29 March 2019

Chair of Sydney Eastern City Planning Panel
Regional Panels Secretariat
320 Pitt Street
SYDNEY NSW 2000

Via email: enquiry@planningpanels.nsw.gov.au

2017SCL027 – INNER WEST COUNCIL – DA201700185
728 PRINCES HIGHWAY, TEMPE
APPLICANT SUBMISSION IN RESPONSE TO COUNCIL OFFICERS & TRAFFIC REPORTS

Dear Mr Scully,

I refer to the above application and coming before the Panel for determination on 4 April, 2019.

On behalf of the applicant I confirm that we have read the GTA Peer Review, the GTA addendum letter, and the Council's Supplementary Report. We note that both peer review report and Council officers report both agree that the proposed access strategy for the Bunnings' development is *"…the only feasible solution*".

To further assist the Panel in its deliberations, attached to this letter is a response to the GTA traffic analysis prepared by *Transport Traffic Planning Associates*. Bunnings contends that both the GTA and Council officers report, indicate expected impacts upon the road network which are not realistic in light of all relevant factors; thus warranting a response from the applicant "in reply".

We would also like to record and reiterate the substantive merit of this development as follows:

- Consistent with the land use and type of development expected in the B6 zone, being an employment generating development
- A development which is compliant with relevant LEP and DCP requirements, including development standards such as FSR, height, parking
- A development which restores and conserves a significant historical element of the Princes Highway streetscape
- A development which will manage contamination & archaeological matters appropriately
- A development that provides for an appropriate traffic outcome at a site, whose most recent historical usage as a warehouse and distribution centre (and decades of past use as industrial and warehousing purposes) has the potential for substantial heavy vehicle use and potential for ongoing use, were the Bunnings proposal was not to proceed

Bunnings Group Limited
A.B.N. 26 008 672 179
A member of the Wesfarmers Limited
Group of Companies

11 Shirley Street
Rosehill, NSW 2142
Locked Bag 30
Granville, NSW 2142

Telephone: + (61) 2 9846 7100
Facsimile: + (61) 02 9847 7510
Web: www.bunnings.com.au

- The proposed improvement to the capacity of the Smith Street & Princes Highway intersection (by way of the proposed slip lane and additional westbound lanes) provide public benefit to current industrial and residential occupants and users of Smith Street
- Makes economic use of a large and underutilized site in a recognised “bulky goods precinct”
- Carefully sited building massing which affords a significant setback (over 20m) for the upper floor level in relation to Smith Street

We have reviewed the draft conditions proposed if the Panel was minded to grant consent to the application. We recognise that a “deferred commencement” condition is now proposed by Council as follows:

> *The applicant is fund a full comprehensive Local Area Traffic Management study to be undertaken by Council to determine the potential impact on specific local residential streets including Smith Street, Union Street, Foreman Street and South Street. Appropriate mitigating LATM measures/works must be detailed and measures proposed to combat any adverse effects identified.*

The applicant agrees that this condition provides an opportunity to determine a suite of measures to discourage rat running through residential streets, and Council management of the process is appropriate. We also acknowledge that a post occupancy review requirement is also outlined in condition 112 which provides an opportunity to review actual observed impacts and measure effectiveness of approved LATM measures.

Given the outcomes of this peer review process, including confirmation that the Bunnings access strategy is the only feasible option; the additional information in response provided by the applicants’ traffic consultant; the RMS having granted its concurrence to the development; the “Deferred Commencement” condition now proposed by Council; and the merits of the development (summarised above); we respectfully request the Panel to resolve to approve the Bunnings application subject to conditions included in the officer’s report.

Myself and our key traffic and parking consultant will be present at the Panel meeting scheduled 4th April and will be available to answer questions.

Yours faithfully,

Philip Drew
Development Approvals Manager
Bunnings Group Ltd

Bunnings Tempe

Factors To Consider

- The Westconnex-M5 Tunnel, which is now physically completed, runs directly beneath the highway at Tempe in connecting with the M5 and the proposed M6 (See Appendix A details). The Traffic Study for Westconnex predicts that as a result of the tunnel the existing traffic flows on the subject section of the Princes Highway will reduce by some 50%. However, there is no mention of this in the GTA assessment.

  Given the requirements to satisfy Consent Conditions (particularly Deferred Commencement Condition 6) and the time needed to demolish, excavate and construct the new building (estimated 18 months), it is apparent that the Bunnings would not open before the time that the Westconnex tunnel becomes operational (i.e. early 2020).

- RMS is the authority responsible for access intersections on the Princess Highway and does not consider these matters lightly. RMS specified the phase split parameters and requested and were provided with the electronic SIDRA modelling files which TTPA prepared. The RMS traffic modelling experts scrutinized the models and proposed access arrangement and accepted the TTPA findings without any exception or qualification as indicated in their concurrence letter of December 2017 (See Appendix B details)

- There is an existing valid Consent for a Bulky Goods development on the site approved by the Panel with RMS concurrence (see Appendix C details). Unlike the Bunnings proposal this approved scheme relies entirely on Smith Street for all vehicle access and the development would potentially generate more delivery and service vehicle movements than the Bunnings due to the multiple tenancies in the proposed 20,000m^2 of floorspace.

  This site represents a viable (and no doubt 'in demand') bulky goods development due its juxtaposition with IKEA and Decathlon, the frontage to the Princess Highway with its traffic signal controlled access and the existing valid Consent.

GTA Report

- **Access Strategy**
  The GTA assessment considered all of the potential vehicle access options and concluded that the proposed access arrangements presented the only feasible solution.

- **Traffic Surveys**
  The GTA assessment is based on traffic surveys undertaken at the intersections on the Highway in early December 2018 however, this is a period of heightened traffic activity compared to the "norm". An assessment was undertaken by TTPA to establish the magnitude of the deviation from the norm (See Appendix D) and this revealed elevated traffic levels of +8% to 20% above the annual average during early December.

  The TTPA assessment was provided to Council in December 2018 however no consideration is given to this in the GTA report.

- **Site Activity**
  The report suggests that the current (at the time of the traffic surveys) level of traffic activity on the site did not equate with what was adopted in the TTPA Traffic Report. In fact, in December 2018 portion of the site was leased to the taxi depot business operated on the opposite side of the highway. The Nearmap image (Appendix E) shows the extent of taxi activity on the site and along Smith Street involving drivers arriving and departing via Smith Street. There were also vehicle movements associated with the various other existing uses on the site.

- **On-Street Parking Loss**
  The on-street parking loss assessment undertaken in the report contains a diagram (see Appendix F) which is a misrepresentation of loss. The red line on the southern side of Smith Street is in fact an existing NO STOPPING restriction and therefore there is no loss. The parking on the northern side of Smith Street commences to the east of the existing site access driveway.

  The GTA assessment did not have regard for the comprehensive previous TTPA assessment provided to Council which established that the existing kerbside parking was heavily utilised by workers in the area but relatively little used at night or on weekends and there was relatively little if any residential use of the parking on the northern side.

- **Traffic Distribution**
  GTA concurs with the TTPA directional distribution of Bunnings traffic but suggests that the weekday PM IN/OUT split be changed to 50/50. Unlike GTA, TTPA have undertaken many traffic surveys at existing Bunnings sites and have a close understanding of Bunnings traffic characteristics and accordingly we have established a 40/60 split characteristic as there are more customers departing in the weekday afternoon peak unlike the 50/50 split on weekends.

- **Traffic Queuing**
  The TTPA SIDRA modelling for the "existing" circumstance, which was accepted by RMS, shows queues of up to 258m on the highway during the weekday PM peak and 158m in the weekend midday peak (See Appendix G details)

  It is not apparent why the GTA modelling indicated much shorter queues in the highway, however this could be a result of not applying the phase split parameters specified by RMS (i.e. it is noted that the highway approaches show Level of Service A while Smith Street has LOS E and this is not the experience on site). However, the overriding consideration is that the traffic volumes on the highway will be substantially reduced when the constructed Westconnex tunnel is operational.

