



**ENNERDALE EXT 9 (ERVEN 5445 & 5446) TOWNSHIP
TRAFFIC IMPACT ASSESSMENT
MAY 2020**

**Rapid Land Release Programme: Packages A & B-Stage 2
RLRP-2019/07-06**



Project Name : Rapid Land Release Programme: Packages A & B-Stage 2
Project Team : GladAfrica Consulting Engineers (Pty) Ltd
Employer : Gauteng Department of Human Settlement
Client Reference : RLRP-2019/07-06
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I certify that this Traffic Impact Assessment has been prepared under my immediate supervision and that I have extensive experience and training in the field of traffic and transportation engineering so as to qualify as a Registered Professional Traffic Engineer.



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Received and accepted by a duly authorised representative of the client

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Date: _____

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List of Acronyms

ACRONYM	DESCRIPTION
CoJ	City of Johannesburg
COTO	Committee of Transport Officials
NMT	Non-motorised Transport
JRA	Johannesburg Roads Agency
UA	Universal Access
TIA	Traffic Impact Assessment
SDP	Site Development Plan
LoS	Level of Service
PCU	Passenger Car Unit
d.u.	Dwelling Unit
v/c	Volume to Capacity Ratio

1 EXECUTIVE SUMMARY

GladAfrica Consulting Engineers (Pty) Ltd was appointed by the Gauteng Province Department of Human Settlements to undertake the Traffic Impact Assessment (TIA) for the Rapid Land Release Programme (RLRP) for a mixed township development in Ennerdale Extension 9 comprising Erven 5445 and 5446, Johannesburg, Gauteng consisting of:

- Social housing (3 460 Residential 3 dwelling units), 2 small business nodes, a creche and a primary school.

The purpose of this report is to identify the traffic impacts of the new development on the surrounding road network, intersections, Non-motorised Transport (NMT) requirements and to propose mitigation measures for the effective traffic operations conditions of vehicle and pedestrian traffic in the area of the development. Therefore, the report describes an investigation of the status quo scenario of the traffic as well as future scenarios concerning the Rapid Land Release mixed township development. The locations of the new mixed development and the external intersections counted and analysed are shown in the figure below.



Figure 1 Ennerdale Ext 9 Township Development Area (Source: Google Earth)

The capacity analysis was performed by using SIDRA Intersection software at Locations 1 to 9.

The results of the analysis showed that no upgrade is required at the nine intersections for the existing 2019 traffic evaluation.

2 BACKGROUND

The Gauteng Province Human Settlements Department has decided to implement the roll out of a Rapid Land Release programme for a mixed development in Ennerdale Extension 9, as part of the National Public Low-Cost Housing Programme. The proposed mixed development township will require supporting ancillary infrastructure such as laybys, public transport stops, pedestrian walkways, and possibly speed calming measures.

GladAfrica Consulting Engineers (Pty) Ltd was appointed by the Gauteng Province Department of Human Settlements to undertake the Ennerdale Extension 9 (Erven 5445 and 5446) Mixed Development Township Traffic Impact Assessment (TIA).

The purpose of this report is to identify the traffic impacts of the new development project on the surrounding road network, intersections and at properties accesses points, and to propose mitigation measures for the safe, effective traffic operating conditions of vehicle and pedestrian traffic in the region of the development. Therefore, the report describes the investigation of the traffic status quo scenario as well as future scenarios concerning the implementation of the new mixed development township project.

2.1 Location

The proposed development site is located on Erf 5445 and Erf 5446 part of the Ennerdale Extension (Ext) 9 on the western boundary of the Ennerdale Extension 9 clinic, City of Johannesburg, Gauteng Province. The site is situated to the north of R558 Road at the intersection with Katz Road, Smith Walk, Samuel Road and Dickson Road. The coordinates of the new mixed development project are 26°24'21.69"S and 27° 49'.37.67"E. Refer to **Figure 1** for the locality map.

2.2 Project Brief

The study area is restricted to several intersections around the proposed development that the traffic and pedestrians would use to access the proposed development (refer to **Figure 2**). This TIA includes the following:

- Analysis of the status quo scenario (2019).
- Analysis of the traffic impact of the development (2024).
- Recommendation for traffic impact mitigation where required.
- Development access including NMT and internal road requirements.

3 STATUS QUO

3.1 Data Collection

The manual turning movements traffic counts were undertaken on Wednesday 27 August 2019, these comprised 12 hours classified turning movement counts for the period 06:00-18:00, recorded in 15 minutes intervals at the following key intersections/ locations (locs) (refer to **Figure 2**):

- Loc 1: R558/ Katz Road.
- Loc 2: R558/ R558 East.
- Loc 3: R558 / Agaat Road.
- Loco 4: R558 / Sonickson Street.
- Loc 5: R558/ Town Road.
- Loc 6: Town Road/ Samuel Road.
- Loc 7: Town Road/ Katz Road.
- Loc 8: Katz Road/ Smith Walk.
- Loc 9: Katz Road/ Dickson Road.



Figure 2: Key Intersection Locations (Source: Google Earth)

The morning (a.m.) peak and afternoon (p.m.) peak hour background traffic counts are shown schematically in **Annexure B**.

3.2 Urban Development Framework

The City of Johannesburg (CoJ) Urban Development Framework (UDF) has clearly identified the Ennerdale Node as District Economic Node for the surrounding area (shown with red border in **Figure 3** below). Furthermore, as part of Region G, Sub-area 5, Ennerdale Ext 9 (yellow star) is within the Ennerdale District Economic Node which is planned to be served by a proposed high order Strategic Public Transport Network (SPTN). These SPTN routes have been identified as the dotted pink lines, which do not include passenger rail but public transport via the main provincial K-routes of R558, M10 and R553 (Golden Highway). The blue stars are the current location of surrounding local taxi ranks and the golden dashed lines indicate the region border.

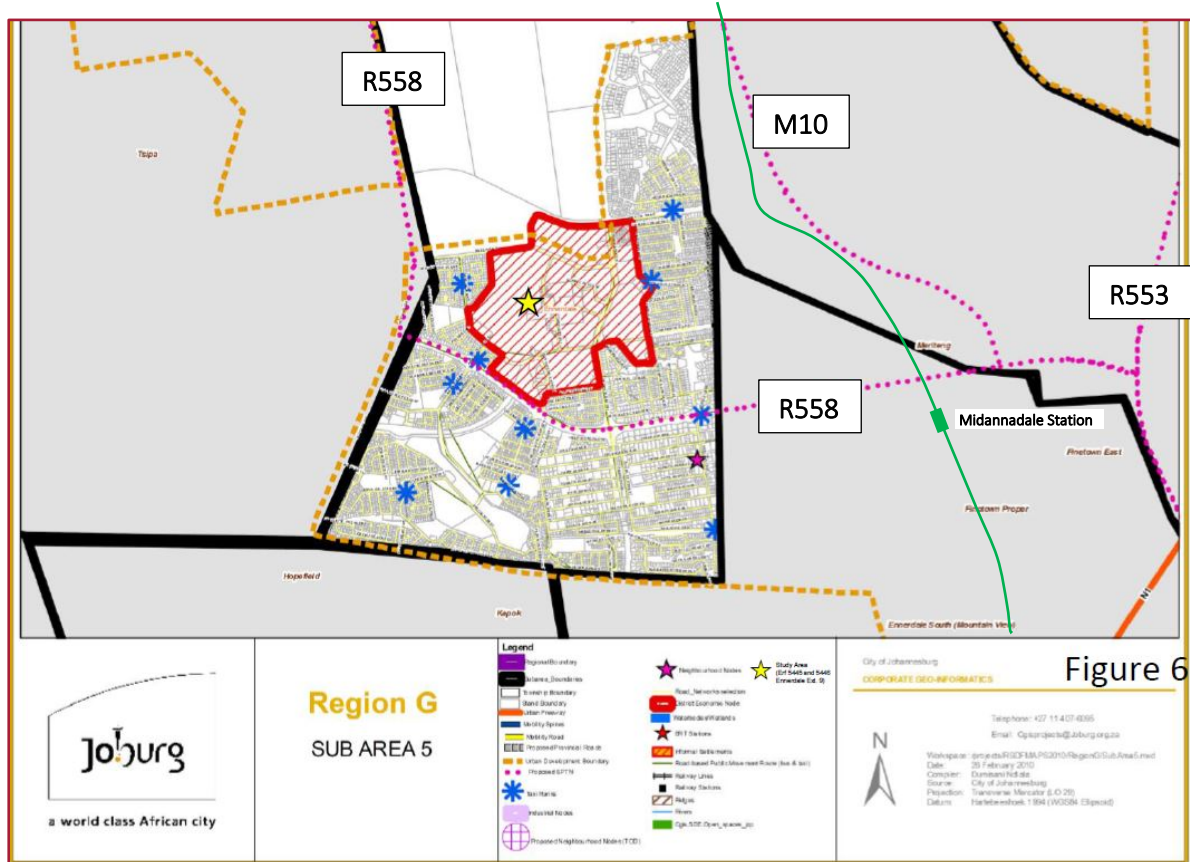


Figure 3: Extract from CoJ- UDF: Region G-Sub-area 5 for Context of Ennerdale Ext 9. (Source CoJ UDF 2016)

This means that the Ennerdale Node can specifically be considered as a Public Transit Node for the purposes of calculating the trip generation.

The appointed town planner has developed a concept development plan which is commensurate with the CoJ definition of District Economic Node for Ennerdale. This is shown in **Figure 4** below.

3.3 Descriptions of Key Intersections

- **Loc 1: R558 (K15) /Katz Road**
This is a 3-leg priority-controlled intersection. The R558 Road is a Class 3 minor arterial main road and has one lane per direction on the northern side of the intersection and a one lane per direction on the southern side, with no access to properties. Katz Road is a Class 4b – residential collector and has one lane per direction eastbound and westbound, with access to properties.
- **Loc 2: R558 (K15) North/ South (N/S) and R558 (K158) East/ West (E/W)**
This is a priority- controlled 3-leg intersection. The R558 Road is a Class 3 minor arterial main road and has one lane per direction on the northern side of the intersection and a one lane per direction on the southern side. The R558 Road is a Class 3 minor arterial main road and has one lane per direction on the eastern side of the intersection with no access to properties.
- **Loc 3: R558 Road (K158)/ Agaat Road**
This is a 4-leg priority-controlled intersection. The R558 Road is a Class 3 minor arterial main road and has one lane per direction on the eastern side of the intersection and a one lane per direction on the western side with access to properties generally not allowed, Agaat Road plays two alternate function at the intersection with R558; the southern approach is a Class 4b residential collector and has one lane per direction and on the northern approach Agaat Road is a Class 3 minor arterial main road and has 2 lanes per direction and the middle island with access to properties not permitted.
- **Loc 4: R558 Road (K158)/ Sonickson Street**
This is a 4-leg priority-controlled intersection. The R558 Road is a Class 3 minor arterial and has one lane per direction on the eastern side of the intersection and a one lane per direction on the western side with no access to properties. Agaat/ Sonickson Street is a Class 4b residential minor collector and has one lane in the northbound and one lane in the southbound with access to properties allowed.
- **Loc 5: R558 Road(K158)/ Town Rd**
This is a 4-leg signalised controlled intersection. The R558 Road (K158) is a Class 3 minor arterial main road and has one lane per direction on the eastern side of the intersection and a one lane per direction on the western side with local road widening at the intersection. Town Road is a Class 3 minor arterial main road and has two lanes per direction in the northbound and two lanes per direction in the southbound with a middle island and no accesses to properties.
- **Loc 6: Town Road/ Samuel Road**
This is a 4-leg priority-controlled intersection. The Town Road is a Class 3 minor arterial main road and has two lanes per direction on the northern and southern side of the intersection and has a middle island with accesses to properties not permitted. Samuel Road is a Class 4b minor collector residential with access to properties and has one lane in the eastbound and one lane in the westbound direction.
- **Loc 7: Town Road/ Samuel Road**
This is a 3-leg priority-controlled intersection. Town Road is a Class 3 minor arterial main road and has two lanes per direction on the northern and southern side of the intersection

and has a middle island with no accesses to properties. Katz Road is a Class 4b minor collector residential with access to properties and has one lane in the eastbound and one lane in the westbound direction.

- **Loc 8: Katz Road/ Smith Walk**
This is a 3-leg priority-controlled intersection. Katz Road is a Class 4b minor collector residential with access to properties and has one lane in the eastbound and one lane in the westbound direction. Smith Walk is a Class 4b minor collector residential with accesses to properties and has one lane in the northbound and one lane in the southbound direction.
- **Loc 9: Katz Road/ Dickson Road**
This is a 3-leg priority-controlled intersection. Katz Road is a Class 4b minor collector residential with access to properties and has one lane in the eastbound and one lane in the westbound direction. Dickson Road is a Class 5b local street residential with access to properties and has one lane per direction on the southern approach of the intersection.

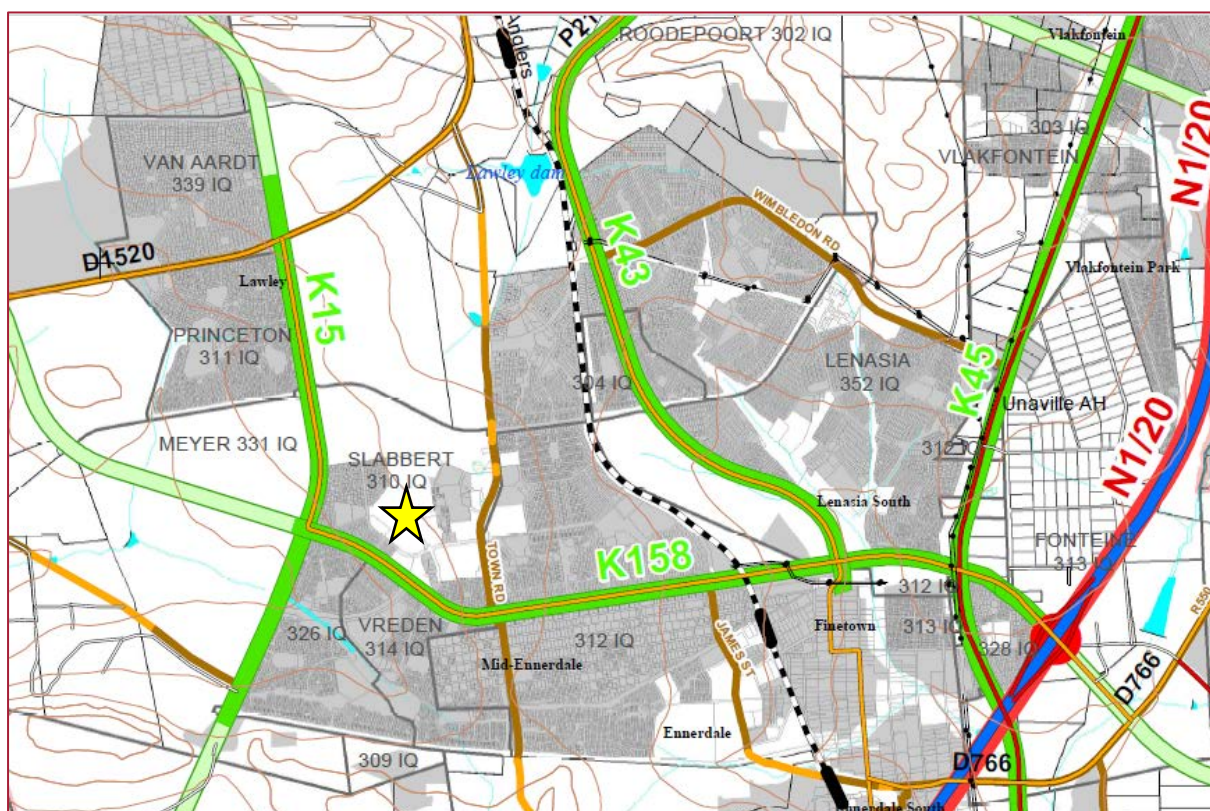


Figure 5: Future Provincial Planning and Road Hierarchy

The proposed future local roads network on Erven 5445 and 5446 traversing east/ west and north/ south for the new mixed development in Ennerdale Extension 9 is provided in **Figure 6** below. The future roads traversing the new development will be connecting to the existing roads network to the north on Katz Road, to the east along Smith Walk, to the south along Samuel Road and to the west along Samuel Road (Rd).

The proposed Sonickson Street (St) traversing the future development has a road reserve of 25 m wide running through the central part of the study area which intend to accommodate the northbound extension of this road.

All the intersections for the Ennerdale new mixed development will be side road stop-controlled except for the intersection of Sonickson St and Agaat Rd which will be a roundabout with a 20 m diameter inner circle and a 4 m wide circulating lane. Space has been allowed for the future upgrade of this intersection to a 2-circulating lane roundabout.

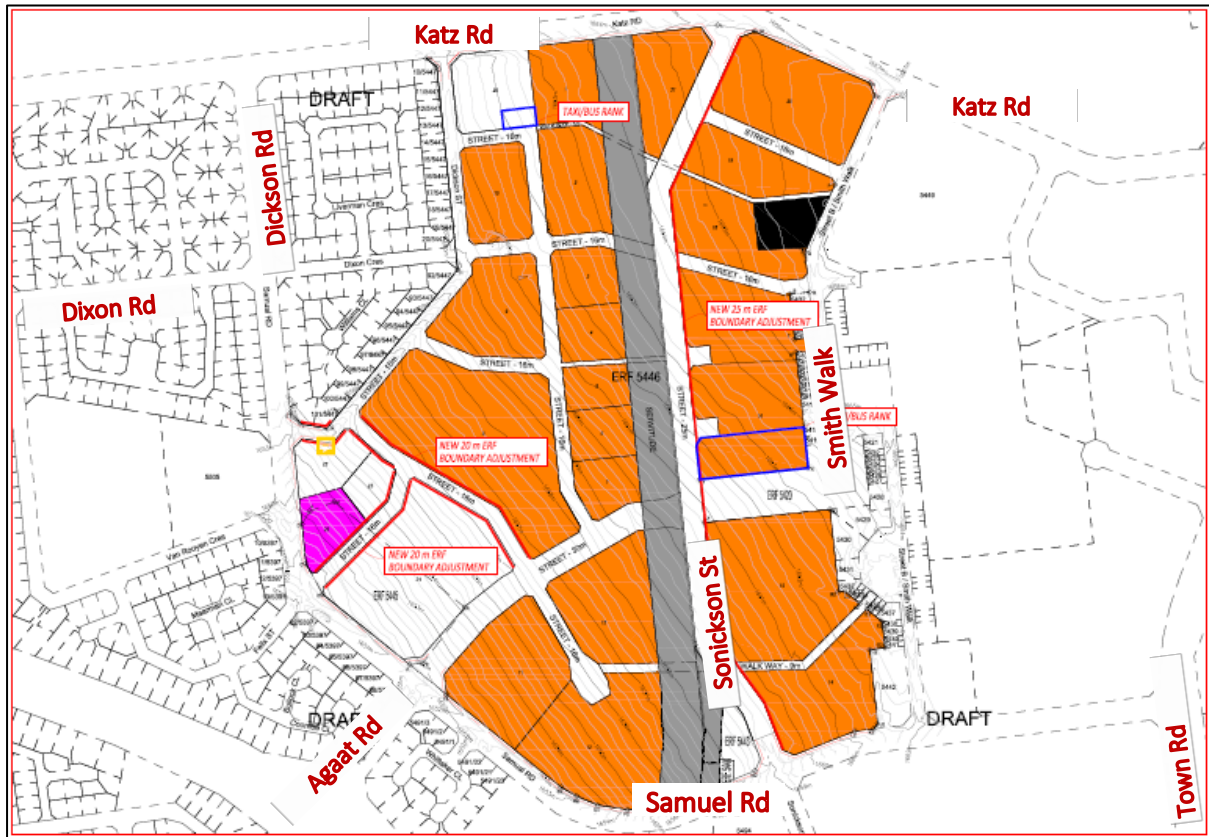


Figure 6: Proposed Future Township Road Network for Ennerdale Extension 9

3.4 Intersection Capacity Analysis

The SIDRA Intersection V7.0 software was used to analyse the operation and capacity of the individual intersections under investigation. The SIDRA software is widely used as a micro-analytical evaluation tool to assess the performance measures of an intersection, including the Level of Service (LoS), delays and volumes to capacity (v/c) ratio.

SIDRA was used to analyse each intersection as discussed in Section 3.3 for current (2019) traffic operations and future scenarios. The 2019 morning and afternoon peak hour background traffic volumes are shown schematically in **Annexure D**. The following scenarios have been tested:

- Status quo scenario (2019) was analysed with SIDRA to test the level of service and other performance measurements of the current intersection operations.
- The other scenario analysed was to determine the impact of the traffic that will be generated by the new development on the road network with 5 years of background traffic growth (2024).
- The recommendations in terms of the traffic signal design optimisation and intersection geometric interventions were identified and conceptual designs were included.

The LoS depends on the traffic delays at the intersection, either due to low capacity on the approaches, or due to inadequate signal timings for signalised intersections. LoS A represents the best operating conditions with minor or no delays while LoS F represents the worst operating condition with serious delays. Delays of 55, 50 and 35 seconds for signalised, roundabout and sign control intersection respectively are deemed acceptable as it is not lower than LoS D. The criterion for acceptable LoS is shown in **Table 1**. The Volume Demand to Capacity Ratio (v/c) is a measure that compares roadway demand (vehicle volumes) with roadway supply (carrying capacity). For example, v/c = 1 indicates that the roadway facility is operating at its capacity. The output modelling summaries and comments in terms of the interventions that could take place to improve the operations are provided in **Table 2**.

Table 1: SIDRA Level of Service Criterion and Definition

Level of Service	Control delay per vehicle in seconds (d)		
	Signals	Roundabout	Sign Control
A	$d \leq 10$	$d \leq 10$	$d \leq 10$
B	$10 < d \leq 20$	$10 < d \leq 20$	$10 < d \leq 15$
C	$20 < d \leq 35$	$20 < d \leq 35$	$15 < d \leq 25$
D	$35 < d \leq 55$	$35 < d \leq 50$	$25 < d \leq 35$
E	$55 < d \leq 80$	$55 < d \leq 70$	$35 < d \leq 50$
F	$80 < d$	$70 < d$	$50 < d$

The following peak hours were considered for traffic volumes in the SIDRA capacity analysis:

- Morning peak hour: 07:00- 08:00
- Afternoon peak hour: 17:00-18:00.

The intersections and road geometry were derived from Google Earth images and confirmed by site observations for each intersection layout and configuration.

The intersections' performance measures are summarised in **Table 2**. Existing traffic profile for the am and pm peak hour are given in **Annexure B** respectively. Detailed SIDRA movement summaries for Intersections 1 to 9 are given in **Annexure F**.

Table 2: Existing 2019 Traffic Evaluation Results

Intersection			a.m. peak					p.m. peak				
			Volume	v/c	Delay (s)	LOS	Queue (veh)	Volume	v/c	Delay (s)	LOS	Queue (veh)
Loc 1: R 558 Rd / Katz Rd (Priority Control)	P	South	319	0,08	1	A	0	188	0,05	1	A	0
	P	East	162	0,43	20	C	2	189	0,40	17	C	2
	P	North	476	0,12	3	A	0	481	0,13	3	A	0
	P	Total	957	0,16	5	A		858	0,17	5	A	
		Comment	Acceptable Level of Service a.m. and p.m. peak									
Loc 2: R558 Road NS and R558 EW (Priority Control)	P	South	125	0,10	10	B	0	88	0,07	10	A	0
	P	East	278	0,13	6	A	0	218	0,08	6	A	0
	P	North	244	0,11	6	A	0	284	0,12	6	A	0
	P	Total	647	0,12	7	A		590	0,10	7	A	
		Comment	Acceptable Level of Service a.m. and p.m. peak									
Loc 3: R 558 Road/ Agaat Road (Priority control)	P	South	257	0,61	24	C	4	256	0,69	28	D	5
	P	East	365	0,10	3	A	0	354	0,09	3	A	0
	P	North	196	0,25	13	B	1	89	0,13	13	B	0
	P	West	184	0,06	2	A	0	244	0,10	1	A	0
	P	Total	1002	0,25	10	B		943	0,26	10	B	
		Comment	Acceptable Level of Service a.m. and p.m. peak									
Loc 4: R558 Road / Sonickson Street (Priority control)	P	South	286	0,66	24	C	3	127	0,22	16	C	1
	P	East	421	0,14	2	A	0	393	0,15	1	A	0
	P	North	65	0,26	26	D	1	42	0,13	20	C	0
	P	West	412	0,16	2	A	0	322	0,13	1	A	0
	P	Total	1184	0,28	8	A		884	0,15	4	A	
		Comment	Acceptable Level of Service a.m. and p.m. peak									
Loc 5: R558 Road/ Town Road (Signalised control)	S	South	473	0,32	13	B	5	375	0,28	12	B	4
	S	East	460	0,33	15	B	5	379	0,31	13	B	5
	S	North	500	0,32	12	B	5	458	0,31	11	B	5
	S	West	423	0,32	15	B	5	302	0,22	15	B	3
	S	Total	1856	0,32	14	B		1514	0,28	13	B	
		Comment	Acceptable Level of Service a.m. and p.m. peak									
Loc 6: Town Road / Samuel Road (Priority control)	P	South	394	0,11	2	A	1	407	0,07	2	A	0
	P	East	301	0,38	13	B	1	160	0,30	15	B	1
	P	North	321	0,07	1	A	0	372	0,08	1	A	0
	P	West	166	0,44	18	C	2	159	0,45	19	C	2
	P	Total	1182	0,21	7	A		1098	0,16	6	A	
		Comment	Acceptable Level of Service a.m. and p.m. peak									

Loc 7: Town Road / Katz (Priority control)	P	South	183	0,03	2	A	0	223	0,05	3	A	0
	P	North	231	0,08	3	A	0	216	0,05	2	A	0
	P	West	213	0,26	10	B	1	168	0,22	11	B	1
	P	Total	627	0,13	5	A		607	0,10	5	A	
		Comment	Acceptable Level of Service a.m. and p.m. peak									
Loc 8: Katz Road / Smith Walk Road (Priority control)	P	South	33	0,03	9	A	0	43	0,04	9	A	0
	P	East	139	0,07	1	A	0	182	0,09	0	A	0
	P	West	255	0,13	1	A	0	208	0,11	1	A	0
	P	Total	427	0,10	1	A		433	0,09	1	A	
		Comment	Acceptable Level of Service a.m. and p.m. peak									
Loc 9: Katz Road/ Dickson (Priority control)	P	South	23	0,02	9	A	0	17	0,02	9	A	0
	P	East	131	0,06	0	A	0	201	0,10	1	A	0
	P	West	226	0,11	0	A	0	189	0,09	0	A	0
	P	Total	380	0,09	1	A		407	0,09	1	A	
		Comment	Acceptable Level of Service a.m. and p.m. peak									

3.5 Status Quo Traffic Appraisal

Location 1: R558 Road (K15)/ Katz Road: The LoS A is acceptable for the overall intersection and all the approaches during the a.m. peak and p.m. peak hour for the existing scenario at a LoS C/A.

