

IN THE MATTER of the Resource Management Act 1991 (**RMA**)

AND

IN THE MATTER of **Private Plan Change 74** to the Auckland Unitary Plan

JOINT WITNESS STATEMENT (JWS) IN RELATION TO:

Planning and Transport

27 September 2022

Expert Conferencing Held on: 27 September 2022

Venue: Online

Independent Facilitator: Marlene Oliver

Admin Support: James Oakley

1 Attendance:

1.1 The list of participants is included in the schedule at the end of this Statement.

2 Basis of Attendance and Environment Court Practice Note 2014

2.1 All participants agree to the following:

- (a) The Environment Court Practice Note 2014 provides relevant guidance and protocols for the expert conferencing session;
- (b) They will comply with the relevant provisions of the Environment Court Practice Note 2014;
- (c) They will make themselves available to appear before the Hearing Panel;
- (d) This statement is to be filed with the Hearing Panel and posted on the Council's website.

3 Matters considered at Conferencing – Agenda and Outcomes

- 3.1 All agree to refer to PPC 74 proposed provisions Version 8 for the purposes of this expert conferencing.
- 3.2 The issues identified as forming the agenda for conferencing were:
- (a) Traffic Modelling / MDRS
 - (b) External Intersections (East St etc)
 - (c) Station Road upgrades outside of Precinct / shared path connection to the rail station
 - (d) Subway Road underpass
 - (e) Golding Road (north of Royal Doulton)
 - (f) Royal Doulton Drive
 - (g) North-South Collector Road from Structure Plan
 - (h) Restrictions of HCVs along proposed east-west collector through residential area
 - (i) Standard for splay for Royal Doulton Drive intersection (included in Obj and Pols but not in any standard)
 - (j) Key intersections/roundabouts terminology
 - (k) Riparian margins
 - (l) Noise Standards Expiry Provision

4 Traffic Modelling / MDRS

- 4.1 Leo Hills circulated additional information relating to traffic modelling of the surrounding local network in response to matters raised in the s42A report and submissions. This additional information is attached as Appendix A.
- 4.2 All experts agree that no further modelling is required.
- 4.3 All experts agree (except Mat Collins) that based on the transport information it is appropriate to retain the special information provisions (I4XX.8.3) included in PPC 74 provisions. Mat Collins will review his position and confirm at the hearing.

5 External Intersections (East St etc)

- 5.1 All experts agree that some additional provisions should be included in PPC 74 to enable an assessment of cumulative effects from development in the precinct. All experts also agree that consistent provisions to address this concern should be included in other future plan changes in this locality.
- 5.2 Below is some preliminary drafting prepared during expert conferencing. The experts will review this prior to the hearing. Mat Collins records that he is not convinced that using special information requirements will adequately capture and address cumulative effects.

I4XX.8.23 Traffic Assessment

- (1) At the first stage of subdivision or development of any site existing at (date of plan change approval); and
 - (2) For any subdivision or development exceeding for every 60 100 dwellings/lots (based on a cumulative total within the Precinct);
 - a Traffic Assessment must be provided which assesses effects (including cumulative effects) on the safety and efficiency of the road network and in particular addresses the need for:
 - (a) Any upgrade of the Station Road / East Street intersection
 - (b) Any upgrade of the Golding Road / East Street existing roundabout
 - (c) Any upgrade of the Ngahere Road / East Street intersection
 - (d) Any upgrade of the Logan Road / Golding Road intersection
 - (e) Any upgrade of the Yates Road / Logan Road intersection
 - (f) Any upgrade of Golding Road (between Royal Doulton Drive and East Street)
- ~~As triggered by the traffic related effects of development within the Precinct.~~

6 Station Road upgrades outside of Precinct / shared path connection to the rail station

6.1 All agree the amendments to PPC 74 provisions below address the concerns.

Transport Upgrade		Trigger
(T1)	<u>Pedestrian and cycle connection to Station Road as indicatively shown in the north-western corner of the Precinct Plan</u>	The first site/dwelling and each subsequent site/dwelling.
(T2)	<u>Footpath Pedestrian and cycle connection on Station Road to the Pukekohe Rail Station, from the precinct boundary to the nearest existing pedestrian footpath on the eastern side of Station Road (at intersection of Subway Road and Station Road)</u>	The first site/dwelling.

I4XX.7.2 Assessment criteria

(f) Whether the road network provides direct, safe and legible pedestrian and cycle connections to the existing network on Station Road to provide access to the Pukekohe train station (acknowledging the constraints on Station Road north of the Subway intersection).

7 Subway Road underpass

7.1 There is an acknowledged issue that the Subway Road underpass is narrow and does not and cannot make provision for pedestrians and cyclists separate from the road carriageway. All agree that it is not reasonable to expect the PPC 74 provisions to resolve this matter.

8 Golding Road (north of Royal Doulton)

- 8.1 Mat Collins considers that Golding Road north of the plan change requires upgrading to a 7m wide carriageway and may require pavement strengthening.
- 8.2 All other experts consider that identifying Golding Road in the special information requirements is an appropriate way to address this issue (refer to item 5.2 above clause f).
- 8.3 Mat Collins will review his position and confirm at the hearing.

9 Royal Doulton Drive

- 9.1 All experts agree that amendments to the PPC 74 provisions address any concerns.

10 North-South Collector Road from Structure Plan

- 10.1 All experts agree that amendments to the PPC 74 provisions address any concerns.

11 Restrictions of HCVs along proposed east-west collector through residential area

- 11.1 All experts agree that no amendments to PPC 74 provisions are required. If necessary, Auckland Transport can address this matter through their bylaw powers.

12 Standard for splay for Royal Doulton Drive intersection (included in Obj and Pols but not in any standard)

- 12.1 All agree that the text and notations shown on PPC 74 precinct plan adequately address this matter.

13 Key intersections/roundabout terminology

- 13.1 Monique Kimber considers that the terminology on the precinct plan should read “key intersection” and not include the wording “indicative roundabout”.
- 13.2 All other experts support the retention of both terms such that the key would read “indicative roundabout/key intersection”.

14 Riparian margins

- 14.1 Mark Tollemache, Peter Reaburn and Monique Kimber agree to make changes to the text, with the proviso that Council ecologists are still to be consulted regarding the wording in particular of (3) relating to the width of SEA buffer. Refer to Appendix B.

15 Noise standards expiry provision

- 15.1 Mark Tollemache and Peter Reaburn agree to amend rule I4XX.6.5 to read as follows.

I4XX.6.5 55 dB L_{Aeq} Noise Contour and Area A on the Precinct Plan

- (7) The above rules shall not apply if and when that part of a plan change deleting all references to motorsport activities from the [Pukekohe Park Precinct, including \(although not limited to\) Rules I434.6.1 and I434.6.2, becomes operative.](#)

16 PARTICIPANTS TO JOINT WITNESS STATEMENT

- 16.1 The participants to this Joint Witness Statement, as listed below, confirm that:
- (a) They agree that the outcome(s) of the expert conferencing are as recorded in this statement; and
 - (b) They agree to the introduction of the attached information – Refer to para 4.1 and 14.1 above; and
 - (c) They have read Appendix 3 of the Environment Court’s Practice Note 2014 and agree to comply with it; and
 - (d) The matters addressed in this statement are within their area of expertise; and
 - (e) As this session was held online, in the interests of efficiency, it was agreed that each expert would verbally confirm their position to the Facilitator and this is recorded in the schedule below.

Confirmed online 27 September 2022

EXPERT'S NAME	PARTY	EXPERT'S CONFIRMATION REFER PARA 4.1
Peter Reaburn (P)	Auckland Council (as regulator) s42A lead author	Yes – all items
Martin Peake (T)	Auckland Council (as regulator)	Yes – items 4-13
David Russell (DE)	Auckland Council (as regulator)	Yes – all items
Ian Blundell (P)	Auckland Council (as submitter)	Yes – items 4-13
Chris Freke (P)	Auckland Transport	Yes – items 4-13
Tim Segedin (T)	Auckland Transport	Yes – items 4-13
Catherine Absil-Couzins (P)	Auckland Transport (observer)	n/a
Monique Kimber (P)	YLH Holdings Ltd	Yes – items 6, 13, 14
Mat Collins (T)	John Harris	Yes – items 4-13
Leo Hills (T)	PPC Applicant	Yes – items 4-13
Mark Tollemache (P)	PPC Applicant	Yes – all items



Golding Meadows
Proposed Private Plan Change 74
Additional Assessment

22 September 2022

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1 INTRODUCTION AND PURPOSE

Commute Transportation Consultants (Commute) has been engaged to provide transport advice on PC74.

Following a review Council's S42a report and subsequent submitter evidence, additional assessment has been undertaken. This report includes:

- Updated assumptions and trip generation assessment.
- Assessment of traffic on the surrounding local transport network
- Implementation plan for network upgrades

2 PLAN CHANGE DETAILS

It is proposed to re-zone the land as follows:

- 19.77 Ha of Light Industry Zone;
- 62.56 Ha of Residential – Mixed Housing Urban Zone;
- 0.33 Ha of Business – Neighbourhood Centre Zone.

The lodged ITA assesses the likely number of households and jobs within both the PC74 area and the remaining land in the wider area based on some high-level rates. The high level rates adopted take into account loss to developable area as a result of small centres (such as the neighbourhood centre), parks and roads.

3 ASSUMPTIONS

3.1 TIMING OF DEVELOPMENT AND LAND USE DETAILS

The development of PC74 is anticipated to occur over time. Table 3-1 sets out a schedule of development for both the industrial and residential land.

The S42a report raised a number of matters regarding the modelled development yield utilised in the ITA given the introduction of PC78. In the preparation for expert caucusing the applicant's planner and urban designer have conservatively identified applying a sensitivity test of an additional 30% yield to account for increased density resulting from PC78. While the number in the ITA (920 dwellings) is still considered most likely, a yield of 1200 has been assessed as a sensitivity test. The trip generation for the dwellings have also been updated to 0.58 trips per dwelling as per Council's Traffic and Transportation peer review undertaken by PTS.

These single land use trip estimates tend to overestimate the trip generation behaviour for mixed-use developments. Given the nature of the site, scale of the area, proximity to the strategic network and variety of activities provided onsite, reductions in the trips generated by the individual activities have been applied based on the following:

- **Internal trips** – Trips which originate and end within the development site which do not access the external road network. i.e. A trip between a residential unit and employment.
- **Multipurpose trips** - These are people that visit more than one unit / entity within the site without getting in their car and travelling out of the site.
- **Pass by trips** - traffic already travelling on the network which uses the site. Given the land use and location this has been assessed as negligible (0%).
- **Public transport reduction** – Typical trip rates from the RTA and alike consider a nominal amount of Public Transport use within a trip rate. In the case of Pukekohe, a higher proportion

of PT use is expected given network conditions and the proximity of the site to the strategic PT network. This is however already reflected in the residential trip rate in particular and as such no additional reduction has been included.

Reductions for the above factors have been applied to trip rates in both AM and PM peak periods at varying levels depending on the nature of the activity.

Assumed reductions are included in Table 3-1 and 3-2 below.

Table 3-1: Anticipated Land use development schedule

Activity	Units	2028	Trip rate	Total traffic	External trips
Residential	Dwellings	1200	0.58	696	522 (25% internal to employment zone)
Industrial	Employees	588 ¹	0.375 ²	221	209 (5% reduction for multi-purpose)

Table 3-2: Anticipated distribution (am)

Activity	External trips	Entry (am)	Exit (am)	Entry trips	Exit trips
Residential	522	20%	80%	104	418
Industrial	209	80%	20%	167	42
Total				271	460

Of note the PM peak has been assumed to be opposite to the AM peak.

3.2 TRIP DISTRIBUTION

In order to determine an appropriate trip distribution, the Census travel to work data has been considered.

The 2018 census journey to work data shows around 669 people leaving “Pukekohe Hospital” zone (residential zone to the west of the site) for work and education purposes in the AM peak. While the area is different in nature to the anticipated future development, this provides a useful indication as to the likely travel patterns of future residents. Of these people:

- 30% travelled to Pukekohe central;
- 10% travelled to other areas in / around Pukekohe;

¹ 588 jobs based on 19.97ha (80% developable or 15.9ha and 37 jobs per ha) as per ITA

² Trips rate based on Industrial assumes to be 1 employee per 50sqm (RTA rate for industrial) and commuter trip rate of 0.75 per 100sqm (RTA mixture of industrial and warehousing) as per ITA

- 6% travelled to the south (Tuakau / Buckland); and
- The remainder (54% travelled to Auckland, generally south Auckland).