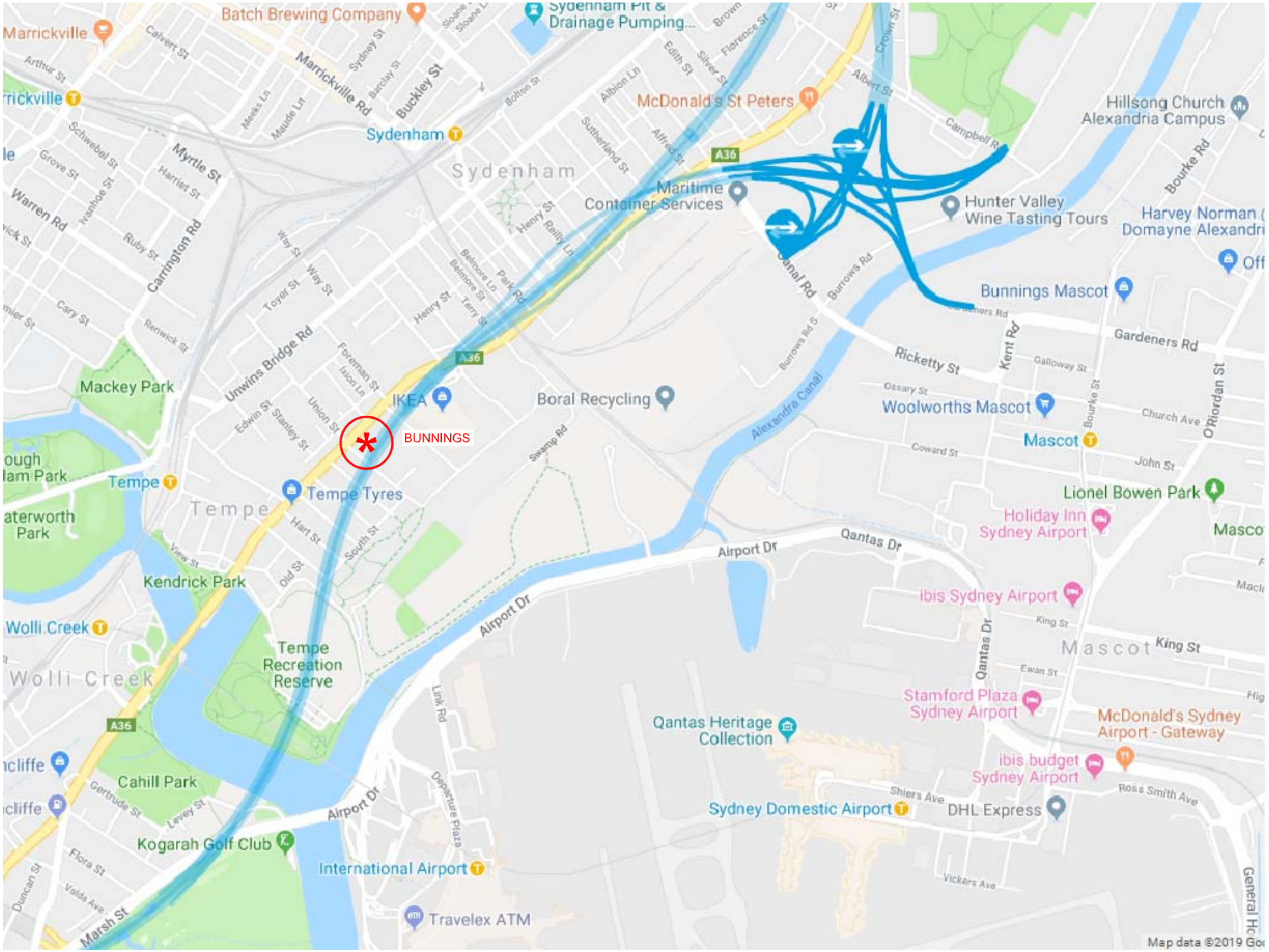
- **Traffic Signal Phasing**
  The traffic signal phasing adopted for the traffic modelled "existing" circumstance reflects the current intersection circumstances and the parameters specified by RMS ie phase splits and phasing (See Appendix H details).

  The traffic signal phasing for the modified intersection is shown on the design plan prepared by TTPA reproduced in Appendix I which:

    - was utilised for the SIDRA modelling
    - is prepared to RMS standards and specifications

APPENDIX A

WESTCONNEX TUNNEL DETAILS


BUNNINGS
Batch Brewing Company
Marrickville
Sydenham
Sydenham Pit & Drainage Pumping...
McDonald's St Peters
Hillsong Church Alexandria Campus
Maritime Container Services
Hunter Valley Wine Tasting Tours
Harvey Norman Domayne Alexandri
Bunnings Mascot
Gardeners Rd
Ricketty St
Woolworths Mascot
Mascot
Lionel Bowen Park
Holiday Inn Sydney Airport
Boral Recycling
IKEA
Mackey Park
Tempe
Tempe Tyres
Kendrick Park
Tempe Recreation Reserve
Wolli Creek
Cahill Park
Kogarah Golf Club
International Airport
Travelex ATM
Qantas Heritage Collection
Sydney Domestic Airport
DHL Express
ibis Sydney Airport
Stamford Plaza Sydney Airport
McDonald's Sydney Airport - Gateway
ibis budget Sydney Airport
Airport Dr
Qantas Dr
King St
Alexandra Canal
Canal Rd
Unwins Bridge Rd
Carrington Rd
Warren Rd
Myrtle St
Marrickville Rd
Buckley St
A36
Map data ©2019

NSW GOVERNMENT

Final tunnel breakthrough on the new M5

Published 16th December, 2018

WestConnex is another step closer to completion following the final tunnel breakthrough on the New M5 motorway between Kingsgrove and St Peters.

Premier Gladys Berejiklian and Minister for WestConnex Stuart Ayres today visited the New M5, where a massive roadheader from Arncliffe has now carved through to the St Peters Interchange.

"Today marks a significant milestone with excavation work on the New M5's twin nine kilometre tunnels now complete," Ms Berejiklian said.

"The M5 East tunnels are one of Labor's big failures. They were built far too small and remain one of Sydney's biggest traffic headaches.

"In just over a year, this Government's new tunnels will double capacity of the M5 corridor, cutting travel times by up to 30 minutes in each direction.

"This investment in cutting congestion is only possible because of the strong economic management of the NSW Liberals & Nationals Government."

Opening to traffic in early 2020, the $4.3 billion New M5 will double capacity from two lanes to four, providing a non-stop underground journey between Kingsgrove and St Peters. The new tunnels are also over half a metre taller than the existing M5, so that trucks won't hit the roof as they often do on Labor's tunnel.

"Tunnelling activities have been underway for almost two years on the New M5, with 21 roadheaders working around the clock at peak construction," Mr Ayres said.

"WestConnex is one of Australia's biggest infrastructure projects, and is a major employer of apprentices and tradespeople, including 3,000 from Western Sydney on the New M5 so far.

"Contrary to the lies of NSW Labor, WestConnex remains on budget at $16.8 billion, and on schedule to be completed by the end of 2023."

Work underground has now turned to the installation of the road pavement and the mechanical and electrical fitout of the tunnels with more than five kilometres of road pavement already laid.

When the New M5 opens to traffic in early 2020 it will cut up to half an hour from an average peak journey between Liverpool and South Sydney, providing relief for the more than 100,000 drivers who use the corridor each day.

Federal Minister for Cities, Urban Infrastructure and Population the Hon Alan Tudge said this project will be a lasting legacy to the people of Sydney with more public open space and significantly improved commuting times.

"Westconnex will improve the quality of life for hardworking families by cutting down travel times and removing trucks off local roads," Mr Tudge said.

When completed, drivers who use WestConnex between Liverpool and South Sydney each workday will save at least five hours a week, allowing them to spend more time at home and less time sitting in traffic.

WestConnex will provide more than 14 kilometres of new and upgraded cycle and pedestrian paths, linked to existing cycleways, and provide a bypass for motorists for up to 52 sets of traffic lights.

APPENDIX B

RMS LETTER OF CONCURRENCE

Transport
Roads & Maritime Services

11 December 2017

Our Reference: SYD17/00630/04
Council Ref: DA201700185

The General Manager
Inner West Council
PO Box 14
PETERSHAM NSW 2049

Attention: Daniel East

Dear Sir/Madam

PROPOSED BULKY GOODS DEVELOPMENT (BUNNINGS)
728-750 PRINCES HIGHWAY, TEMPE NSW 2044

Reference is made to Council's letter dated 13 November 2017, regarding the abovementioned Application which was referred to Roads and Maritime Services (Roads and Maritime) in accordance with Clause 104 of *State Environmental Planning Policy (Infrastructure) 2007* and concurrence in accordance with Section 138 of the *Roads Act 1993*.

Roads and Maritime has reviewed the submitted application, including amended road design plans (Proposed Road Layout General Arrangement Plan – Option 2, Drawing No. SKC14, Issue P6, prepared by AT&L, dated 05/09/2017), and would provide concurrence, subject to Council's approval and the following being included in any conditions of consent:

1. All buildings and structures, together with any improvements integral to the future use of the site are wholly within the freehold property (unlimited in height or depth), along the Princes Highway boundary and does not affect or impact the integrity of any WestConnex New M5 tunnel.

   Additionally all required road works and relocated public footpaths required by this development should be located within public road or land to be dedicated as public road.

2. Detailed design plans and hydraulic calculations of any changes to the stormwater drainage system are to be submitted to Roads and Maritime for approval, prior to the commencement of any works.

   Details should be forwarded to:
   The Sydney Asset Management
   Roads and Maritime Services
   PO Box 973 Parramatta CBD 2124.

   A plan checking fee will be payable and a performance bond may be required before Roads and Maritime approval is issued. With regard to the Civil Works requirement please contact the Roads and Maritime Project Engineer, External Works Ph: 8849 2114 or Fax: 8849 2766.

