2	12.8	8.0							
Approach Delay (s)	11.0	10.3	9.2	11.2								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay			10.8									
HCM Level of Service			B									
Intersection Capacity Utilization			51.6%	ICU Level of Service	A							
Analysis Period (min)			15									

















Intersection: 12: King St (CR21) & CR10

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	19.4	16.3	10.6	24.5	16.6
Average Queue (m)	14.3	11.4	8.0	17.7	11.0
95th Queue (m)	21.8	16.7	14.1	26.8	17.9
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				14	4
Queuing Penalty (veh)				16	9

HCM Unsignalized Intersection Capacity Analysis




















3: Larmer Line & CR10

Existing Volumes - 2021
SAT Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	15	3	15	16	6	4	16	266	14	4	291	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	16	3	16	17	7	4	17	289	15	4	316	14
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	671	671	323	682	671	297	330			304		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	671	671	323	682	671	297	330			304		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	99	98	95	98	99	99			100		
cM capacity (veh/h)	358	371	718	349	371	743	1229			1256		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	36	28	322	335								
Volume Left	16	17	17	4								
Volume Right	16	4	15	14								
cSH	466	386	1229	1256								
Volume to Capacity	0.08	0.07	0.01	0.00								
Queue Length 95th (m)	1.9	1.8	0.3	0.1								
Control Delay (s)	13.4	15.1	0.6	0.1								
Lane LOS	B	C	A	A								
Approach Delay (s)	13.4	15.1	0.6	0.1								
Approach LOS	B	C										
Intersection Summary												
Average Delay			1.6									
Intersection Capacity Utilization			34.5%		ICU Level of Service				A			
Analysis Period (min)			15									










HCM Unsignalized Intersection Capacity Analysis
6: Fallis Line & CR10

Existing Volumes - 2021
SAT Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	101	0	58	0	0	0	76	200	0	0	202	110
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	110	0	63	0	0	0	83	217	0	0	220	120
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)			4									
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	602	602	220	634	722	217	339			217		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	602	602	220	634	722	217	339			217		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	72	100	92	100	100	100	93			100		
cM capacity (veh/h)	390	385	820	343	329	822	1220			1352		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	173	0	83	217	220	120						
Volume Left	110	0	83	0	0	0						
Volume Right	63	0	0	0	0	120						
cSH	614	1700	1220	1700	1352	1700						
Volume to Capacity	0.28	0.00	0.07	0.13	0.00	0.07						
Queue Length 95th (m)	8.7	0.0	1.7	0.0	0.0	0.0						
Control Delay (s)	14.9	0.0	8.2	0.0	0.0	0.0						
Lane LOS	B	A	A									
Approach Delay (s)	14.9	0.0	2.2		0.0							
Approach LOS	B	A										
Intersection Summary												
Average Delay			4.0									
Intersection Capacity Utilization			36.8%		ICU Level of Service					A		
Analysis Period (min)			15									



















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Existing Volumes - 2021
 SAT Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	3	21	37	2	25	38
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	23	40	2	27	41
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	137	41			42	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	137	41			42	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	98			98	
cM capacity (veh/h)	841	1030			1554	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	26	42	68			
Volume Left	3	0	27			
Volume Right	23	2	0			
cSH	1002	1700	1554			
Volume to Capacity	0.03	0.02	0.02			
Queue Length 95th (m)	0.6	0.0	0.4			
Control Delay (s)	8.7	0.0	3.0			
Lane LOS	A		A			
Approach Delay (s)	8.7	0.0	3.0			
Approach LOS	A					
Intersection Summary						
Average Delay			3.2			
Intersection Capacity Utilization			20.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Existing Volumes - 2021
 SAT Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop				Stop
Volume (vph)	49	27	1	5	31	110	2	13	5	102	19	79
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	53	29	1	5	34	120	2	14	5	111	21	86
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	84	159	22	111	107							
Volume Left (vph)	53	5	2	111	0							
Volume Right (vph)	1	120	5	0	86							
Hadj (s)	0.15	-0.41	-0.10	0.53	-0.53							
Departure Headway (s)	4.8	4.2	4.7	5.6	4.5							
Degree Utilization, x	0.11	0.18	0.03	0.17	0.13							
Capacity (veh/h)	702	812	708	611	753							
Control Delay (s)	8.4	8.1	7.9	8.6	7.1							
Approach Delay (s)	8.4	8.1	7.9	7.8								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			8.0									
HCM Level of Service			A									
Intersection Capacity Utilization			35.2%	ICU Level of Service	A							
Analysis Period (min)			15									

Intersection: 12: King St (CR21) & CR10

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	9.3	15.2	9.2	17.0	22.2
Average Queue (m)	8.9	11.4	4.3	11.1	13.3
95th Queue (m)	11.9	17.2	11.6	18.0	23.0
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				4	5
Queuing Penalty (veh)				4	5

















Appendix D

Synchro Reports

Background Horizon Year 2025

HCM Unsignalized Intersection Capacity Analysis
 3: Larmer Line & CR10




















Background Volumes - 2025
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	27	5	41	28	2	11	37	631	45	6	410	4
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	5	45	30	2	12	40	686	49	7	446	4
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1265	1276	448	1299	1254	710	450			735		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1265	1276	448	1299	1254	710	450			735		
tC, single (s)	7.1	6.5	6.4	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.5	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	78	97	92	75	99	97	96			99		
cM capacity (veh/h)	136	159	575	120	164	433	1110			870		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	79	45	775	457								
Volume Left	29	30	40	7								
Volume Right	45	12	49	4								
cSH	242	152	1110	870								
Volume to Capacity	0.33	0.29	0.04	0.01								
Queue Length 95th (m)	10.4	8.7	0.9	0.2								
Control Delay (s)	26.9	38.3	0.9	0.2								
Lane LOS	D	E	A	A								
Approach Delay (s)	26.9	38.3	0.9	0.2								
Approach LOS	D	E										
Intersection Summary												
Average Delay			3.4									
Intersection Capacity Utilization			68.6%		ICU Level of Service					C		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis










6: Fallis Line & CR10

Background Volumes - 2025
AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	229	5	220	75	11	44	166	290	5	121	179	134
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	249	5	239	82	12	48	180	315	5	132	195	146
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)			4									
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1188	1139	195	1259	1282	318	340			321		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1188	1139	195	1259	1282	318	340			321		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	96	72	3	90	93	85			89		
cM capacity (veh/h)	117	153	847	84	126	723	1219			1239		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	493	141	180	321	326	146						
Volume Left	249	82	180	0	132	0						
Volume Right	239	48	0	5	0	146						
cSH	204	125	1219	1700	1239	1700						
Volume to Capacity	2.41	1.13	0.15	0.19	0.11	0.09						
Queue Length 95th (m)	309.2	63.6	3.9	0.0	2.7	0.0						
Control Delay (s)	687.9	187.4	8.5	0.0	3.9	0.0						
Lane LOS	F	F	A		A							
Approach Delay (s)	687.9	187.4	3.0		2.7							
Approach LOS	F	F										
Intersection Summary												
Average Delay			229.4									
Intersection Capacity Utilization			61.3%		ICU Level of Service					B		
Analysis Period (min)			15									



















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Background Volumes - 2025
 AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	3	104	43	5	41	22
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	113	47	5	45	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	162	49			52	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	162	49			52	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	100	89			97	
cM capacity (veh/h)	803	1005			1480	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	116	52	68			
Volume Left	3	0	45			
Volume Right	113	5	0			
cSH	998	1700	1480			
Volume to Capacity	0.12	0.03	0.03			
Queue Length 95th (m)	3.0	0.0	0.7			
Control Delay (s)	9.1	0.0	5.0			
Lane LOS	A		A			
Approach Delay (s)	9.1	0.0	5.0			
Approach LOS	A					
Intersection Summary						
Average Delay			5.9			
Intersection Capacity Utilization			23.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Background Volumes - 2025
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	102	32	1	7	38	230	2	26	7	208	33	174
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	111	35	1	8	41	250	2	28	8	226	36	189
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	147	299	38	226	225							
Volume Left (vph)	111	8	2	226	0							
Volume Right (vph)	1	250	8	0	189							
Hadj (s)	0.22	-0.43	-0.07	0.55	-0.54							
Departure Headway (s)	5.8	4.9	5.8	6.3	5.2							
Degree Utilization, x	0.24	0.41	0.06	0.40	0.33							
Capacity (veh/h)	576	687	538	546	661							
Control Delay (s)	10.6	11.3	9.2	12.2	9.5							
Approach Delay (s)	10.6	11.3	9.2	10.8								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay			10.9									
HCM Level of Service			B									
Intersection Capacity Utilization			52.2%	ICU Level of Service	A							
Analysis Period (min)			15									

Intersection: 12: King St (CR21) & CR10

















Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	17.7	21.9	11.8	19.0	19.7
Average Queue (m)	12.5	16.9	7.5	12.5	15.1
95th Queue (m)	19.6	24.1	15.0	20.3	22.7
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				10	11
Queuing Penalty (veh)				21	24

HCM Unsignalized Intersection Capacity Analysis

3: Larmer Line & CR10




















Background Volumes - 2025

PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	4	1	36	29	1	4	33	253	26	9	696	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	1	39	32	1	4	36	275	28	10	757	12
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1148	1157	762	1183	1149	289	768			303		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1148	1157	762	1183	1149	289	768			303		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	99	90	78	99	99	96			99		
cM capacity (veh/h)	167	186	405	144	189	750	846			1258		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	45	37	339	778								
Volume Left	4	32	36	10								
Volume Right	39	4	28	12								
cSH	347	160	846	1258								
Volume to Capacity	0.13	0.23	0.04	0.01								
Queue Length 95th (m)	3.3	6.5	1.0	0.2								
Control Delay (s)	16.9	34.1	1.4	0.2								
Lane LOS	C	D	A	A								
Approach Delay (s)	16.9	34.1	1.4	0.2								
Approach LOS	C	D										
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			54.3%		ICU Level of Service					A		
Analysis Period (min)			15									










HCM Unsignalized Intersection Capacity Analysis
6: Fallis Line & CR10

Background Volumes - 2025
PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	202	14	148	151	7	46	208	256	16	136	231	230
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	220	15	161	164	8	50	226	278	17	148	251	250
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)			4									
Median type							None				None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1331	1295	251	1374	1536	287	501			296		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1331	1295	251	1374	1536	287	501			296		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	87	80	0	91	93	79			88		
cM capacity (veh/h)	87	113	788	67	81	752	1063			1266		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	396	222	226	296	399	250						
Volume Left	220	164	226	0	148	0						
Volume Right	161	50	0	17	0	250						
cSH	140	85	1063	1700	1266	1700						
Volume to Capacity	2.83	2.60	0.21	0.17	0.12	0.15						
Queue Length 95th (m)	274.5	159.6	6.1	0.0	3.0	0.0						
Control Delay (s)	894.1	828.5	9.3	0.0	3.8	0.0						
Lane LOS	F	F	A		A							
Approach Delay (s)	894.1	828.5	4.0		2.3							
Approach LOS	F	F										
Intersection Summary												
Average Delay			302.6									
Intersection Capacity Utilization			62.3%		ICU Level of Service				B			
Analysis Period (min)			15									


















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Background Volumes - 2025
 PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	2	54	47	3	107	66
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	59	51	3	116	72
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	357	53			54	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	357	53			54	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	94			92	
cM capacity (veh/h)	593	1006			1532	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	61	54	188			
Volume Left	2	0	116			
Volume Right	59	3	0			
cSH	982	1700	1532			
Volume to Capacity	0.06	0.03	0.08			
Queue Length 95th (m)	1.5	0.0	1.9			
Control Delay (s)	8.9	0.0	4.9			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	4.9			
Approach LOS	A					
Intersection Summary						
Average Delay			4.8			
Intersection Capacity Utilization			26.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Background Volumes - 2025
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	201	75	3	9	55	253	2	60	16	380	17	177
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	218	82	3	10	60	275	2	65	17	413	18	192
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	303	345	85	413	211							
Volume Left (vph)	218	10	2	413	0							
Volume Right (vph)	3	275	17	0	192							
Hadj (s)	0.17	-0.44	-0.08	0.53	-0.60							
Departure Headway (s)	6.9	6.2	7.5	7.3	6.2							
Degree Utilization, x	0.58	0.60	0.18	0.84	0.36							
Capacity (veh/h)	491	548	416	481	568							
Control Delay (s)	18.9	18.0	12.1	37.3	11.5							
Approach Delay (s)	18.9	18.0	12.1	28.6								
Approach LOS	C	C	B	D								
Intersection Summary												
Delay			22.7									
HCM Level of Service			C									
Intersection Capacity Utilization			72.0%	ICU Level of Service	C							
Analysis Period (min)			15									

Intersection: 12: King St (CR21) & CR10

















Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	23.6	23.6	13.2	22.8	18.6
Average Queue (m)	16.2	16.4	9.6	18.2	12.9
95th Queue (m)	25.9	24.9	14.4	24.7	20.0
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				19	8
Queuing Penalty (veh)				37	31

HCM Unsignalized Intersection Capacity Analysis

3: Larmer Line & CR10

Background Volumes - 2025




















SAT Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	16	4	42	30	7	5	40	624	33	5	686	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	17	4	46	33	8	5	43	678	36	5	746	15
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1557	1565	753	1595	1555	696	761			714		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1557	1565	753	1595	1555	696	761			714		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	79	96	89	54	93	99	95			99		
cM capacity (veh/h)	82	105	410	71	107	442	851			886		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	67	46	758	766								
Volume Left	17	33	43	5								
Volume Right	46	5	36	15								
cSH	185	84	851	886								
Volume to Capacity	0.37	0.54	0.05	0.01								
Queue Length 95th (m)	11.9	18.1	1.2	0.1								
Control Delay (s)	35.3	90.2	1.3	0.2								
Lane LOS	E	F	A	A								
Approach Delay (s)	35.3	90.2	1.3	0.2								
Approach LOS	E	F										
Intersection Summary												
Average Delay			4.7									
Intersection Capacity Utilization			74.5%		ICU Level of Service					D		
Analysis Period (min)			15									

HCM Unsignalized Intersection Capacity Analysis










6: Fallis Line & CR10

Background Volumes - 2025
SAT Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	208	11	196	144	9	68	200	292	11	202	179	222
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	226	12	213	157	10	74	217	317	12	220	195	241
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)			4									
Median type							None				None	
Median storage (veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	1465	1398	195	1504	1633	323	436			329		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1465	1398	195	1504	1633	323	436			329		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	0	87	75	0	85	90	81			82		
cM capacity (veh/h)	63	93	847	50	67	718	1124			1230		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2						
Volume Total	451	240	217	329	414	241						
Volume Left	226	157	217	0	220	0						
Volume Right	213	74	0	12	0	241						
cSH	114	71	1124	1700	1230	1700						
Volume to Capacity	3.96	3.38	0.19	0.19	0.18	0.14						
Queue Length 95th (m)	Err	Err	5.4	0.0	4.9	0.0						
Control Delay (s)	Err	Err	9.0	0.0	5.3	0.0						
Lane LOS	F	F	A		A							
Approach Delay (s)	Err	9999.0	3.6		3.4							
Approach LOS	F	F										
Intersection Summary												
Average Delay			3652.8									
Intersection Capacity Utilization			65.9%	ICU Level of Service	C							
Analysis Period (min)			15									



















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Background Volumes - 2025
 SAT Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	7	52	43	4	64	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	57	47	4	70	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	237	49			51	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	237	49			51	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	94			95	
cM capacity (veh/h)	717	1020			1542	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	64	51	118			
Volume Left	8	0	70			
Volume Right	57	4	0			
cSH	971	1700	1542			
Volume to Capacity	0.07	0.03	0.05			
Queue Length 95th (m)	1.6	0.0	1.1			
Control Delay (s)	9.0	0.0	4.5			
Lane LOS	A		A			
Approach Delay (s)	9.0	0.0	4.5			
Approach LOS	A					
Intersection Summary						
Average Delay			4.7			
Intersection Capacity Utilization			22.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Background Volumes - 2025
 SAT Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	115	29	1	6	33	259	2	30	6	230	42	181
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	125	32	1	7	36	282	2	33	7	250	46	197
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	158	324	41	250	242							
Volume Left (vph)	125	7	2	250	0							
Volume Right (vph)	1	282	7	0	197							
Hadj (s)	0.19	-0.48	-0.05	0.53	-0.53							
Departure Headway (s)	5.9	5.0	6.1	6.4	5.3							
Degree Utilization, x	0.26	0.45	0.07	0.45	0.36							
Capacity (veh/h)	563	677	513	538	647							
Control Delay (s)	11.0	12.1	9.5	13.3	10.1							
Approach Delay (s)	11.0	12.1	9.5	11.7								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay			11.6									
HCM Level of Service			B									
Intersection Capacity Utilization			55.4%	ICU Level of Service	B							
Analysis Period (min)			15									

Intersection: 12: King St (CR21) & CR10

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	14.8	20.5	10.7	18.7	20.0
Average Queue (m)	10.5	14.2	5.0	13.6	14.1
95th Queue (m)	16.4	23.6	13.3	20.8	22.4
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				10	8
Queuing Penalty (veh)				23	19

Appendix E

Synchro Reports

Background Horizon Year 2030

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / Larmer Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
April	2017	AM	23	4	10	6	205	10	4	2	9	5	159	3	Registered Volumes
April	2017	PM	3	1	6	8	165	4	4	1	3	8	225	9	
August	2017	SAT	14	3	10	12	170	6	7	6	4	4	181	12	
Annual Growth Rate 2.00%															
	2021	AM	25	4	11	6	222	11	4	2	10	5	172	3	Existing Volumes (Projected)
	2021	PM	3	1	6	9	179	4	4	1	3	9	244	10	
	2021	SAT	15	3	11	13	184	6	8	6	4	4	196	13	
		AM	0	0	0	0	103	6	2	0	0	0	34	0	Tower Hills South Trips
		PM	0	0	0	0	67	4	6	0	0	0	115	0	
		SAT	0	0	0	0	81	5	5	0	0	0	94	0	
		AM	0	0	6	3	1	3	4	0	0	0	2	0	Millbrook Community Centre
		PM	0	0	6	6	3	5	4	0	0	0	2	0	
		SAT	0	0	4	3	1	3	3	0	0	0	1	0	
	2021	AM	25	4	17	9	326	20	10	2	10	5	208	3	Total Existing Volumes
	2021	PM	3	1	12	15	249	13	14	1	3	9	361	10	
	2021	SAT	15	3	15	16	266	14	16	6	4	4	291	13	
	2025	AM	27	5	12	7	240	12	5	2	11	6	186	4	Background Volumes (Projected)
	2025	PM	4	1	7	9	193	5	5	1	4	9	264	11	
	2025	SAT	16	4	12	14	199	7	8	7	5	5	212	14	
		AM	0	0	6	3	104	9	6	0	0	0	36	0	Tower Hills South & M. Community Centre
		PM	0	0	6	6	70	9	10	0	0	0	117	0	
		SAT	0	0	4	3	82	8	8	0	0	0	95	0	
		AM	0	0	17	25	194	20	14	0	0	0	68	0	Development "A" & School
		PM	0	0	20	13	122	8	13	0	0	0	204	0	
		SAT	0	0	19	17	178	12	12	0	0	0	191	0	
		AM	0	0	0	0	31	0	0	0	0	0	48	0	Development "B"
		PM	0	0	0	0	65	0	0	0	0	0	27	0	
		SAT	0	0	0	0	60	0	0	0	0	0	61	0	
		AM	0	0	6	2	62	4	3	0	0	0	72	0	Development "C" 100% Commercial 50% Residential
		PM	0	0	3	5	73	4	1	0	0	0	84	0	
		SAT	0	0	7	6	105	6	2	0	0	0	127	0	
	2025	AM	27	5	41	37	631	45	28	2	11	6	410	4	Total Background Volumes 2025
	2025	PM	4	1	36	33	523	26	29	1	4	9	696	11	
	2025	SAT	16	4	42	40	624	33	30	7	5	5	686	14	
	2025	AM	0	0	2	2	81	5	1	0	0	0	25	0	Site Generated Trips 50% of Development
	2025	PM	0	0	3	2	37	2	1	0	0	0	80	0	
	2025	SAT	0	0	4	4	62	3	1	0	0	0	77	0	
	2025	AM	27	5	43	39	712	50	29	2	11	6	435	4	Total Trips 2025
	2025	PM	4	1	39	35	560	28	30	1	4	9	776	11	
	2025	SAT	16	4	46	44	686	36	31	7	5	5	763	14	

Annual Growth Rate 2.00%															
	2030	AM	30	5	13	8	265	13	5	3	12	6	206	4	Background Volumes (Projected)
	2030	PM	4	1	8	10	213	5	5	1	4	10	291	12	
	2030	SAT	18	4	13	16	220	8	9	8	5	5	234	16	
		AM	0	0	6	3	104	9	6	0	0	0	36	0	Tower Hills South & M. Community Centre
		PM	0	0	6	6	70	9	10	0	0	0	117	0	
		SAT	0	0	4	3	82	8	8	0	0	0	95	0	
		AM	0	0	17	25	225	20	14	0	0	0	116	0	Developments "A" + "B"
		PM	0	0	20	13	187	8	13	0	0	0	231	0	
		SAT	0	0	19	17	238	12	12	0	0	0	252	0	
		AM	0	0	6	2	82	6	4	0	0	0	80	0	Development "C" 100% Commercial 100% Residential
		PM	0	0	3	5	84	4	1	0	0	0	104	0	
		SAT	0	0	8	7	121	7	3	0	0	0	148	0	
	2030	AM	30	5	42	38	676	48	29	3	12	6	438	4	Total Background Volumes 2030
	2030	PM	4	1	37	34	554	26	29	1	4	10	743	12	
	2030	SAT	18	4	44	43	661	35	32	8	5	5	729	16	
	2030	AM	0	0	4	5	161	10	2	0	0	0	49	0	Site Generated Trips 100% of Development
	2030	PM	0	0	6	4	74	4	1	0	0	0	159	0	
	2030	SAT	0	0	8	8	125	7	2	0	0	0	154	0	
	2030	AM	30	5	46	43	837	58	31	3	12	6	487	4	Total Trips 2030
	2030	PM	4	1	43	38	628	30	30	1	4	10	902	12	
	2030	SAT	18	4	52	51	786	42	34	8	5	5	883	16	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / Fallis Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
April	2017	AM	10	0	15	15	215	0	0	0	0	0	162	5	Registered Volumes
April	2017	PM	4	0	18	19	170	1	0	0	0	0	230	11	
August	2017	SAT	7	0	18	21	180	0	0	0	0	0	185	10	
Annual Growth Rate 2.00%															
	2021	AM	11	0	16	16	233	0	0	0	0	0	175	5	Existing Volumes (Projected)
	2021	PM	4	0	19	21	184	1	0	0	0	0	249	12	
	2021	SAT	8	0	19	23	195	0	0	0	0	0	200	11	
		AM	109	0	49	16	0	0	0	0	0	0	0	36	Tower Hills South Trips
		PM	71	0	32	55	0	0	0	0	0	0	0	121	
		SAT	86	0	39	45	0	0	0	0	0	0	0	99	
		AM	7	0	0	14	6	0	0	0	0	0	3	0	Millbrook Community Centre
		PM	14	0	0	14	6	0	0	0	0	0	6	1	
		SAT	7	0	0	8	5	0	0	0	0	0	2	0	
	2021	AM	127	0	65	46	239	0	0	0	0	0	178	41	Total Existing Volumes
	2021	PM	89	0	51	90	190	1	0	0	0	0	255	134	
	2021	SAT	101	0	58	76	200	0	0	0	0	0	202	110	
	2025	AM	12	0	18	18	252	0	0	0	0	0	190	6	Background Volumes (Projected)
	2025	PM	5	0	21	22	199	1	0	0	0	0	269	13	
	2025	SAT	8	0	21	25	211	0	0	0	0	0	217	12	
		AM	116	0	49	30	6	0	0	0	0	0	3	36	Tower Hills South & M. Community Centre
		PM	85	0	32	69	6	0	0	0	0	0	6	122	
		SAT	93	0	39	53	5	0	0	0	0	0	2	99	
		AM	70	0	128	95	9	0	0	0	0	0	26	44	Development "A" & School
		PM	35	0	60	86	28	0	0	0	0	0	16	56	
		SAT	47	0	78	82	26	0	0	0	0	0	25	50	
		AM	31	0	25	23	0	0	0	0	0	0	0	48	Development "B"
		PM	77	0	35	31	-12	0	0	0	0	0	-12	39	
		SAT	60	0	58	40	0	0	0	0	0	0	0	61	
		AM	0	5	0	0	23	5	75	11	44	121	-40	0	Development "C" 100% Commercial 50% Residential
		PM	0	14	0	0	35	15	151	7	46	136	-48	0	
		SAT	0	11	0	0	50	11	144	9	68	202	-65	0	
	2025	AM	229	5	220	166	290	5	75	11	44	121	179	134	Total Background Volumes 2025
	2025	PM	202	14	148	208	256	16	151	7	46	136	231	230	
	2025	SAT	208	11	196	200	292	11	144	9	68	202	179	222	
	2025	AM	61	40	33	13	0	7	14	14	27	8	0	20	Site Generated Trips 50% of Development
	2025	PM	29	28	36	45	0	19	16	44	12	25	0	58	
	2025	SAT	49	34	33	32	0	13	14	38	20	24	0	58	
	2025	AM	290	45	253	179	290	12	89	25	71	129	179	154	Total Trips 2025
	2025	PM	231	42	184	253	256	35	167	51	58	161	231	288	
	2025	SAT	257	45	229	232	292	24	158	47	88	226	179	280	

Annual Growth Rate 2.00%															
	2030	AM	13	0	19	19	278	0	0	0	0	0	210	6	Background Volumes (Projected)
	2030	PM	5	0	23	25	220	1	0	0	0	0	298	14	
	2030	SAT	9	0	23	27	233	0	0	0	0	0	239	13	
		AM	116	0	49	30	6	0	0	0	0	0	3	36	Tower Hills South & M. Community Centre
		PM	85	0	32	69	6	0	0	0	0	0	6	122	
		SAT	93	0	39	53	5	0	0	0	0	0	2	99	
		AM	101	0	153	118	9	0	0	0	0	0	26	92	Developments "A" + "B"
		PM	112	0	95	117	16	0	0	0	0	0	4	95	
		SAT	107	0	136	122	26	0	0	0	0	0	25	111	
		AM	0	5	0	0	23	11	87	14	68	130	-40	0	Development "C" 100% Commercial 100% Residential
		PM	0	19	0	0	35	30	166	8	57	156	-48	0	
		SAT	0	12	0	0	50	22	156	11	85	224	-65	0	
	2030	AM	230	5	221	167	316	11	87	14	68	130	199	134	Total Background Volumes 2030
	2030	PM	202	19	150	211	277	31	166	8	57	156	260	231	
	2030	SAT	209	12	198	202	314	22	156	11	85	224	201	223	
	2030	AM	122	81	66	27	0	12	27	29	54	16	0	39	Site Generated Trips 100% of Development
	2030	PM	58	55	73	91	0	39	30	87	25	49	0	117	
	2030	SAT	98	68	66	65	0	27	27	75	41	48	0	116	
	2030	AM	352	86	287	194	316	23	114	43	122	146	199	173	Total Trips 2030
	2030	PM	260	74	223	302	277	70	196	95	82	205	260	348	
	2030	SAT	307	80	264	267	314	49	183	86	126	272	201	339	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / CR21 / Distillery			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
July	2018	AM	34	28	1	2	9	6	6	33	78	62	11	50	Registered Volumes
July	2018	PM	80	65	3	2	24	14	8	48	103	184	8	86	
July	2020	SAT	31	26	1	2	9	5	5	30	72	75	15	59	
Annual Growth Rate 2.00%															
	2021	AM	36	30	1	2	10	6	6	35	83	66	12	53	Existing Volumes (Projected)
	2021	PM	85	69	3	2	25	15	8	51	109	195	8	91	
	2021	SAT	32	27	1	2	9	5	5	31	73	77	15	60	
		AM	5	0	0	0	1	0	0	0	10	25	2	22	Tower Hills South Trips
		PM	21	0	0	0	6	0	0	0	28	21	1	10	
		SAT	13	0	0	0	3	0	0	0	29	20	4	15	
		AM	6	0	0	0	1	0	0	0	13	5	1	4	Millbrook Community Centre
		PM	8	0	0	0	2	0	0	0	10	13	1	6	
		SAT	4	0	0	0	1	0	0	0	8	5	0	4	
	2021	AM	47	30	1	2	12	6	6	35	106	96	15	79	Total Existing Volumes
	2021	PM	114	69	3	2	33	15	8	51	147	229	10	107	
	2021	SAT	49	27	1	2	13	5	5	31	110	102	19	79	
	2025	AM	39	32	1	2	10	7	7	38	90	71	13	57	Background Volumes (Projected)
	2025	PM	92	75	3	2	28	16	9	55	118	211	9	99	
	2025	SAT	34	29	1	2	10	6	6	33	79	83	17	65	
		AM	11	0	0	0	2	0	0	0	23	30	3	26	Tower Hills South & M. Community Centre
		PM	29	0	0	0	8	0	0	0	38	34	2	16	
		SAT	17	0	0	0	4	0	0	0	37	25	4	19	
		AM	29	0	0	0	8	0	0	0	67	77	12	65	Development "A" & School
		PM	46	0	0	0	14	0	0	0	55	50	2	24	
		SAT	31	0	0	0	8	0	0	0	69	53	9	41	
		AM	6	0	0	0	2	0	0	0	15	13	2	11	Development "B"
		PM	8	0	0	0	2	0	0	0	9	15	1	7	
		SAT	12	0	0	0	3	0	0	0	26	30	5	23	
		AM	16	0	0	0	4	0	0	0	36	17	3	15	Development "C" 100% Commercial 50% Residential
		PM	27	0	0	0	8	0	0	0	33	69	3	32	
		SAT	21	0	0	0	6	0	0	0	48	40	7	32	
	2025	AM	102	32	1	2	26	7	7	38	230	208	33	174	Total Background Volumes 2025
	2025	PM	201	75	3	2	60	16	9	55	253	380	17	177	
	2025	SAT	115	29	1	2	30	6	6	33	259	230	42	181	
	2025	AM	6	0	0	0	1	0	0	0	13	24	4	20	Site Generated Trips 50% of Development
	2025	PM	25	0	0	0	7	0	0	0	32	34	2	16	
	2025	SAT	13	0	0	0	3	0	0	0	29	24	5	19	
	2025	AM	108	32	1	2	27	7	7	38	243	232	37	194	Total Trips 2025
	2025	PM	226	75	3	2	67	16	9	55	285	414	19	193	
	2025	SAT	128	29	1	2	33	6	6	33	288	254	47	200	

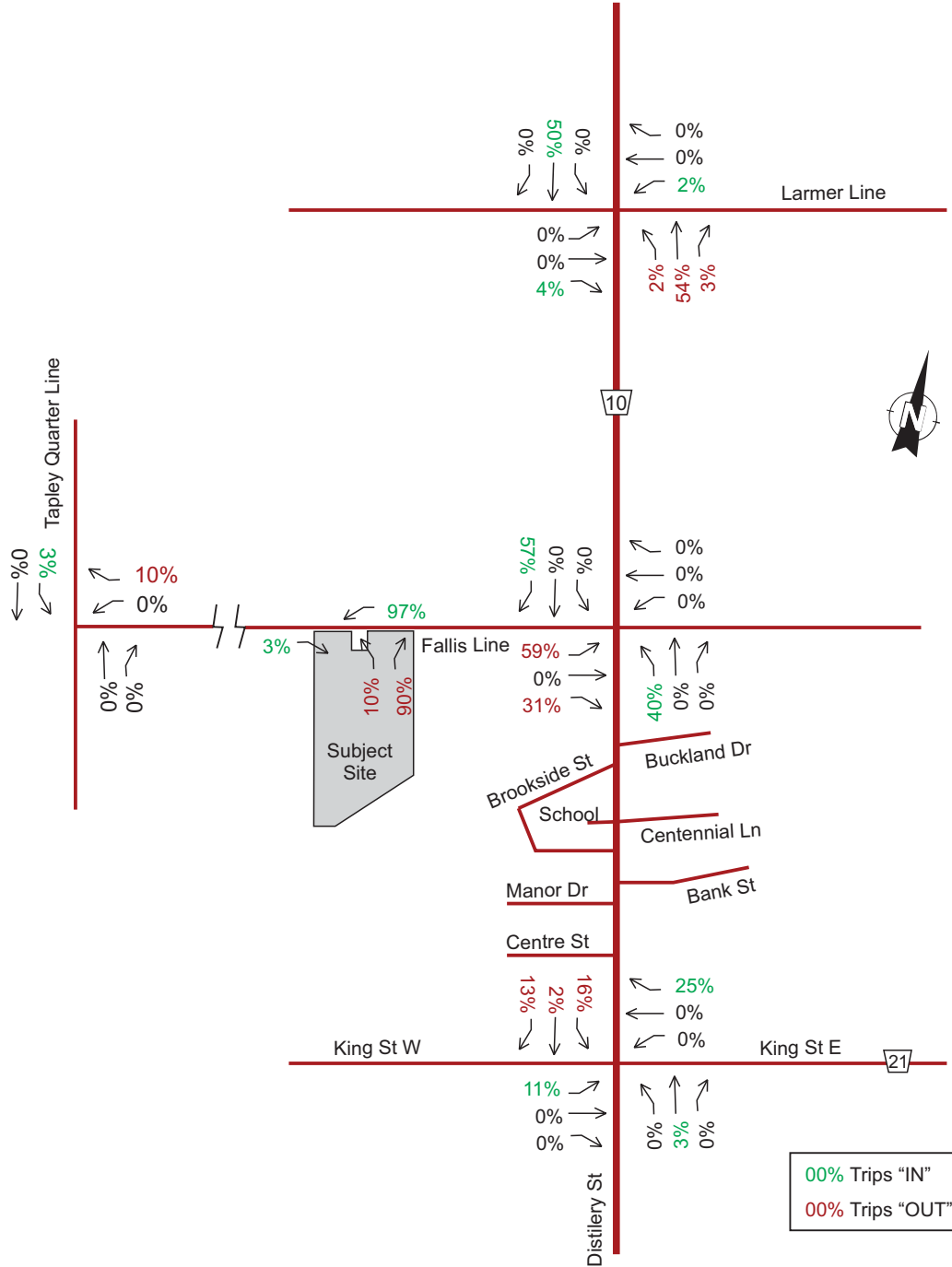
Annual Growth Rate 2.00%															
	2030	AM	43	36	1	3	11	8	8	42	99	79	14	63	Background Volumes (Projected)
	2030	PM	101	82	4	3	30	18	10	61	131	233	10	109	
	2030	SAT	38	32	1	2	11	6	6	37	88	91	18	72	
		AM	11	0	0	0	2	0	0	0	23	30	3	26	Tower Hills South & M. Community Centre
		PM	29	0	0	0	8	0	0	0	38	34	2	16	
		SAT	17	0	0	0	4	0	0	0	37	25	4	19	
		AM	36	0	0	0	10	0	0	0	81	90	14	75	Developments "A" + "B"
		PM	53	0	0	0	16	0	0	0	64	65	3	31	
		SAT	43	0	0	0	10	0	0	0	95	82	14	64	
		AM	17	0	0	0	5	0	0	0	40	21	4	21	Development "C" 100% Commercial 100% Residential
		PM	33	0	0	0	10	0	0	0	43	78	4	37	
		SAT	25	0	0	0	7	0	0	0	55	46	8	37	
	2030	AM	107	36	1	3	29	8	8	42	243	219	35	186	Total Background Volumes 2030
	2030	PM	217	82	4	3	64	18	10	61	275	411	19	193	
	2030	SAT	123	32	1	2	32	6	6	37	274	245	45	192	
	2030	AM	11	0	0	0	3	0	0	0	25	47	7	39	Site Generated Trips 100% of Development
	2030	PM	50	0	0	0	15	0	0	0	65	68	3	32	
	2030	SAT	26	0	0	0	7	0	0	0	59	48	9	37	
	2030	AM	118	36	1	3	32	8	8	42	268	266	42	225	Total Trips 2030
	2030	PM	267	82	4	3	79	18	10	61	340	479	22	225	
	2030	SAT	149	32	1	2	39	6	6	37	333	293	54	229	

REGISTERED AND PROJECTED VOLUMES

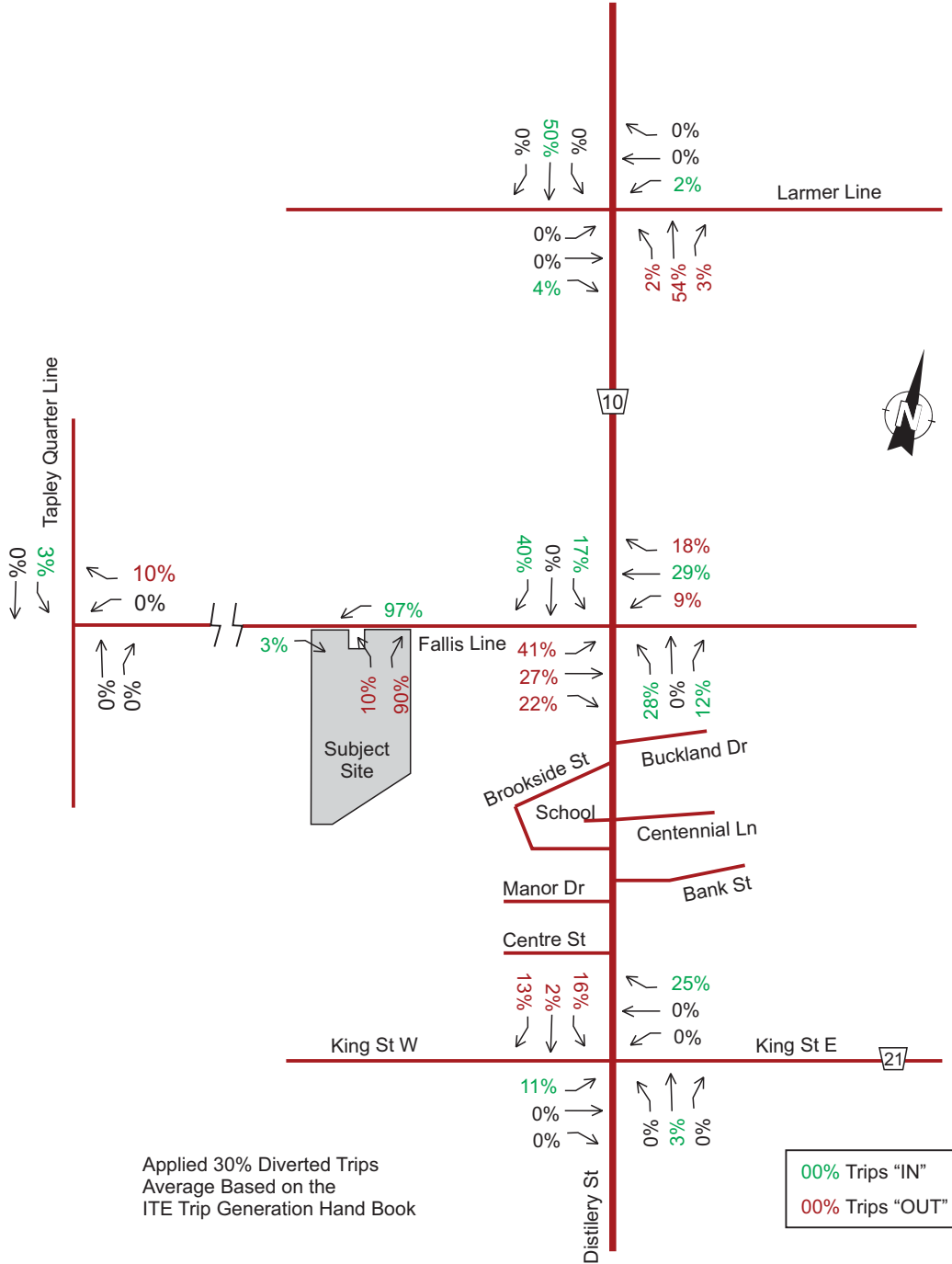
Volumes at AM, PM and SAT Peak Hours

Fallis Line / Tapley Quarter Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
December	2021	AM	0	0	0	0	37	2	2	0	56	14	19	0	Registered Volumes
December	2021	PM	0	0	0	0	40	2	1	0	22	61	56	0	
December	2021	SAT	0	0	0	0	37	2	3	0	21	25	38	0	
Annual Growth Rate 2.00%															
	2025	AM	0	0	0	0	43	2	2	0	66	16	22	0	Background Volumes (Projected)
	2025	PM	0	0	0	0	47	2	1	0	26	71	66	0	
	2025	SAT	0	0	0	0	43	2	4	0	25	29	45	0	
		AM	0	0	0	0	0	2	1	0	25	14	0	0	Development "A" & School
		PM	0	0	0	0	0	1	1	0	12	18	0	0	
		SAT	0	0	0	0	0	1	2	0	16	18	0	0	
		AM	0	0	0	0	0	1	0	0	2	5	0	0	Development "B"
		PM	0	0	0	0	0	0	0	0	9	3	0	0	
		SAT	0	0	0	0	0	0	0	0	4	6	0	0	
		AM	0	0	0	0	0	0	0	0	11	5	0	0	Development "C" 100% Commercial 50% Residential
		PM	0	0	0	0	0	0	0	0	7	14	0	0	
		SAT	0	0	0	0	0	0	1	0	8	11	0	0	
	2025	AM	0	0	0	0	43	5	3	0	104	41	22	0	Total Background Volumes 2025
	2025	PM	0	0	0	0	47	3	2	0	54	107	66	0	
	2025	SAT	0	0	0	0	43	4	7	0	52	64	45	0	
	2025	AM	0	0	0	0	0	0	0	0	15	2	0	0	Site Generated Trips 50% of Development
	2025	PM	0	0	0	0	0	0	0	0	3	15	0	0	
	2025	SAT	0	0	0	0	0	0	1	0	5	7	0	0	
	2025	AM	0	0	0	0	43	5	3	0	119	43	22	0	Total Trips 2025
	2025	PM	0	0	0	0	47	3	2	0	57	122	66	0	
	2025	SAT	0	0	0	0	43	4	8	0	57	71	45	0	
Annual Growth Rate 2.00%															
	2030	AM	0	0	0	0	44	2	2	0	67	17	23	0	Background Volumes (Projected)
	2030	PM	0	0	0	0	48	2	1	0	26	73	67	0	
	2030	SAT	0	0	0	0	44	2	4	0	25	30	45	0	
		AM	0	0	0	0	0	3	1	0	27	19	0	0	Developments "A" + "B"
		PM	0	0	0	0	0	1	1	0	21	21	0	0	
		SAT	0	0	0	0	0	2	3	0	19	23	0	0	
		AM	0	0	0	0	0	0	0	0	14	5	0	0	Development "C" 100% Commercial 100% Residential
		PM	0	0	0	0	0	0	0	0	8	19	0	0	
		SAT	0	0	0	0	0	0	1	0	10	12	0	0	
	2030	AM	0	0	0	0	44	5	3	0	108	41	23	0	Total Background Volumes 2030
	2030	PM	0	0	0	0	48	3	2	0	55	113	67	0	
	2030	SAT	0	0	0	0	44	4	7	0	54	65	45	0	
	2030	AM	0	0	0	0	0	0	1	0	28	3	0	0	Site Generated Trips 100% of Development
	2030	PM	0	0	0	0	0	1	0	0	6	28	0	0	
	2030	SAT	0	0	0	0	0	1	2	0	10	13	0	0	
	2030	AM	0	0	0	0	44	5	4	0	136	44	23	0	Total Trips 2030
	2030	PM	0	0	0	0	48	4	2	0	61	141	67	0	
	2030	SAT	0	0	0	0	44	5	9	0	64	78	45	0	