In terms of an employment zone, the 2018 census journey to work data shows around 6,100 people entering “Pukekohe Central” zone (general industrial / employment zone to the north / west of the site) for work and education purposes in the AM peak. While the area is different in nature to the anticipated future development, this provides a useful indication as to the likely travel patterns of future employees. Of these people:

- 40% travelled to Pukekohe central;
- 10% travelled to west of Pukekohe (Glenbrook , Patumahoe);
- 15% travelled to the north of Pukekohe;
- 15% travelled to the east of Pukekohe (Bombay, Ramarama);
- 15% travelled to the south (Tuakau / Buckland); and
- The remainder (5% travelled to Auckland).

From this review, **Appendix A** contains the expected traffic distribution.

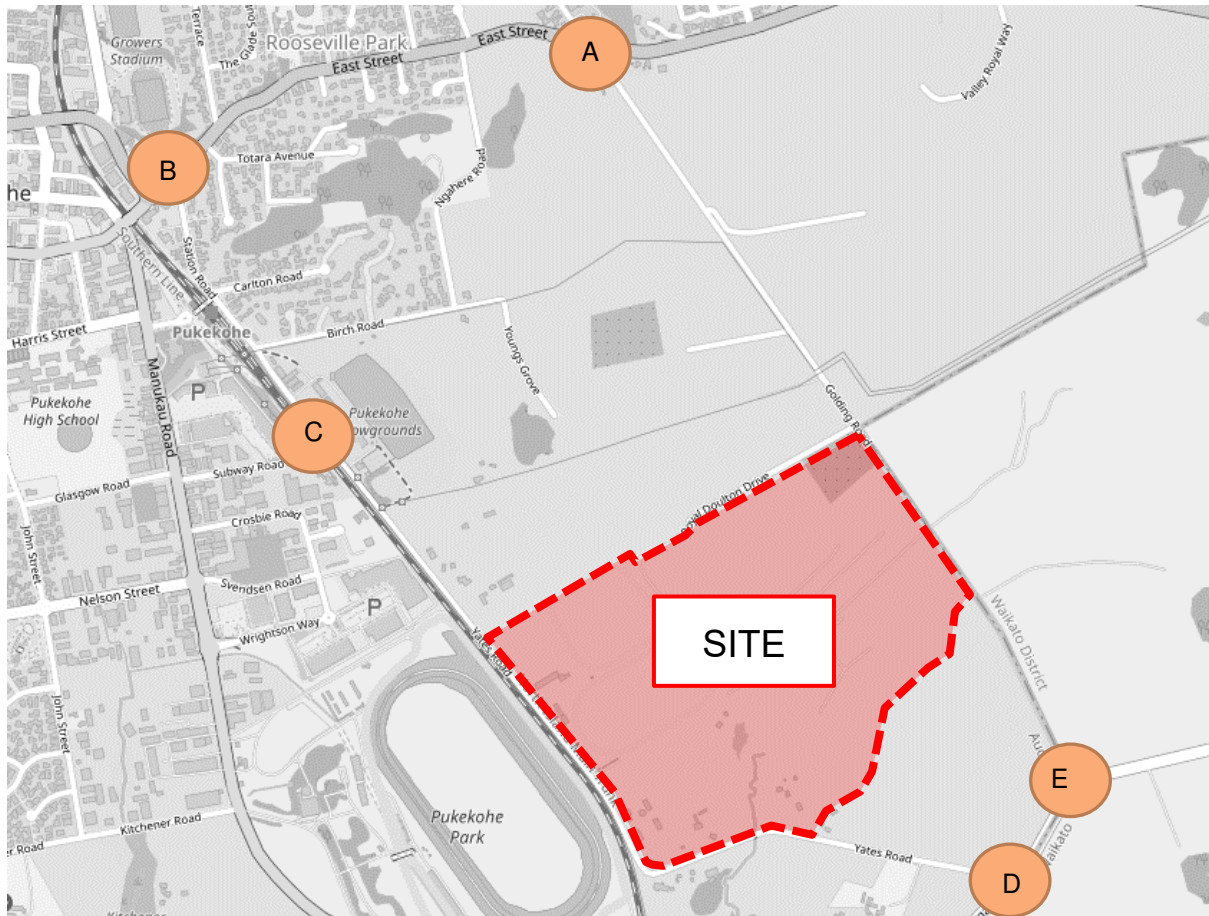
4 MODELLING APPROACH

In order to assess traffic effects of the PPC, SIDRA models have been developed for the following intersections:

- A. Golding Road / East Street
- B. East Street / Station Road
- C. Station Road / Subway Road
- D. Yates Road / Logan Road
- E. Golding Road / Logan Road

These key intersections are shown in Figure 4-1

Figure 4-1: Key Intersections



4.1 SIDRA MODEL SCENARIOS

The assessment considers five intersections (shown in Figure 4-1 above):

- A. Golding Road / East Street / Pukekohe East Road / Belgium Road (roundabout)
- B. East Street / Station Road (priority control)
- C. Station Road / Subway Road (priority control)
- D. Yates Road / Logan Road (priority control)
- E. Golding Road / Logan Road (priority control)

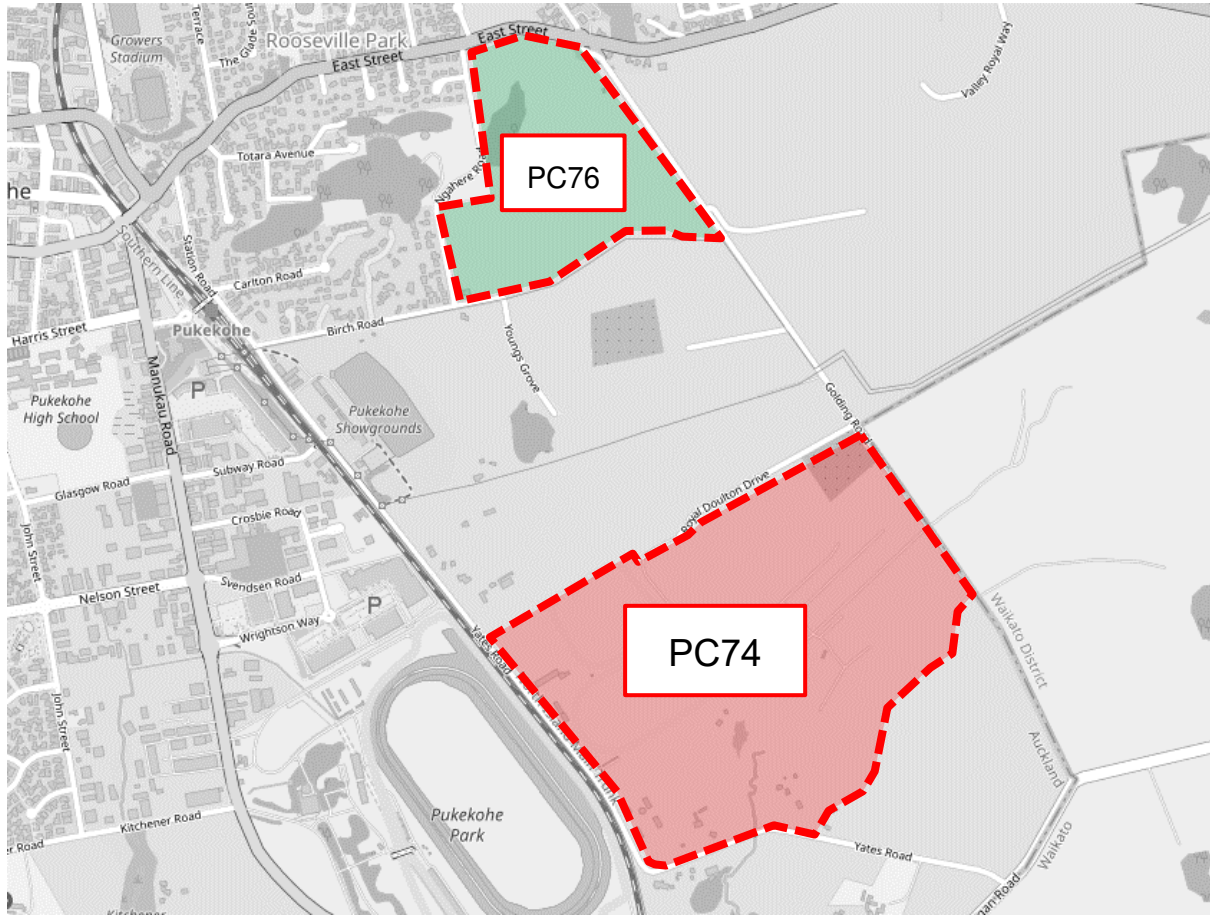
Each intersection has been modelled using SIDRA Intersection under existing 2021/2022 survey volumes (referred to as 'Existing' scenario) with the PC74 volumes added to form the 'Full development' scenario.

AM and PM peak commuter periods are modelled with the detailed results contained in Appendix A.

4.2 PC76

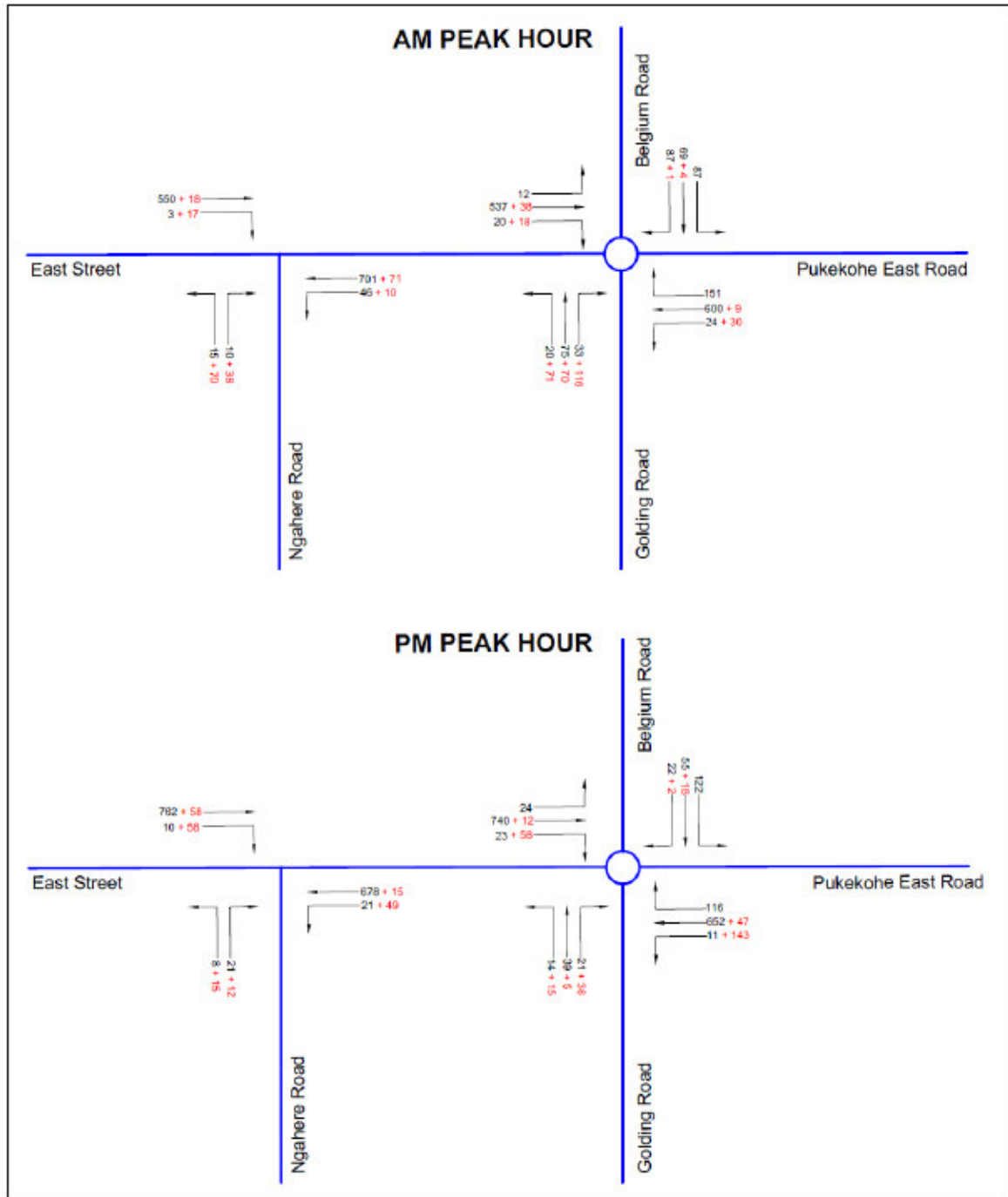
PC76 has been publicly notified and includes approximately 31ha of FUZ land which is intended to be rezoned to residential. TPC have undertaken an assessment of Transport Effects including a review of the performance of the Golding Road / East Street intersection (intersection "A"). The location of PC76 in relation to PC74 is shown in Figure 4-2.