Location 2: R558 Road (K15) NS/ R558 Road (158) EW: This intersection operates at an acceptable LoS A for the overall intersection and all the approaches during the a.m. peak and p.m. peak hour at an acceptable LoS A/B.

Location 3: R558 Road (K158)/ Agaat Road: This intersection during the a.m. peak and p.m. peak is operating at an overall acceptable LoS A and all the approaches at acceptable LoS B/C with the southern approach at a LoS D during the p.m. peak hour.

Location 4: R558 Road (K158)/ Sonickson Street: This intersection during the a.m. peak and p.m. peak is operating at an overall acceptable LoS A and all approaches operating at acceptable LoS A/B/C during the a.m. peak and p.m. peak with the northern approach at a LoS D.

Location 5: R558 Road (K158)/ Town Road: This intersection is operating at an overall acceptable LoS B for the a.m. peak and the p.m. peak and all approaches at an acceptable LoS B during the a.m. peak and p.m. peak hour.

Location 6: Town Road/ Samuel Road: This intersection during the a.m. peak and p.m. peak is operating at an overall acceptable LoS A. All approaches operate at acceptable LoS A/B/C for the a.m. and p.m. peak hour.

Location 7: Town Road/ Katz Road: This intersection during the a.m. peak and p.m. peak is operating at an overall acceptable LoS A and all approaches at acceptable LoS A/B for the a.m. and p.m. peak hour.

Location 8: Katz Road/ Smith Walk: This intersection is operating at an overall acceptable LoS B/ A for the a.m. and p.m. peak hour with all approaches at acceptable LoS A during the a.m. and p.m. peak hour.

Location 9: Katz Road/ Dickson Road: This intersection during the a.m. peak and p.m. peak is operating at an overall acceptable LoS A with all approaches operating at acceptable LoS A for the a.m. and p.m. peak hour.

4 PROPOSED DEVELOPMENT MODELLING

4.1 Trip Generation

The trip generation is based on the number of vehicles to be generated by the new development. In terms of calculating the vehicles expected to be generated by the proposed new mixed development, the criteria specified in COTO manual “Committee of Transport Officials” TMH17 South Africa Trip Data Manual, September 2013 were applied in conjunction with other assumed basic criteria being:

- Vehicle trip generation rate for Apartments and Flats, 1 dwelling/ unit = 0,65
- Vehicle Trip generation rate for Public Primary school 1 Student= a.m. 0,85/ p.m. 0,30
- Vehicle Trip generation rate for Pre-School a.m. 1/ p.m. 0,8
- Vehicle Trip generation rate for Business Centre 100 sqm GLA= 1,50

Trip Adjustment Factors

- Trip generation adjustment factor for very low car ownership (Apartments and Flats) at 50%
- Trip generation adjustment factor for very low car ownership (Public Primary School) at 80%
- Trip generation adjustment factor for very low car ownership (Pre- School) at 80%
- Trip generation adjustment factor for very low car ownership (Business centre) at 30%
- Public Transit Node reduction factor at 15%.

1354 Trips will be generated during the peak hour for the Ennerdale new development on Erven 5445/ 5446.

The current inbound to outbound split to be used is the same as contained in the COTO manual and the number of trips generated is shown in the table below.

Table 3: Trip Generation

Description	Size/ Units	Period Weekday	Trip Generation						Trip (veh/h)					
			Trip Rate	Reduction Factor for low car ownership	Reduct. transit corridor	Combined Reduction Factor	Final Trip Gen. rate	Gen. Traffic	Directional		In	Out		
									Movement					
									In/out (%)	Peak hour factor				
Residential 3 (d.u.)	3460	AM Peak	0,65	0,5	0,15	0,575	0,28	956	25/75		239	717		
		PM Peak	0,65	0,5	0,15	0,575	0,28	956	70/30		669	287		
Public Primary School (pupils)	1000	AM Peak	0,85	0,8	0,15	0,83	0,14	145	50/50	0,55	131	131		
		PM Peak	0,3	0,8	0,15	0,83	0,05	51	50/50	0,55	46	46		
Pre-School (pupils)	200	AM Peak	1	0,8	0,15	0,83	0,17	34	50/50	0,85	20	20		
		PM Peak	0,8	0,8	0,15	0,83	0,14	27	50/50	0,8	17	17		
Business Centre (100 sqm GLA)	107,11	AM Peak	1,5	0,3	0,15	0,405	0,89	96	85/15		81	14		
		PM Peak	1,5	0,3	0,15	0,405	0,89	96	20/80		19	76		
											AM PEAK IN		472	
											AM PEAK OUT			883
											PM PEAK IN		752	
											PM PEAK OUT			427

In terms of trip distribution, it was assumed that traffic expected to be generated by the proposed developments would distribute onto the existing road network in accordance with traffic distribution evident in terms of existing a.m. peak and p.m. peak traffic demands as determined from the 2019 traffic count surveys for Ennerdale Extension 9.

The existing traffic profile for the Ennerdale development is shown in **Figure 1/2 Annexure B**, the background traffic is shown in **Figure 3/4 Annexure C**, the generated traffic is shown in **Figure 5/6 Annexure D** and the forecast total traffic (2024) in **Figure 7/8 Annexure E**

When adding the development related traffic onto the existing traffic, the latter trip movements were also increased to account for existing traffic growth between the time the traffic counts were conducted until the time when the developments could be expected to be completed. In this regard, the assumed background traffic growth rate was 2% per annum for five years.

The maximum scenario has been modelled together with the background traffic for the highest impact to be tested.

5 TRAFFIC IMPACT ASSESSMENT

5.1 2024 Forecast Traffic Evaluation

The trip assignment for the forecast year 2024 scenarios was further analysed to evaluate the impact on the intersection capacity and discussed under this chapter. The capacity analysis was performed using SIDRA Intersection V7.0 software package. The results for the township development 2024 traffic, morning and afternoon peak hour are shown in the following section.

5.1.1 Intersection Capacity Analysis

The intersections performance measures are summarised in **Table 4**. The forecast development traffic profile for the a.m. and p.m. peak hour are given in **Annexure E** respectively. Detailed movement summary for Intersections 1 to 10 are given in **Annexure G**.

Table 4: Results of 2024 Forecast Intersection Evaluation

Intersection			a.m. peak					p.m. peak				
			Volume	v/c	Delay (s)	LOS	Queue (veh)	Volume	v/c	Delay (s)	LOS	Queue (veh)
Loc 1: R 558 Rd / Katz Rd (Priority Control)	P	South	389	0,10	1	A	0	240	0,06	1	A	0
	P	East	337	1,30	283	F	53	335	1,02	87	F	21
	P	North	763	0,27	3	A	0	708	0,21	3	A	0
	P	Total	1489	0,46	66	F		1283	0,39	25	C	
		Comment	Unacceptable Level of Service a.m. and p.m. peak									
Loc 1: R 558 Rd / Katz Rd (Signal Control)	S	South	389	0,20	9	A	3	240	0,13	9	A	2
	S	East	337	0,30	22	C	4	335	0,30	23	C	4
	S	North	763	0,30	7	A	5	708	0,30	7	A	5
	S	Total	1489	0,27	11	B		1283	0,27	11	B	
		Comment	Signalised: Acceptable Level of Service a.m. and p.m. peak									
Loc 2: R558 Road NS and R558 EW (Priority Control)	P	South	139	0,13	11	B	1	98	0,09	10	B	0
	P	East	345	0,16	6	A	0	272	0,11	6	A	0
	P	North	340	0,16	6	A	0	329	0,14	6	A	0
	P	Total	824	0,15	7	A		699	0,12	7	A	
		Comment	Acceptable Level of Service a.m. and p.m. peak									
Loc 3: R 558 Road/ Agaat Road (Priority control)	P	South	289	1,01	87	F	16	304	1,15	171	F	32
	P	East	476	0,12	3	A	0	493	0,11	3	A	1
	P	North	315	0,44	17	C	2	189	0,29	16	C	1
	P	West	266	0,08	2	A	0	285	0,12	1	A	0
	P	Total	1346	0,38	24	C		1271	0,39	45	E	
	Comment	Unacceptable Level of Service a.m. and p.m. peak										
	S	South	289	0,30	14	B	5	304	0,34	15	B	5

Loc 3: R 558 Road / Agaat Road (Signal control)	S	East	476	0,29	13	B	5	493	0,35	13	B	4
	S	North	315	0,13	10	A	2	189	0,07	10	A	1
	S	West	266	0,19	11	B	3	285	0,27	12	B	4
	S	Total	1346	0,23	12	B		1271	0,29	13	B	
		Comment	Signalised: Acceptable Level of Service a.m. and p.m. peak									
Loc 4: R558 Road / Sonickson Street (Priority control)	P	South	323	1,76	333	F	43	158	0,57	33	D	2
	P	East	604	0,19	2	A	0	616	0,21	2	A	0
	P	North	168	0,80	55	F	4	128	0,47	30	D	2
	P	West	563	0,21	2	A	0	432	0,18	1	A	0
	P	Total	1658	0,56	72	F		1334	0,27	8	A	
	Comment	Unacceptable Level of Service a.m. and p.m. peak										
Loc 4: R558 Road / Sonickson Street (Signal control)	S	South	323	0,36	24	C	4	158	0,27	30	C	2
	S	East	604	0,33	8	A	6	616	0,30	5	A	5
	S	North	168	0,12	13	B	1	128	0,18	17	B	1
	S	West	563	0,37	9	A	7	432	0,25	5	A	4
	S	Total	1658	0,33	12	B		1334	0,27	9	A	
	Comment	Signalised: Acceptable Level of Service a.m. and p.m. peak										
Loc 5: R558 Road / Town Road (Signalised control)	S	South	533	0,52	19	B	7	434	0,46	17	B	7
	S	East	726	0,51	13	B	7	798	0,50	12	B	10
	S	North	703	0,54	15	B	8	592	0,50	15	B	7
	S	West	587	0,38	11	B	7	453	0,30	12	B	5
	S	Total	2549	0,49	14	B		2277	0,45	14	B	
	Comment	Acceptable Level of Service a.m. and p.m. peak										
Loc 6: Town Road / Samuel Road (Priority control)	P	South	525	0,17	3	A	1	625	0,09	3	A	0
	P	East	333	0,74	22	C	3	271	1,20	165	F	26
	P	North	508	0,12	1	A	0	480	0,11	1	A	0
	P	West	337	1,79	594	F	80	256	1,37	294	F	39
	P	Total	1703	0,59	123	F		1632	0,48	75	F	
	Comment	Unacceptable Level of Service a.m. and p.m. peak										
Loc 6: Town Road / Samuel Road (Signalised control)	S	South	525	0,42	15	B	4	625	0,26	13	B	4
	S	East	333	0,27	16	B	4	271	0,22	13	B	3
	S	North	508	0,31	15	B	5	480	0,31	16	B	5
	S	West	337	0,43	14	B	6	256	0,30	13	B	4
	S	Total	1703	0,36	15	B		1632	0,27	14	B	
	Comment	Signalised: Acceptable Level of Service a.m. and p.m. peak										
Loc 7: Town Road / Katz (Priority control)	P	South	238	0,05	2	A	0	288	0,08	3	A	0
	P	North	265	0,09	3	A	0	257	0,08	2	A	0
	P	West	414	0,75	20	C	7	255	0,46	15	B	2
	P	Total	917	0,38	11	B		800	0,20	7	A	
	Comment	Acceptable Level of Service a.m. and p.m. peak										
Loc 8: Katz Road / Smith Walk Road (Priority control)	P	South	147	0,20	11	B	1	114	0,12	10	A	1
	P	East	193	0,10	1	A	0	260	0,13	1	A	0
	P	West	425	0,23	1	A	1	326	0,18	2	A	1

	P	Total	765	0,19	3	A		700	0,15	3	A	
		Comment	Acceptable Level of Service a.m. and p.m. peak									
Loc 9: Katz Road/ Dickson (Priority control)	P	South	131	0,21	12	B	1	72	0,11	12	B	0
	P	East	381	0,19	0	A	0	426	0,22	1	A	0
	P	West	396	0,21	1	A	0	399	0,22	1	A	1
	P	Total	908	0,20	2	A		897	0,21	2	A	
		Comment	Acceptable Level of Service a.m. and p.m. peak									
Loc 10: Katz Road/ Sonickson St.	P	South	137	0,17	11	B	1	137	0,17	11	B	1
	P	East	293	0,15	0	A	0	339	0,17	0	A	0
	P	West	433	0,23	1	A	1	382	0,21	1	A	1
	P	Total	863	0,19	2	A		858	0,19	2	A	
		Comment	Acceptable Level of Service a.m. and p.m. peak									

5.1.2 2024 Forecast Opening Year Appraisal

Location 1: R558 Road (K15)/ Katz Road: The LoS F is not acceptable for the overall intersection for the a.m. peak, the east approach during the a.m. peak and p.m. peak hour for the future scenario is operating at a LoS F and the north/ south approach are operating at an acceptable LoS A for the a.m. peak and p.m. peak hour.

For the forecast scenario, this intersection requires geometry upgrade to the eastern approach with an extra short right turn lane and an upgrade to a signal control intersection to achieve an acceptable LoS.

With the upgraded geometry and signalised intersection, an overall acceptable LoS B for the a.m. peak and p.m. peak is achieved and the north/ south operates at an acceptable LoS A and the eastern approach at a LoS C for both the a.m. peak and p.m. peak hour.

Location 2: R558 Road (K15) NS/ R558 Road (K158) EW: This intersection operates at an acceptable LoS A for the overall intersection during the a.m. peak and p.m. peak hour and during both peak hours all approaches are operating at an acceptable LoS A/B.

Location 3: R558 Road (K158)/ Agaat Road: This intersection during the a.m. peak is operating at an overall acceptable LoS C with the southern approach at a nonacceptable LoS F. The p.m. peak hour is operating at an overall unacceptable LoS E with the south approach at a nonacceptable LoS F with a volume to capacity ratio (v/c) 1,15 with a delay of 171 second. A signal control upgrade is required for this intersection.

With a signalised control, this intersection operates at an overall LoS B for the a.m. peak and p.m. peak and all approaches operating at an acceptable LoS A/B for both peak hours. The volume to capacity ratio (v/c) is at 0,30 and 0,34 for the a.m. peak and p.m. peak hour on the southern approach.

Location 4: R558 Road (K158)/ Sonickson Street: This intersection is operating at an overall unacceptable LoS F for the a.m. peak and the southern/ northern approaches operating at a LoS F for

the same peak hour. The overall LoS for the p.m. peak hour at an acceptable LoS A with the southern/northern approaches at an acceptable LoS D, hence an upgrade to this intersection is required.

With a signalised control, this intersection operates at an overall LoS B/A for the a.m. peak and p.m. peak and all approaches operating at an acceptable LoS A/B/C for the a.m. peak and p.m. peak hour.

Location 5: R558 Road (K158)/ Town Road: The intersection operates at an overall acceptable LoS B for the a.m. peak and the p.m. peak and all approaches at an acceptable LoS B for both peak hours.

Location 6: Town Road/ Samuel Road: This intersection during the a.m. peak and p.m. peak is operating at an overall none acceptable LoS F and the western approach is operating at a none acceptable LoS F for the a.m. peak and p.m. peak, the east approach is operating at a none acceptable LoS F for the p.m. peak hour.

The east approach at a v/c of 1,20 for the p.m. peak and the west approach at a v/c 1,79/ 1,37 for the a.m. peak and p.m. peak. Therefore, a signal control upgrade is required for this intersection.

With a signalised control, this intersection operates at an overall acceptable LoS B for the a.m. peak and p.m. peak hour and all approaches operating at an acceptable LoS B for both peak hours. The volume to capacity ratio (v/c) is at 0,43 and 0,30 for the a.m. peak and p.m. peak hour on the western approach respectively. The eastern approach at a v/c of 0,22 during the pm peak hour.

Location 7: Town Road/ Katz Road: This intersection during the a.m. peak and p.m. peak is operating at an overall acceptable LoS B/A and all approaches at acceptable LoS A/B/C for the a.m. and p.m. peak hour.

Location 8: Katz Road/ Smith Walk: This intersection is operating at an overall acceptable LoS A for the a.m. and p.m. peak hour with all approaches at acceptable LoS A/B during the a.m. and p.m. peak hour.

Location 9: Katz Road/ Dickson Road: This intersection during the a.m. peak and p.m. peak is operating at an overall acceptable LoS A with all approaches operating at acceptable LoS A/B for the a.m. and p.m. peak hour.

Location 10: Sonickson/ Katz Road: This intersection during the a.m. peak and p.m. peak is operating at an overall acceptable LoS A and all approaches are operating at acceptable LoS A/B for the a.m. peak and p.m. peak hour.

Location 16: Sonickson/ Samuel Road: This proposed roundabout only requires a single lane per direction approach, a 20 m wide diameter inner circle and a 4m wide circulating lane. During the a.m. peak and p.m. peak it is operating at an overall acceptable LoS B and all approaches are operating at acceptable LoS A/B for the a.m. peak and p.m. peak hour. (The layout of a 2 circulating lane roundabout and, dual carriageway on Agaat Rd and 4 lanes on Sonickson St was tested to be able to fit within the road reserves provided if in future they were to be upgraded for some reason in line with their road hierarchy classification. This full layout is shown in **Annexure E**.

5.2 Public Transport

The Ennerdale Extension Development lies to the east of Daleview Secondary School, north of the R558 Road (K158), west of the Ennerdale Library and Ennerdale Clinic and south-west of the Ennerdale Swimming Pool. These four areas are well served by public transport services such as minibus-taxis, bus and taxis.

The Ennerdale area has an excellent public route networks, consisting of mobility spine, mobility roads and urban freeways; with the future proposed strategic public transport routes this will improve the linkage of the north/ south and east/ west therefore making this region suitable for a public transport node.

The current predominant movement from Ennerdale Extension 9 north and south towards the employment opportunities; in Johannesburg central, Alberton, City Deep, Sandton, Vereeniging area, Vanderbijlpark, etc. This further emphasises that most of the trips from the new development will be northbound and southbound.

it is expected that some of the Ennerdale Extension 9 residents will use the Midannadale Railway Station via minibus – taxi mode or non- motorized transport.



Figure 7: Public Transport Routes

Residents of the new mixed development Ennerdale Extension 9 will be served by existing public transport routes and future public transport routes along the R558 (K158) route, Town Road (Rd), Samuel Rd, Katz Rd, Sonickson Street (St) and future Agaat Rd extension.

The existing and future taxi routes and busses within the area are shown in the figure above. The predominant movement is expected for residents either to walk to the rail stations, or taxis to feed passengers to the rail systems, or directly to places of work opportunities.

The existing Bus Rapid Transport (BRT) trunk services running east-west along the R558 (K158) will serve residents of the Ennerdale new mixed development. Hence, Agaat Road and Sonickson Street are to serve as feeder paths to connect on the BRT route.

There are two informal taxi ranks, one along Samuel Road and the second one at the corner of R558 Rd (K158) and Agaat Rd intersection. These could be formalised and provide suitable public transport infrastructure to serve the existing Ennerdale area and the future new mixed development.

For this scale of the new mixed development and the existing demand in this area; two (2) taxi rank facilities will be required to serve this region. The locations of the proposed public transport facilities are shown on the figure below.

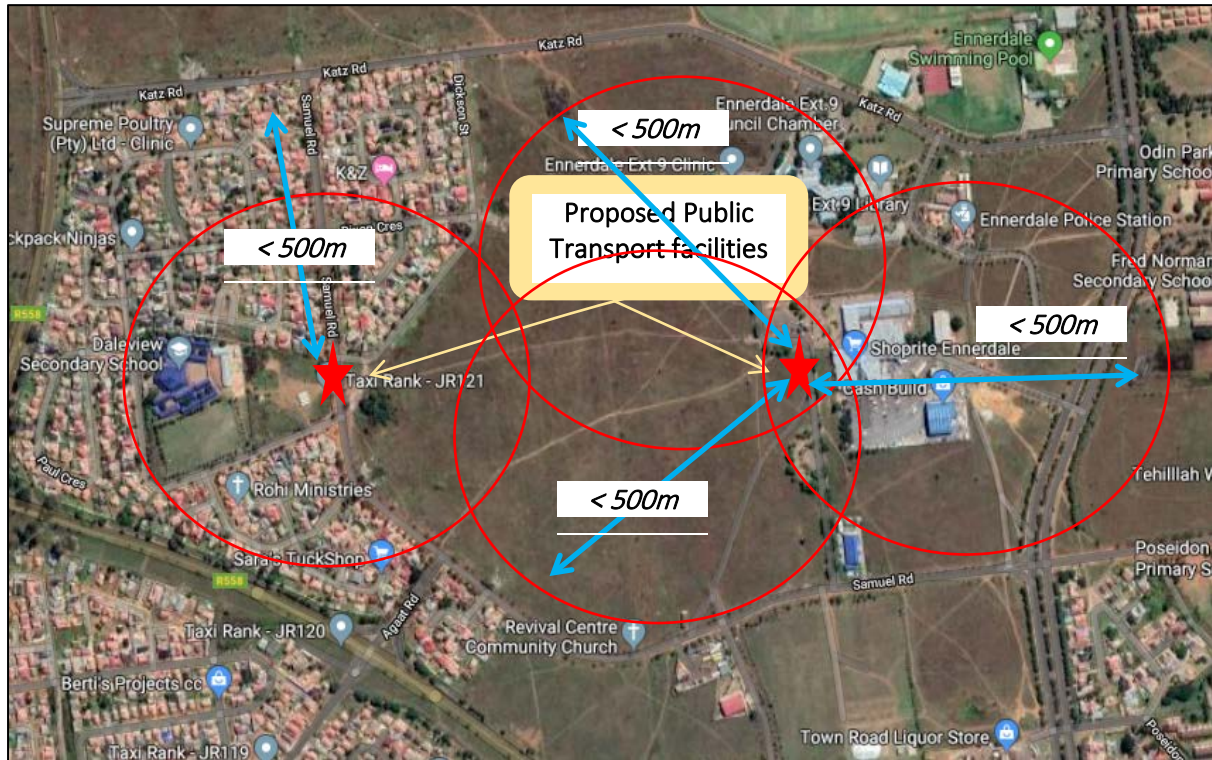


Figure 8: Proposed Public Transport Facilities

Two taxi ranks will suffice to serve this new Ennerdale mixed development. The taxi rank along Samuel Road/ Van Rooyen Crescent will have to be formalised with proper public transport infrastructures according to standards. The second taxi rank will be established on the west of Smith Walk at the intersection of Agaat Road/ Sonickson Street with proper public transport infrastructures and a taxi labyes of at least 20 m in length to serve the future business centre on Dickson Street.

Within the strategic objectives for improving accessibility, with these two ranks a target has been set to reducing walking distances to public-transport facilities to less than about one kilometre. As most pedestrians take about 15 minutes to walk one kilometre, so this objective should be regarded as a minimum. The placement of these public transport facilities will give an opportunity to the existing and new residents of the Ennerdale new housing development a far more desirable walking target within about seven minutes of a public transport boarding point (around 400 m to 500 m).

The Ennerdale mixed township development is important for public transport in that it supports differentiated public transport provision and enhances operating efficiency.

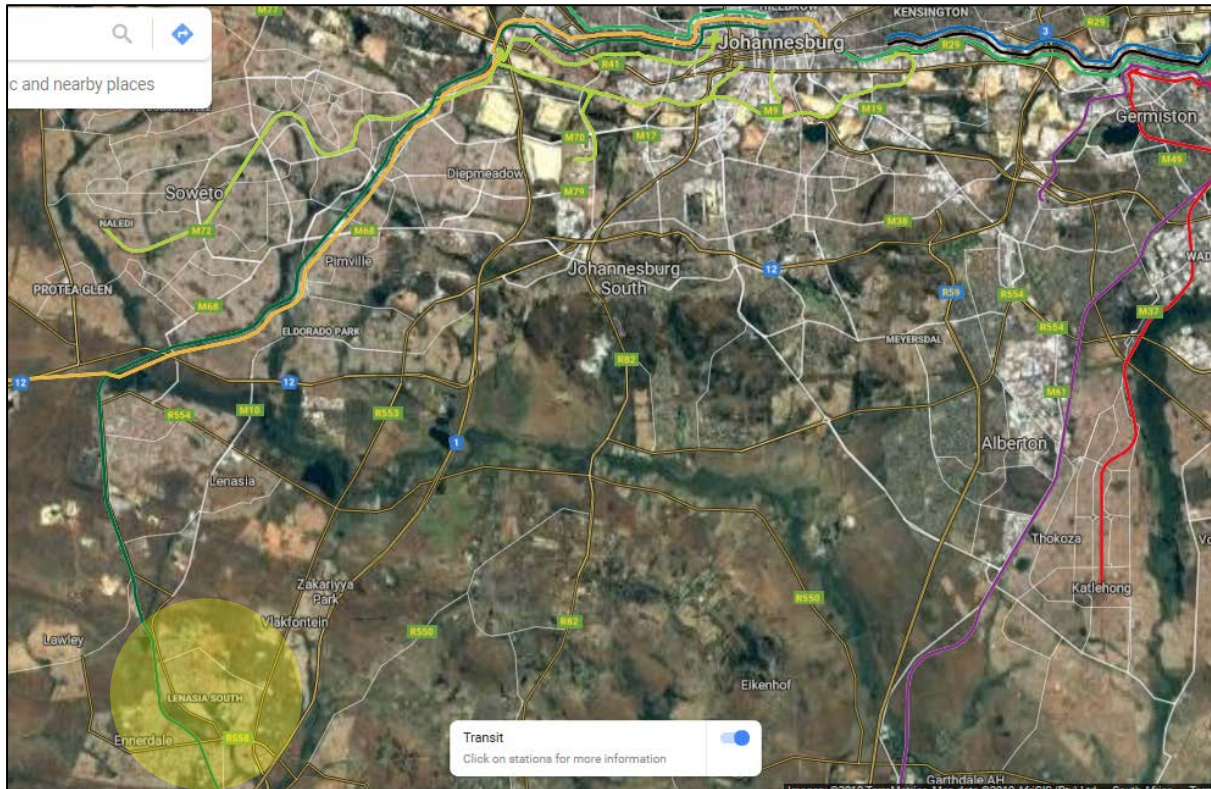


Figure 9: Passenger Railway Network

The passenger rail network forms the spine to the north/ south connection, linking the Ennerdale area via the Midannadale Rail Station to the Johannesburg CBD and Emfuleni Municipality to the south.