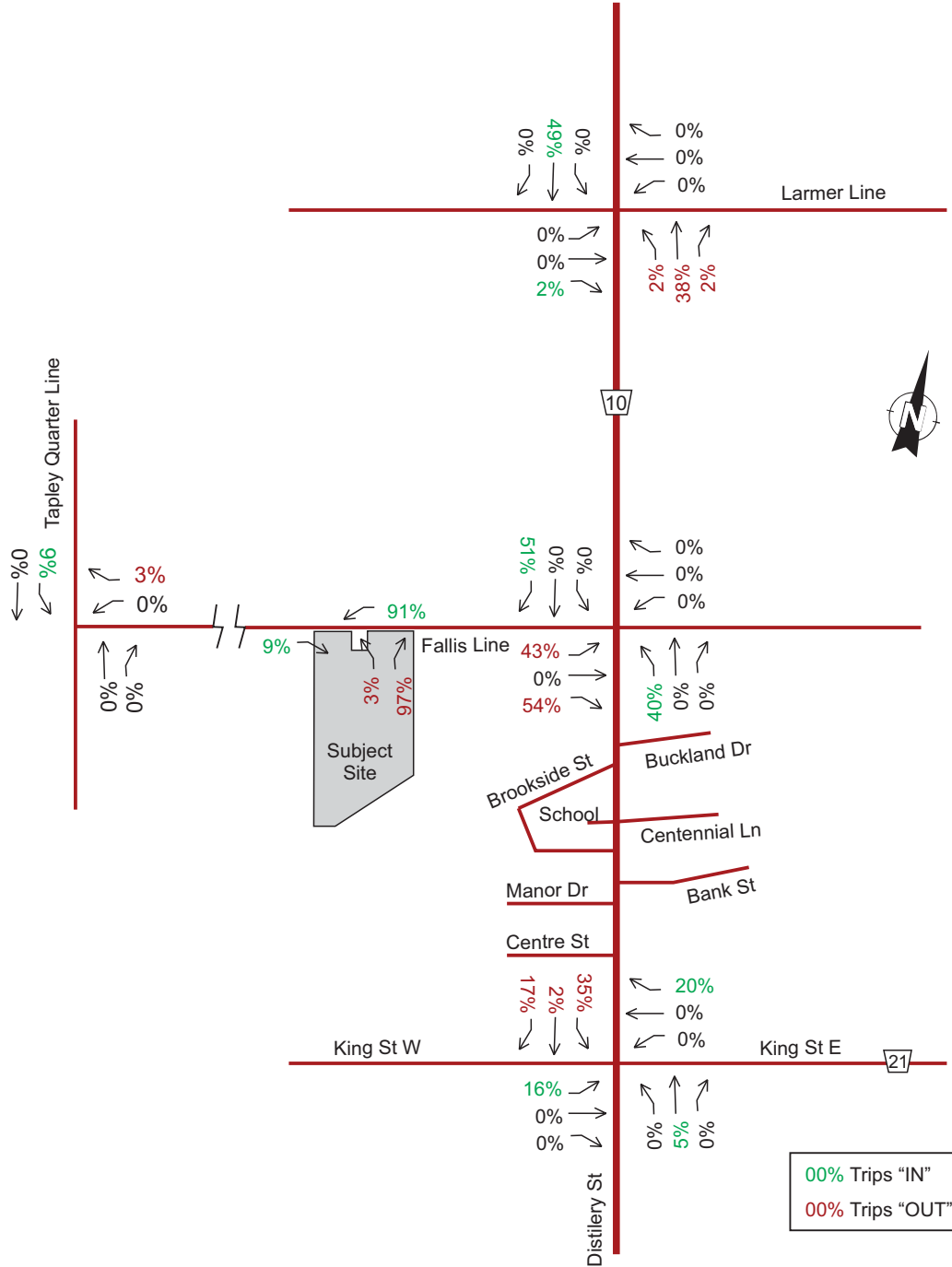
AM Distribution of Trips (Residential West of CR10)



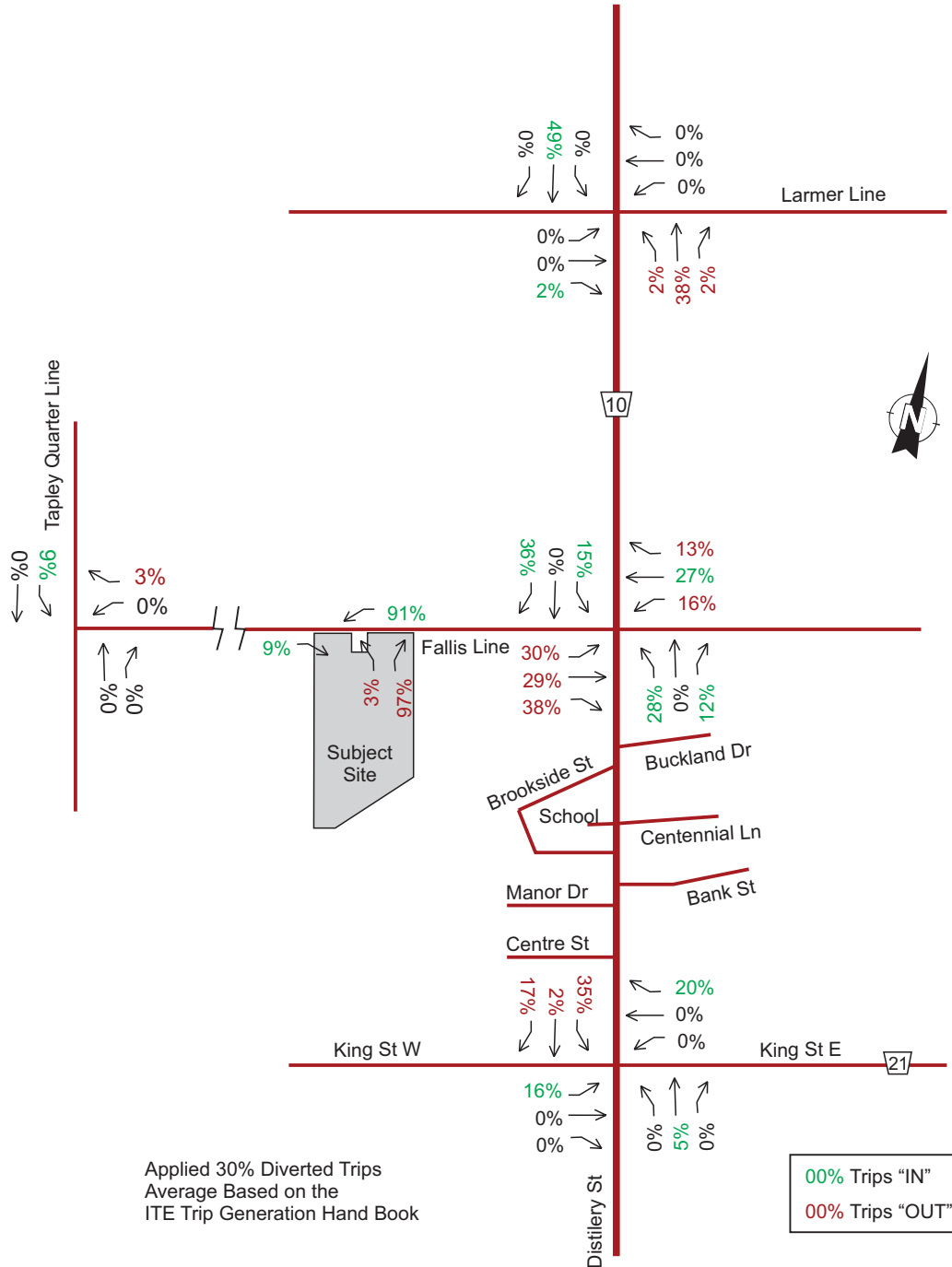
AM Distribution of Trips With Diverted Trips (Residential Site West of CR10)



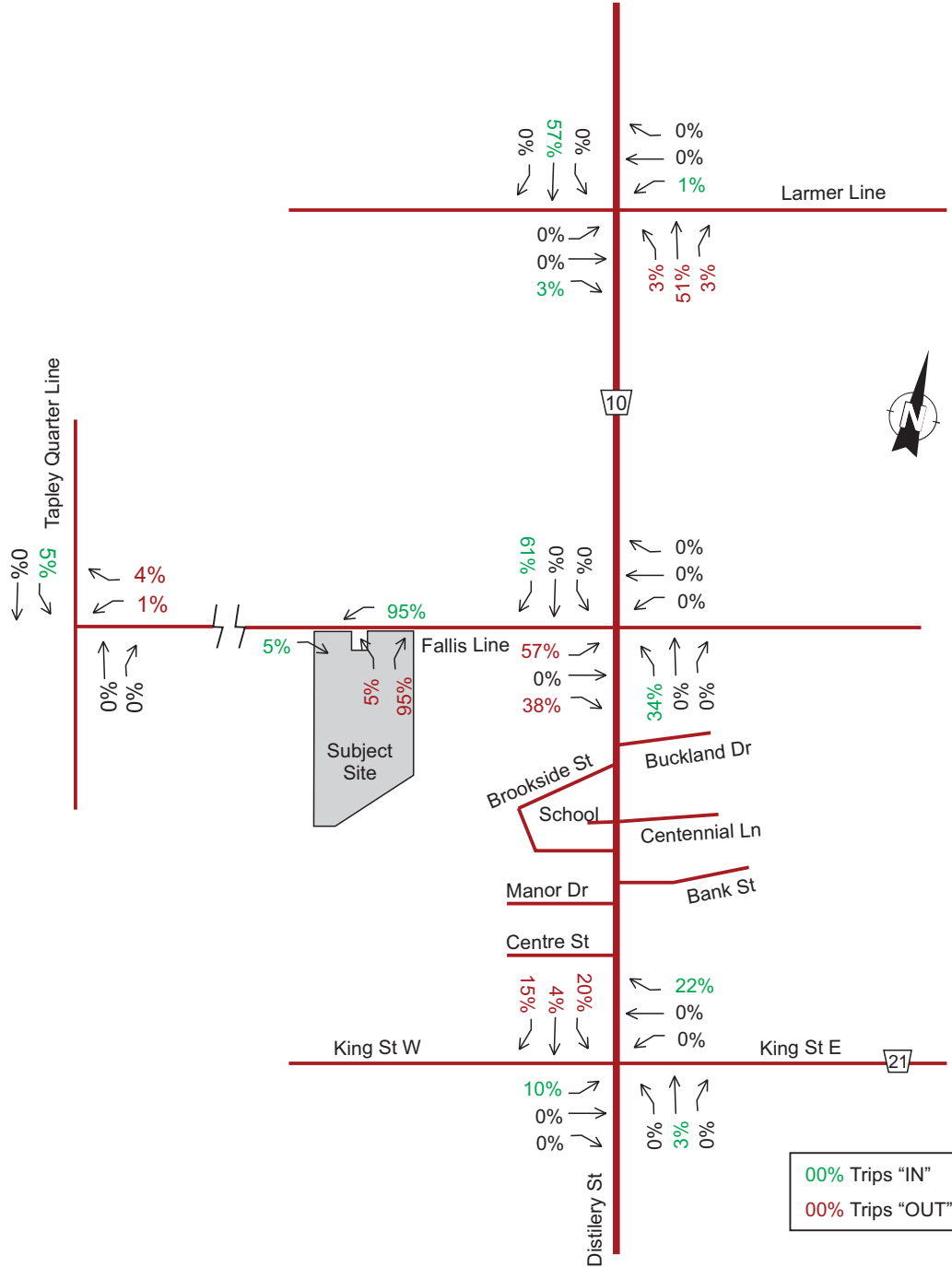
PM Distribution of Trips (Residential West of CR10)



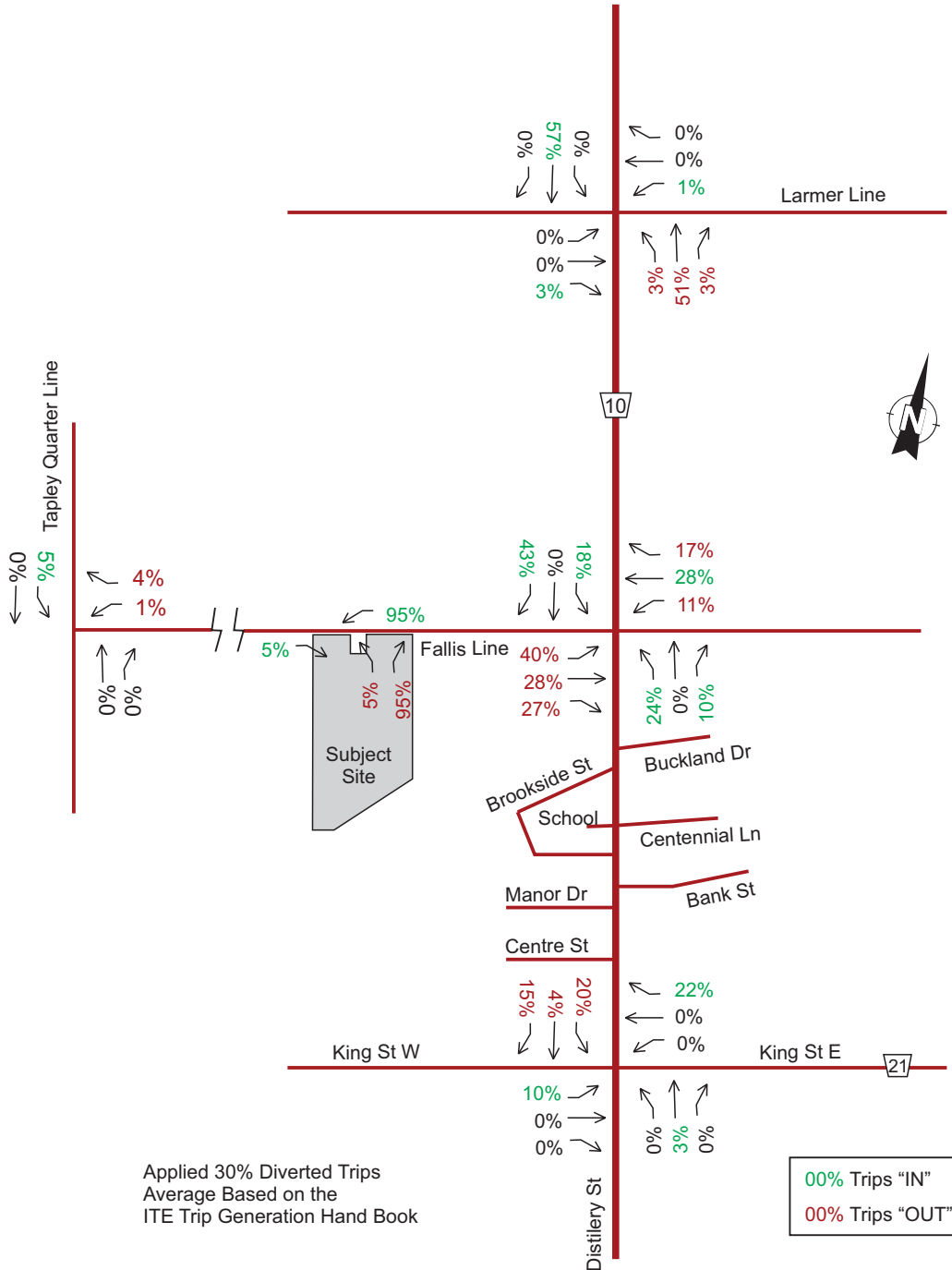
PM Distribution of Trips With Diverted Trips (Residential Site West of CR10)



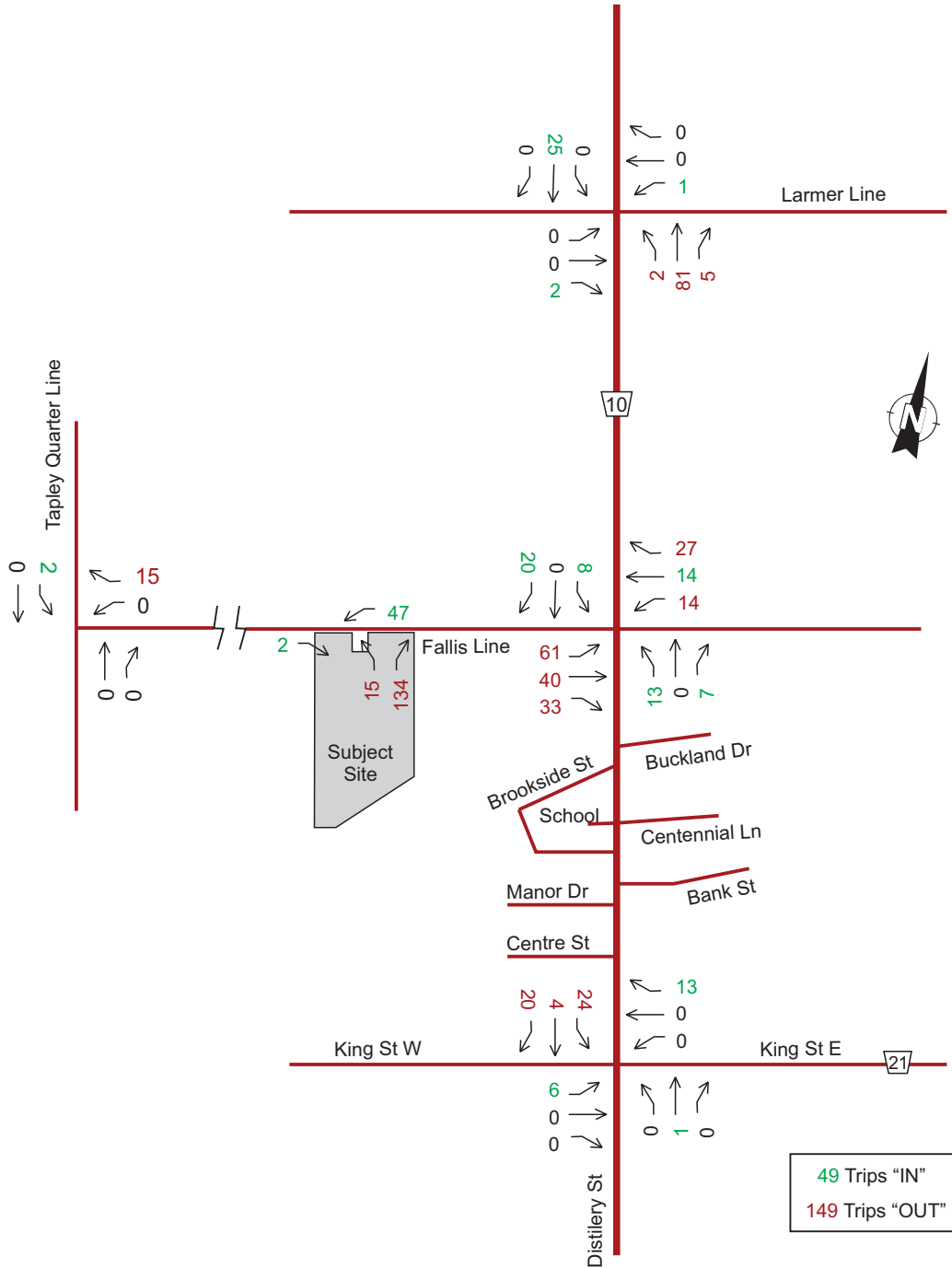
SAT Distribution of Trips (Residential West of CR10)



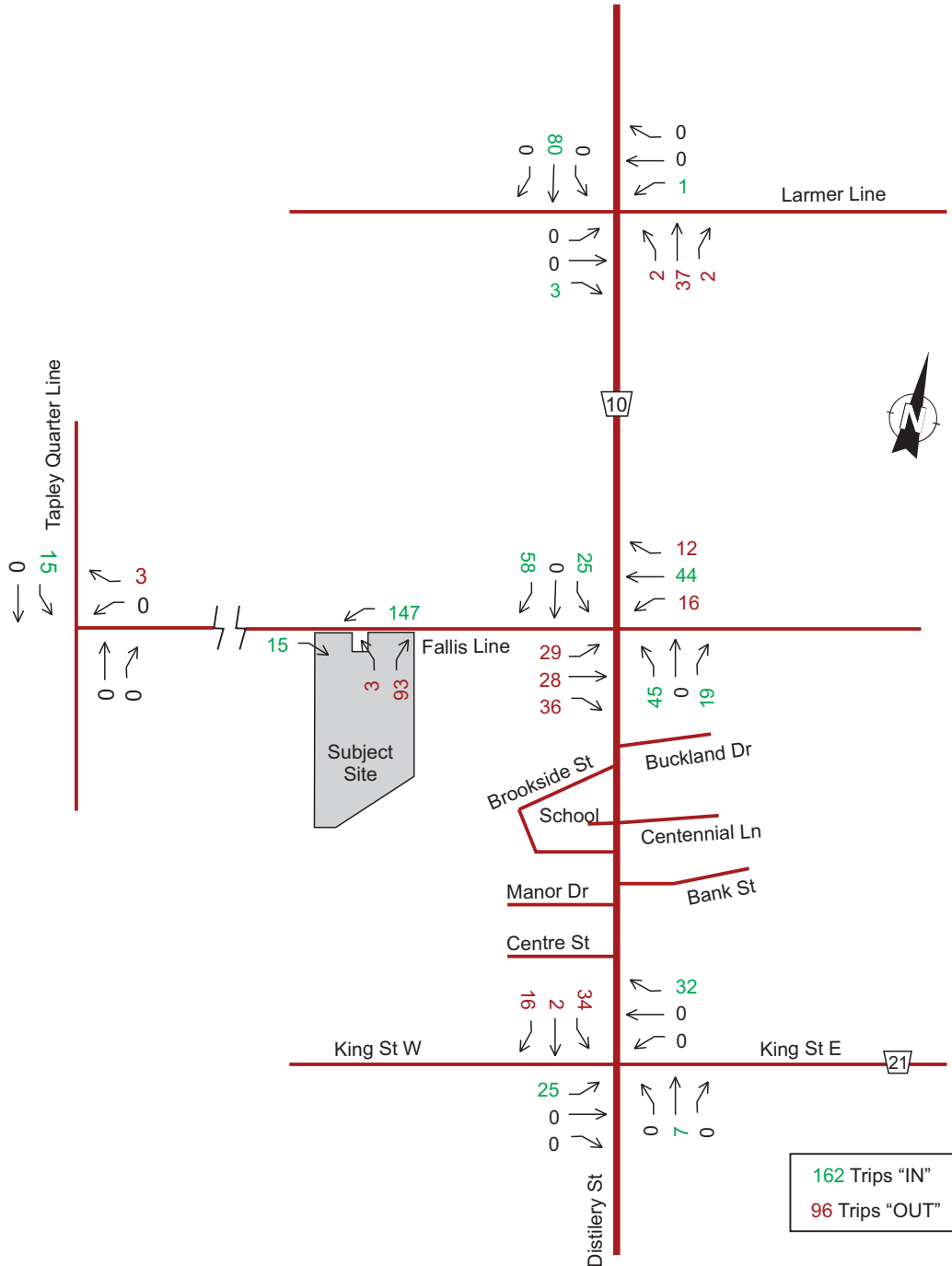
SAT Distribution of Trips With Diverted Trips (Residential Site West of CR10)



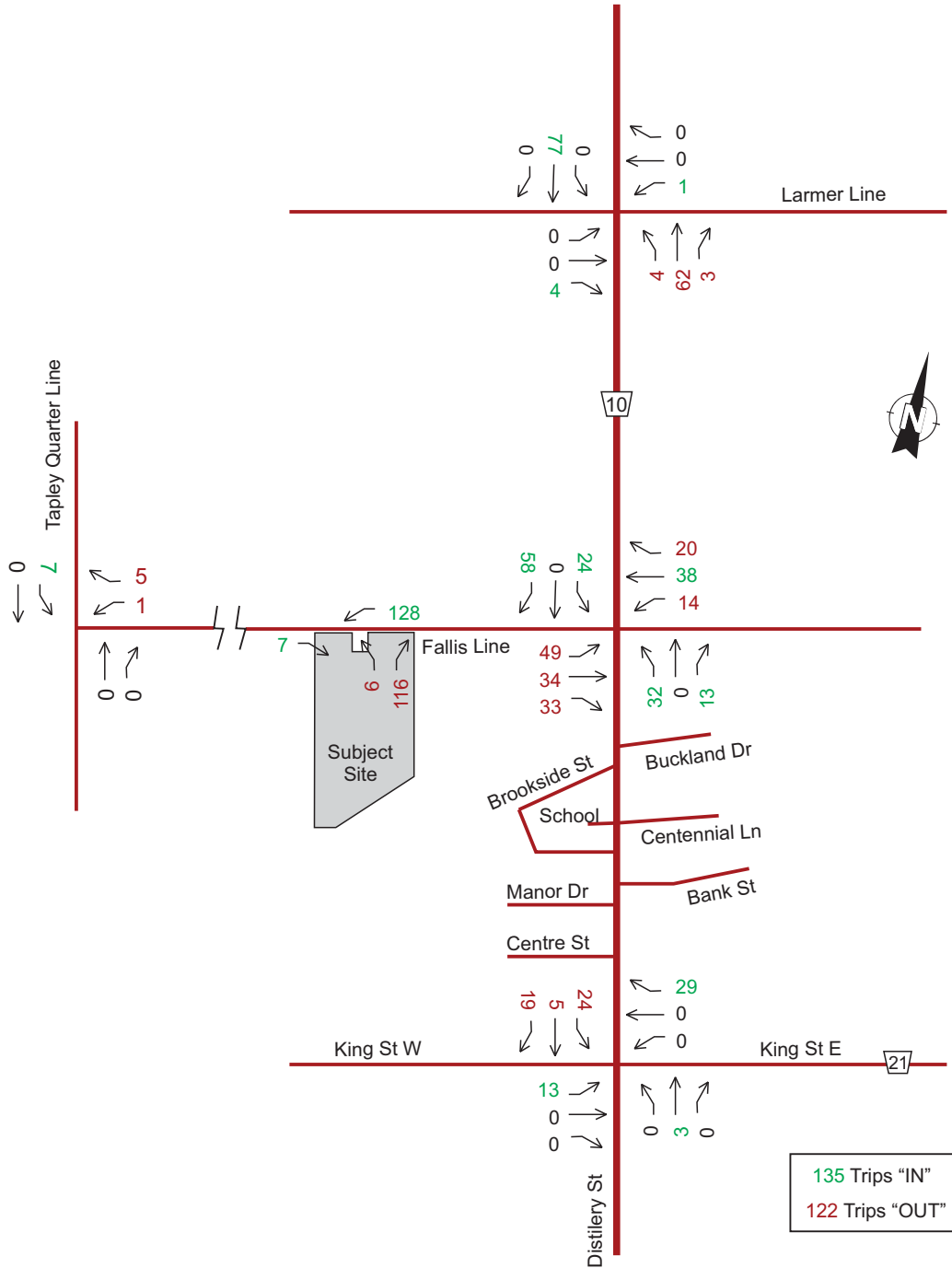
AM Site Generated Trips With Diverted Trips - 2025 (Residential Site West of CR10)



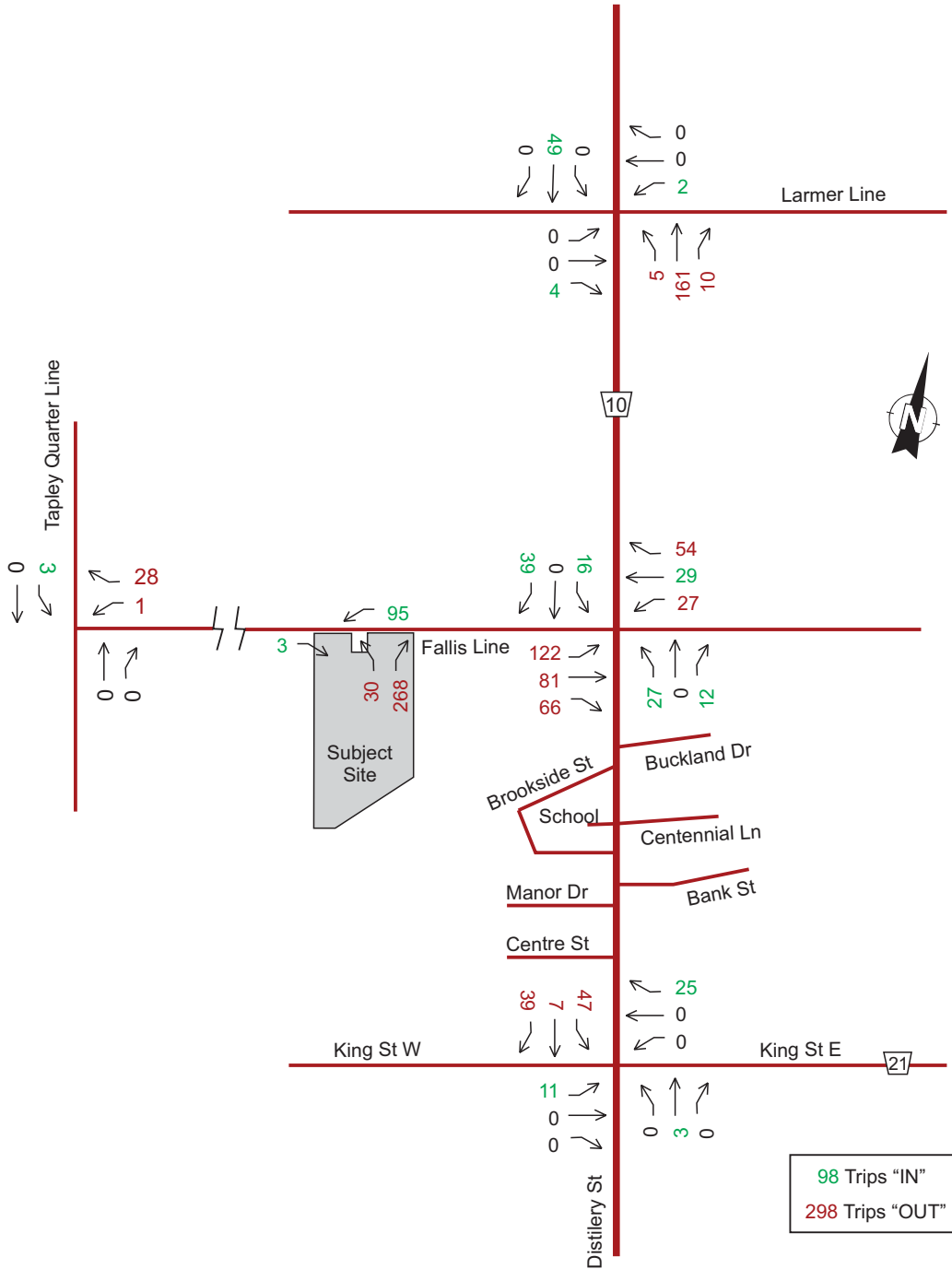
PM Site Generated Trips With Diverted Trips - 2025 (Residential Site West of CR10)



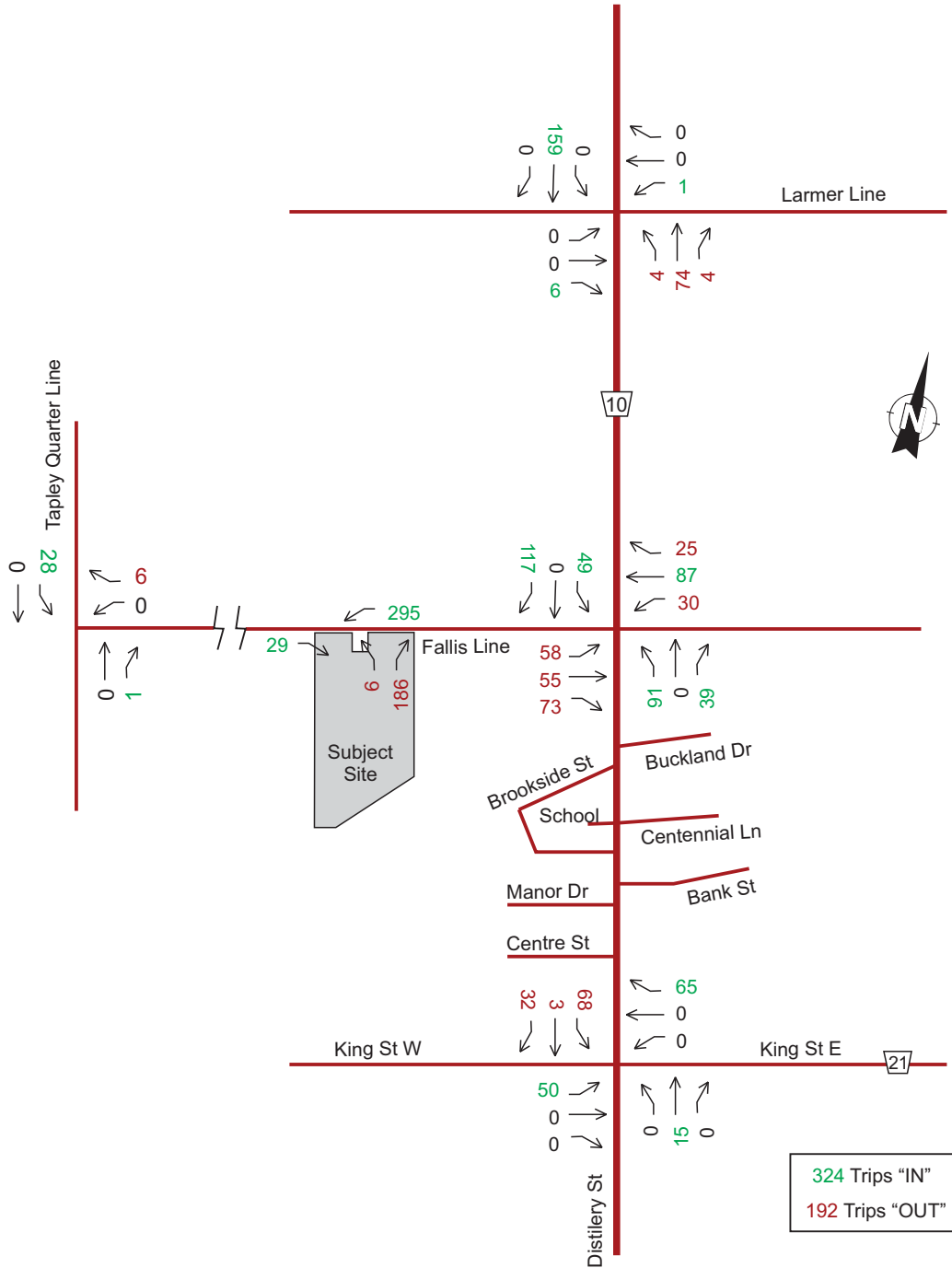
SAT Site Generated Trips With Diverted Trips - 2025 (Residential Site West of CR10)



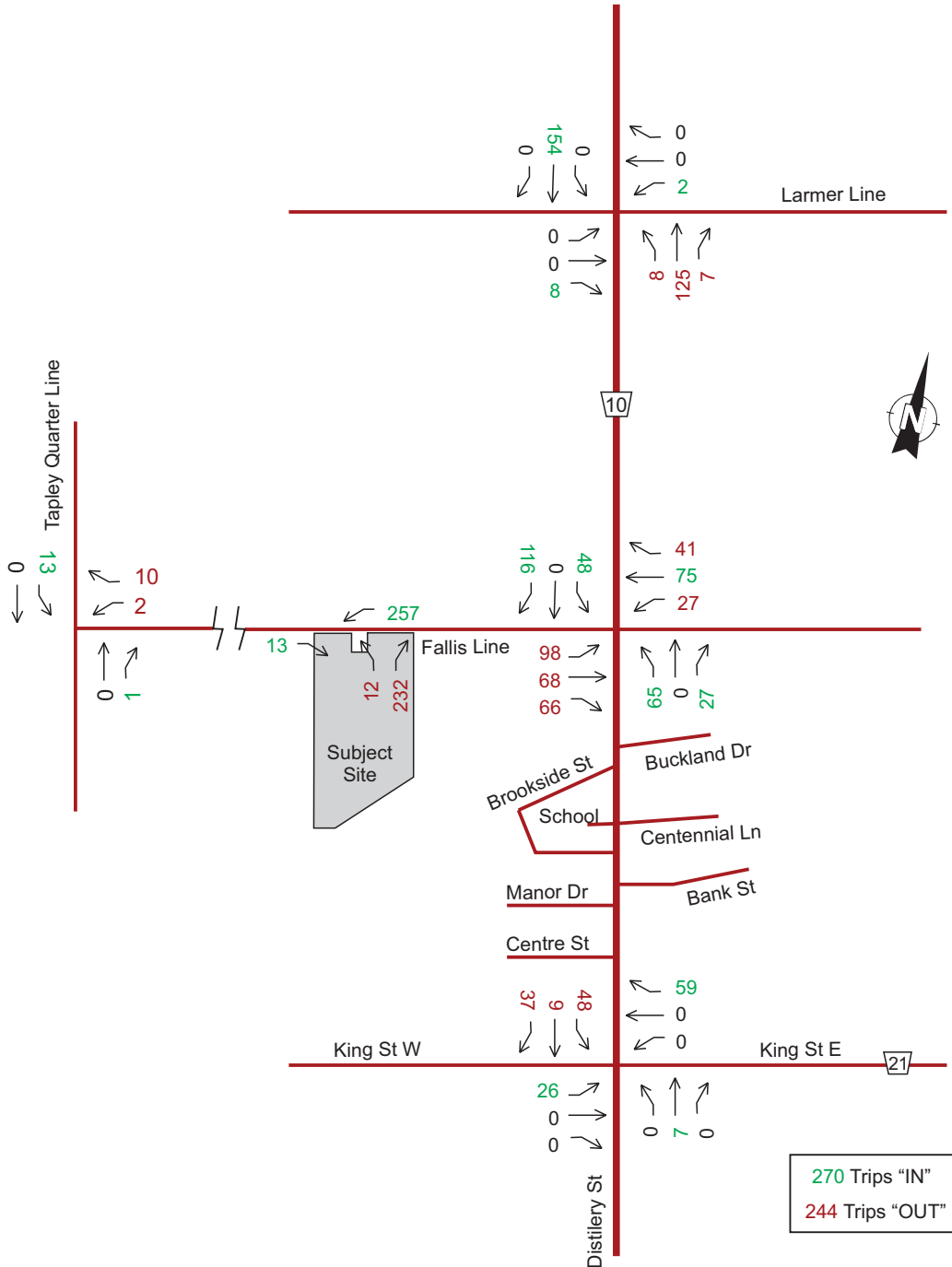
AM Site Generated Trips With Diverted Trips - 2030 (Residential Site West of CR10)



