Our Ref: 16241

23 April 2020

ACEQUITY
Suite 801,
1 Castlereagh Street
Sydney NSW 2001

Attention: Mr Huw Williams (Director of Property and Development)

Dear Huw,

RE: PLANNING PROPOSAL PP_2019_CUMB_002_00 AT 1 CRESCENT STREET, HOLROYD RESPONSE TO TRANSPORT FOR NEW SOUTH WALES REQUEST FOR INFORMATION

I am writing further to our recent appearance at the Sydney Central Sydney Planning panel and the concerns that RMS concerns had not been fully addressed. In particular, I would note that a letter was received from Transport for New South Wales dated 14th October 2019, in which they said:-

> Comment
>
> At a preliminary Gateway meeting with the proponent (June 2019) arranged by Department of Planning, Industry and Environment (DPIE), Roads and Maritime advised that the 2015 survey counts used in the SIDRA modelling were considered to be outdated. It was recommended that the traffic modelling be revised to utilise the mesoscopic base model prepared by GTA for the Parramatta Road Corridor Urban Transformation Strategy (PRCUTS) for the Granville area. This will enable all stakeholders to have a better understanding of the traffic impacts on the adjacent arterial road network and any required road infrastructure to accommodate the traffic generated by the proposed development, and the identification of a developer funding mechanism.
>
> It should be noted that Roads and Maritime has since provided the PRCUTS base model to the proponent as agreed with DPIE. It is advised that the mesoscopic base model should be the latest version as calibrated and validated for PRCUTS under the Granville Precinct.
>
> As stated earlier, the TIA does not provide a multimodal assessment of the combined impacts the planning proposal will have on the surrounding transport network. There is no consideration of the public transport and active transport demands and associated service and infrastructure requirements. Given that the site is not in close proximity to mass public transport, the report needs to review the underlying assumptions regarding trip generation for all modes of transport and undertake the multimodal assessment.

We had erroneously assumed that this modelling was required following exhibition which is a position I believe Acequity took following their discussion with the Department of Planning and Industry.

Consequently, TTPP has used the Aimsun model to look at the much wider road network. The modelling report which is included in full at **Attachment 1** concludes the following.

TTPP have undertaken Aimsun micro-simulation modelling for the planning proposal of 1 Crescent Street, Holroyd. The modelling was based on a base model provided by Roads and Maritime.

Three scenarios were modelled, the base model, Intersection upgrades scenario and a Project case which includes the development traffic. The intersection upgrades scenario included those upgrades being undertaken by RMS primarily at the intersection of Church Street/ Woodville Road / Parramatta Road and the upgrade of the M4 Motorway exit ramp / Church Street. The project case added those improvements at the intersection of Crescent Street and Woodville Road being undertaken by the developer and then adding the estimated development traffic.

The models covered the weekday morning and evening peak periods from 7:00am – 9:00am and 4:00pm – 6:00pm respectively.

The results of the modelling of both the Intersection upgrade scenario and the project case shows that:

- In the morning peak period, the intersection of Woodville Road / Crescent Street would operate at Level of Service B. The intersection of Parramatta Road / Church Street / Woodville Road would improve from Level of Service F to E and the intersection of Church Street and the M4 exit ramp would remain at Level of Service F but with a reduction in delay for the exit ramp.
- In the evening peak the intersection of Crescent Street / Woodville Road will operate at Level of Service A. The intersection of Parramatta Road / Church Street will improve from Level of Service F to D and the intersection of Church Street and the M4 exit ramp will improve from Level of Service F to Level of Service C.

The travel times in the morning peak indicate that:

- There will be a modest increase in travel times southbound on Church Street by 1 minute. This is caused by more traffic from the M4 Motorway exit ramp able to enter Church Street increasing the delay. The level of service analysis indicates a significant reduction in delay on the Church Street exit ramp.
- Likewise, there is a 6-minute increase in travel time eastbound on Parramatta Road which is congested due to the capacity constraint west of James Ruse Drive.
- Westbound traffic on Parramatta will improve significantly due to the additional capacity for the right turn at Church Street.

The travel times in the evening peak indicate that:

- A reduction in travel time southbound on Church Street of 1 minute.
- An increase in travel time on Parramatta Road eastbound by 1 minute.
- And decrease in travel time on Parramatta Road westbound by 25 minutes.

By simply comparing the last columns (i.e. intersection upgrades being undertaken by RMS and Project Case which adds the development traffic and Developer funded upgrades), it can be seen that the development traffic makes little difference to the Levels of Service in both AM peak/PM peak.