The Midannadale Rail Stations is one of the busiest stations and can provide an important opportunity for structuring development in the region. This station can act as catalysts for development and as inter-modal facilities.

6 PARKING PROVISION FOR ENNERDALE EXTENSION 9

6.1 Parking Provision

The City of Johannesburg Land Use Scheme 2017 “City planning and Development Division Premier’s draft June 2017” were applied in conjunction with other assumed basic criteria, these being:

As per the Township Development Plans included in **Annexure A**, the parking provision for Ennerdale Extension 9. As per trip generation table a maximum of 1354 trip vehicles will be generated for this development. Therefore, a provision for parking bays will be required for this new mixed development project.

It shall be noted that the Ennerdale mixed development falls under Zone B for areas as defined in the Spatial Development Framework (SDF) and areas covered by Zone B include the following aspects:

- Public transport priority areas: areas located within 500 m walking distance from PRASA rail stations
- Areas within the priority Transit Oriented Development Corridors
- Marginalized areas
- Transit Oriented Development (TOD) metropolitan and regional nodes.

This means that 2167 parking bays should be provided under this town planning scheme.

The number of parking bays required is shown in the following table for the Ennerdale Extension 9 new mixed township development.

Table 5: Parking Provision

Description	Units/ size	Standard	Zone B Parking Rate	Parking Bays
Residential 3 (d.u.)	3460	Inclusionary	0,5	1730
Public Primary School (pupils)	1000	per classroom/20 Pupils	1 bay per classroom, 1 bay per teacher/ staff, 0,1 per learner	105
Pre-School (pupils)	200	per classroom/ 20 Pupils	1 bay per classroom, 0,1 per Child	11
Business Centre (100 sqm GLA)	10711	100 sqm GLA	3	321
Total				2167

7 DEVELOPMENT ACCESS AND INTERNAL CIRCULATION

The preliminary design of the Ennerdale access intersections is provided in **Annexure A**. From the capacity analysis it was concluded that all access intersections would be stop-controlled intersections. The intersection configuration proposed will allow efficient and effective use of the road reserve by residents and motorists.

The internal circulation road with a road reserve of 20 m to 30 m requires a 7 m wide paved road with kerbing, with this roadway representing only one carriageway for a possible 4 lane undivided (25 m reserve) or divided roadway (for the 30 m wide reserve).

The extension of Agaat Road eastward through the development to Smith Walk should be 30m road reserve to potentially accommodate a future 4 lane dual carriageway. The extension of Sonickson St through the development should be at least a 25 m wide road reserve extending through to Katz Rd.

The road reserve outside the business node, institutional and education land use corner should be served by a 20m reserve width to accommodate sufficient parking and local public transport drop-off facilities. These roads should typically have pedestrian crossings, traffic calming measures, speed humps of 50 m spacing, 2 m wide paved pedestrian sidewalk on at least one side of the road and a minimum speed of 15 -20 km/h.

The balance of the local residential streets within the proposed township would have a 16 m wide road reserve with a 6m wide kerbed paved roadway. Each land parcel would have only one entrance, preferably off the lower order road. if possible.

Provision should be made for a refuse truck or fire truck to be able to use the internal road to avoid truck having to turn around.

If access control is considered at different parcels, a control boom should be placed some 12 m from the edge of the local street. Allowance must be made for one of the lanes (probably inbound) to be at least 4,5 m wide for fire truck access and no roof structure with a clearance less than 4,2 m would be allowed.

The 7 m wide access width at the property boundary (3,5 m per direction) would widen to 4,5 m inbound, 3 m outbound and a 2 m wide central median for a guard house placed at least 12 m inside the property boundary.

Annexure A shows the proposed Ennerdale Ext 9 new mixed development township roads network connecting east/ west and north/ south.

8 NON-MOTORISED TRANSPORT

Non-motorised Transport (NMT) plays an important role in the first and last mile (kilometre) of travel, especially for public transport users. The implementation of NMT involves the application of universal access design; - a principle that enables all citizens to reach their destination without a hindrance in their physical environment.

With regards to the residents of this new housing development, travel by means of cycling, walking, including travel by persons living with any visual or physical disability, should be accommodated. This has the beneficial effect of promoting transportation equity, maximising independence and improving community liveability.

To provide NMT facilities, all street infrastructures ought to comply with complete streets cross-section as per the City of Johannesburg standards requirement.

The various complete streets cross-sections are shown below for the required road reserve widths.



Figure 10: 20 m Wide Reserve Residential Collector

Safety and security to be included as two of the key aspects of the NMT facility designs. Safety of pedestrians over the level crossings/ security in general needs to be maximised through the infrastructure designs.

The road reserve running from Dickson to Agaat should be 20 m wide to accommodate dropping off laybys in front of the school and creche. This will need to be complemented by yield-controlled pedestrian crossings in front of the primary school.

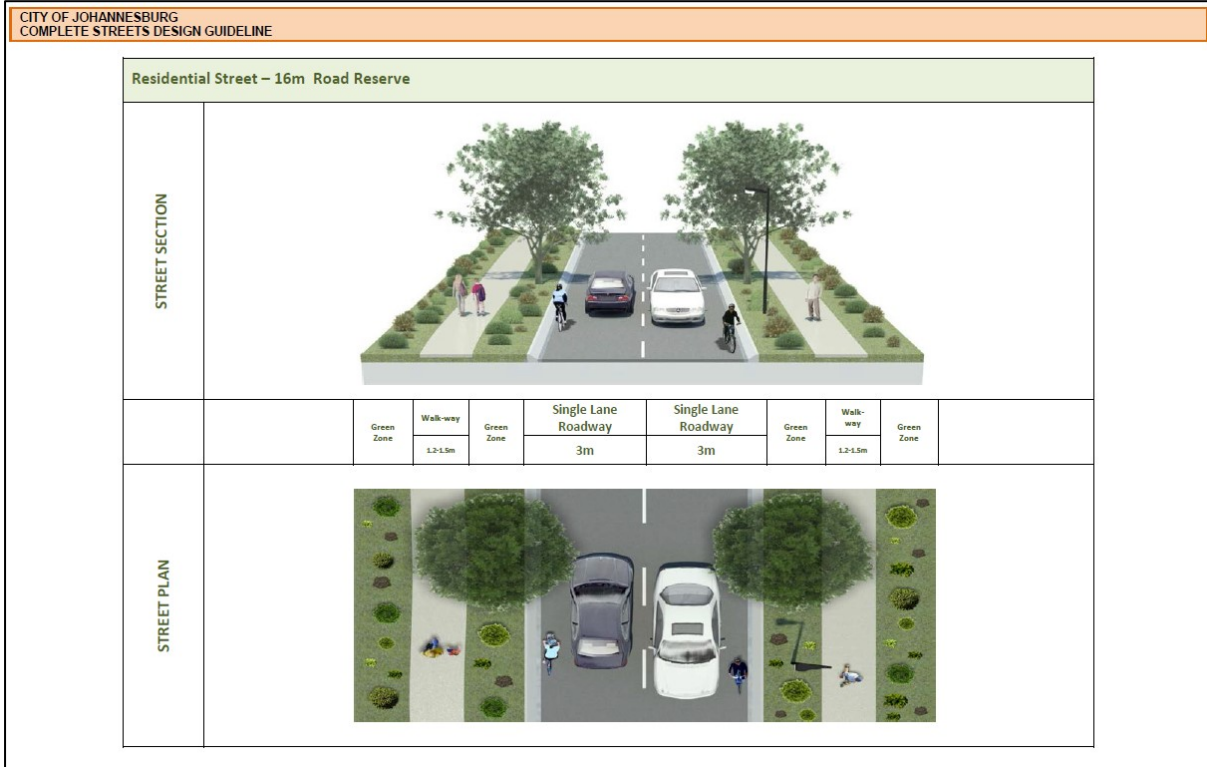


Figure 11: 16 m Wide Reserve Local Residential Street

All facilities that will be provided for public transport users and Non-motorised Transport users residing at the Ennerdale Extension 9 new mixed development, should be accessible and safe.

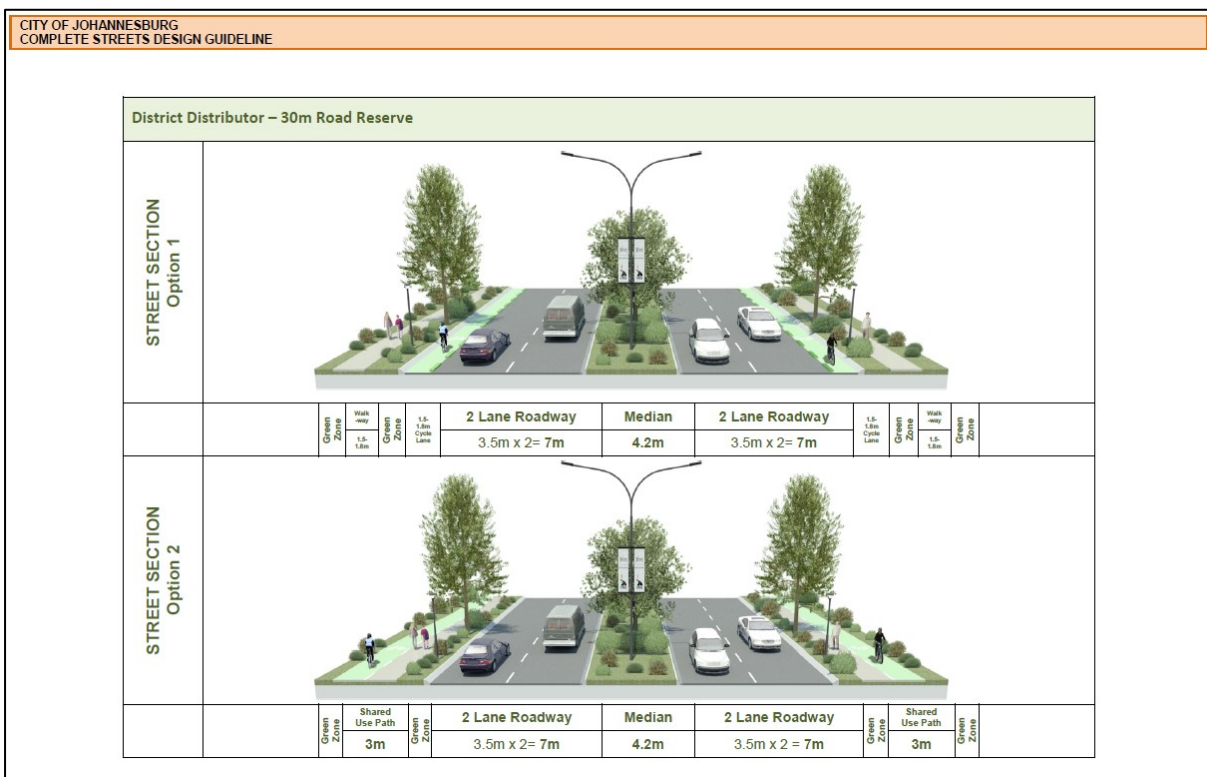


Figure 12: 30 m Wide Reserve District Distributor

8.1 Recommendations for Non-motorised Transport

The following recommendations should be provided from an NMT and public transport perspective:

- Several dedicated NMT walkway reserves have been identified in the north, centre and south across the development to provide access to the Ennerdale node and Clinic on Smith walk
- It is recommended that a minimum paved sidewalk width of 2 m be provided all around the Ennerdale new mixed development.
- It is recommended that lighting along all future roads be provided to ensure that safety and security is enhanced for all NMT users of the new development.
- providing tactile pavers at different intersections leading to the new mixed development for guidance and warning, making sure that the transfer of pedestrians from taxi/ bus to walking is done seamlessly and as safe as possible.
- Traffic calming measures (speed humps, road signs, speed restriction) should be provided for the safety of NMT users and around all learning institutions.

9 CONCLUSIONS AND RECOMMENDATIONS

Summary of findings includes:

- All intersections for the Ennerdale Extension 9 new mixed development operates at acceptable LoS for the existing evaluation during the 2019 a.m. peak and p.m. peak hour.
- The intersection of R558 (K15) Rd and Katz Rd, Intersection 1, operates at unacceptable LoS for the east approach; hence an upgrade to a signalised intersection is proposed for the future 2024 scenario with a geometric upgrade for the east approach.
- The 2024 forecast traffic evaluation for Intersections 3,4 and 6 indicates that these intersections should be signalised to achieve an acceptable LoS.
- The 2024 forecast traffic evaluation for Intersections 2,5,7,8,9 and 10 did not require any geometric upgrades because of the Ennerdale Ext 9 new mixed development.
- The number of trips generated for the new mixed development is 1 354 trips.

The Ennerdale Extension 9 mixed development will require a total of 2167 parking bays. The parking requirement was calculated by assuming that the Ennerdale mixed development falls under Zone B for areas as defined in the Spatial Development Framework and areas covered by Zone B include the following aspects:

- Public transport priority areas: areas located within 500 m walking distance from PRASA rail stations
- Areas within the priority Transit Oriented Development Corridors
- Marginalized areas
- Transit Oriented Development (TOD) metropolitan and regional nodes.

The following conclusions and recommendations are made based on the modelling and capacity analysis of the intersections:

The intersection and road upgrades required due to the impact of the new housing development:

- All township roads are to be constructed as a single 3,5 m wide lane per direction (paved and kerbed), but the 16m wide reserve roads are to be kerbed 6 m wide roadways for a lane per direction and paved sidewalk on at least one side of the road.
- R558 (K15) and Katz Rd Intersection 1; the 2024 forecast traffic evaluation requires the stop-control intersection to be upgraded to a signalised-control and the eastern approach lane configuration will be upgraded to two right turn lane northbound instead of one lane
- R558 (K158) and Agaat Rd intersection 3; to be upgraded from the stop-control to a signalised intersection.
- R558 (K158) and Sonickson St intersection 4; to be upgraded from a stop-control intersection to a signalised intersection-control.
- The signalised intersection of R558 (K158) and Town Rd intersection 5; to be optimised for the 2024 forecast scenario.
- The intersection of Town Rd and Samuel Rd (Intersection 6); the forecast traffic evaluation requires the stop-control intersection to be upgraded to a signalised-control and no geometric upgrade is required.
- A new roundabout is to be constructed at the intersection of Sonickson and Agaat Road, which comprises a 20 m diameter inner circle with one circulating lane 4 m wide. Both approaches on Sonickson St and Agaat Rd are to be a single 3,5m lane per direction.

Public transport facilities to be erected at the two locations as planned.

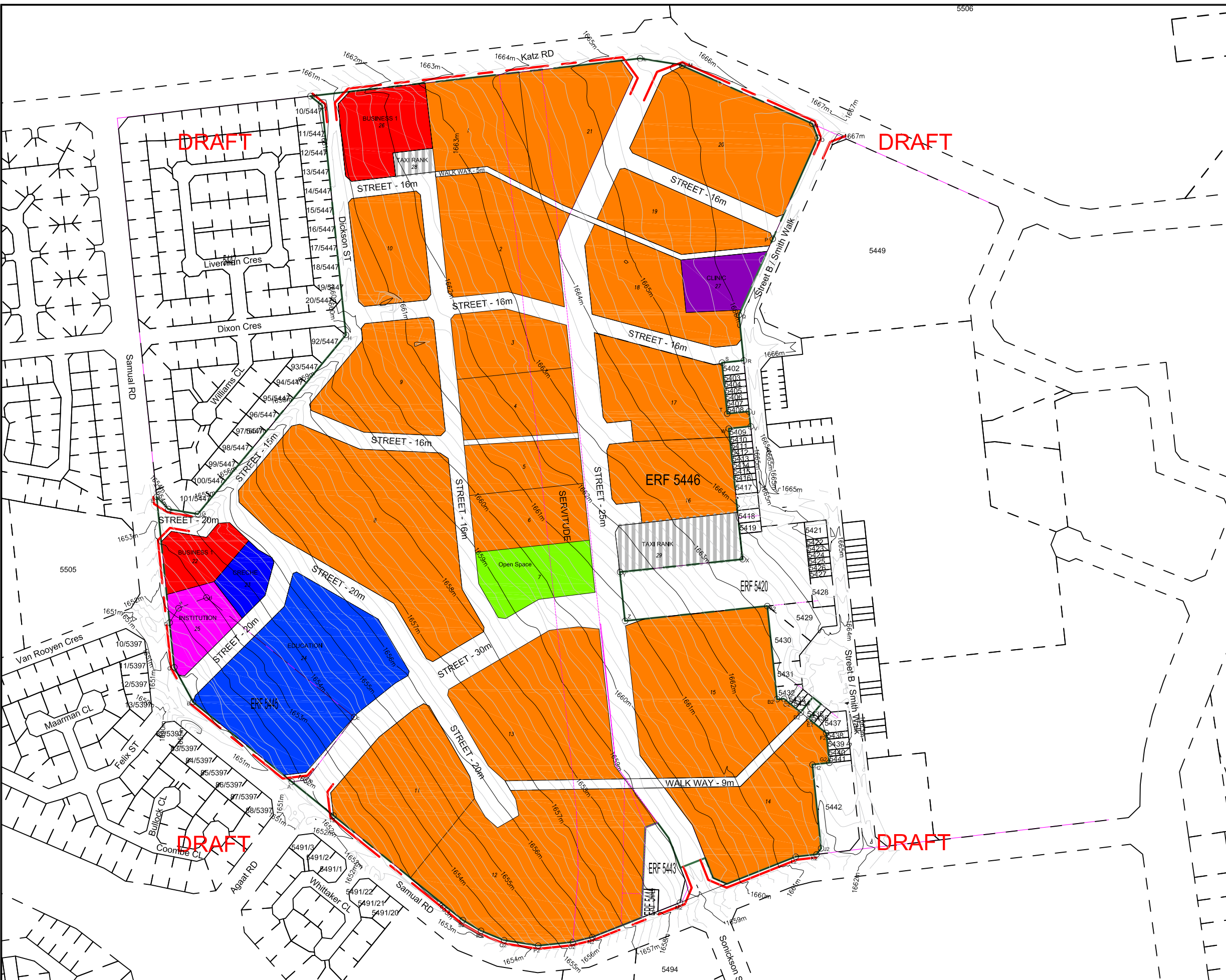
- The taxi rank along Samuel Road/ Van Rooyen Crescent will have to be formalised with proper public transport infrastructures according to standards,
- The second taxi/bus rank will be established on the west of Smith Walk at the intersection of Agaat Road/ Sonickson Street with proper minibus-taxi/bus public transport infrastructure, and
- Taxi labys at least 20 m long to serve the future business centre on Dickson Street.

Residents of the new mixed developments are to use existing and future public transport routes and NMT facilities to be provided as discussed for residents of the Ennerdale Ext 9 new housing development.

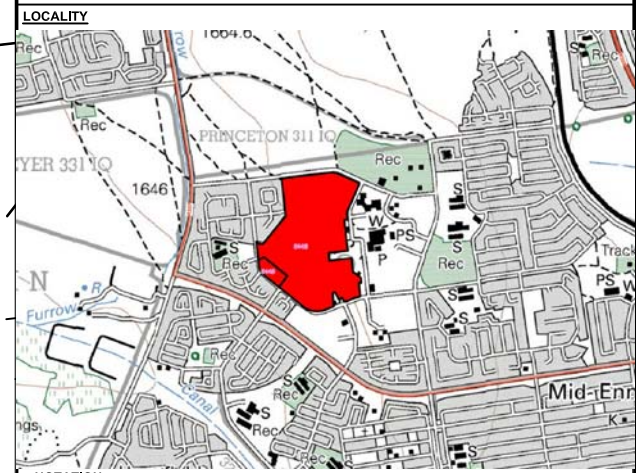
It is recommended that the roads and intersections be upgraded as described. It is recommended that the public transport facilities be developed and provided as proposed at two locations.

It is recommended that this Traffic Impact Study be accepted and approved for the new mixed township development of Ennerdale Extension 9.

ANNEXURE A
TOWNSHIP LAYOUT PLANS



Drawing
Ennerdale EXT 9
Proposed consolidation and subdivision of Erf 5445 & 5446.



NOTATION:
Town Planning Scheme:
City of Johannesburg Scheme 2018
Legislation:
City of Johannesburg Planning By Plans

Land Use / Zoning	Notation	No of Erven	No of Units	Density	Average size in m ²	Area in m ²	% of Township
Residential 3	[Orange]	20	3460	152	11411.9	228237	65%
Business 1	[Red]	2			4739.6	9479	3%
Institution	[Purple]	1			3748.7	3749	1%
Education	[Blue]	1			20143.5	20144	6%
Creche	[Light Blue]	1			2241.4	2241	1%
Clinic	[Purple]	1			3396.8	3397	1%
Taxi Rank	[Grey]	2			2933.4	5867	2%
Open Area	[Green]	1			5637.0	3725	1%
Roads	[White]					73447	21%
Total		29	3460			350285	100%

COMPONENTS

Ennerdale EXT 9		
	Figure	Extent (sqm)
Erf 5445 Ennerdale Ext 9	A b c d e D C B A	14 798 sqm
Erf 5446 Ennerdale Ext 9	A B C D E F G H J K L M N O P Q R S T U V W X Y Z A2 B2 C2 D2 E2 F2 G2 H2 J2 K2 L2 M2 N2 O2 P2 Q2 R2 S2 T2	337 365 sqm
Consolidation (Erf 5445 + 5446 Ennerdale Ext 9)	A B C D E F G H J K L M N O P Q R S T U V W X Y Z A2 B2 C2 D2 E2 F2 G2 H2 J2 K2 L2 M2 N2 O2 P2 Q2 R2 S2 T2	352 163 sqm

- NOTES:**
- All erf sizes are approximate pending final survey.
 - All road reserves are as indicated on the layout plan.
 - Road plays are as indicated on the plan.
 - All building lines are 5m along any boundary with a public street, and 2m along any boundary with a private road. All other building lines will be 2m except where the local authority approve its relaxation.
 - All development will be subject to a further geo-technical assessment as required by the NHBC where applicable.
 - All erf numbers are temporary, and subject to final numbering by the office of the Gauteng Surveyor General.
 - Line of no access are indicated by the following line: - - - - -

FLOOD LINE:
With reference to Section 144 of the National Water Act (Act no. 36 of 1998) it is hereby certified that the proposed development, as indicated on this drawing, is not affected by flood lines representing the maximum flood level likely to be reached by flood water in the event of a flood with a recurrence interval of 100 years.

CONTOURS:
Interval: 0.25 m
Date AHSL: Sea level
Contours conform to the standards laid down in the Regulations in terms of Section 138 of Ordinance 15/1986, dated 10 June 1987 (Administrators Notice 858)

Prof. Reg. Number: _____ Date: _____

SCALE: 1: 2000 (A3 Paper) **PLAN NO: COJ EN X/5**

Town Planner:
TH Strydom
Pr. Pln A/2027/2015

Date: 05/02/2020

CLIENT:

PROFESSIONAL SERVICE PROVIDER:

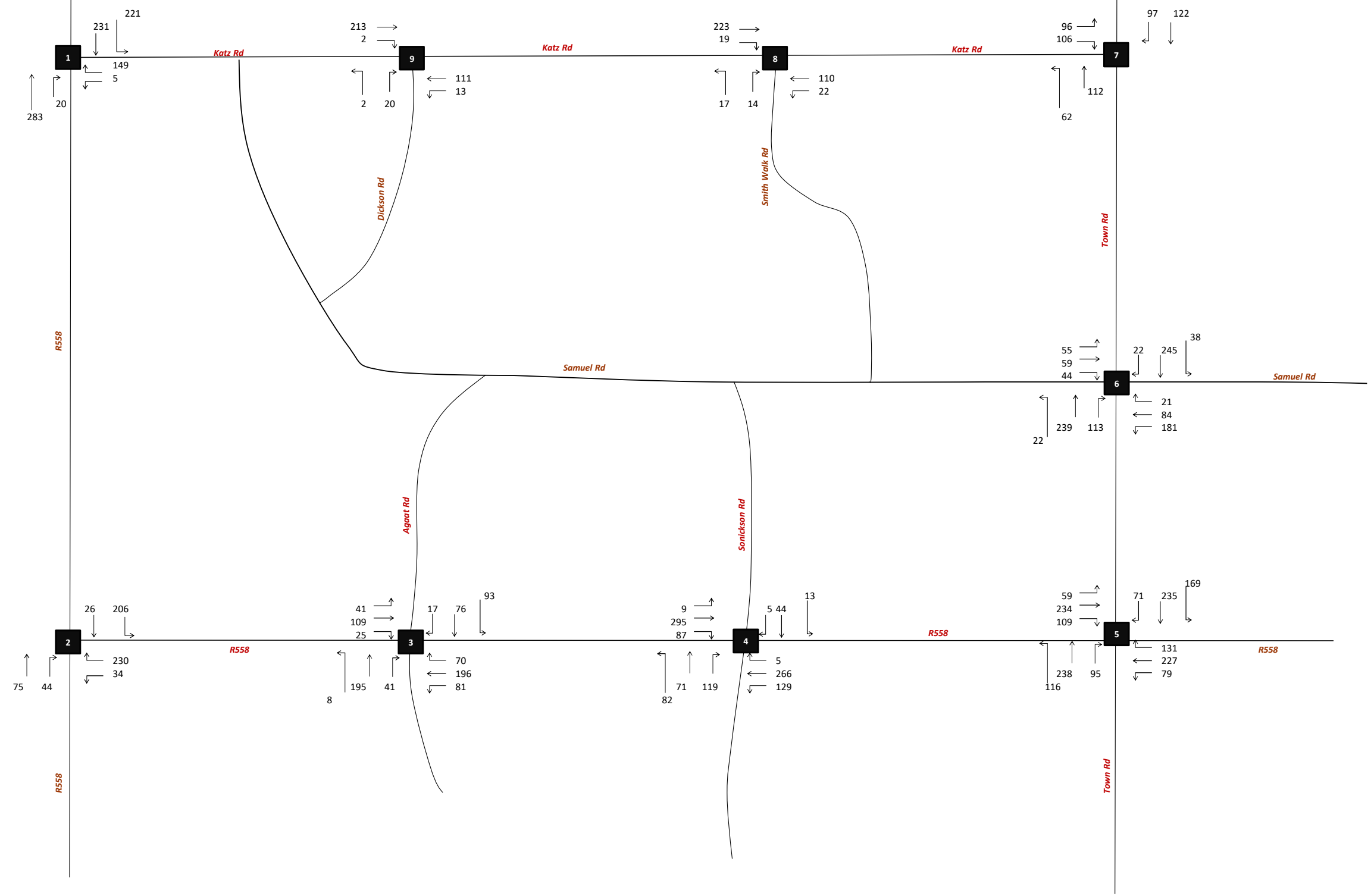
Gauteng Department of Human Settlement **Glad Africa**

GEOLOGICAL:
It is hereby certified that the layout of the township complies with the recommendations and requirements set out in the geotechnical report.