PM Site Generated Trips With Diverted Trips - 2030 (Residential Site West of CR10)



SAT Site Generated Trips With Diverted Trips - 2030 (Residential Site West of CR10)



Appendix F

Subject Site Trip Distribution

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / Larmer Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
April	2017	AM	23	4	10	6	205	10	4	2	9	5	159	3	Registered Volumes
April	2017	PM	3	1	6	8	165	4	4	1	3	8	225	9	
August	2017	SAT	14	3	10	12	170	6	7	6	4	4	181	12	
Annual Growth Rate 2.00%															
	2021	AM	25	4	11	6	222	11	4	2	10	5	172	3	Existing Volumes (Projected)
	2021	PM	3	1	6	9	179	4	4	1	3	9	244	10	
	2021	SAT	15	3	11	13	184	6	8	6	4	4	196	13	
		AM	0	0	0	0	103	6	2	0	0	0	34	0	Tower Hills South Trips
		PM	0	0	0	0	67	4	6	0	0	0	115	0	
		SAT	0	0	0	0	81	5	5	0	0	0	94	0	
		AM	0	0	6	3	1	3	4	0	0	0	2	0	Millbrook Community Centre
		PM	0	0	6	6	3	5	4	0	0	0	2	0	
		SAT	0	0	4	3	1	3	3	0	0	0	1	0	
	2021	AM	25	4	17	9	326	20	10	2	10	5	208	3	Total Existing Volumes
	2021	PM	3	1	12	15	249	13	14	1	3	9	361	10	
	2021	SAT	15	3	15	16	266	14	16	6	4	4	291	13	
	2025	AM	27	5	12	7	240	12	5	2	11	6	186	4	Background Volumes (Projected)
	2025	PM	4	1	7	9	193	5	5	1	4	9	264	11	
	2025	SAT	16	4	12	14	199	7	8	7	5	5	212	14	
		AM	0	0	6	3	104	9	6	0	0	0	36	0	Tower Hills South & M. Community Centre
		PM	0	0	6	6	70	9	10	0	0	0	117	0	
		SAT	0	0	4	3	82	8	8	0	0	0	95	0	
		AM	0	0	17	25	194	20	14	0	0	0	68	0	Development "A" & School
		PM	0	0	20	13	122	8	13	0	0	0	204	0	
		SAT	0	0	19	17	178	12	12	0	0	0	191	0	
		AM	0	0	0	0	31	0	0	0	0	0	48	0	Development "B"
		PM	0	0	0	0	65	0	0	0	0	0	27	0	
		SAT	0	0	0	0	60	0	0	0	0	0	61	0	
		AM	0	0	6	2	62	4	3	0	0	0	72	0	Development "C" 100% Commercial 50% Residential
		PM	0	0	3	5	73	4	1	0	0	0	84	0	
		SAT	0	0	7	6	105	6	2	0	0	0	127	0	
	2025	AM	27	5	41	37	631	45	28	2	11	6	410	4	Total Background Volumes 2025
	2025	PM	4	1	36	33	523	26	29	1	4	9	696	11	
	2025	SAT	16	4	42	40	624	33	30	7	5	5	686	14	
	2025	AM	0	0	2	2	81	5	1	0	0	0	25	0	Site Generated Trips 50% of Development
	2025	PM	0	0	3	2	37	2	1	0	0	0	80	0	
	2025	SAT	0	0	4	4	62	3	1	0	0	0	77	0	
	2025	AM	27	5	43	39	712	50	29	2	11	6	435	4	Total Trips 2025
	2025	PM	4	1	39	35	560	28	30	1	4	9	776	11	
	2025	SAT	16	4	46	44	686	36	31	7	5	5	763	14	

Annual Growth Rate 2.00%															
	2030	AM	30	5	13	8	265	13	5	3	12	6	206	4	Background Volumes (Projected)
	2030	PM	4	1	8	10	213	5	5	1	4	10	291	12	
	2030	SAT	18	4	13	16	220	8	9	8	5	5	234	16	
		AM	0	0	6	3	104	9	6	0	0	0	36	0	Tower Hills South & M. Community Centre
		PM	0	0	6	6	70	9	10	0	0	0	117	0	
		SAT	0	0	4	3	82	8	8	0	0	0	95	0	
		AM	0	0	17	25	225	20	14	0	0	0	116	0	Developments "A" + "B"
		PM	0	0	20	13	187	8	13	0	0	0	231	0	
		SAT	0	0	19	17	238	12	12	0	0	0	252	0	
		AM	0	0	6	2	82	6	4	0	0	0	80	0	Development "C" 100% Commercial 100% Residential
		PM	0	0	3	5	84	4	1	0	0	0	104	0	
		SAT	0	0	8	7	121	7	3	0	0	0	148	0	
	2030	AM	30	5	42	38	676	48	29	3	12	6	438	4	Total Background Volumes 2030
	2030	PM	4	1	37	34	554	26	29	1	4	10	743	12	
	2030	SAT	18	4	44	43	661	35	32	8	5	5	729	16	
	2030	AM	0	0	4	5	161	10	2	0	0	0	49	0	Site Generated Trips 100% of Development
	2030	PM	0	0	6	4	74	4	1	0	0	0	159	0	
	2030	SAT	0	0	8	8	125	7	2	0	0	0	154	0	
	2030	AM	30	5	46	43	837	58	31	3	12	6	487	4	Total Trips 2030
	2030	PM	4	1	43	38	628	30	30	1	4	10	902	12	
	2030	SAT	18	4	52	51	786	42	34	8	5	5	883	16	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / Fallis Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
April	2017	AM	10	0	15	15	215	0	0	0	0	0	162	5	Registered Volumes
April	2017	PM	4	0	18	19	170	1	0	0	0	0	230	11	
August	2017	SAT	7	0	18	21	180	0	0	0	0	0	185	10	
Annual Growth Rate 2.00%															
	2021	AM	11	0	16	16	233	0	0	0	0	0	175	5	Existing Volumes (Projected)
	2021	PM	4	0	19	21	184	1	0	0	0	0	249	12	
	2021	SAT	8	0	19	23	195	0	0	0	0	0	200	11	
		AM	109	0	49	16	0	0	0	0	0	0	0	36	Tower Hills South Trips
		PM	71	0	32	55	0	0	0	0	0	0	0	121	
		SAT	86	0	39	45	0	0	0	0	0	0	0	99	
		AM	7	0	0	14	6	0	0	0	0	0	3	0	Millbrook Community Centre
		PM	14	0	0	14	6	0	0	0	0	0	6	1	
		SAT	7	0	0	8	5	0	0	0	0	0	2	0	
	2021	AM	127	0	65	46	239	0	0	0	0	0	178	41	Total Existing Volumes
	2021	PM	89	0	51	90	190	1	0	0	0	0	255	134	
	2021	SAT	101	0	58	76	200	0	0	0	0	0	202	110	
	2025	AM	12	0	18	18	252	0	0	0	0	0	190	6	Background Volumes (Projected)
	2025	PM	5	0	21	22	199	1	0	0	0	0	269	13	
	2025	SAT	8	0	21	25	211	0	0	0	0	0	217	12	
		AM	116	0	49	30	6	0	0	0	0	0	3	36	Tower Hills South & M. Community Centre
		PM	85	0	32	69	6	0	0	0	0	0	6	122	
		SAT	93	0	39	53	5	0	0	0	0	0	2	99	
		AM	70	0	128	95	9	0	0	0	0	0	26	44	Development "A" & School
		PM	35	0	60	86	28	0	0	0	0	0	16	56	
		SAT	47	0	78	82	26	0	0	0	0	0	25	50	
		AM	31	0	25	23	0	0	0	0	0	0	0	48	Development "B"
		PM	77	0	35	31	-12	0	0	0	0	0	-12	39	
		SAT	60	0	58	40	0	0	0	0	0	0	0	61	
		AM	0	5	0	0	23	5	75	11	44	121	-40	0	Development "C" 100% Commercial 50% Residential
		PM	0	14	0	0	35	15	151	7	46	136	-48	0	
		SAT	0	11	0	0	50	11	144	9	68	202	-65	0	
	2025	AM	229	5	220	166	290	5	75	11	44	121	179	134	Total Background Volumes 2025
	2025	PM	202	14	148	208	256	16	151	7	46	136	231	230	
	2025	SAT	208	11	196	200	292	11	144	9	68	202	179	222	
	2025	AM	61	40	33	13	0	7	14	14	27	8	0	20	Site Generated Trips 50% of Development
	2025	PM	29	28	36	45	0	19	16	44	12	25	0	58	
	2025	SAT	49	34	33	32	0	13	14	38	20	24	0	58	
	2025	AM	290	45	253	179	290	12	89	25	71	129	179	154	Total Trips 2025
	2025	PM	231	42	184	253	256	35	167	51	58	161	231	288	
	2025	SAT	257	45	229	232	292	24	158	47	88	226	179	280	

Annual Growth Rate 2.00%															
	2030	AM	13	0	19	19	278	0	0	0	0	0	210	6	Background Volumes (Projected)
	2030	PM	5	0	23	25	220	1	0	0	0	0	298	14	
	2030	SAT	9	0	23	27	233	0	0	0	0	0	239	13	
		AM	116	0	49	30	6	0	0	0	0	0	3	36	Tower Hills South & M. Community Centre
		PM	85	0	32	69	6	0	0	0	0	0	6	122	
		SAT	93	0	39	53	5	0	0	0	0	0	2	99	
		AM	101	0	153	118	9	0	0	0	0	0	26	92	Developments "A" + "B"
		PM	112	0	95	117	16	0	0	0	0	0	4	95	
		SAT	107	0	136	122	26	0	0	0	0	0	25	111	
		AM	0	5	0	0	23	11	87	14	68	130	-40	0	Development "C" 100% Commercial 100% Residential
		PM	0	19	0	0	35	30	166	8	57	156	-48	0	
		SAT	0	12	0	0	50	22	156	11	85	224	-65	0	
	2030	AM	230	5	221	167	316	11	87	14	68	130	199	134	Total Background Volumes 2030
	2030	PM	202	19	150	211	277	31	166	8	57	156	260	231	
	2030	SAT	209	12	198	202	314	22	156	11	85	224	201	223	
	2030	AM	122	81	66	27	0	12	27	29	54	16	0	39	Site Generated Trips 100% of Development
	2030	PM	58	55	73	91	0	39	30	87	25	49	0	117	
	2030	SAT	98	68	66	65	0	27	27	75	41	48	0	116	
	2030	AM	352	86	287	194	316	23	114	43	122	146	199	173	Total Trips 2030
	2030	PM	260	74	223	302	277	70	196	95	82	205	260	348	
	2030	SAT	307	80	264	267	314	49	183	86	126	272	201	339	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / CR21 / Distillery			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
July	2018	AM	34	28	1	2	9	6	6	33	78	62	11	50	Registered Volumes
July	2018	PM	80	65	3	2	24	14	8	48	103	184	8	86	
July	2020	SAT	31	26	1	2	9	5	5	30	72	75	15	59	
Annual Growth Rate 2.00%															
	2021	AM	36	30	1	2	10	6	6	35	83	66	12	53	Existing Volumes (Projected)
	2021	PM	85	69	3	2	25	15	8	51	109	195	8	91	
	2021	SAT	32	27	1	2	9	5	5	31	73	77	15	60	
		AM	5	0	0	0	1	0	0	0	10	25	2	22	Tower Hills South Trips
		PM	21	0	0	0	6	0	0	0	28	21	1	10	
		SAT	13	0	0	0	3	0	0	0	29	20	4	15	
		AM	6	0	0	0	1	0	0	0	13	5	1	4	Millbrook Community Centre
		PM	8	0	0	0	2	0	0	0	10	13	1	6	
		SAT	4	0	0	0	1	0	0	0	8	5	0	4	
	2021	AM	47	30	1	2	12	6	6	35	106	96	15	79	Total Existing Volumes
	2021	PM	114	69	3	2	33	15	8	51	147	229	10	107	
	2021	SAT	49	27	1	2	13	5	5	31	110	102	19	79	
	2025	AM	39	32	1	2	10	7	7	38	90	71	13	57	Background Volumes (Projected)
	2025	PM	92	75	3	2	28	16	9	55	118	211	9	99	
	2025	SAT	34	29	1	2	10	6	6	33	79	83	17	65	
		AM	11	0	0	0	2	0	0	0	23	30	3	26	Tower Hills South & M. Community Centre
		PM	29	0	0	0	8	0	0	0	38	34	2	16	
		SAT	17	0	0	0	4	0	0	0	37	25	4	19	
		AM	29	0	0	0	8	0	0	0	67	77	12	65	Development "A" & School
		PM	46	0	0	0	14	0	0	0	55	50	2	24	
		SAT	31	0	0	0	8	0	0	0	69	53	9	41	
		AM	6	0	0	0	2	0	0	0	15	13	2	11	Development "B"
		PM	8	0	0	0	2	0	0	0	9	15	1	7	
		SAT	12	0	0	0	3	0	0	0	26	30	5	23	
		AM	16	0	0	0	4	0	0	0	36	17	3	15	Development "C" 100% Commercial 50% Residential
		PM	27	0	0	0	8	0	0	0	33	69	3	32	
		SAT	21	0	0	0	6	0	0	0	48	40	7	32	
	2025	AM	102	32	1	2	26	7	7	38	230	208	33	174	Total Background Volumes 2025
	2025	PM	201	75	3	2	60	16	9	55	253	380	17	177	
	2025	SAT	115	29	1	2	30	6	6	33	259	230	42	181	
	2025	AM	6	0	0	0	1	0	0	0	13	24	4	20	Site Generated Trips 50% of Development
	2025	PM	25	0	0	0	7	0	0	0	32	34	2	16	
	2025	SAT	13	0	0	0	3	0	0	0	29	24	5	19	
	2025	AM	108	32	1	2	27	7	7	38	243	232	37	194	Total Trips 2025
	2025	PM	226	75	3	2	67	16	9	55	285	414	19	193	
	2025	SAT	128	29	1	2	33	6	6	33	288	254	47	200	

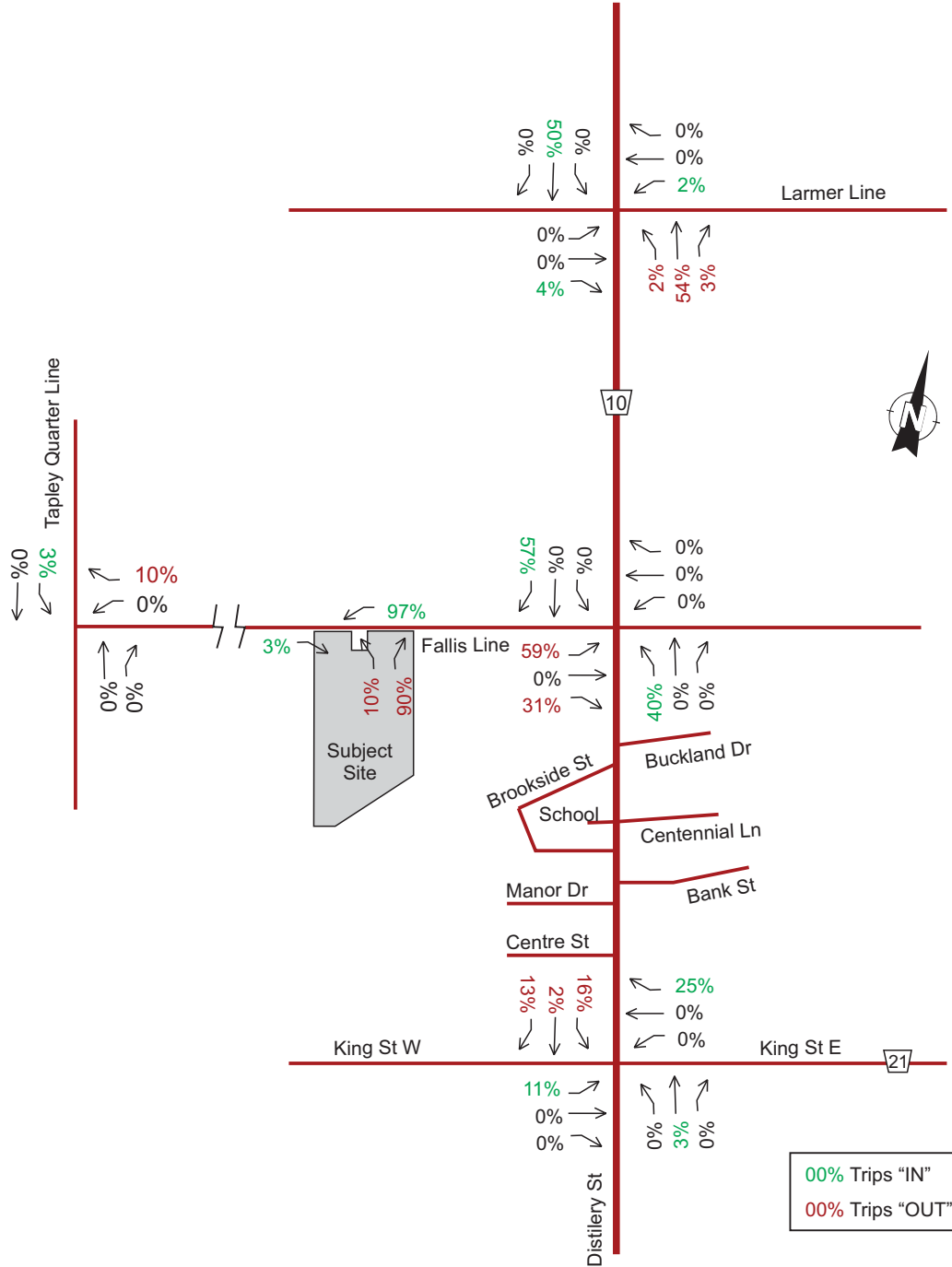
Annual Growth Rate 2.00%															
	2030	AM	43	36	1	3	11	8	8	42	99	79	14	63	Background Volumes (Projected)
	2030	PM	101	82	4	3	30	18	10	61	131	233	10	109	
	2030	SAT	38	32	1	2	11	6	6	37	88	91	18	72	
		AM	11	0	0	0	2	0	0	0	23	30	3	26	Tower Hills South & M. Community Centre
		PM	29	0	0	0	8	0	0	0	38	34	2	16	
		SAT	17	0	0	0	4	0	0	0	37	25	4	19	
		AM	36	0	0	0	10	0	0	0	81	90	14	75	Developments "A" + "B"
		PM	53	0	0	0	16	0	0	0	64	65	3	31	
		SAT	43	0	0	0	10	0	0	0	95	82	14	64	
		AM	17	0	0	0	5	0	0	0	40	21	4	21	Development "C" 100% Commercial 100% Residential
		PM	33	0	0	0	10	0	0	0	43	78	4	37	
		SAT	25	0	0	0	7	0	0	0	55	46	8	37	
	2030	AM	107	36	1	3	29	8	8	42	243	219	35	186	Total Background Volumes 2030
	2030	PM	217	82	4	3	64	18	10	61	275	411	19	193	
	2030	SAT	123	32	1	2	32	6	6	37	274	245	45	192	
	2030	AM	11	0	0	0	3	0	0	0	25	47	7	39	Site Generated Trips 100% of Development
	2030	PM	50	0	0	0	15	0	0	0	65	68	3	32	
	2030	SAT	26	0	0	0	7	0	0	0	59	48	9	37	
	2030	AM	118	36	1	3	32	8	8	42	268	266	42	225	Total Trips 2030
	2030	PM	267	82	4	3	79	18	10	61	340	479	22	225	
	2030	SAT	149	32	1	2	39	6	6	37	333	293	54	229	

REGISTERED AND PROJECTED VOLUMES

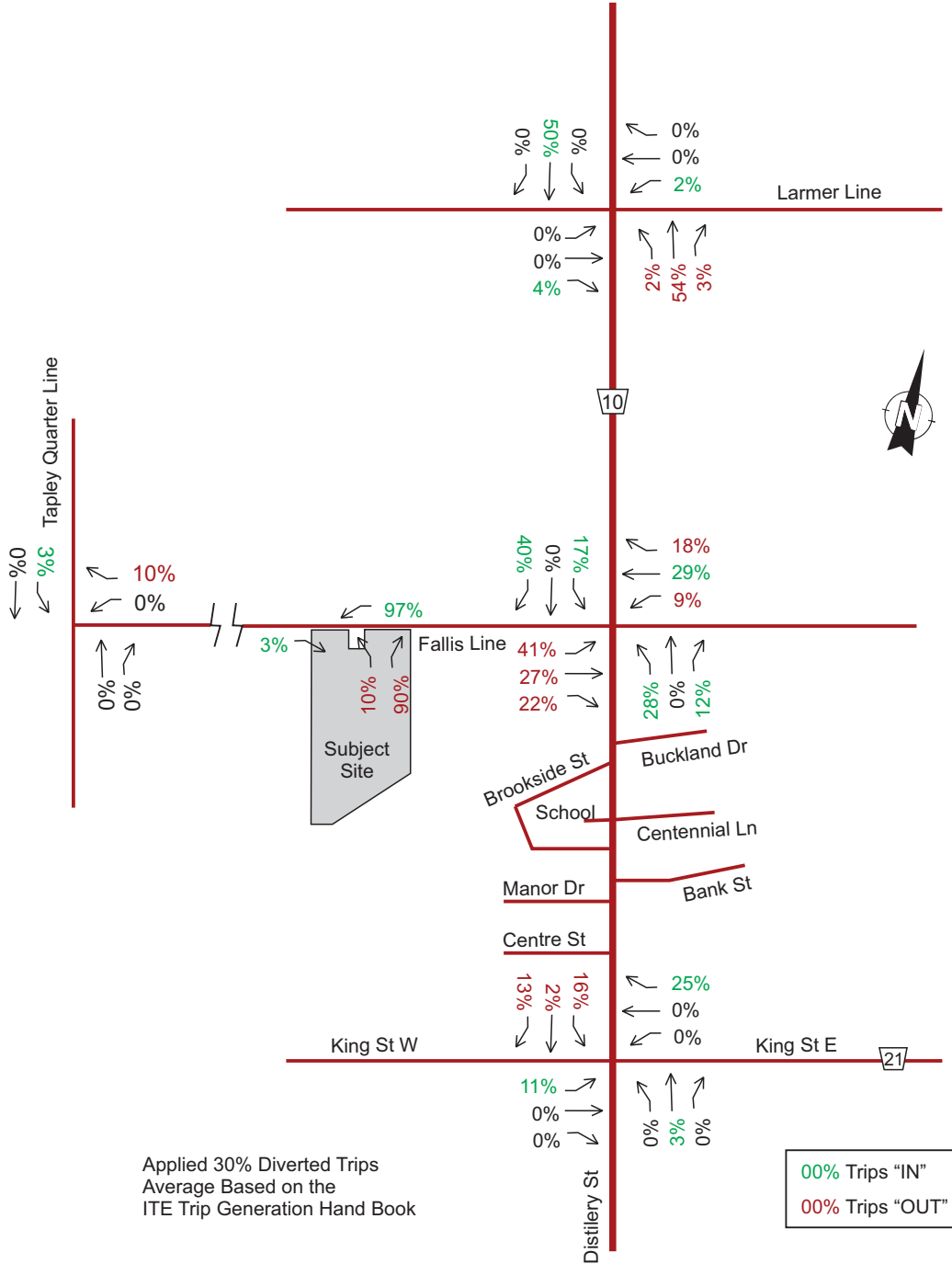
Volumes at AM, PM and SAT Peak Hours

Fallis Line / Tapley Quarter Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
December	2021	AM	0	0	0	0	37	2	2	0	56	14	19	0	Registered Volumes
December	2021	PM	0	0	0	0	40	2	1	0	22	61	56	0	
December	2021	SAT	0	0	0	0	37	2	3	0	21	25	38	0	
Annual Growth Rate 2.00%															
	2025	AM	0	0	0	0	43	2	2	0	66	16	22	0	Background Volumes (Projected)
	2025	PM	0	0	0	0	47	2	1	0	26	71	66	0	
	2025	SAT	0	0	0	0	43	2	4	0	25	29	45	0	
		AM	0	0	0	0	0	2	1	0	25	14	0	0	Development "A" & School
		PM	0	0	0	0	0	1	1	0	12	18	0	0	
		SAT	0	0	0	0	0	1	2	0	16	18	0	0	
		AM	0	0	0	0	0	1	0	0	2	5	0	0	Development "B"
		PM	0	0	0	0	0	0	0	0	9	3	0	0	
		SAT	0	0	0	0	0	0	0	0	4	6	0	0	
		AM	0	0	0	0	0	0	0	0	11	5	0	0	Development "C" 100% Commercial 50% Residential
		PM	0	0	0	0	0	0	0	0	7	14	0	0	
		SAT	0	0	0	0	0	0	1	0	8	11	0	0	
	2025	AM	0	0	0	0	43	5	3	0	104	41	22	0	Total Background Volumes 2025
	2025	PM	0	0	0	0	47	3	2	0	54	107	66	0	
	2025	SAT	0	0	0	0	43	4	7	0	52	64	45	0	
	2025	AM	0	0	0	0	0	0	0	0	15	2	0	0	Site Generated Trips 50% of Development
	2025	PM	0	0	0	0	0	0	0	0	3	15	0	0	
	2025	SAT	0	0	0	0	0	0	1	0	5	7	0	0	
	2025	AM	0	0	0	0	43	5	3	0	119	43	22	0	Total Trips 2025
	2025	PM	0	0	0	0	47	3	2	0	57	122	66	0	
	2025	SAT	0	0	0	0	43	4	8	0	57	71	45	0	
Annual Growth Rate 2.00%															
	2030	AM	0	0	0	0	44	2	2	0	67	17	23	0	Background Volumes (Projected)
	2030	PM	0	0	0	0	48	2	1	0	26	73	67	0	
	2030	SAT	0	0	0	0	44	2	4	0	25	30	45	0	
		AM	0	0	0	0	0	3	1	0	27	19	0	0	Developments "A" + "B"
		PM	0	0	0	0	0	1	1	0	21	21	0	0	
		SAT	0	0	0	0	0	2	3	0	19	23	0	0	
		AM	0	0	0	0	0	0	0	0	14	5	0	0	Development "C" 100% Commercial 100% Residential
		PM	0	0	0	0	0	0	0	0	8	19	0	0	
		SAT	0	0	0	0	0	0	1	0	10	12	0	0	
	2030	AM	0	0	0	0	44	5	3	0	108	41	23	0	Total Background Volumes 2030
	2030	PM	0	0	0	0	48	3	2	0	55	113	67	0	
	2030	SAT	0	0	0	0	44	4	7	0	54	65	45	0	
	2030	AM	0	0	0	0	0	0	1	0	28	3	0	0	Site Generated Trips 100% of Development
	2030	PM	0	0	0	0	0	1	0	0	6	28	0	0	
	2030	SAT	0	0	0	0	0	1	2	0	10	13	0	0	
	2030	AM	0	0	0	0	44	5	4	0	136	44	23	0	Total Trips 2030
	2030	PM	0	0	0	0	48	4	2	0	61	141	67	0	
	2030	SAT	0	0	0	0	44	5	9	0	64	78	45	0	

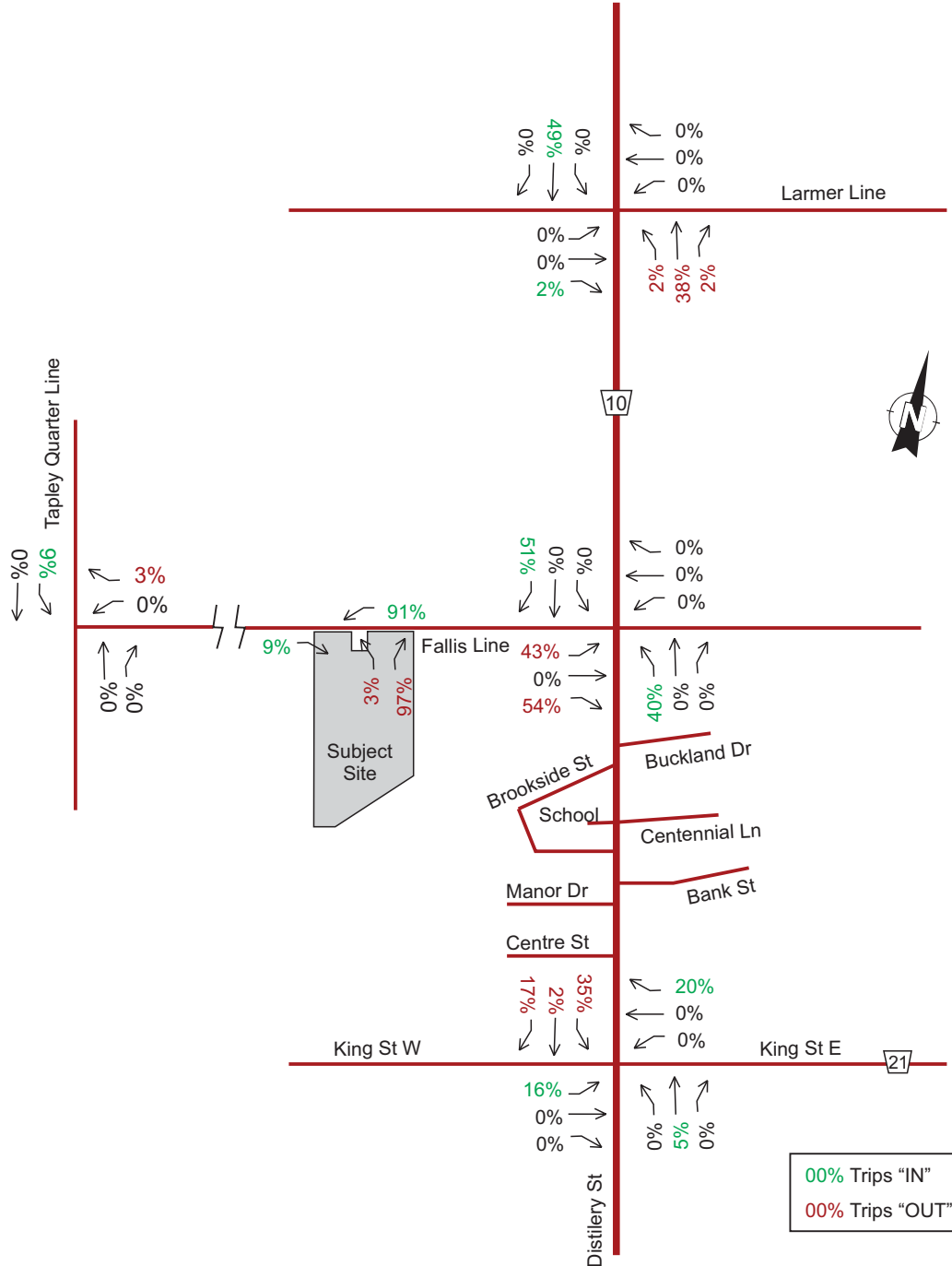
AM Distribution of Trips (Residential West of CR10)



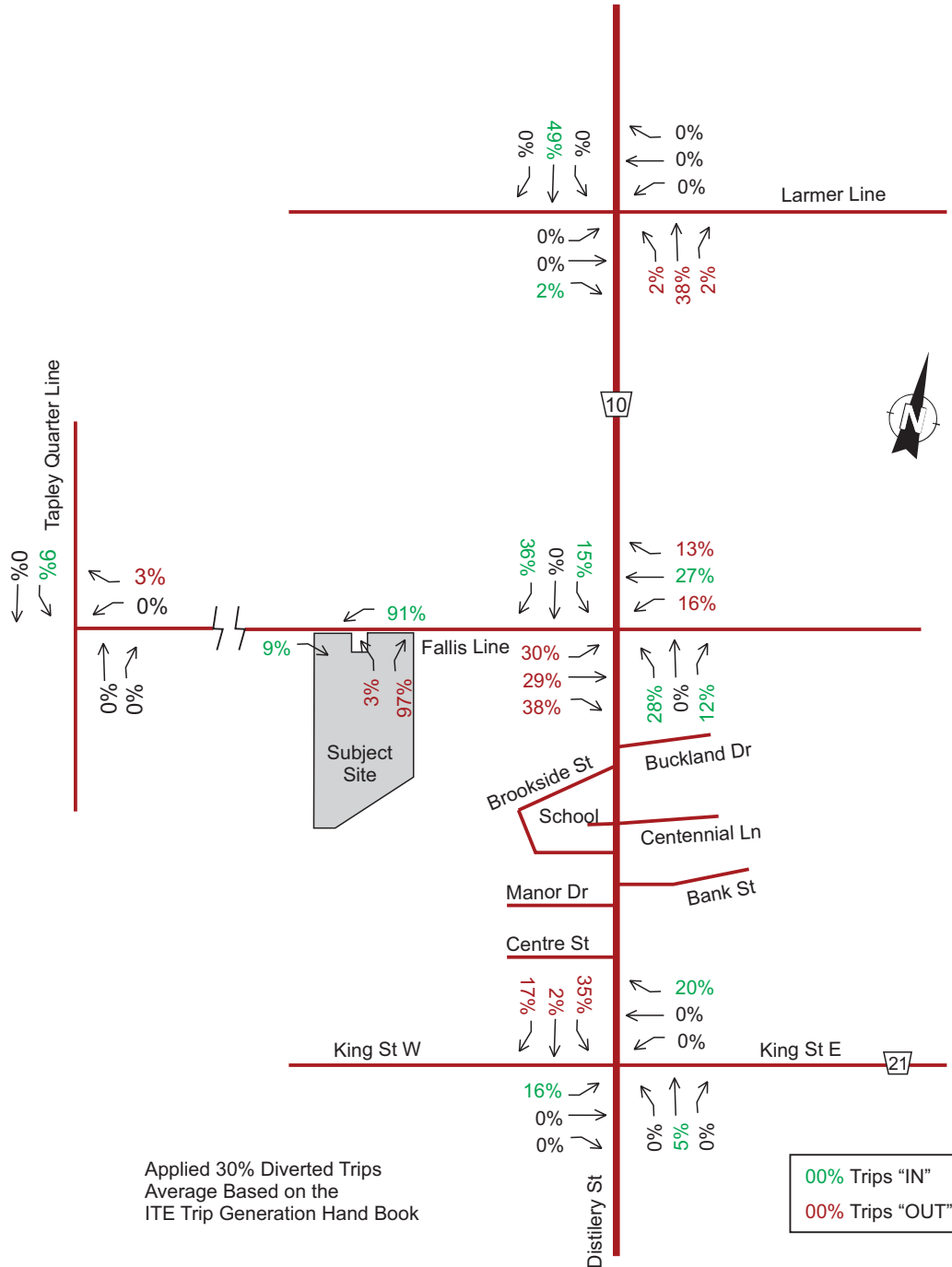
AM Distribution of Trips With Diverted Trips (Residential Site West of CR10)



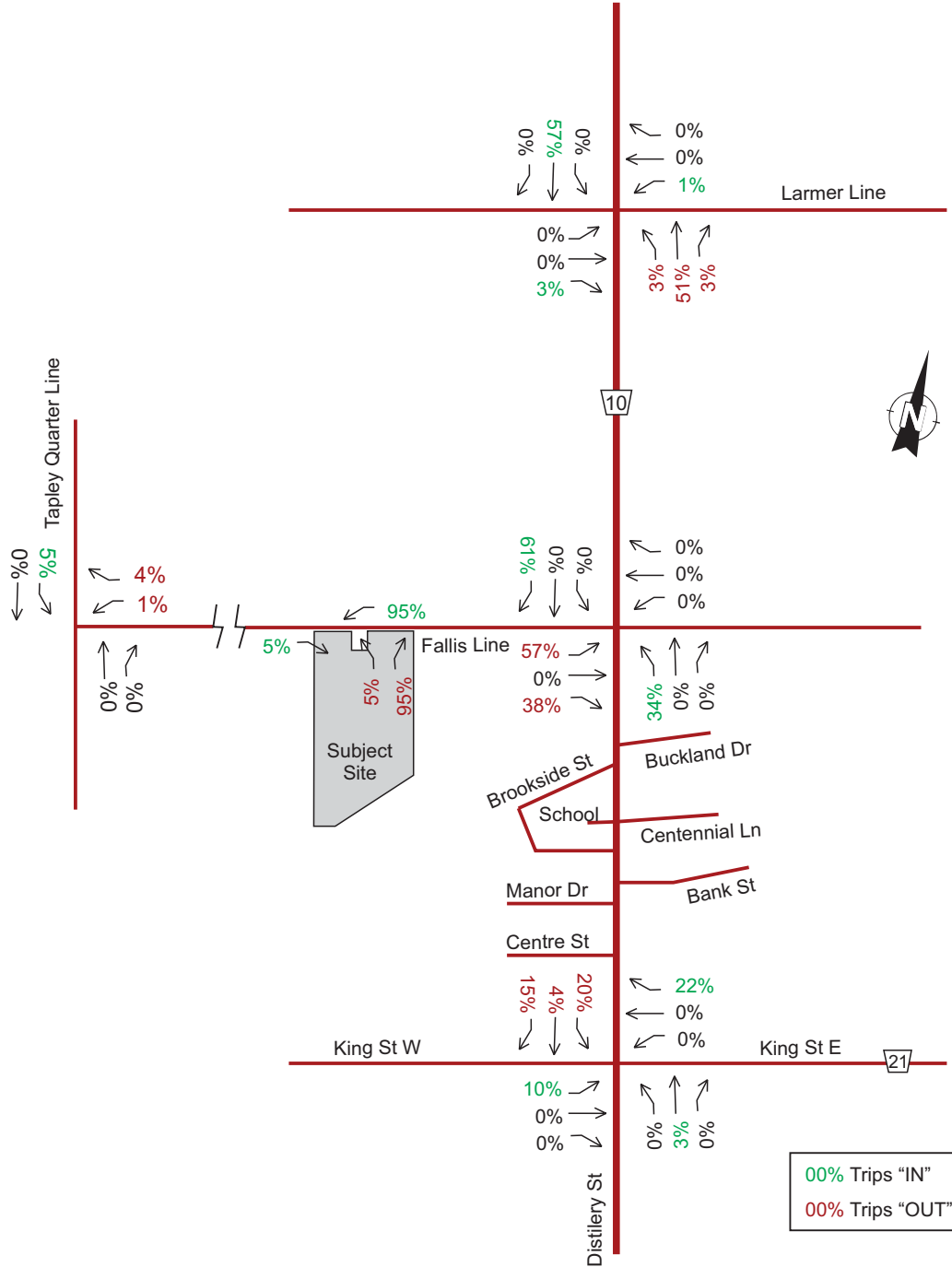
PM Distribution of Trips (Residential West of CR10)