Figure 4-2: pC76 vs PC74



The traffic generation and distribution of PC76 has been based on the TPC analysis and has been included as a scenario (PC76 scenario). The PC76 additional volumes have been taken directly from the TPC report as per Figure 4-3 below.

Figure 4-3: TPC PC76 volumes



4.3 BASE TRAFFIC VOLUMES

The traffic at each of the five intersections has been based on the following:

- Golding Road / East Street: TPC survey dated 30 June 2021
- East Street / Station Road: Commute commissioned survey dated 13 September 2022
- Station Road / Subway Road: Commute commissioned survey dated 13 September 2022
- Yates Road / Logan Road: Commute commissioned survey dated 20 September 2022
- Golding Road / Logan Road: Commute commissioned survey dated 13 September 2022

The overall existing traffic volumes are shown in Appendix A.

4.4 TRAFFIC GROWTH

Traffic growth in the local area has been reviewed in relation to MSM predictions. The Pukekohe-Paerata Structure Plan ITA also sets out future predictions for daily traffic volumes under a number of scenarios. The design years are 2028 and 2048. Under all scenarios, East Street corridor is expected to accommodate up to 10,000 vehicles movements per day in the vicinity of the site.

Given that the current volumes measured by Auckland Transport in 2018 are approximately 14,000 vehicles per day this indicates that volumes will actually drop in the future (presumably due to better public transport including the electrification of the rail line and the wider roading improvement planned). In reality it is expected the background volumes will remain relatively static in the future and the growth in traffic will be from Plan Changes such as PC74 / 76.

4.5 INTERSECTION FORMS

The intersection form as included in the SIDRA models is outlined in Figure 4-4 to 4-8.

Figure 4-4: Golding Road / East Street intersection

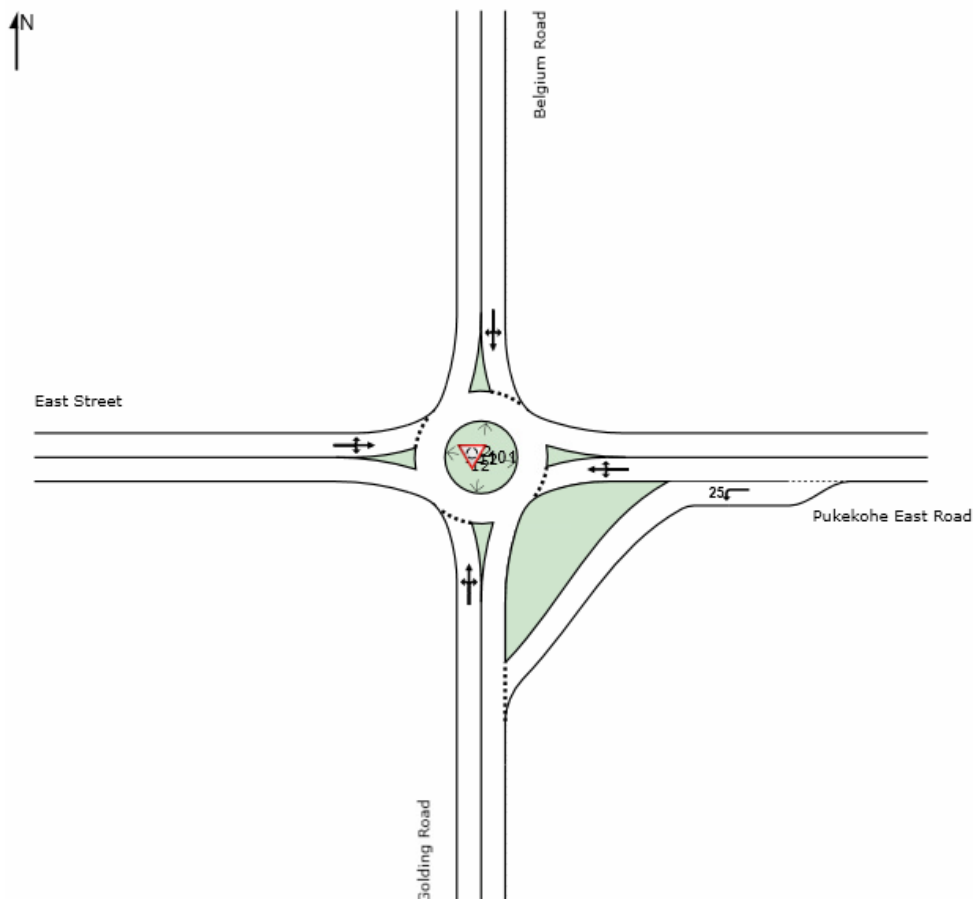


Figure 4-5: East Street / Station Road intersection

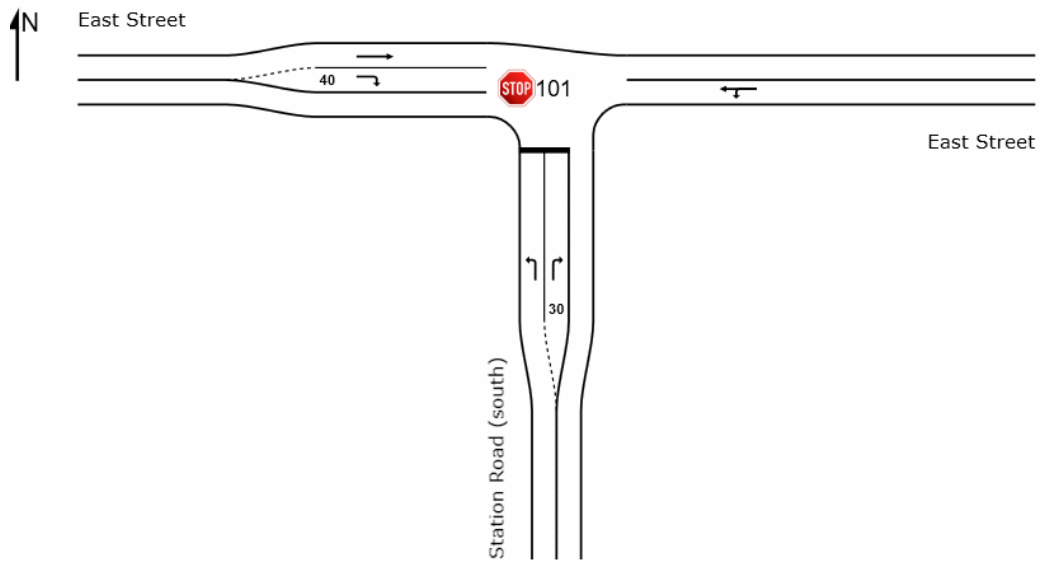


Figure 4-6: Station Road / Subway Road intersection

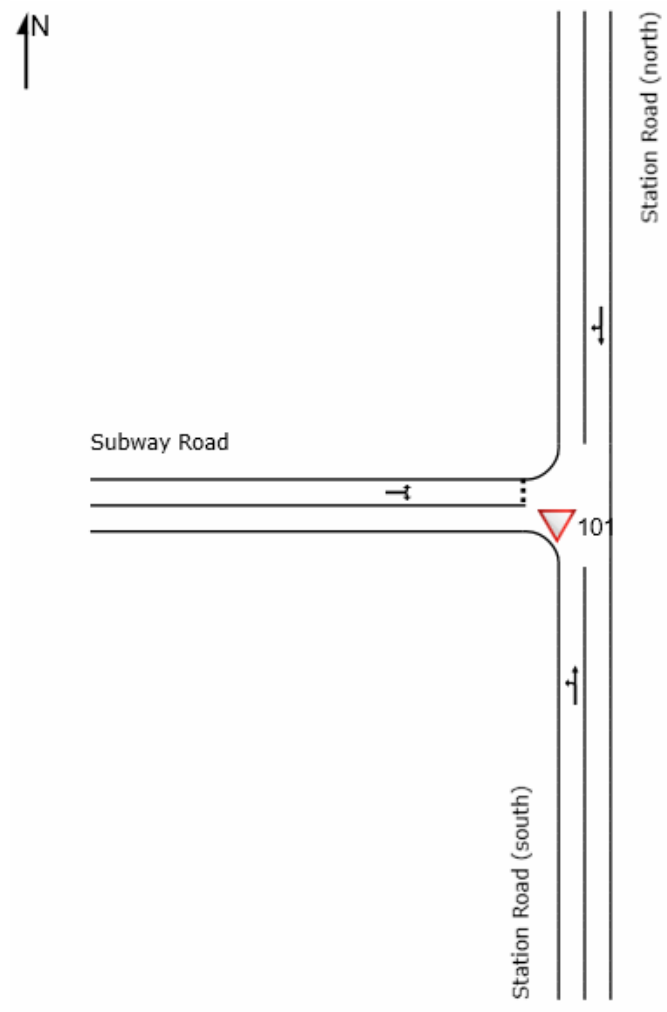


Figure 4-7: Yates Road / Logan Road intersection

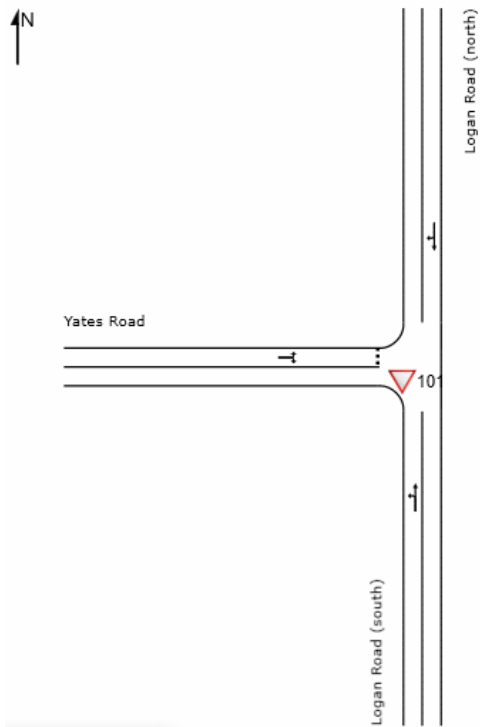
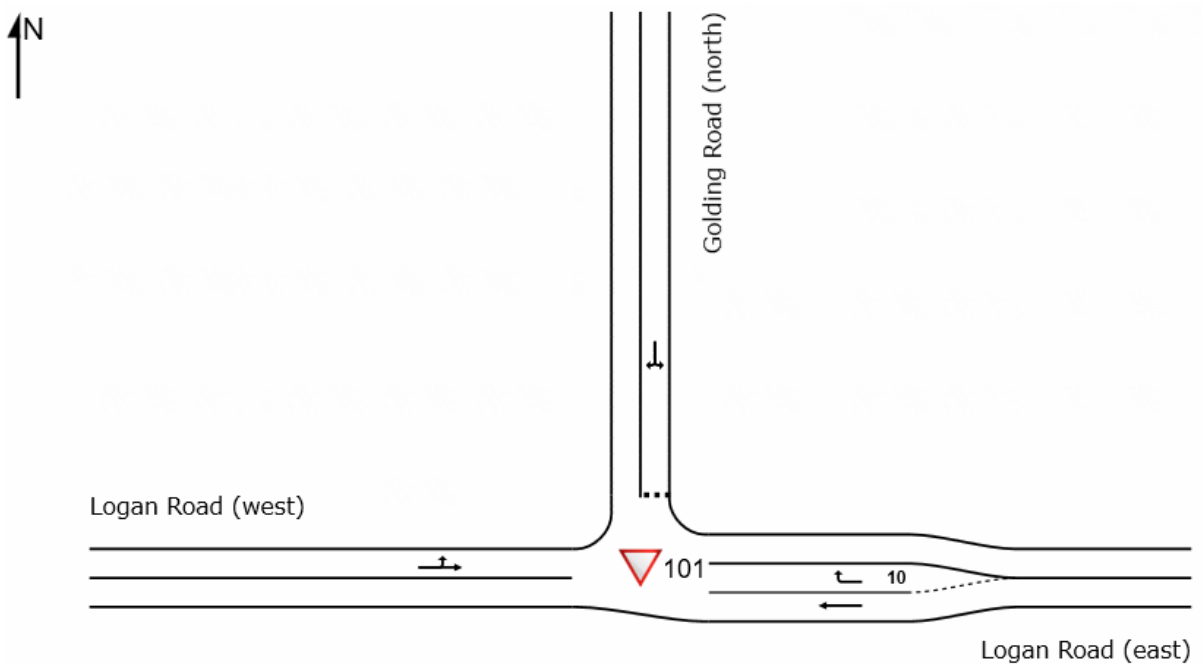


Figure 4-8: Golding Road / Logan Road intersection



5 SIDRA RESULTS

5.1 GOLDING ROAD / EAST STREET / BELGIUM ROAD

Results from the SIDRA modelling for Golding Road / East Street intersection are summarised in Table 5-1. The assessment indicates that traffic from the proposed development can be accommodated by the existing intersection layout (single lane roundabout) during the morning and afternoon peak hour periods.