Table 5: Intersection level of service (morning peak hour 7:30am – 8:30am)

Approach	Average Delay	LoS	Average Delay	LoS	Average Delay	LoS
	Base		Intersection upgrades		Project Case	
Woodville Road / Crescent Street						
Woodville Road Northbound	10	A	15	B	21	B
Crescent Street	57	E	48	D	51	D
Woodville Road Southbound	6	A	7	A	6	A
Intersection	**14**	**A**	**16**	**B**	**20**	**B**
Parramatta Road/Church Street						
Woodville Road Northbound	55	D	69	E	64	E
Woodville Road Northbound Slip Lane	22	B	13	A	10	A
Church Street Southbound	88	F	76	F	97	F
Church Street Southbound Slip Lane	33	C	76	F	71	F
Parramatta Road Eastbound	134	F	91	F	86	F
Parramatta Road Eastbound Slip Lane	62	E	30	C	25	B
Intersection	**73**	**F**	**68**	**E**	**67**	**E**
Church Street / M4 Exit ramp						
Church Street Northbound	16	B	16	B	15	B
Church Street Southbound	14	B	33	C	38	C
M4 Motorway exit ramp	413	F	204	F	353	F
Intersection	**182**	**F**	**106**	**F**	**166**	**F**

Table 6: Intersection level of service (morning peak hour 4:30pm – 5:30pm)

Approach	Average Delay	LoS	Average Delay	LoS	Average Delay	LoS
	Base		Intersection upgrades		Project Case	
Woodville Road / Crescent Street						
Woodville Road Northbound	10	A	6	A	6	A
Crescent Street	57	E	44	D	46	D
Woodville Road Southbound	6	A	5	A	7	A
Intersection	**14**	**A**	**8**	**A**	**11**	**A**
Parramatta Road/Church Street						
Woodville Road Northbound	55	D	30	C	33	C
Woodville Road Northbound Slip Lane	22	B	2	A	2	A
Church Street Southbound	88	F	36	C	39	C
Church Street Southbound Slip Lane	33	C	10	A	10	A
Parramatta Road Eastbound	134	F	186	F	168	F
Parramatta Road Eastbound Slip Lane	62	E	88	F	75	F
Intersection	**73**	**F**	**57**	**E**	**55**	**D**
Church Street / M4 Exit ramp						
Church Street Northbound	16	B	21	B	20	B
Church Street Southbound	14	B	15	B	18	B
M4 Motorway exit ramp	413	F	34	C	46	D
Intersection	**182**	**F**	**25**	**B**	**31**	**C**

Some of the details about the history of the assessment, traffic generation, potential alternative uses, walking distances to railway stations etc are contained at **Attachment 2.**

In summary, I believe that at this planning proposal stage, it is clear that the road network can accommodate the estimated traffic generation of the subject site.

Furthermore the road improvement works proposed by the Client (including the additional lane on Crescent Street which could be used a s a bus jump to improve connectivity to railway stations), the road improvements proposed by RMS (which use a significant area of the proponents land), the proposed Green Travel / Travel Demand Management Measures (as detailed in the TTPP October 2019 report) which will be provided in a similar manner to Harold Park (where traffic generated at the subject site was some 30% lower than at comparable sites) together with the more localised pedestrian and cycle improvements (which are best worked out with Council during any subsequent development application) will enable the impact of the subject development to be minimised further.

We trust the above is to your satisfaction. Should you have any queries regarding the above or require further information, please do not hesitate to contact the undersigned on 8437 7800.

Yours sincerely,

Ken Hollyoak
Director

The Transport Planning Partnership
Suite 402, 22 Atchison Street
ST LEONARDS NSW 2065

Attachment 1

AIMSUN MODELLING REPORT

Memorandum

From: Stephen Read

Date: 1 April 2020

TTPP REF: 16241

RE: CRESCENT PARKLANDS 1 CRESCENT STREET, HOLROYD
AIMSUN MICROSIMULATION MODELLING

TTPP Consultants was commissioned by Tiberius (Holroyd) Pty Ltd to provide traffic advice in relation to the 1 Crescent Street, Holroyd development. This technical note summarises the micro-simulation modelling undertaken to test the impacts of the planning proposal.

Background

Tiberius (Holroyd) Pty Ltd has submitted a Planning Proposal for a mixed-use development at 1 Crescent Street, Holroyd. It is intended that the proposal will seek to rezone the site to deliver a high-density mixed-use development, comprising some 1,109 – 1,255 residential apartments that will be complimented with large areas of passive and active open space, and a retail and commercial area to service the local community.

The site location is shown in Figure 1 while the site boundary is shown in Figure 2.