3. The proposed works along the Princes Highway shall be designed to meet Roads and Maritime requirements, and endorsed by a suitably qualified practitioner. The design requirements shall be in accordance with AUSTROADS and other Australian Codes of Practice. The certified copies of the civil design plans shall be submitted to Roads and Maritime for consideration and approval prior to the release of the Construction Certificate by the Principal Certifying Authority and commencement of road works.

4. The proposed modifications to the traffic control light at the intersection of Prince Highway and Smith Street shall be designed to meet Roads and Maritime requirements. The Traffic Control Signal (TCS) plans shall be drawn by a suitably qualified person and endorsed by a suitably qualified practitioner.

   The submitted design shall be in accordance with Austroads Guide to Road Design in association with relevant Roads and Maritime supplements (available on www.rms.nsw.gov.au). The certified copies of the civil design plans shall be submitted to Roads and Maritime for consideration and approval prior to the release of a Construction Certificate and commencement of road works.

   Roads and Maritime fees for administration, plan checking, civil works inspections and project management shall be paid by the developer prior to the commencement of works.

   The developer will be required to enter into a Works Authorisation Deed (WAD) for the abovementioned works. Please note that the WAD will need to be executed prior to Roads and Maritime assessment of the detailed civil design plans.

5. The developer shall be responsible for all public utility adjustment/relocation works, necessitated by the above work and as required by the various public utility authorities and/or their agents.

In addition to the above, Roads and Maritime provides the following advisory comments to Council for consideration in its determination of the development application:

1. The layout of the proposed car parking areas associated with the subject development (including, driveways, grades, turn paths, sight distance requirements in relation to landscaping and/or fencing, aisle widths, aisle lengths, and parking bay dimensions) should be in accordance with AS 2890.1- 2004, AS2890.6-2009 and AS 2890.2 – 2002 for heavy vehicle usage.

2. Consideration should also be given to providing bicycle parking facilities either within the development or close to it, as well as end trip facilities such as showers, changing rooms, etc. to encourage employees travelling to and from the development by cycling.

3. All demolition and construction vehicles are to be contained wholly within the site and vehicles must enter the site before stopping. A construction zone will not be permitted on the Princes Highway.

4. A Construction Traffic Management Plan detailing construction vehicle routes, number of trucks, hours of operation, access arrangements and traffic control should be submitted to Council for approval prior to the issue of a Construction Certificate

5. A Road Occupancy Licence should be obtained from Transport Management Centre for any works that may impact on traffic flows on the Princes Highway during construction activities.

The Applicant should be advised that the subject property is within a broad area currently under investigation in relation to the proposed F6 Project.

Further information about the project is available by contacting the F6 Team on 1800 789 297 or motorwaydevelopment@rms.nsw.gov.au, or by visiting the project website at www.rms.nsw.gov.au/projects/motorwaydevelopment.

This property is also within a broad area under investigation for the proposed New M5 WestConnex Project.

The contractor for this project has now been announced and part of the land beneath the property is required for this project (DP 1231263). Please note however the detailed design for the project has not been finalised and accordingly land requirements may be subject to change.

Further information about this project is available by contacting the WestConnex Team on 1800 660 248 or info@westconnex.com.au, or by visiting the project website at www.westconnex.com.au.

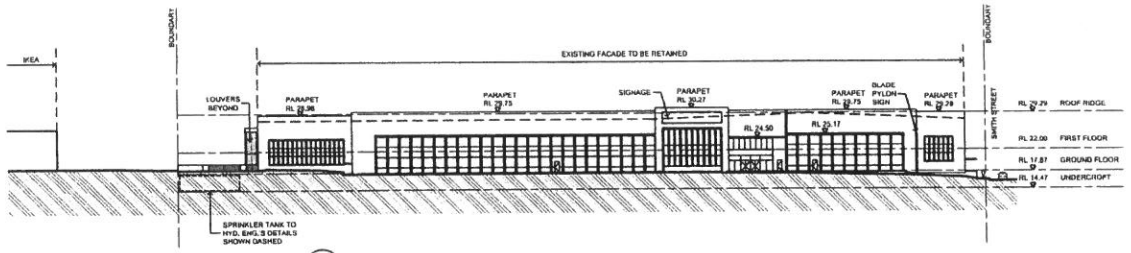
Should you have any further inquiries in relation to this matter, please do not hesitate to contact the undersigned by email at development.sydney@rms.nsw.gov.au.

Yours sincerely,

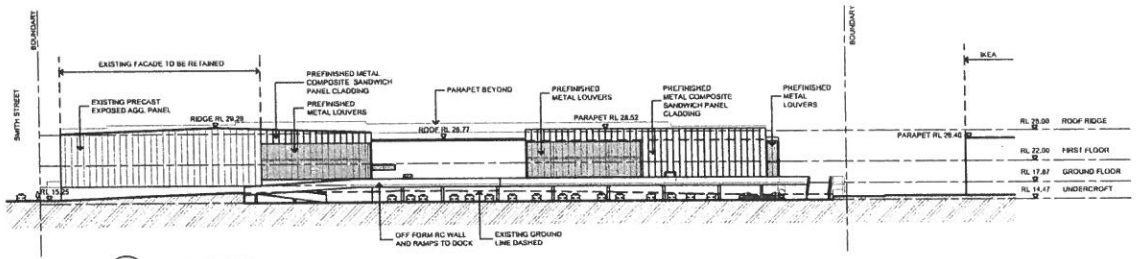
Aleks Tancevski
Senior Land Use Planner
Network Sydney South Precinct

APPENDIX C

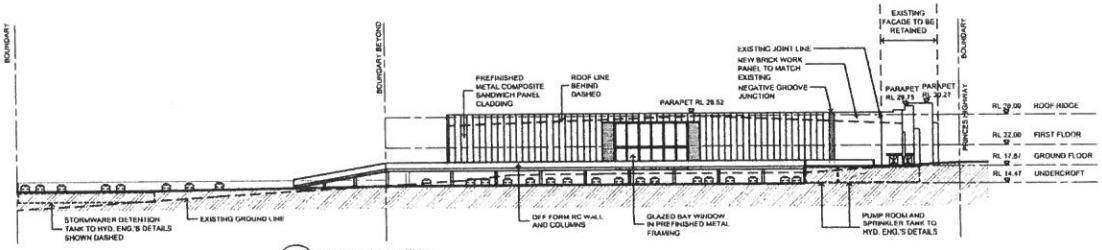
APPROVED BULKY GOODS PLANS



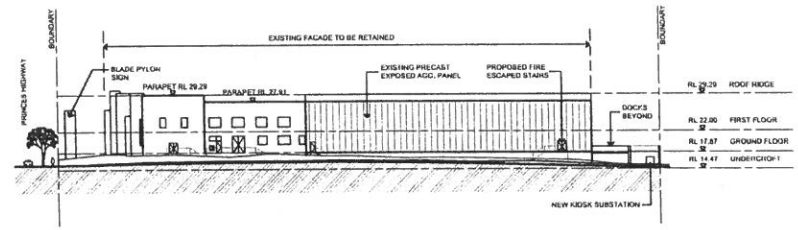
1 WEST ELEVATION (PRINCES HIGHWAY)



2 EAST ELEVATION



3 NORTHELEVATION
BOUNDARY RETAINING WALL
OMITTED FOR CLARITY



4 SOUTH ELEVATION (SMITH STREET)

BULKY GOODS PROPOSAL

750 PRINCES HIGHWAY, TEMPE NSW 2044

PRELIMINARY

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS ON SITE. REFER ANY DISCREPANCIES TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK.

PROPRIETOR
VALAD PROPERTY GROUP
Level 9, 1 CHIFLEY SQUARE
SYDNEY NSW 2000
Tel: +02 8257 8653 Fax: +02 8257 8655 Mob: +0404020576