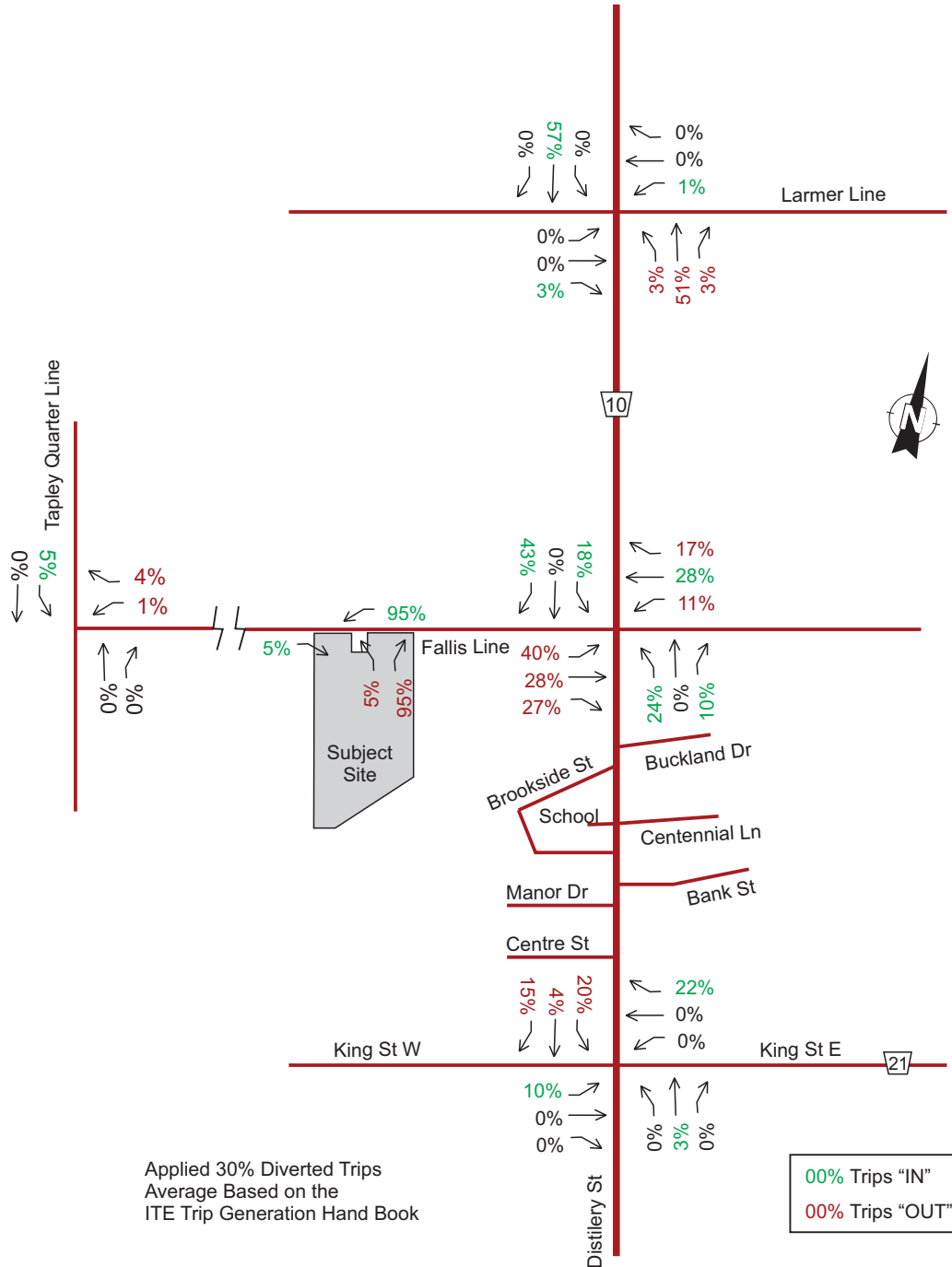
PM Distribution of Trips With Diverted Trips (Residential Site West of CR10)



SAT Distribution of Trips (Residential West of CR10)

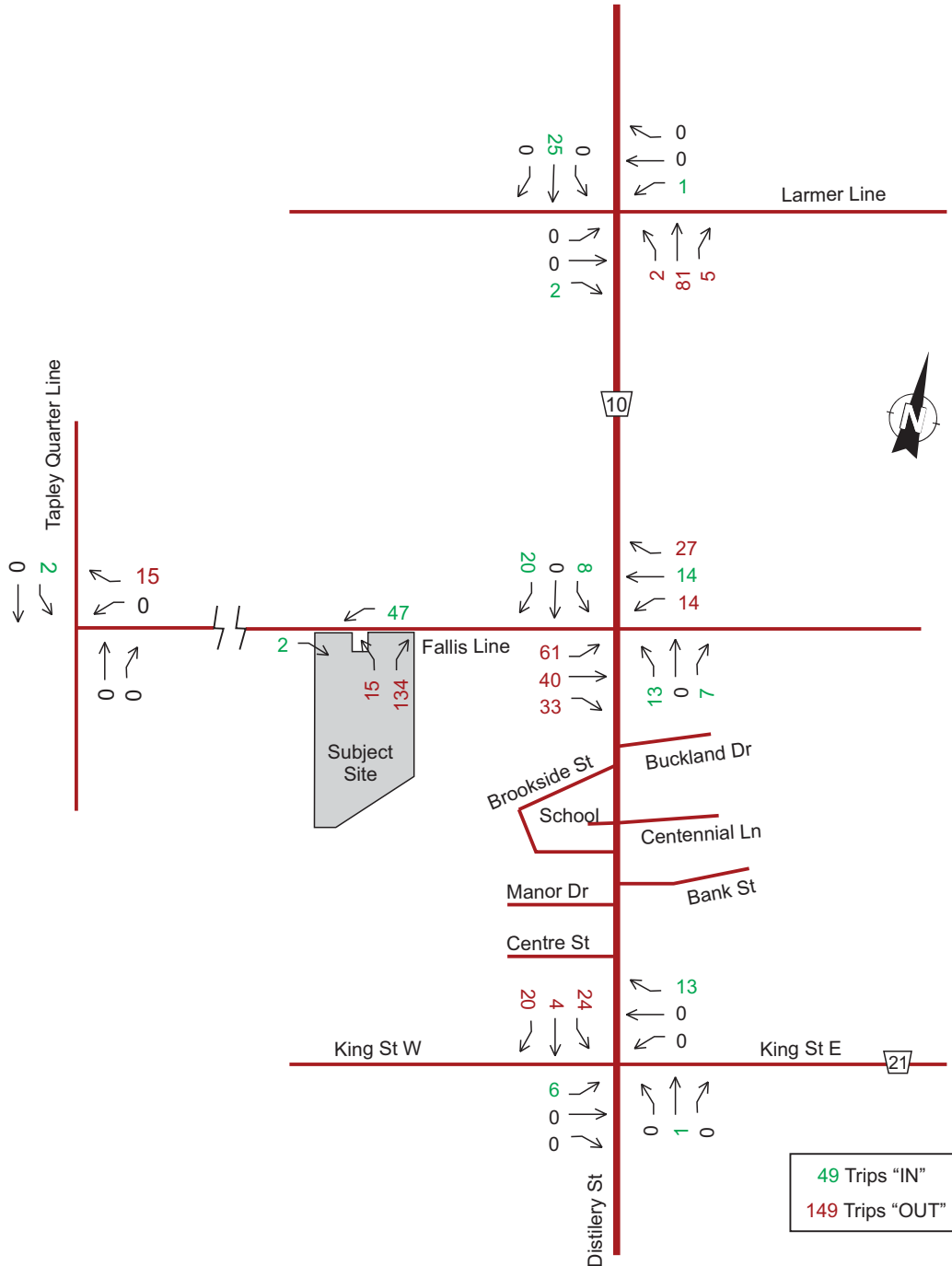


SAT Distribution of Trips With Diverted Trips (Residential Site West of CR10)

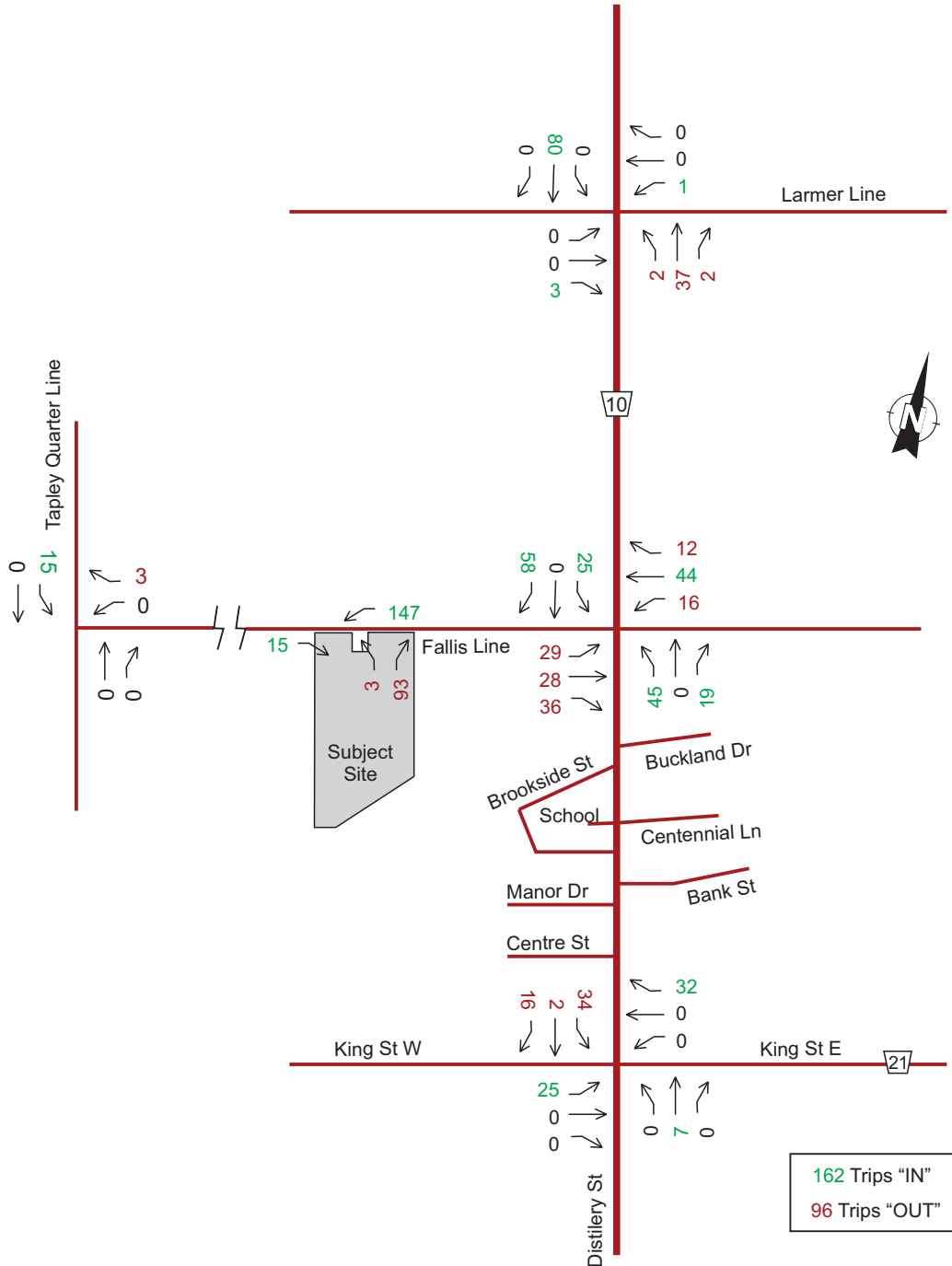


Location	Direction	Trips "IN" (%)	Trips "OUT" (%)
Tapley Quarter Line	West	0%	5%
	East	5%	0%
Larmer Line	North	0%	0%
	South	57%	1%
Fallis Line	North	0%	0%
	South	0%	3%
King St W	West	0%	0%
	East	0%	4%
King St E	West	0%	0%
	East	0%	1%
Distillery St	West	0%	0%
	East	0%	0%
King St W	West	10%	0%
	East	0%	0%
Fallis Line	West	43%	0%
	East	0%	18%
Fallis Line	West	0%	0%
	East	40%	28%
Fallis Line	West	0%	27%
	East	28%	0%
Fallis Line	West	0%	0%
	East	17%	28%
Fallis Line	West	0%	11%
	East	24%	0%
Fallis Line	West	0%	0%
	East	0%	10%
Fallis Line	West	0%	0%
	East	22%	0%
Fallis Line	West	0%	0%
	East	0%	0%
Fallis Line	West	0%	0%
	East	0%	3%
Fallis Line	West	0%	0%
	East	0%	0%

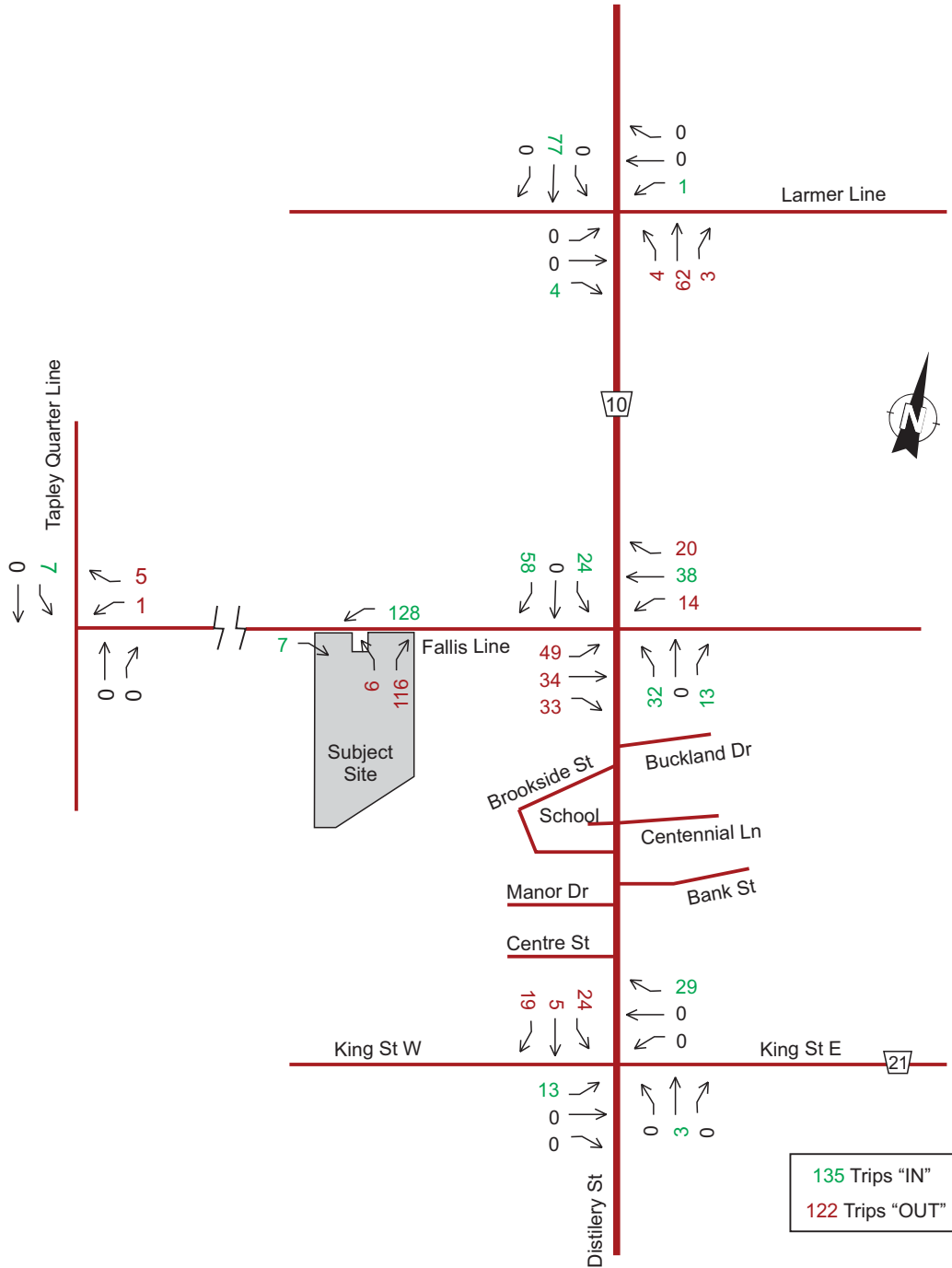
AM Site Generated Trips With Diverted Trips - 2025 (Residential Site West of CR10)



PM Site Generated Trips With Diverted Trips - 2025 (Residential Site West of CR10)

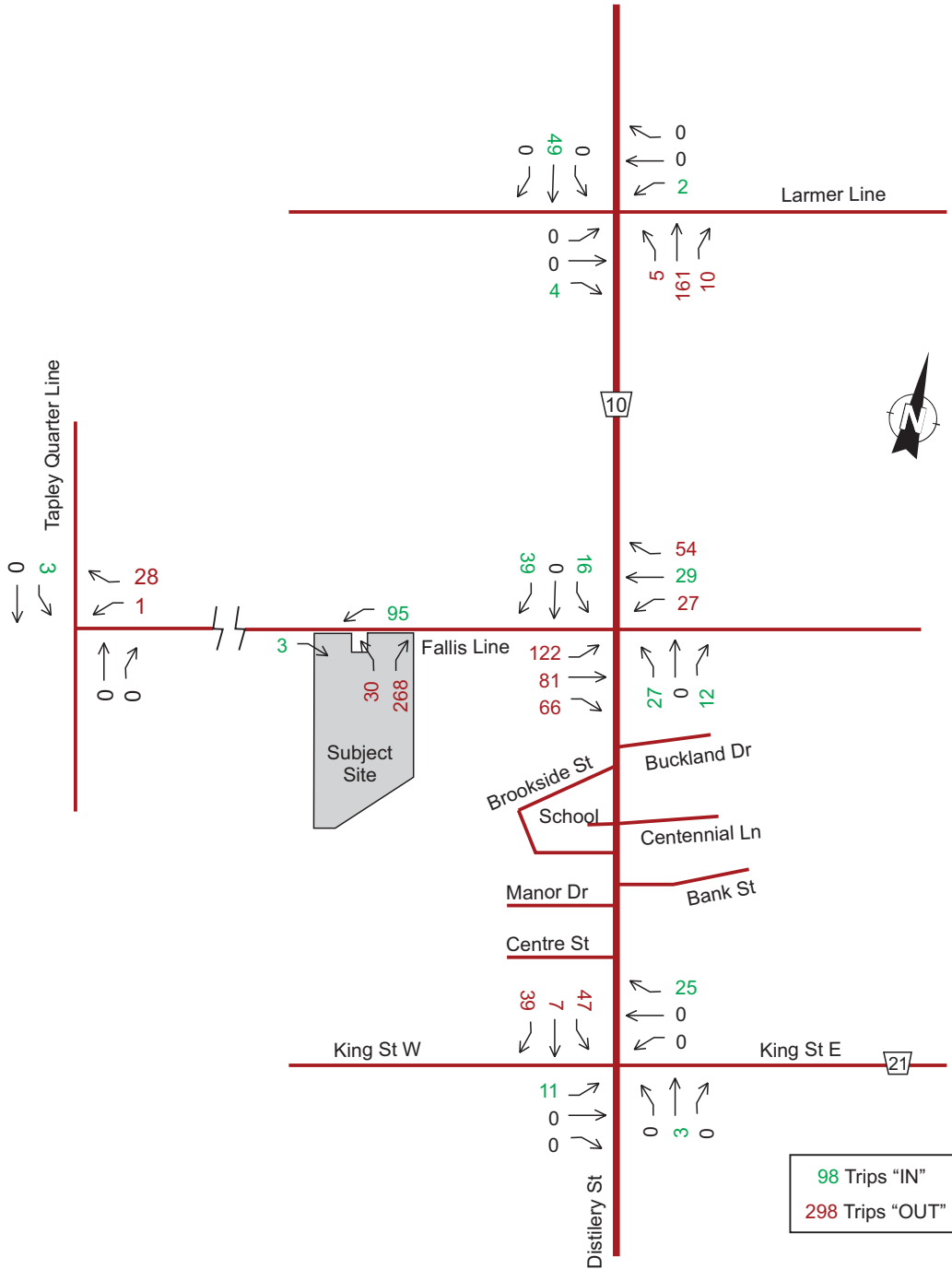


SAT Site Generated Trips With Diverted Trips - 2025 (Residential Site West of CR10)

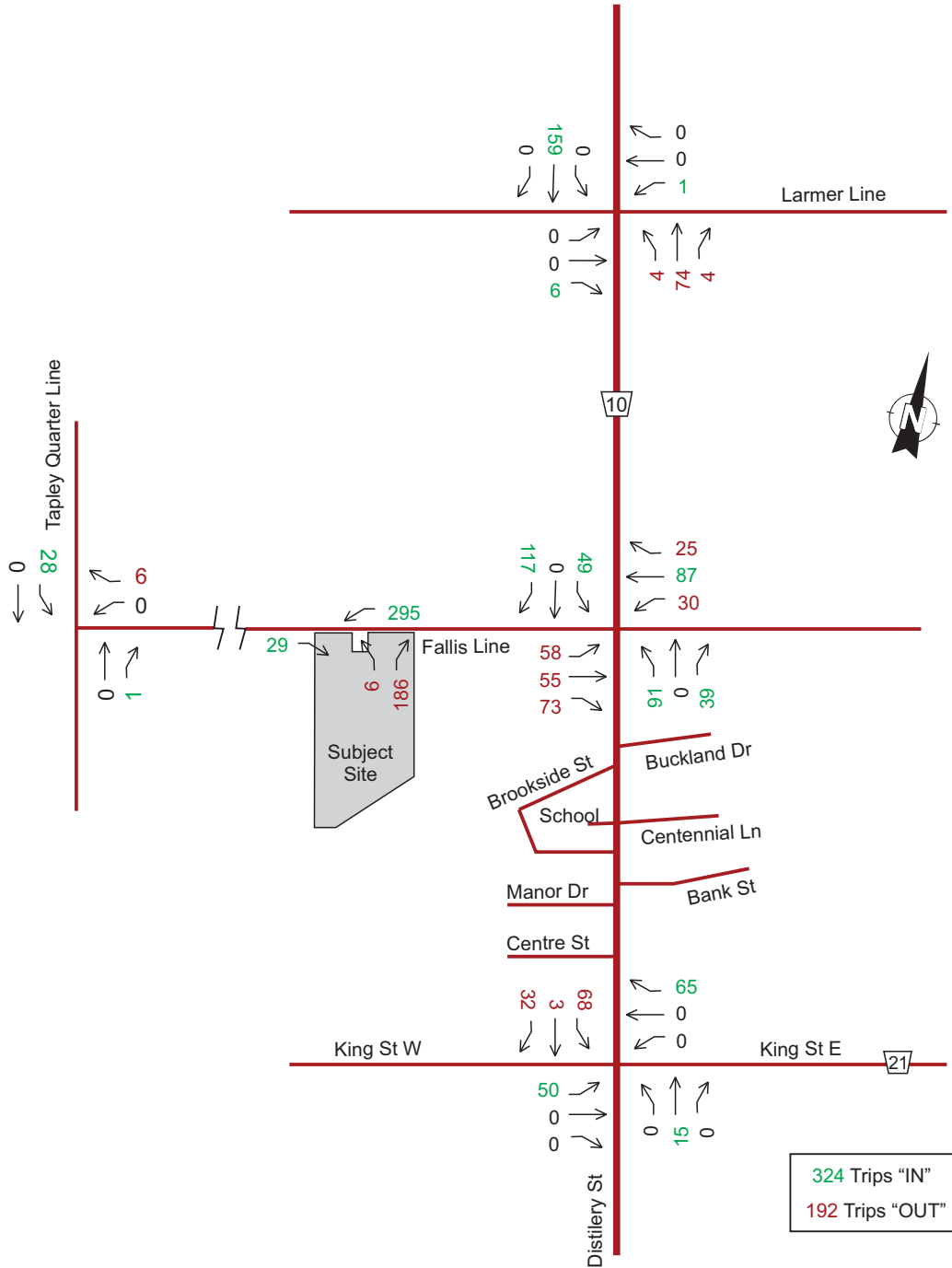


135 Trips "IN"
122 Trips "OUT"

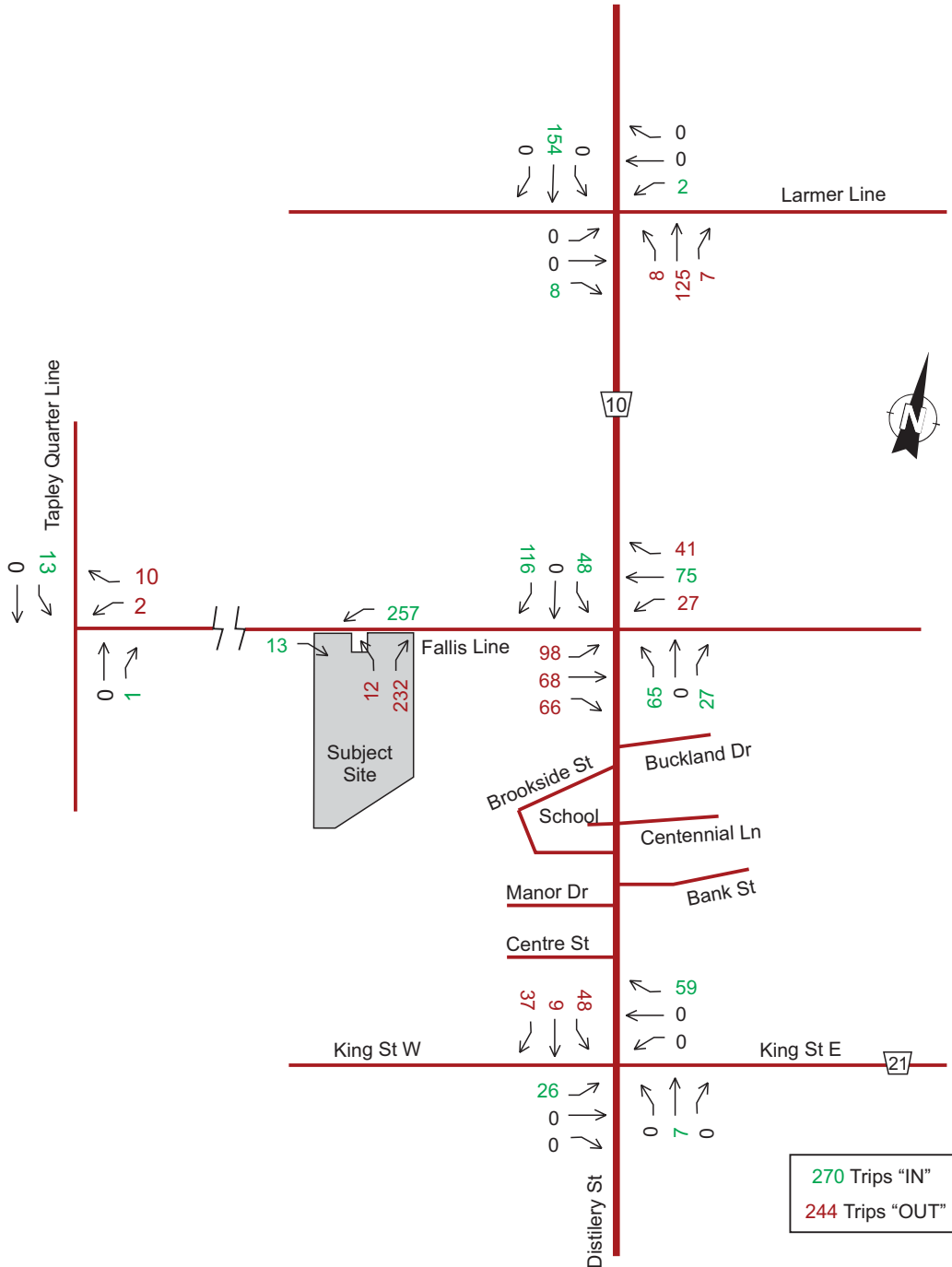
AM Site Generated Trips With Diverted Trips - 2030 (Residential Site West of CR10)



PM Site Generated Trips With Diverted Trips - 2030 (Residential Site West of CR10)



SAT Site Generated Trips With Diverted Trips - 2030 (Residential Site West of CR10)



Appendix G

Trip Distribution of Proposed
Commercial/Residential Site (East of CR10)

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / Larmer Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
April	2017	AM	23	4	10	6	205	10	4	2	9	5	159	3	Registered Volumes
April	2017	PM	3	1	6	8	165	4	4	1	3	8	225	9	
August	2017	SAT	14	3	10	12	170	6	7	6	4	4	181	12	
Annual Growth Rate 2.00%															
	2021	AM	25	4	11	6	222	11	4	2	10	5	172	3	Existing Volumes (Projected)
	2021	PM	3	1	6	9	179	4	4	1	3	9	244	10	
	2021	SAT	15	3	11	13	184	6	8	6	4	4	196	13	
		AM	0	0	0	0	103	6	2	0	0	0	34	0	Tower Hills South Trips
		PM	0	0	0	0	67	4	6	0	0	0	115	0	
		SAT	0	0	0	0	81	5	5	0	0	0	94	0	
		AM	0	0	6	3	1	3	4	0	0	0	2	0	Millbrook Community Centre
		PM	0	0	6	6	3	5	4	0	0	0	2	0	
		SAT	0	0	4	3	1	3	3	0	0	0	1	0	
	2021	AM	25	4	17	9	326	20	10	2	10	5	208	3	Total Existing Volumes
	2021	PM	3	1	12	15	249	13	14	1	3	9	361	10	
	2021	SAT	15	3	15	16	266	14	16	6	4	4	291	13	
	2025	AM	27	5	12	7	240	12	5	2	11	6	186	4	Background Volumes (Projected)
	2025	PM	4	1	7	9	193	5	5	1	4	9	264	11	
	2025	SAT	16	4	12	14	199	7	8	7	5	5	212	14	
		AM	0	0	6	3	104	9	6	0	0	0	36	0	Tower Hills South & M. Community Centre
		PM	0	0	6	6	70	9	10	0	0	0	117	0	
		SAT	0	0	4	3	82	8	8	0	0	0	95	0	
		AM	0	0	17	25	194	20	14	0	0	0	68	0	Development "A" & School
		PM	0	0	20	13	122	8	13	0	0	0	204	0	
		SAT	0	0	19	17	178	12	12	0	0	0	191	0	
		AM	0	0	0	0	31	0	0	0	0	0	48	0	Development "B"
		PM	0	0	0	0	65	0	0	0	0	0	27	0	
		SAT	0	0	0	0	60	0	0	0	0	0	61	0	
		AM	0	0	2	2	81	5	1	0	0	0	25	0	Development "C" 50% Residential
		PM	0	0	3	2	37	2	1	0	0	0	80	0	
		SAT	0	0	4	4	62	3	1	0	0	0	77	0	
	2025	AM	27	5	37	37	650	46	26	2	11	6	363	4	Total Background Volumes 2025
	2025	PM	4	1	36	30	487	24	29	1	4	9	692	11	
	2025	SAT	16	4	39	38	581	30	29	7	5	5	636	14	
	2025	AM	0	0	6	2	62	4	3	0	0	0	72	0	Site Generated Trips 100% Commercial 50% Residential
	2025	PM	0	0	3	5	73	4	1	0	0	0	84	0	
	2025	SAT	0	0	7	6	105	6	2	0	0	0	127	0	
	2025	AM	27	5	43	39	712	50	29	2	11	6	435	4	Total Trips 2025
	2025	PM	4	1	39	35	560	28	30	1	4	9	776	11	
	2025	SAT	16	4	46	44	686	36	31	7	5	5	763	14	

REGISTERED AND PROJECTED VOLUMES

Annual Growth Rate 2.00%															
	2030	AM	30	5	13	8	265	13	5	3	12	6	206	4	Background Volumes (Projected)
	2030	PM	4	1	8	10	213	5	5	1	4	10	291	12	
	2030	SAT	18	4	13	16	220	8	9	8	5	5	234	16	
		AM	0	0	6	3	104	9	6	0	0	0	36	0	Tower Hills South & M. Community Centre
		PM	0	0	6	6	70	9	10	0	0	0	117	0	
		SAT	0	0	4	3	82	8	8	0	0	0	95	0	
		AM	0	0	17	25	225	20	14	0	0	0	116	0	Developments "A" + "B"
		PM	0	0	20	13	187	8	13	0	0	0	231	0	
		SAT	0	0	19	17	238	12	12	0	0	0	252	0	
		AM	0	0	4	5	161	10	2	0	0	0	49	0	Development "C" 100% Residential
		PM	0	0	6	4	74	4	1	0	0	0	159	0	
		SAT	0	0	8	8	125	7	2	0	0	0	154	0	
	2030	AM	30	5	40	41	755	52	27	3	12	6	407	4	Total Background Volumes 2030
	2030	PM	4	1	40	33	544	26	29	1	4	10	798	12	
	2030	SAT	18	4	44	44	665	35	31	8	5	5	735	16	
	2030	AM	0	0	6	2	82	6	4	0	0	0	80	0	Site Generated Trips 100% of Development
	2030	PM	0	0	3	5	84	4	1	0	0	0	104	0	
	2030	SAT	0	0	8	7	121	7	3	0	0	0	148	0	
	2030	AM	30	5	46	43	837	58	31	3	12	6	487	4	Total Trips 2030
	2030	PM	4	1	43	38	628	30	30	1	4	10	902	12	
	2030	SAT	18	4	52	51	786	42	34	8	5	5	883	16	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / Fallis Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
April	2017	AM	10	0	15	15	215	0	0	0	0	0	162	5	Registered Volumes
April	2017	PM	4	0	18	19	170	1	0	0	0	0	230	11	
August	2017	SAT	7	0	18	21	180	0	0	0	0	0	185	10	
Annual Growth Rate 2.00%															
	2021	AM	11	0	16	16	233	0	0	0	0	0	175	5	Existing Volumes (Projected)
	2021	PM	4	0	19	21	184	1	0	0	0	0	249	12	
	2021	SAT	8	0	19	23	195	0	0	0	0	0	200	11	
		AM	109	0	49	16	0	0	0	0	0	0	0	36	Tower Hills South Trips
		PM	71	0	32	55	0	0	0	0	0	0	0	121	
		SAT	86	0	39	45	0	0	0	0	0	0	0	99	
		AM	7	0	0	14	6	0	0	0	0	0	0	3	Millbrook Community Centre
		PM	14	0	0	14	6	0	0	0	0	0	6	1	
		SAT	7	0	0	8	5	0	0	0	0	0	2	0	
	2021	AM	127	0	65	46	239	0	0	0	0	0	178	41	Total Existing Volumes
	2021	PM	89	0	51	90	190	1	0	0	0	0	255	134	
	2021	SAT	101	0	58	76	200	0	0	0	0	0	202	110	
	2025	AM	12	0	18	18	252	0	0	0	0	0	190	6	Background Volumes (Projected)
	2025	PM	5	0	21	22	199	1	0	0	0	0	269	13	
	2025	SAT	8	0	21	25	211	0	0	0	0	0	217	12	
		AM	116	0	49	30	6	0	0	0	0	0	3	36	Tower Hills South & M. Community Centre
		PM	85	0	32	69	6	0	0	0	0	0	6	122	
		SAT	93	0	39	53	5	0	0	0	0	0	2	99	
		AM	70	0	128	95	9	0	0	0	0	0	26	44	Development "A" & School
		PM	35	0	60	86	28	0	0	0	0	0	16	56	
		SAT	47	0	78	82	26	0	0	0	0	0	25	50	
		AM	31	0	25	23	0	0	0	0	0	0	0	48	Development "B"
		PM	77	0	35	31	-12	0	0	0	0	0	-12	39	
		SAT	60	0	58	40	0	0	0	0	0	0	0	61	
		AM	61	40	33	13	0	7	14	14	27	8	0	20	Development "C" 50% Residential
		PM	29	28	36	45	0	19	16	44	12	25	0	58	
		SAT	49	34	33	32	0	13	14	38	20	24	0	58	
	2025	AM	290	40	253	179	267	7	14	14	27	8	219	154	Total Background Volumes 2025
	2025	PM	231	28	184	253	221	20	16	44	12	25	279	288	
	2025	SAT	257	34	229	232	242	13	14	38	20	24	244	280	
	2025	AM	0	5	0	0	23	5	75	11	44	121	-40	0	Site Generated Trips 100% Commercial 50% Residential
	2025	PM	0	14	0	0	35	15	151	7	46	136	-48	0	
	2025	SAT	0	11	0	0	50	11	144	9	68	202	-65	0	
	2025	AM	290	45	253	179	290	12	89	25	71	129	179	154	Total Trips 2025
	2025	PM	231	42	184	253	256	35	167	51	58	161	231	288	
	2025	SAT	257	45	229	232	292	24	158	47	88	226	179	280	

REGISTERED AND PROJECTED VOLUMES

Annual Growth Rate 2.00%															
	2030	AM	13	0	19	19	278	0	0	0	0	0	210	6	Background Volumes (Projected)
	2030	PM	5	0	23	25	220	1	0	0	0	0	298	14	
	2030	SAT	9	0	23	27	233	0	0	0	0	0	239	13	
		AM	116	0	49	30	6	0	0	0	0	0	3	36	Tower Hills South & M. Community Centre
		PM	85	0	32	69	6	0	0	0	0	0	6	122	
		SAT	93	0	39	53	5	0	0	0	0	0	2	99	
		AM	101	0	153	118	9	0	0	0	0	0	26	92	Developments "A" + "B"
		PM	112	0	95	117	16	0	0	0	0	0	4	95	
		SAT	107	0	136	122	26	0	0	0	0	0	25	111	
		AM	122	81	66	27	0	12	27	29	54	16	0	39	Development "C" 100% Residential
		PM	58	55	73	91	0	39	30	87	25	49	0	117	
		SAT	98	68	66	65	0	27	27	75	41	48	0	116	
	2030	AM	352	81	287	194	293	12	27	29	54	16	239	173	Total Background Volumes 2030
	2030	PM	260	55	223	302	242	40	30	87	25	49	308	348	
	2030	SAT	307	68	264	267	264	27	27	75	41	48	266	339	
	2030	AM	0	5	0	0	23	11	87	14	68	130	-40	0	Site Generated Trips 100% of Development
	2030	PM	0	19	0	0	35	30	166	8	57	156	-48	0	
	2030	SAT	0	12	0	0	50	22	156	11	85	224	-65	0	
	2030	AM	352	86	287	194	316	23	114	43	122	146	199	173	Total Trips 2030
	2030	PM	260	74	223	302	277	70	196	95	82	205	260	348	
	2030	SAT	307	80	264	267	314	49	183	86	126	272	201	339	

REGISTERED AND PROJECTED VOLUMES

Volumes at AM, PM and SAT Peak Hours

CR10 / CR21 / Distillery			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
July	2018	AM	34	28	1	2	9	6	6	33	78	62	11	50	Registered Volumes
July	2018	PM	80	65	3	2	24	14	8	48	103	184	8	86	
July	2020	SAT	31	26	1	2	9	5	5	30	72	75	15	59	
Annual Growth Rate 2.00%															
	2021	AM	36	30	1	2	10	6	6	35	83	66	12	53	Existing Volumes (Projected)
	2021	PM	85	69	3	2	25	15	8	51	109	195	8	91	
	2021	SAT	32	27	1	2	9	5	5	31	73	77	15	60	
		AM	5	0	0	0	1	0	0	0	10	25	2	22	Tower Hills South Trips
		PM	21	0	0	0	6	0	0	0	28	21	1	10	
		SAT	13	0	0	0	3	0	0	0	29	20	4	15	
		AM	6	0	0	0	1	0	0	0	13	5	1	4	Millbrook Community Centre
		PM	8	0	0	0	2	0	0	0	10	13	1	6	
		SAT	4	0	0	0	1	0	0	0	8	5	0	4	
	2021	AM	47	30	1	2	12	6	6	35	106	96	15	79	Total Existing Volumes
	2021	PM	114	69	3	2	33	15	8	51	147	229	10	107	
	2021	SAT	49	27	1	2	13	5	5	31	110	102	19	79	
	2025	AM	39	32	1	2	10	7	7	38	90	71	13	57	Background Volumes (Projected)
	2025	PM	92	75	3	2	28	16	9	55	118	211	9	99	
	2025	SAT	34	29	1	2	10	6	6	33	79	83	17	65	
		AM	11	0	0	0	2	0	0	0	23	30	3	26	Tower Hills South & M. Community Centre
		PM	29	0	0	0	8	0	0	0	38	34	2	16	
		SAT	17	0	0	0	4	0	0	0	37	25	4	19	
		AM	29	0	0	0	8	0	0	0	67	77	12	65	Development "A" & School
		PM	46	0	0	0	14	0	0	0	55	50	2	24	
		SAT	31	0	0	0	8	0	0	0	69	53	9	41	
		AM	6	0	0	0	2	0	0	0	15	13	2	11	Development "B"
		PM	8	0	0	0	2	0	0	0	9	15	1	7	
		SAT	12	0	0	0	3	0	0	0	26	30	5	23	
		AM	6	0	0	0	1	0	0	0	13	24	4	20	Development "C" 50% Residential
		PM	25	0	0	0	7	0	0	0	32	34	2	16	
		SAT	13	0	0	0	3	0	0	0	29	24	5	19	
	2025	AM	92	32	1	2	23	7	7	38	207	215	34	179	Total Background Volumes 2025
	2025	PM	199	75	3	2	59	16	9	55	252	345	16	161	
	2025	SAT	107	29	1	2	27	6	6	33	240	214	40	168	
	2025	AM	16	0	0	0	4	0	0	0	36	17	3	15	Site Generated Trips 100% Commercial 50% Residential
	2025	PM	27	0	0	0	8	0	0	0	33	69	3	32	
	2025	SAT	21	0	0	0	6	0	0	0	48	40	7	32	
	2025	AM	108	32	1	2	27	7	7	38	243	232	37	194	Total Trips 2025
	2025	PM	226	75	3	2	67	16	9	55	285	414	19	193	
	2025	SAT	128	29	1	2	33	6	6	33	288	254	47	200	