The Transport Planning Partnership
Suite 402, 22 Atchison Street
ST LEONARDS NSW 2065

Figure 1: Site location

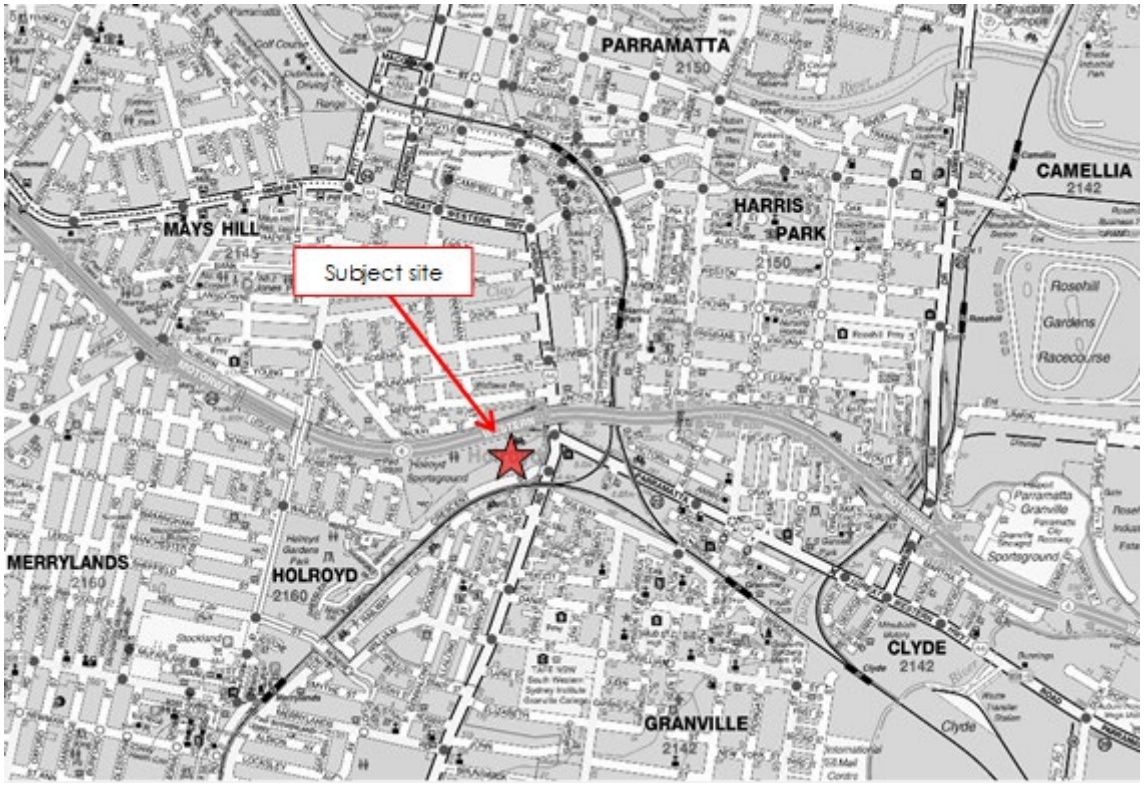

Figure 2: Site boundary

Assumptions

The modelling has relied on an Aimsun model of the Aulburn area that was developed by GTA consultants. The model was provided by the Roads and Maritime Services (Roads and Maritime) and is assumed to be calibrated and validated to an acceptable standard.

Modelling

The model extents are shown in Figure 3. The model covers Parramatta Road from Church Street to west of Homebush Bay Drive. Route choice in the model has been limited by the M4 being cut at locations between interchanges. Models were run as 'one shots' based on the mesoscopic paths. For each scenario five (5) random seeds were run and the median Vehicle Hours Travel (VHT) was used to select the representative run.

Figure 3: Model extents

Scenarios

Three scenarios have been modelled for the morning and evening peak traffic periods of 4:00pm – 6:00pm in the evening and 7:00am – 9:00am in the morning. The following section describes the scenarios. A summary of what is included in the scenarios is shown in Table 1.

Table 1: Model scenario summary

To/From Directions	Upgrade of Parramatta Road / Church Street and M4 exit Ramp	Upgrade of Crescent Street and Woodville Road	Development traffic
Base scenario	×	×	×
Intersection upgrade scenario	✓	×	×
Project case scenario	✓	✓	✓

Base

The base scenario is the base model as provided; no changes were made to the model. We were not provided with any documentation of the base model.

Intersection upgrades

The Intersections upgrade scenario assumes:

- Upgrade to Crescent Street intersection with Woodville Road.
- Upgrade of the M4 exit ramp to Church Street
- Upgrade of the intersection of Church Street/ Woodville Road / Parramatta Road.

In order to improve the existing traffic conditions, it is proposed to upgrade the following key intersections:

- Parramatta Road and Woodville Road (signalised)
- Woodville Road and the Crescent Street intersection (signalised).