Table 5-1: Golding Road / East Street / Belgium Road intersection (roundabout)

Intersection	Year and period	DOS	Average Delay in seconds (Intersection)	LOS	95th percentile queue (m)		
					(m)	Approach	
Golding Road / East Street / Pukekohe East Road / Belgium Road	2022 Existing scenario	AM	0.582	7.7	A	40 m (5-6 veh)	Pukekohe East Rd – LOS A
		PM	0.693	7.1	A	51.7m (7-8 veh)	East Rd – LOS A
	Proposed scenario (Full buildout)	AM	0.732	11.8	B	67.5m (9-10 veh)	East Rd – LOS B
		PM	0.778	9.4	A	81.4m (11-12 veh)	East Rd – LOS A

The above modelling results indicate the existing intersection performs at an overall degree of saturation of 0.582 (LOS A) during the morning peak hour and 0.693 (LOS A) during the evening peak hour respectively. With the proposed volumes, the maximum degree of saturation increases from 0.582 to 0.732 (LOS A to LOS B) during the morning peak hour, and 0.693 to 0.778 (LOS A) during the evening peak hour respectively. The maximum 95%ile back of queue (with full buildout) is expected to be 81.4 m (11-12 vehicles) on the western approach (East Road).

As such, the modelling results indicate that with the additional PC74 traffic (full buildout), the intersection is expected to continue operating below capacity during both peak hours.

5.2 EAST STREET / STATION ROAD

Results from the SIDRA modelling for the East Street / Station Road intersection are summarised in Table 5-2.

Table 5-2: East Street / Station Road

Intersection	Year and period	DOS	Average Delay in seconds (Intersection)	LOS	95th percentile queue		
					(m)	Approach	
East Street Road / Station Road	2022 Existing scenario	AM	0.374	2.2	NA	5.6m (Less than 1 veh)	Station Rd south (LOS C)
		PM	0.490	2.4	NA	8.7m (1-2 veh)	Station Rd south (LOS D)
	Proposed scenario (Full buildout)	AM	0.439	4.0	NA	12.2m (1-2 veh)	Station Rd south (LOS C)
		PM	0.756	4.9	NA	19.0m (2-3 veh)	Station Rd south (LOS E)

The above modelling results indicates that the existing intersection experiences some difficulties / delay for vehicles turning right out of Station Road into East Street in the evening peak hour. The modelling results indicate that this particular movement currently has a maximum degree of saturation of 0.397 (LOS F) during the evening peak hour and a maximum 95%ile back of queue of 1-2 vehicles. With the development traffic, the degree of saturation increases to 0.756 (remains at LOS F) and has an additional queue length of one vehicle (2-3 vehicles in total).

The modelling results indicate that with the additional PC74 traffic (full buildout), the intersection is expected to deteriorate slightly. It is noted that from on-site observations the right turn manoeuvre from Station Road into East Street can be difficult to undertake due to sight distance limitations and is likely currently avoided by local residents. Further, on-site observations indicate that vehicles queueing from the nearby Stadium Drive / East Street intersection allow right turn movements to occur thereby the actual delay for the right turn out is less than the model indicates. In all model results the actual queue length is low (2-3 vehicles maximum) for this right turn.

5.3 STATION ROAD / SUBWAY ROAD

Results from the SIDRA modelling for the Station Road / Subway Road intersection are summarised in Table 5-3.

Table 5-3: Station Road / Subway Road

Intersection	Year and period	DOS	Average Delay in seconds (Intersection)	LOS	95th percentile queue (m)		
					(m)	Approach	
Subway Road / Station Road	2022 Existing scenario	AM	0.229	5.1	NA	8.9m (1-2 veh)	Station Road (north)
		PM	0.170	4.9	NA	5.1m (less than 1 veh)	Subway Road – LOS A
	Proposed scenario (Full buildout)	AM	0.324	5.3	NA	13.7m (1-2 veh)	Station Road (north)
		PM	0.314	4.8	NA	9.8m (1-2 veh)	Subway Road (west) – LOS A

The above modelling results indicate that the existing intersection performs at an overall degree of saturation of 0.229 during the morning peak hour and 0.170 during the evening peak hour respectively. With the additional PC74 traffic (full buildout), the modelling results show a slight increase in the degree of saturation to 0.324 (morning peak) and 0.314 (evening peak) therefore indicating that this intersection continues to operate well below capacity (0.8) therefore is considered acceptable.

5.4 YATES ROAD / LOGAN ROAD

Results from the SIDRA modelling for the Yates Road / Logan Road intersection are summarised in Table 5-4

Table 5-4: Yates Road / Logan Road

Intersection	Year and period	DOS	Average Delay in seconds (Intersection)	LOS	95th percentile queue (m)		
					(m)	Approach	
Yates Road / Logan Road	2022 Existing scenario	AM	0.132	3.2	NA	3.3m (less than 1 veh)	Logan Road north
		PM	0.106	3.1	NA	2.3m (less than 1 veh)	Yates Road – LOS A
	Proposed scenario (Full buildout)	AM	0.157	3.8	NA	4.7m (less than 1 veh)	Logan Road north
		PM	0.131	3.8	NA	3.7m (less than 1 veh)	Yates Road – LOS A

The above modelling results indicate that the existing intersection performs at an overall degree of saturation of 0.132 during the morning peak hour and 0.106 during the evening peak hour respectively. With the additional PC74 traffic (full buildout), the modelling results show a slight increase in the degree of saturation to 0.157 (morning peak) and 0.131 (evening peak) therefore indicating that this intersection continues to operate well below capacity (0.8) therefore is considered acceptable.

5.5 GOLDING ROAD / LOGAN ROAD

Results from the SIDRA modelling for the Golding Road / Logan Road intersection are summarised in Table 5-5.

Table 5-5: Golding Road / Logan Road

Intersection	Year and period	DOS	Average Delay in seconds (Intersection)	LOS	95th percentile queue (m)		
					(m)	Approach	
Logan Road / Golding Road	2022 Existing scenario	AM	0.105	2.9	NA	3.1 m (less than 1 veh)	Golding Rd – LOS A
		PM	0.100	2.7	NA	1.9m (less than 1 veh)	Golding Rd – LOS A
	Proposed scenario (Full buildout)	AM	0.145	3.1	NA	4.3m (less than 1 veh)	Golding Rd – LOS A
		PM	0.116	2.9	NA	2.6m (less than 1 veh)	Golding Rd – LOS A

The above modelling results indicate that the existing intersection performs at an overall degree of saturation of 0.105 during the morning peak hour and 0.100 during the evening peak hour

respectively. With the additional PC74 traffic (full buildout), the modelling results show a slight increase in the degree of saturation to 0.145 (morning peak) and 0.116 (evening peak) therefore indicating that this intersection continues to operate well below capacity (0.8) therefore is considered acceptable.

5.6 SENSITIVITY TESTING (PC76)

As outlined above, the Golding Road / East Street intersection (roundabout) is expected to perform at acceptable levels of service with the additional PC74 volumes. In addition to this, sensitivity testing has been undertaken on the SIDRA models with the additional traffic associated with PC76.

Results from the SIDRA modelling for Golding Road / East Street intersection are summarised in Table 5-6 below. This includes the modelling results of the 'Full Buildout' scenario (i.e. existing survey volumes plus PC74 volumes) with the PC76 volumes added to form the Sensitivity test scenario.

Table 5-6: Golding Road / East Street / Pukekohe East Road / Belgium Road (sensitivity test)

Intersection	Year and period	DOS	Average Delay in seconds (Intersection)	LOS	95th percentile queue (m)		
					(m)	Approach	
Golding Road / East Street / Pukekohe East Road / Belgium Road	Full buildout scenario	AM	0.732	11.8	B	67.5m (9-10 veh)	East St – LOS B
		PM	0.778	9.4	A	81.4m (11-12 veh)	East St – LOS A
	Sensitivity test scenario (Full buildout+PC76 volumes*)	AM	1.189	65.7	E	568.3m (80-81 veh)	Golding Road – LOS F
		PM	0.892	15.1	B	148.6m (20-21 veh)	East St – LOS B

*PC76 volumes are shown in Figure 4-3 above (in red)

As shown above, the additional volumes generated by PC76 is expected to result in a decline of the intersection performance from LOS B to LOS E during the morning peak hour only. The overall degree of saturation of the intersection increases from 0.732 (LOS B) to 1.189 (LOS E) during the morning peak hour and 0.778 (LOS A) to 0.892 (LOS B) during the evening peak hour. The maximum 95%ile back of queue is 569 m (with PC76 volumes) and occurs on the southern approach (Golding Road) during the morning peak hour. In this regard it is noted:

- It is noted that the PC74 estimates 240 jobs within the site. In this regard, with the proximity of the PC76 development to the PPC site, there is potential for commuter trips to occur between the two sites (thus removing some PC76 traffic through the roundabout);
- The future public transport network (i.e. the electrification of rail from Papakura to Pukekohe) has the potential to reduce existing vehicle movements at the Golding Road / East Street roundabout by shifting vehicle trips to PT trips; and
- A ring road is being considered within Pukekohe (referred to as the Pukekohe Ring Road), this is shown in Figure 5-1 below. In particular relevance to the PPC and PC76 development, this corridor essentially provides an alternative route for vehicles travelling to / from Auckland to bypass the Golding Road / East Street roundabout. As such, whilst the timing / funding for this corridor is unknown, it has the potential to reduce traffic at the Golding Road / East Street roundabout.

Figure 5-1: Indicative route for Pukekohe Ring Road



5.7 OVERALL RESULTS

Based on the above modelling assessment, the following is concluded:

- The five key intersections located near the vicinity of the site are expected to accommodate the additional volumes generated by the PC74 (full buildout) and continue to operate below capacity even with 1200 dwellings (a 30% sensitivity test). It is noted that the Station Road / East Street intersection already experiences delay for right turning out of Station Road and this manoeuvre is likely avoided by local users; and
- The modelling results of the sensitivity test scenario indicate that with the additional PC76 volumes, the Golding Road / East Street intersection will potentially operate above capacity during the morning peak hour.

Overall, as a method to address potential traffic effects, it is still considered appropriate to continually review the performance of the Golding Road / East Street intersection and the Station Road / East Street as part of future resource consent applications as proposed by PC74.

APPENDIX A: SIDRA ANALYSIS / VOLUMES

GOLDING ROAD / EAST STREET INT – EXISTING

MOVEMENT SUMMARY

▼ Site: 101 [Golding Road / East Street_Existing AM (Site Folder: PPC)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total veh/h]		DEMAND FLOWS [Total veh/h]		Deg. Satn w/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh]	QUEUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Golding Road														
1	L2	20	1.0	21	1.0	0.245	11.3	LOS B	1.6	11.6	0.86	0.88	0.86	48.9
2	T1	75	1.0	79	1.0	0.245	11.6	LOS B	1.6	11.6	0.86	0.88	0.86	49.8
3	R2	33	1.0	35	1.0	0.245	15.2	LOS B	1.6	11.6	0.86	0.88	0.86	49.5
Approach		128	1.0	135	1.0	0.245	12.5	LOS B	1.6	11.6	0.86	0.88	0.86	49.6
East: Pukekohe East Road														
4	L2	24	1.0	25	1.0	0.018	4.6	LOS A	0.1	0.7	0.25	0.49	0.25	54.0
5	T1	600	3.0	632	3.0	0.582	5.9	LOS A	5.6	40.0	0.60	0.59	0.60	52.7
6	R2	151	2.0	159	2.0	0.582	9.5	LOS A	5.6	40.0	0.60	0.59	0.60	52.4
Approach		775	2.7	816	2.7	0.582	6.6	LOS A	5.6	40.0	0.59	0.59	0.59	52.7
North: Belgium Road														
7	L2	87	1.0	92	1.0	0.354	8.8	LOS A	2.4	17.1	0.79	0.84	0.79	50.3
8	T1	69	2.0	73	2.0	0.354	9.1	LOS A	2.4	17.1	0.79	0.84	0.79	51.2
9	R2	87	1.0	92	1.0	0.354	12.7	LOS B	2.4	17.1	0.79	0.84	0.79	51.0
Approach		243	1.3	256	1.3	0.354	10.3	LOS B	2.4	17.1	0.79	0.84	0.79	50.8
West: East Street														
10	L2	12	2.0	13	2.0	0.566	6.7	LOS A	4.6	33.3	0.67	0.67	0.67	51.7
11	T1	537	4.0	565	4.0	0.566	7.1	LOS A	4.6	33.3	0.67	0.67	0.67	52.7
12	R2	20	1.0	21	1.0	0.566	10.6	LOS B	4.6	33.3	0.67	0.67	0.67	52.5
Approach		569	3.9	599	3.9	0.566	7.2	LOS A	4.6	33.3	0.67	0.67	0.67	52.6
All Vehicles		1715	2.8	1805	2.8	0.582	7.7	LOS A	5.6	40.0	0.66	0.67	0.67	52.2