ELEVATIONS

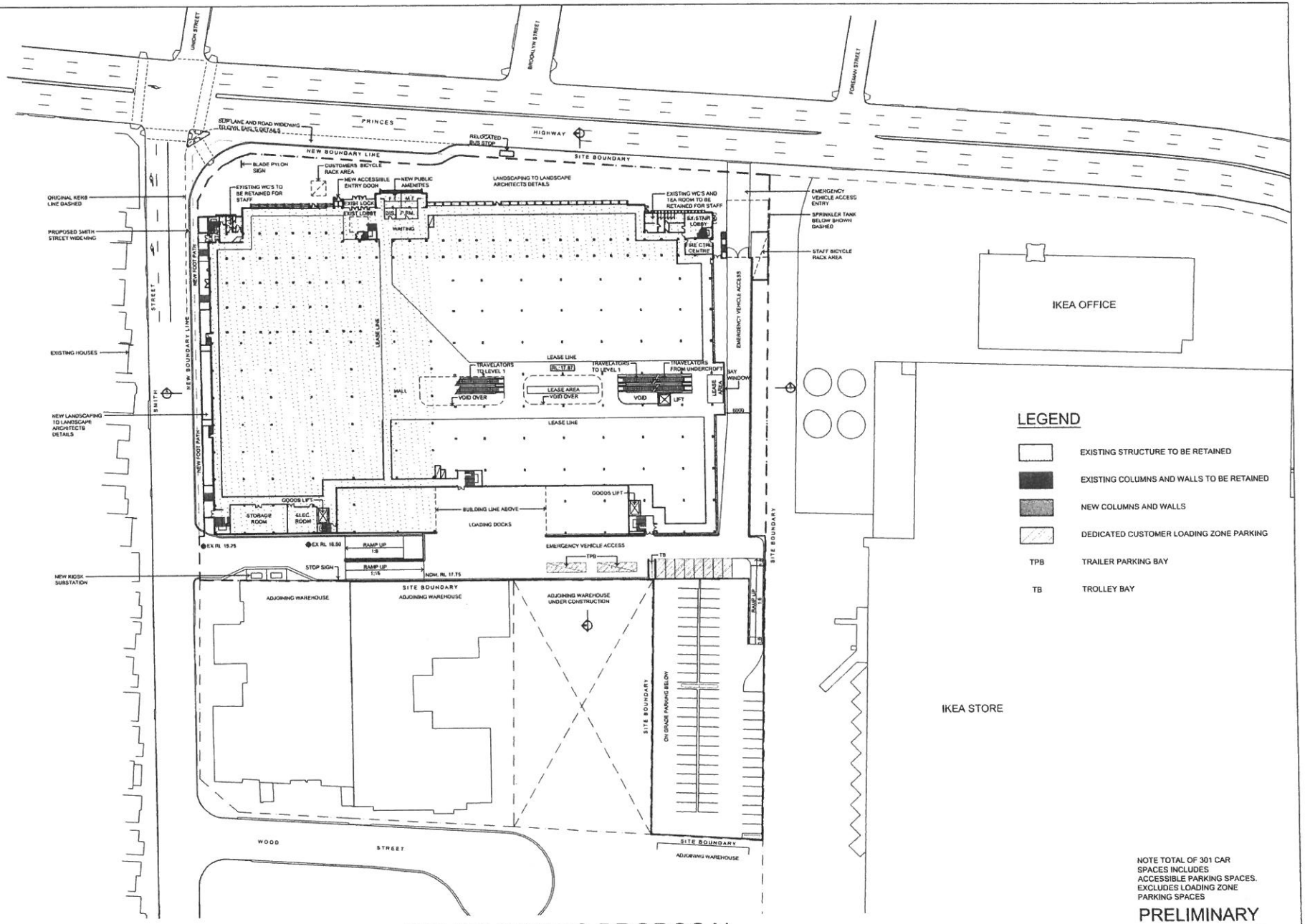
ARCHITECT
kta
a level 7 37 pacific highway
north sydney nsw 2060
po box 725 north sydney nsw 2059
p +61(0)2 9900 8000 f +61(0)2 9900 8001
w www.kiktayler.com.au
krikis tayler retail

DATE 10/07/2012
SCALE 1:500@A1
0 5 10 15 25 35

PROJECT NO.	DRAWING NO.	ISSUE
09Q	A06	F

A1

100mm | 200mm | 300mm ON ORIGINAL



NOTE TOTAL OF 301 CAR SPACES INCLUDES ACCESSIBLE PARKING SPACES. EXCLUDES LOADING ZONE PARKING SPACES

PRELIMINARY

BULKY GOODS PROPOSAL

750 PRINCES HIGHWAY, TEMPE NSW 2044

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS ON SITE. REFER ANY DISCREPANCIES TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK.

PROPRIETOR

VALAD PROPERTY GROUP

Level 9, 1 CHIFLEY SQUARE
SYDNEY NSW 2000
Tel: +02 8257 6653 Fax: +02 8257 6655 Mob: +0404020576