Figure 4 shows an indicative updated design layout of the Parramatta Road / Woodville Road intersection.

Figure 4: Indicative layout of the Upgraded Parramatta Road and Woodville Road Intersection

Source: TTPP

The key features of the upgrade at the Parramatta Road and the Woodville Road intersection include:

- Provision of an additional westbound right turn lane and an additional westbound through lane in Parramatta Road
- Provision of a short northbound right turn lane in the Woodville Road approach to the intersection
- Conversion of the northbound shared through and right turn lane into a through lane in the Woodville Road approach to the intersection.

Figure 5 shows an indicative updated design layout of the Woodville Road/ Crescent Street intersection.

Figure 5: Indicative layout of the Upgraded Woodville Road and Crescent Street Intersection

Source: GTA Consultants

Key features of the upgrade at the Woodville Road and The Crescent intersection include:

- Provision of an additional eastbound left turn lane in The Crescent
- Provision of an additional southbound through lane in the Woodville Road approach and the southbound downstream short lane south of The Crescent
- Provision of an extension to the existing dual left turn bay from 30m to 140m in length on The Crescent

Provision of a right turn bay on Crescent Street approaching the site from Woodville Road.

Development traffic generation

Traffic generation estimates for the proposed mixed-use development have been sourced from the *Guide to Traffic Generating Developments* (RMS 2002) & its supplementary technical direction (TDT 2013/04a). The following peak hour traffic generation rates have been used:

- High density residential flat buildings – 0.29 trips per unit for AM/PM (N.B. Whilst TDT 13/04a has suggested that traffic generation could be as low as 0.16 peak hours trips when close to a railway line, the trip generation at this site is likely to be slightly higher)

- Retail (supermarket) – 12.3 trips per 100m^2 GFA
- Office – 1.6 trips per 100m^2 GFA

In addition to above RMS traffic generation rates, the following assumptions were adopted:

- 20% reduction factor is applied to the above trip rates for retail and office uses to account for trips, which will be contained within the site boundary.
- 28% of retail generated trips will be "pass-by" trips (i.e. the new development is an intermediate stop on a trip that is made from an origin to a destination). This assumption is adopted from *Guide to Traffic Management Part 12: Traffic Impacts of Development* Commentary 8 – Linked Trips.

  AM traffic generation will be 50% of the PM trips for retail and office uses.

The survey of the site access indicated that the existing industrial site currently generates 35 and 34 vehicles per hour during the AM and PM peak hours, respectively.

Table 2 presents the total traffic generation of the proposed development then subtracts the traffic generated by the existing industrial site.

Table 2: Resultant traffic generation by the proposal

Development Generated Traffic	Peak Hour Traffic (vehicles per hour)	
	AM Peak Hour	PM Peak Hour
Residential	363	363
Retail	275	549
Office	50	74
Total	+ 688	+ 986
Current Industrial Site Traffic	**- 35**	**- 34**
Resultant Increase	**+ 653**	**+ 952**

It is expected that the net change in traffic volumes would be in the order of 653 in the AM peak hour and 952 vehicles in the PM peak hour. These figures, which are lower than the 2015 GTA figures, have been adopted for the post development traffic modelling purposes.

The traffic directional distribution adopted in this report, which is based on Journey to Work data, is consistent with the earlier transport impact assessment. Similarly, the traffic growth projections used are the same as those in the 2015 GTA report.

The directional distribution for residential traffic was assumed to be 20% inbound and 80% outbound during the AM peak period. These inbound/outbound percentages are reversed in the PM peak period.

For traffic arising from the commercial / retail functions, 80% of the traffic was assumed to be inbound while the remaining 20% would be outbound during the AM peak period. The inbound/outbound percentages are assumed to be 50% each in the PM peak period.

The development traffic was distributed on the local road network based on 2011 journey to work data of the Holroyd area (specifically travel zones 1223 and 1274).

The distribution factors are presented in Table 3.

Table 3: Development traffic distribution percentages

To/From Directions	Residential	Other Uses
Church St-North	5%	8%
M4-West	10%	25%
Parramatta Rd/M4-East	32%	15%
Walpole St-North	20%	14%
Walpole St-South	33%	20%
Woodville Rd-South	-	18%
Total	100%	100%

Using the above traffic distribution percentages and the resultant increase in traffic generated by the proposal presented in Table 2, the development generated traffic is assigned to the key external road network.

Modelling Results

Intersection level of service

The operation of the key intersections has been assessed using the Aimsun model. The commonly used measure of intersection performance, as defined by the RTA (now Transport for NSW), is vehicle delay. Aimsun determines the average delay that vehicles encounter and provides a measure of the level of service based on the intersection average delay.