Firm: Dr Michael Pavlakis and Associates
Prof. Reg. Number: _____
Date: _____
Signature: _____

ANNEXURE B

A.M. AND P.M. 2019 PEAK HOUR EXISTING TRAFFIC PROFILE

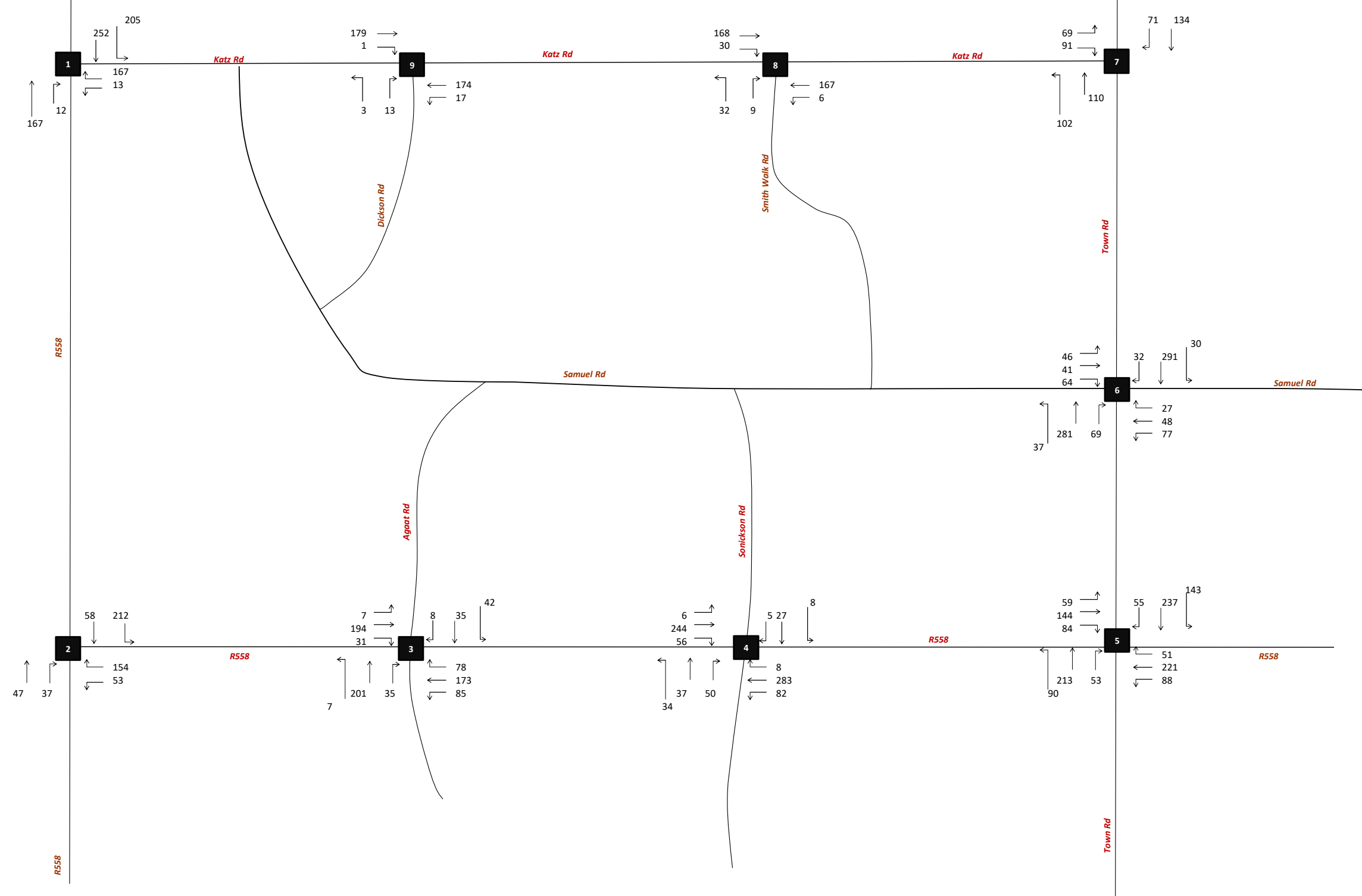


EXISTING ENNERDALE 2019 TRAFFIC VOLUMES

AM PEAK

Proj. Nber

Fig 1AM



EXISTING ENNERDALE 2019 TRAFFIC VOLUMES

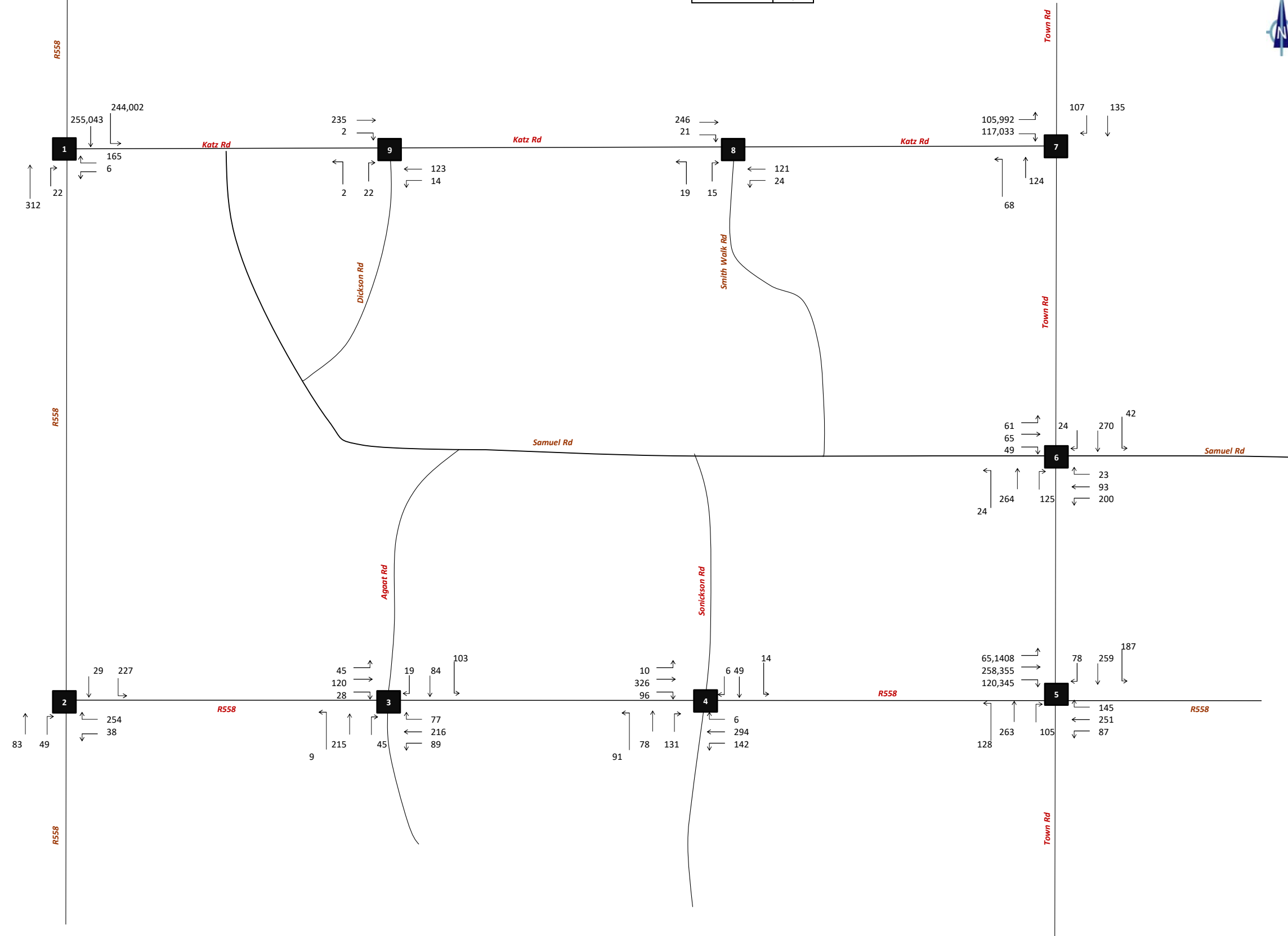
PM PEAK

Proj. Nber

Fig 2PM

ANNEXURE C
BACKGROUND TRAFFIC GROWTH

Growth Rate	0,02
No. of Years	5



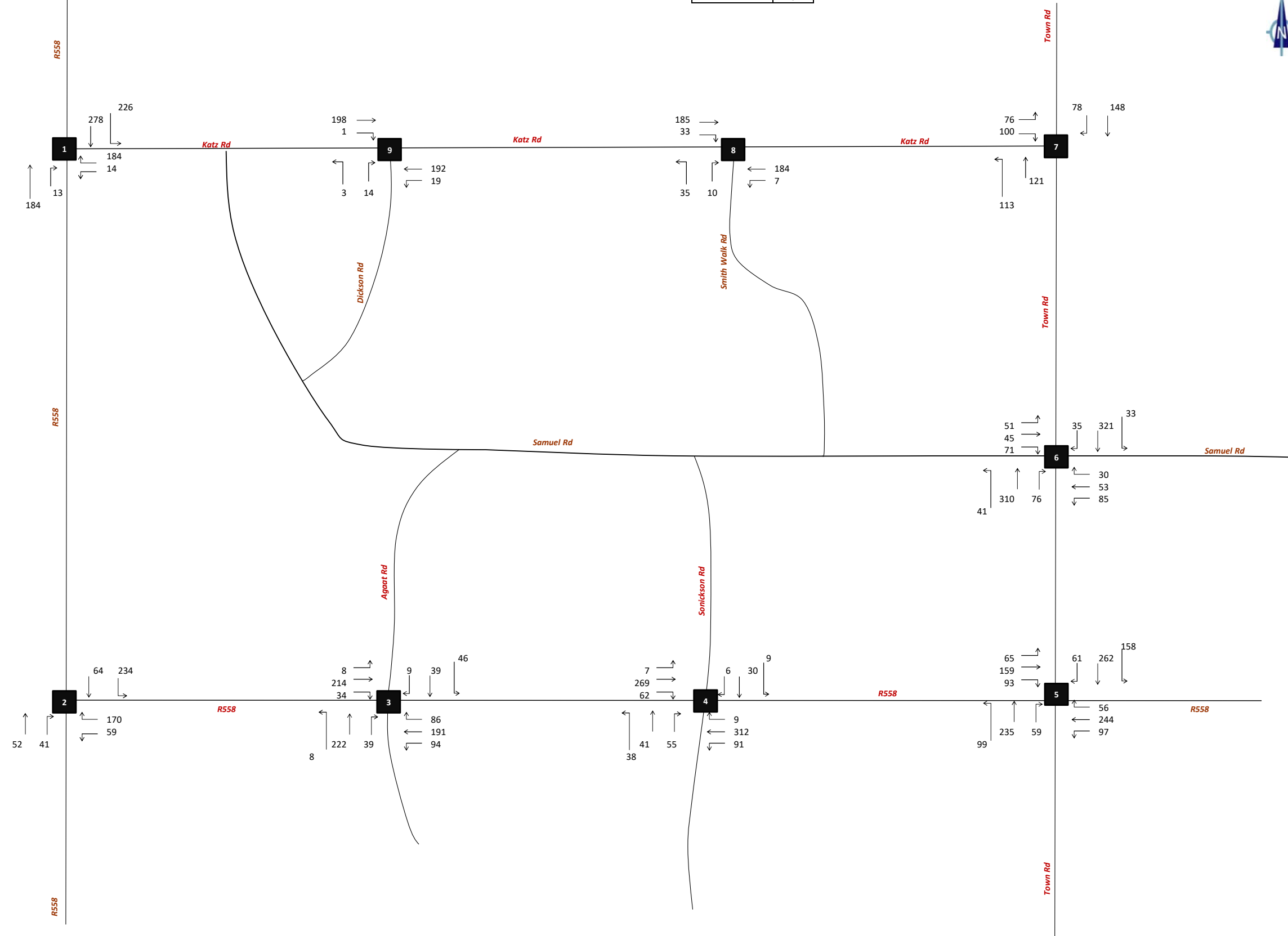
AM PEAK 2024 BACKGROUND INTERSECTION TURNING VOLUMES

Proj. Nber

ENNERDALE HOUSING PROJECT

Fig 3AM Growth

Growth Rate	0,02
No. of Years	5



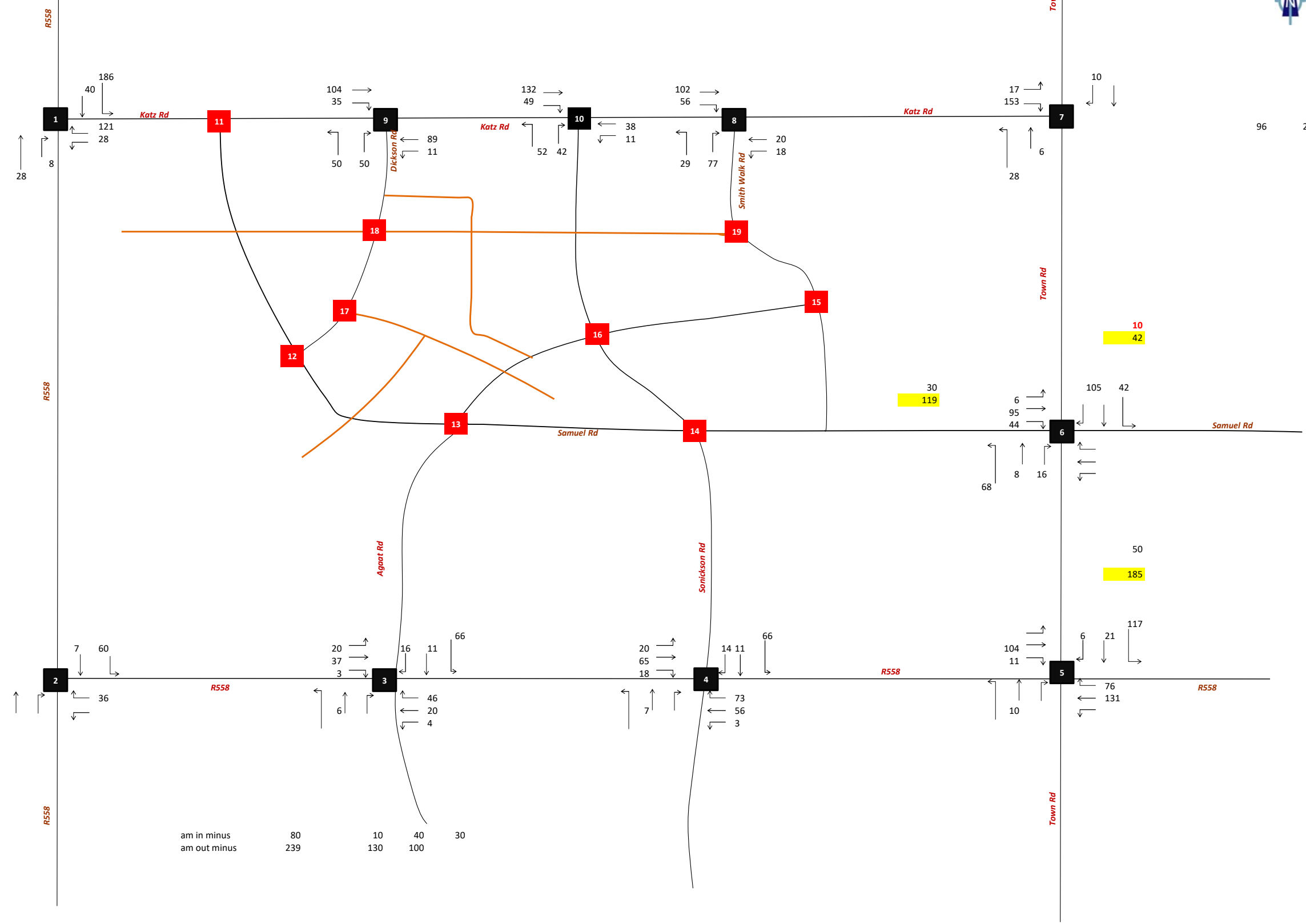
PM PEAK 2024 BACKGROUND INTERSECTION TURNING VOLUMES