GROUND FLOOR PLAN

ARCHITECT

kta
krikis tayler retail

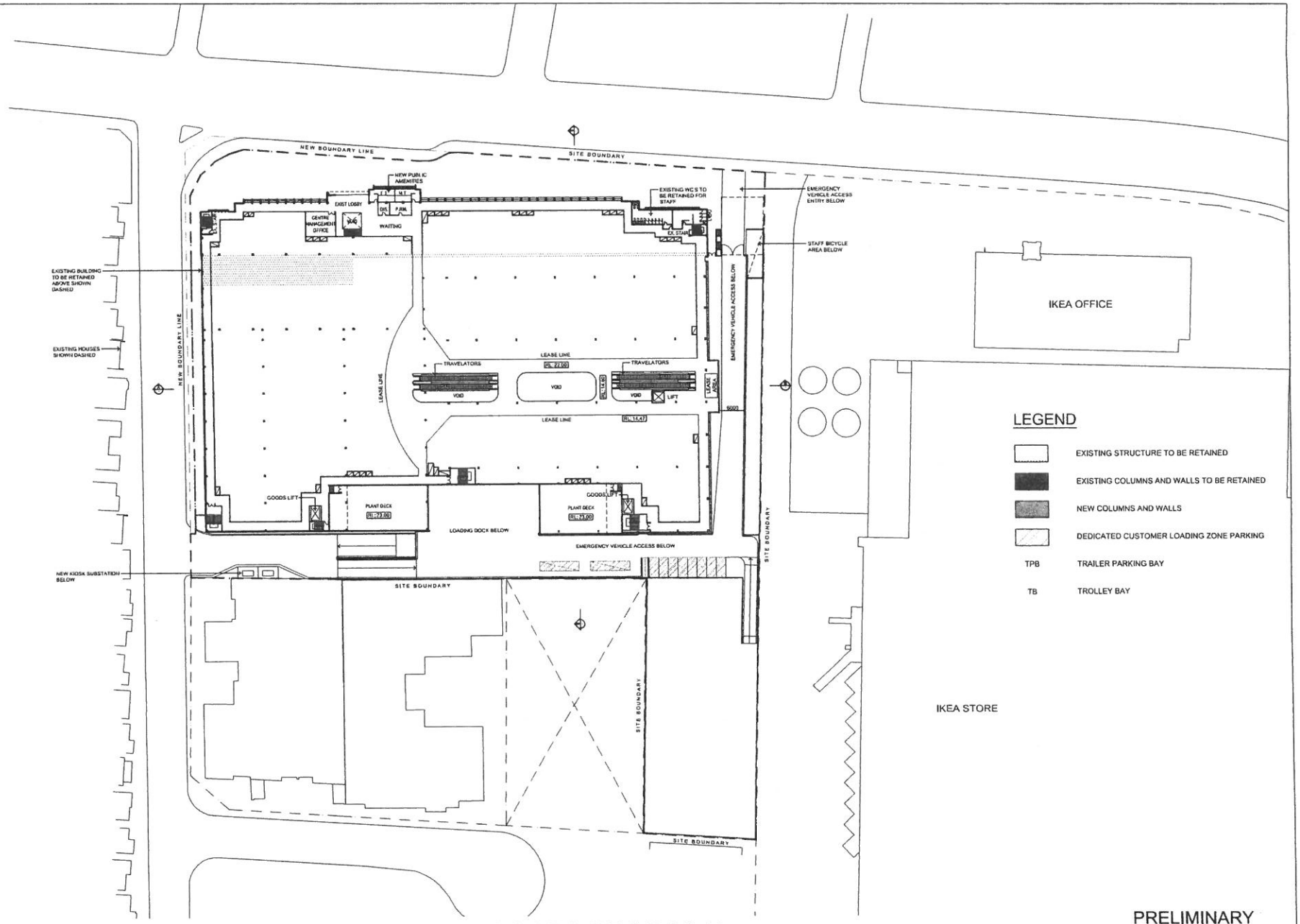
DATE 10/07/2012
SCALE 1:500@A1

0 5 10 15 25 35

PROJECT NO.	DRAWING NO.	ISSUE
09Q	A03	G

A1

100mm 200mm 300mm ON ORIGINAL



BULKY GOODS PROPOSAL

750 PRINCES HIGHWAY, TEMPE NSW 2044

FIRST FLOOR PLAN

PRELIMINARY

DATE 10/07/2012
SCALE 1:500@A1

0 5 10 15 25 35

PROJECT NO. 09Q | DRAWING NO. A04 | ISSUE E

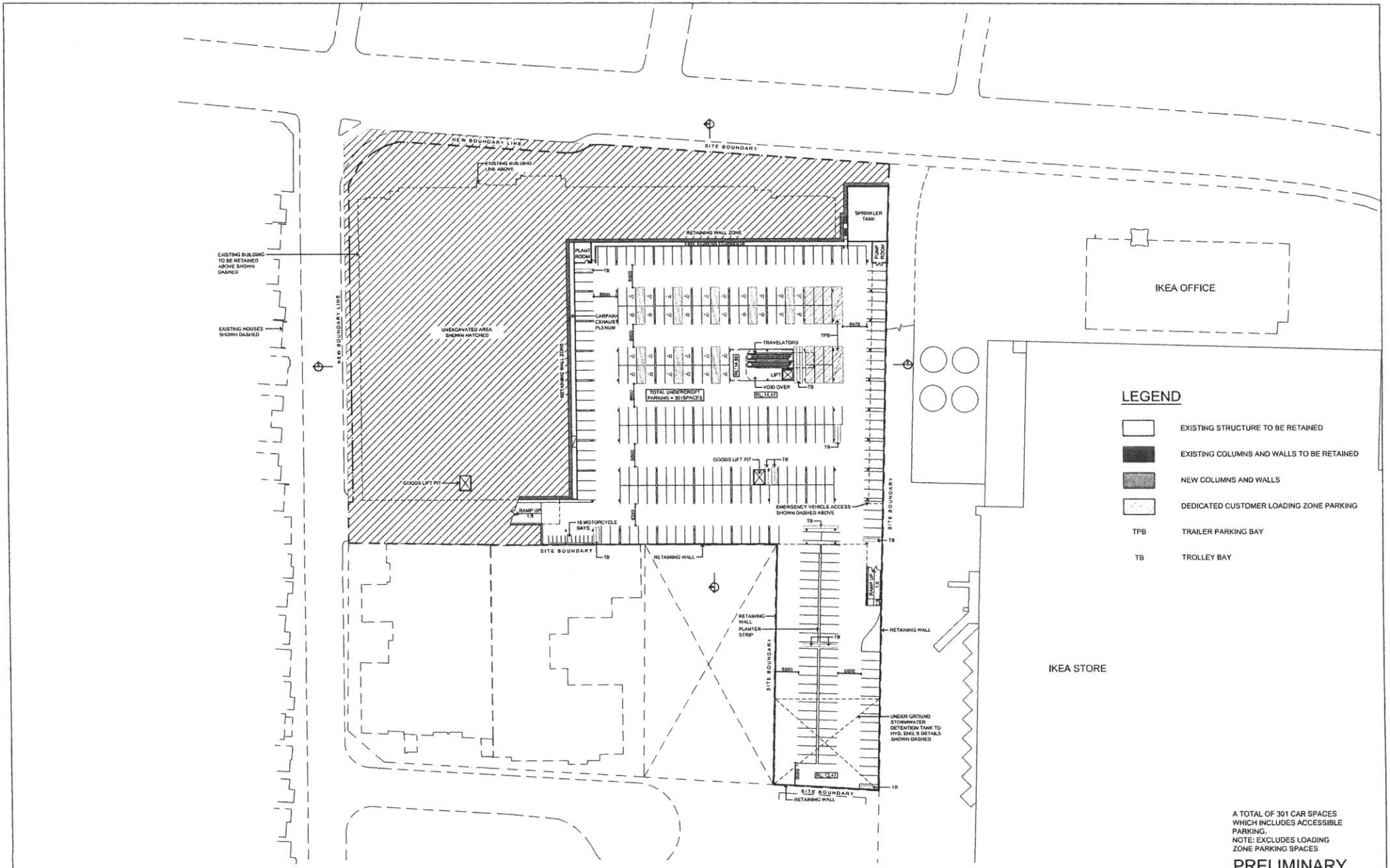
A1

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS ON SITE. REFER ANY DISCREPANCIES TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK.

PROPRIETOR
VALAD PROPERTY GROUP
Level 9, 1 CHIFLEY SQUARE
SYDNEY NSW 2000
Tel: +02 8257 6653 Fax: +02 8257 6655 Mob: +0404020576

ARCHITECT
krikis tayler retail

100mm | 200mm | 300mm ON ORIGINAL



A TOTAL OF 301 CAR SPACES WHICH INCLUDES ACCESSIBLE PARKING.
NOTE: EXCLUDES LOADING ZONE PARKING SPACES

PRELIMINARY

BULKY GOODS PROPOSAL

750 PRINCES HIGHWAY, TEMPE NSW 2044

DO NOT SCALE DRAWINGS. VERIFY ALL DIMENSIONS ON SITE. REFER ANY DISCREPANCIES TO THE SUPERINTENDENT BEFORE PROCEEDING WITH THE WORK.

PROPRIETOR
VALAD PROPERTY GROUP
Level 9, 1 CHIFLEY SQUARE
SYDNEY NSW 2000
Tel: +02 8257 6653 Fax: +02 8257 8655 Mob: +0404020576

UNDERCROFT PLAN

ARCHITECT
krtkls tayler retail
level 7 37 pacific highway
north sydney new 2060
m po box 775 north sydney nsw 7059
p +61(0)2 9900 8000 f +61(0)2 9900 8001
w www.krtklstayler.com.au

DATE 10/07/2012
SCALE 1:500@A1

0 5 10 15 25 35

PROJECT NO.	DRAWING NO.	ISSUE
09Q	A02	G

A1

100mm 200mm 300mm ON ORIGINAL

APPENDIX D

RELEVANCE OF DECEMBER TRAFFIC SURVEYS

Ross Nettle

From: Ross Nettle <ross@ttpa.com.au>
Sent: Tuesday, 4 December 2018 11:21 AM
To: Philip Drew (pdrew@bunnings.com.au)
Subject: Revised Advice - Bunnings Tempe (17053)
Attachments: 23001 - Princes Highway_Traffic Analysis.pdf

Phil

There is an RMS permanent counting station on the Princes Highway at Tempe which provides comprehensive day to day data. I have interrogated the available data to establish:

- the annual average total 2-way volume for Thursday AM and PM and Saturday Midday
- the total 2-way volume for the 1st week in December for Thursday AM and PM and Saturday Midday

The attached details reveal that:

- the December AM volume was 14 to 20% higher than the annual average
- the December PM volume was 10 to 16% higher than the annual average
- the December Saturday Midday volume was 8 to 10% higher than the annual average

Regards

Ross Nettle | Director

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES

Established 1994

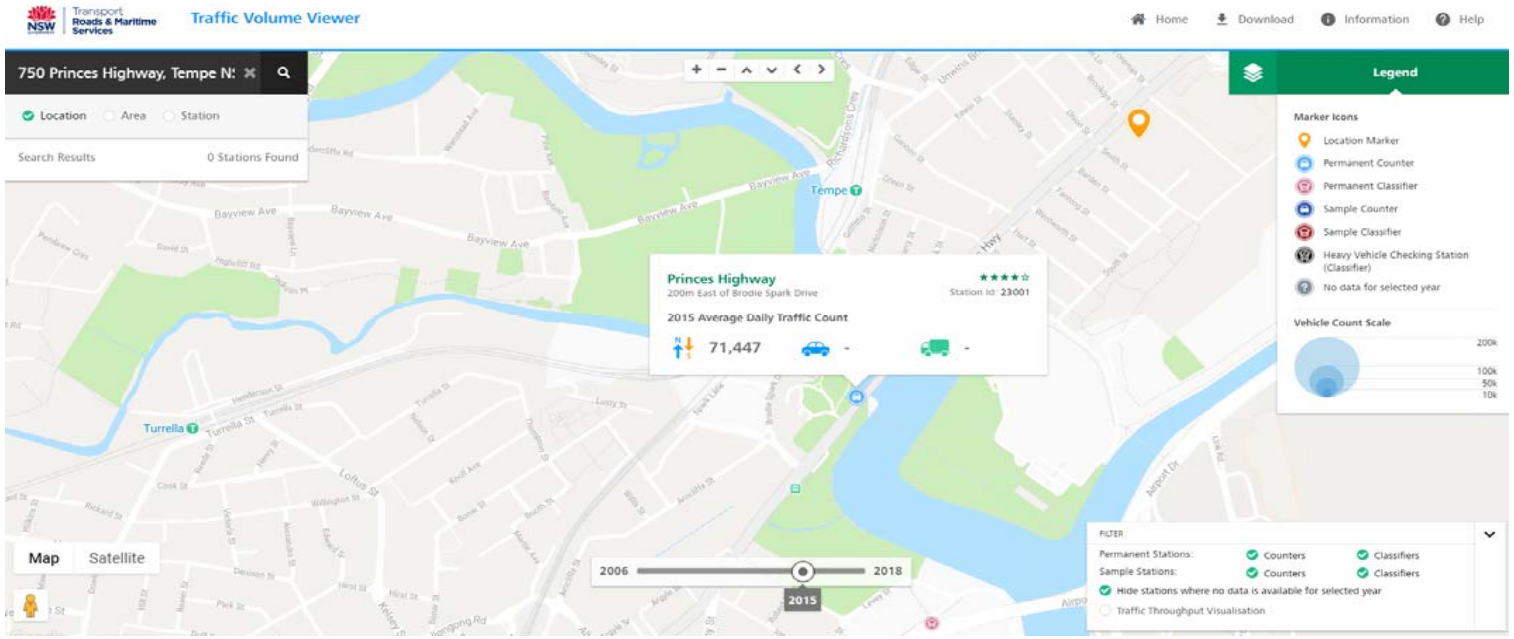
Suite 502, Level 5, 282 Victoria Avenue, Chatswood NSW 2067
P (02) 9411 5660 F (02) 9904 6622 W ttpa.com.au

ttpa

Traffic Data from Roads and Maritime Services - Traffic Volume Viewer - Princess Highway 200m East of Brodie Spark Drive, Wolli Creek 2205 (Station ID: 23001)