It should be noted that delay in a micro-simulation model is based on the delay experienced by vehicles on approach to the subject intersection. Results can vary considerably when compared to stand alone Sidra models as the delays from intersections downstream and influence the results of a subject intersection. Likewise, upstream capacity constraints can limit the amount of traffic flowing downstream and produce lower delay at the subject intersection.

Table 4 shows the criteria that has been adopted in assessing the level of service based on the RTA level of service criteria.

Table 4: Level of Service Criteria

Level of Service (LOS)	Average Delay per vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Sign
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Near capacity	Near capacity, accident study required
E	57 to 70	At capacity, at signals incidents will cause excessive delays	At capacity, requires other control mode
F	Greater than 70	Extra capacity required	Extreme delay, major treatment required

Intersection analysis was conducted for the key intersections based on the existing peak hour flows and the estimated future peak hour flows, with and without the proposed development traffic.

The results of the intersection performance for the morning peak are shown in Table 5.

Table 5: Intersection level of service (morning peak hour 7:30am – 8:30am)

Approach	Average Delay	LoS	Average Delay	LoS	Average Delay	LoS
	Base		Intersection upgrades		Project Case	
Woodville Road / Crescent Street						
Woodville Road Northbound	10	A	15	B	21	B
Crescent Street	57	E	48	D	51	D
Woodville Road Southbound	6	A	7	A	6	A
Intersection	**14**	**A**	**16**	**B**	**20**	**B**
Parramatta Road/Church Street						
Woodville Road Northbound	55	D	69	E	64	E
Woodville Road Northbound Slip Lane	22	B	13	A	10	A
Church Street Southbound	88	F	76	F	97	F
Church Street Southbound Slip Lane	33	C	76	F	71	F
Parramatta Road Eastbound	134	F	91	F	86	F
Parramatta Road Eastbound Slip Lane	62	E	30	C	25	B
Intersection	**73**	**F**	**68**	**E**	**67**	**E**
Church Street / M4 Exit ramp						
Church Street Northbound	16	B	16	B	15	B
Church Street Southbound	14	B	33	C	38	C
M4 Motorway exit ramp	413	F	204	F	353	F
Intersection	**182**	**F**	**106**	**F**	**166**	**F**

In the morning peak period, the intersection of Woodville Road / Crescent Street would operate at Level of Service B with the upgrade and development traffic. The intersection of Parramatta Road / Church Street / Woodville Road would improve from Level of Service F to E and the intersection of Church Street and the M4 exit ramp would remain at Level of Service F but with a reduction in delay for the exit ramp compared to the base case.

The intersection performance for the evening peak is shown in Table 6.

Table 6: Intersection level of service (morning peak hour 4:30pm – 5:30pm)

Approach	Average Delay	LoS	Average Delay	LoS	Average Delay	LoS
	Base		Intersection upgrades		Project Case	
Woodville Road / Crescent Street						
Woodville Road Northbound	10	A	6	A	6	A
Crescent Street	57	E	44	D	46	D
Woodville Road Southbound	6	A	5	A	7	A
Intersection	**14**	**A**	**8**	**A**	**11**	**A**
Parramatta Road/Church Street						
Woodville Road Northbound	55	D	30	C	33	C
Woodville Road Northbound Slip Lane	22	B	2	A	2	A
Church Street Southbound	88	F	36	C	39	C
Church Street Southbound Slip Lane	33	C	10	A	10	A
Parramatta Road Eastbound	134	F	186	F	168	F
Parramatta Road Eastbound Slip Lane	62	E	88	F	75	F
Intersection	**73**	**F**	**57**	**E**	**55**	**D**
Church Street / M4 Exit ramp						
Church Street Northbound	16	B	21	B	20	B
Church Street Southbound	14	B	15	B	18	B
M4 Motorway exit ramp	413	F	34	C	46	D
Intersection	**182**	**F**	**25**	**B**	**31**	**C**

In the evening peak the intersection of Crescent Street / Woodville Road will operate at Level of Service A. The intersection of Parramatta Road / Church Street will improve from Level of Service F to D and the intersection of Church Street and the M4 exit ramp will improve from Level of Service F to Level of Service C.

The impact of the development traffic on the network is minimal when compared to Intersection upgrades scenario.

Travel time

Model travel times were recorded in each direction on two routes:

- Church Street / Woodville Road – Crescent Street to Landsdowne Street (Northbound and Southbound)
- Parramatta Road – Church Street to James Ruse Drive (Eastbound and Westbound).

The result for the morning peak models is shown in Table 7.