Proj. Nber

ENNERDALE HOUSING PROJECT

Fig 4PM Growth

ANNEXURE D
GENERATED TRAFFIC PROFILE

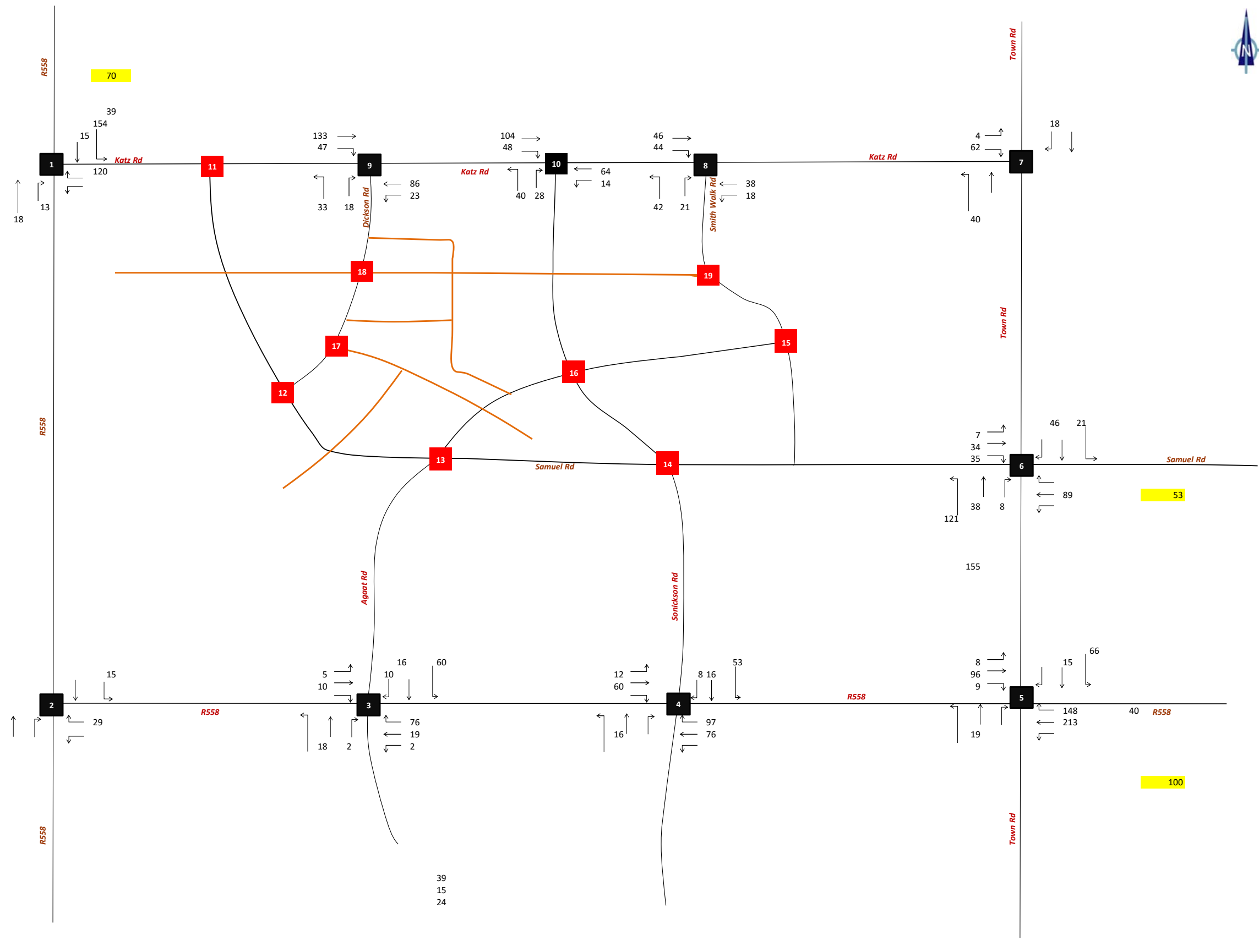


ENNERDALE DEVELOPMENT TRAFFIC VOLUMES

AM PEAK

Proj. Nber

Fig 5AM Dev



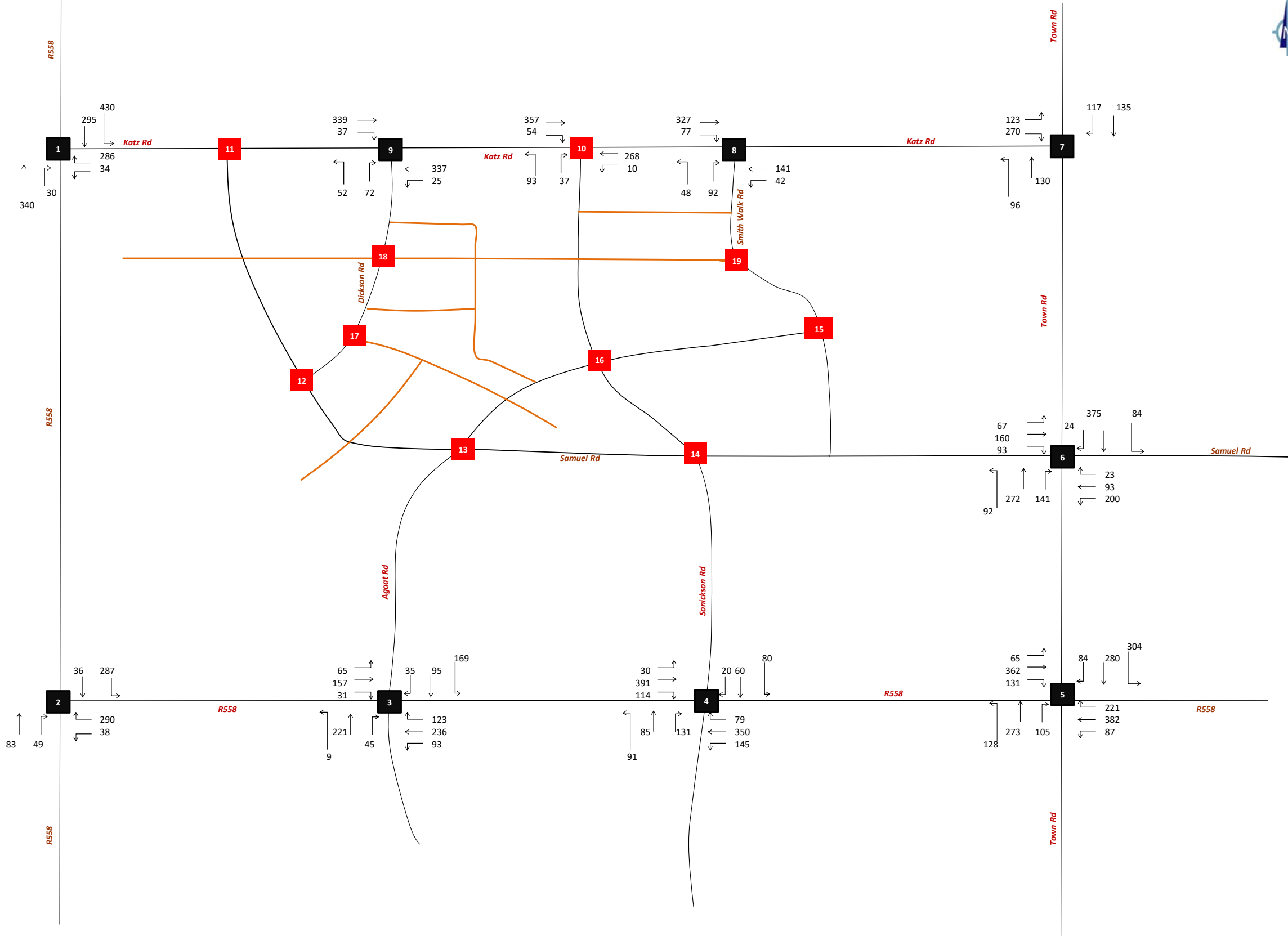
ENNERDALE DEVELOPMENT TRAFFIC VOLUMES

PM PEAK

Proj. Nber

Fig 6PM Dev

ANNEXURE E
2024 FORECAST TOTAL TRAFFIC

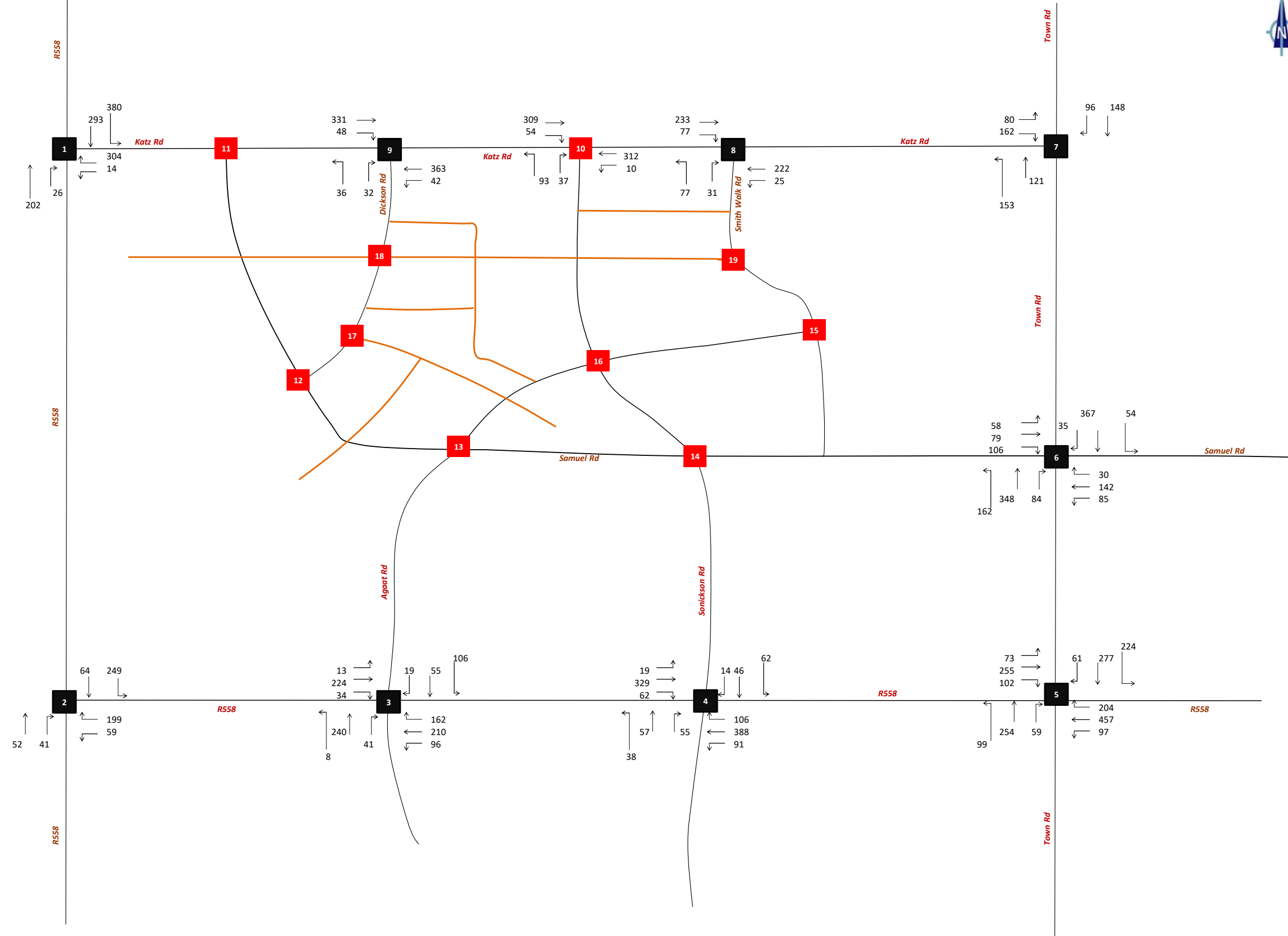


ENNERDALE FORECAST TRAFFIC VOLUMES

Proj. Nber

AM PEAK

Fig 7AM



ENNERDALE FORECAST TRAFFIC VOLUMES

PM PEAK

Proj. Nber

Fig 8AM

-16m

6

RVTUDE

16

5417

5418

5419

7

X

ERF 5420

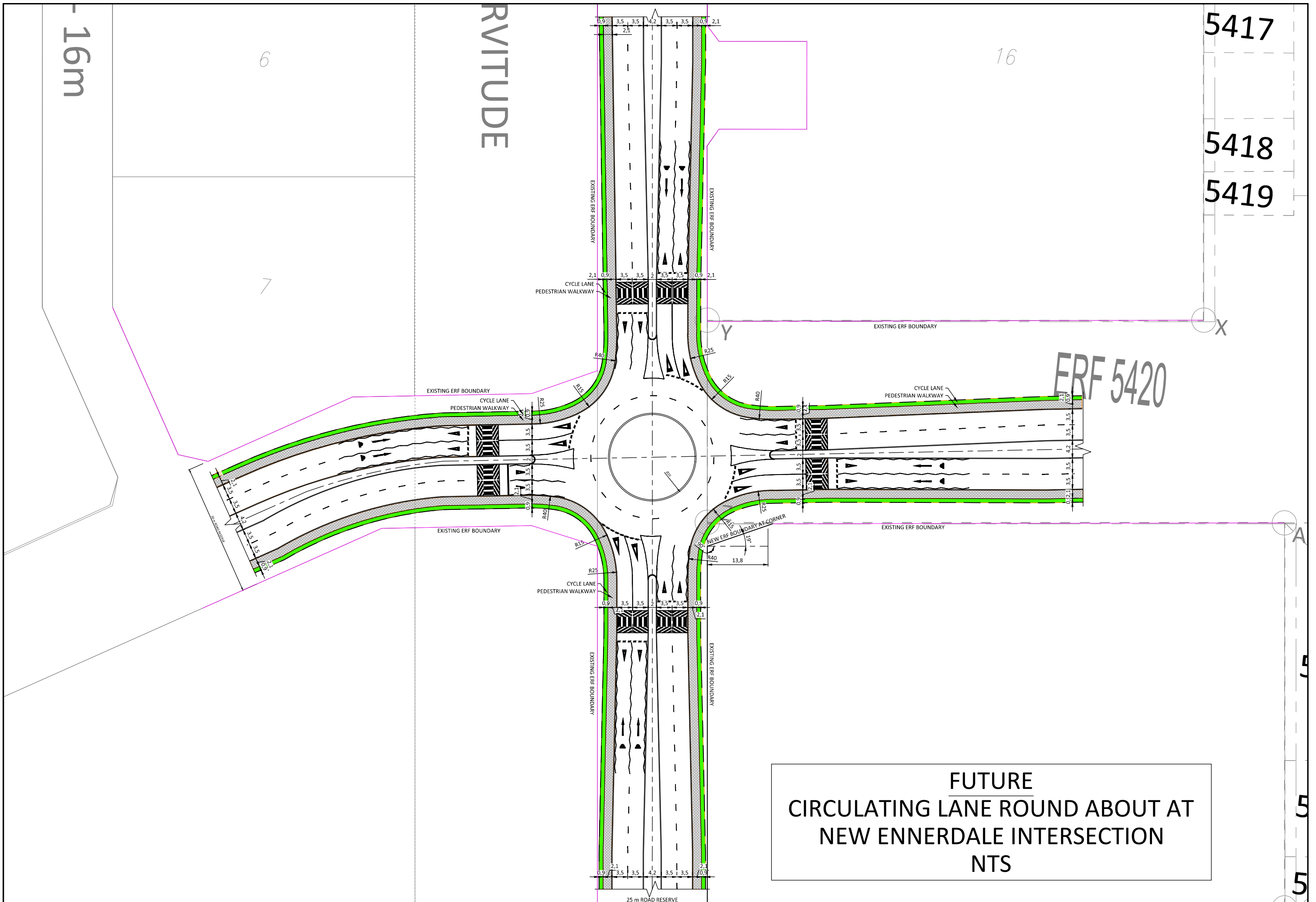
A

5

5

5

FUTURE
CIRCULATING LANE ROUND ABOUT AT
NEW ENNERDALE INTERSECTION
NTS



25 m ROAD RESERVE

ANNEXURE F
MOVEMENT SUMMARY EXISTING EVALUATION – INTERSECTIONS 1 TO 9

MOVEMENT SUMMARY

 Site: 101 [INT 1 EX AM]

EXISTING AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: R558 SOUTH APP											
2	T1	298	2,0	0,085	0,1	LOS A	0,2	1,1	0,05	0,04	59,4
3	R2	21	2,0	0,085	6,4	LOS A	0,2	1,1	0,11	0,08	57,1
Approach		319	2,0	0,085	0,5	NA	0,2	1,1	0,05	0,04	59,3
East: KATZ EAST APP											
4	L2	5	2,0	0,003	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
6	R2	157	2,0	0,435	20,4	LOS C	2,2	15,5	0,76	1,09	44,8
Approach		162	2,0	0,435	20,0	LOS C	2,2	15,5	0,73	1,07	45,1
North: R558 NORTH APP											
7	L2	233	2,0	0,127	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	243	2,0	0,126	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
Approach		476	2,0	0,127	2,8	NA	0,0	0,0	0,00	0,26	57,3
All Vehicles		957	2,0	0,435	4,9	NA	2,2	15,5	0,14	0,32	55,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT 1 EX PM]

EXISTING PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: R558 SOUTH APP											
2	T1	176	2,0	0,050	0,1	LOS A	0,1	0,7	0,05	0,04	59,4
3	R2	13	2,0	0,050	6,5	LOS A	0,1	0,7	0,12	0,08	57,1
Approach		188	2,0	0,050	0,5	NA	0,1	0,7	0,06	0,04	59,3
East: KATZ EAST APP											
4	L2	14	2,0	0,007	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
6	R2	176	2,0	0,408	17,5	LOS C	2,1	15,0	0,69	1,08	46,4
Approach		189	2,0	0,408	16,6	LOS C	2,1	15,0	0,64	1,04	47,0
North: R558 NORTH APP											
7	L2	216	2,0	0,118	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	265	2,0	0,138	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
Approach		481	2,0	0,138	2,5	NA	0,0	0,0	0,00	0,24	57,5
All Vehicles		859	2,0	0,408	5,2	NA	2,1	15,0	0,15	0,37	55,2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT2 EX AM]

EXISTING AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: R558 SOUTH APP											
2	T1	79	2,0	0,109	9,3	LOS A	0,4	2,7	0,37	0,90	51,0
3	R2	46	2,0	0,109	11,3	LOS B	0,4	2,7	0,41	0,93	50,6
Approach		125	2,0	0,109	10,1	LOS B	0,4	2,7	0,39	0,91	50,8
East: R558 EAST APP											
4	L2	36	2,0	0,023	5,7	LOS A	0,1	0,6	0,09	0,52	53,9
6	R2	242	2,0	0,132	5,6	LOS A	0,0	0,0	0,00	0,58	53,5
Approach		278	2,0	0,132	5,6	LOS A	0,1	0,6	0,01	0,57	53,6
North: R558 NORTH APP											
7	L2	217	2,0	0,118	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	27	2,0	0,027	9,4	LOS A	0,1	0,7	0,34	0,87	51,3
Approach		244	2,0	0,118	6,1	LOS A	0,1	0,7	0,04	0,57	54,4
All Vehicles		647	2,0	0,132	6,6	NA	0,4	2,7	0,09	0,63	53,3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT2 EX PM]

EXISTING PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: R558 SOUTH APP											
2	T1	49	2,0	0,076	8,9	LOS A	0,3	1,8	0,32	0,89	51,2
3	R2	39	2,0	0,076	11,0	LOS B	0,3	1,8	0,38	0,92	50,6
Approach		88	2,0	0,076	9,8	LOS A	0,3	1,8	0,34	0,90	50,9
East: R558 EAST APP											
4	L2	56	2,0	0,036	5,8	LOS A	0,1	1,0	0,14	0,52	53,7
6	R2	162	2,0	0,089	5,6	LOS A	0,0	0,0	0,00	0,58	53,5
Approach		218	2,0	0,089	5,6	LOS A	0,1	1,0	0,04	0,56	53,6
North: R558 NORTH APP											
7	L2	223	2,0	0,122	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	61	2,0	0,055	8,9	LOS A	0,2	1,4	0,28	0,88	51,5
Approach		284	2,0	0,122	6,4	LOS A	0,2	1,4	0,06	0,60	54,1
All Vehicles		591	2,0	0,122	6,6	NA	0,3	1,8	0,09	0,63	53,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT3 EX AM]

EXISTING AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: AGAAT AVE SOUTH APP											
1	L2	8	2,0	0,009	9,1	LOS A	0,0	0,2	0,30	0,85	51,4
2	T1	205	2,0	0,619	25,1	LOS D	4,0	28,7	0,78	1,19	42,6
3	R2	43	2,0	0,202	23,7	LOS C	0,7	4,9	0,74	1,01	43,4
Approach		257	2,0	0,619	24,4	LOS C	4,0	28,7	0,76	1,15	42,9
East: R558 EAST APP											
4	L2	85	2,0	0,047	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	206	2,0	0,107	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
6	R2	74	2,0	0,046	5,9	LOS A	0,2	1,5	0,22	0,53	53,0
Approach		365	2,0	0,107	2,5	NA	0,2	1,5	0,04	0,23	57,2
North: AGAAT NORTH APP											
7	L2	98	2,0	0,053	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	80	2,0	0,251	18,7	LOS C	1,0	7,0	0,66	1,02	45,9
9	R2	18	2,0	0,085	22,7	LOS C	0,3	1,9	0,72	1,00	43,8
Approach		196	2,0	0,251	12,5	LOS B	1,0	7,0	0,34	0,77	49,8
West: R558 WEST APP											
10	L2	43	2,0	0,024	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	115	2,0	0,060	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
12	R2	26	2,0	0,018	6,2	LOS A	0,1	0,6	0,31	0,54	52,8
Approach		184	2,0	0,060	2,2	NA	0,1	0,6	0,04	0,20	57,6
All Vehicles		1002	2,0	0,619	10,0	NA	4,0	28,7	0,29	0,57	51,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT3 EX PM]

EXISTING PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: AGAAT AVE SOUTH APP											
1	L2	7	2,0	0,008	8,9	LOS A	0,0	0,2	0,28	0,86	51,5
2	T1	212	2,0	0,693	29,5	LOS D	4,9	34,7	0,84	1,26	40,6
3	R2	37	2,0	0,166	22,3	LOS C	0,5	3,9	0,73	1,00	44,0
Approach		256	2,0	0,693	27,9	LOS D	4,9	34,7	0,81	1,21	41,3
East: R558 EAST APP											
4	L2	89	2,0	0,049	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	182	2,0	0,095	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
6	R2	82	2,0	0,056	6,2	LOS A	0,2	1,8	0,31	0,55	52,7
Approach		354	2,0	0,095	2,9	NA	0,2	1,8	0,07	0,26	56,8
North: AGAAT NORTH APP											
7	L2	44	2,0	0,024	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	37	2,0	0,131	19,2	LOS C	0,4	3,2	0,68	1,00	45,6
9	R2	8	2,0	0,046	24,9	LOS C	0,1	1,0	0,75	1,00	42,8
Approach		89	2,0	0,131	13,0	LOS B	0,4	3,2	0,35	0,77	49,4
West: R558 WEST APP											
10	L2	7	2,0	0,004	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	204	2,0	0,106	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
12	R2	33	2,0	0,022	6,1	LOS A	0,1	0,7	0,29	0,53	52,8
Approach		244	2,0	0,106	1,0	NA	0,1	0,7	0,04	0,09	58,8
All Vehicles		943	2,0	0,693	10,1	NA	4,9	34,7	0,29	0,52	51,3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT4 EX AM]

EXISTING AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: AGAAT AVE SOUTH APP											
1	L2	86	2,0	0,091	9,1	LOS A	0,2	1,8	0,29	0,92	51,4
2	T1	75	2,0	0,264	19,4	LOS C	0,8	6,0	0,71	1,03	45,5
3	R2	125	2,0	0,669	37,1	LOS E	3,1	21,8	0,89	1,18	37,6
Approach		286	2,0	0,669	24,0	LOS C	3,1	21,8	0,66	1,06	43,0
East: R558 EAST APP											
4	L2	136	2,0	0,074	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	280	2,0	0,145	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
6	R2	5	2,0	0,004	6,6	LOS A	0,0	0,1	0,38	0,53	52,5
Approach		421	2,0	0,145	1,9	NA	0,0	0,1	0,00	0,18	58,1
North: SONICKSON NORTH APP											
7	L2	14	2,0	0,007	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	46	2,0	0,269	31,0	LOS D	1,0	6,8	0,83	1,03	39,9
9	R2	5	2,0	0,040	32,7	LOS D	0,1	0,9	0,82	1,00	39,2
Approach		65	2,0	0,269	25,8	LOS D	1,0	6,8	0,66	0,92	42,3
West: R558 WEST APP											
10	L2	9	2,0	0,005	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	311	2,0	0,161	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
12	R2	92	2,0	0,067	6,6	LOS A	0,3	2,1	0,38	0,58	52,5
Approach		412	2,0	0,161	1,6	NA	0,3	2,1	0,08	0,14	58,0
All Vehicles		1184	2,0	0,669	8,5	NA	3,1	21,8	0,23	0,42	52,5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT4 EX PM]

EXISTING PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: AGAAT AVE SOUTH APP											
1	L2	36	2,0	0,038	9,1	LOS A	0,1	0,7	0,29	0,91	51,4
2	T1	39	2,0	0,119	16,2	LOS C	0,3	2,4	0,62	1,00	47,3
3	R2	53	2,0	0,227	21,6	LOS C	0,7	5,1	0,73	1,02	44,4
Approach		127	2,0	0,227	16,4	LOS C	0,7	5,1	0,57	0,98	47,1
East: R558 EAST APP											
4	L2	86	2,0	0,047	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	298	2,0	0,155	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
6	R2	8	2,0	0,006	6,4	LOS A	0,0	0,2	0,34	0,53	52,6
Approach		393	2,0	0,155	1,4	NA	0,0	0,2	0,01	0,13	58,6
North: SONICKSON NORTH APP											
7	L2	8	2,0	0,005	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	28	2,0	0,130	23,3	LOS C	0,4	3,0	0,75	1,00	43,5
9	R2	5	2,0	0,028	24,4	LOS C	0,1	0,6	0,74	1,00	43,0
Approach		42	2,0	0,130	19,9	LOS C	0,4	3,0	0,60	0,91	45,3
West: R558 WEST APP											
10	L2	6	2,0	0,003	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	257	2,0	0,133	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
12	R2	59	2,0	0,044	6,6	LOS A	0,2	1,4	0,38	0,58	52,5
Approach		322	2,0	0,133	1,3	NA	0,2	1,4	0,07	0,12	58,4
All Vehicles		884	2,0	0,227	4,4	NA	0,7	5,1	0,14	0,28	55,8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101v [INT5 EX AM]

EXISTING AM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN AVE SOUTH APP											
1	L2	122	2,0	0,067	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	251	2,0	0,325	13,5	LOS B	5,1	36,5	0,73	0,61	49,1
3	R2	100	2,0	0,244	22,6	LOS C	2,3	16,0	0,78	0,75	43,1
Approach		473	2,0	0,325	13,4	LOS B	5,1	36,5	0,55	0,62	49,0
East: R558 EAST APP											
4	L2	83	2,0	0,045	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	239	2,0	0,310	13,4	LOS B	4,9	34,6	0,73	0,61	49,2
6	R2	138	2,0	0,335	23,2	LOS C	3,2	22,9	0,81	0,77	42,7
Approach		460	2,0	0,335	15,0	LOS B	4,9	34,6	0,62	0,64	47,9
North: TOWN NORTH APP											
7	L2	178	2,0	0,097	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	247	2,0	0,321	13,5	LOS B	5,1	36,0	0,73	0,61	49,1
9	R2	75	2,0	0,183	22,2	LOS C	1,6	11,7	0,76	0,73	43,3
Approach		500	2,0	0,321	12,0	LOS B	5,1	36,0	0,47	0,60	50,0
West: R558 WEST APP											
10	L2	62	2,0	0,034	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	246	2,0	0,320	13,5	LOS B	5,0	35,8	0,73	0,61	49,1
12	R2	115	2,0	0,275	22,8	LOS C	2,6	18,6	0,79	0,76	43,0
Approach		423	2,0	0,320	14,9	LOS B	5,0	35,8	0,64	0,64	48,0
All Vehicles		1856	2,0	0,335	13,7	LOS B	5,1	36,5	0,57	0,62	48,8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

MOVEMENT SUMMARY

 Site: 101v [INT5 EX PM]

EXISTING PM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN AVE SOUTH APP											
1	L2	95	2,0	0,052	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	224	2,0	0,280	12,6	LOS B	4,4	31,2	0,70	0,58	49,8
3	R2	56	2,0	0,130	21,1	LOS C	1,2	8,4	0,73	0,72	43,8
Approach		375	2,0	0,280	12,1	LOS B	4,4	31,2	0,53	0,59	50,0
East: R558 EAST APP											
4	L2	93	2,0	0,051	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	233	2,0	0,315	14,2	LOS B	4,8	34,5	0,74	0,62	48,7
6	R2	54	2,0	0,116	20,9	LOS C	1,1	8,0	0,72	0,71	43,9
Approach		379	2,0	0,315	13,0	LOS B	4,8	34,5	0,56	0,61	49,3
North: TOWN NORTH APP											
7	L2	151	2,0	0,082	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	249	2,0	0,311	12,8	LOS B	5,0	35,3	0,71	0,60	49,6
9	R2	58	2,0	0,129	20,3	LOS C	1,2	8,5	0,71	0,72	44,2
Approach		458	2,0	0,311	11,4	LOS B	5,0	35,3	0,48	0,59	50,5
West: R558 WEST APP											
10	L2	62	2,0	0,034	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	152	2,0	0,205	13,5	LOS B	3,0	21,4	0,71	0,57	49,2
12	R2	88	2,0	0,220	23,2	LOS C	2,0	14,3	0,79	0,75	42,7
Approach		302	2,0	0,220	14,7	LOS B	3,0	21,4	0,58	0,61	48,1
All Vehicles		1514	2,0	0,315	12,6	LOS B	5,0	35,3	0,53	0,60	49,6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT6 EX AM]

EXISTING AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN AVE SOUTH APP											
1	L2	23	2,0	0,013	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	252	2,0	0,065	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
3	R2	119	2,0	0,112	6,9	LOS A	0,5	3,3	0,39	0,62	52,3
Approach		394	2,0	0,112	2,4	NA	0,5	3,3	0,12	0,22	57,1
East: SAMUEL ROAD EAST APP											
4	L2	191	2,0	0,174	8,5	LOS A	0,5	3,6	0,18	0,92	51,7
5	T1	88	2,0	0,382	21,5	LOS C	1,4	10,3	0,73	1,06	44,8
6	R2	22	2,0	0,382	19,5	LOS C	1,4	10,3	0,73	1,06	44,6
Approach		301	2,0	0,382	13,1	LOS B	1,4	10,3	0,38	0,97	48,9
North: TOWN AVE NORTH APP											
7	L2	40	2,0	0,078	5,6	LOS A	0,0	0,0	0,00	0,16	56,9
8	T1	258	2,0	0,078	0,0	LOS A	0,0	0,0	0,00	0,07	59,4
9	R2	23	2,0	0,021	6,5	LOS A	0,1	0,6	0,34	0,57	52,5
Approach		321	2,0	0,078	1,2	NA	0,1	0,6	0,02	0,12	58,5
West: SAMUEL ROAD WEST APP											
10	L2	58	2,0	0,048	5,9	LOS A	0,1	0,8	0,15	0,54	53,7
11	T1	62	2,0	0,446	22,6	LOS C	1,6	11,7	0,79	1,08	43,1
12	R2	46	2,0	0,446	26,9	LOS D	1,6	11,7	0,79	1,08	43,2
Approach		166	2,0	0,446	18,0	LOS C	1,6	11,7	0,57	0,89	46,3
All Vehicles		1182	2,0	0,446	7,0	NA	1,6	11,7	0,22	0,48	53,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT6 EX PM]

EXISTING PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN AVE SOUTH APP											
1	L2	39	2,0	0,021	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	296	2,0	0,077	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
3	R2	73	2,0	0,072	7,1	LOS A	0,3	2,0	0,41	0,63	52,3
Approach		407	2,0	0,077	1,8	NA	0,3	2,0	0,07	0,16	57,9
East: SAMUEL ROAD EAST APP											
4	L2	81	2,0	0,076	8,5	LOS A	0,2	1,4	0,18	0,92	51,6
5	T1	51	2,0	0,300	22,2	LOS C	1,0	7,1	0,73	1,04	44,8
6	R2	28	2,0	0,300	19,1	LOS C	1,0	7,1	0,73	1,04	44,6
Approach		160	2,0	0,300	14,7	LOS B	1,0	7,1	0,45	0,98	48,0
North: TOWN AVE NORTH APP											
7	L2	32	2,0	0,088	5,6	LOS A	0,0	0,0	0,00	0,11	57,3
8	T1	306	2,0	0,088	0,0	LOS A	0,0	0,0	0,00	0,05	59,5
9	R2	34	2,0	0,032	6,8	LOS A	0,1	0,9	0,37	0,59	52,4
Approach		372	2,0	0,088	1,1	NA	0,1	0,9	0,03	0,10	58,6
West: SAMUEL ROAD WEST APP											
10	L2	48	2,0	0,040	6,0	LOS A	0,1	0,7	0,17	0,54	53,6
11	T1	43	2,0	0,453	24,3	LOS C	1,6	11,7	0,79	1,08	43,3
12	R2	67	2,0	0,453	24,1	LOS C	1,6	11,7	0,79	1,08	43,4
Approach		159	2,0	0,453	18,6	LOS C	1,6	11,7	0,60	0,92	46,0
All Vehicles		1098	2,0	0,453	5,9	NA	1,6	11,7	0,19	0,37	54,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT7 EX AM]

EXISTING AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN ROAD SOUTH APP											
1	L2	65	2,0	0,036	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	118	2,0	0,031	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
Approach		183	2,0	0,036	2,0	NA	0,0	0,0	0,00	0,19	58,0
North: TOWN ROAD NORTH APP											
8	T1	128	2,0	0,033	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
9	R2	102	2,0	0,080	6,0	LOS A	0,3	2,3	0,23	0,55	52,8
Approach		231	2,0	0,080	2,7	NA	0,3	2,3	0,10	0,24	56,6
West: KATZ AVE WEST APP											
10	L2	101	2,0	0,081	5,9	LOS A	0,3	2,1	0,15	0,52	53,7
12	R2	112	2,0	0,262	14,4	LOS B	1,0	7,4	0,55	1,01	48,4
Approach		213	2,0	0,262	10,3	LOS B	1,0	7,4	0,36	0,78	50,8
All Vehicles		626	2,0	0,262	5,1	NA	1,0	7,4	0,16	0,41	54,9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT7 EX PM]