REGISTERED AND PROJECTED VOLUMES

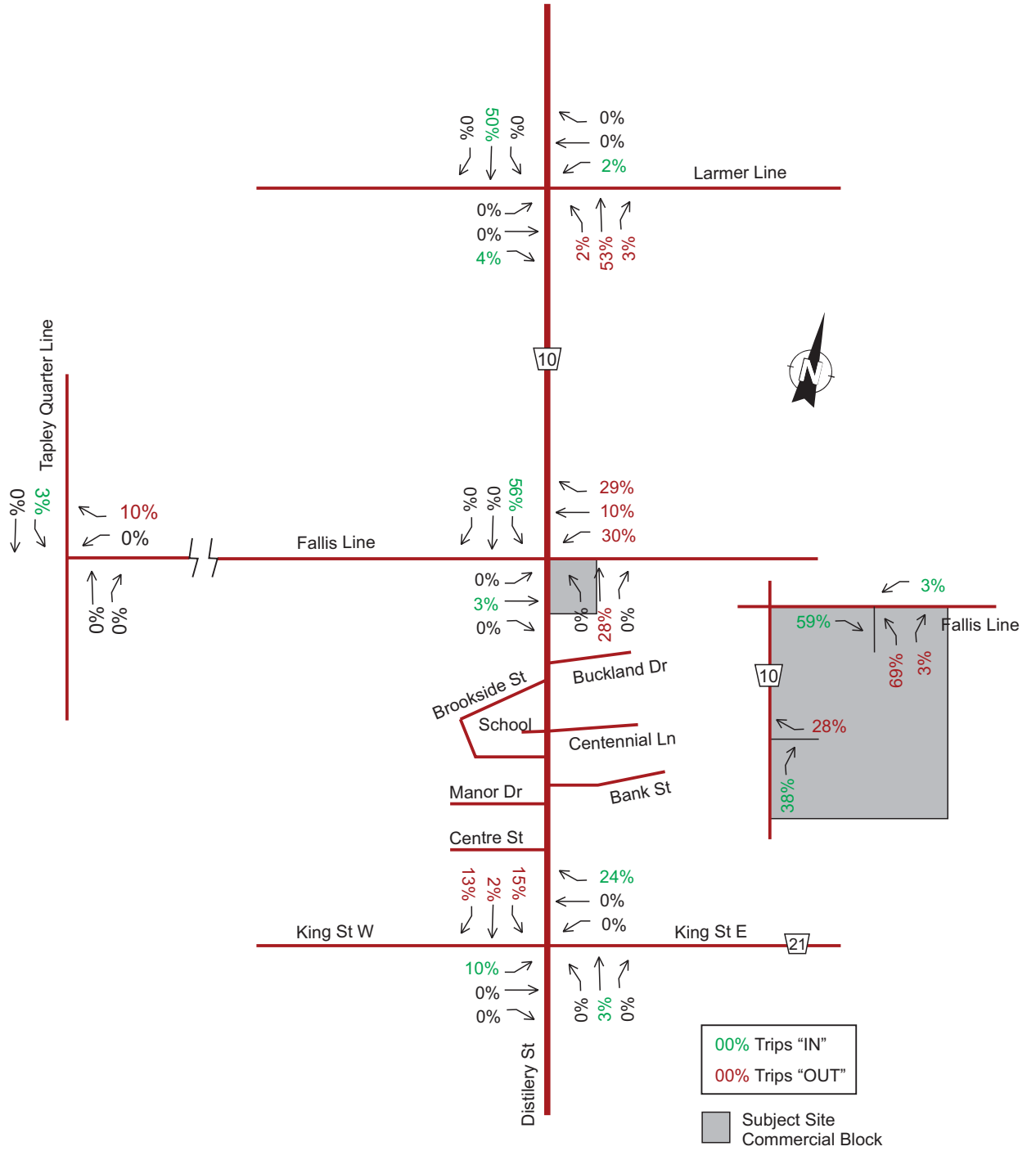
Annual Growth Rate 2.00%															
	2030	AM	43	36	1	3	11	8	8	42	99	79	14	63	Background Volumes (Projected)
	2030	PM	101	82	4	3	30	18	10	61	131	233	10	109	
	2030	SAT	38	32	1	2	11	6	6	37	88	91	18	72	
		AM	11	0	0	0	2	0	0	0	23	30	3	26	Tower Hills South & M. Community Centre
		PM	29	0	0	0	8	0	0	0	38	34	2	16	
		SAT	17	0	0	0	4	0	0	0	37	25	4	19	
		AM	36	0	0	0	10	0	0	0	81	90	14	75	Developments "A" + "B"
		PM	53	0	0	0	16	0	0	0	64	65	3	31	
		SAT	43	0	0	0	10	0	0	0	95	82	14	64	
		AM	11	0	0	0	3	0	0	0	25	47	7	39	Development "C" 100% Residential
		PM	50	0	0	0	15	0	0	0	65	68	3	32	
		SAT	26	0	0	0	7	0	0	0	59	48	9	37	
	2030	AM	101	36	1	3	27	8	8	42	228	245	38	204	Total Background Volumes 2030
	2030	PM	234	82	4	3	69	18	10	61	297	401	18	188	
	2030	SAT	124	32	1	2	32	6	6	37	278	247	46	192	
	2030	AM	17	0	0	0	5	0	0	0	40	21	4	21	Site Generated Trips 100% of Development
	2030	PM	33	0	0	0	10	0	0	0	43	78	4	37	
	2030	SAT	25	0	0	0	7	0	0	0	55	46	8	37	
	2030	AM	118	36	1	3	32	8	8	42	268	266	42	225	Total Trips 2030
	2030	PM	267	82	4	3	79	18	10	61	340	479	22	225	
	2030	SAT	149	32	1	2	39	6	6	37	333	293	54	229	

REGISTERED AND PROJECTED VOLUMES

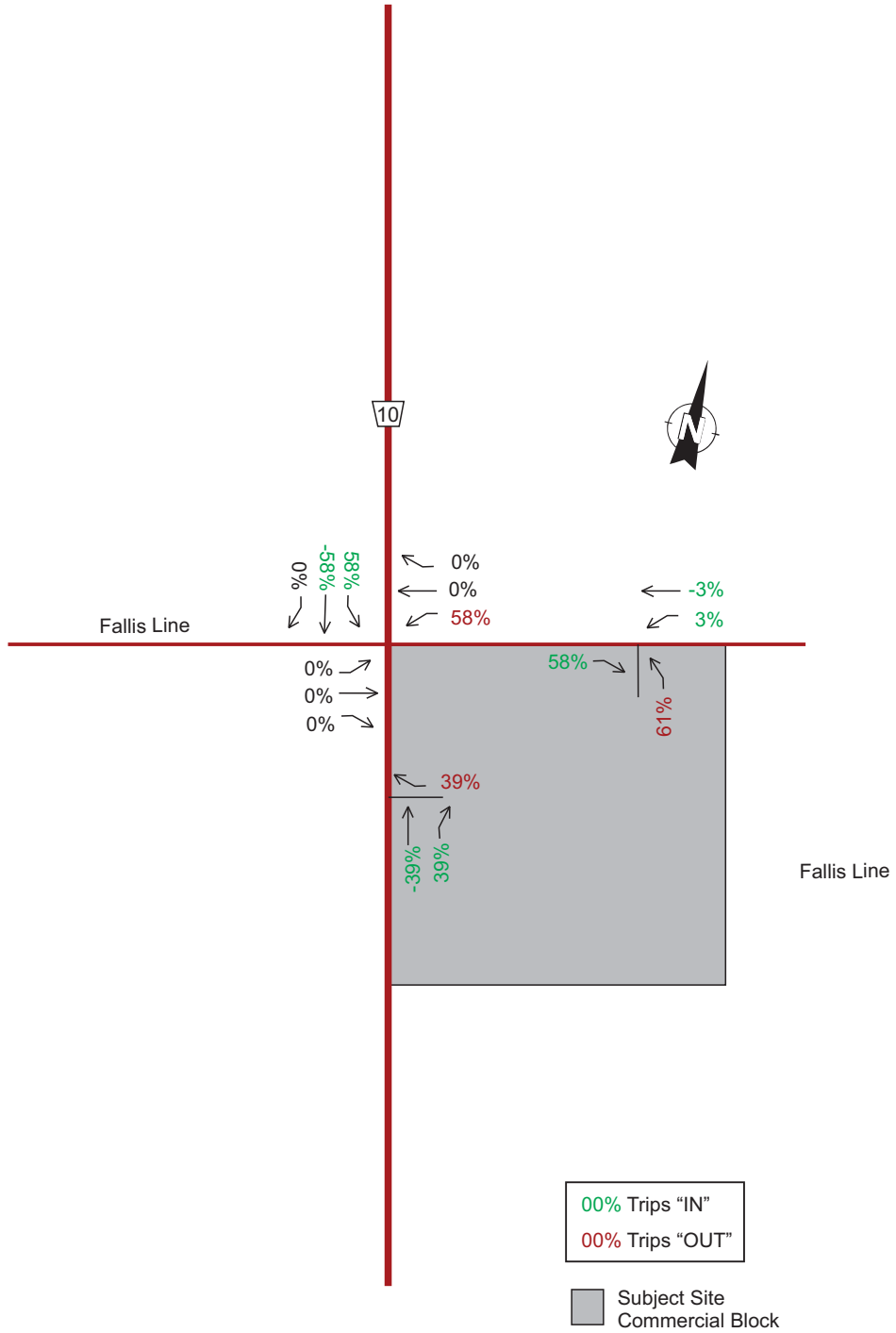
Volumes at AM, PM and SAT Peak Hours

Fallis Line / Tapley Quarter Line			Eastbound			Northbound			Westbound			Southbound			Volume Type
			LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
December	2021	AM	0	0	0	0	37	2	2	0	56	14	19	0	Registered Volumes
December	2021	PM	0	0	0	0	40	2	1	0	22	61	56	0	
December	2021	SAT	0	0	0	0	37	2	3	0	21	25	38	0	
Annual Growth Rate 2.00%															
	2025	AM	0	0	0	0	43	2	2	0	66	16	22	0	Background Volumes (Projected)
	2025	PM	0	0	0	0	47	2	1	0	26	71	66	0	
	2025	SAT	0	0	0	0	43	2	4	0	25	29	45	0	
		AM	0	0	0	0	0	2	1	0	25	14	0	0	Development "A" & School
		PM	0	0	0	0	0	1	1	0	12	18	0	0	
		SAT	0	0	0	0	0	1	2	0	16	18	0	0	
		AM	0	0	0	0	0	1	0	0	2	5	0	0	Development "B"
		PM	0	0	0	0	0	0	0	0	9	3	0	0	
		SAT	0	0	0	0	0	0	0	0	4	6	0	0	
		AM	0	0	0	0	0	0	0	0	15	2	0	0	Development "C" 50% Residential
		PM	0	0	0	0	0	0	0	0	3	15	0	0	
		SAT	0	0	0	0	0	0	1	0	5	7	0	0	
	2025	AM	0	0	0	0	43	5	3	0	108	38	22	0	Total Background Volumes 2025
	2025	PM	0	0	0	0	47	3	2	0	50	108	66	0	
	2025	SAT	0	0	0	0	43	4	7	0	49	60	45	0	
	2025	AM	0	0	0	0	0	0	0	0	11	5	0	0	Site Generated Trips 100% Commercial 50% Residential
	2025	PM	0	0	0	0	0	0	0	0	7	14	0	0	
	2025	SAT	0	0	0	0	0	0	1	0	8	11	0	0	
	2025	AM	0	0	0	0	43	5	3	0	119	43	22	0	Total Trips 2025
	2025	PM	0	0	0	0	47	3	2	0	57	122	66	0	
	2025	SAT	0	0	0	0	43	4	8	0	57	71	45	0	
Annual Growth Rate 2.00%															
	2030	AM	0	0	0	0	44	2	2	0	67	17	23	0	Background Volumes (Projected)
	2030	PM	0	0	0	0	48	2	1	0	26	73	67	0	
	2030	SAT	0	0	0	0	44	2	4	0	25	30	45	0	
		AM	0	0	0	0	0	3	1	0	27	19	0	0	Developments "A" + "B"
		PM	0	0	0	0	0	1	1	0	21	21	0	0	
		SAT	0	0	0	0	0	2	3	0	19	23	0	0	
		AM	0	0	0	0	0	0	1	0	28	3	0	0	Development "C" 100% Residential
		PM	0	0	0	0	0	1	0	0	6	28	0	0	
		SAT	0	0	0	0	0	1	2	0	10	13	0	0	
	2030	AM	0	0	0	0	44	5	4	0	122	39	23	0	Total Background Volumes 2030
	2030	PM	0	0	0	0	48	4	2	0	53	122	67	0	
	2030	SAT	0	0	0	0	44	5	8	0	54	66	45	0	
	2030	AM	0	0	0	0	0	0	0	0	14	5	0	0	Site Generated Trips 100% of Development
	2030	PM	0	0	0	0	0	0	0	0	8	19	0	0	
	2030	SAT	0	0	0	0	0	0	1	0	10	12	0	0	
	2030	AM	0	0	0	0	44	5	4	0	136	44	23	0	Total Trips 2030
	2030	PM	0	0	0	0	48	4	2	0	61	141	67	0	
	2030	SAT	0	0	0	0	44	5	9	0	64	78	45	0	

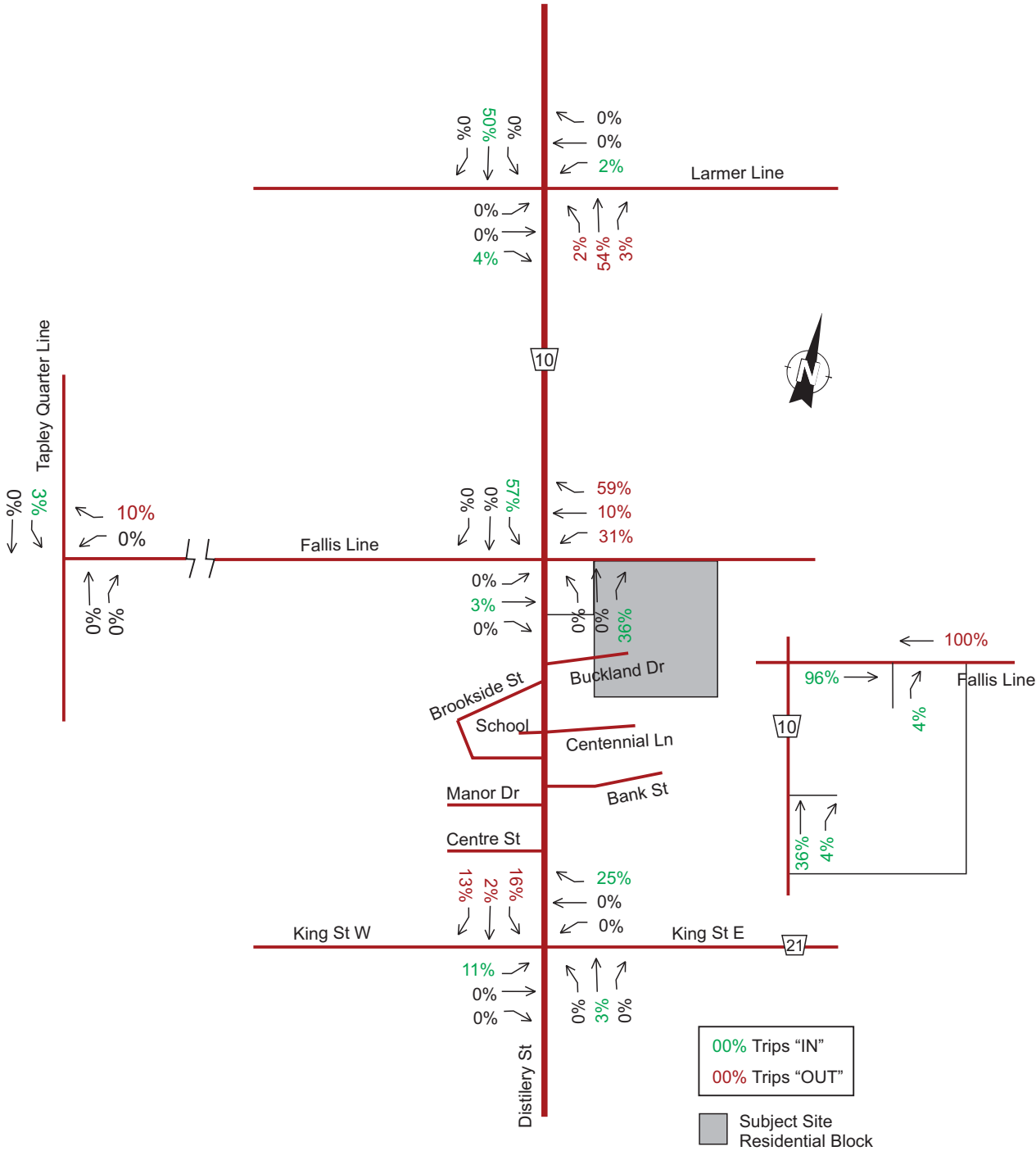
AM Distribution of Trips (Commercial Block East of CR10)



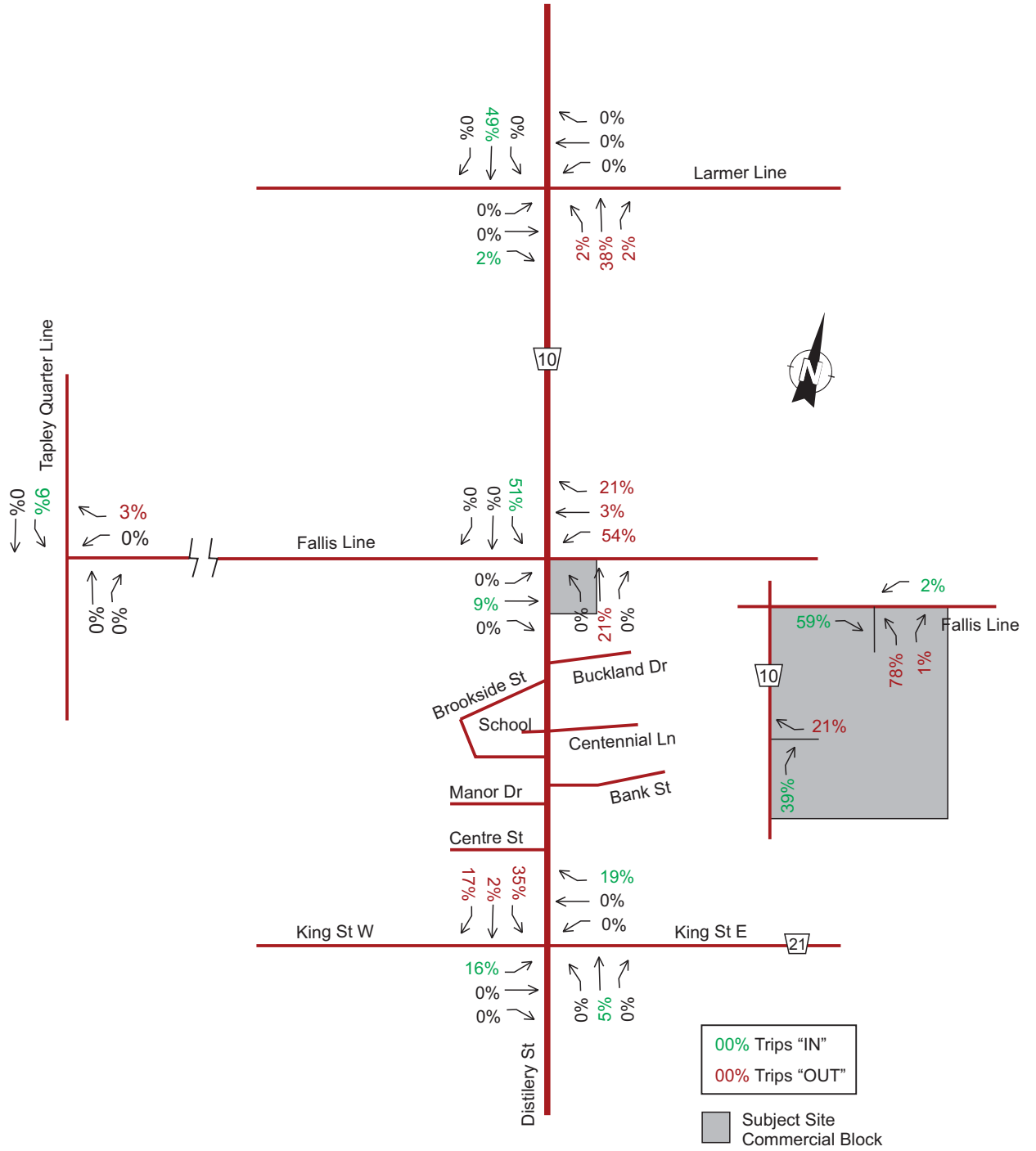
AM Distribution of Pass-By Trips (Commercial Block East of CR10)



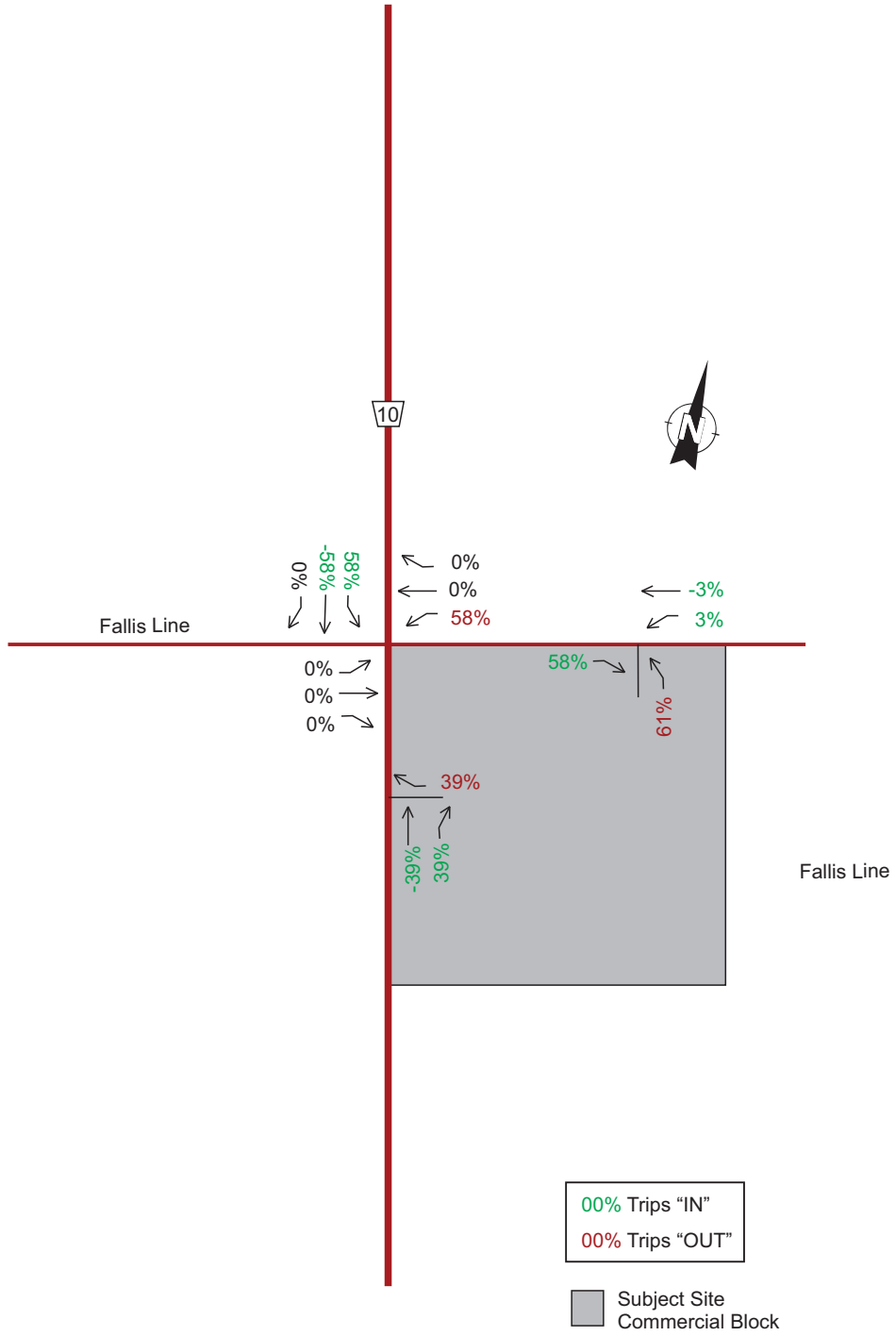
AM Distribution of Trips (Residential Block East of CR10)



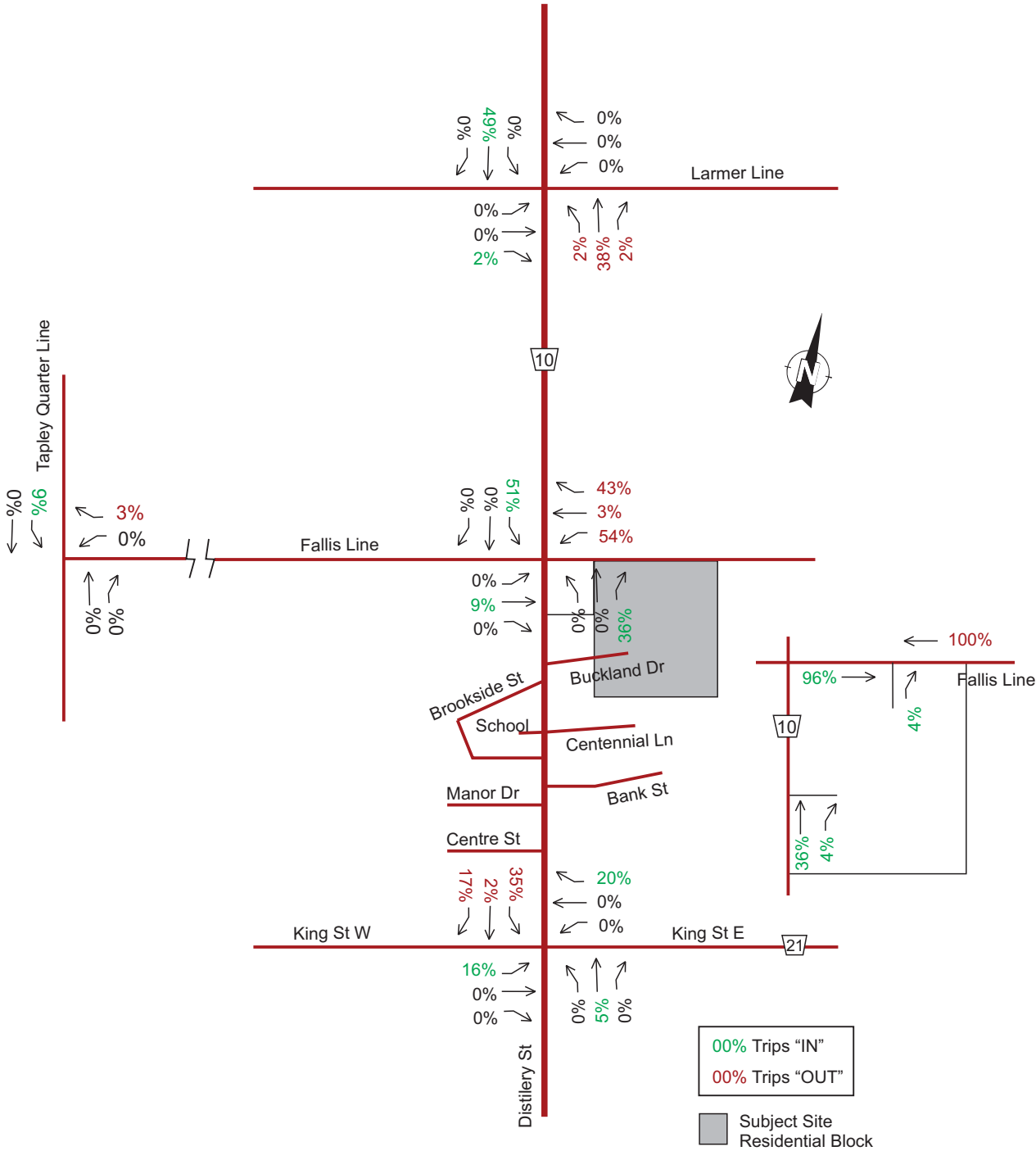
PM Distribution of Trips (Commercial Block East of CR10)



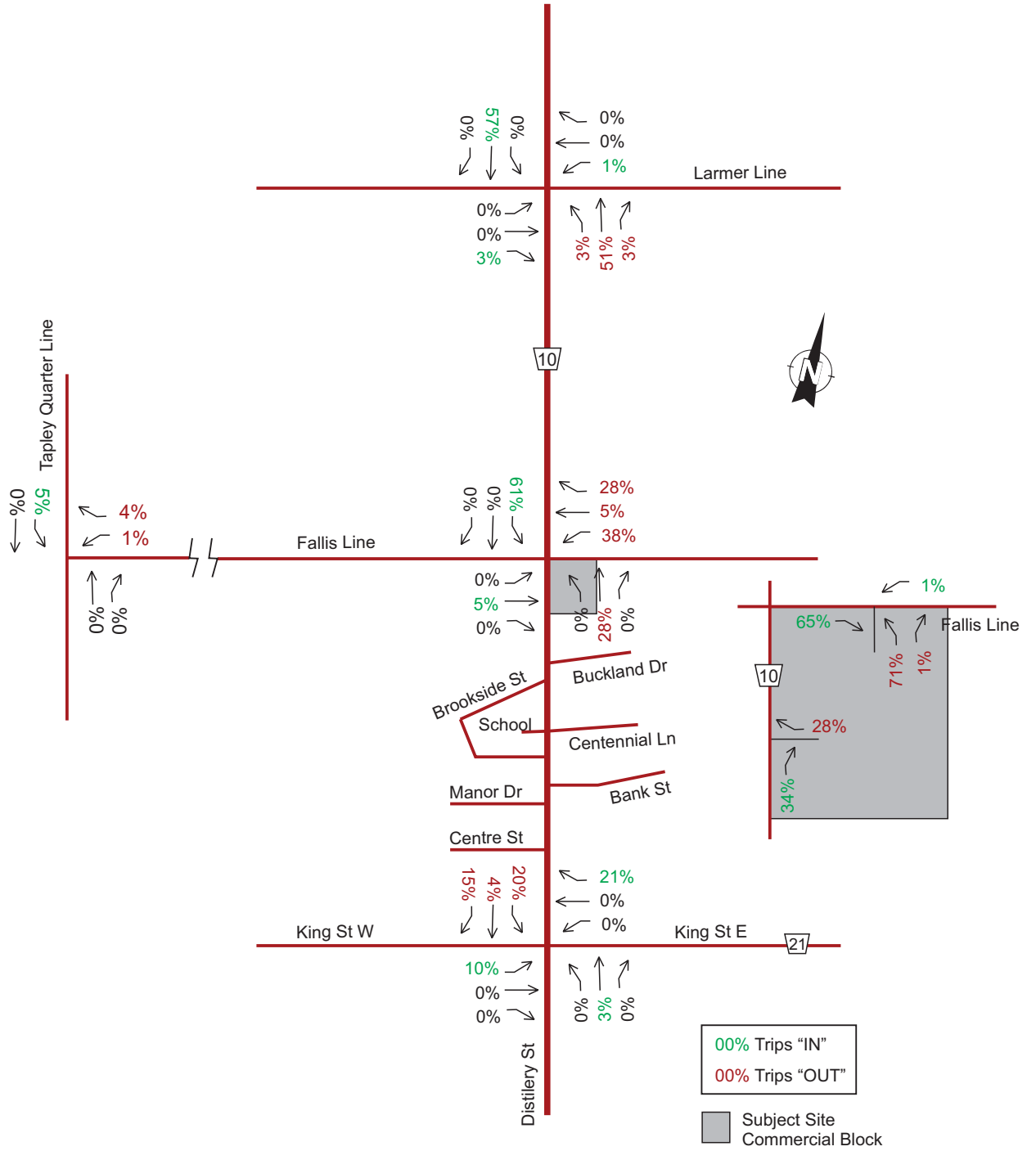
PM Distribution of Pass-By Trips (Commercial Block East of CR10)



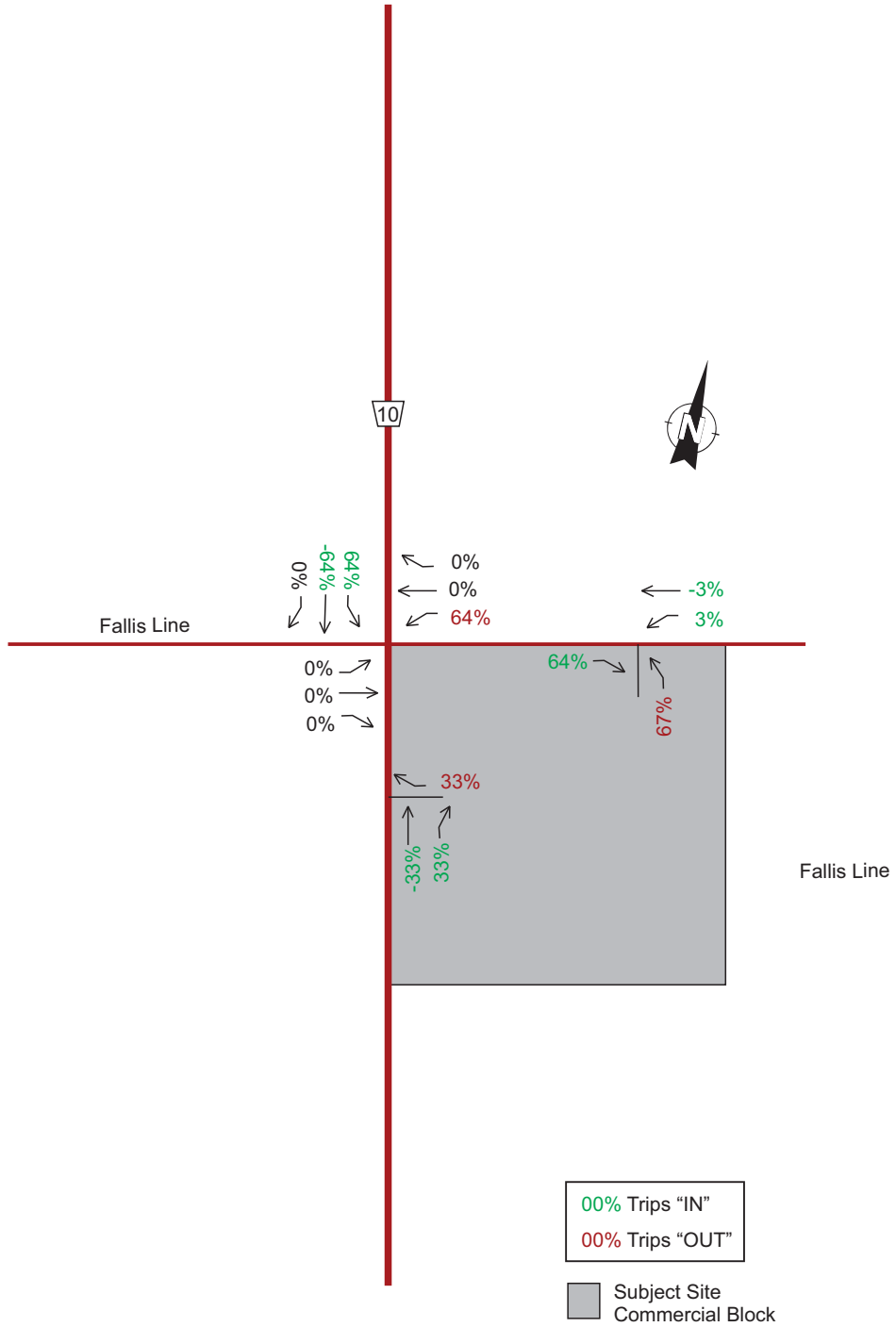
PM Distribution of Trips (Residential Block East of CR10)



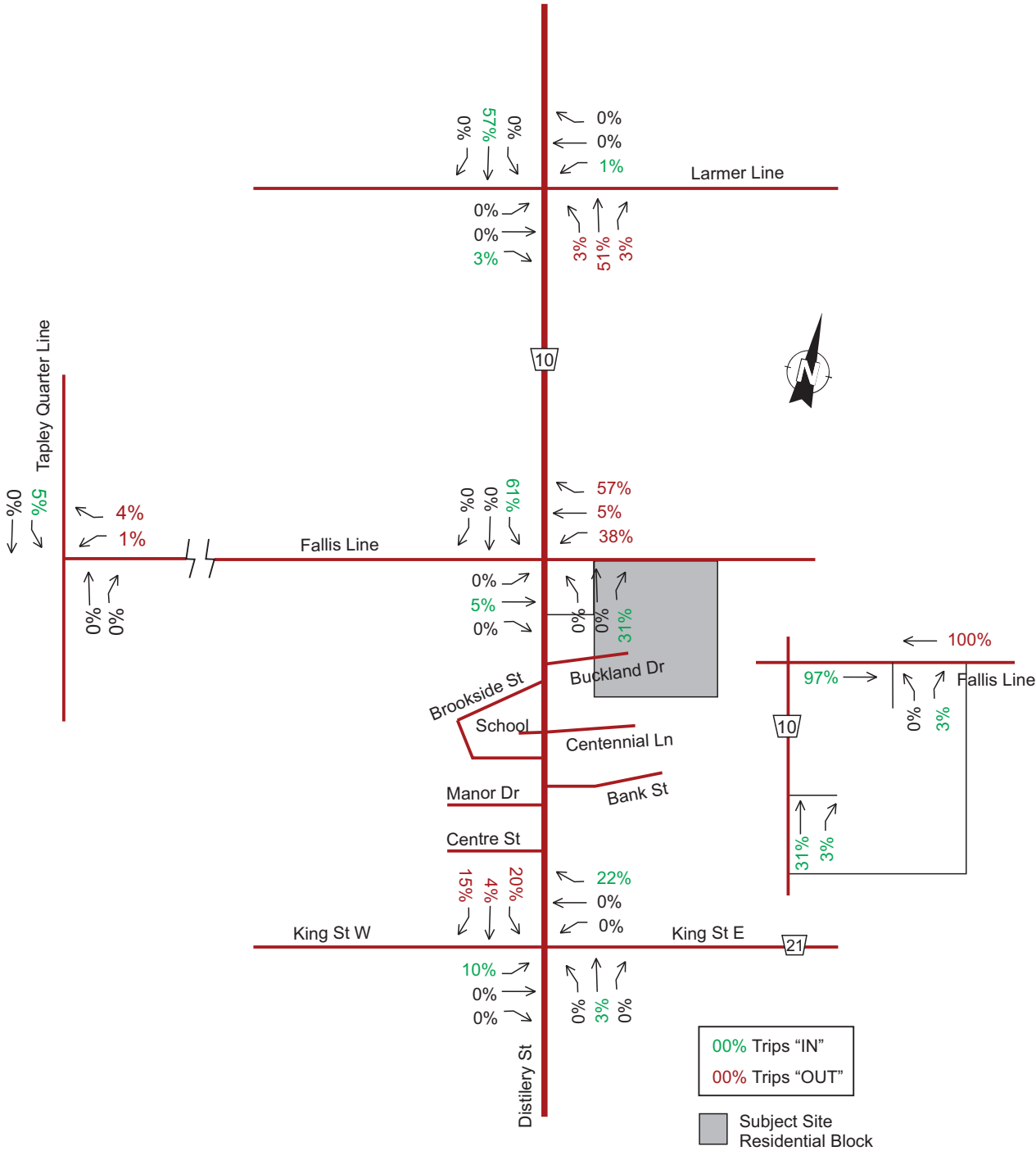
SAT Distribution of Trips (Commercial Block East of CR10)