MOVEMENT SUMMARY

▼ Site: 101 [Golding Road / East Street_Existing PM (Site Folder: PPC)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total veh/h]		DEMAND FLOWS [Total veh/h]		Deg. Satn w/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh]	QUEUE Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Golding Road														
1	L2	14	1.0	15	1.0	0.129	10.3	LOS B	0.8	5.7	0.79	0.80	0.79	49.5
2	T1	39	1.0	41	1.0	0.129	10.6	LOS B	0.8	5.7	0.79	0.80	0.79	50.4
3	R2	21	1.0	22	1.0	0.129	14.2	LOS B	0.8	5.7	0.79	0.80	0.79	50.1
Approach		74	1.0	78	1.0	0.129	11.5	LOS B	0.8	5.7	0.79	0.80	0.79	50.2
East: Pukekohe East Road														
4	L2	11	1.0	12	1.0	0.006	4.0	LOS A	0.0	0.0	0.00	0.51	0.00	55.3
5	T1	652	4.0	686	4.0	0.551	5.3	LOS A	5.3	38.1	0.45	0.51	0.45	53.3
6	R2	116	1.0	122	1.0	0.551	8.9	LOS A	5.3	38.1	0.45	0.51	0.45	53.1
Approach		779	3.5	820	3.5	0.551	5.9	LOS A	5.3	38.1	0.44	0.51	0.44	53.3
North: Belgium Road														
7	L2	122	1.0	128	1.0	0.373	11.1	LOS B	2.7	18.9	0.90	0.93	0.91	49.4
8	T1	55	1.0	58	1.0	0.373	11.4	LOS B	2.7	18.9	0.90	0.93	0.91	50.3
9	R2	22	1.0	23	1.0	0.373	15.0	LOS B	2.7	18.9	0.90	0.93	0.91	50.0
Approach		199	1.0	209	1.0	0.373	11.6	LOS B	2.7	18.9	0.90	0.93	0.91	49.7
West: East Road														
10	L2	24	1.0	25	1.0	0.693	6.4	LOS A	7.2	51.7	0.68	0.62	0.69	51.7
11	T1	740	4.0	779	4.0	0.693	6.7	LOS A	7.2	51.7	0.68	0.62	0.69	52.6
12	R2	23	1.0	24	1.0	0.693	10.2	LOS B	7.2	51.7	0.68	0.62	0.69	52.4
Approach		787	3.8	828	3.8	0.693	6.8	LOS A	7.2	51.7	0.68	0.62	0.69	52.6
All Vehicles		1839	3.3	1936	3.3	0.693	7.1	LOS A	7.2	51.7	0.61	0.61	0.61	52.5

GOLDING ROAD / EAST STREET INT – PROPOSED

MOVEMENT SUMMARY

▼ Site: 101 [Golding Road / East Street_Proposed AM (Site Folder: PPC)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Golding Road														
1	L2	53	1.0	56	1.0	0.637	19.5	LOS B	6.6	46.8	1.00	1.16	1.43	43.7
2	T1	123	1.0	129	1.0	0.637	19.8	LOS B	6.6	46.8	1.00	1.16	1.43	44.5
3	R2	145	1.0	153	1.0	0.637	23.4	LOS C	6.6	46.8	1.00	1.16	1.43	44.2
Approach		321	1.0	338	1.0	0.637	21.4	LOS C	6.6	46.8	1.00	1.16	1.43	44.2
East: Pukekohe East Road														
4	L2	56	1.0	59	1.0	0.043	4.7	LOS A	0.2	1.7	0.29	0.50	0.29	53.9
5	T1	609	3.0	641	3.0	0.609	6.2	LOS A	6.0	43.2	0.66	0.62	0.66	52.5
6	R2	151	2.0	159	2.0	0.609	9.7	LOS A	6.0	43.2	0.66	0.62	0.66	52.2
Approach		816	2.7	859	2.7	0.609	6.7	LOS A	6.0	43.2	0.64	0.61	0.64	52.5
North: Belgium Road														
7	L2	87	1.0	92	1.0	0.465	11.9	LOS B	3.8	26.8	0.92	0.99	1.03	48.3
8	T1	83	2.0	87	2.0	0.465	12.2	LOS B	3.8	26.8	0.92	0.99	1.03	49.2
9	R2	91	1.0	96	1.0	0.465	15.7	LOS B	3.8	26.8	0.92	0.99	1.03	48.9
Approach		261	1.3	275	1.3	0.465	13.3	LOS B	3.8	26.8	0.92	0.99	1.03	48.8
West: East Road														
10	L2	19	2.0	20	2.0	0.732	12.3	LOS B	9.3	67.5	0.93	1.01	1.23	48.6
11	T1	554	4.0	583	4.0	0.732	12.7	LOS B	9.3	67.5	0.93	1.01	1.23	49.4
12	R2	28	1.0	29	1.0	0.732	16.2	LOS B	9.3	67.5	0.93	1.01	1.23	49.3
Approach		601	3.8	633	3.8	0.732	12.9	LOS B	9.3	67.5	0.93	1.01	1.23	49.4
All Vehicles		1999	2.6	2104	2.6	0.732	11.8	LOS B	9.3	67.5	0.82	0.87	0.99	49.6

MOVEMENT SUMMARY

▼ Site: 101 [Golding Road / East Street_Proposed PM (Site Folder: PPC)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %	v/c	sec		[Veh. veh	Dist] m				km/h
South: Golding Road														
1	L2	22	1.0	23	1.0	0.247	11.0	LOS B	1.7	11.8	0.87	0.89	0.87	48.7
2	T1	53	1.0	56	1.0	0.247	11.3	LOS B	1.7	11.8	0.87	0.89	0.87	49.6
3	R2	53	1.0	56	1.0	0.247	14.9	LOS B	1.7	11.8	0.87	0.89	0.87	49.4
Approach		128	1.0	135	1.0	0.247	12.7	LOS B	1.7	11.8	0.87	0.89	0.87	49.4
East: Pukekohe East Road														
4	L2	123	1.0	129	1.0	0.068	4.2	LOS A	0.0	0.0	0.00	0.51	0.00	55.3
5	T1	669	4.0	704	4.0	0.693	6.1	LOS A	6.2	44.4	0.64	0.60	0.64	52.6
6	R2	116	1.0	122	1.0	0.693	9.6	LOS A	6.2	44.4	0.64	0.60	0.64	52.4
Approach		908	3.2	956	3.2	0.693	6.3	LOS A	6.2	44.4	0.55	0.59	0.55	52.9
North: Belgium Road														
7	L2	122	1.0	128	1.0	0.564	17.2	LOS B	5.2	37.0	1.00	1.11	1.28	45.6
8	T1	103	1.0	108	1.0	0.564	17.5	LOS B	5.2	37.0	1.00	1.11	1.28	46.4
9	R2	29	1.0	31	1.0	0.564	21.1	LOS C	5.2	37.0	1.00	1.11	1.28	46.2
Approach		254	1.0	267	1.0	0.564	17.8	LOS B	5.2	37.0	1.00	1.11	1.28	46.0
West: East Road														
10	L2	28	1.0	29	1.0	0.778	9.0	LOS A	11.3	81.4	0.85	0.77	0.97	50.8
11	T1	749	4.0	788	4.0	0.778	9.4	LOS A	11.3	81.4	0.85	0.77	0.97	51.7
12	R2	56	1.0	59	1.0	0.778	12.9	LOS B	11.3	81.4	0.85	0.77	0.97	51.5
Approach		833	3.7	877	3.7	0.778	9.6	LOS A	11.3	81.4	0.85	0.77	0.97	51.6
All Vehicles		2123	3.0	2235	3.0	0.778	9.4	LOS A	11.3	81.4	0.74	0.74	0.82	51.3

GOLDING ROAD / EAST STREET INT – SENSITIVITY TEST (WITH PC76 VOLUMES)

MOVEMENT SUMMARY

Site: 101 [Golding Road / East Street_Proposed AM - Sensitivity test (Site Folder: PPC)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total HV] veh/h %		DEMAND FLOWS [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist] veh m		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Golding Road														
1	L2	124	1.0	131	1.0	1.189	208.9	LOS F	80.5	568.3	1.00	3.81	8.44	13.4
2	T1	193	1.0	203	1.0	1.189	209.1	LOS F	80.5	568.3	1.00	3.81	8.44	13.5
3	R2	261	1.0	275	1.0	1.189	212.7	LOS F	80.5	568.3	1.00	3.81	8.44	13.5
Approach		578	1.0	608	1.0	1.189	210.7	LOS F	80.5	568.3	1.00	3.81	8.44	13.5
East: Pukekohe East Road														
4	L2	86	1.0	91	1.0	0.067	4.8	LOS A	0.4	2.7	0.32	0.51	0.32	53.8
5	T1	618	3.0	651	3.0	0.632	6.4	LOS A	6.3	45.4	0.71	0.65	0.71	52.3
6	R2	151	2.0	159	2.0	0.632	10.0	LOS A	6.3	45.4	0.71	0.65	0.71	52.1
Approach		855	2.6	900	2.6	0.632	6.8	LOS A	6.3	45.4	0.67	0.63	0.67	52.4
North: Belgium Road														
7	L2	87	1.0	92	1.0	0.580	17.7	LOS B	5.5	38.6	1.00	1.12	1.31	44.9
8	T1	87	2.0	92	2.0	0.580	18.0	LOS B	5.5	38.6	1.00	1.12	1.31	45.6
9	R2	92	1.0	97	1.0	0.580	21.6	LOS C	5.5	38.6	1.00	1.12	1.31	45.4
Approach		266	1.3	280	1.3	0.580	19.2	LOS B	5.5	38.6	1.00	1.12	1.31	45.3
West: East Street														
10	L2	19	2.0	20	2.0	0.934	32.8	LOS C	23.1	166.8	1.00	1.58	2.44	38.2
11	T1	592	4.0	623	4.0	0.934	33.2	LOS C	23.1	166.8	1.00	1.58	2.44	38.8
12	R2	46	1.0	48	1.0	0.934	36.6	LOS D	23.1	166.8	1.00	1.58	2.44	38.6
Approach		657	3.7	692	3.7	0.934	33.4	LOS C	23.1	166.8	1.00	1.58	2.44	38.7
All Vehicles		2356	2.4	2480	2.4	1.189	65.7	LOS E	80.5	568.3	0.88	1.73	3.14	28.7

MOVEMENT SUMMARY

Site: 101 [Golding Road / East Street_Proposed PM- Sensitivity test (Site Folder: PPC)]

New Site
Site Category: (None)
Roundabout

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES [Total HV] veh/h %		DEMAND FLOWS [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. Dist] veh m		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Golding Road														
1	L2	37	1.0	39	1.0	0.421	13.5	LOS B	3.3	23.5	0.97	1.02	1.06	47.0
2	T1	58	1.0	61	1.0	0.421	13.7	LOS B	3.3	23.5	0.97	1.02	1.06	47.9
3	R2	89	1.0	94	1.0	0.421	17.3	LOS B	3.3	23.5	0.97	1.02	1.06	47.6
Approach		184	1.0	194	1.0	0.421	15.4	LOS B	3.3	23.5	0.97	1.02	1.06	47.6
East: Pukekohe East Road														
4	L2	266	1.0	280	1.0	0.778	6.7	LOS A	11.5	83.1	0.61	0.66	0.66	52.4
5	T1	716	5.0	754	5.0	0.778	9.2	LOS A	11.5	83.1	0.87	0.79	1.00	51.6
6	R2	116	1.0	122	1.0	0.778	12.7	LOS B	11.5	83.1	0.87	0.79	1.00	51.4
Approach		1098	3.6	1158	3.6	0.778	8.9	LOS A	11.5	83.1	0.80	0.76	0.92	51.8
North: Belgium Road														
7	L2	122	1.0	128	1.0	0.775	35.5	LOS D	9.6	67.9	1.00	1.28	1.77	37.1
8	T1	121	1.0	127	1.0	0.775	35.8	LOS D	9.6	67.9	1.00	1.28	1.77	37.7
9	R2	31	1.0	33	1.0	0.775	39.4	LOS D	9.6	67.9	1.00	1.28	1.77	37.5
Approach		274	1.0	288	1.0	0.775	36.1	LOS D	9.6	67.9	1.00	1.28	1.77	37.4
West: East Street														
10	L2	28	1.0	29	1.0	0.892	15.2	LOS B	20.5	148.6	1.00	1.03	1.44	46.6
11	T1	761	5.0	801	5.0	0.892	15.7	LOS B	20.5	148.6	1.00	1.03	1.44	47.4
12	R2	114	1.0	120	1.0	0.892	19.1	LOS B	20.5	148.6	1.00	1.03	1.44	47.2
Approach		903	4.4	951	4.4	0.892	16.1	LOS B	20.5	148.6	1.00	1.03	1.44	47.3
All Vehicles		2459	3.4	2588	3.4	0.892	15.1	LOS B	20.5	148.6	0.91	0.94	1.22	47.8