Table 7: Travel times morning peak

Route	Base	Intersection Upgrades	Project Case
Church Street Northbound	8:12	8:21	8:07
Church Street Southbound	14:06	12:51	15:16
Parramatta Road Eastbound	44:01	50:51	50:29
Parramatta Road Westbound	34:31	25:09	24:40

The travel times in the morning peak indicate that:

- For the project case there will be a modest increase in travel times southbound on Church Street of 1 minute. This is caused by more traffic from the M4 Motorway exit ramp able to enter Church Street increasing the delay as it occurs in the intersection upgrade case. The level of service analysis indicates a significant reduction in delay on the Church Street exit ramp.
- Likewise, there is a 6-minute increase in travel time eastbound on Parramatta Road which is congested due to the capacity constraint west of James Ruse Drive.
- Westbound traffic on Parramatta will improve significantly due to the additional capacity for the right turn at Church Street.

The travel time results for the evening peak are shown in Table 8.

Table 8: Travel time evening peak

Route	Base	Intersection Upgrades	Project Case
Church Street Northbound	6:40	6:35	6:27
Church Street Southbound	10:59	9:20	9:51
Parramatta Road Eastbound	11:02	11:46	12:15
Parramatta Road Westbound	1:10:28	49:17	44:07

The travel times in the evening peak indicate that in both the Intersection upgrades scenario and the project case:

- A reduction in travel time southbound on Church Street of 1 minute.
- An increase in travel time on Parramatta Road eastbound by 1 minute.
- And decrease in travel time on Parramatta Road westbound by 25 minutes.

Conclusion

TTPP have undertaken Aimsun micro-simulation modelling for the planning proposal of 1 Crescent Street, Holroyd. The modelling was based on a base model provided by Roads and Maritime.

Three scenarios were modelled, the base model, Intersection upgrades scenario and a Project case which includes the development traffic. The intersection upgrades scenario included those upgrades being undertaken by RMS primarily at the intersection of Church Street/ Woodville Road / Parramatta Road and the upgrade of the M4 Motorway exit ramp / Church Street. The project case added those improvements at the intersection of Crescent Street and Woodville Road being undertaken by the developer and then adding the estimated development traffic.

The models covered the weekday morning and evening peak periods from 7:00am – 9:00am and 4:00pm – 6:00pm respectively.

The results of the modelling of both the Intersection upgrade scenario and the project case shows that:

- In the morning peak period, the intersection of Woodville Road / Crescent Street would operate at Level of Service B. The intersection of Parramatta Road / Church Street / Woodville Road would improve from Level of Service F to E and the intersection of Church Street and the M4 exit ramp would remain at Level of Service F but with a reduction in delay for the exit ramp.
- In the evening peak the intersection of Crescent Street / Woodville Road will operate at Level of Service A. The intersection of Parramatta Road / Church Street will improve from Level of Service F to D and the intersection of Church Street and the M4 exit ramp will improve from Level of Service F to Level of Service C.

The travel times in the morning peak indicate that:

- There will be a modest increase in travel times southbound on Church Street by 1 minute. This is caused by more traffic from the M4 Motorway exit ramp able to enter Church Street increasing the delay. The level of service analysis indicates a significant reduction in delay on the Church Street exit ramp.
- Likewise, there is a 6-minute increase in travel time eastbound on Parramatta Road which is congested due to the capacity constraint west of James Ruse Drive.
- Westbound traffic on Parramatta will improve significantly due to the additional capacity for the right turn at Church Street.

The travel times in the evening peak indicate that:

- A reduction in travel time southbound on Church Street of 1 minute.
- An increase in travel time on Parramatta Road eastbound by 1 minute.
- And decrease in travel time on Parramatta Road westbound by 25 minutes.

Attachment 2

ADDITIONAL TRAFFIC MATTERS

1. Following submission of the first traffic and transport report in 2015, RMS made a formal response which stated the following.

> Roads and Maritime advises that there are no planned road improvements on Woodville Road in the current forward works program. As a result of the above, any road works and transport improvements to accommodate the proposed development shall be at full cost to the developer. It should be noted that current NSW Government policy is that land use development should not result in any additional cost to government in the provision of supporting infrastructure.

At that time, the proposed development was estimated to generate up to **1084 peak hour traffic movements.** No issues were raised about the traffic generation estimates used in the analysis.

Table 6.1: Resultant Traffic Generation by the Proposal

Development Generated Traffic	Peak Hour Traffic (vehicles per hour)	
	AM Peak Hour	PM Peak Hour
Residential	544	544
Retail	217	434
Showroom	7	14
Childcare centre	49	43
Gym	54	54
Office/Medical	15	29
Total	+ 886	+ 1118
Current Industrial Site Traffic	**- 35**	**- 34**
Resultant Increase	**+ 851**	**+ 1084**

N.B. Extracted from GTA Traffic Report 2015

Since that time, many more traffic reports have been submitted to the Department of Planning, Council, Urbangrowth and these include:-

- The original traffic report June 2015
- The addendum traffic report 2016
- A letter report responding to PRCUTS in 2016
- A number of letters to council clarifying points / amending modelling etc
- The April 2019 report which basically collected all of the previous information
- The October 2019 report which removed the reference to the proposed pedestrian overbridge.