EXISTING PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m		per veh	km/h
South: TOWN ROAD SOUTH APP											
1	L2	107	2,0	0,059	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	116	2,0	0,030	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
Approach		223	2,0	0,059	2,7	NA	0,0	0,0	0,00	0,25	57,4
North: TOWN ROAD NORTH APP											
8	T1	141	2,0	0,037	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
9	R2	75	2,0	0,059	6,0	LOS A	0,2	1,7	0,22	0,55	52,8
Approach		216	2,0	0,059	2,1	NA	0,2	1,7	0,08	0,19	57,3
West: KATZ AVE WEST APP											
10	L2	73	2,0	0,058	5,8	LOS A	0,2	1,5	0,14	0,52	53,7
12	R2	96	2,0	0,225	14,0	LOS B	0,8	5,9	0,54	1,00	48,7
Approach		168	2,0	0,225	10,5	LOS B	0,8	5,9	0,37	0,79	50,7
All Vehicles		607	2,0	0,225	4,6	NA	0,8	5,9	0,13	0,38	55,3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT8 EX AM]

EXISTING AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m		per veh	km/h
South: SMITH WALK ROAD SOUTH APP											
1	L2	18	2,0	0,033	8,5	LOS A	0,1	0,8	0,25	0,90	51,4
3	R2	15	2,0	0,033	9,5	LOS A	0,1	0,8	0,25	0,90	50,9
Approach		33	2,0	0,033	9,0	LOS A	0,1	0,8	0,25	0,90	51,2
East: KATZ AVE EAST APP											
4	L2	23	2,0	0,073	5,6	LOS A	0,0	0,0	0,00	0,10	57,4
5	T1	116	2,0	0,073	0,0	LOS A	0,0	0,0	0,00	0,10	59,1
Approach		139	2,0	0,073	0,9	NA	0,0	0,0	0,00	0,10	58,8
West: KATZ AVE WEST APP											
11	T1	235	2,0	0,135	0,1	LOS A	0,1	1,0	0,05	0,05	59,4
12	R2	20	2,0	0,135	6,0	LOS A	0,1	1,0	0,05	0,05	57,0
Approach		255	2,0	0,135	0,5	NA	0,1	1,0	0,05	0,05	59,2
All Vehicles		426	2,0	0,135	1,3	NA	0,1	1,0	0,05	0,13	58,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT8 EX PM]

EXISTING PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
		Total veh/h	HV %				Vehicles veh	Distance m			
South: SMITH WALK ROAD SOUTH APP											
1	L2	34	2,0	0,040	8,8	LOS A	0,1	1,1	0,29	0,88	51,5
3	R2	9	2,0	0,040	9,5	LOS A	0,1	1,1	0,29	0,88	51,0
Approach		43	2,0	0,040	9,0	LOS A	0,1	1,1	0,29	0,88	51,4
East: KATZ AVE EAST APP											
4	L2	6	2,0	0,095	5,6	LOS A	0,0	0,0	0,00	0,02	58,1
5	T1	176	2,0	0,095	0,0	LOS A	0,0	0,0	0,00	0,02	59,8
Approach		182	2,0	0,095	0,2	NA	0,0	0,0	0,00	0,02	59,7
West: KATZ AVE WEST APP											
11	T1	177	2,0	0,113	0,1	LOS A	0,2	1,6	0,11	0,09	58,8
12	R2	32	2,0	0,113	6,1	LOS A	0,2	1,6	0,11	0,09	56,5
Approach		208	2,0	0,113	1,0	NA	0,2	1,6	0,11	0,09	58,4
All Vehicles		434	2,0	0,113	1,5	NA	0,2	1,6	0,08	0,14	58,1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT9 EX AM]

EXISTING AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m		per veh	km/h
South: DICKSON ST SOUTH APP											
1	L2	2	2,0	0,028	8,5	LOS A	0,1	0,6	0,35	0,89	51,3
3	R2	21	2,0	0,028	9,3	LOS A	0,1	0,6	0,35	0,89	50,8
Approach		23	2,0	0,028	9,2	LOS A	0,1	0,6	0,35	0,89	50,9
East: KATZ AVE EAST APP											
4	L2	14	2,0	0,068	5,6	LOS A	0,0	0,0	0,00	0,06	57,7
5	T1	117	2,0	0,068	0,0	LOS A	0,0	0,0	0,00	0,06	59,4
Approach		131	2,0	0,068	0,6	NA	0,0	0,0	0,00	0,06	59,2
West: KATZ AVE WEST APP											
11	T1	224	2,0	0,118	0,0	LOS A	0,0	0,1	0,01	0,01	59,9
12	R2	2	2,0	0,118	5,9	LOS A	0,0	0,1	0,01	0,01	57,6
Approach		226	2,0	0,118	0,1	NA	0,0	0,1	0,01	0,01	59,9
All Vehicles		380	2,0	0,118	0,8	NA	0,1	0,6	0,02	0,08	59,0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT9 EX PM]

EXISTING PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m		per veh	km/h
South: DICKSON ST SOUTH APP											
1	L2	3	2,0	0,020	8,8	LOS A	0,1	0,5	0,36	0,88	51,3
3	R2	14	2,0	0,020	9,4	LOS A	0,1	0,5	0,36	0,88	50,8
Approach		17	2,0	0,020	9,3	LOS A	0,1	0,5	0,36	0,88	50,9
East: KATZ AVE EAST APP											
4	L2	18	2,0	0,105	5,6	LOS A	0,0	0,0	0,00	0,05	57,8
5	T1	183	2,0	0,105	0,0	LOS A	0,0	0,0	0,00	0,05	59,5
Approach		201	2,0	0,105	0,5	NA	0,0	0,0	0,00	0,05	59,3
West: KATZ AVE WEST APP											
11	T1	188	2,0	0,099	0,0	LOS A	0,0	0,1	0,00	0,00	60,0
12	R2	1	2,0	0,099	6,2	LOS A	0,0	0,1	0,00	0,00	57,6
Approach		189	2,0	0,099	0,0	NA	0,0	0,1	0,00	0,00	59,9
All Vehicles		407	2,0	0,105	0,7	NA	0,1	0,5	0,02	0,06	59,2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

ANNEXURE G
MOVEMENT SUMMARY FORECAST EVALUATION– INTERSECTION 1 TO 10

MOVEMENT SUMMARY

 Site: 101 [INT 1 FUT AM]

FORECAST AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: R558 SOUTH APP											
2	T1	358	2,0	0,105	0,1	LOS A	0,3	1,8	0,07	0,04	59,3
3	R2	32	2,0	0,105	6,7	LOS A	0,3	1,8	0,16	0,10	56,7
Approach		389	2,0	0,105	0,7	NA	0,3	1,8	0,08	0,05	59,1
East: KATZ EAST APP											
4	L2	36	2,0	0,020	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
6	R2	301	2,0	1,305	316,3	LOS F	52,5	373,6	1,00	3,86	9,6
Approach		337	2,0	1,305	283,3	LOS F	52,5	373,6	0,89	3,50	10,5
North: R558 NORTH APP											
7	L2	453	2,0	0,247	5,7	LOS A	0,0	0,0	0,00	0,53	54,8
8	T1	311	2,0	0,161	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
Approach		763	2,0	0,247	3,4	NA	0,0	0,0	0,00	0,31	56,8
All Vehicles		1489	2,0	1,305	66,0	NA	52,5	373,6	0,22	0,97	28,7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT 1 FUT PM]

FORECAST PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: R558 SOUTH APP											
2	T1	213	2,0	0,066	0,2	LOS A	0,2	1,4	0,09	0,06	59,1
3	R2	27	2,0	0,066	6,7	LOS A	0,2	1,4	0,21	0,15	56,2
Approach		240	2,0	0,066	0,9	NA	0,2	1,4	0,10	0,07	58,7
East: KATZ EAST APP											
4	L2	15	2,0	0,008	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
6	R2	320	2,0	1,020	90,4	LOS F	20,9	148,8	1,00	2,34	24,2
Approach		335	2,0	1,020	86,6	LOS F	20,9	148,8	0,96	2,26	24,8
North: R558 NORTH APP											
7	L2	400	2,0	0,218	5,7	LOS A	0,0	0,0	0,00	0,53	54,8
8	T1	308	2,0	0,160	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
Approach		708	2,0	0,218	3,2	NA	0,0	0,0	0,00	0,30	56,9
All Vehicles		1283	2,0	1,020	24,5	NA	20,9	148,8	0,27	0,77	42,8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

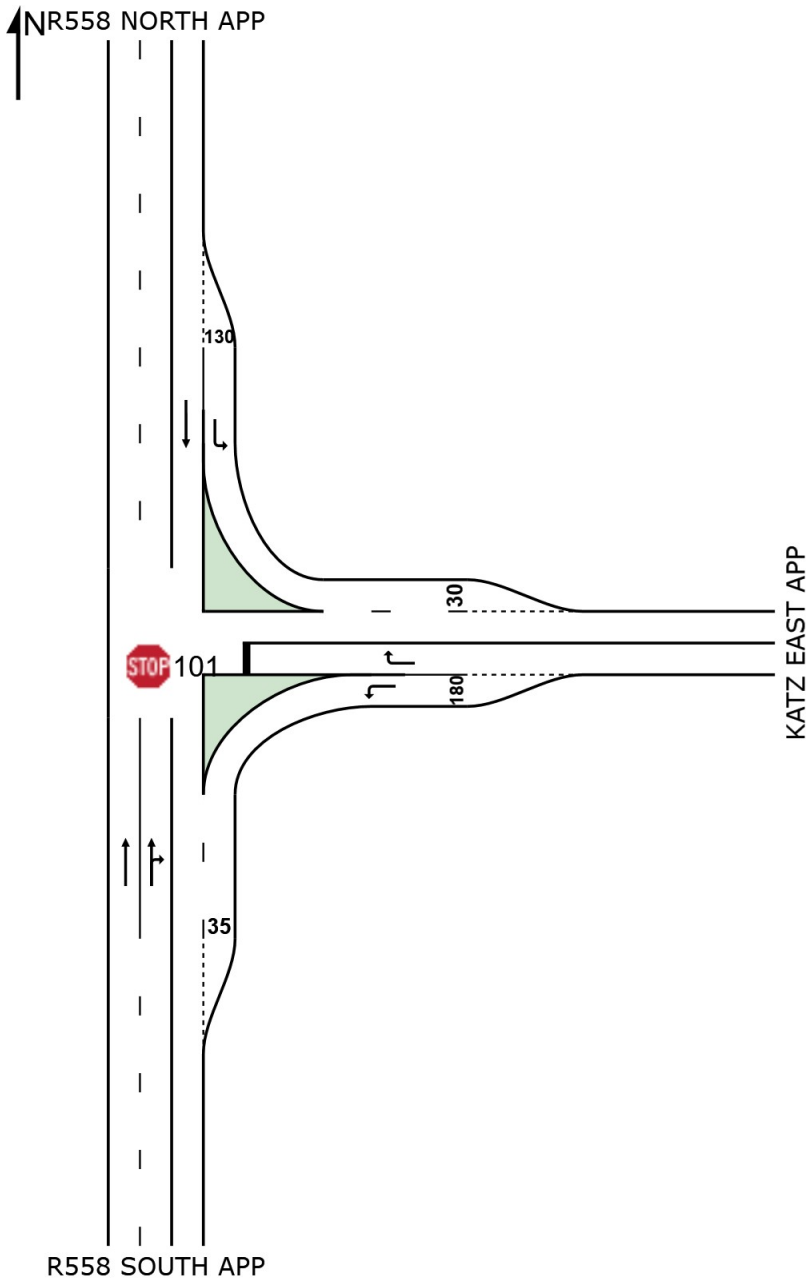
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

SITE LAYOUT

 Site: 101 [INT 1 EX AM]

EXISTING AM PEAK
Stop (Two-Way)



MOVEMENT SUMMARY

 **Site: 101v [INT 1 FUT AM - Conversion]**

FORECAST AM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: R558 SOUTH APP												
2	T1	358	2,0	0,206	8,2	LOS A	3,2	23,1	0,56	0,49	52,6	
3	R2	32	2,0	0,206	14,1	LOS B	2,8	20,2	0,57	0,52	50,6	
Approach		389	2,0	0,206	8,6	LOS A	3,2	23,1	0,56	0,49	52,5	
East: KATZ EAST APP												
4	L2	36	2,0	0,302	20,4	LOS C	3,4	24,5	0,80	0,78	44,5	
6	R2	301	2,0	0,302	22,0	LOS C	3,8	27,3	0,81	0,77	43,1	
Approach		337	2,0	0,302	21,9	LOS C	3,8	27,3	0,81	0,77	43,3	
North: R558 NORTH APP												
7	L2	453	2,0	0,247	5,7	LOS A	0,0	0,0	0,00	0,53	54,8	
8	T1	311	2,0	0,302	8,4	LOS A	5,1	36,2	0,59	0,51	52,7	
Approach		763	2,0	0,302	6,8	LOS A	5,1	36,2	0,24	0,52	54,0	
All Vehicles		1489	2,0	0,302	10,7	LOS B	5,1	36,2	0,45	0,57	50,8	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

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MOVEMENT SUMMARY

 **Site: 101v [INT 1 FUT PM - Conversion]**

FORECAST PM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles												
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h	
South: R558 SOUTH APP												
2	T1	213	2,0	0,131	8,0	LOS A	2,0	14,0	0,54	0,46	52,7	
3	R2	27	2,0	0,131	14,3	LOS B	1,7	11,8	0,56	0,52	50,2	
Approach		240	2,0	0,131	8,7	LOS A	2,0	14,0	0,54	0,47	52,4	
East: KATZ EAST APP												
4	L2	15	2,0	0,303	22,7	LOS C	3,8	27,2	0,80	0,77	43,7	
6	R2	320	2,0	0,303	23,1	LOS C	3,8	27,4	0,80	0,77	42,6	
Approach		335	2,0	0,303	23,0	LOS C	3,8	27,4	0,80	0,77	42,7	
North: R558 NORTH APP												
7	L2	400	2,0	0,218	5,7	LOS A	0,0	0,0	0,00	0,53	54,8	
8	T1	308	2,0	0,300	8,4	LOS A	5,0	35,9	0,59	0,50	52,7	
Approach		708	2,0	0,300	6,9	LOS A	5,0	35,9	0,26	0,52	53,9	
All Vehicles		1283	2,0	0,303	11,4	LOS B	5,0	35,9	0,45	0,57	50,2	

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

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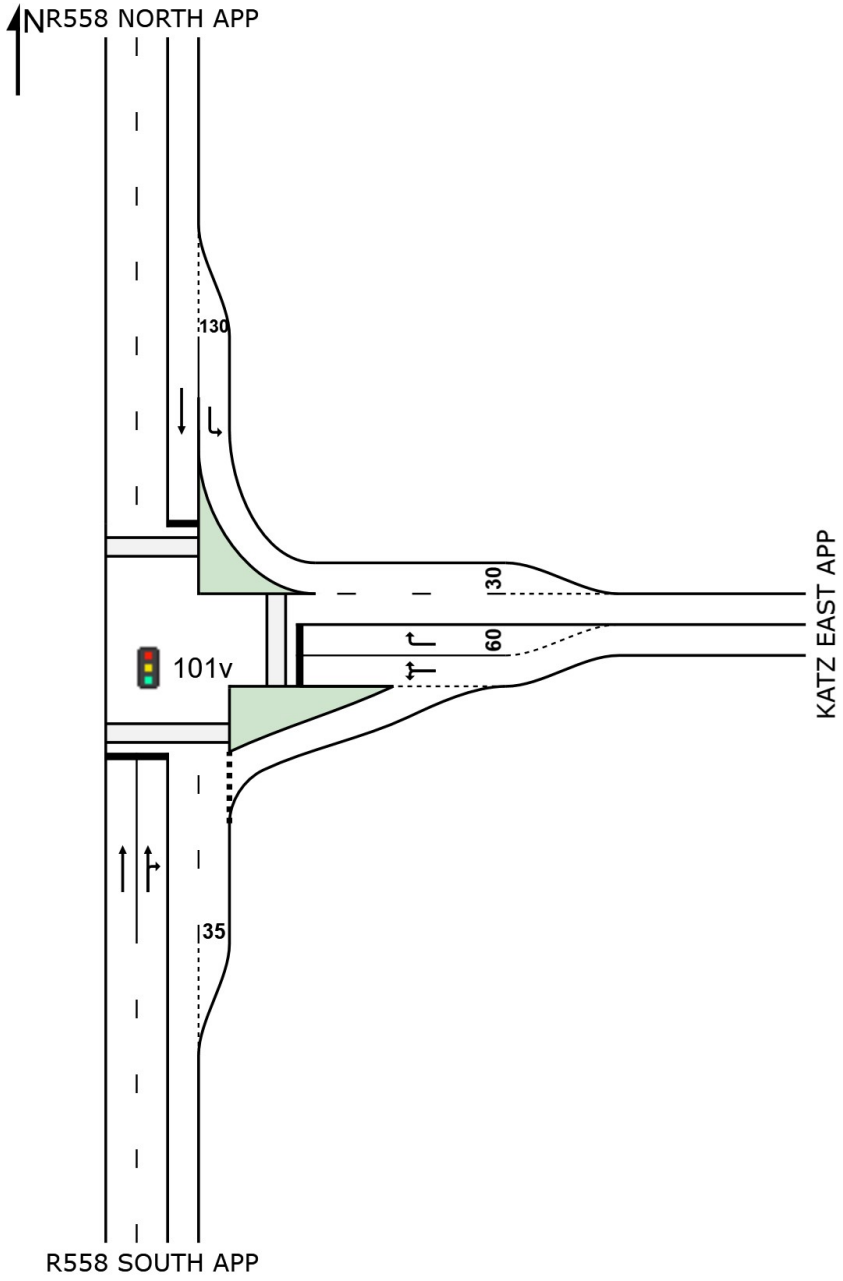
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Project: C:\Work\Ennerdale\Sidra pdf\INT1.sip7

SITE LAYOUT

 Site: 101v [INT 1 FUT AM - Conversion]

FORECAST AM PEAK
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

 Site: 101 [INT2 FUT AM]

FORECAST AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: R558 SOUTH APP											
2	T1	87	2,0	0,139	9,7	LOS A	0,5	3,4	0,43	0,92	50,6
3	R2	52	2,0	0,139	13,0	LOS B	0,5	3,4	0,49	0,95	49,9
Approach		139	2,0	0,139	10,9	LOS B	0,5	3,4	0,45	0,93	50,3
East: R558 EAST APP											
4	L2	40	2,0	0,025	5,7	LOS A	0,1	0,7	0,11	0,52	53,8
6	R2	305	2,0	0,167	5,6	LOS A	0,0	0,0	0,00	0,58	53,5
Approach		345	2,0	0,167	5,6	LOS A	0,1	0,7	0,01	0,57	53,5
North: R558 NORTH APP											
7	L2	302	2,0	0,165	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	38	2,0	0,041	9,7	LOS A	0,1	1,0	0,39	0,88	51,1
Approach		340	2,0	0,165	6,1	LOS A	0,1	1,0	0,04	0,57	54,4
All Vehicles		824	2,0	0,167	6,7	NA	0,5	3,4	0,10	0,63	53,3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT2 FUT PM]

FORECAST PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: R558 SOUTH APP											
2	T1	55	2,0	0,092	9,2	LOS A	0,3	2,2	0,36	0,90	51,0
3	R2	43	2,0	0,092	11,9	LOS B	0,3	2,2	0,44	0,94	50,2
Approach		98	2,0	0,092	10,4	LOS B	0,3	2,2	0,39	0,91	50,6
East: R558 EAST APP											
4	L2	62	2,0	0,041	5,8	LOS A	0,2	1,2	0,15	0,52	53,7
6	R2	209	2,0	0,114	5,6	LOS A	0,0	0,0	0,00	0,58	53,5
Approach		272	2,0	0,114	5,6	LOS A	0,2	1,2	0,03	0,56	53,5
North: R558 NORTH APP											
7	L2	262	2,0	0,143	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	67	2,0	0,064	9,2	LOS A	0,2	1,7	0,32	0,88	51,4
Approach		329	2,0	0,143	6,4	LOS A	0,2	1,7	0,07	0,60	54,1
All Vehicles		699	2,0	0,143	6,6	NA	0,3	2,2	0,10	0,63	53,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT3 FUT AM]

FORECAST AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m		per veh	km/h
South: AGAAT AVE SOUTH APP											
1	L2	9	2,0	0,010	9,3	LOS A	0,0	0,3	0,34	0,85	51,3
2	T1	233	2,0	1,012	99,0	LOS F	16,3	116,1	1,00	2,09	23,0
3	R2	47	2,0	0,395	44,5	LOS E	1,4	9,9	0,89	1,06	34,9
Approach		289	2,0	1,012	87,2	LOS F	16,3	116,1	0,96	1,88	24,8
East: R558 EAST APP											
4	L2	98	2,0	0,053	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	248	2,0	0,129	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
6	R2	129	2,0	0,084	6,1	LOS A	0,4	2,8	0,28	0,55	52,8
Approach		476	2,0	0,129	2,8	NA	0,4	2,8	0,08	0,26	56,8
North: AGAAT NORTH APP											
7	L2	178	2,0	0,097	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	100	2,0	0,449	29,1	LOS D	2,0	14,1	0,82	1,09	40,8
9	R2	37	2,0	0,270	36,3	LOS E	0,9	6,4	0,85	1,03	37,8
Approach		315	2,0	0,449	16,7	LOS C	2,0	14,1	0,36	0,77	47,2
West: R558 WEST APP											
10	L2	68	2,0	0,037	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	165	2,0	0,086	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
12	R2	33	2,0	0,023	6,4	LOS A	0,1	0,7	0,34	0,55	52,6
Approach		266	2,0	0,086	2,2	NA	0,1	0,7	0,04	0,20	57,6
All Vehicles		1346	2,0	1,012	24,1	NA	16,3	116,1	0,33	0,71	43,0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT3 FUT PM]

FORECAST PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: AGAAT AVE SOUTH APP											
1	L2	8	2,0	0,009	9,2	LOS A	0,0	0,2	0,32	0,85	51,4
2	T1	253	2,0	1,159	198,7	LOS F	31,6	224,8	1,00	2,88	14,0
3	R2	43	2,0	0,339	40,5	LOS E	1,2	8,3	0,87	1,04	36,2
Approach		304	2,0	1,159	171,0	LOS F	31,6	224,8	0,96	2,56	15,7
East: R558 EAST APP											
4	L2	101	2,0	0,055	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	221	2,0	0,115	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
6	R2	171	2,0	0,119	6,4	LOS A	0,6	3,9	0,35	0,58	52,6
Approach		493	2,0	0,119	3,4	NA	0,6	3,9	0,12	0,31	56,2
North: AGAAT NORTH APP											
7	L2	112	2,0	0,061	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	58	2,0	0,291	28,1	LOS D	1,1	7,7	0,81	1,04	41,2
9	R2	20	2,0	0,173	38,5	LOS E	0,5	3,8	0,86	1,01	37,0
Approach		189	2,0	0,291	16,0	LOS C	1,1	7,7	0,34	0,73	47,7
West: R558 WEST APP											
10	L2	14	2,0	0,007	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	236	2,0	0,122	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
12	R2	36	2,0	0,025	6,3	LOS A	0,1	0,8	0,32	0,55	52,7
Approach		285	2,0	0,122	1,1	NA	0,1	0,8	0,04	0,09	58,7
All Vehicles		1272	2,0	1,159	44,8	NA	31,6	224,8	0,34	0,86	34,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

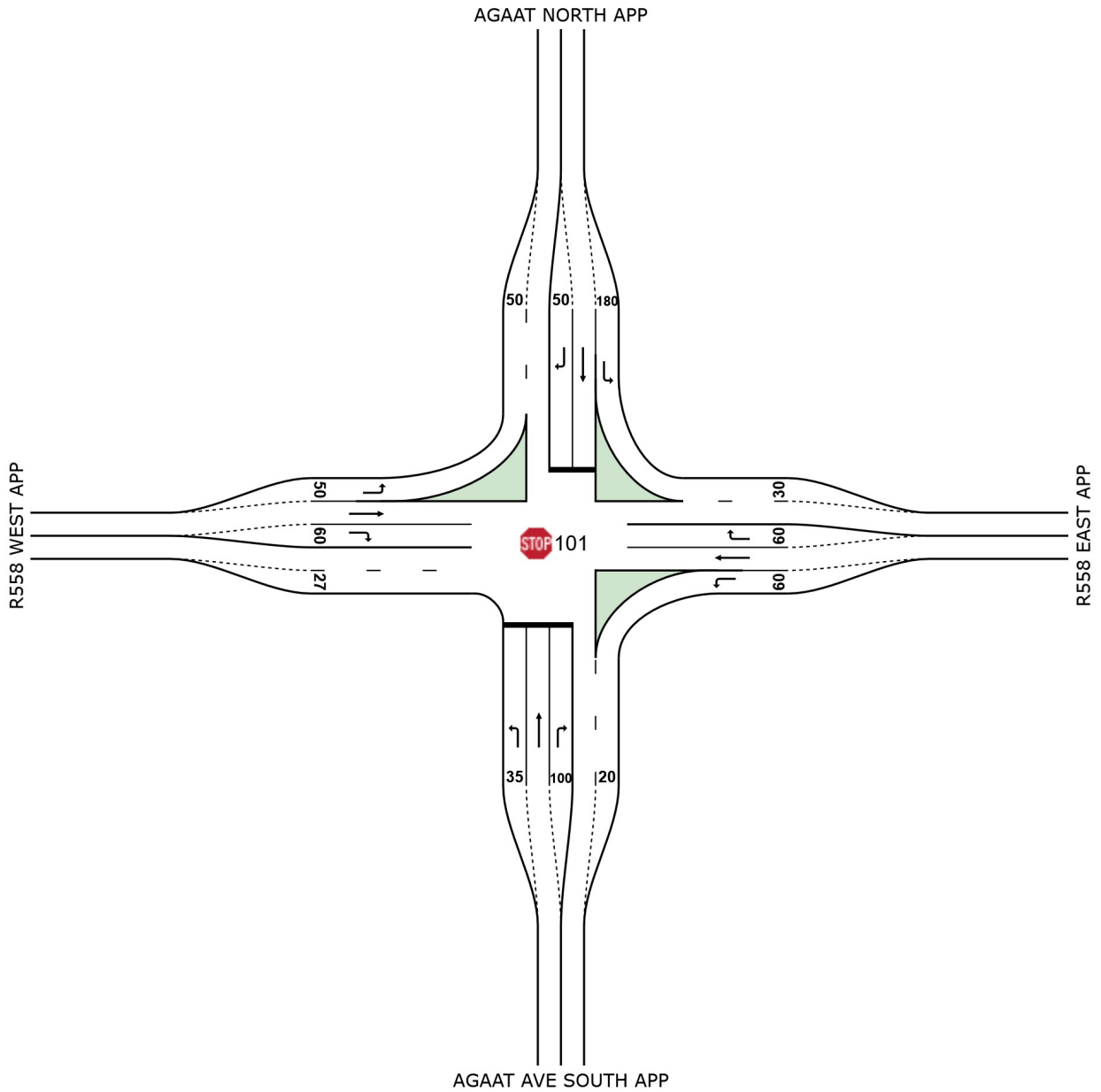
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