STATION ROAD / EAST STREET INT - EXISTING

MOVEMENT SUMMARY

Site: 101 [East Road / Station Road_Existing AM (Site Folder: PPC)]

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Station Road (south)														
1	L2	122	5.0	128	5.0	0.203	12.7	LOS B	0.8	5.6	0.60	1.00	0.60	49.3
3	R2	25	5.0	26	5.0	0.181	32.4	LOS D	0.5	4.0	0.90	1.01	0.93	38.8
Approach		147	5.0	155	5.0	0.203	16.1	LOS C	0.8	5.6	0.65	1.00	0.66	47.1
East: East Street														
4	L2	52	5.0	55	5.0	0.363	5.7	LOS A	0.0	0.0	0.00	0.05	0.00	57.5
5	T1	596	5.0	627	5.0	0.363	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	59.3
Approach		648	5.0	682	5.0	0.363	0.6	NA	0.0	0.0	0.00	0.05	0.00	59.2
West: East Street														
11	T1	664	5.0	699	5.0	0.374	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
12	R2	49	5.0	52	5.0	0.066	9.1	LOS A	0.3	1.9	0.59	0.77	0.59	50.6
Approach		713	5.0	751	5.0	0.374	0.7	NA	0.3	1.9	0.04	0.05	0.04	59.0
All Vehicles		1508	5.0	1587	5.0	0.374	2.2	NA	0.8	5.6	0.08	0.14	0.08	57.7

MOVEMENT SUMMARY

Site: 101 [East Road / Station Road_Existing PM (Site Folder: PPC)]

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Station Road (south)														
1	L2	78	5.0	82	5.0	0.132	12.7	LOS B	0.5	3.5	0.59	1.00	0.59	49.3
3	R2	29	5.0	31	5.0	0.397	65.4	LOS F	1.2	8.7	0.96	1.04	1.12	28.7
Approach		107	5.0	113	5.0	0.397	27.0	LOS D	1.2	8.7	0.69	1.01	0.74	41.3
East: East Road														
4	L2	59	5.0	62	5.0	0.374	5.7	LOS A	0.0	0.0	0.00	0.05	0.00	57.5
5	T1	608	5.0	640	5.0	0.374	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	59.3
Approach		667	5.0	702	5.0	0.374	0.6	NA	0.0	0.0	0.00	0.05	0.00	59.1
West: East Road														
11	T1	870	5.0	916	5.0	0.490	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
12	R2	64	5.0	67	5.0	0.089	9.3	LOS A	0.3	2.5	0.61	0.80	0.61	50.4
Approach		934	5.0	983	5.0	0.490	0.8	NA	0.3	2.5	0.04	0.05	0.04	58.9
All Vehicles		1708	5.0	1798	5.0	0.490	2.4	NA	1.2	8.7	0.07	0.11	0.07	57.4

STATION ROAD / EAST STREET INT – PROPOSED

MOVEMENT SUMMARY

Site: 101 [East Road / Station Road_Proposed AM (Site Folder: PPC)]

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Station Road (south)														
1	L2	202	5.0	213	5.0	0.356	14.5	LOS B	1.7	12.2	0.68	1.06	0.86	48.3
3	R2	49	5.0	52	5.0	0.439	47.3	LOS E	1.5	10.6	0.94	1.06	1.17	33.5
Approach		251	5.0	264	5.0	0.439	20.9	LOS C	1.7	12.2	0.73	1.06	0.92	44.4
East: East Road														
4	L2	64	5.0	67	5.0	0.388	5.7	LOS A	0.0	0.0	0.00	0.05	0.00	57.4
5	T1	629	5.0	662	5.0	0.388	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	59.2
Approach		693	5.0	729	5.0	0.388	0.7	NA	0.0	0.0	0.00	0.05	0.00	59.1
West: East Road														
11	T1	672	5.0	707	5.0	0.377	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
12	R2	120	5.0	126	5.0	0.174	9.9	LOS A	0.7	5.1	0.64	0.85	0.64	50.1
Approach		792	5.0	834	5.0	0.377	1.6	NA	0.7	5.1	0.10	0.13	0.10	58.0
All Vehicles		1736	5.0	1827	5.0	0.439	4.0	NA	1.7	12.2	0.15	0.23	0.18	56.0

MOVEMENT SUMMARY

Site: 101 [East Road / Station Road_Proposed PM (Site Folder: PPC)]

New Site
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Station Road (south)														
1	L2	149	5.0	157	5.0	0.257	13.4	LOS B	1.0	7.6	0.64	1.02	0.70	48.9
3	R2	41	5.0	43	5.0	0.756	130.8	LOS F	2.6	19.0	0.99	1.12	1.52	18.9
Approach		190	5.0	200	5.0	0.756	38.7	LOS E	2.6	19.0	0.71	1.04	0.87	36.5
East: East Road														
4	L2	83	5.0	87	5.0	0.392	5.7	LOS A	0.0	0.0	0.00	0.07	0.00	57.3
5	T1	616	5.0	648	5.0	0.392	0.1	LOS A	0.0	0.0	0.00	0.07	0.00	59.1
Approach		699	5.0	736	5.0	0.392	0.8	NA	0.0	0.0	0.00	0.07	0.00	58.9
West: East Road														
11	T1	903	5.0	951	5.0	0.506	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	59.6
12	R2	144	5.0	152	5.0	0.211	10.0	LOS B	0.9	6.2	0.65	0.85	0.65	49.9
Approach		1047	5.0	1102	5.0	0.506	1.6	NA	0.9	6.2	0.09	0.12	0.09	58.0
All Vehicles		1936	5.0	2038	5.0	0.756	4.9	NA	2.6	19.0	0.12	0.19	0.13	55.1

STATION ROAD / SUBWAY ROAD INT – EXISTING

MOVEMENT SUMMARY

▽ Site: 101 [Subway Road / Station Road_Existing AM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Station Road (south)														
1	L2	98	5.0	103	5.0	0.092	5.6	LOSA	0.0	0.0	0.00	0.36	0.00	55.1
2	T1	61	5.0	64	5.0	0.092	0.0	LOSA	0.0	0.0	0.00	0.36	0.00	56.8
Approach		159	5.0	167	5.0	0.092	3.5	NA	0.0	0.0	0.00	0.36	0.00	55.7
North: Station Road (north)														
8	T1	46	5.0	48	5.0	0.229	0.7	LOSA	1.2	8.9	0.33	0.51	0.33	54.7
9	R2	288	5.0	303	5.0	0.229	6.2	LOSA	1.2	8.9	0.33	0.51	0.33	52.6
Approach		334	5.0	352	5.0	0.229	5.4	NA	1.2	8.9	0.33	0.51	0.33	52.9
West: Subway Road														
10	L2	68	5.0	72	5.0	0.104	5.8	LOSA	0.4	2.8	0.15	0.58	0.15	52.6
12	R2	42	5.0	44	5.0	0.104	7.8	LOSA	0.4	2.8	0.15	0.58	0.15	52.1
Approach		110	5.0	116	5.0	0.104	6.6	LOSA	0.4	2.8	0.15	0.58	0.15	52.4
All Vehicles		603	5.0	635	5.0	0.229	5.1	NA	1.2	8.9	0.21	0.48	0.21	53.5

MOVEMENT SUMMARY

▽ Site: 101 [Subway Road / Station Road_Existing PM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Station Road (south)														
1	L2	56	5.0	59	5.0	0.068	5.6	LOSA	0.0	0.0	0.00	0.28	0.00	55.8
2	T1	63	5.0	66	5.0	0.068	0.0	LOSA	0.0	0.0	0.00	0.28	0.00	57.5
Approach		119	5.0	125	5.0	0.068	2.6	NA	0.0	0.0	0.00	0.28	0.00	56.7
North: Station Road (north)														
8	T1	33	5.0	35	5.0	0.130	0.4	LOSA	0.6	4.7	0.25	0.48	0.25	55.0
9	R2	165	5.0	174	5.0	0.130	5.9	LOSA	0.6	4.7	0.25	0.48	0.25	52.9
Approach		198	5.0	208	5.0	0.130	5.0	NA	0.6	4.7	0.25	0.48	0.25	53.2
West: Subway Road														
10	L2	146	5.0	154	5.0	0.170	5.8	LOSA	0.7	5.1	0.16	0.57	0.16	52.9
12	R2	61	5.0	64	5.0	0.170	7.0	LOSA	0.7	5.1	0.16	0.57	0.16	52.4
Approach		207	5.0	218	5.0	0.170	6.2	LOSA	0.7	5.1	0.16	0.57	0.16	52.8
All Vehicles		524	5.0	552	5.0	0.170	4.9	NA	0.7	5.1	0.16	0.47	0.16	53.8

STATION ROAD / SUBWAY ROAD INT – PROPOSED

MOVEMENT SUMMARY

▽ Site: 101 [Subway Road / Station Road_Proposed AM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Station Road (south)														
1	L2	178	5.0	187	5.0	0.197	5.6	LOS A	0.0	0.0	0.00	0.30	0.00	55.5
2	T1	166	5.0	175	5.0	0.197	0.1	LOS A	0.0	0.0	0.00	0.30	0.00	57.2
Approach		344	5.0	362	5.0	0.197	2.9	NA	0.0	0.0	0.00	0.30	0.00	56.3
North: Station Road (north)														
8	T1	130	5.0	137	5.0	0.324	1.7	LOS A	1.9	13.7	0.52	0.49	0.52	54.8
9	R2	288	5.0	303	5.0	0.324	7.4	LOS A	1.9	13.7	0.52	0.49	0.52	52.7
Approach		418	5.0	440	5.0	0.324	5.6	NA	1.9	13.7	0.52	0.49	0.52	53.3
West: Subway Road														
10	L2	68	5.0	72	5.0	0.254	6.3	LOS A	1.0	7.0	0.41	0.70	0.42	51.0
12	R2	113	5.0	119	5.0	0.254	10.2	LOS B	1.0	7.0	0.41	0.70	0.42	50.5
Approach		181	5.0	191	5.0	0.254	8.8	LOS A	1.0	7.0	0.41	0.70	0.42	50.7
All Vehicles		943	5.0	993	5.0	0.324	5.3	NA	1.9	13.7	0.31	0.46	0.31	53.8

MOVEMENT SUMMARY

▽ Site: 101 [Subway Road / Station Road_Proposed PM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn	Aver. Delay	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Station Road (south)														
1	L2	127	5.0	134	5.0	0.156	5.6	LOS A	0.0	0.0	0.00	0.27	0.00	55.8
2	T1	147	5.0	155	5.0	0.156	0.0	LOS A	0.0	0.0	0.00	0.27	0.00	57.5
Approach		274	5.0	288	5.0	0.156	2.6	NA	0.0	0.0	0.00	0.27	0.00	56.7
North: Station Road (north)														
8	T1	138	5.0	145	5.0	0.210	1.0	LOS A	1.1	8.0	0.40	0.35	0.40	55.8
9	R2	165	5.0	174	5.0	0.210	6.8	LOS A	1.1	8.0	0.40	0.35	0.40	53.6
Approach		303	5.0	319	5.0	0.210	4.2	NA	1.1	8.0	0.40	0.35	0.40	54.6
West: Subway Road														
10	L2	146	5.0	154	5.0	0.314	6.3	LOS A	1.3	9.8	0.35	0.66	0.36	51.9
12	R2	141	5.0	148	5.0	0.314	9.0	LOS A	1.3	9.8	0.35	0.66	0.36	51.4
Approach		287	5.0	302	5.0	0.314	7.6	LOS A	1.3	9.8	0.35	0.66	0.36	51.6
All Vehicles		864	5.0	909	5.0	0.314	4.8	NA	1.3	9.8	0.26	0.43	0.26	54.2