Clearly, RMS now has a scheme to address existing traffic issues at the Woodville Road / Parramatta Road intersection and land acquisition to facilitate this development has commenced.

To summarise, TTPPs modelling concluded that whilst the base case was overcapacity, with the additional development traffic, the RMS upgrade and the upgrades proposed by the developer, both of the intersections modelled would operate then below capacity with the development traffic added.

Scenario	Network	Intersection	AM Peak Hour		PM Peak Hour	
			Avg Delay (sec/veh)	Level of Service	Avg Delay (sec/veh)	Level of Service
1. Base Case	Existing	Parramatta Road/Woodville Road	53	D	90	**F**
		Woodville Road/The Crescent	101	**F**	25	B
2. Existing year (with development)	Upgrade	Parramatta Road/Woodville Road	47	D	32	C
		Woodville Road/The Crescent	12	A	19	B
3. Future year (without development)	Upgrade	Parramatta Road/Woodville Road	36	C	28	B
		Woodville Road/The Crescent	9	A	15	B
4. Future year (with development)	Upgrade	Parramatta Road/Woodville Road	55	D	55	D
		Woodville Road/The Crescent	30	C	37	C

N.B. Extracted from TTPP Traffic Report dated October 2019.

2. It is also noteworthy that the site is a large site and if it was not developed as proposed by Acequity, there would still be a large traffic generation from any redeveloped site. For example, in 2016, a letter which was submitted to Urbangrowth (**See Attachment 3**), who were looking at the site in relation to PRCUTS, suggested that its highest and best use would be as follows: -

- Bulky goods - 39,000sqm GFA
- Mixed use:
    - o 5200sqm GFA retail
    - o 29500sqm GFA residential (approx. 343 apartments)

On this basis, TTPP estimated that such a development would generate **1695 peak hour trips.**

This is clearly considerably more traffic than would be generated by the scheme currently promoted by Acequity.

We are writing to you regarding your recent request that the Transport Planning Partnership (TTPP) undertake a preliminary assessment of the traffic likely to be generated by the UrbanGrowth recommendations for the above site in the context of the Parramatta Road Urban Transformation Strategy 2016 (PRUTS).

Architectus has provided TTPP with the following analysis of the likely development outcome proposed for the UrbanGrowth site and they have assumed the site is developed for the highest and best use.

- Bulky goods - 39,000sqm GFA
- Mixed use:
  - 5200sqm GFA retail
  - 29500sqm GFA residential (approx. 343 apartments)

(N.B. Assumptions used are that the mixed use is divided into 0.3:1 retail and 1.7:1 residential and that there would be 86sqm GFA / apartment (this was the number used for the planning proposal and equates to approx. 73.25sqm NSA per apartment)

Based upon the above yields I have calculated the "UrbanGrowth" proposal could have generated up to 1958 trips in the PM peak hour

		Weekday PM peak Traffic Generation Rate	Weekday PM Peak hour traffic generation
Bulky Goods	39000	2.7 2.7 Traffic movements per 100m2 Allow for 25% multivisiting	790
Retail	5200	15.5 Traffic movements 15.5 per 10m2	806
Residential	343	0.29 0.29 trips per peak	99
		TOTAL	**1695**

3. The 2019 TTPP traffic report assumed that the development would comprise a lower yield than originally envisaged, this being

   - Residential dwellings 1,109 – 1,255 units
   - Commercial 15,505 m^2 GFA (for traffic modelling purposes, the commercial has been broken down into 7,752.5 m^2 retail (supermarket/specialty shop and 7,752.5 m^2 of office)

Development Generated Traffic	Peak Hour Traffic (vehicles per hour)	
	AM Peak Hour	PM Peak Hour
Residential	363	363
Retail	275	549
Office	50	74
Total	+ 688	+ 986
Current Industrial Site Traffic	**- 35**	**- 34**
Resultant Increase	**+ 653**	**+ 952**

With this yield, the development would generate up to **952 peak hour trips.**

4. Finally, with regard to the proximity of the rail stations, I do note that in a report undertaken by TTPP for RMS in 2016, it was noted that above 50% of rail passengers walked above 1km to reach a train so the walking distance is not the only key to encourage walking to train stations, it is the quality of the route, This is why the applicant has committed to work with Council and RMS to improve the walking links between the site and the railway stations. However, this will be better discussed at the planning application stage.