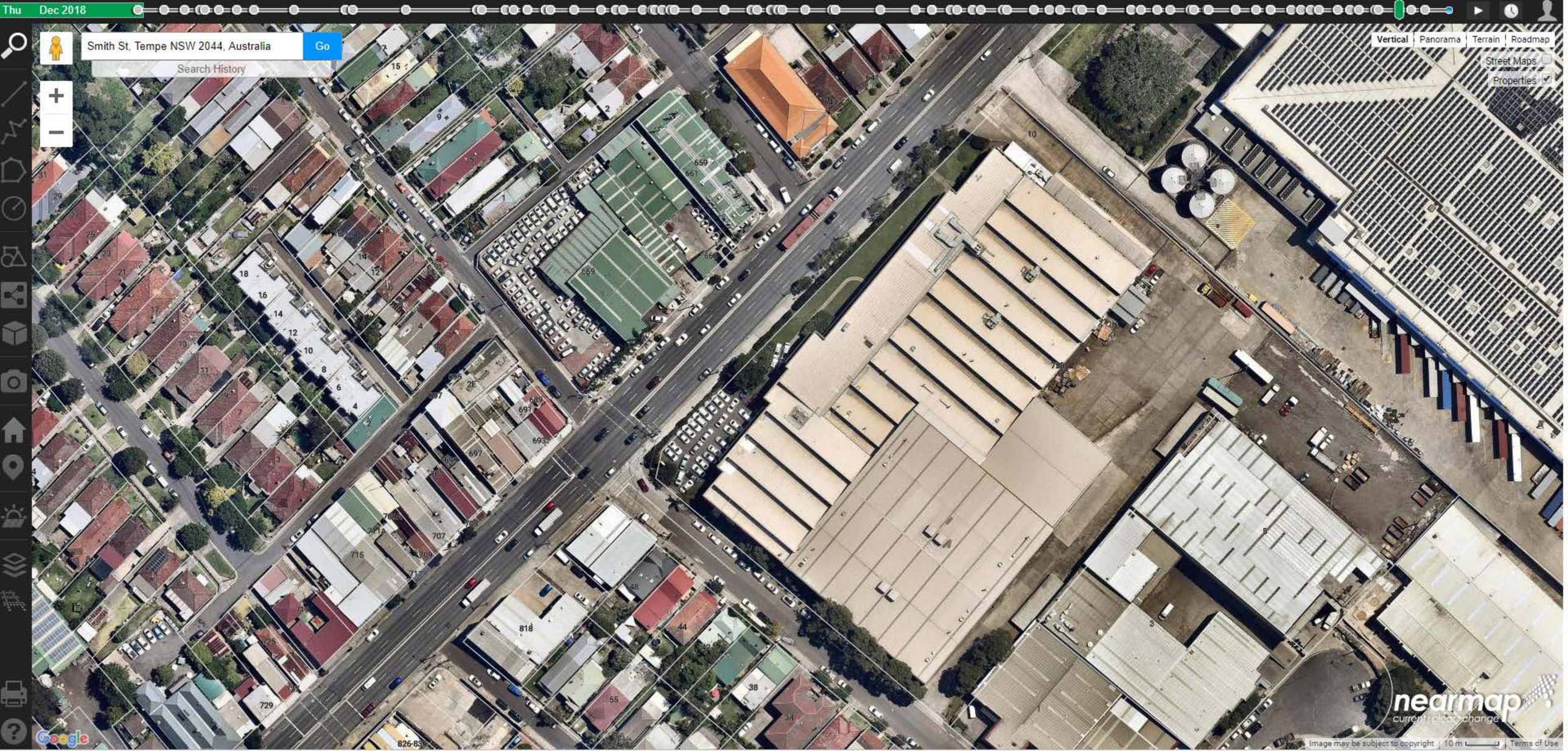
Day Assessed	Date	Vehicle/hour in Both Northbound and Southbound Directions							
		AM Peak		Midday Peak		PM Peak			
		7 - 8	8 - 9	12 - 1	1 - 2	4 - 5	5 - 6	6 - 7	7 - 8
Thursday	3/12/2015	4,857	4,646			5,452	5,499	5,062	3,460
	Annual Average Hourly Traffic (01/01/15 - 31/12/15)*	4,035	4,084			4,903	5,022	4,383	3,064
	Ratio of 03/12/15 traffic to Annual Average Hourly Traffic	120%	114%			111%	110%	116%	113%
	03/12/15 traffic is % higher than Annual Average Hourly Traffic	20%	14%			11%	10%	16%	13%
Saturday	5/12/2015			4,397	4,572				
	Annual Average Hourly Traffic (01/01/15 - 31/12/15)*			4,059	4,138				
	Ratio of 05/12/2015 traffic to Annual Average Hourly Traffic			108%	110%				
	5/12/2015 traffic is % higher than Annual Average Hourly Traffic			8%	10%				

Note: *Annual Average Hourly Traffic is the average hourly traffic volume for the traffic collection station for 365 days.
Source: https://www.rms.nsw.gov.au/about/corporate-publications/statistics/traffic-volumes/aadt-map/index.html#



APPENDIX E

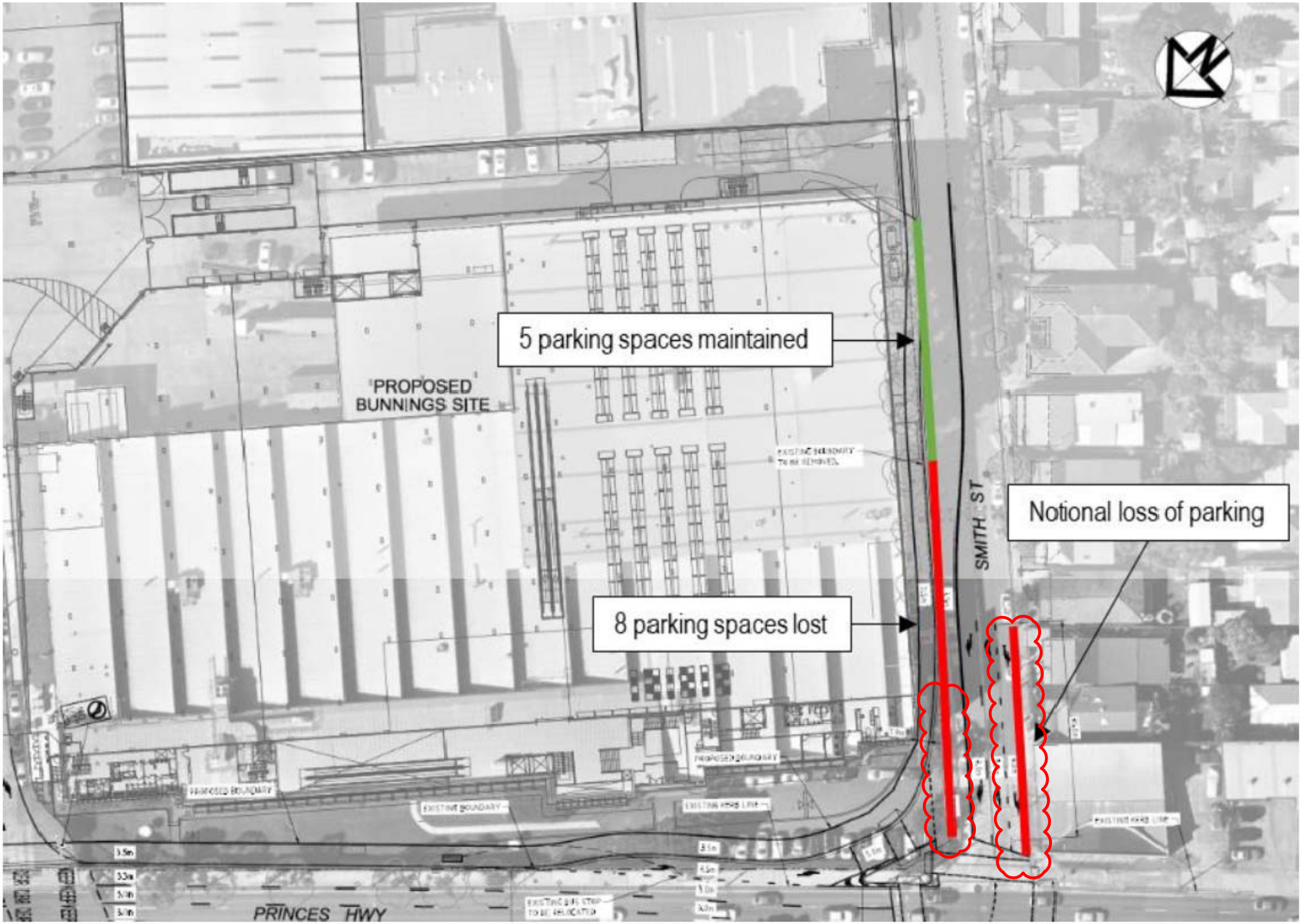
SITE ACTIVITY
DURING TRAFFIC SURVEYS


Thu Dec 2018
Smith St, Tempe NSW 2044, Australia
Go
Search History
Vertical
Panorama
Terrain
Roadmap
Street Maps
Properties
nearmap
current | clear | change
Google
Image may be subject to copyright
10 m
Terms of Use