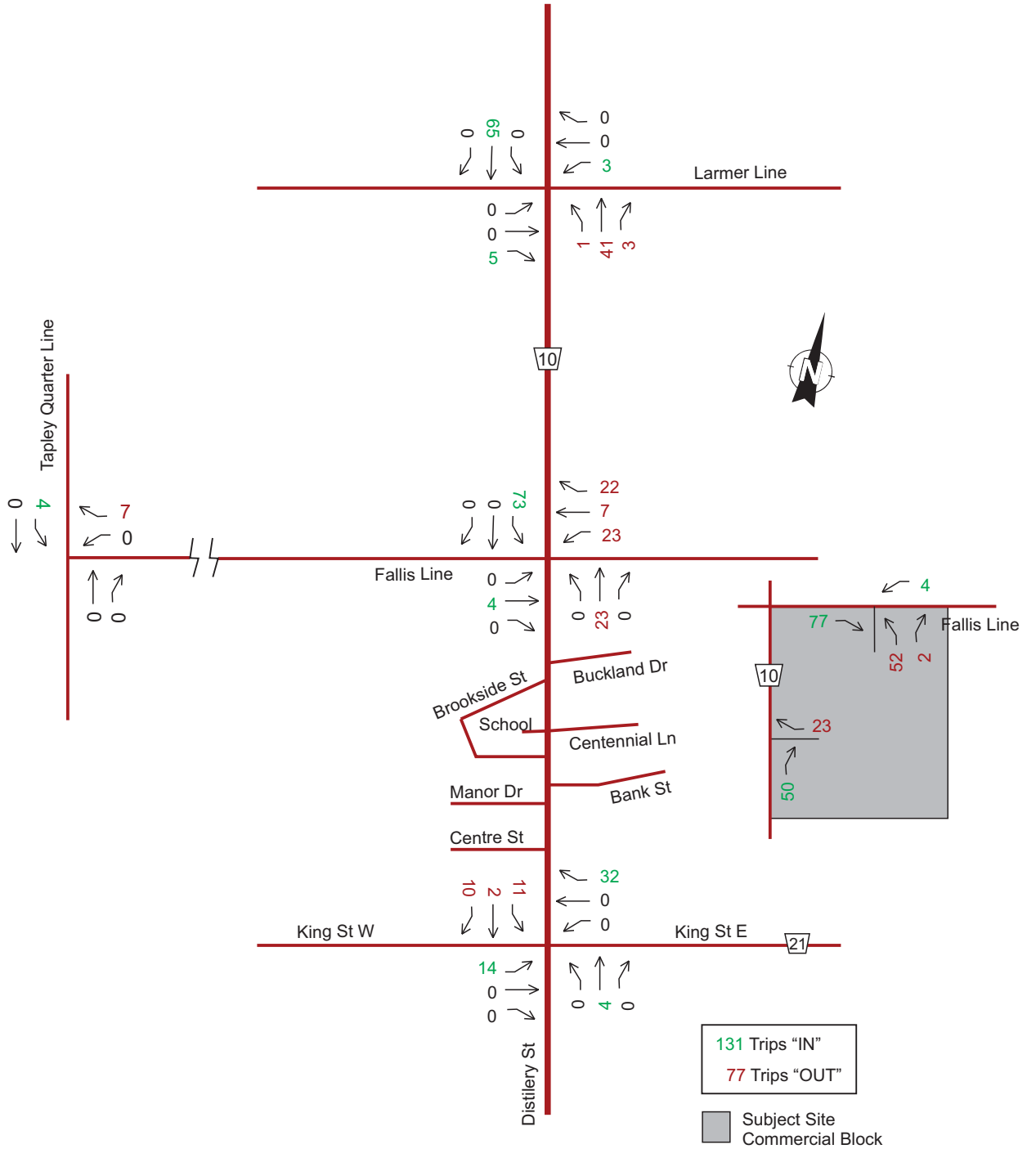
SAT Distribution of Pass-By Trips (Commercial Block East of CR10)



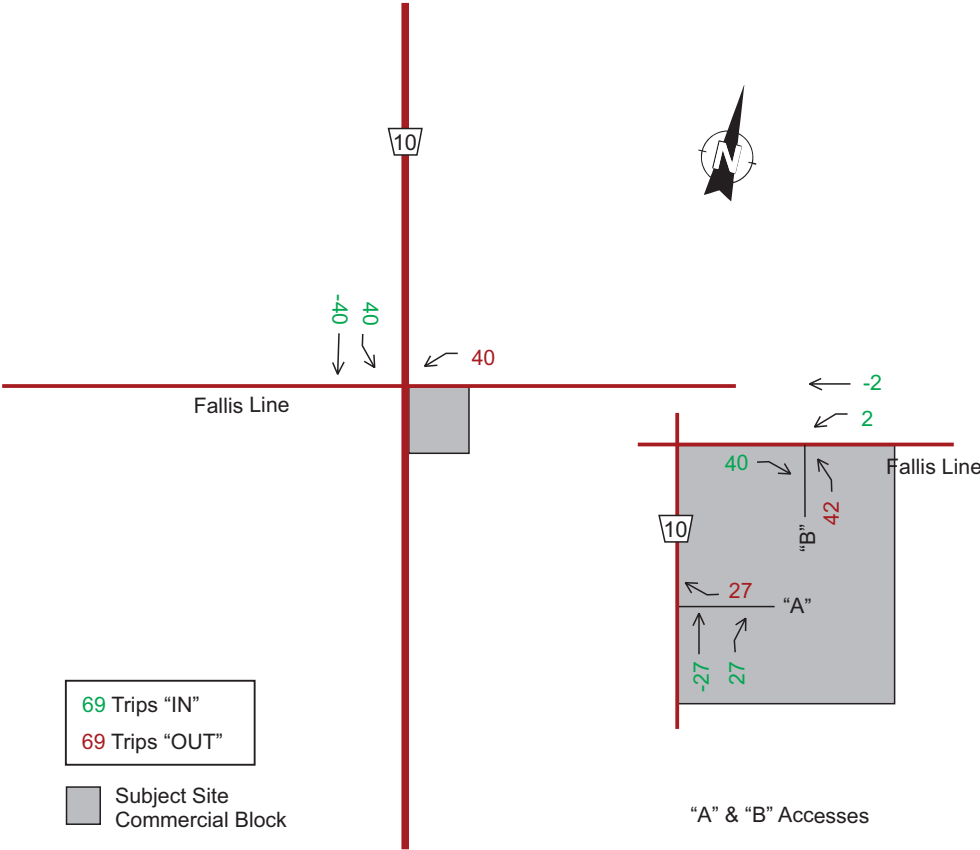
SAT Distribution of Trips (Residential Block East of CR10)



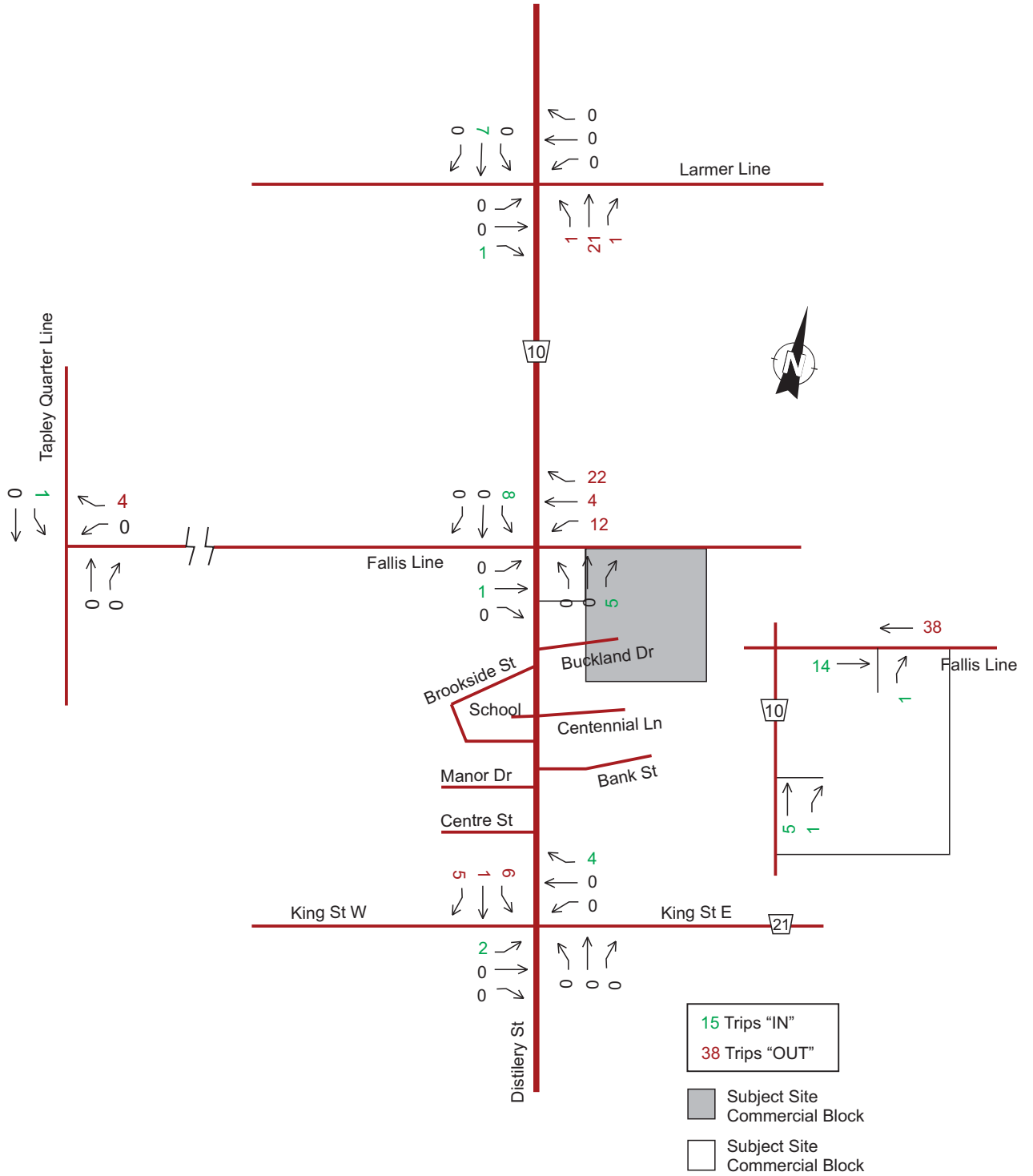
AM Site Generated Trips - 2025 & 2030 (Commercial Block East of CR10)



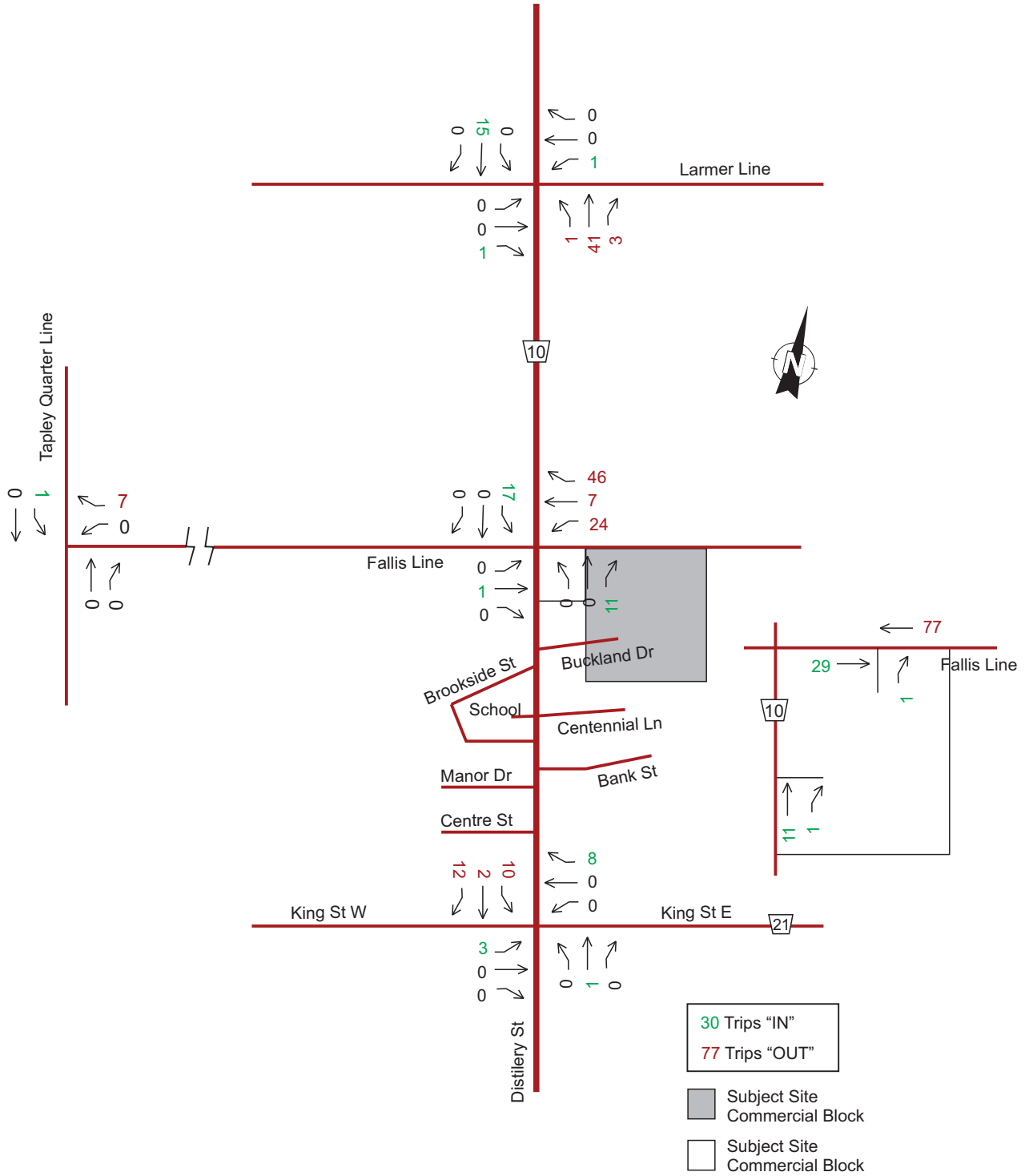
AM Site Pass-By Trips - 2025 & 2030 (Commercial Block East of CR10)



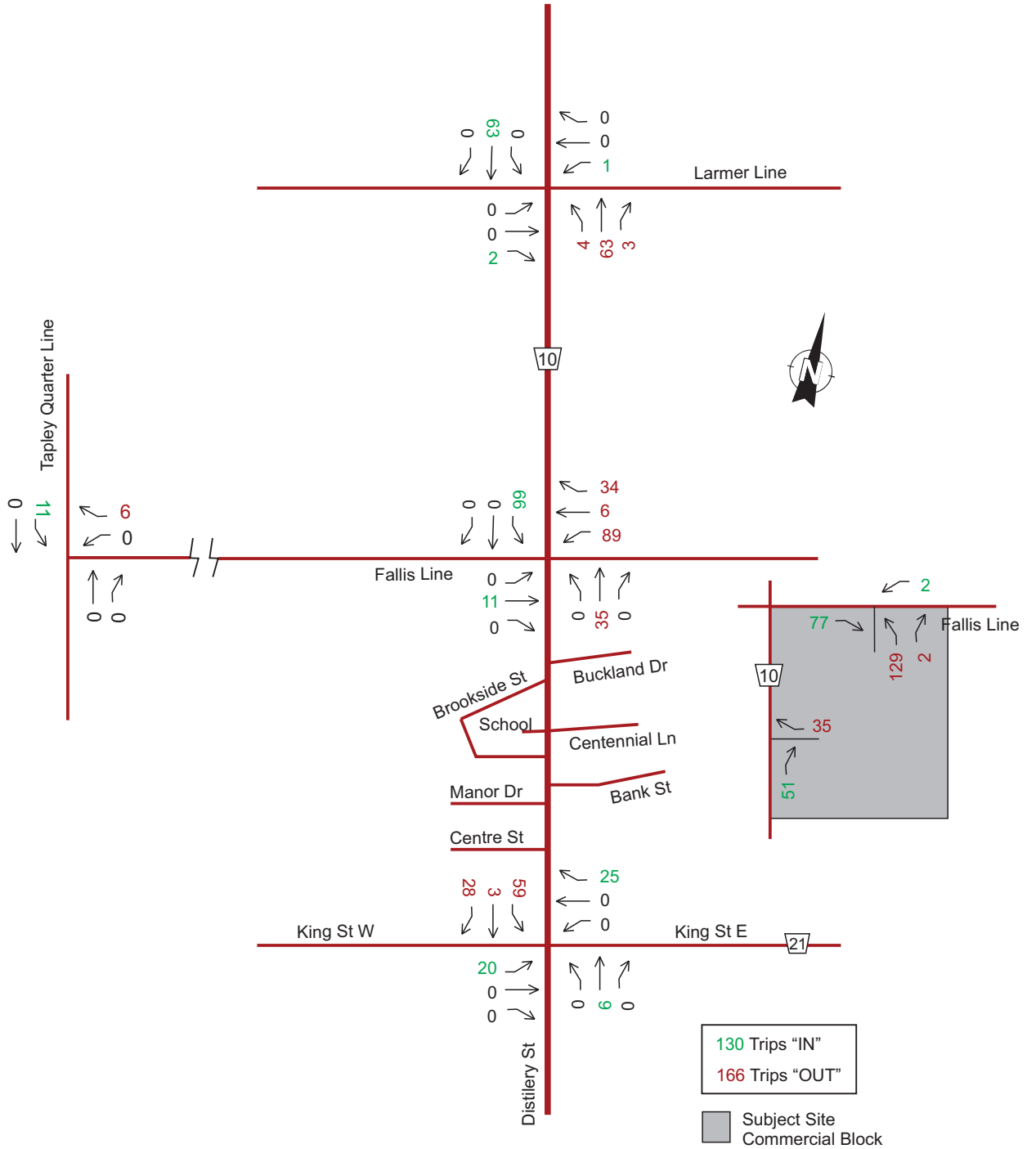
AM Site Generated Trips - 2025 (Residential Block East of CR10)



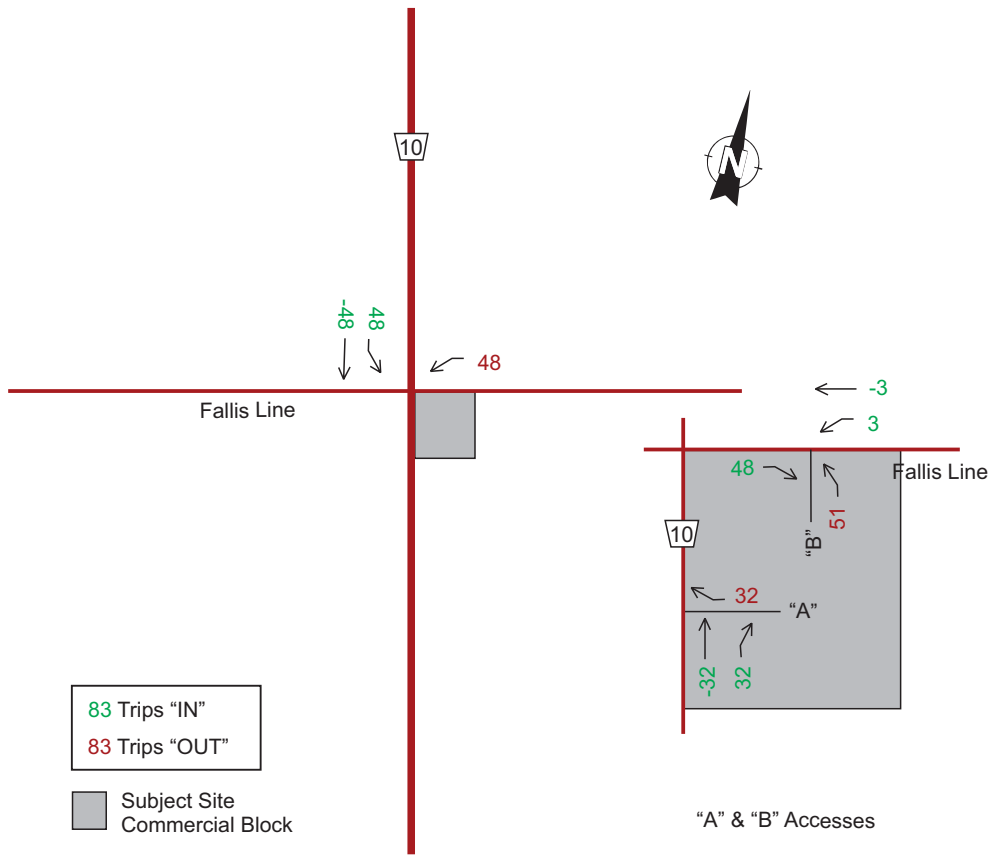
AM Site Generated Trips - 2030 (Residential Block East of CR10)



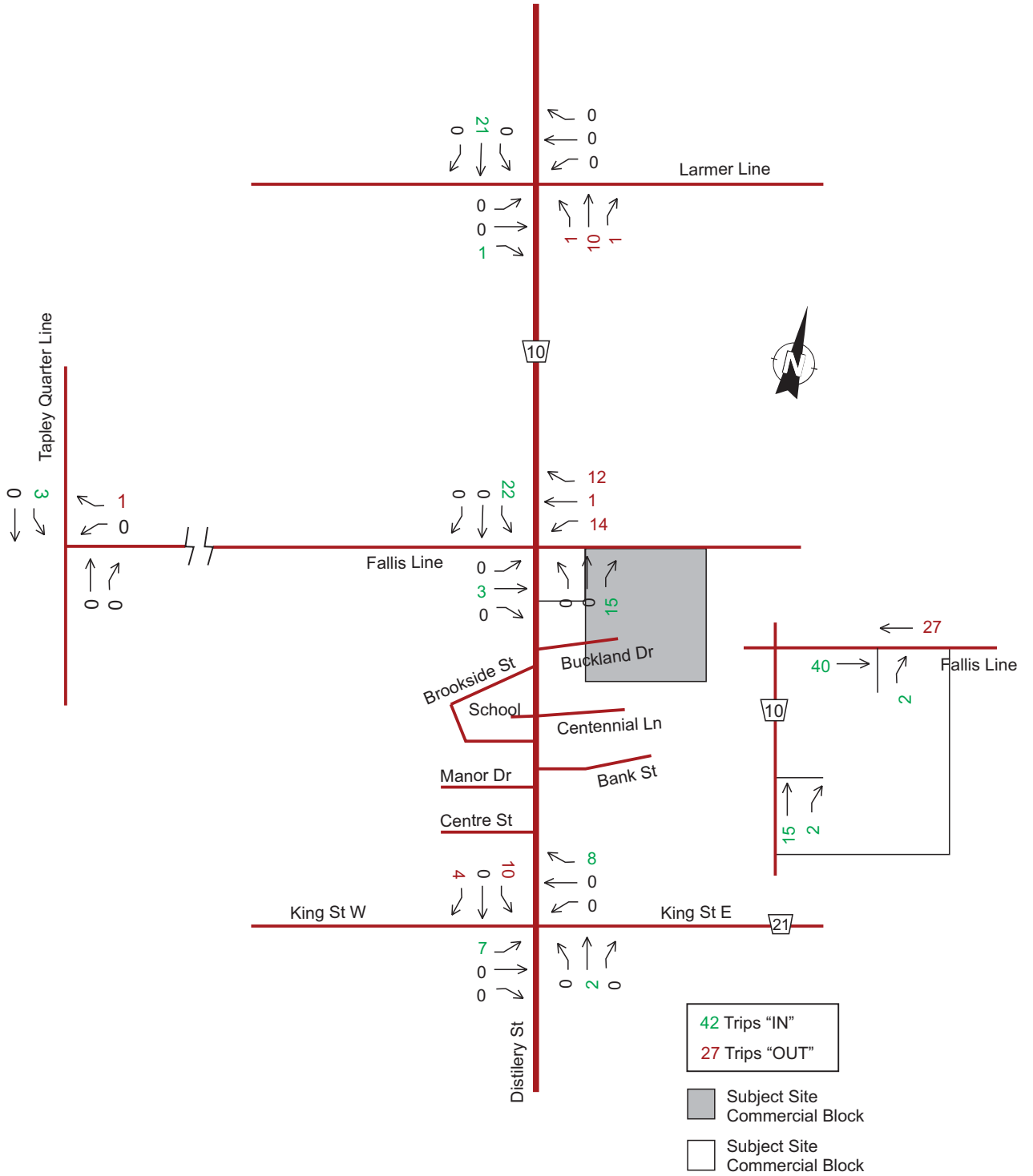
PM Site Generated Trips - 2025 & 2030 (Commercial Block East of CR10)



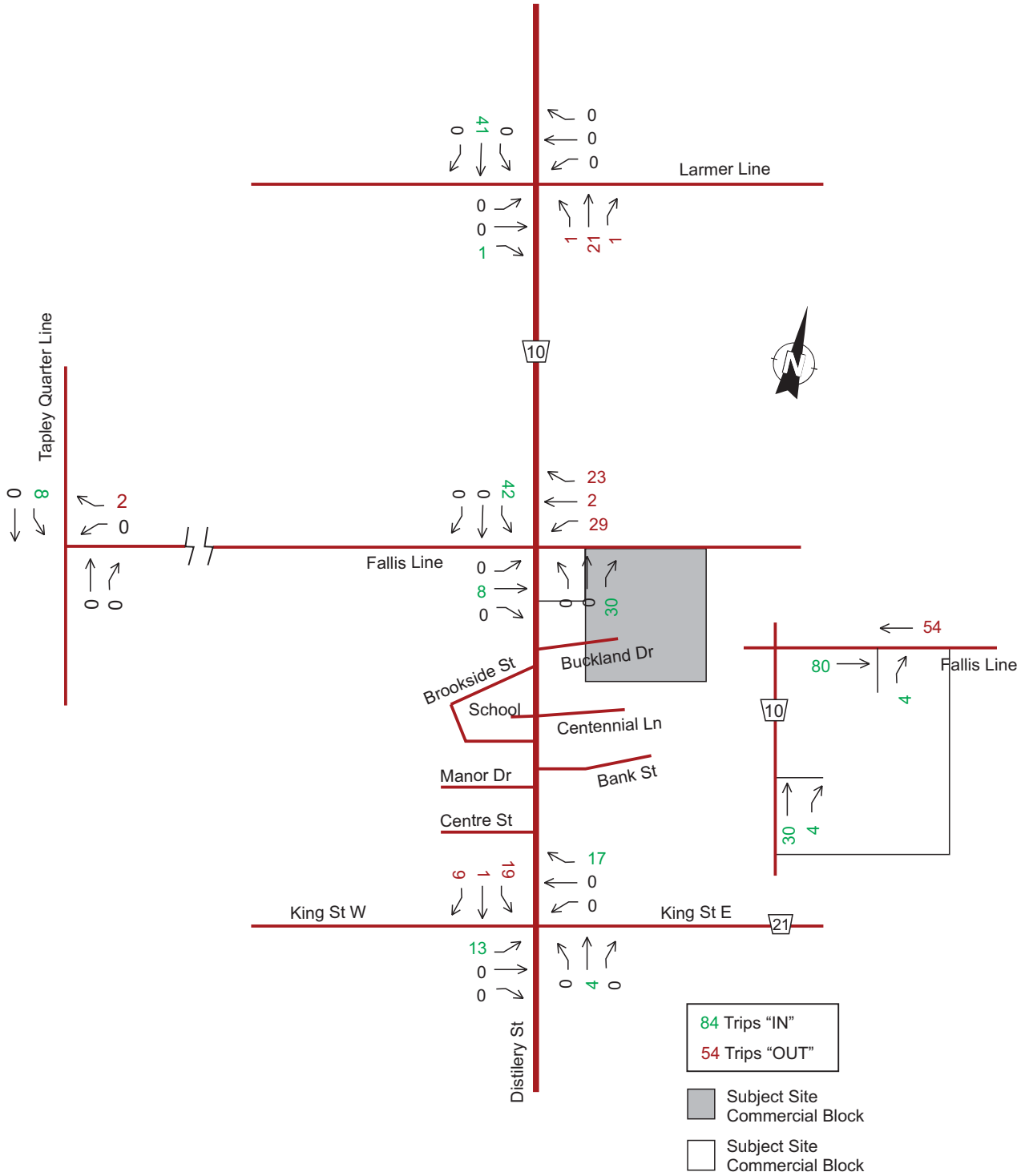
PM Site Pass-By Trips - 2025 & 2030 (Commercial Block East of CR10)



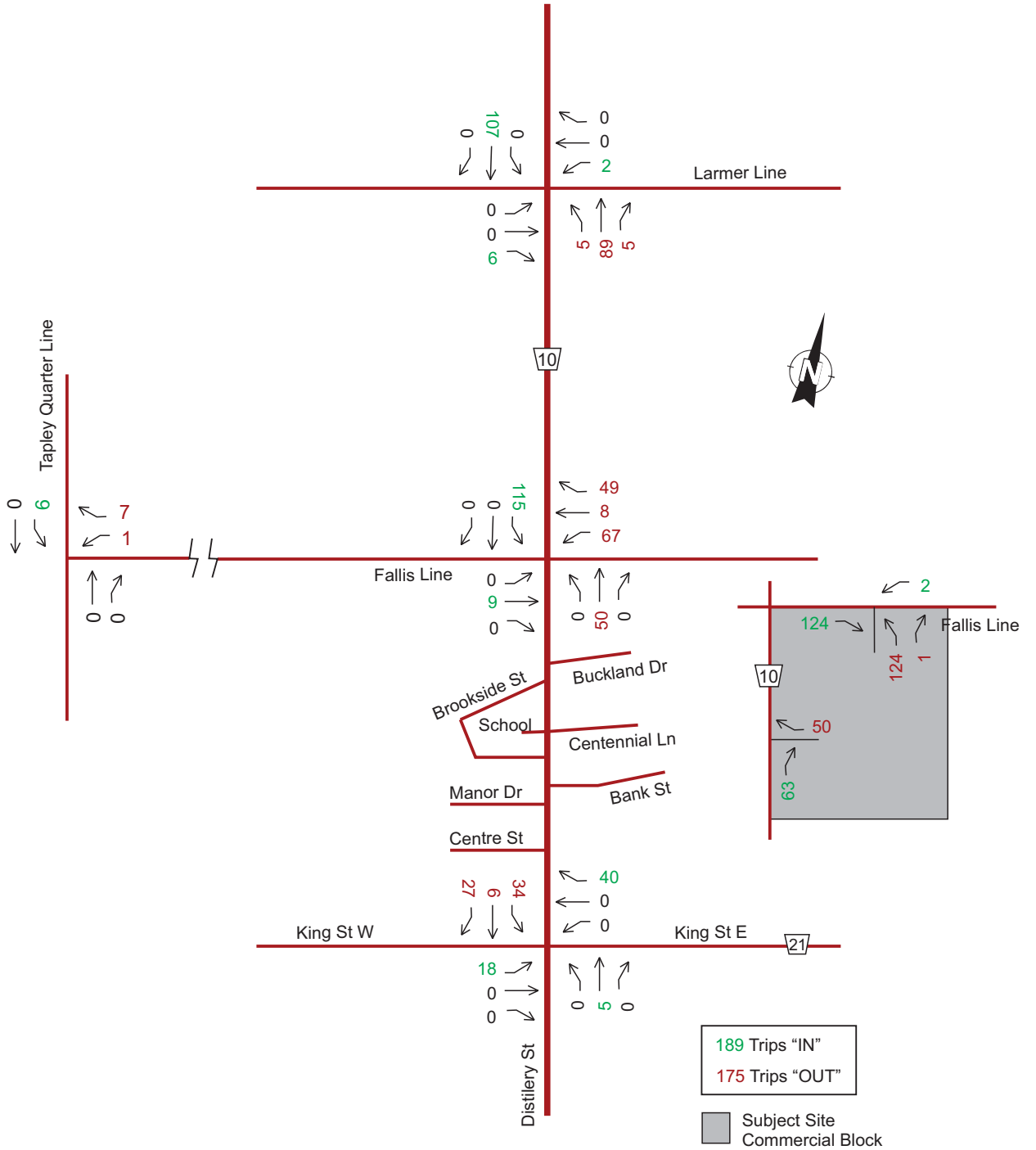
PM Site Generated Trips - 2025 (Residential Block East of CR10)



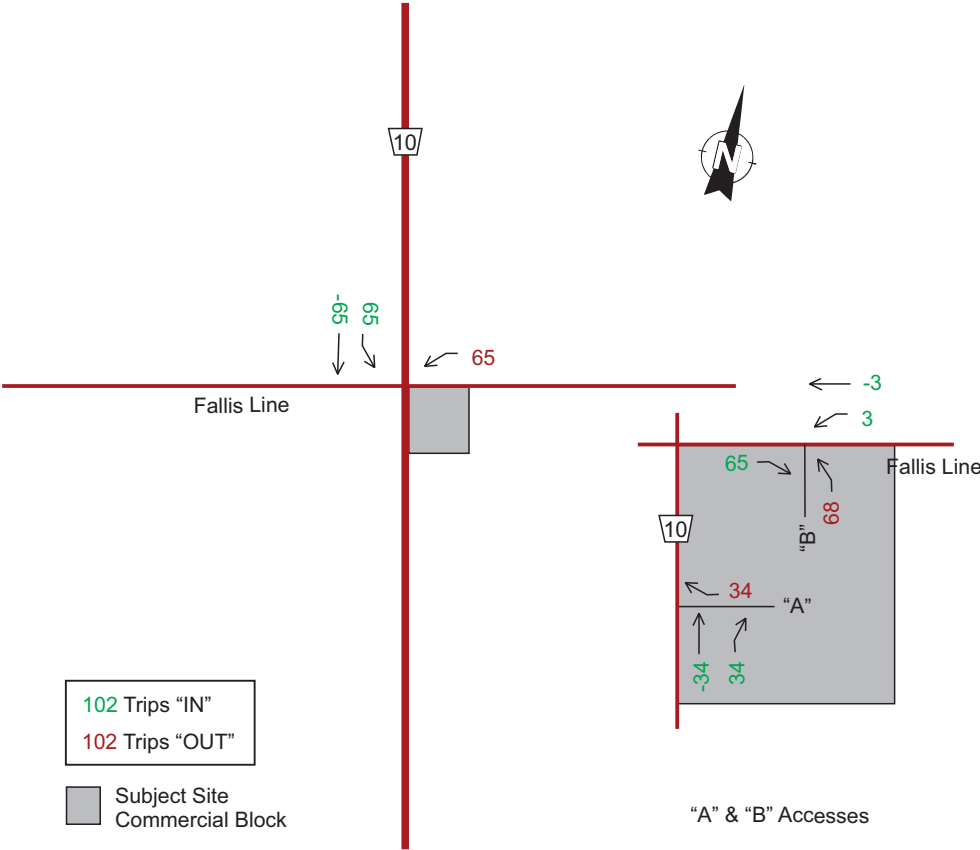
PM Site Generated Trips - 2030 (Residential Block East of CR10)



SAT Site Generated Trips - 2025 & 2030 (Commercial Block East of CR10)

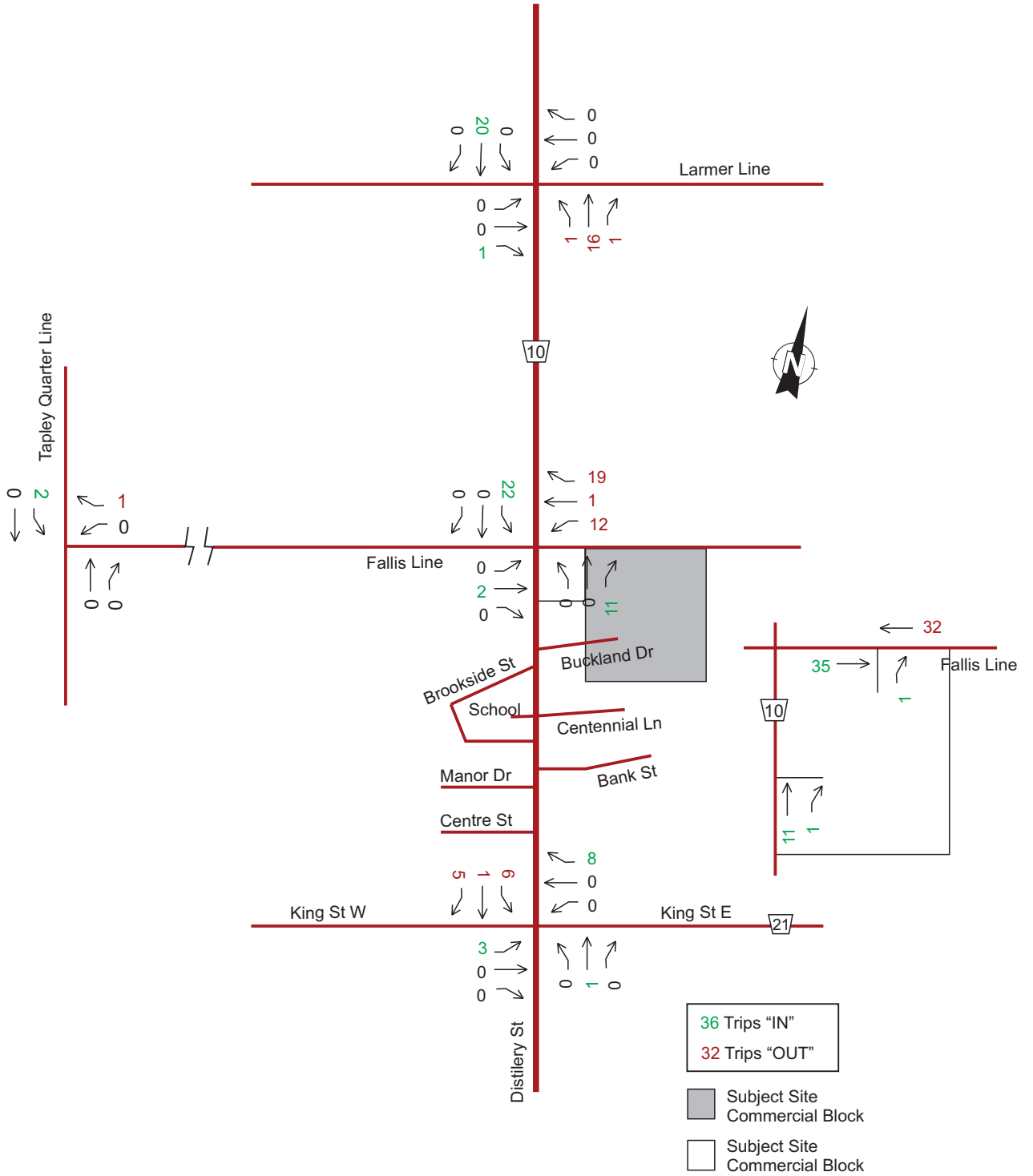


SAT Site Pass-By Trips - 2025 & 2030 (Commercial Block East of CR10)