SITE LAYOUT

 Site: 101 [INT3 EX AM]

EXISTING AM PEAK
Stop (Two-Way)



MOVEMENT SUMMARY

 Site: 101v [INT3 FUT AM - Conversion]

FORECAST AM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: AGAAT AVE SOUTH APP											
1	L2	9	2,0	0,013	17,2	LOS B	0,2	1,2	0,62	0,65	45,8
2	T1	233	2,0	0,302	13,4	LOS B	4,7	33,5	0,72	0,60	49,2
3	R2	47	2,0	0,090	18,5	LOS B	0,9	6,4	0,67	0,70	45,2
Approach		289	2,0	0,302	14,4	LOS B	4,7	33,5	0,71	0,62	48,4
East: R558 EAST APP											
4	L2	98	2,0	0,053	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	248	2,0	0,298	12,0	LOS B	4,8	34,0	0,69	0,58	50,1
6	R2	129	2,0	0,251	19,6	LOS B	2,7	19,0	0,72	0,75	44,6
Approach		476	2,0	0,298	12,8	LOS B	4,8	34,0	0,56	0,61	49,4
North: AGAAT NORTH APP											
7	L2	178	2,0	0,097	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	100	2,0	0,130	12,3	LOS B	1,9	13,3	0,66	0,53	49,9
9	R2	37	2,0	0,088	20,8	LOS C	0,8	5,4	0,72	0,70	44,0
Approach		315	2,0	0,130	9,5	LOS A	1,9	13,3	0,29	0,55	51,8
West: R558 WEST APP											
10	L2	68	2,0	0,037	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	165	2,0	0,198	11,4	LOS B	3,0	21,5	0,65	0,54	50,6
12	R2	33	2,0	0,072	19,9	LOS B	0,7	4,6	0,69	0,69	44,4
Approach		266	2,0	0,198	11,0	LOS B	3,0	21,5	0,49	0,55	50,7
All Vehicles		1346	2,0	0,302	12,0	LOS B	4,8	34,0	0,52	0,59	50,0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

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Project: C:\Work\Ennerdale\Sidra pdf\INT3.sip7

MOVEMENT SUMMARY

 Site: 101v [INT3 FUT PM - Conversion]

FORECAST PM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: AGAAT AVE SOUTH APP											
1	L2	8	2,0	0,012	17,8	LOS B	0,2	1,1	0,64	0,65	45,4
2	T1	253	2,0	0,342	14,4	LOS B	5,3	38,0	0,75	0,63	48,6
3	R2	43	2,0	0,080	19,2	LOS B	0,8	6,0	0,68	0,70	44,9
Approach		304	2,0	0,342	15,1	LOS B	5,3	38,0	0,74	0,64	47,9
East: R558 EAST APP											
4	L2	101	2,0	0,055	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	221	2,0	0,255	11,1	LOS B	4,1	28,9	0,66	0,55	50,8
6	R2	171	2,0	0,354	20,3	LOS C	3,7	26,3	0,75	0,77	44,2
Approach		493	2,0	0,354	13,2	LOS B	4,1	28,9	0,56	0,62	49,0
North: AGAAT NORTH APP											
7	L2	112	2,0	0,061	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	58	2,0	0,078	12,7	LOS B	1,1	7,7	0,66	0,51	49,7
9	R2	20	2,0	0,052	22,1	LOS C	0,4	3,0	0,74	0,69	43,3
Approach		189	2,0	0,078	9,5	LOS A	1,1	7,7	0,28	0,54	51,8
West: R558 WEST APP											
10	L2	14	2,0	0,007	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	236	2,0	0,272	11,2	LOS B	4,4	31,1	0,66	0,56	50,7
12	R2	36	2,0	0,073	18,5	LOS B	0,7	4,8	0,66	0,69	45,2
Approach		285	2,0	0,272	11,9	LOS B	4,4	31,1	0,63	0,57	50,1
All Vehicles		1272	2,0	0,354	12,8	LOS B	5,3	38,0	0,58	0,60	49,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

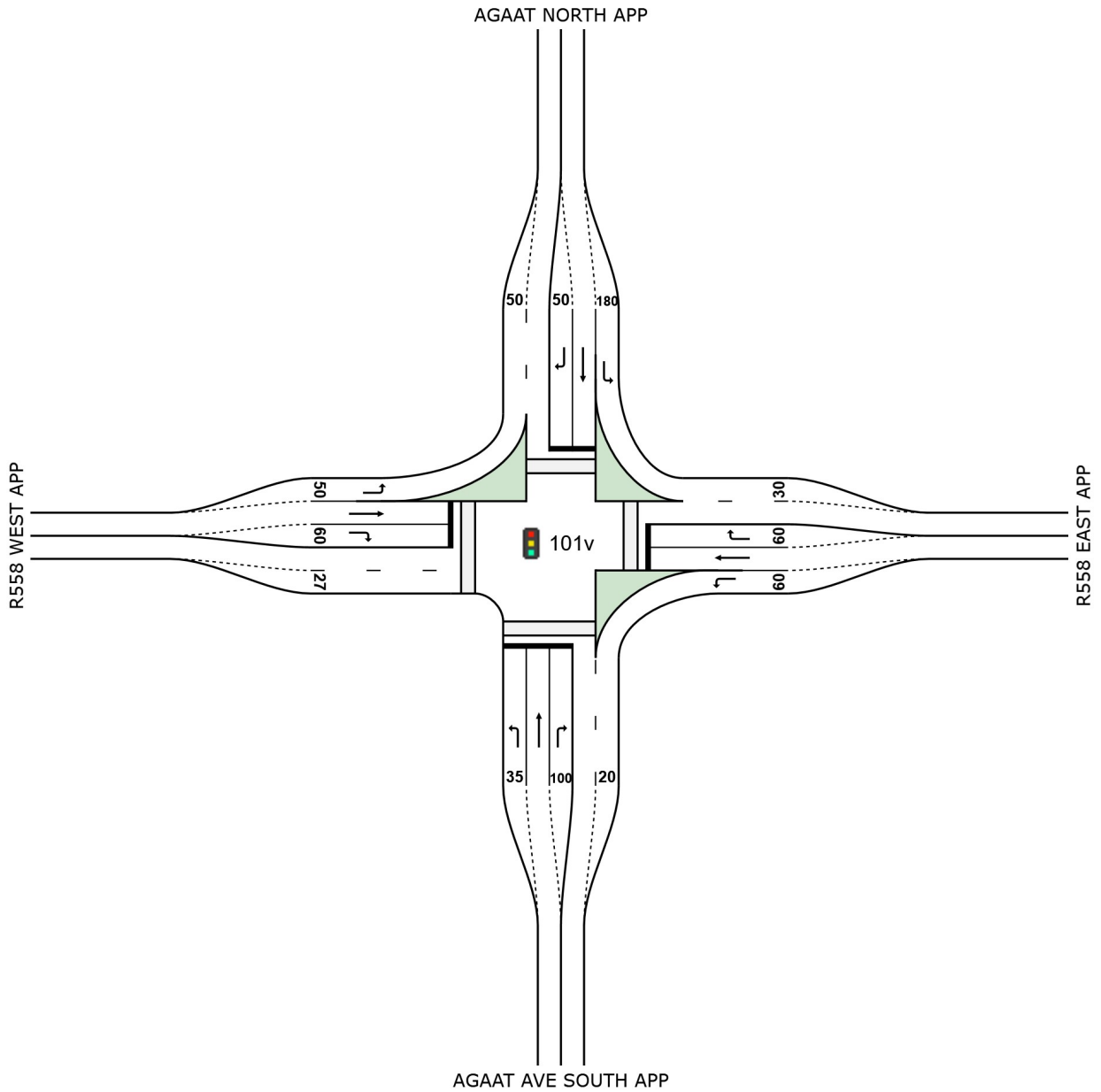
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

SITE LAYOUT

 Site: 101v [INT3 FUT AM - Conversion]

FORECAST AM PEAK
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

 Site: 101 [INT4 FUT AM]

FORECAST AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: AGAAT AVE SOUTH APP											
1	L2	96	2,0	0,110	9,5	LOS A	0,3	2,2	0,34	0,94	51,2
2	T1	89	2,0	0,567	37,6	LOS E	2,0	14,5	0,90	1,11	37,3
3	R2	138	2,0	1,768	749,1	LOS F	43,2	307,5	1,00	3,06	4,4
Approach		323	2,0	1,768	332,9	LOS F	43,2	307,5	0,78	1,89	9,1
East: R558 EAST APP											
4	L2	153	2,0	0,083	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	368	2,0	0,191	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
6	R2	83	2,0	0,070	7,2	LOS A	0,3	2,1	0,46	0,64	52,3
Approach		604	2,0	0,191	2,4	NA	0,3	2,1	0,06	0,22	57,4
North: SONICKSON NORTH APP											
7	L2	84	2,0	0,046	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	63	2,0	0,805	109,4	LOS F	3,6	25,8	0,98	1,21	21,6
9	R2	21	2,0	0,386	87,3	LOS F	1,2	8,3	0,95	1,04	24,8
Approach		168	2,0	0,805	54,7	LOS F	3,6	25,8	0,49	0,85	31,8
West: R558 WEST APP											
10	L2	32	2,0	0,017	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	412	2,0	0,214	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
12	R2	120	2,0	0,097	7,0	LOS A	0,4	3,0	0,44	0,63	52,3
Approach		563	2,0	0,214	1,8	NA	0,4	3,0	0,09	0,16	57,9
All Vehicles		1659	2,0	1,768	71,9	NA	43,2	307,5	0,26	0,59	27,2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT4 FUT PM]

FORECAST PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: AGAAT AVE SOUTH APP											
1	L2	40	2,0	0,048	9,6	LOS A	0,1	0,9	0,35	0,93	51,1
2	T1	60	2,0	0,321	27,5	LOS D	1,0	7,1	0,83	1,04	41,5
3	R2	58	2,0	0,571	55,5	LOS F	2,0	13,9	0,93	1,09	31,6
Approach		158	2,0	0,571	33,3	LOS D	2,0	13,9	0,75	1,03	38,9
East: R558 EAST APP											
4	L2	96	2,0	0,052	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	408	2,0	0,212	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
6	R2	112	2,0	0,088	6,9	LOS A	0,4	2,8	0,43	0,62	52,4
Approach		616	2,0	0,212	2,1	NA	0,4	2,8	0,08	0,19	57,6
North: SONICKSON NORTH APP											
7	L2	65	2,0	0,036	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	48	2,0	0,473	56,0	LOS F	1,7	12,1	0,93	1,07	31,4
9	R2	15	2,0	0,184	52,7	LOS F	0,5	3,8	0,91	1,01	32,4
Approach		128	2,0	0,473	30,0	LOS D	1,7	12,1	0,45	0,79	40,4
West: R558 WEST APP											
10	L2	20	2,0	0,011	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	346	2,0	0,180	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
12	R2	65	2,0	0,055	7,1	LOS A	0,2	1,7	0,46	0,63	52,3
Approach		432	2,0	0,180	1,4	NA	0,2	1,7	0,07	0,12	58,4
All Vehicles		1334	2,0	0,571	8,3	NA	2,0	13,9	0,19	0,33	52,7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

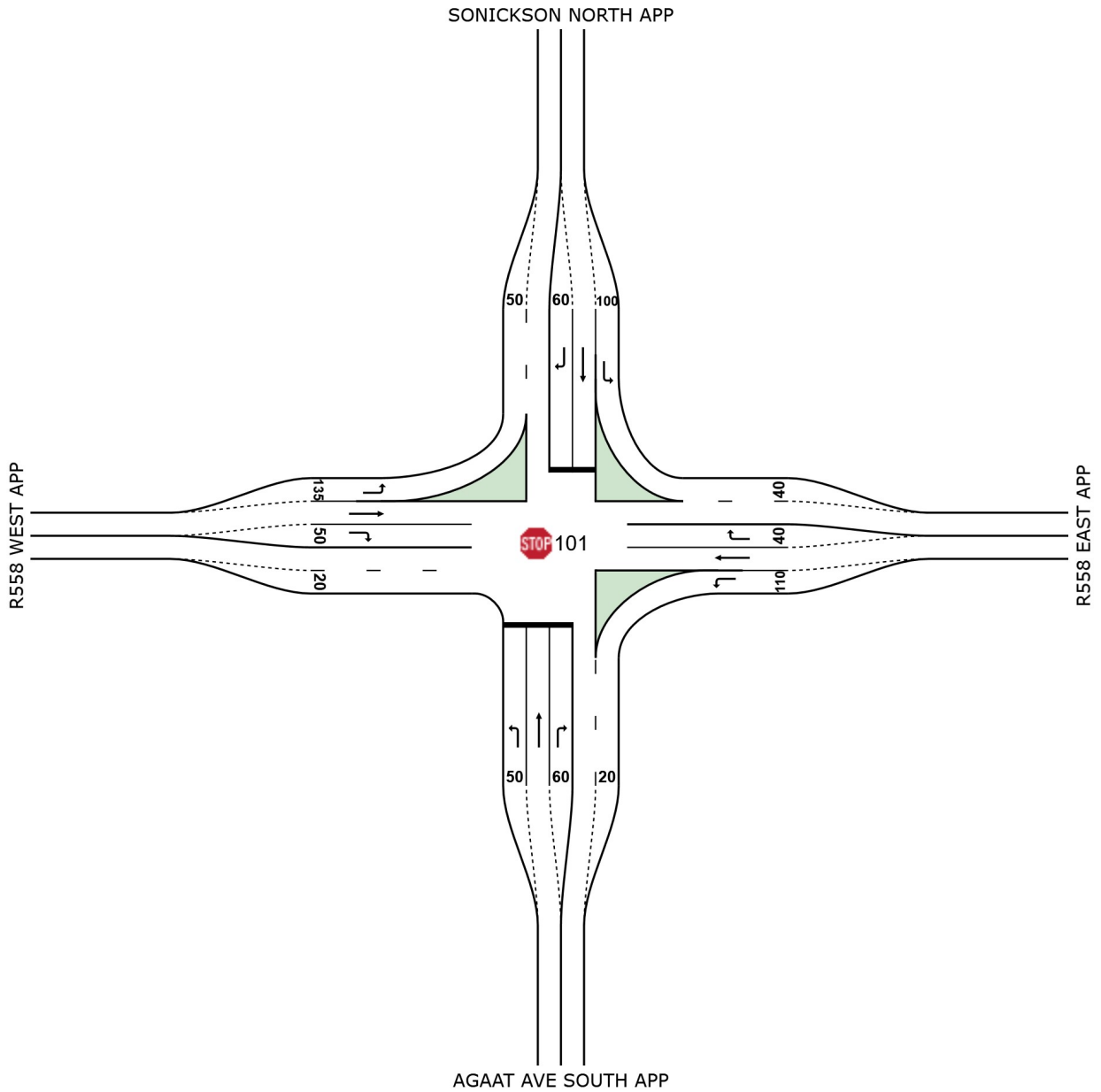
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

SITE LAYOUT

 Site: 101 [INT4 EX AM]

EXISTING AM PEAK
Stop (Two-Way)



MOVEMENT SUMMARY

 Site: 101v [INT4 FUT AM - Conversion]

FORECAST AM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: AGAAT AVE SOUTH APP											
1	L2	96	2,0	0,196	24,4	LOS C	2,2	15,9	0,81	0,75	42,0
2	T1	89	2,0	0,174	18,6	LOS B	2,1	14,7	0,81	0,63	46,0
3	R2	138	2,0	0,364	26,5	LOS C	3,5	24,8	0,87	0,78	41,2
Approach		323	2,0	0,364	23,7	LOS C	3,5	24,8	0,83	0,73	42,7
East: R558 EAST APP											
4	L2	153	2,0	0,083	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	368	2,0	0,338	7,5	LOS A	5,8	41,3	0,57	0,49	53,4
6	R2	83	2,0	0,173	16,5	LOS B	1,5	10,7	0,63	0,72	46,3
Approach		604	2,0	0,338	8,3	LOS A	5,8	41,3	0,44	0,53	52,7
North: SONICKSON NORTH APP											
7	L2	84	2,0	0,046	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	63	2,0	0,123	18,3	LOS B	1,4	10,2	0,79	0,61	46,2
9	R2	21	2,0	0,063	25,5	LOS C	0,5	3,5	0,81	0,69	41,6
Approach		168	2,0	0,123	12,9	LOS B	1,4	10,2	0,40	0,58	49,4
West: R558 WEST APP											
10	L2	32	2,0	0,017	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	412	2,0	0,377	7,7	LOS A	6,7	47,5	0,59	0,51	53,3
12	R2	120	2,0	0,233	16,2	LOS B	2,2	15,4	0,63	0,73	46,5
Approach		563	2,0	0,377	9,4	LOS A	6,7	47,5	0,57	0,56	51,8
All Vehicles		1659	2,0	0,377	12,1	LOS B	6,7	47,5	0,55	0,58	49,8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

MOVEMENT SUMMARY

 Site: 101v [INT4 FUT PM - Conversion]

FORECAST PM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: AGAAT AVE SOUTH APP											
1	L2	40	2,0	0,164	31,7	LOS C	1,1	7,8	0,92	0,72	38,7
2	T1	60	2,0	0,234	26,4	LOS C	1,7	11,8	0,93	0,70	41,9
3	R2	58	2,0	0,274	33,4	LOS C	1,7	11,8	0,95	0,74	38,2
Approach		158	2,0	0,274	30,3	LOS C	1,7	11,8	0,93	0,72	39,7
East: R558 EAST APP											
4	L2	96	2,0	0,052	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	408	2,0	0,303	3,7	LOS A	4,5	32,3	0,41	0,36	56,6
6	R2	112	2,0	0,162	10,1	LOS B	1,3	9,3	0,41	0,67	50,4
Approach		616	2,0	0,303	5,1	LOS A	4,5	32,3	0,35	0,44	55,1
North: SONICKSON NORTH APP											
7	L2	65	2,0	0,036	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	48	2,0	0,189	26,2	LOS C	1,3	9,5	0,92	0,69	42,0
9	R2	15	2,0	0,070	32,3	LOS C	0,4	2,9	0,92	0,68	38,6
Approach		128	2,0	0,189	16,5	LOS B	1,3	9,5	0,45	0,61	47,2
West: R558 WEST APP											
10	L2	20	2,0	0,011	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	346	2,0	0,257	3,5	LOS A	3,7	26,3	0,39	0,34	56,7
12	R2	65	2,0	0,103	10,3	LOS B	0,8	5,4	0,41	0,66	50,3
Approach		432	2,0	0,257	4,7	LOS A	3,7	26,3	0,38	0,40	55,6
All Vehicles		1334	2,0	0,303	9,1	LOS A	4,5	32,3	0,44	0,47	52,0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

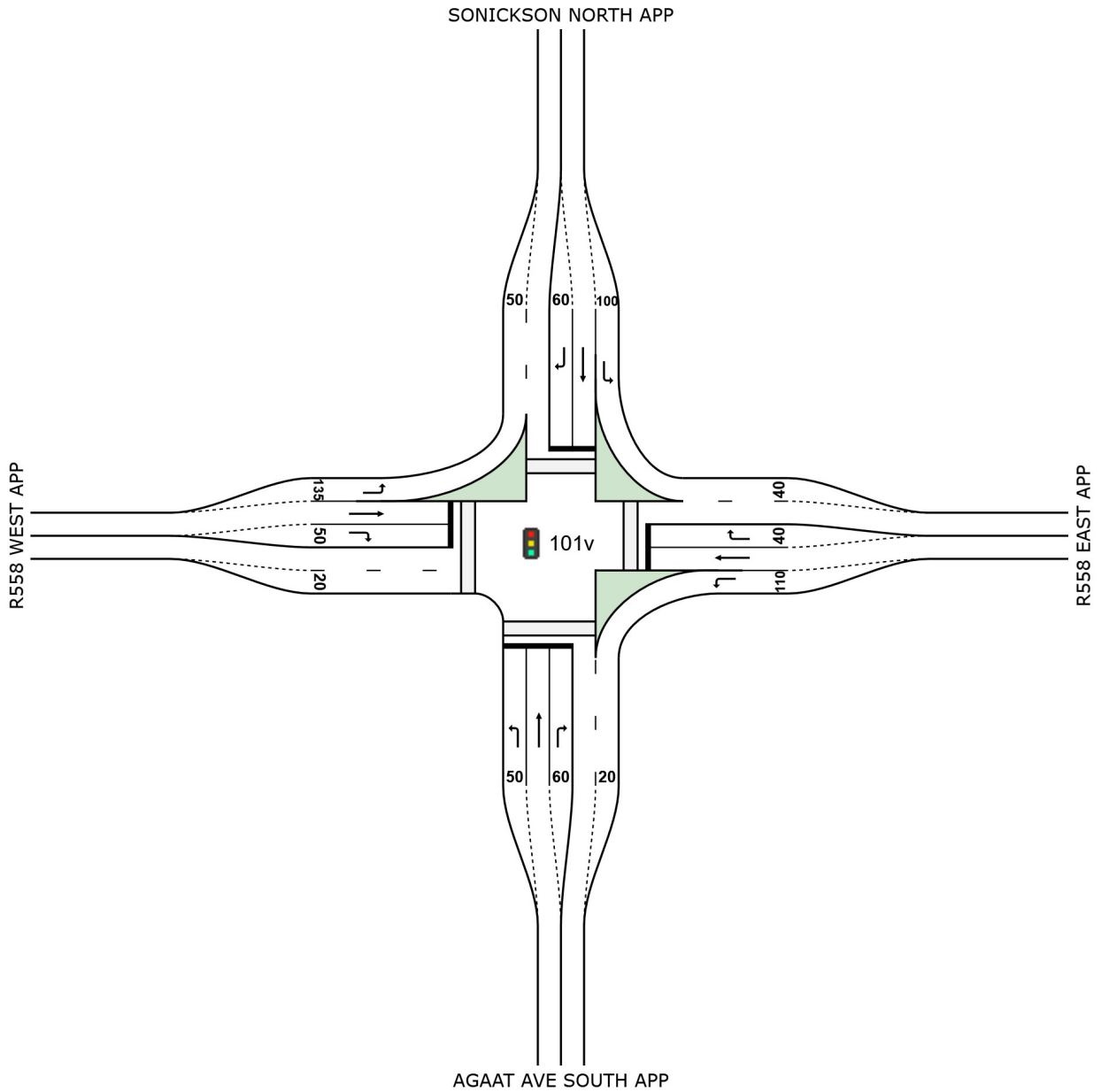
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

SITE LAYOUT

 Site: 101v [INT4 FUT AM - Conversion]

FORECAST AM PEAK
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

 Site: 101v [INT5 FUT AM]

FORECAST AM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN AVE SOUTH APP											
1	L2	135	2,0	0,074	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	287	2,0	0,527	20,1	LOS C	7,3	52,0	0,89	0,75	45,2
3	R2	111	2,0	0,468	31,7	LOS C	3,1	22,4	0,95	0,78	38,9
Approach		533	2,0	0,527	18,9	LOS B	7,3	52,0	0,68	0,70	45,7
East: R558 EAST APP											
4	L2	92	2,0	0,050	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	402	2,0	0,404	9,6	LOS A	7,2	51,6	0,65	0,57	51,9
6	R2	233	2,0	0,519	20,9	LOS C	5,4	38,4	0,80	0,80	43,9
Approach		726	2,0	0,519	12,7	LOS B	7,2	51,6	0,62	0,63	49,3
North: TOWN NORTH APP											
7	L2	320	2,0	0,175	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	295	2,0	0,540	20,2	LOS C	7,5	53,6	0,90	0,75	45,1
9	R2	88	2,0	0,367	31,1	LOS C	2,5	17,5	0,93	0,77	39,1
Approach		703	2,0	0,540	15,0	LOS B	7,5	53,6	0,49	0,65	48,1
West: R558 WEST APP											
10	L2	68	2,0	0,037	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	381	2,0	0,383	9,5	LOS A	6,8	48,2	0,64	0,56	52,0
12	R2	138	2,0	0,319	19,5	LOS B	2,9	20,6	0,73	0,76	44,7
Approach		587	2,0	0,383	11,4	LOS B	6,8	48,2	0,59	0,60	50,4
All Vehicles		2549	2,0	0,540	14,3	LOS B	7,5	53,6	0,59	0,65	48,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

MOVEMENT SUMMARY

 Site: 101v [INT5 FUT PM]