APPENDIX F

GTA DIAGRAM

Figure 1: Likely loss of Smith Street parking



APPENDIX G

TTPA SIDRA MODELLING FOR EXISTING

MOVEMENT SUMMARY

Site: PM Peak - Existing

Union St x Princes Hwy
Existing PM Peak
Signals - Fixed Time Cycle Time = 120 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop Queued	Effective Stop Rate per veh	Average Speed km/h
South: Smith St											
1	L	51	3.0	0.259	41.1	LOS C	3.2	22.6	0.77	0.73	26.1
2	T	28	3.0	0.264	45.8	LOS D	6.1	43.6	0.90	0.71	22.5
3	R	61	3.0	0.264	53.0	LOS D	6.1	43.6	0.90	0.78	23.0
Approach		140	3.0	0.264	47.2	LOS D	6.1	43.6	0.85	0.75	23.9
East: Princes Hwy (E)											
4	L	33	3.0	0.853	19.4	LOS B	35.9	257.9	0.65	1.02	40.3
5	T	2983	3.0	0.853	11.9	LOS A	36.0	258.1	0.65	0.61	43.2
Approach		3016	3.0	0.853	11.9	LOS A	36.0	258.1	0.65	0.62	43.1
West: Princes Hwy (W)											
10	L	11	3.0	0.111	8.5	LOS A	0.6	4.1	0.06	1.09	47.8
11	T	1394	3.0	0.556	1.3	LOS A	6.2	44.3	0.11	0.10	57.2
12	R	17	3.0	0.558	8.5	LOS A	3.3	24.0	0.11	1.08	48.1
Approach		1421	3.0	0.556	1.4	LOS A	6.2	44.3	0.11	0.11	57.0
All Vehicles		4577	3.0	0.853	9.8	LOS A	36.0	258.1	0.49	0.47	45.5

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).
Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (RTA NSW)
Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop Queued	Effective Stop Rate per ped
P1	Across S approach	53	11.7	LOS B	0.1	0.1	0.44	0.44
P3	Across E approach	53	54.2	LOS E	0.2	0.2	0.95	0.95
P5	Across N approach	53	5.4	LOS A	0.1	0.1	0.30	0.30
P7	Across W approach	53	54.2	LOS E	0.2	0.2	0.95	0.95
All Pedestrians		212	31.4				0.66	0.66

Level of Service (Aver. Int. Delay): LOS D. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS E. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: MID WKN Peak - Existing

Union St x Princes Hwy
Existing Midday Weekend Peak
Signals - Fixed Time Cycle Time = 70 seconds (Practical Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Smith St											
1	L	12	3.0	0.028	17.1	LOS B	0.3	2.3	0.54	0.67	36.6
2	T	7	3.0	0.071	18.2	LOS B	1.5	10.9	0.73	0.55	32.5
3	R	34	3.0	0.071	25.4	LOS B	1.5	10.9	0.73	0.73	32.3
Approach		53	3.0	0.071	22.6	LOS B	1.5	10.9	0.69	0.69	33.1
East: Princes Hwy (E)											
4	L	22	3.0	0.871	37.5	LOS C	22.1	158.3	0.97	1.04	30.5
5	T	1701	3.0	0.876	29.9	LOS C	22.1	158.6	0.97	1.01	31.3
Approach		1723	3.0	0.876	30.0	LOS C	22.1	158.6	0.97	1.01	31.3
West: Princes Hwy (W)											
10	L	16	3.0	0.157	10.3	LOS A	1.0	7.5	0.17	1.02	46.3
11	T	1579	3.0	0.788	5.9	LOS A	14.5	104.1	0.49	0.46	49.4
12	R	13	3.0	0.787	14.1	LOS A	14.5	104.1	0.57	1.02	44.4
Approach		1607	3.0	0.788	6.0	LOS A	14.5	104.1	0.49	0.47	49.4
All Vehicles		3383	3.0	0.876	18.5	LOS B	22.1	158.6	0.74	0.75	37.9

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).
Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (RTA NSW).
Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	20.1	LOS C	0.1	0.1	0.76	0.76
P3	Across E approach	53	29.3	LOS C	0.1	0.1	0.91	0.91
P5	Across N approach	53	9.3	LOS A	0.1	0.1	0.51	0.51
P7	Across W approach	53	29.3	LOS C	0.1	0.1	0.91	0.91
All Pedestrians		212	22.0				0.77	0.77

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS C. LOS Method for individual pedestrian movements: Delay (HCM).

APPENDIX H

ADVICE TO RMS

www.rms.nsw.gov.au
Every journey matters

Roads and Maritime Services
Level 11 27 Argyle Street Parramatta NSW 2150

From: Ross Nettle [mailto:ross@ttpa.com.au]
Sent: Friday, 3 February 2017 9:04 AM
To: 'Philip Drew'
Cc: TANCEVSKI Aleksandar; PILLY MOOTANAH Hans R; KOCOSKI Nicolas; DEWBERRY Timothy C; 'John. R Brogan & Associates'
Subject: [WARNING: Attachments not scanned for viruses] RE: Princes Hwy and Smith St - Tempe Phase Splits for Bunnings (14274)

Phil

I refer to the recent meeting with RMS and the email from Aleks of 1 Feb. Please find attached the results of revised SIDRA models with:

- RMS advised phase splits and phasing
- satisfactorily operational performance results

Importantly, further consideration has been given to the provision of "signage" to give better direction to northbound drivers on the highway. Attached are 2 options for direction signage which would be mounted on a traffic signal post on the proposed triangular island at the Smith Street intersection.

It is considered that this signage would "go a long way" to ensuring that drivers approaching from the south will use the direct sight turn access into Bunnings.

Regards
Ross Nettle
Director

Transport and Traffic Planning Associates
Suite 502, L5, 282 Victoria Avenue, PO Box 1160
Chatswood 2067
P 02 9411 5660
F 02 9904 6622
E Ross@ttpa.com.au
W www.ttpa.com.au

ttpa
transport & traffic planning associates

Roads & Maritime

Before printing, please consider the environment

NSW Government | Transport Roads & Maritime Services

APPENDIX I

FUTURE SIGNAL DESIGN

DRAWN BY CADD
DO NOT AMEND MANUALLY

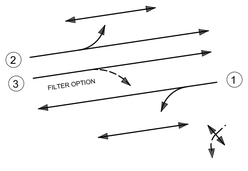
TCS 1285

DATE IN SERVICE : 05/04/77

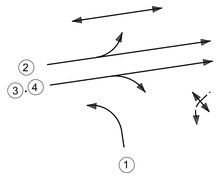
Transport Roads & Maritime Services

NOTES:

1. This site is SCATS linked
2. All Audio Tactile Push buttons are provided on Posts 1,3,5,6,7,8,9,11,12 & 13.
3. Special STOP sign (R1-4) attached to Post 8.
4. Kerb ramps to be constructed at all pedestrian crossings in accordance with Model Drawing MD.R173.BØ1.A.1.
5. V6 & P5 displays associated with the sliplane, are to operate independantly to the site. V6 to rest in the 'Off state" & P5 to display 'Dont Walk'. Push Button P5 demand will display V6 yellow then red and remain red until Walk and Clearance has expired followed by "Off" state. P5 has a delay timer.
6. The "Walk" aspects on posts 1 & 5 to be tilted downwards and fitted with extended visors if justified to obscure the lanterns from pedestrians located on 5 & 1 respectively.
7. Roadworks are in accordance with A T & L's road drawing number SKC14.