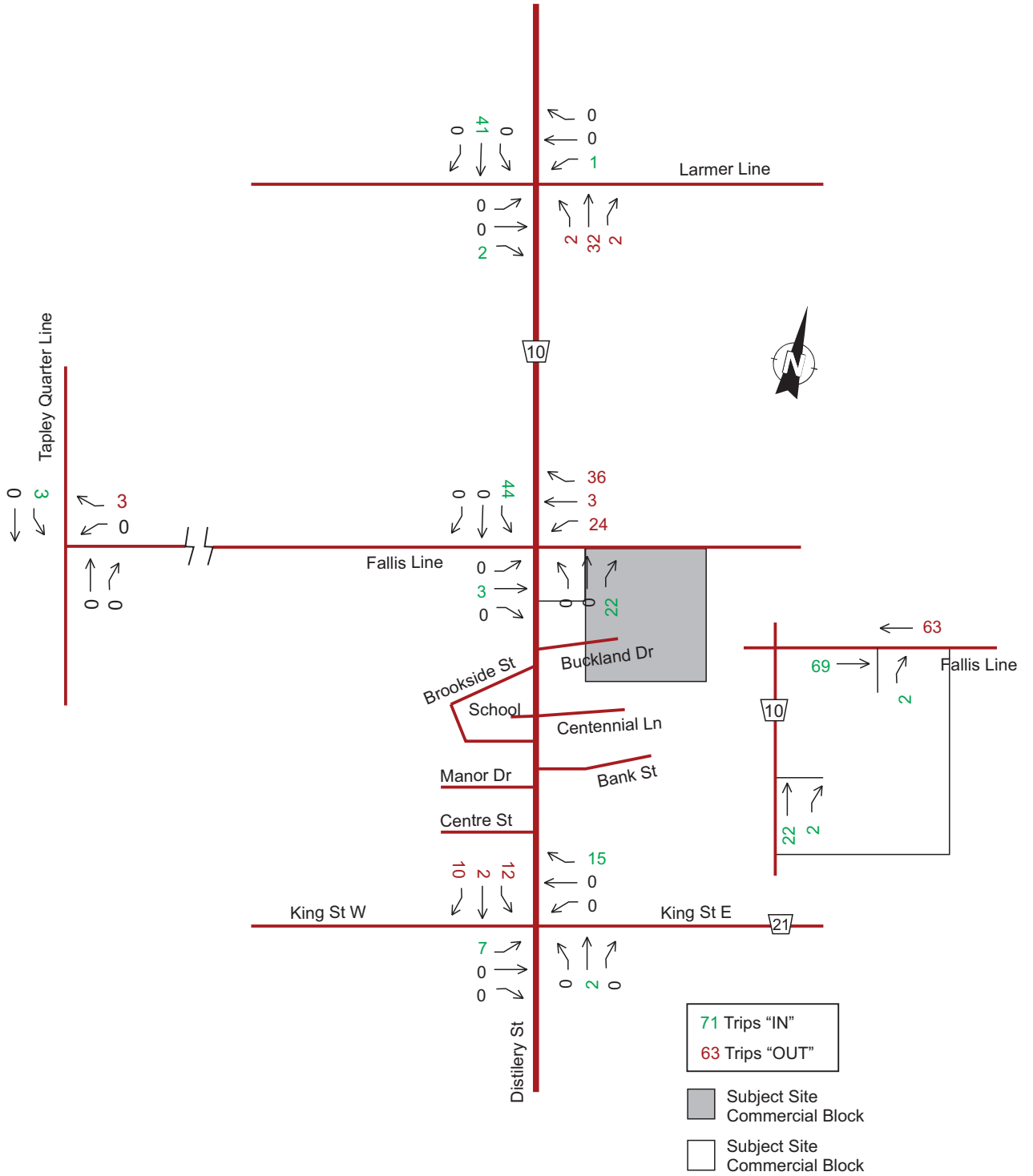


SAT Site Generated Trips - 2025

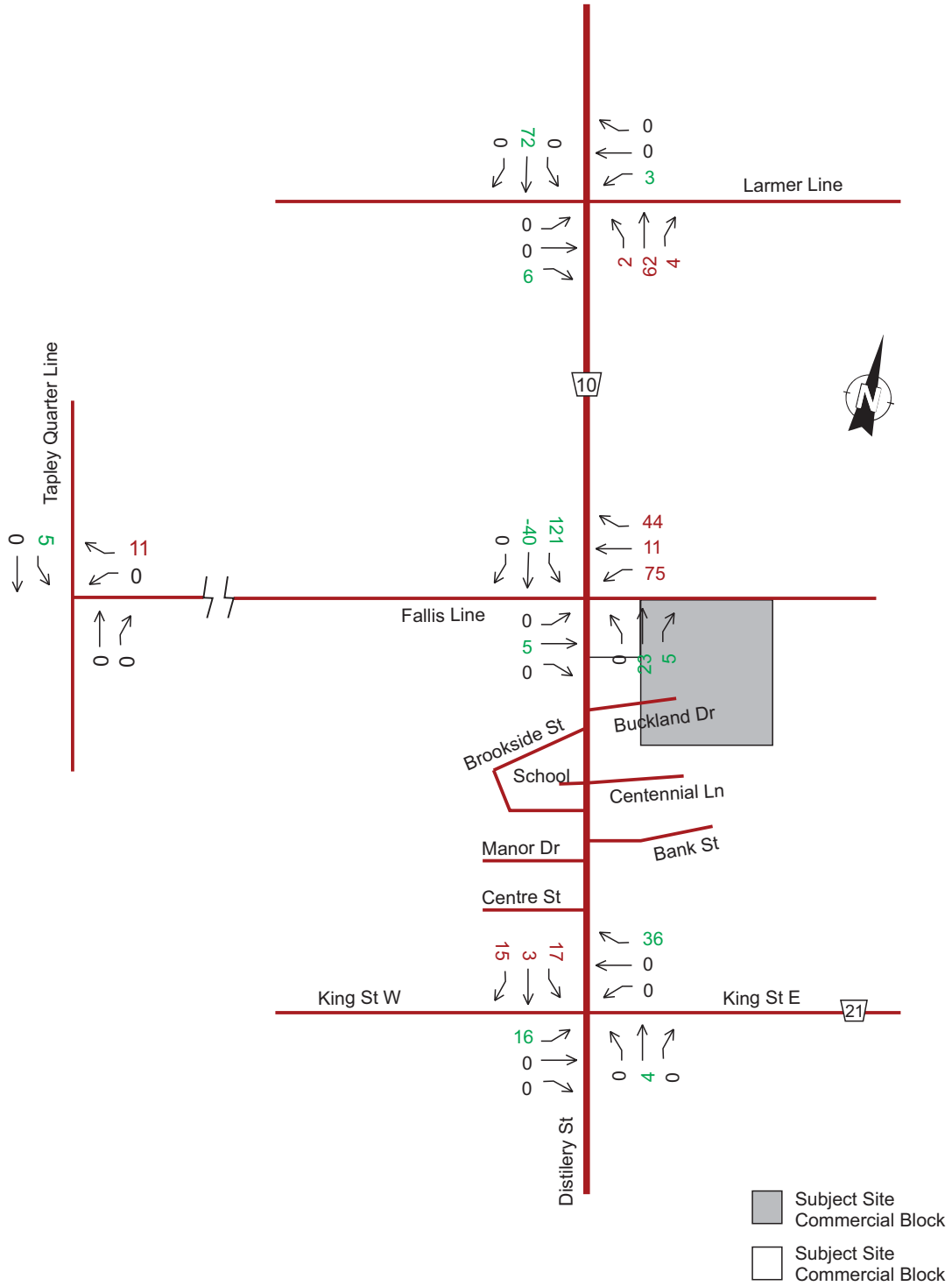
(Residential Block East of CR10)



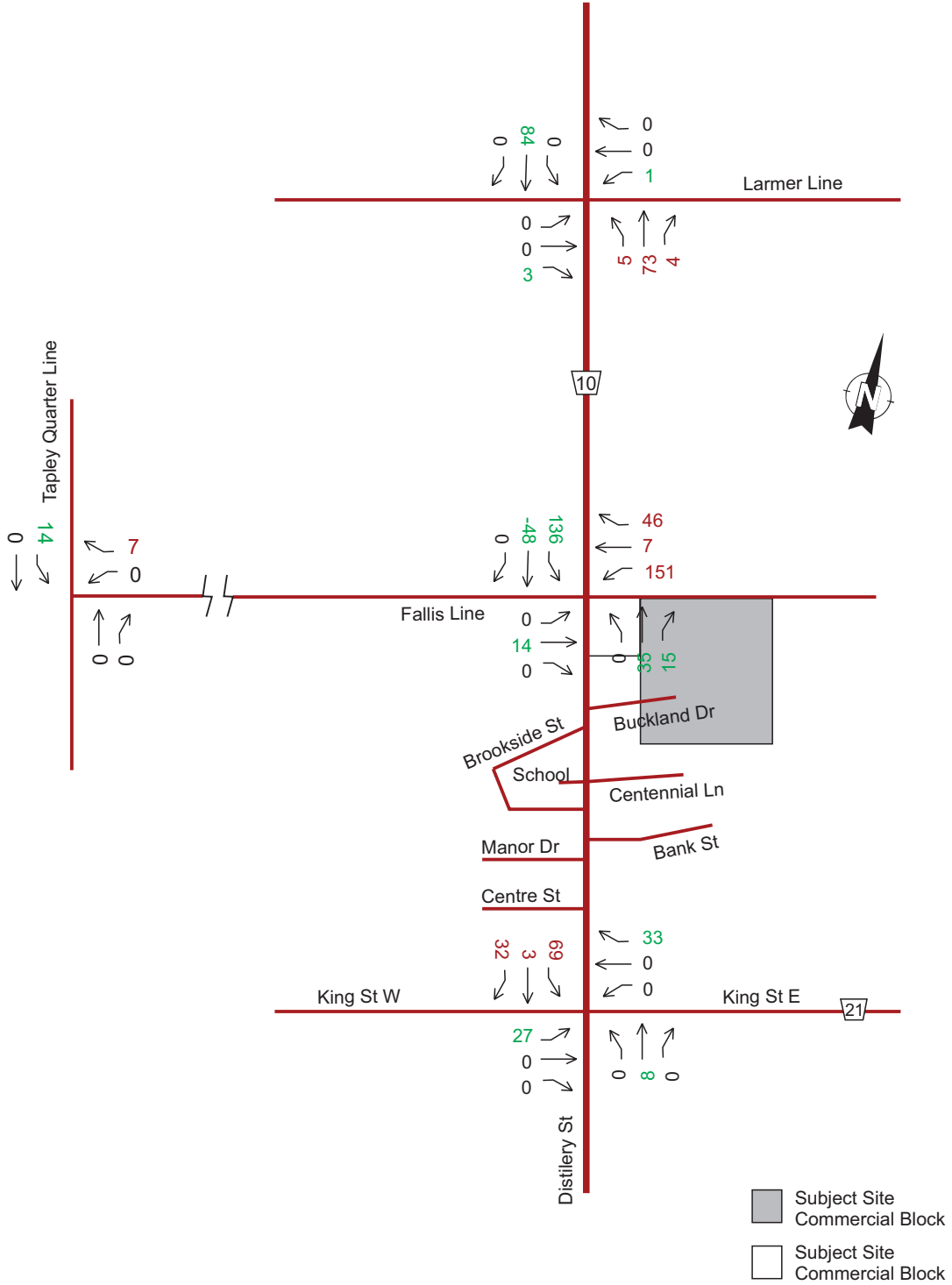
SAT Site Generated Trips - 2030 (Residential Block East of CR10)



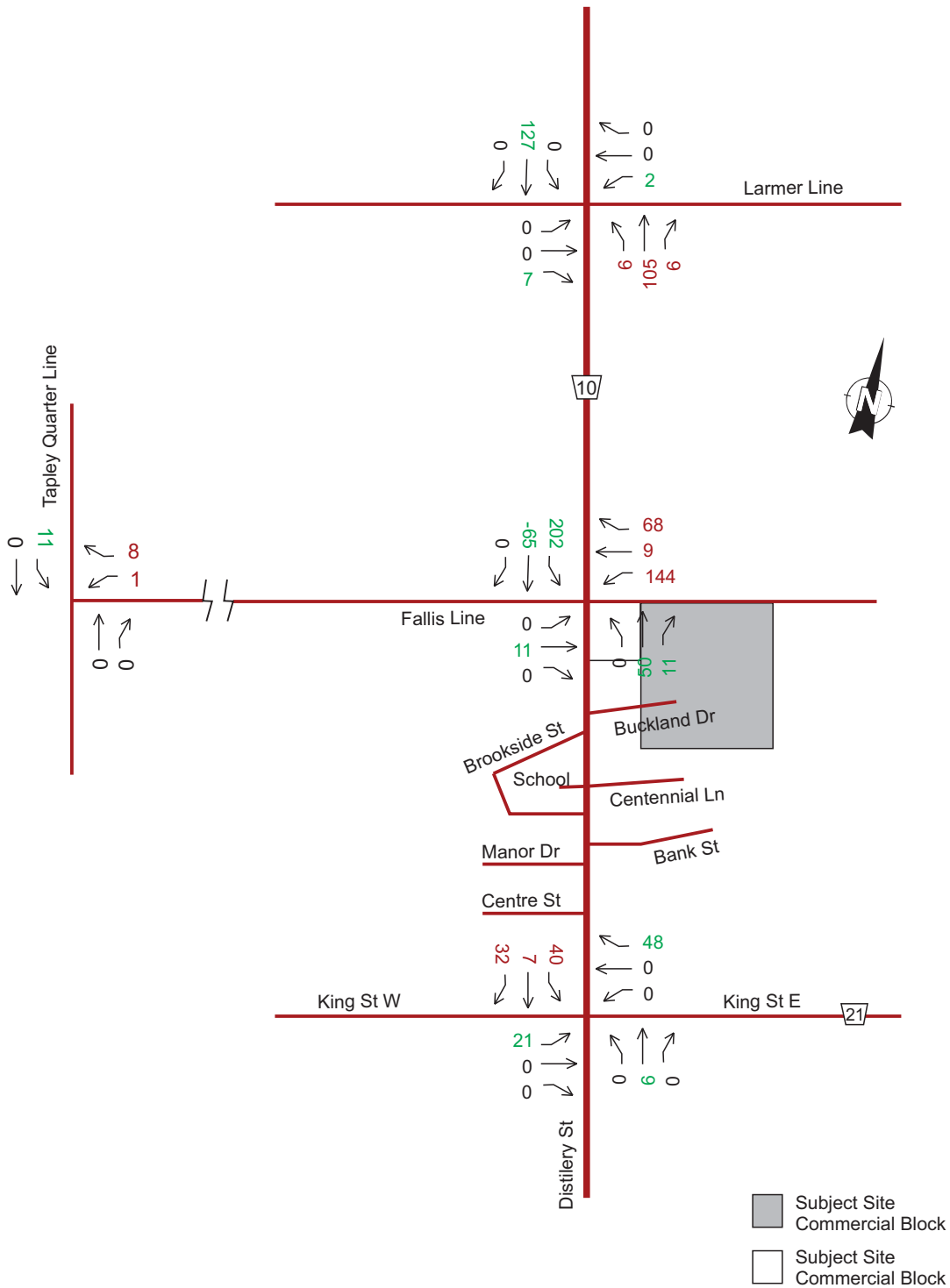
AM Site Generated Trips - 2025 (East of CR10)



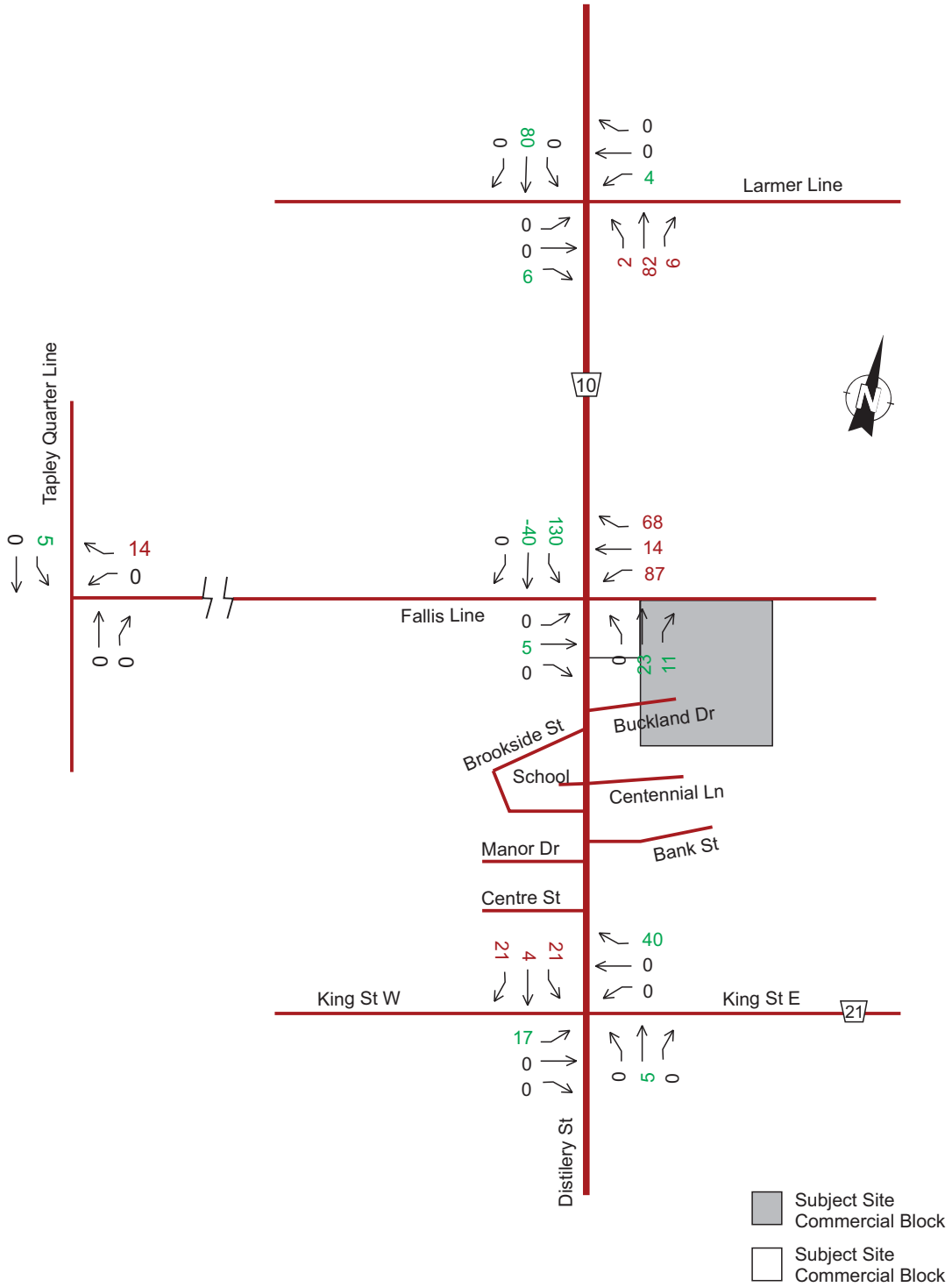
PM Site Generated Trips - 2025 (East of CR10)



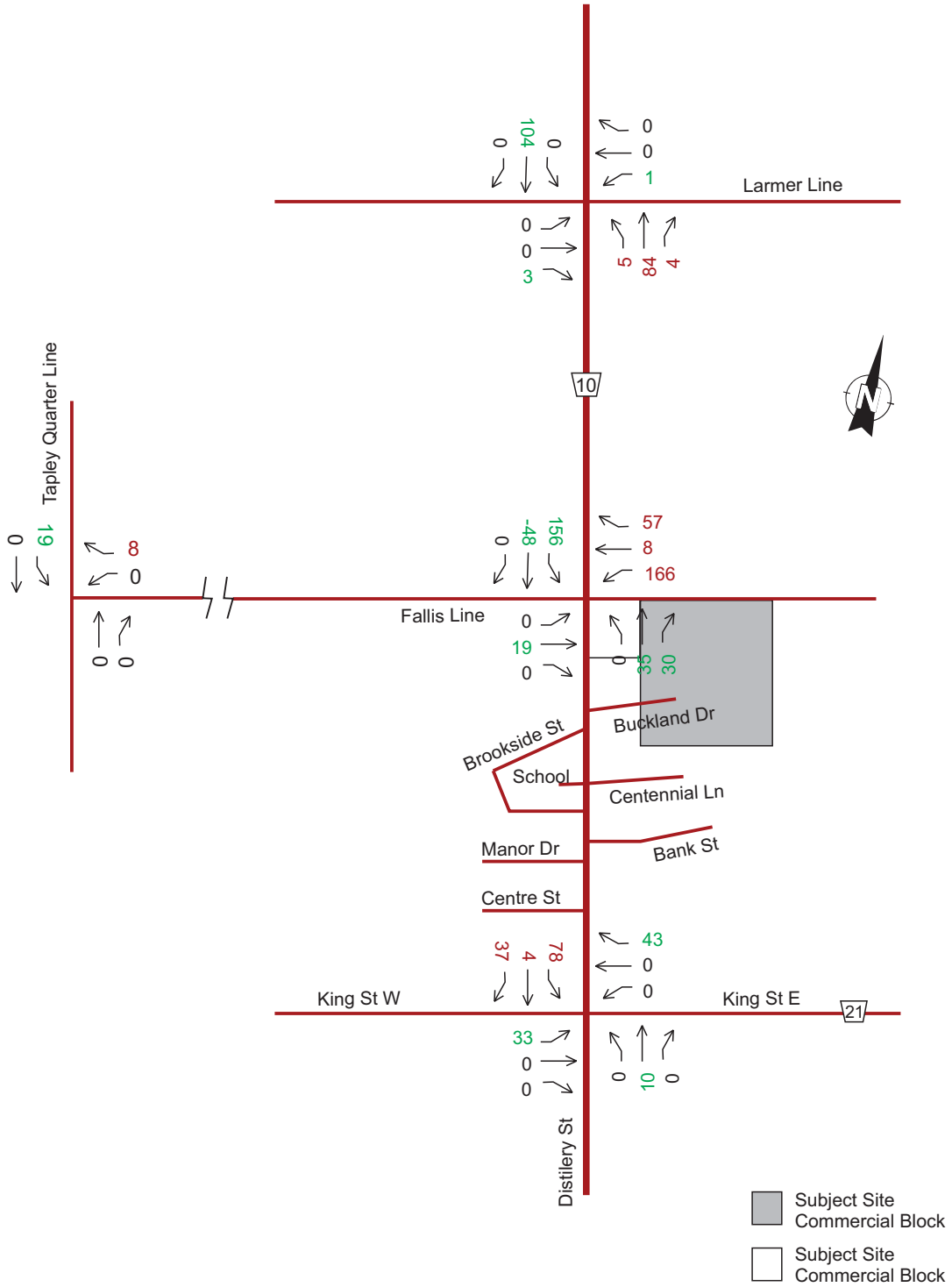
SAT Site Generated Trips - 2025 (East of CR10)



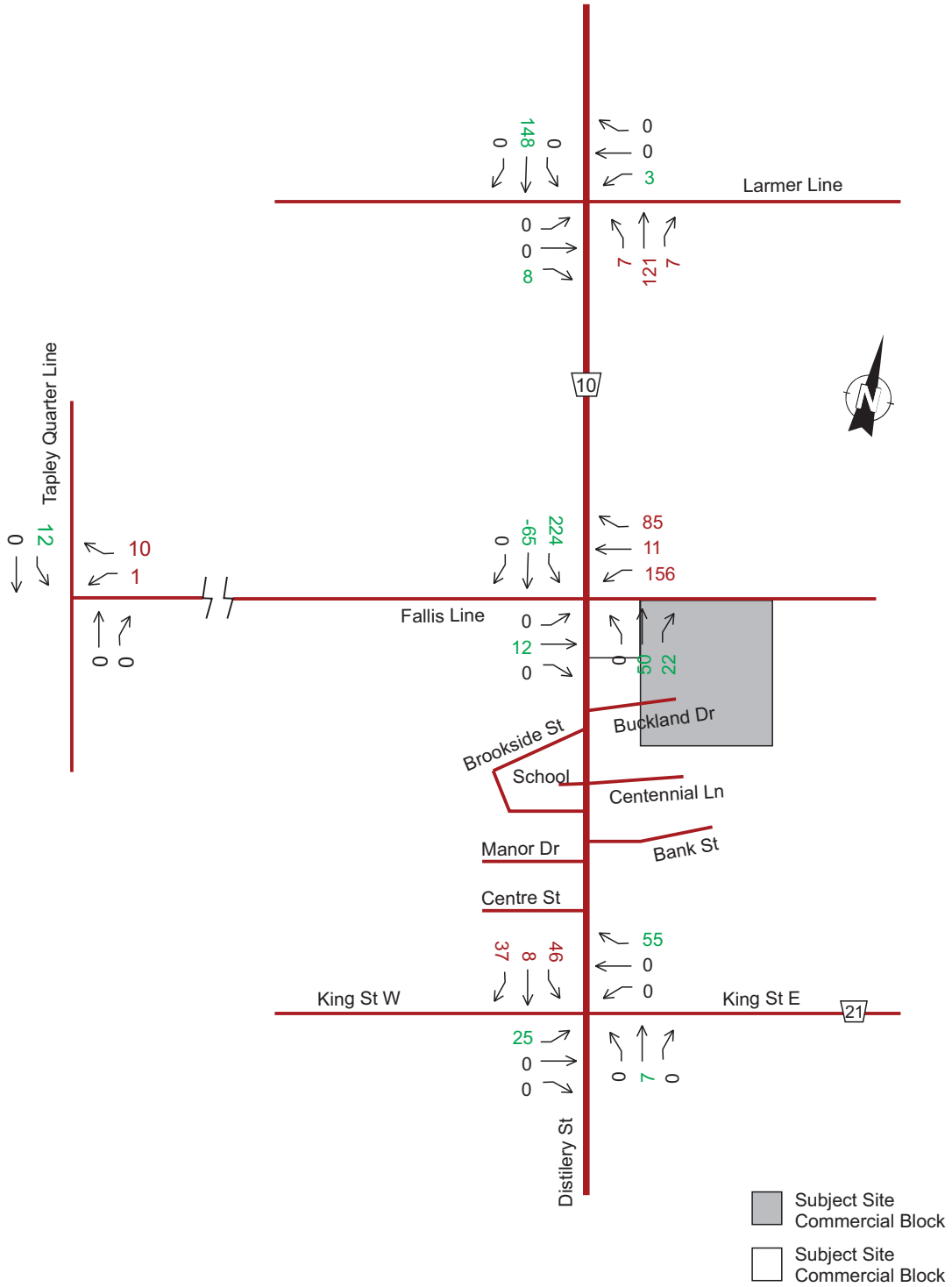
AM Site Generated Trips - 2030 (East of CR10)



PM Site Generated Trips - 2030 (East of CR10)



SAT Site Generated Trips - 2030 (East of CR10)





















Appendix H

Synchro Reports - Total Horizon Year 2025

HCM Signalized Intersection Capacity Analysis
3: Larmer Line & CR10

Total Volumes - 2025
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	27	5	43	29	2	11	39	712	50	6	435	4
Satd. Flow (prot)	0	1547	0	0	1756	0	1789	1799	0	1789	1843	0
Flt Permitted		0.887			0.777		0.483			0.306		
Satd. Flow (perm)	0	1397	0	0	1412	0	910	1799	0	576	1843	0
Satd. Flow (RTOR)		47			12			8			1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	20%	2%	2%	2%	2%	6%	2%	2%	4%	20%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	81	0	0	46	0	42	828	0	7	477	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.3	20.3		20.3	20.3		20.7	20.7		20.7	20.7	
Total Split (s)	28.0	28.0	0.0	28.0	28.0	0.0	62.0	62.0	0.0	62.0	62.0	0.0
Total Split (%)	31.1%	31.1%	0.0%	31.1%	31.1%	0.0%	68.9%	68.9%	0.0%	68.9%	68.9%	0.0%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	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 Lost Time (s)	4.3	4.3	4.0	4.3	4.3	4.0	4.7	4.7	4.0	4.7	4.7	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effect Green (s)		8.4			8.4		66.4	66.4		66.4	66.4	
Actuated g/C Ratio		0.10			0.10		0.83	0.83		0.83	0.83	
v/c Ratio		0.43			0.29		0.06	0.56		0.01	0.31	
Control Delay		24.1			30.3		2.5	5.2		2.5	3.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		24.1			30.3		2.5	5.2		2.5	3.1	
LOS		C			C		A	A		A	A	
Approach Delay		24.1			30.3			5.0			3.1	
Approach LOS		C			C			A			A	
Queue Length 50th (m)		5.0			5.0		1.0	33.4		0.2	14.1	
Queue Length 95th (m)		16.2			13.4		3.5	72.6		1.1	30.1	
Internal Link Dist (m)		252.5			269.3			1034.2			158.9	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		446			426		751	1486		475	1521	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.18			0.11		0.06	0.56		0.01	0.31	
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 80.4												
Natural Cycle: 60												

HCM Signalized Intersection Capacity Analysis
 3: Larmer Line & CR10

Total Volumes - 2025
 AM Peak Hour

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 6.2

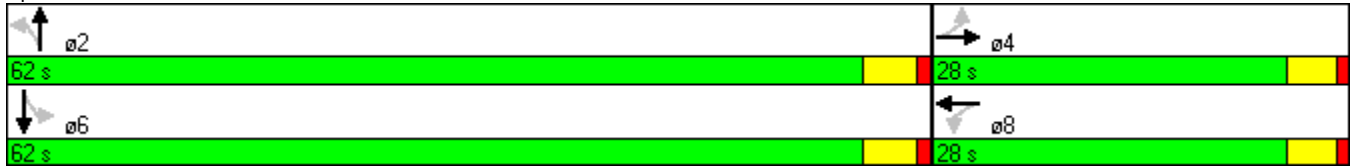
Intersection LOS: A

Intersection Capacity Utilization 53.8%

ICU Level of Service A























Analysis Period (min) 15

Splits and Phases: 3: Larmer Line & CR10



HCM Signalized Intersection Capacity Analysis
6: Fallis Line & CR10

Total Volumes - 2025
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	290	45	253	89	25	71	179	290	12	129	179	154
Satd. Flow (prot)	1789	1644	0	1789	1674	0	1789	1830	1601	1789	1847	1601
Flt Permitted	0.487			0.556			0.617			0.504		
Satd. Flow (perm)	917	1644	0	1047	1674	0	1162	1830	1601	949	1847	1601
Satd. Flow (RTOR)		275			77				8			167
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	4%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	315	324	0	97	104	0	195	315	13	140	195	167
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	20.7		11.0	20.7		11.0	20.7	20.7	11.0	20.7	20.7
Total Split (s)	16.0	22.0	0.0	16.0	22.0	0.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (%)	17.8%	24.4%	0.0%	17.8%	24.4%	0.0%	13.3%	44.4%	44.4%	13.3%	44.4%	44.4%
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	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 Lost Time (s)	3.0	4.7	4.0	3.0	4.7	4.0	3.0	4.7	4.7	3.0	4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effct Green (s)	23.3	12.4		17.4	8.9		46.3	36.1	36.1	45.5	35.7	35.7
Actuated g/C Ratio	0.30	0.16		0.22	0.11		0.59	0.46	0.46	0.58	0.45	0.45
v/c Ratio	0.76	0.66		0.31	0.40		0.26	0.37	0.02	0.22	0.23	0.20
Control Delay	36.1	14.1		22.4	17.6		8.7	17.3	10.5	8.6	15.9	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	14.1		22.4	17.6		8.7	17.3	10.5	8.6	15.9	3.5
LOS	D	B		C	B		A	B	B	A	B	A
Approach Delay		25.0			19.9			14.0			9.8	
Approach LOS		C			B			B			A	
Queue Length 50th (m)	39.5	6.7		10.6	3.9		11.4	30.2	0.4	7.9	17.7	0.0
Queue Length 95th (m)	62.4	31.0		20.7	17.1		26.4	59.6	3.9	19.4	36.8	11.3
Internal Link Dist (m)		1212.7			352.9			842.8			1034.2	
Turn Bay Length (m)	90.0			60.0			150.0		15.0	60.0		75.0
Base Capacity (vph)	423	580		413	433		767	841	740	659	839	818
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.56		0.23	0.24		0.25	0.37	0.02	0.21	0.23	0.20

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 78.6
Natural Cycle: 65

HCM Signalized Intersection Capacity Analysis
 6: Fallis Line & CR10

Total Volumes - 2025
 AM Peak Hour

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 17.2









Intersection LOS: B

Intersection Capacity Utilization 60.7%

ICU Level of Service B










Analysis Period (min) 15

Splits and Phases: 6: Fallis Line & CR10

 ø1	 ø2	 ø3	 ø4
12 s	40 s	16 s	22 s
 ø5	 ø6	 ø7	 ø8
12 s	40 s	16 s	22 s



















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Total Volumes - 2025
 AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	3	119	43	5	43	22
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	3	129	47	5	47	24
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	167	49			52	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	167	49			52	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	100	87			97	
cM capacity (veh/h)	798	1005			1480	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	133	52	71			
Volume Left	3	0	47			
Volume Right	129	5	0			
cSH	999	1700	1480			
Volume to Capacity	0.13	0.03	0.03			
Queue Length 95th (m)	3.5	0.0	0.7			
Control Delay (s)	9.2	0.0	5.1			
Lane LOS	A		A			
Approach Delay (s)	9.2	0.0	5.1			
Approach LOS	A					
Intersection Summary						
Average Delay			6.2			
Intersection Capacity Utilization			24.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Total Volumes - 2025
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	108	32	1	7	38	243	2	27	7	232	37	194
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	117	35	1	8	41	264	2	29	8	252	40	211
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	153	313	39	252	251							
Volume Left (vph)	117	8	2	252	0							
Volume Right (vph)	1	264	8	0	211							
Hadj (s)	0.22	-0.43	-0.07	0.55	-0.54							
Departure Headway (s)	6.0	5.1	6.0	6.4	5.3							
Degree Utilization, x	0.25	0.44	0.07	0.45	0.37							
Capacity (veh/h)	560	670	518	541	653							
Control Delay (s)	11.0	12.0	9.4	13.3	10.2							
Approach Delay (s)	11.0	12.0	9.4	11.7								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay			11.6									
HCM Level of Service			B									
Intersection Capacity Utilization			54.6%	ICU Level of Service	A							
Analysis Period (min)			15									

Intersection: 12: King St (CR21) & CR10

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	19.3	26.5	9.3	17.3	17.1
Average Queue (m)	12.8	17.0	6.5	12.8	13.5
95th Queue (m)	21.8	28.6	13.2	19.3	19.5
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				9	9
Queuing Penalty (veh)				21	22

HCM Signalized Intersection Capacity Analysis
3: Larmer Line & CR10

Total Volumes - 2025
PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Volume (vph)	4	1	39	30	1	4	35	560	28	9	776	11
Satd. Flow (prot)	0	1649	0	0	1779	0	1789	1870	0	1789	1880	0
Flt Permitted		0.965			0.934		0.305			0.404		
Satd. Flow (perm)	0	1598	0	0	1735	0	574	1870	0	761	1880	0
Satd. Flow (RTOR)		42			4			5			2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	47	0	0	38	0	38	639	0	10	855	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.3	20.3		20.3	20.3		20.7	20.7		20.7	20.7	
Total Split (s)	28.0	28.0	0.0	28.0	28.0	0.0	62.0	62.0	0.0	62.0	62.0	0.0
Total Split (%)	31.1%	31.1%	0.0%	31.1%	31.1%	0.0%	68.9%	68.9%	0.0%	68.9%	68.9%	0.0%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	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 Lost Time (s)	4.3	4.3	4.0	4.3	4.3	4.0	4.7	4.7	4.0	4.7	4.7	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effect Green (s)		7.9			7.9		70.3	70.3		70.3	70.3	
Actuated g/C Ratio		0.10			0.10		0.87	0.87		0.87	0.87	
v/c Ratio		0.24			0.22		0.08	0.39		0.02	0.52	
Control Delay		15.8			33.7		2.4	3.0		2.1	4.0	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		15.8			33.7		2.4	3.0		2.1	4.0	
LOS		B			C		A	A		A	A	
Approach Delay		15.8			33.7			2.9			4.0	
Approach LOS		B			C			A			A	
Queue Length 50th (m)		0.8			5.5		0.9	21.1		0.2	34.5	
Queue Length 95th (m)		9.6			12.7		3.1	39.9		1.2	65.7	
Internal Link Dist (m)		252.5			269.3			1034.2			158.9	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		501			515		501	1632		664	1641	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.09			0.07		0.08	0.39		0.02	0.52	

Intersection Summary

Cycle Length: 90
 Actuated Cycle Length: 80.6
 Natural Cycle: 60
 Control Type: Semi Act-Uncoord

HCM Signalized Intersection Capacity Analysis

3: Larmer Line & CR10

Total Volumes - 2025
PM Peak Hour

Maximum v/c Ratio: 0.52

Intersection Signal Delay: 4.6

Intersection LOS: A

Intersection Capacity Utilization 57.6%

ICU Level of Service B























Analysis Period (min) 15

Splits and Phases: 3: Larmer Line & CR10



HCM Signalized Intersection Capacity Analysis
6: Fallis Line & CR10

Total Volumes - 2025
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	231	42	184	167	51	58	253	256	35	161	231	288
Satd. Flow (prot)	1789	1654	0	1789	1733	0	1789	1883	1601	1789	1883	1601
Flt Permitted	0.466			0.494			0.547			0.535		
Satd. Flow (perm)	878	1654	0	930	1733	0	1030	1883	1601	1008	1883	1601
Satd. Flow (RTOR)		200			57				27			313
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	251	246	0	182	118	0	275	278	38	175	251	313
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	20.7		11.0	20.7		11.0	20.7	20.7	11.0	20.7	20.7
Total Split (s)	16.0	22.0	0.0	16.0	22.0	0.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (%)	17.8%	24.4%	0.0%	17.8%	24.4%	0.0%	13.3%	44.4%	44.4%	13.3%	44.4%	44.4%
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	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 Lost Time (s)	3.0	4.7	4.0	3.0	4.7	4.0	3.0	4.7	4.7	3.0	4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effct Green (s)	24.7	10.4		20.6	9.6		46.3	35.9	35.9	45.4	35.4	35.4
Actuated g/C Ratio	0.30	0.13		0.25	0.12		0.57	0.44	0.44	0.56	0.44	0.44
v/c Ratio	0.58	0.64		0.51	0.46		0.41	0.33	0.05	0.27	0.31	0.36
Control Delay	27.5	16.6		26.6	24.9		10.7	17.4	8.1	9.3	17.3	3.4
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	16.6		26.6	24.9		10.7	17.4	8.1	9.3	17.3	3.4
LOS	C	B		C	C		B	B	A	A	B	A
Approach Delay		22.1			26.0			13.7			9.5	
Approach LOS		C			C			B			A	
Queue Length 50th (m)	30.2	6.5		21.0	8.9		17.9	27.3	0.9	10.7	24.3	0.0
Queue Length 95th (m)	49.1	27.6		36.2	23.5		36.7	51.7	6.8	23.6	46.4	14.8
Internal Link Dist (m)		1217.2			352.9			842.8			1034.2	
Turn Bay Length (m)	90.0			60.0			150.0		15.0	60.0		75.0
Base Capacity (vph)	432	511		395	415		675	832	722	660	821	875
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.48		0.46	0.28		0.41	0.33	0.05	0.27	0.31	0.36

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 81.2

Natural Cycle: 65

Control Type: Semi Act-Uncoord

HCM Signalized Intersection Capacity Analysis
 6: Fallis Line & CR10

Total Volumes - 2025
 PM Peak Hour

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 15.9

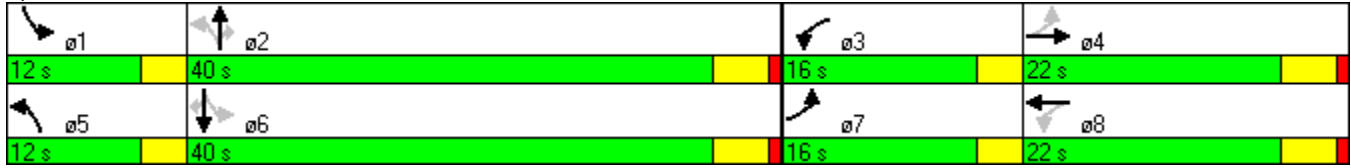
Intersection LOS: B

Intersection Capacity Utilization 63.5%

ICU Level of Service B










Analysis Period (min) 15

Splits and Phases: 6: Fallis Line & CR10





















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Total Volumes - 2025
 PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	2	57	47	3	122	66
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	62	51	3	133	72
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	390	53			54	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	390	53			54	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	94			91	
cM capacity (veh/h)	561	1006			1532	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	64	54	204			
Volume Left	2	0	133			
Volume Right	62	3	0			
cSH	980	1700	1532			
Volume to Capacity	0.07	0.03	0.09			
Queue Length 95th (m)	1.6	0.0	2.2			
Control Delay (s)	8.9	0.0	5.2			
Lane LOS	A		A			
Approach Delay (s)	8.9	0.0	5.2			
Approach LOS	A					
Intersection Summary						
Average Delay			5.0			
Intersection Capacity Utilization			27.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Total Volumes - 2025
 PM Peak Hour



