YATES ROAD / LOGAN ROAD INT – EXISTING

MOVEMENT SUMMARY

▼ Site: 101 [Yates Road / Logan Road_Existing AM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Logan Road (south)														
1	L2	110	5.0	116	5.0	0.113	5.6	LOSA	0.0	0.0	0.00	0.33	0.00	55.3
2	T1	86	5.0	91	5.0	0.113	0.0	LOSA	0.0	0.0	0.00	0.33	0.00	57.0
Approach		196	5.0	206	5.0	0.113	3.2	NA	0.0	0.0	0.00	0.33	0.00	56.1
North: Logan Road (north)														
8	T1	155	5.0	163	5.0	0.132	0.3	LOSA	0.5	3.3	0.20	0.17	0.20	57.7
9	R2	61	5.0	64	5.0	0.132	6.3	LOSA	0.5	3.3	0.20	0.17	0.20	55.4
Approach		216	5.0	227	5.0	0.132	2.0	NA	0.5	3.3	0.20	0.17	0.20	57.0
West: Yates Road														
10	L2	60	5.0	63	5.0	0.079	5.9	LOSA	0.3	2.2	0.19	0.57	0.19	52.8
12	R2	30	5.0	32	5.0	0.079	7.2	LOSA	0.3	2.2	0.19	0.57	0.19	52.3
Approach		90	5.0	95	5.0	0.079	6.3	LOSA	0.3	2.2	0.19	0.57	0.19	52.6
All Vehicles		502	5.0	528	5.0	0.132	3.2	NA	0.5	3.3	0.12	0.31	0.12	55.8

MOVEMENT SUMMARY

▼ Site: 101 [Yates Road / Logan Road_Existing PM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Logan Road (south)														
1	L2	82	5.0	86	5.0	0.106	5.6	LOSA	0.0	0.0	0.00	0.26	0.00	55.9
2	T1	104	5.0	109	5.0	0.106	0.0	LOSA	0.0	0.0	0.00	0.26	0.00	57.6
Approach		186	5.0	196	5.0	0.106	2.5	NA	0.0	0.0	0.00	0.26	0.00	56.9
North: Logan Road (north)														
8	T1	95	5.0	100	5.0	0.076	0.3	LOSA	0.2	1.6	0.17	0.15	0.17	58.0
9	R2	31	5.0	33	5.0	0.076	6.2	LOSA	0.2	1.6	0.17	0.15	0.17	55.7
Approach		126	5.0	133	5.0	0.076	1.7	NA	0.2	1.6	0.17	0.15	0.17	57.4
West: Yates Road														
10	L2	72	5.0	76	5.0	0.081	6.0	LOSA	0.3	2.3	0.22	0.57	0.22	52.8
12	R2	26	5.0	27	5.0	0.081	6.7	LOSA	0.3	2.3	0.22	0.57	0.22	52.2
Approach		98	5.0	103	5.0	0.081	6.2	LOSA	0.3	2.3	0.22	0.57	0.22	52.6
All Vehicles		410	5.0	432	5.0	0.106	3.1	NA	0.3	2.3	0.10	0.30	0.10	55.9

YATES ROAD / LOGAN ROAD INT – PROPOSED

MOVEMENT SUMMARY

▼ Site: 101 [Yates Road / Logan Road_Proposed AM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Logan Road (south)														
1	L2	136	5.0	143	5.0	0.129	5.6	LOS A	0.0	0.0	0.00	0.35	0.00	55.1
2	T1	89	5.0	94	5.0	0.129	0.0	LOS A	0.0	0.0	0.00	0.35	0.00	56.8
Approach		225	5.0	237	5.0	0.129	3.4	NA	0.0	0.0	0.00	0.35	0.00	55.8
North: Logan Road (north)														
8	T1	161	5.0	169	5.0	0.157	0.5	LOS A	0.6	4.7	0.27	0.22	0.27	57.2
9	R2	87	5.0	92	5.0	0.157	6.5	LOS A	0.6	4.7	0.27	0.22	0.27	54.9
Approach		248	5.0	261	5.0	0.157	2.6	NA	0.6	4.7	0.27	0.22	0.27	56.3
West: Yates Road														
10	L2	88	5.0	93	5.0	0.125	5.9	LOS A	0.5	3.5	0.21	0.58	0.21	52.7
12	R2	49	5.0	52	5.0	0.125	7.6	LOS A	0.5	3.5	0.21	0.58	0.21	52.2
Approach		137	5.0	144	5.0	0.125	6.5	LOS A	0.5	3.5	0.21	0.58	0.21	52.5
All Vehicles		610	5.0	642	5.0	0.157	3.8	NA	0.6	4.7	0.15	0.35	0.15	55.2

MOVEMENT SUMMARY

▼ Site: 101 [Yates Road / Logan Road_Proposed PM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
South: Logan Road (south)														
1	L2	101	5.0	106	5.0	0.119	5.6	LOS A	0.0	0.0	0.00	0.29	0.00	55.7
2	T1	107	5.0	113	5.0	0.119	0.0	LOS A	0.0	0.0	0.00	0.29	0.00	57.4
Approach		208	5.0	219	5.0	0.119	2.7	NA	0.0	0.0	0.00	0.29	0.00	56.6
North: Logan Road (north)														
8	T1	98	5.0	103	5.0	0.099	0.5	LOS A	0.4	2.9	0.25	0.23	0.25	57.1
9	R2	59	5.0	62	5.0	0.099	6.3	LOS A	0.4	2.9	0.25	0.23	0.25	54.8
Approach		157	5.0	165	5.0	0.099	2.7	NA	0.4	2.9	0.25	0.23	0.25	56.2
West: Yates Road														
10	L2	98	5.0	103	5.0	0.131	6.0	LOS A	0.5	3.7	0.23	0.58	0.23	52.7
12	R2	52	5.0	55	5.0	0.131	7.0	LOS A	0.5	3.7	0.23	0.58	0.23	52.2
Approach		150	5.0	158	5.0	0.131	6.3	LOS A	0.5	3.7	0.23	0.58	0.23	52.5
All Vehicles		515	5.0	542	5.0	0.131	3.8	NA	0.5	3.7	0.15	0.35	0.15	55.2

GOLDING ROAD / LOGAN ROAD INT – EXISTING

MOVEMENT SUMMARY

▼ Site: 101 [Logan Road / Golding Road_Existing AM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
East: Logan Road (east)														
5	T1	152	5.0	160	5.0	0.085	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
6	R2	39	5.0	41	5.0	0.027	6.0	LOS A	0.1	0.9	0.26	0.56	0.26	52.2
Approach		191	5.0	201	5.0	0.085	1.2	NA	0.1	0.9	0.05	0.11	0.05	58.2
North: Golding Road (north)														
7	L2	32	5.0	34	5.0	0.105	5.9	LOS A	0.4	3.1	0.28	0.61	0.28	52.3
9	R2	62	5.0	65	5.0	0.105	7.7	LOS A	0.4	3.1	0.28	0.61	0.28	51.8
Approach		94	5.0	99	5.0	0.105	7.1	LOS A	0.4	3.1	0.28	0.61	0.28	51.9
West: Logan Road (west)														
10	L2	65	5.0	68	5.0	0.083	5.6	LOS A	0.0	0.0	0.00	0.26	0.00	55.9
11	T1	81	5.0	85	5.0	0.083	0.0	LOS A	0.0	0.0	0.00	0.26	0.00	57.6
Approach		146	5.0	154	5.0	0.083	2.5	NA	0.0	0.0	0.00	0.26	0.00	56.8
All Vehicles		431	5.0	454	5.0	0.105	2.9	NA	0.4	3.1	0.09	0.27	0.09	56.3

MOVEMENT SUMMARY

▼ Site: 101 [Logan Road / Golding Road_Existing PM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h	HV] %	[Total veh/h	HV] %				[Veh. veh	Dist] m				
East: Logan Road (east)														
5	T1	85	5.0	89	5.0	0.048	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
6	R2	25	5.0	26	5.0	0.018	6.1	LOS A	0.1	0.6	0.29	0.56	0.29	52.1
Approach		110	5.0	116	5.0	0.048	1.4	NA	0.1	0.6	0.07	0.13	0.07	58.0
North: Golding Road (north)														
7	L2	20	5.0	21	5.0	0.065	6.0	LOS A	0.3	1.9	0.30	0.60	0.30	52.5
9	R2	41	5.0	43	5.0	0.065	7.2	LOS A	0.3	1.9	0.30	0.60	0.30	52.0
Approach		61	5.0	64	5.0	0.065	6.8	LOS A	0.3	1.9	0.30	0.60	0.30	52.1
West: Logan Road (west)														
10	L2	68	5.0	72	5.0	0.100	5.6	LOS A	0.0	0.0	0.00	0.23	0.00	56.2
11	T1	108	5.0	114	5.0	0.100	0.0	LOS A	0.0	0.0	0.00	0.23	0.00	57.9
Approach		176	5.0	185	5.0	0.100	2.2	NA	0.0	0.0	0.00	0.23	0.00	57.2
All Vehicles		347	5.0	365	5.0	0.100	2.7	NA	0.3	1.9	0.07	0.26	0.07	56.5

GOLDING ROAD / LOGAN ROAD INT – PROPOSED

MOVEMENT SUMMARY

▼ Site: 101 [Logan Road / Golding Road_Proposed AM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h]	[HV] %	[Total veh/h]	[HV] %				[Veh. veh]	[Dist] m				
East: Logan Road (east)														
5	T1	178	5.0	187	5.0	0.100	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
6	R2	57	5.0	60	5.0	0.041	6.1	LOS A	0.2	1.3	0.30	0.57	0.30	52.1
Approach		235	5.0	247	5.0	0.100	1.5	NA	0.2	1.3	0.07	0.14	0.07	57.8
North: Golding Road (north)														
7	L2	63	5.0	66	5.0	0.145	6.0	LOS A	0.6	4.3	0.31	0.62	0.31	52.1
9	R2	68	5.0	72	5.0	0.145	8.5	LOS A	0.6	4.3	0.31	0.62	0.31	51.6
Approach		131	5.0	138	5.0	0.145	7.3	LOS A	0.6	4.3	0.31	0.62	0.31	51.8
West: Logan Road (west)														
10	L2	68	5.0	72	5.0	0.101	5.6	LOS A	0.0	0.0	0.00	0.23	0.00	56.2
11	T1	109	5.0	115	5.0	0.101	0.0	LOS A	0.0	0.0	0.00	0.23	0.00	57.9
Approach		177	5.0	186	5.0	0.101	2.2	NA	0.0	0.0	0.00	0.23	0.00	57.2
All Vehicles		543	5.0	572	5.0	0.145	3.1	NA	0.6	4.3	0.10	0.28	0.10	56.1

MOVEMENT SUMMARY

▼ Site: 101 [Logan Road / Golding Road_Proposed PM (Site Folder: PPC)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance														
Mov ID	Turn	INPUT VOLUMES		DEMAND FLOWS		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE		Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
		[Total veh/h]	[HV] %	[Total veh/h]	[HV] %				[Veh. veh]	[Dist] m				
East: Logan Road (east)														
5	T1	113	5.0	119	5.0	0.063	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
6	R2	56	5.0	59	5.0	0.041	6.2	LOS A	0.2	1.3	0.32	0.58	0.32	52.0
Approach		169	5.0	178	5.0	0.063	2.1	NA	0.2	1.3	0.11	0.19	0.11	57.1
North: Golding Road (north)														
7	L2	38	5.0	40	5.0	0.089	6.1	LOS A	0.4	2.6	0.33	0.61	0.33	52.3
9	R2	44	5.0	46	5.0	0.089	7.9	LOS A	0.4	2.6	0.33	0.61	0.33	51.7
Approach		82	5.0	86	5.0	0.089	7.1	LOS A	0.4	2.6	0.33	0.61	0.33	52.0
West: Logan Road (west)														
10	L2	71	5.0	75	5.0	0.116	5.6	LOS A	0.0	0.0	0.00	0.20	0.00	56.3
11	T1	134	5.0	141	5.0	0.116	0.0	LOS A	0.0	0.0	0.00	0.20	0.00	58.1
Approach		205	5.0	216	5.0	0.116	2.0	NA	0.0	0.0	0.00	0.20	0.00	57.5
All Vehicles		456	5.0	480	5.0	0.116	2.9	NA	0.4	2.6	0.10	0.27	0.10	56.3

Activity	GFA / Number of dwellings	AM Adopted trip rate	PM Adopted trip rate	Internal capture (to jobs)**	Multipurpose trip reduction	AM		PM		Gross trips		Car trips external			
						Trips inbound	Trips outbound	Trips inbound	Trips outbound	Weekday AM peak hour trips		Weekday peak hour trips		AM trips in	AM trips out
Residential - MHU	1200	0.5%	0.5%	25%	0%	20%	80%	80%	20%	696	522	104	418	418	104
Total										696	522	104	418	418	104
Jobs	Number														
Household jobs	240	0	0	0%	0%	80%	20%	20%	80%	0	0	0	0	0	0
Industrial**	588	0.375	0.375	0%	5%	80%	20%	20%	80%	221	209	168	42	42	168
Total										221	209	168	42	42	168
Total										917	731	272	459	459	272