A PHASE

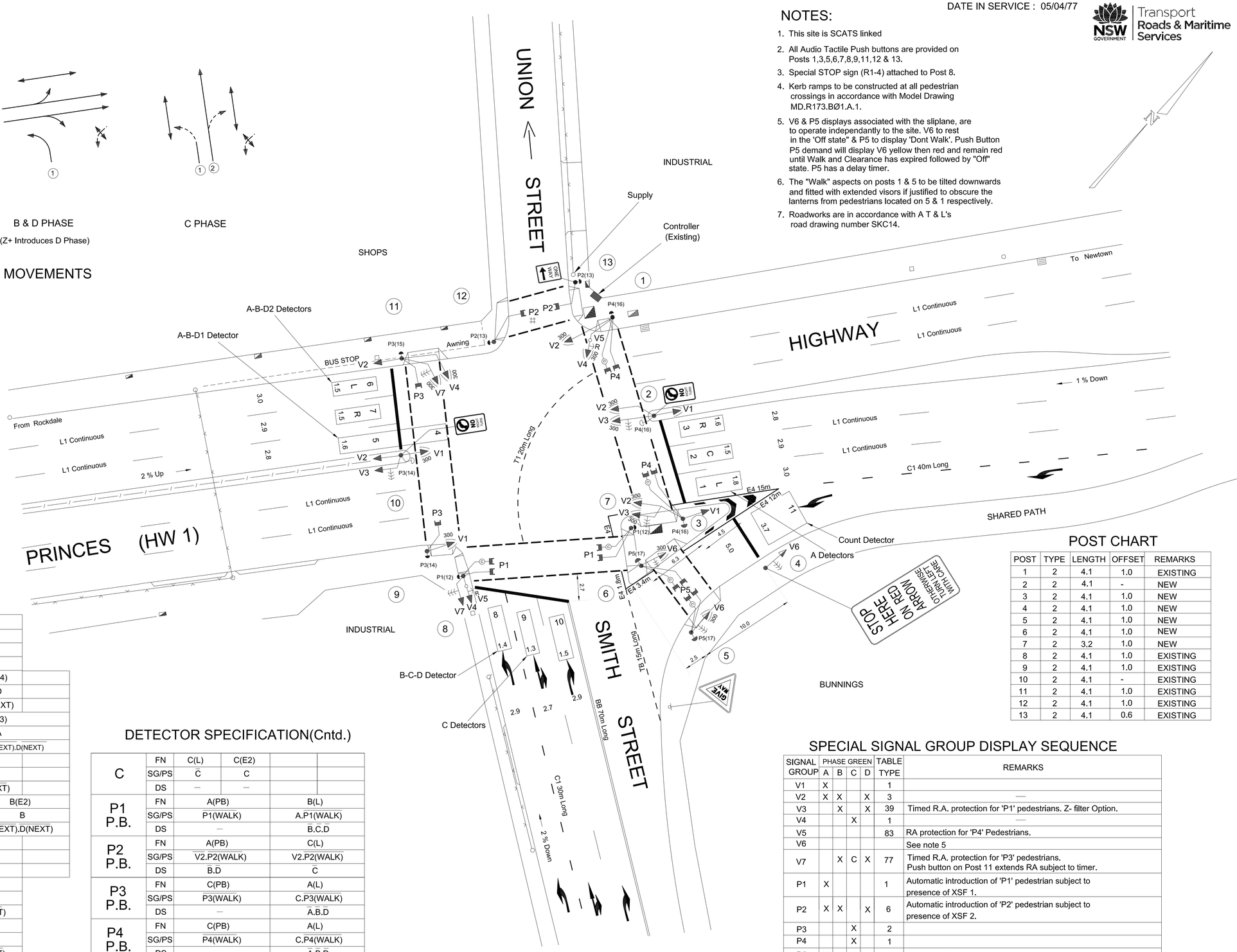


B & D PHASE

(Z+ Introduces D Phase)

C PHASE

MOVEMENTS



POST CHART

POST	TYPE	LENGTH	OFFSET	REMARKS
1	2	4.1	1.0	EXISTING
2	2	4.1	-	NEW
3	2	4.1	1.0	NEW
4	2	4.1	1.0	NEW
5	2	4.1	1.0	NEW
6	2	4.1	1.0	NEW
7	2	3.2	1.0	NEW
8	2	4.1	1.0	EXISTING
9	2	4.1	1.0	EXISTING
10	2	4.1	-	EXISTING
11	2	4.1	1.0	EXISTING
12	2	4.1	1.0	EXISTING
13	2	4.1	0.6	EXISTING

DETECTOR SPECIFICATION

Detector		Specifications			
A	FN	A(L)	A(E1)		
	SG/PS	$\overline{A}$	A		
	DS	—	—		
A-B-D1 Depart. & Approach	FN	B(PR)	D(PR)	B(E4)	D(E4)
	SG/PS	A	A	B	D
	DS	-	Z+	A(NEXT)	A(NEXT)
A-B-D1 Approach	FN	A(L).B(L)	D(L)	A(E3)	
	SG/PS	$\overline{V2}$	$\overline{V2}$	A	
	DS	-	Z+	$\overline{A\text{-}B\text{-}D1(PR).B(NEXT).D(NEXT)}$	
cont. A-B-D1 Approach	FN	B(E3)		D(E3)	
	SG/PS	B		D	
	DS	$\overline{A(NEXT).D(NEXT)}$		$\overline{A(NEXT).B(NEXT)}$	
A-B-D2	FN	A(L)	A(E2)	B(E2)	
	SG/PS	$\overline{V2}$	A	B	
	DS	$\overline{B.D}$	$\overline{B(NEXT).D(NEXT)}$	$\overline{A(NEXT).D(NEXT)}$	
cont. A-B-D2	FN	D(E2)			
	SG/PS	D			
	DS	$\overline{A(NEXT).B(NEXT)}$			
B-C-D	FN	B(PR)	D(PR)	B(E1)	
	SG/PS	$\overline{B.C.D}$	$\overline{B.C.D}$	B	
	DS	$\overline{C}$	Z+.$\overline{C}$	$\overline{C(NEXT).D(NEXT)}$	
cont. B-C-D	FN	C(E1)		D(E1)	
	SG/PS	C		D	
	DS	$\overline{B(NEXT).D(NEXT)}$		$\overline{B(NEXT).C(NEXT)}$	

DETECTOR SPECIFICATION(Cntd.)

C	FN	C(L)	C(E2)		
	SG/PS	$\overline{C}$	C		
	DS	—	—		
P1 P.B.	FN	A(PB)		B(L)	
	SG/PS	$\overline{P1(WALK)}$		A.$\overline{P1(WALK)}$	
	DS	—		$\overline{B.C.D}$	
P2 P.B.	FN	A(PB)		C(L)	
	SG/PS	$\overline{V2.P2(WALK)}$		$\overline{V2.P2(WALK)}$	
	DS	$\overline{B.D}$		$\overline{C}$	
P3 P.B.	FN	C(PB)		A(L)	
	SG/PS	$\overline{P3(WALK)}$		C.$\overline{P3(WALK)}$	
	DS	—		$\overline{A.B.D}$	
P4 P.B.	FN	C(PB)		A(L)	
	SG/PS	$\overline{P4(WALK)}$		C.$\overline{P4(WALK)}$	
	DS	—		$\overline{A.B.D}$	

SPECIAL SIGNAL GROUP DISPLAY SEQUENCE

SIGNAL GROUP	PHASE GREEN A	B	C	D	TABLE TYPE	REMARKS
V1	X				1	
V2	X	X		X	3	—
V3		X		X	39	Timed R.A. protection for 'P1' pedestrians. Z- filter Option.
V4			X		1	—
V5					83	RA protection for 'P4' Pedestrians.
V6						See note 5
V7		X	C	X	77	Timed R.A. protection for 'P3' pedestrians. Push button on Post 11 extends RA subject to timer.
P1	X				1	Automatic introduction of 'P1' pedestrian subject to presence of XSF 1.
P2	X	X		X	6	Automatic introduction of 'P2' pedestrian subject to presence of XSF 2.
P3			X		2	
P4			X		1	
P5	X	X	X	X	-	See note 5

A ORIGINAL ISSUE

PUBLIC UTILITY LEGEND		REFERENCE PLANS	
HYDRANT		SYMBOLS/ABBS.	VD003-6
STOP VALVE		STD POSIT	VD001-5
GAS VALVE		PRES. DETECT	VC005-17
SEWER MANHOLE		VEH. GROUP OP	TS-TN-019
TELECOM PIT		DET. LOGIC OP	TS-TN-020
ELECT LIGHT POLE		PED. MOVEMNT OP	TS-TN-021
POWER POLE			
STAY POLE			
TELEPHONE BOX		SURVEYOR : ESO Surveyors	
TELECOM PILLAR		DATE : July 2010	

U.B.D. Ref. Map 275 C2
I.S.G. CO-ORDS E: 314 900 N: 1 244 850

DESIGNED : JS
CHECKED : CT
BL
SITE CHECKED
BL
RECOMMENDED

DESIGN APPROVAL
APPROVED
R. NETTLE
POSITION DIRECTOR
DATE 22.03.17
DESIGN PREPARED BY
TRANSPORT AND TRAFFIC PLANNING ASSOCIATES

RMS ACCEPTANCE
RECOMMENDED
POSITION
DATE
ACCEPTED
POSITION
DATE

ROADS AND MARITIME SERVICES

MARRICKVILLE COUNCIL AREA
TRAFFIC SIGNALS AT THE INTERSECTION OF PRINCES HIGHWAY (H.W.1), SMITH STREET AND UNION STREET
TEMPE

DESIGN LAYOUT TCS No 1285

EXISTING ☐ PROPOSED ☒

CADD FILE: VV1285_?A.dgn

SCALE 5 0 (1:200) 5 10

ISSUE A

FILE SF0000/000000

SUPERSEDES SHEET/ISSUE 13A

REG No. DS0000/000000

TCS No. 1285

SHEET ?

$DATE$ $TIME$ $FILE$

Revision 1 - August 2014