												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	226	75	3	9	55	285	2	67	16	414	19	193
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	246	82	3	10	60	310	2	73	17	450	21	210
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	330	379	92	450	230							
Volume Left (vph)	246	10	2	450	0							
Volume Right (vph)	3	310	17	0	210							
Hadj (s)	0.18	-0.45	-0.07	0.53	-0.60							
Departure Headway (s)	7.3	6.6	8.1	7.7	6.6							
Degree Utilization, x	0.67	0.70	0.21	0.97	0.42							
Capacity (veh/h)	481	537	393	462	542							
Control Delay (s)	23.8	23.3	13.2	60.3	13.0							
Approach Delay (s)	23.8	23.3	13.2	44.3								
Approach LOS	C	C	B	E								
Intersection Summary												
Delay			32.4									
HCM Level of Service			D									
Intersection Capacity Utilization			77.2%	ICU Level of Service	D							
Analysis Period (min)			15									

Intersection: 12: King St (CR21) & CR10

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	27.3	24.9	13.0	29.8	30.9
Average Queue (m)	17.1	17.7	9.8	20.3	16.3
95th Queue (m)	29.0	27.8	13.3	31.3	34.8
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				25	11
Queuing Penalty (veh)				54	47

HCM Signalized Intersection Capacity Analysis
3: Larmer Line & CR10

Total Volumes - 2025
SAT Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	16	4	46	31	7	5	44	686	36	5	763	14
Satd. Flow (prot)	0	1684	0	0	1792	0	1789	1870	0	1789	1878	0
Flt Permitted		0.922			0.808		0.300			0.327		
Satd. Flow (perm)	0	1572	0	0	1501	0	565	1870	0	616	1878	0
Satd. Flow (RTOR)		50			5			6			2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	71	0	0	47	0	48	785	0	5	844	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.3	20.3		20.3	20.3		20.7	20.7		20.7	20.7	
Total Split (s)	28.0	28.0	0.0	28.0	28.0	0.0	62.0	62.0	0.0	62.0	62.0	0.0
Total Split (%)	31.1%	31.1%	0.0%	31.1%	31.1%	0.0%	68.9%	68.9%	0.0%	68.9%	68.9%	0.0%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	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 Lost Time (s)	4.3	4.3	4.0	4.3	4.3	4.0	4.7	4.7	4.0	4.7	4.7	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effect Green (s)		8.2			8.2		66.8	66.8		66.8	66.8	
Actuated g/C Ratio		0.10			0.10		0.83	0.83		0.83	0.83	
v/c Ratio		0.35			0.30		0.10	0.51		0.01	0.54	
Control Delay		19.2			34.9		2.9	4.4		2.4	4.8	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		19.2			34.9		2.9	4.4		2.4	4.8	
LOS		B			C		A	A		A	A	
Approach Delay		19.2			34.9			4.3			4.8	
Approach LOS		B			C			A			A	
Queue Length 50th (m)		3.1			6.4		1.2	30.2		0.1	34.6	
Queue Length 95th (m)		13.5			14.7		3.9	58.5		0.8	66.8	
Internal Link Dist (m)		252.5			269.3			1034.2			158.9	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		499			446		468	1550		510	1556	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.14			0.11		0.10	0.51		0.01	0.54	
Intersection Summary												
Cycle Length: 90												
Actuated Cycle Length: 80.7												
Natural Cycle: 60												
Control Type: Semi Act-Uncoord												

HCM Signalized Intersection Capacity Analysis

3: Larmer Line & CR10

Total Volumes - 2025
SAT Peak Hour

Maximum v/c Ratio: 0.54

Intersection Signal Delay: 5.9

Intersection LOS: A

Intersection Capacity Utilization 54.5%

ICU Level of Service A

Analysis Period (min) 15























Splits and Phases: 3: Larmer Line & CR10



HCM Signalized Intersection Capacity Analysis

6: Fallis Line & CR10

Total Volumes - 2025
SAT Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	257	45	229	158	47	88	232	292	24	226	179	280
Satd. Flow (prot)	1789	1648	0	1789	1699	0	1789	1883	1601	1789	1883	1601
Flt Permitted	0.470			0.400			0.618			0.484		
Satd. Flow (perm)	885	1648	0	753	1699	0	1164	1883	1601	912	1883	1601
Satd. Flow (RTOR)		249			93				16			304
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	279	298	0	172	147	0	252	317	26	246	195	304
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	20.7		11.0	20.7		11.0	20.7	20.7	11.0	20.7	20.7
Total Split (s)	16.0	22.0	0.0	16.0	22.0	0.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (%)	17.8%	24.4%	0.0%	17.8%	24.4%	0.0%	13.3%	44.4%	44.4%	13.3%	44.4%	44.4%
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	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 Lost Time (s)	3.0	4.7	4.0	3.0	4.7	4.0	3.0	4.7	4.7	3.0	4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effect Green (s)	25.8	11.7		22.5	10.0		45.9	35.5	35.5	45.8	35.4	35.4
Actuated g/C Ratio	0.31	0.14		0.27	0.12		0.56	0.43	0.43	0.56	0.43	0.43
v/c Ratio	0.67	0.67		0.50	0.51		0.35	0.39	0.04	0.41	0.24	0.35
Control Delay	30.6	15.5		25.5	20.5		10.4	18.8	9.8	11.1	16.9	3.5
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.6	15.5		25.5	20.5		10.4	18.8	9.8	11.1	16.9	3.5
LOS	C	B		C	C		B	B	A	B	B	A
Approach Delay		22.8			23.2			14.8			9.5	
Approach LOS		C			C			B			A	
Queue Length 50th (m)	34.2	6.9		19.7	7.9		16.0	31.8	0.8	15.6	18.1	0.0
Queue Length 95th (m)	54.7	30.3		34.1	23.8		35.0	61.0	5.9	34.2	37.5	14.9
Internal Link Dist (m)		1219.8			352.9			842.8			1034.2	
Turn Bay Length (m)	90.0			60.0			150.0		15.0	60.0		75.0
Base Capacity (vph)	422	545		392	433		724	813	700	609	812	863
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.55		0.44	0.34		0.35	0.39	0.04	0.40	0.24	0.35

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 82.1

Natural Cycle: 65

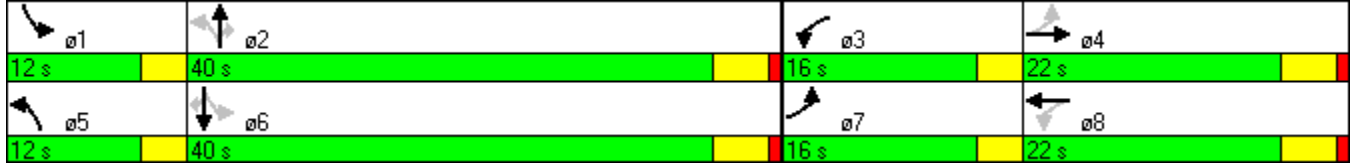
Control Type: Semi Act-Uncoord

HCM Signalized Intersection Capacity Analysis
 6: Fallis Line & CR10

Total Volumes - 2025
 SAT Peak Hour










Maximum v/c Ratio: 0.67	Intersection Signal Delay: 16.3	Intersection LOS: B
Intersection Capacity Utilization 67.6%	ICU Level of Service C	
Analysis Period (min) 15		

Splits and Phases: 6: Fallis Line & CR10




















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Total Volumes - 2025
 SAT Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	8	57	43	4	71	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	62	47	4	77	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	252	49			51	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	252	49			51	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	94			95	
cM capacity (veh/h)	700	1020			1542	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	71	51	126			
Volume Left	9	0	77			
Volume Right	62	4	0			
cSH	965	1700	1542			
Volume to Capacity	0.07	0.03	0.05			
Queue Length 95th (m)	1.8	0.0	1.2			
Control Delay (s)	9.0	0.0	4.7			
Lane LOS	A		A			
Approach Delay (s)	9.0	0.0	4.7			
Approach LOS	A					
Intersection Summary						
Average Delay			5.0			
Intersection Capacity Utilization			23.6%	ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Total Volumes - 2025
 SAT Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	128	29	1	6	33	288	2	33	6	254	47	200
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	139	32	1	7	36	313	2	36	7	276	51	217
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	172	355	45	276	268							
Volume Left (vph)	139	7	2	276	0							
Volume Right (vph)	1	313	7	0	217							
Hadj (s)	0.19	-0.49	-0.04	0.53	-0.53							
Departure Headway (s)	6.2	5.2	6.4	6.6	5.5							
Degree Utilization, x	0.29	0.51	0.08	0.51	0.41							
Capacity (veh/h)	542	657	484	526	629							
Control Delay (s)	11.7	13.6	9.9	14.9	11.1							
Approach Delay (s)	11.7	13.6	9.9	13.1								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay			12.9									
HCM Level of Service			B									
Intersection Capacity Utilization			59.3%	ICU Level of Service	B							
Analysis Period (min)			15									

Intersection: 12: King St (CR21) & CR10

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	19.3	22.4	10.6	16.6	21.2
Average Queue (m)	13.4	16.7	6.0	13.2	14.8
95th Queue (m)	21.5	23.8	13.8	20.3	22.5
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				10	11
Queuing Penalty (veh)				25	27

Appendix I

Synchro Reports - Total Horizon Year 2030

HCM Signalized Intersection Capacity Analysis

Total Volumes - 2030

3: Larmer Line & CR10

AM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕		↕	↕	
Volume (vph)	30	5	46	31	3	12	43	837	58	6	487	4
Satd. Flow (prot)	0	1552	0	0	1758	0	1789	1799	0	1789	1843	0
Flt Permitted		0.891			0.758		0.451			0.241		
Satd. Flow (perm)	0	1408	0	0	1378	0	849	1799	0	454	1843	0
Satd. Flow (RTOR)		50			13			8			1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	20%	2%	2%	2%	2%	6%	2%	2%	4%	20%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	88	0	0	50	0	47	973	0	7	533	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.3	20.3		20.3	20.3		20.7	20.7		20.7	20.7	
Total Split (s)	28.0	28.0	0.0	28.0	28.0	0.0	62.0	62.0	0.0	62.0	62.0	0.0
Total Split (%)	31.1%	31.1%	0.0%	31.1%	31.1%	0.0%	68.9%	68.9%	0.0%	68.9%	68.9%	0.0%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	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 Lost Time (s)	4.3	4.3	4.0	4.3	4.3	4.0	4.7	4.7	4.0	4.7	4.7	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effect Green (s)		8.6			8.6		65.8	65.8		65.8	65.8	
Actuated g/C Ratio		0.11			0.11		0.82	0.82		0.82	0.82	
v/c Ratio		0.45			0.31		0.07	0.66		0.02	0.35	
Control Delay		24.3			30.5		2.7	7.0		2.7	3.4	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		24.3			30.5		2.7	7.0		2.7	3.4	
LOS		C			C		A	A		A	A	
Approach Delay		24.3			30.5			6.8			3.4	
Approach LOS		C			C			A			A	
Queue Length 50th (m)		5.5			5.4		1.1	46.9		0.2	16.8	
Queue Length 95th (m)		17.3			14.2		4.0	108.1		1.1	36.1	
Internal Link Dist (m)		252.5			269.3			1034.2			158.9	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		453			418		698	1480		373	1515	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.19			0.12		0.07	0.66		0.02	0.35	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 80.1

Natural Cycle: 65

HCM Signalized Intersection Capacity Analysis
 3: Larmer Line & CR10

Total Volumes - 2030
 AM Peak Hour

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 7.3

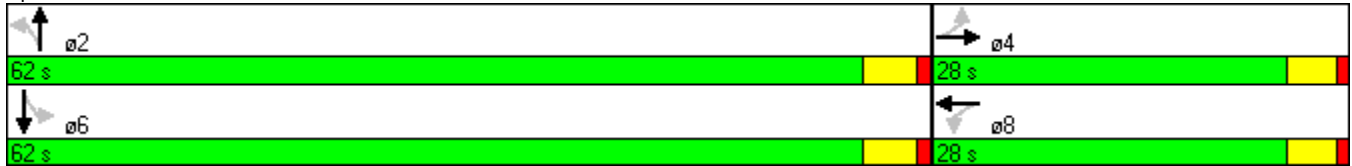
Intersection LOS: A

Intersection Capacity Utilization 60.9%

ICU Level of Service B

Analysis Period (min) 15























Splits and Phases: 3: Larmer Line & CR10



HCM Signalized Intersection Capacity Analysis

6: Fallis Line & CR10

Total Volumes - 2030
AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	352	86	287	114	43	122	194	316	23	146	199	173
Satd. Flow (prot)	1789	1665	0	1789	1674	0	1789	1830	1601	1789	1847	1601
Flt Permitted	0.399			0.292			0.581			0.445		
Satd. Flow (perm)	751	1665	0	550	1674	0	1094	1830	1601	838	1847	1601
Satd. Flow (RTOR)		166			133				14			188
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	5%	2%	2%	4%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	383	405	0	124	180	0	211	343	25	159	216	188
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	20.7		11.0	20.7		11.0	20.7	20.7	11.0	20.7	20.7
Total Split (s)	16.0	22.0	0.0	16.0	22.0	0.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (%)	17.8%	24.4%	0.0%	17.8%	24.4%	0.0%	13.3%	44.4%	44.4%	13.3%	44.4%	44.4%
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	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 Lost Time (s)	3.0	4.7	4.0	3.0	4.7	4.0	3.0	4.7	4.7	3.0	4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effect Green (s)	30.0	18.6		24.4	13.0		46.0	35.6	35.6	45.5	35.4	35.4
Actuated g/C Ratio	0.35	0.22		0.29	0.15		0.54	0.42	0.42	0.53	0.41	0.41
v/c Ratio	0.91	0.82		0.42	0.49		0.32	0.45	0.04	0.29	0.28	0.24
Control Delay	51.5	35.7		23.4	15.3		11.1	21.1	10.8	11.0	18.8	3.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.5	35.7		23.4	15.3		11.1	21.1	10.8	11.0	18.8	3.7
LOS	D	D		C	B		B	C	B	B	B	A
Approach Delay		43.4			18.6			17.0			11.5	
Approach LOS		D			B			B			B	
Queue Length 50th (m)	50.5	39.4		13.8	6.8		15.9	40.3	1.1	11.6	23.3	0.0
Queue Length 95th (m)	#85.8	#93.6		25.4	24.4		29.4	67.2	5.9	22.5	41.5	12.2
Internal Link Dist (m)		1212.7			352.9			842.8			1034.2	
Turn Bay Length (m)	90.0			60.0			150.0		15.0	60.0		75.0
Base Capacity (vph)	422	492		367	446		666	763	675	552	764	773
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.82		0.34	0.40		0.32	0.45	0.04	0.29	0.28	0.24

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 85.5

Natural Cycle: 65

HCM Signalized Intersection Capacity Analysis
 6: Fallis Line & CR10

Total Volumes - 2030
 AM Peak Hour

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 25.2

Intersection LOS: C

Intersection Capacity Utilization 68.5%









ICU Level of Service C

Analysis Period (min) 15

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










Queue shown is maximum after two cycles.

Splits and Phases: 6: Fallis Line & CR10

 ø1	 ø2	 ø3	 ø4
12 s	40 s	16 s	22 s
 ø5	 ø6	 ø7	 ø8
12 s	40 s	16 s	22 s



















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Total Volumes - 2030
 AM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	4	136	44	5	44	23
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	4	148	48	5	48	25
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage (veh)						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	171	51			53	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	171	51			53	
tC, single (s)	6.4	6.3			4.2	
tC, 2 stage (s)						
tF (s)	3.5	3.4			2.3	
p0 queue free %	99	85			97	
cM capacity (veh/h)	792	1004			1479	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	152	53	73			
Volume Left	4	0	48			
Volume Right	148	5	0			
cSH	996	1700	1479			
Volume to Capacity	0.15	0.03	0.03			
Queue Length 95th (m)	4.1	0.0	0.8			
Control Delay (s)	9.3	0.0	5.0			
Lane LOS	A		A			
Approach Delay (s)	9.3	0.0	5.0			
Approach LOS	A					
Intersection Summary						
Average Delay			6.4			
Intersection Capacity Utilization			25.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Total Volumes - 2030
 AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	118	36	1	8	42	268	3	32	8	266	42	225
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	128	39	1	9	46	291	3	35	9	289	46	245
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	168	346	47	289	290							
Volume Left (vph)	128	9	3	289	0							
Volume Right (vph)	1	291	9	0	245							
Hadj (s)	0.22	-0.43	-0.06	0.55	-0.54							
Departure Headway (s)	6.3	5.3	6.4	6.6	5.5							
Degree Utilization, x	0.29	0.51	0.08	0.53	0.44							
Capacity (veh/h)	534	642	485	526	633							
Control Delay (s)	11.9	13.8	9.9	15.6	11.6							
Approach Delay (s)	11.9	13.8	9.9	13.6								
Approach LOS	B	B	A	B								
Intersection Summary												
Delay			13.3									
HCM Level of Service			B									
Intersection Capacity Utilization			59.1%	ICU Level of Service	B							
Analysis Period (min)			15									

Intersection: 12: King St (CR21) & CR10

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	19.5	25.6	15.1	18.2	18.4
Average Queue (m)	13.7	17.9	8.3	13.2	14.6
95th Queue (m)	21.3	27.8	18.1	19.9	20.4
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				12	11
Queuing Penalty (veh)				32	29

HCM Signalized Intersection Capacity Analysis

Total Volumes - 2030

3: Larmer Line & CR10

PM Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Volume (vph)	4	1	43	30	1	4	38	628	30	10	902	12
Satd. Flow (prot)	0	1647	0	0	1779	0	1789	1870	0	1789	1880	0
Flt Permitted		0.968			0.924		0.247			0.367		
Satd. Flow (perm)	0	1601	0	0	1716	0	465	1870	0	691	1880	0
Satd. Flow (RTOR)		47			4			5			1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	52	0	0	38	0	41	716	0	11	993	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.3	20.3		20.3	20.3		20.7	20.7		20.7	20.7	
Total Split (s)	28.0	28.0	0.0	28.0	28.0	0.0	62.0	62.0	0.0	62.0	62.0	0.0
Total Split (%)	31.1%	31.1%	0.0%	31.1%	31.1%	0.0%	68.9%	68.9%	0.0%	68.9%	68.9%	0.0%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	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 Lost Time (s)	4.3	4.3	4.0	4.3	4.3	4.0	4.7	4.7	4.0	4.7	4.7	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effect Green (s)		7.9			7.9		70.0	70.0		70.0	70.0	
Actuated g/C Ratio		0.10			0.10		0.87	0.87		0.87	0.87	
v/c Ratio		0.26			0.22		0.10	0.44		0.02	0.61	
Control Delay		15.3			33.5		2.7	3.3		2.2	5.1	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		15.3			33.5		2.7	3.3		2.2	5.1	
LOS		B			C		A	A		A	A	
Approach Delay		15.3			33.5			3.3			5.0	
Approach LOS		B			C			A			A	
Queue Length 50th (m)		0.8			5.5		1.0	25.3		0.3	46.4	
Queue Length 95th (m)		9.9			12.6		3.5	47.8		1.2	91.7	
Internal Link Dist (m)		252.5			269.3			1034.2			158.9	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		507			511		405	1631		603	1640	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.10			0.07		0.10	0.44		0.02	0.61	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 80.3

Natural Cycle: 65

Control Type: Semi Act-Uncoord

HCM Signalized Intersection Capacity Analysis
 3: Larmer Line & CR10

Total Volumes - 2030
 PM Peak Hour

Maximum v/c Ratio: 0.61	Intersection LOS: A
Intersection Signal Delay: 5.2	ICU Level of Service C
Intersection Capacity Utilization 64.3%	
Analysis Period (min) 15	























Splits and Phases: 3: Larmer Line & CR10



HCM Signalized Intersection Capacity Analysis

6: Fallis Line & CR10

Total Volumes - 2030
PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	260	74	223	196	95	82	302	277	70	205	260	348
Satd. Flow (prot)	1789	1671	0	1789	1752	0	1789	1883	1601	1789	1883	1601
Flt Permitted	0.420			0.301			0.503			0.497		
Satd. Flow (perm)	791	1671	0	567	1752	0	947	1883	1601	936	1883	1601
Satd. Flow (RTOR)		150			43				49			378
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	283	322	0	213	192	0	328	301	76	223	283	378
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	20.7		11.0	20.7		11.0	20.7	20.7	11.0	20.7	20.7
Total Split (s)	16.0	22.0	0.0	16.0	22.0	0.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (%)	17.8%	24.4%	0.0%	17.8%	24.4%	0.0%	13.3%	44.4%	44.4%	13.3%	44.4%	44.4%
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	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 Lost Time (s)	3.0	4.7	4.0	3.0	4.7	4.0	3.0	4.7	4.7	3.0	4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effect Green (s)	28.3	14.1		26.6	13.3		46.5	35.8	35.8	45.8	35.4	35.4
Actuated g/C Ratio	0.33	0.16		0.31	0.16		0.54	0.42	0.42	0.54	0.41	0.41
v/c Ratio	0.70	0.80		0.62	0.62		0.54	0.38	0.11	0.38	0.36	0.43
Control Delay	31.0	34.3		28.5	35.2		15.0	20.2	8.7	12.0	20.0	3.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.0	34.3		28.5	35.2		15.0	20.2	8.7	12.0	20.0	3.7
LOS	C	C		C	D		B	C	A	B	C	A
Approach Delay		32.8			31.7			16.5			11.0	
Approach LOS		C			C			B			B	
Queue Length 50th (m)	34.8	27.6		25.0	23.0		28.0	35.4	2.7	17.8	32.9	0.0
Queue Length 95th (m)	55.5	#63.2		41.7	43.4		46.4	58.0	11.1	31.1	54.2	16.3
Internal Link Dist (m)		1217.2			352.9			842.8			1034.2	
Turn Bay Length (m)	90.0			60.0			150.0		15.0	60.0		75.0
Base Capacity (vph)	416	458		372	390		603	787	698	595	779	884
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.70		0.57	0.49		0.54	0.38	0.11	0.37	0.36	0.43

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 85.6

Natural Cycle: 65

Control Type: Semi Act-Uncoord

HCM Signalized Intersection Capacity Analysis
 6: Fallis Line & CR10

Total Volumes - 2030
 PM Peak Hour

Maximum v/c Ratio: 0.80

Intersection Signal Delay: 20.8

Intersection LOS: C

Intersection Capacity Utilization 73.4%

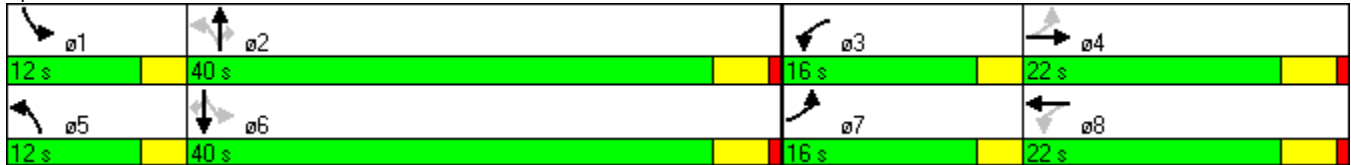
ICU Level of Service D

Analysis Period (min) 15

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










Queue shown is maximum after two cycles.

Splits and Phases: 6: Fallis Line & CR10





















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Total Volumes - 2030
 PM Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	2	61	48	4	141	67
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	2	66	52	4	153	73
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	434	54			57	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	434	54			57	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	93			90	
cM capacity (veh/h)	521	1004			1529	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	68	57	226			
Volume Left	2	0	153			
Volume Right	66	4	0			
cSH	976	1700	1529			
Volume to Capacity	0.07	0.03	0.10			
Queue Length 95th (m)	1.7	0.0	2.5			
Control Delay (s)	9.0	0.0	5.4			
Lane LOS	A		A			
Approach Delay (s)	9.0	0.0	5.4			
Approach LOS	A					
Intersection Summary						
Average Delay			5.2			
Intersection Capacity Utilization			28.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Total Volumes - 2030
 PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	267	82	4	10	61	340	3	79	18	479	22	225
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	290	89	4	11	66	370	3	86	20	521	24	245
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	384	447	109	521	268							
Volume Left (vph)	290	11	3	521	0							
Volume Right (vph)	4	370	20	0	245							
Hadj (s)	0.18	-0.46	-0.07	0.53	-0.60							
Departure Headway (s)	7.6	6.9	8.8	8.3	7.1							
Degree Utilization, x	0.81	0.85	0.26	1.20	0.53							
Capacity (veh/h)	465	512	366	423	500							
Control Delay (s)	35.4	38.0	14.9	137.2	16.8							
Approach Delay (s)	35.4	38.0	14.9	96.2								
Approach LOS	E	E	B	F								
Intersection Summary												
Delay			62.6									
HCM Level of Service			F									
Intersection Capacity Utilization			87.3%	ICU Level of Service	E							
Analysis Period (min)			15									

Intersection: 12: King St (CR21) & CR10

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	31.1	35.6	18.6	32.3	68.3
Average Queue (m)	23.8	25.5	12.9	26.2	36.3
95th Queue (m)	34.7	41.2	22.2	39.4	92.8
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				54	12
Queuing Penalty (veh)				133	58

HCM Signalized Intersection Capacity Analysis

Total Volumes - 2030

3: Larmer Line & CR10

SAT Peak Hour



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↘		↗	↘	
Volume (vph)	18	4	52	34	8	5	51	786	42	5	883	16
Satd. Flow (prot)	0	1684	0	0	1794	0	1789	1868	0	1789	1878	0
Flt Permitted		0.924			0.764		0.241			0.274		
Satd. Flow (perm)	0	1575	0	0	1420	0	454	1868	0	516	1878	0
Satd. Flow (RTOR)		57			5			6			2	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	81	0	0	51	0	55	900	0	5	977	0
Turn Type	Perm			Perm			Perm			Perm		
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		10.0	10.0		10.0	10.0	
Minimum Split (s)	20.3	20.3		20.3	20.3		20.7	20.7		20.7	20.7	
Total Split (s)	28.0	28.0	0.0	28.0	28.0	0.0	62.0	62.0	0.0	62.0	62.0	0.0
Total Split (%)	31.1%	31.1%	0.0%	31.1%	31.1%	0.0%	68.9%	68.9%	0.0%	68.9%	68.9%	0.0%
Yellow Time (s)	3.3	3.3		3.3	3.3		3.7	3.7		3.7	3.7	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	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 Lost Time (s)	4.3	4.3	4.0	4.3	4.3	4.0	4.7	4.7	4.0	4.7	4.7	4.0
Lead/Lag												
Lead-Lag Optimize?												
Recall Mode	None	None		None	None		Max	Max		Max	Max	
Act Effect Green (s)		8.3			8.3		66.1	66.1		66.1	66.1	
Actuated g/C Ratio		0.10			0.10		0.83	0.83		0.83	0.83	
v/c Ratio		0.38			0.34		0.15	0.58		0.01	0.63	
Control Delay		19.0			35.8		3.5	5.4		2.4	6.2	
Queue Delay		0.0			0.0		0.0	0.0		0.0	0.0	
Total Delay		19.0			35.8		3.5	5.4		2.4	6.2	
LOS		B			D		A	A		A	A	
Approach Delay		19.0			35.8			5.3			6.1	
Approach LOS		B			D			A			A	
Queue Length 50th (m)		3.5			6.8		1.4	39.8		0.1	46.9	
Queue Length 95th (m)		14.6			15.6		4.9	78.9		0.8	94.7	
Internal Link Dist (m)		252.5			269.3			1034.2			158.9	
Turn Bay Length (m)							25.0			25.0		
Base Capacity (vph)		507			425		374	1542		426	1549	
Starvation Cap Reductn		0			0		0	0		0	0	
Spillback Cap Reductn		0			0		0	0		0	0	
Storage Cap Reductn		0			0		0	0		0	0	
Reduced v/c Ratio		0.16			0.12		0.15	0.58		0.01	0.63	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 80.1

Natural Cycle: 60

Control Type: Semi Act-Uncoord

HCM Signalized Intersection Capacity Analysis

3: Larmer Line & CR10

Total Volumes - 2030
SAT Peak Hour

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 7.0

Intersection LOS: A

Intersection Capacity Utilization 61.4%

ICU Level of Service B

Analysis Period (min) 15























Splits and Phases: 3: Larmer Line & CR10



HCM Signalized Intersection Capacity Analysis

6: Fallis Line & CR10

Total Volumes - 2030
SAT Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	307	80	264	183	86	126	267	314	49	272	201	339
Satd. Flow (prot)	1789	1667	0	1789	1716	0	1789	1883	1601	1789	1883	1601
Flt Permitted	0.317			0.286			0.580			0.441		
Satd. Flow (perm)	597	1667	0	539	1716	0	1092	1883	1601	831	1883	1601
Satd. Flow (RTOR)		163			73				30			368
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	334	374	0	199	230	0	290	341	53	296	218	368
Turn Type	pm+pt			pm+pt			pm+pt		Perm	pm+pt		Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4			8			2		2	6		6
Detector Phase	7	4		3	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	7.0	7.0		7.0	7.0		7.0	10.0	10.0	7.0	10.0	10.0
Minimum Split (s)	11.0	20.7		11.0	20.7		11.0	20.7	20.7	11.0	20.7	20.7
Total Split (s)	16.0	22.0	0.0	16.0	22.0	0.0	12.0	40.0	40.0	12.0	40.0	40.0
Total Split (%)	17.8%	24.4%	0.0%	17.8%	24.4%	0.0%	13.3%	44.4%	44.4%	13.3%	44.4%	44.4%
Yellow Time (s)	3.0	3.7		3.0	3.7		3.0	3.7	3.7	3.0	3.7	3.7
All-Red Time (s)	0.0	1.0		0.0	1.0		0.0	1.0	1.0	0.0	1.0	1.0
Lost Time Adjust (s)	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 Lost Time (s)	3.0	4.7	4.0	3.0	4.7	4.0	3.0	4.7	4.7	3.0	4.7	4.7
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None		None	None		None	Max	Max	None	Max	Max
Act Effect Green (s)	30.0	15.6		27.0	14.0		46.0	35.4	35.4	46.0	35.4	35.4
Actuated g/C Ratio	0.35	0.18		0.31	0.16		0.53	0.41	0.41	0.53	0.41	0.41
v/c Ratio	0.87	0.86		0.60	0.68		0.45	0.44	0.08	0.55	0.28	0.42
Control Delay	46.5	40.2		27.6	33.8		13.3	21.6	9.9	15.3	19.3	3.7
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	46.5	40.2		27.6	33.8		13.3	21.6	9.9	15.3	19.3	3.7
LOS	D	D		C	C		B	C	A	B	B	A
Approach Delay		43.2			30.9			17.2			11.5	
Approach LOS		D			C			B			B	
Queue Length 50th (m)	42.5	35.3		23.2	24.5		25.1	42.2	2.4	25.7	25.0	0.0
Queue Length 95th (m)	#77.6	#81.6		38.9	47.6		40.6	66.3	9.4	41.6	41.9	16.2
Internal Link Dist (m)		1219.8			352.9			842.8			1034.2	
Turn Bay Length (m)	90.0			60.0			150.0		15.0	60.0		75.0
Base Capacity (vph)	385	464		366	402		653	769	671	542	769	872
Starvation Cap Reductn	0	0		0	0		0	0	0	0	0	0
Spillback Cap Reductn	0	0		0	0		0	0	0	0	0	0
Storage Cap Reductn	0	0		0	0		0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.81		0.54	0.57		0.44	0.44	0.08	0.55	0.28	0.42

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 86.7

Natural Cycle: 65

Control Type: Semi Act-Uncoord

HCM Signalized Intersection Capacity Analysis
 6: Fallis Line & CR10

Total Volumes - 2030
 SAT Peak Hour

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 24.3

Intersection LOS: C

Intersection Capacity Utilization 76.7%

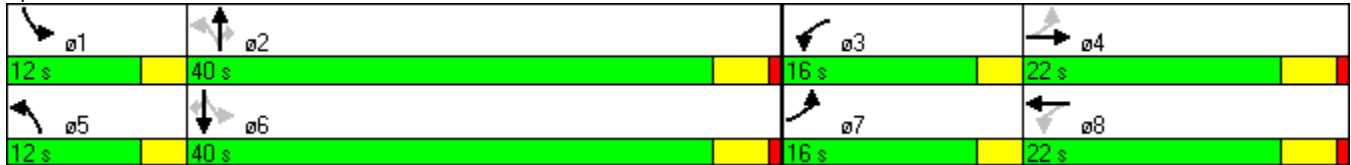
ICU Level of Service D

Analysis Period (min) 15

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










Queue shown is maximum after two cycles.

Splits and Phases: 6: Fallis Line & CR10





















HCM Unsignalized Intersection Capacity Analysis
 15: Fallis Line & Tapley Quarter Line

Total Volumes - 2030
 SAT Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (veh/h)	9	64	44	5	78	45
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	70	48	5	85	49
Pedestrians						
Lane Width (m)						
Walking Speed (m/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh						
Upstream signal (m)						
pX, platoon unblocked						
vC, conflicting volume	269	51			53	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	269	51			53	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	99	93			94	
cM capacity (veh/h)	681	1018			1540	
Direction, Lane #	WB 1	NB 1	SB 1			
Volume Total	79	53	134			
Volume Left	10	0	85			
Volume Right	70	5	0			
cSH	959	1700	1540			
Volume to Capacity	0.08	0.03	0.06			
Queue Length 95th (m)	2.1	0.0	1.3			
Control Delay (s)	9.1	0.0	4.9			
Lane LOS	A		A			
Approach Delay (s)	9.1	0.0	4.9			
Approach LOS	A					
Intersection Summary						
Average Delay			5.2			
Intersection Capacity Utilization		24.5%		ICU Level of Service		A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 12: King St (CR21) & CR10

Total Volumes - 2030
 SAT Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	Stop
Volume (vph)	149	32	1	6	37	333	2	39	6	293	54	229
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	162	35	1	7	40	362	2	42	7	318	59	249
Direction, Lane #	EB 1	WB 1	NB 1	SB 1	SB 2							
Volume Total (vph)	198	409	51	318	308							
Volume Left (vph)	162	7	2	318	0							
Volume Right (vph)	1	362	7	0	249							
Hadj (s)	0.19	-0.49	-0.03	0.53	-0.53							
Departure Headway (s)	6.6	5.5	6.9	6.9	5.9							
Degree Utilization, x	0.36	0.63	0.10	0.61	0.50							
Capacity (veh/h)	511	627	437	502	597							
Control Delay (s)	13.3	17.4	10.7	19.2	13.4							
Approach Delay (s)	13.3	17.4	10.7	16.3								
Approach LOS	B	C	B	C								
Intersection Summary												
Delay			16.0									
HCM Level of Service			C									
Intersection Capacity Utilization			65.7%	ICU Level of Service	C							
Analysis Period (min)			15									

Intersection: 12: King St (CR21) & CR10

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	LTR	L	TR
Maximum Queue (m)	16.5	20.9	17.3	20.7	18.4
Average Queue (m)	12.3	17.8	9.2	15.4	14.3
95th Queue (m)	18.0	22.1	19.4	22.7	21.4
Link Distance (m)	518.3	494.8	260.2		495.3
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (m)				12.0	
Storage Blk Time (%)				13	12
Queuing Penalty (veh)				36	36

Appendix J

Traffic Signal Warrants

Hour Ending	Main Lanes (CR10)						Main Lanes (CR10)						Minor Road (Larmer Line)					
	North Approach 1			South Approach 2			North Approach 1			South Approach 2			East Approach 1			West Approach 2		
	LT	Factor	TH	Factor	RT	Factor	LT	Factor	TH	Factor	RT	Factor	LT	Factor	TH	Factor	RT	Factor
7	3	1.22	122	0.97	4	152	0.50	6	152	0.40	6	152	2	2.00	1	1.00	8	14
8	1	0.17	125	1.00	5	162	1.00	3	162	1.00	4	162	4	2.00	1	1.00	16	22
9	6	1.00	129	1.00	3	171	1.00	6	171	1.00	10	171	2	1.00	1	1.00	3	16
10	2	0.33	113	0.88	3	124	1.33	8	124	0.73	4	124	1	0.50	1	1.00	6	4
16	8	1.68	168	1.11	11	127	1.33	7	127	0.73	3	127	5	3.00	1	2.00	3	4
17	7	0.88	180	0.86	6	152	1.00	7	152	1.09	6	152	7	3.50	0	5.00	5	2
18	8	1.00	209	1.00	11	140	1.00	7	140	1.00	2	140	2	1.00	1	1.00	1	2
19	8	1.00	116	0.56	15	88	1.14	8	88	0.63	2	88	6	3.00	3	3.00	2	9

PROJECTED

Hour Ending	Main Lanes (CR10)						Main Lanes (CR10)						Minor Road (Larmer Line)					
	North Approach 1			South Approach 2			North Approach 1			South Approach 2			East Approach 1			West Approach 2		
	LT	Factor	TH	Factor	RT	Factor	LT	Factor	TH	Factor	RT	Factor	LT	Factor	TH	Factor	RT	Factor
7	3	462	462	5	746	746	41	35	35	35	35	35	36	26	3	33	38	38
8	1	472	472	7	793	793	22	23	23	23	23	23	62	41	3	64	37	37
9	6	487	487	4	837	837	43	58	58	58	58	58	31	30	5	12	46	46
10	2	427	427	4	607	607	57	23	23	23	23	23	16	8	1	24	32	32
16	10	726	726	12	568	568	40	50	50	50	50	50	75	9	1	11	68	68
17	9	777	777	7	682	682	38	90	90	90	90	90	105	4	1	20	108	108
18	10	902	902	12	628	628	38	30	30	30	30	30	30	4	1	4	43	43
19	10	501	501	16	395	395	43	30	30	30	30	30	90	18	0	8	54	54

Data From Counts

Peak Hour Data used to generated the factor (increase/decrease of volumes)

Peak Hour from traffic report and projected to the 8 hrs period

SIGNAL JUSTIFICATION - HORIZON 2030

Hour Ending	CR10						Larmer Line						PED
	Main Approach 1			Main Approach 2			Minor Approach 1			Minor Approach 2			
	LT	TH	RT	LT	TH	RT	LT	TH	RT	LT	TH	RT	
7:00	3	462	5	41	746	35	36	3	33	26	3	38	2
8:00	1	472	7	22	793	23	62	3	64	41	3	37	2
9:00	6	487	4	43	837	58	31	3	12	30	5	46	2
10:00	2	427	4	57	607	23	16	3	24	8	1	32	2
16:00	10	726	12	40	568	50	75	1	11	9	1	68	2
17:00	9	777	7	38	682	90	105	0	20	4	1	108	2
18:00	10	902	12	38	628	30	30	1	4	4	1	43	2
19:00	10	501	16	43	395	30	90	3	8	18	0	54	2

Location CR10 / Larmer Line Intersection
 Nº of Lanes on Major Rd 1
 Nº of Lanes on Minor Rd 1
 How many Approaches 4
 Operating Environment Rural Free Flow Population < 10,000

CR10 / Larmer Line Intersection

Signal Justification 1: Minimum Vehicle Volumes

Justification	Guidance Approach Lanes				PERCENTAGE WARRANT								TOTAL ACROSS	SECTION PERCENT
	1 Lanes		2 or More Lanes		HOUR ENDING									
Flow Condition	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00		
1A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1431	1527	1562	1204	1570	1839	1703	1168		
	Compliance %				100	100	100	100	100	100	100	100	800	100
1B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	140	210	127	83	164	237	83	173		
	Compliance %				100	100	100	70	100	100	69	100	739	92
Free Flow					Both 1A and 1B 100% fulfilled each of 8 hours?								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Signal Justification 1:					Lesser of 1A or 1B at least 80% fulfilled each of 8 hours?								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Signal Justification 2: Delay to Cross Traffic

Justification	Guidance Approach Lanes				PERCENTAGE WARRANT								TOTAL ACROSS	SECTION PERCENT
	1 Lanes		2 or More Lanes		HOUR ENDING									
Flow Condition	FREE FLOW	REST. FLOW	FREE FLOW	REST. FLOW	7:00	8:00	9:00	10:00	16:00	17:00	18:00	19:00		
2A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1291	1317	1435	1120	1406	1602	1620	995		
	Compliance %				100	100	100	100	100	100	100	100	800	100
2B	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	67	108	68	28	107	131	56	113		
	Compliance %				100	100	100	56	100	100	100	100	756	95
Free Flow					Both 2A and 2B 100% fulfilled each of 8 hours?								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Signal Justification 1:					Lesser of 2A or 2B at least 80% fulfilled each of 8 hours?								Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>

Signal Justification 3: Combination

Justification	Justification Satisfied 80% or More?	Two Justifications Satisfied 80% or More?	
1 Minimum Vehicular Volume	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
2 Delay to Cross Traffic	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	NOT JUSTIFIED	