FORECAST PM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN AVE SOUTH APP											
1	L2	104	2,0	0,057	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	267	2,0	0,463	18,9	LOS B	6,5	46,5	0,86	0,72	45,9
3	R2	62	2,0	0,241	29,5	LOS C	1,6	11,7	0,89	0,75	39,8
Approach		434	2,0	0,463	17,2	LOS B	6,5	46,5	0,66	0,68	46,7
East: R558 EAST APP											
4	L2	102	2,0	0,056	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
5	T1	481	2,0	0,500	10,9	LOS B	9,5	67,5	0,71	0,62	51,0
6	R2	215	2,0	0,416	18,7	LOS B	4,5	32,0	0,73	0,77	45,1
Approach		798	2,0	0,500	12,3	LOS B	9,5	67,5	0,63	0,65	49,7
North: TOWN NORTH APP											
7	L2	236	2,0	0,129	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
8	T1	292	2,0	0,505	19,2	LOS B	7,2	51,6	0,87	0,74	45,7
9	R2	64	2,0	0,234	28,5	LOS C	1,7	11,9	0,88	0,75	40,2
Approach		592	2,0	0,505	14,8	LOS B	7,2	51,6	0,53	0,65	48,2
West: R558 WEST APP											
10	L2	77	2,0	0,042	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
11	T1	268	2,0	0,279	9,4	LOS A	4,6	32,7	0,62	0,52	52,0
12	R2	107	2,0	0,300	21,6	LOS C	2,4	17,1	0,77	0,76	43,5
Approach		453	2,0	0,300	11,7	LOS B	4,6	32,7	0,55	0,58	50,1
All Vehicles		2276	2,0	0,505	13,8	LOS B	9,5	67,5	0,59	0,64	48,8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT6 FUT AM]

FORECAST AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN AVE SOUTH APP											
1	L2	97	2,0	0,053	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	286	2,0	0,074	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
3	R2	148	2,0	0,172	8,1	LOS A	0,7	5,0	0,52	0,73	51,6
Approach		532	2,0	0,172	3,3	NA	0,7	5,0	0,14	0,30	56,5
East: SAMUEL ROAD EAST APP											
4	L2	211	2,0	0,199	8,7	LOS A	0,6	4,3	0,22	0,92	51,6
5	T1	98	2,0	0,742	46,6	LOS E	3,4	24,5	0,94	1,22	34,5
6	R2	24	2,0	0,742	43,8	LOS E	3,4	24,5	0,94	1,22	34,3
Approach		333	2,0	0,742	22,4	LOS C	3,4	24,5	0,48	1,03	43,6
North: TOWN AVE NORTH APP											
7	L2	88	2,0	0,127	5,6	LOS A	0,0	0,0	0,00	0,22	56,4
8	T1	395	2,0	0,127	0,0	LOS A	0,0	0,0	0,00	0,08	59,2
9	R2	25	2,0	0,024	6,7	LOS A	0,1	0,6	0,36	0,58	52,4
Approach		508	2,0	0,127	1,3	NA	0,1	0,6	0,02	0,13	58,3
West: SAMUEL ROAD WEST APP											
10	L2	71	2,0	0,059	6,0	LOS A	0,1	1,1	0,17	0,54	53,6
11	T1	168	2,0	1,795	748,0	LOS F	80,3	571,8	1,00	4,71	4,5
12	R2	98	2,0	1,795	751,3	LOS F	80,3	571,8	1,00	4,71	4,5
Approach		337	2,0	1,795	593,6	LOS F	80,3	571,8	0,83	3,84	5,5
All Vehicles		1709	2,0	1,795	122,7	NA	80,3	571,8	0,31	1,09	19,7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT6 FUT PM]

FORECAST PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back Vehicles veh	of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN AVE SOUTH APP											
1	L2	171	2,0	0,093	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	366	2,0	0,095	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
3	R2	88	2,0	0,098	7,7	LOS A	0,4	2,7	0,47	0,68	51,9
Approach		625	2,0	0,098	2,6	NA	0,4	2,7	0,07	0,24	57,3
East: SAMUEL ROAD EAST APP											
4	L2	89	2,0	0,085	8,6	LOS A	0,2	1,7	0,21	0,92	51,6
5	T1	149	2,0	1,203	243,3	LOS F	25,5	181,7	1,00	2,68	12,0
6	R2	32	2,0	1,203	234,3	LOS F	25,5	181,7	1,00	2,68	12,0
Approach		271	2,0	1,203	164,6	LOS F	25,5	181,7	0,74	2,10	16,0
North: TOWN AVE NORTH APP											
7	L2	57	2,0	0,116	5,6	LOS A	0,0	0,0	0,00	0,15	57,0
8	T1	386	2,0	0,116	0,0	LOS A	0,0	0,0	0,00	0,06	59,4
9	R2	37	2,0	0,037	7,1	LOS A	0,1	1,0	0,42	0,62	52,2
Approach		480	2,0	0,116	1,2	NA	0,1	1,0	0,03	0,12	58,5
West: SAMUEL ROAD WEST APP											
10	L2	61	2,0	0,052	6,1	LOS A	0,1	0,9	0,19	0,55	53,5
11	T1	83	2,0	1,376	382,8	LOS F	38,9	277,3	1,00	3,35	8,1
12	R2	112	2,0	1,376	385,3	LOS F	38,9	277,3	1,00	3,35	8,1
Approach		256	2,0	1,376	294,0	LOS F	38,9	277,3	0,81	2,68	10,2
All Vehicles		1632	2,0	1,376	74,8	NA	38,9	277,3	0,28	0,89	26,7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

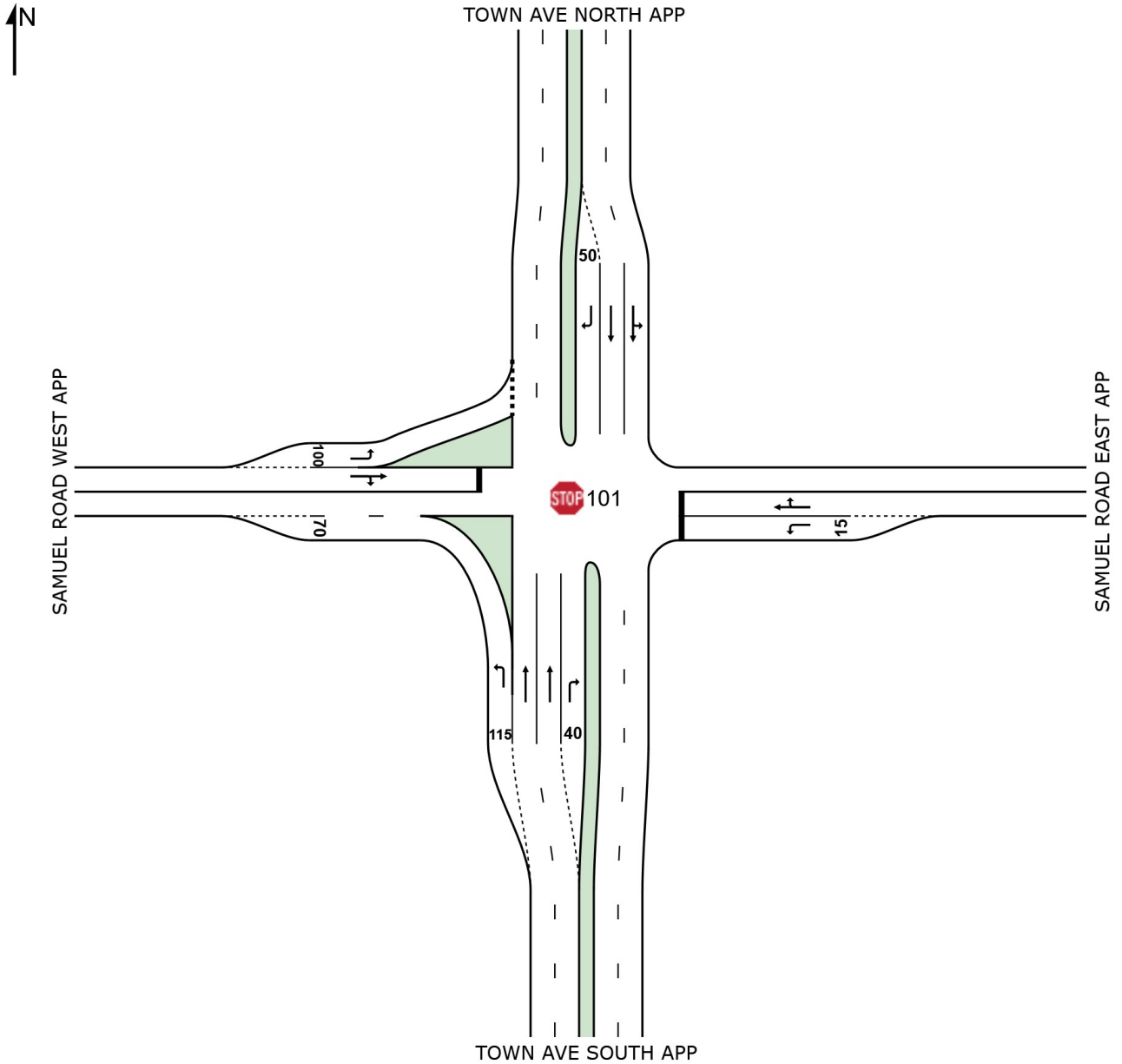
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

SITE LAYOUT

 Site: 101 [INT6 EX AM]

EXISTING AM PEAK
Stop (Two-Way)



MOVEMENT SUMMARY

 Site: 101v [INT6 FUT AM - Conversion]

FORECAST AM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN AVE SOUTH APP											
1	L2	97	2,0	0,053	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	286	2,0	0,186	12,7	LOS B	2,7	19,5	0,68	0,55	49,7
3	R2	148	2,0	0,424	23,9	LOS C	3,6	25,8	0,83	0,78	42,2
Approach		532	2,0	0,424	14,5	LOS B	3,6	25,8	0,60	0,61	48,1
East: SAMUEL ROAD EAST APP											
4	L2	211	2,0	0,277	17,4	LOS B	4,0	28,4	0,68	0,75	45,6
5	T1	98	2,0	0,167	11,3	LOS B	2,2	15,7	0,64	0,56	49,9
6	R2	24	2,0	0,167	16,9	LOS B	2,2	15,7	0,64	0,56	48,8
Approach		333	2,0	0,277	15,6	LOS B	4,0	28,4	0,67	0,68	47,0
North: TOWN AVE NORTH APP											
7	L2	88	2,0	0,317	19,1	LOS B	4,9	34,8	0,73	0,67	46,7
8	T1	395	2,0	0,317	13,5	LOS B	5,0	35,4	0,73	0,63	48,6
9	R2	25	2,0	0,057	19,1	LOS B	0,5	3,5	0,67	0,69	44,7
Approach		508	2,0	0,317	14,7	LOS B	5,0	35,4	0,73	0,64	48,1
West: SAMUEL ROAD WEST APP											
10	L2	71	2,0	0,059	6,3	LOS A	0,3	1,9	0,22	0,60	53,4
11	T1	168	2,0	0,434	13,8	LOS B	5,7	40,6	0,76	0,70	47,7
12	R2	98	2,0	0,434	19,4	LOS B	5,7	40,6	0,76	0,70	47,0
Approach		337	2,0	0,434	13,8	LOS B	5,7	40,6	0,64	0,68	48,6
All Vehicles		1709	2,0	0,434	14,7	LOS B	5,7	40,6	0,66	0,65	48,0

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

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

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

MOVEMENT SUMMARY

 Site: 101v [INT6 FUT PM - Conversion]

FORECAST PM PEAK

Signals - Fixed Time Isolated Cycle Time = 60 seconds (User-Given Cycle Time)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN AVE SOUTH APP											
1	L2	171	2,0	0,093	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	366	2,0	0,259	14,5	LOS B	3,8	27,1	0,74	0,61	48,5
3	R2	88	2,0	0,264	23,6	LOS C	2,1	14,7	0,80	0,75	42,3
Approach		625	2,0	0,264	13,4	LOS B	3,8	27,1	0,55	0,61	49,0
East: SAMUEL ROAD EAST APP											
4	L2	89	2,0	0,105	15,2	LOS B	1,5	10,5	0,59	0,70	46,9
5	T1	149	2,0	0,220	10,3	LOS B	3,2	22,6	0,63	0,56	50,7
6	R2	32	2,0	0,220	15,9	LOS B	3,2	22,6	0,63	0,56	49,5
Approach		271	2,0	0,220	12,6	LOS B	3,2	22,6	0,62	0,61	49,2
North: TOWN AVE NORTH APP											
7	L2	57	2,0	0,316	20,5	LOS C	4,7	33,4	0,76	0,67	46,2
8	T1	386	2,0	0,316	14,9	LOS B	4,8	33,8	0,76	0,65	47,8
9	R2	37	2,0	0,100	21,7	LOS C	0,8	5,6	0,74	0,71	43,3
Approach		480	2,0	0,316	16,1	LOS B	4,8	33,8	0,76	0,65	47,3
West: SAMUEL ROAD WEST APP											
10	L2	61	2,0	0,053	6,5	LOS A	0,3	1,8	0,24	0,60	53,4
11	T1	83	2,0	0,308	11,6	LOS B	3,7	26,5	0,68	0,67	48,3
12	R2	112	2,0	0,308	17,2	LOS B	3,7	26,5	0,68	0,67	47,6
Approach		256	2,0	0,308	12,8	LOS B	3,7	26,5	0,57	0,66	49,1
All Vehicles		1632	2,0	0,316	14,0	LOS B	4,8	33,8	0,62	0,63	48,5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

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

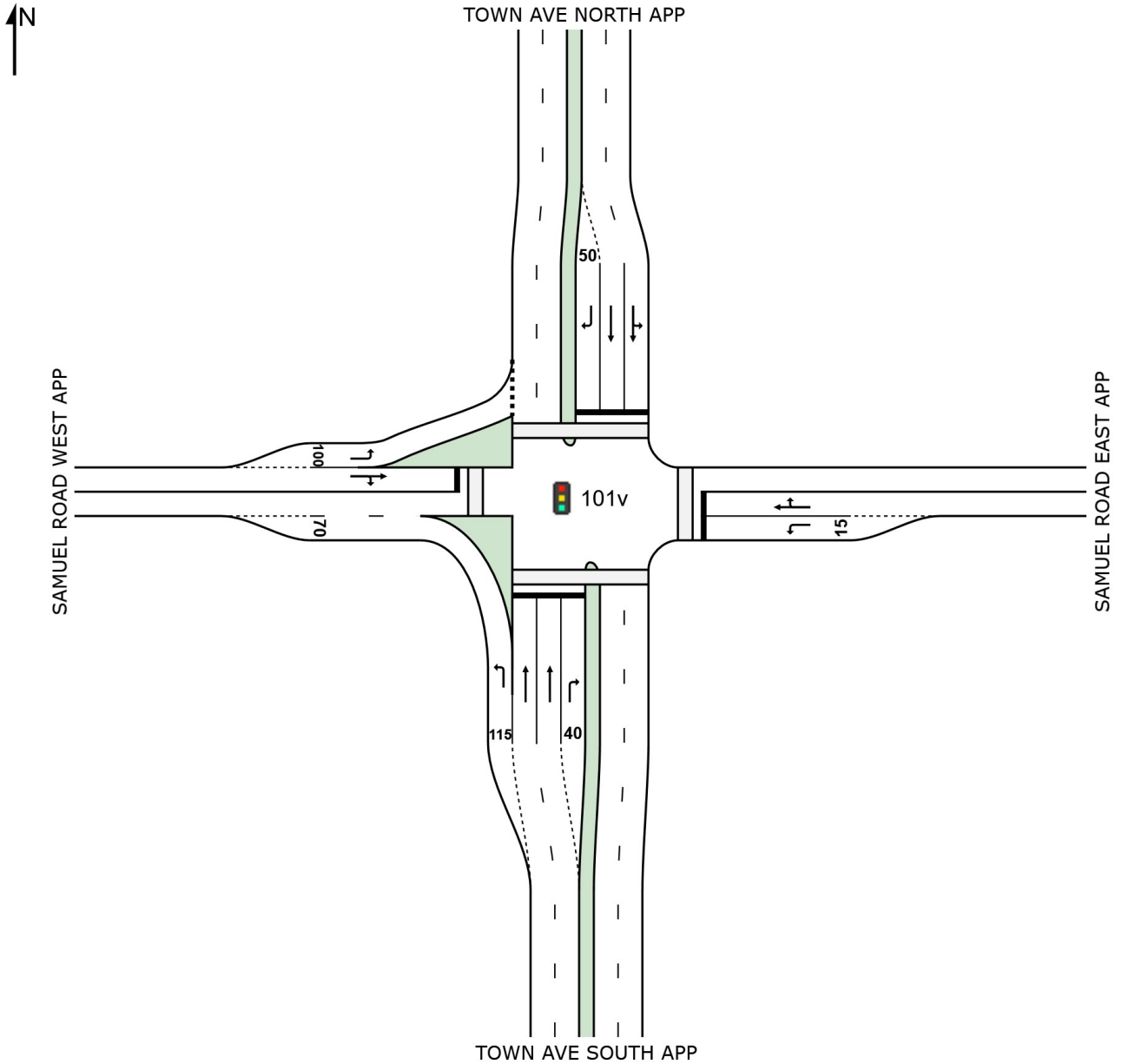
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

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

SITE LAYOUT

 Site: 101v [INT6 FUT AM - Conversion]

FORECAST AM PEAK
Signals - Fixed Time Isolated



MOVEMENT SUMMARY

 Site: 101 [INT7 FUT AM]

FORECAST AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN ROAD SOUTH APP											
1	L2	101	2,0	0,055	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	137	2,0	0,036	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
Approach		238	2,0	0,055	2,4	NA	0,0	0,0	0,00	0,22	57,7
North: TOWN ROAD NORTH APP											
8	T1	142	2,0	0,037	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
9	R2	123	2,0	0,098	6,1	LOS A	0,4	2,9	0,25	0,56	52,7
Approach		265	2,0	0,098	2,8	NA	0,4	2,9	0,12	0,26	56,4
West: KATZ AVE WEST APP											
10	L2	129	2,0	0,104	5,9	LOS A	0,4	2,8	0,16	0,53	53,6
12	R2	284	2,0	0,759	26,7	LOS D	6,7	48,0	0,82	1,34	41,9
Approach		414	2,0	0,759	20,2	LOS C	6,7	48,0	0,61	1,08	45,0
All Vehicles		917	2,0	0,759	10,6	NA	6,7	48,0	0,31	0,62	50,9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT7 FUT PM]

FORECAST PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN ROAD SOUTH APP											
1	L2	161	2,0	0,088	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	127	2,0	0,033	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
Approach		288	2,0	0,088	3,2	NA	0,0	0,0	0,00	0,29	57,0
North: TOWN ROAD NORTH APP											
8	T1	156	2,0	0,040	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
9	R2	101	2,0	0,080	6,1	LOS A	0,3	2,3	0,24	0,55	52,8
Approach		257	2,0	0,080	2,4	NA	0,3	2,3	0,09	0,22	56,9
West: KATZ AVE WEST APP											
10	L2	84	2,0	0,068	5,9	LOS A	0,2	1,8	0,15	0,52	53,7
12	R2	171	2,0	0,462	19,0	LOS C	2,4	17,1	0,67	1,10	45,8
Approach		255	2,0	0,462	14,7	LOS B	2,4	17,1	0,50	0,91	48,1
All Vehicles		800	2,0	0,462	6,6	NA	2,4	17,1	0,19	0,47	53,8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT8 FUT AM]

FORECAST AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: SMITH WALK ROAD SOUTH APP											
1	L2	51	2,0	0,207	8,8	LOS A	0,8	5,3	0,39	0,94	50,3
3	R2	97	2,0	0,207	11,8	LOS B	0,8	5,3	0,39	0,94	49,8
Approach		147	2,0	0,207	10,8	LOS B	0,8	5,3	0,39	0,94	50,0
East: KATZ AVE EAST APP											
4	L2	44	2,0	0,101	5,6	LOS A	0,0	0,0	0,00	0,14	57,1
5	T1	148	2,0	0,101	0,0	LOS A	0,0	0,0	0,00	0,14	58,8
Approach		193	2,0	0,101	1,3	NA	0,0	0,0	0,00	0,14	58,4
West: KATZ AVE WEST APP											
11	T1	344	2,0	0,235	0,2	LOS A	0,6	4,6	0,15	0,12	58,4
12	R2	81	2,0	0,235	6,3	LOS A	0,6	4,6	0,15	0,12	56,1
Approach		425	2,0	0,235	1,4	NA	0,6	4,6	0,15	0,12	57,9
All Vehicles		765	2,0	0,235	3,2	NA	0,8	5,3	0,16	0,28	56,3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT7 FUT PM]

FORECAST PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: TOWN ROAD SOUTH APP											
1	L2	161	2,0	0,088	5,6	LOS A	0,0	0,0	0,00	0,53	54,9
2	T1	127	2,0	0,033	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
Approach		288	2,0	0,088	3,2	NA	0,0	0,0	0,00	0,29	57,0
North: TOWN ROAD NORTH APP											
8	T1	156	2,0	0,040	0,0	LOS A	0,0	0,0	0,00	0,00	60,0
9	R2	101	2,0	0,080	6,1	LOS A	0,3	2,3	0,24	0,55	52,8
Approach		257	2,0	0,080	2,4	NA	0,3	2,3	0,09	0,22	56,9
West: KATZ AVE WEST APP											
10	L2	84	2,0	0,068	5,9	LOS A	0,2	1,8	0,15	0,52	53,7
12	R2	171	2,0	0,462	19,0	LOS C	2,4	17,1	0,67	1,10	45,8
Approach		255	2,0	0,462	14,7	LOS B	2,4	17,1	0,50	0,91	48,1
All Vehicles		800	2,0	0,462	6,6	NA	2,4	17,1	0,19	0,47	53,8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT9 FUT AM]

FORECAST AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m		per veh	km/h
South: DICKSON ST SOUTH APP											
1	L2	55	2,0	0,216	9,9	LOS A	0,8	5,5	0,54	0,96	49,6
3	R2	76	2,0	0,216	13,6	LOS B	0,8	5,5	0,54	0,96	49,1
Approach		131	2,0	0,216	12,1	LOS B	0,8	5,5	0,54	0,96	49,3
East: KATZ AVE EAST APP											
4	L2	26	2,0	0,199	5,6	LOS A	0,0	0,0	0,00	0,04	57,9
5	T1	355	2,0	0,199	0,0	LOS A	0,0	0,0	0,00	0,04	59,6
Approach		381	2,0	0,199	0,4	NA	0,0	0,0	0,00	0,04	59,5
West: KATZ AVE WEST APP											
11	T1	357	2,0	0,218	0,3	LOS A	0,4	2,8	0,12	0,06	58,9
12	R2	39	2,0	0,218	7,3	LOS A	0,4	2,8	0,12	0,06	56,7
Approach		396	2,0	0,218	1,0	NA	0,4	2,8	0,12	0,06	58,7
All Vehicles		907	2,0	0,218	2,3	NA	0,8	5,5	0,13	0,18	57,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT9 FUT PM]

FORECAST PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m		per veh	km/h
South: DICKSON ST SOUTH APP											
1	L2	38	2,0	0,115	10,0	LOS A	0,4	2,8	0,52	0,95	49,8
3	R2	34	2,0	0,115	13,7	LOS B	0,4	2,8	0,52	0,95	49,3
Approach		72	2,0	0,115	11,7	LOS B	0,4	2,8	0,52	0,95	49,6
East: KATZ AVE EAST APP											
4	L2	44	2,0	0,223	5,6	LOS A	0,0	0,0	0,00	0,06	57,7
5	T1	382	2,0	0,223	0,0	LOS A	0,0	0,0	0,00	0,06	59,4
Approach		426	2,0	0,223	0,6	NA	0,0	0,0	0,00	0,06	59,2
West: KATZ AVE WEST APP											
11	T1	348	2,0	0,226	0,4	LOS A	0,5	3,8	0,17	0,08	58,6
12	R2	51	2,0	0,226	7,5	LOS A	0,5	3,8	0,17	0,08	56,3
Approach		399	2,0	0,226	1,3	NA	0,5	3,8	0,17	0,08	58,3
All Vehicles		897	2,0	0,226	1,8	NA	0,5	3,8	0,12	0,14	57,9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT10 FUT AM]

FORECAST AM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows		Deg. Satn	Average Delay	Level of Service	95% Back of Queue		Prop. Queued	Effective Stop Rate	Average Speed
		Total veh/h	HV %	v/c	sec		Vehicles veh	Distance m		per veh	km/h
South: SONICKSON ST SOUTH APP											
1	L2	98	2,0	0,170	9,5	LOS A	0,6	4,6	0,44	0,92	50,6
3	R2	39	2,0	0,170	13,1	LOS B	0,6	4,6	0,44	0,92	50,1
Approach		137	2,0	0,170	10,5	LOS B	0,6	4,6	0,44	0,92	50,4
East: KATZ AVE EAST APP											
4	L2	11	2,0	0,152	5,6	LOS A	0,0	0,0	0,00	0,02	58,1
5	T1	282	2,0	0,152	0,0	LOS A	0,0	0,0	0,00	0,02	59,8
Approach		293	2,0	0,152	0,2	NA	0,0	0,0	0,00	0,02	59,7
West: KATZ AVE WEST APP											
11	T1	376	2,0	0,239	0,3	LOS A	0,5	3,7	0,14	0,08	58,7
12	R2	57	2,0	0,239	6,8	LOS A	0,5	3,7	0,14	0,08	56,4
Approach		433	2,0	0,239	1,1	NA	0,5	3,7	0,14	0,08	58,4
All Vehicles		862	2,0	0,239	2,3	NA	0,6	4,6	0,14	0,19	57,4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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

MOVEMENT SUMMARY

 Site: 101 [INT10 FUT PM]

FORECAST PM PEAK
Stop (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: SONICKSON ST SOUTH APP											
1	L2	98	2,0	0,174	9,7	LOS A	0,7	4,7	0,47	0,93	50,5
3	R2	39	2,0	0,174	13,0	LOS B	0,7	4,7	0,47	0,93	50,0
Approach		137	2,0	0,174	10,7	LOS B	0,7	4,7	0,47	0,93	50,4
East: KATZ AVE EAST APP											
4	L2	11	2,0	0,176	5,6	LOS A	0,0	0,0	0,00	0,02	58,1
5	T1	328	2,0	0,176	0,0	LOS A	0,0	0,0	0,00	0,02	59,8
Approach		339	2,0	0,176	0,2	NA	0,0	0,0	0,00	0,02	59,7
West: KATZ AVE WEST APP											
11	T1	325	2,0	0,215	0,4	LOS A	0,5	3,8	0,17	0,09	58,5
12	R2	57	2,0	0,215	7,0	LOS A	0,5	3,8	0,17	0,09	56,3
Approach		382	2,0	0,215	1,3	NA	0,5	3,8	0,17	0,09	58,2
All Vehicles		858	2,0	0,215	2,4	NA	0,7	4,7	0,15	0,20	57,3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

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

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

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