Attachment 3

CORRESPONDENCE WITH URBANGROWTH

Our Ref: 16241

5 December 2016

Tiberius (Holroyd) Pty Ltd
Suite 8.01, Level,
1 Castlereagh Street,
SYDNEY NSW 2000

Attention: Mr Kurt Robinson

Dear Kurt,

RE: 1 CRESCENT STREET, HOLROYD – PLANNING PROPOSAL

We are writing to you regarding your recent request that the Transport Planning Partnership (TTPP) undertake a preliminary assessment of the traffic likely to be generated by the UrbanGrowth recommendations for the above site in the context of the Parramatta Road Urban Transformation Strategy 2016 (PRUTS).

Architectus has provided TTPP with the following analysis of the likely development outcome proposed for the UrbanGrowth site and they have assumed the site is developed for the highest and best use.

- Bulky goods - 39,000sqm GFA
- Mixed use:
  - 5200sqm GFA retail
  - 29500sqm GFA residential (approx. 343 apartments)

(N.B. Assumptions used are that the mixed use is divided into 0.3:1 retail and 1.7:1 residential and that there would be 86sqm GFA / apartment (this was the number used for the planning proposal and equates to approx. 73.25sqm NSA per apartment)

Based upon the above yields I have calculated the "UrbanGrowth" proposal could have generated up to 1958 trips in the PM peak hour

		Weekday PM peak Traffic Generation Rate	Weekday PM Peak hour traffic generation
Bulky Goods	39000	2.7 2.7 Traffic movements per 100m2 Allow for 25% multivisiting	790
Retail	5200	15.5 Traffic movements 15.5 per 10m2	806
Residential	343	0.29 0.29 trips per peak	99
		TOTAL	**1695**

My assessment has been based upon the following

Bulky Goods (taken from RMS Guidelines to Traffic Generating Developments – Updated Traffic Surveys technical direction 2013	**Bulky goods retail stores** Six surveys were conducted in 2009. Two of the surveys were conducted within the Sydney urban area (one electrical goods and one furniture) and four within regional New South Wales (two electrical goods and two furniture). Summary vehicle trip rates are as follows: Weekday daily vehicle trips = 17 (including 1 heavy) vehicles per 100 m^2 of gross floor area) Weekday peak hour vehicle trips = 2.7 vehicles per 100 m^2 of gross floor area. (note that the morning site peak hour during weekdays does not generally coincide with the network peak hour.) Weekend day daily vehicle trips = 19 vehicles per 100 m^2 of gross floor area (minimal heavy vehicles) Weekend day peak hour vehicle trips = 3.9 vehicles per 100 m^2 of gross floor area. It is also noted that bulky goods sites generally have an area of 2000m2 to 6000m2 so a site with a size of 39,000m2 would need to be comprised of up to 10 individual stores. Consequently, there would be likely to be an element of multi-visiting of around 25%.
Mixed Use (taken from GTA traffic report for Crescent Parklands)	Traffic generation estimates for the proposed mixed use development have been sourced from the *Guide to Traffic Generating Developments* (RMS 2002) & its supplementary technical direction (TDT 2013/04a). The following peak hour traffic generation rates have been used: ○ High density residential flat buildings – 0.29 trips per unit for AM/PM (N.B. Whilst TDT 13/04a has suggested that traffic generation could be as low as 0.16 peak hours trips when close to a railway line, the trip generation at this site is likely to be higher) ○ Retail (supermarket) – 155 trips per 1,000m^2 for PM using the multiple regression equation for different trade categories

The traffic report for the Tiberius Planning Proposal estimated the traffic generation for the planning proposal as outlined below.

Development Generated Traffic	Peak Hour Traffic (vehicles per hour)	
	AM Peak Hour	PM Peak Hour
Residential	544	544
Retail	217	434
Showroom	7	14
Childcare centre	49	43
Gym	54	54
Office/Medical	15	29
Total	+ 886	+ 1118
Current Industrial Site Traffic	**- 35**	**- 34**
Resultant Increase	**+ 851**	**+ 1084**

It can therefore be concluded that based upon the preliminary analysis of the PRUTS recommendations. if developed to its highest and best use, the site would result in traffic impacts some 50% greater than the Planning Proposal. (1695 for the UrbanGrowth proposal as opposed to 1118 for the Tiberius Planning proposal).

There is no certainty that RMS or Transport for NSW will support this level of additional traffic impact.

It has been demonstrated that the Planning Proposal can provide a traffic outcome (predicated upon the balance of employment and residential development) with manageable traffic impacts supported by well-considered transport solutions.

I trust the above is clear but should you require any else, do not hesitate to call.

Yours sincerely,

Ken Hollyoak
Executive Director