*Internal capture increases due to industrial zone / employment zone next to each other (ie residents living and working in same area)
 ** Industrial assumes to be 1 employee per 50sqm (RTA rate for industrial) and commuter trip rate of 0.75 per 100sqm (RTA mixture of industrial and warehousing)

Residential trips					
		AM trips in	AM trips out	PM trips in	PM trips out
To/from North-eastern areas	54%	56	226	226	56
via Station Road	10%	6	23	23	6
via Golding Road	70%	39	158	158	39
via Logan Road - East	20%	11	45	45	11
	100%				
To/from the west - Pukekohe and Pukekohe Central	40%	42	167	167	42
via Station Road	70%	29	117	117	29
via Golding Road	20%	8	33	33	8
via Yates Road	10%	4	17	17	4
	100%				
To/from south (Tuakau / Buckland Road)	6%	6	25	25	6
via Station Road	10%	1	3	3	1
via Golding Road	45%	3	11	11	3
via Yates Road	45%	3	11	11	3
	100%	104	418	418	104

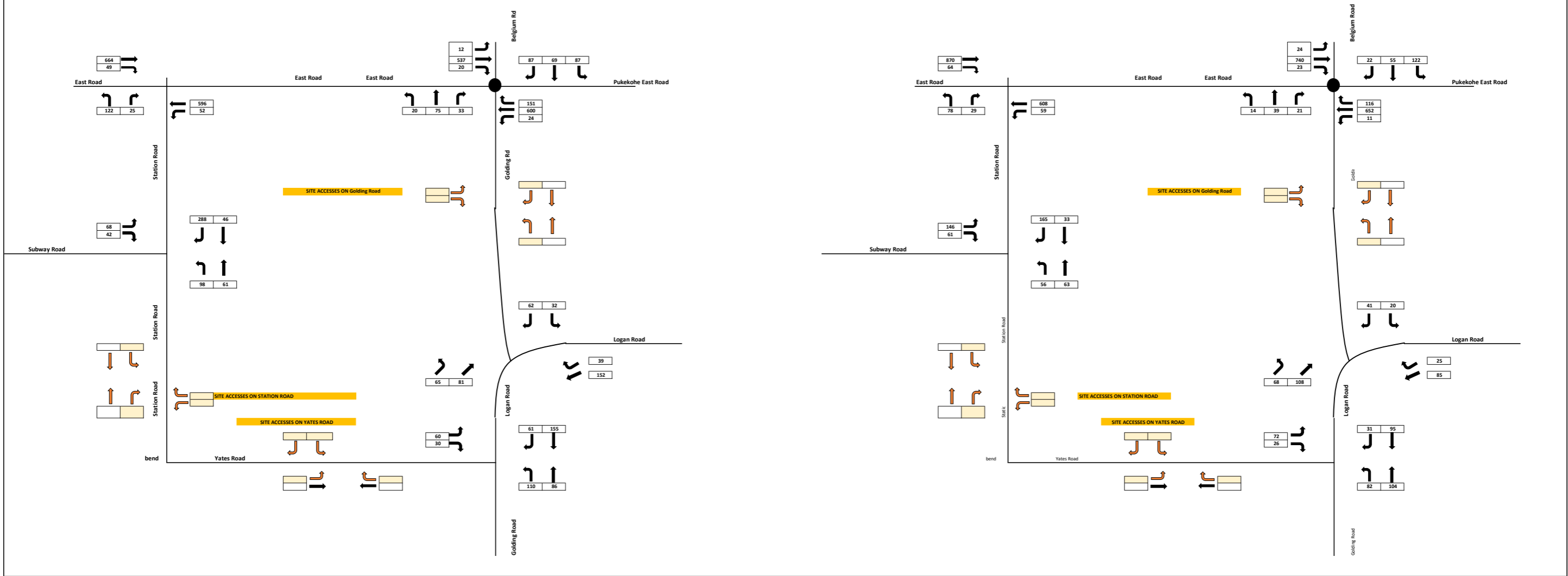
Station Road trips via Subway Road				
	AM trips in	AM trips out	PM trips in	PM trips out
50%	17	67	67	17
50%	17	67	67	17
	33	134	134	33

Industrial trips					
		AM trips in	AM trips out	PM trips in	PM trips out
To/from North-eastern areas	20%	34	8	8	34
via Station Road	20%	7	2	2	7
via Golding Road	20%	7	2	2	7
via Logan Road - East	60%	20	5	5	20
	100%				
To/from the west - Pukekohe and Pukekohe Central	65%	109	27	27	109
via Station Road	100%	109	27	27	109
via Golding Road	0%	0	0	0	0
via Yates Road	0%	0	0	0	0
	100%				
To/from south (Tuakau / Buckland Road)	15%	25	6	6	25
via Station Road	80%	20	5	5	20
via Golding Road	10%	3	1	1	3
via Yates Road	10%	3	1	1	3
	100%	168	42	42	168

Station Road trips via Subway Road				
	AM trips in	AM trips out	PM trips in	PM trips out
50%	54	14	14	54
50%	54	14	14	54
	109	27	27	109

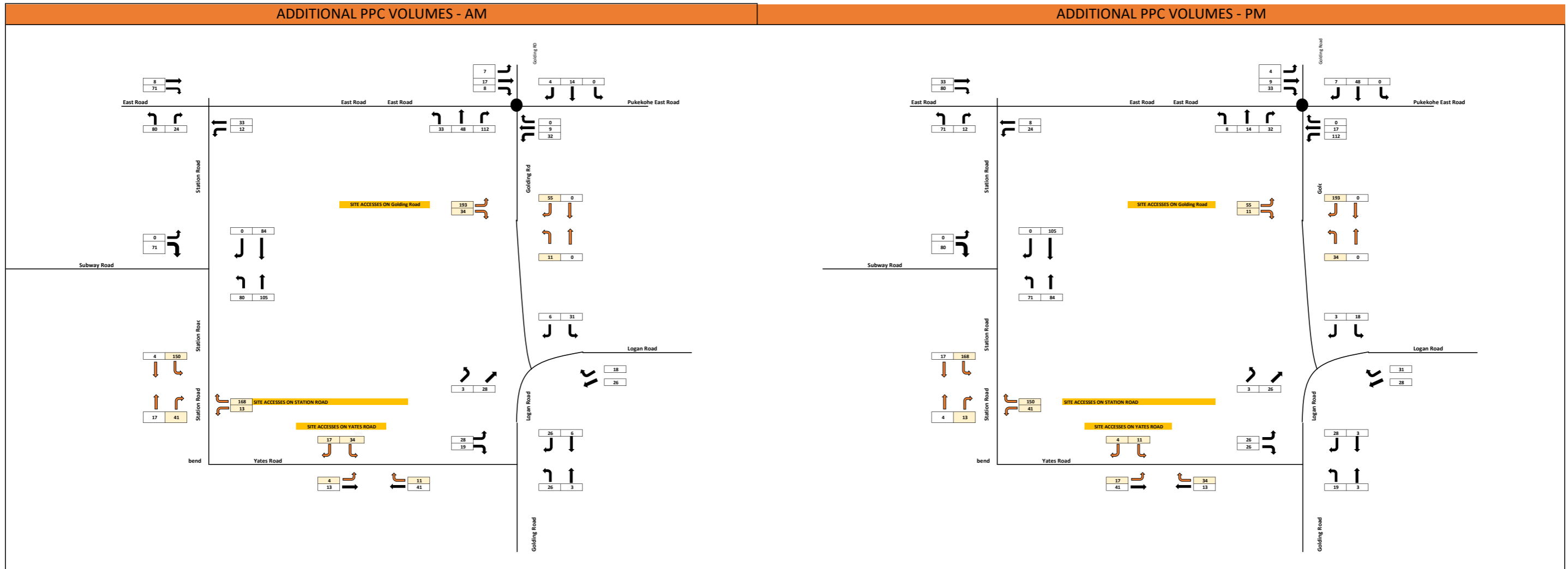
EXISTING VOLUMES - AM

EXISTING VOLUMES - PM



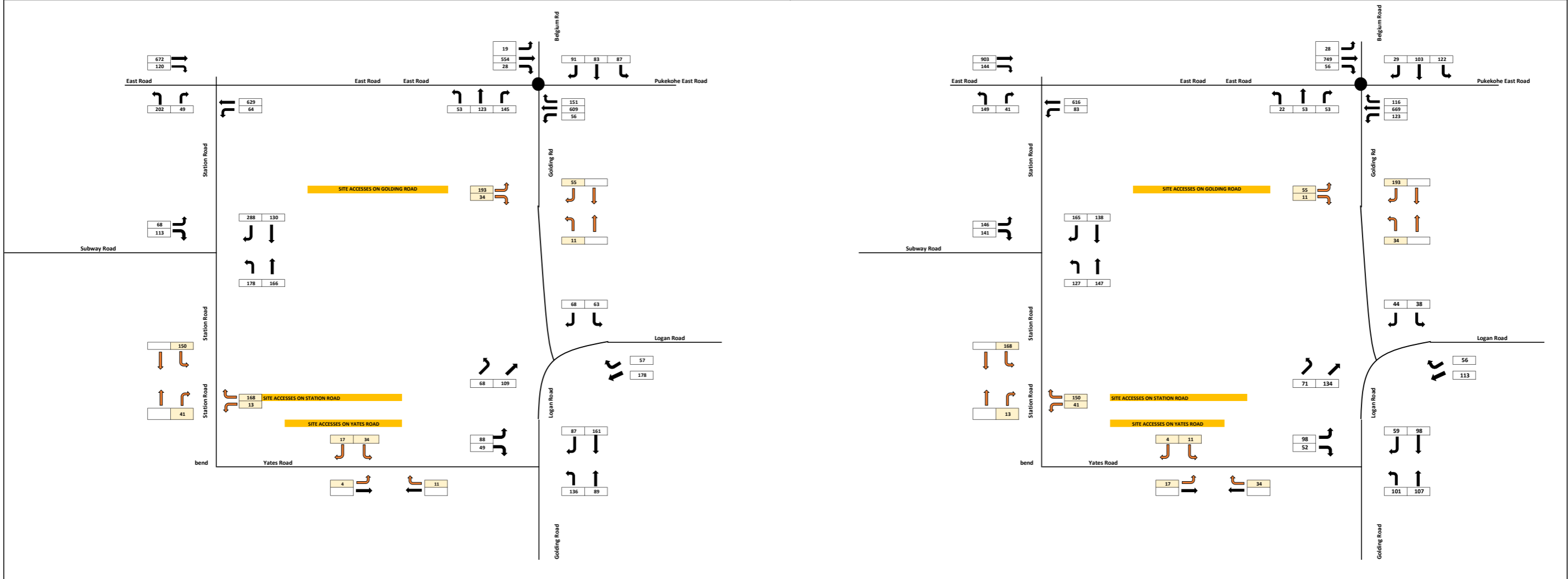
ADDITIONAL PPC VOLUMES - AM

ADDITIONAL PPC VOLUMES - PM



PROPOSED VOLUMES - AM

PROPOSED VOLUMES - PM



Appendix B

14XX.6.2 Riparian and Buffer Planting

- (1) The riparian margins of any permanent or intermittent stream must be planted at the time of subdivision or land development to a minimum width of 10m measured from the top of the stream bank ~~or, where the stream edge cannot be identified by survey, from the centre line of the stream.~~ This standard does not apply to that part of a riparian margin where a road, ~~or public walkway, or cycleway crosses~~ over the stream ~~and/or passes through or along the riparian margin.~~
- (2) The ~~riparian margins~~ buffer of any natural wetland must be planted at the time of subdivision or land development to a minimum width of 10m measured from the wetland's fullest extent, ~~and the wetted habitat enhanced.~~ This standard does not apply to that part of a ~~riparian margin~~ wetland buffer where a road or public walkway crosses over the wetland ~~and/or passes through or along the riparian margin.~~
- (3) The ~~margin~~ buffer of the Significant Ecological Area must be planted at the time of any subdivision or land development adjacent to the feature to a minimum width of 5m measured from the edge of the canopy.
- (4) The planting required by clauses (1)-(3) above must:
 - (a) use eco-sourced native vegetation ~~where available;~~
 - (b) be consistent with local biodiversity;
 - (c) be planted at a density of 10,000 plants per hectare, ~~unless a different density has been approved on the basis of plant requirements.~~
 - (d) Be undertaken in accordance with the Special Information Requirements in 14XX.8.1