APPLICATION ON NOTIFICATION – Category 2

Applicant:	Cohen Group C/- AECOM
Development Number:	180/E003/19
Nature of Development:	Staged redevelopment of existing shopping centre incorporating removal of three (3) significant trees and one (1) regulated tree
Development Type:	Merit
Subject Land:	447 Portrush Road, Glenside (Burnside Village Shopping Centre comprising all allotments bounded within Portrush Road, Greenhill Road, Sydney Street and Cator Street, Glenside)
Development Plan:	Burnside Council Development Plan
Zone / Policy Area:	District Centre Zone, District Centre Area 1
Contact Officer:	Ben Scholes
Phone Number:	(08) 8402 1861
Consultation Start Date:	Monday 25 February 2019
Consultation Close Date:	5:00PM Tuesday 12 March 2019
During the notification period, hard copies of the application documentation can be viewed at the Department of Planning, Transport and Infrastructure, Level 5, 50 Flinders St, Adelaide, during normal business hours. Application documentation may also be viewed during normal business hours at the Burnside Council office.	

Written representations must be received by the close date (indicated above) and can either be posted, hand-delivered or emailed to the State Commission Assessment Panel.

Any representations received after the close date will not be considered.

Postal Address:
The Secretary
State Commission Assessment Panel
GPO Box 1815
ADELAIDE SA 5001

Street Address:
Development Division
Department of Planning, Transport and Infrastructure
Level 5, 50 Flinders Street
ADELAIDE

Email Address: scapreps@sa.gov.au
Fax Number: (08) 8303 0753

DEVELOPMENT APPLICATION FORM

PLEASE USE BLOCK LETTERS

COUNCIL: CITY OF BURNSIDE

APPLICANT: COHEN GROUP

Postal Address: C/- AECOM

L28, 91 KING WILLIAM ST, ADELAIDE 5000

Owner: BURNSIDE VILLAGE PTY LTD

Postal Address: SUITE 1/447 PORTRUSH RD

GLENSIDE 5065

BUILDER: TBA

Postal Address:

Licence No:

CONTACT PERSON FOR FURTHER INFORMATION

Name: TOM HATELEY

Telephone: 08 7223 5437 [work] 0418 838 290 [Ah]

Fax: [work] [Ah]

EXISTING USE: SHOPPING CENTRE

FOR OFFICE USE

Development No:

Previous Development No:

Assessment No:

☐ Complying	Application forwarded to DA
☐ Non Complying	Commission/Council on
☐ Notification Cat 2	/ /
☐ Notification Cat 3	Decision:
☐ Referrals/Concurrences	Type:
☐ DA Commission	Date: / /

	Decision required	Fees	Receipt No	Date
Planning:				
Building:				
Land Division:				
Additional:				
Development Approval				

DESCRIPTION OF PROPOSED DEVELOPMENT: REDEVELOPMENT OF EXISTING SHOPPING CENTRE

LOCATION OF PROPOSED DEVELOPMENT: 447 PORTRUSH ROAD, GLENSIDE 5065

House No: Lot No: Street: Town/Suburb:

Section No [full/part] MULTIPLE Hundred: Volume: Folio:

Section No [full/part] Hundred: Volume: Folio:

LAND DIVISION:

Site Area [m^2] Reserve Area [m^2] No of existing allotments

Number of additional allotments [excluding road and reserve]: Lease: **YES** ☐ **NO** ☐

BUILDING RULES CLASSIFICATION SOUGHT: Present classification:

If Class 5,6,78 or 9 classification is sought, state the proposed number of employees: Male: Female:

If Class 9a classification is sought, state the number o persons for whom accommodation is provided:

If Class 9b classification is sought, state the proposed number of occupants of the various spaces at the premises:

DOES EITHER SCHEDULE 21 OR 22 OF THE DEVELOPMENT REGULATIONS 2008 APPLY? **YES** ☐ **NO** ☒

HAS THE CONSTRUCTION INDUSTRY TRAINING FUND ACT 2008 LEVY BEEN PAID? **YES** ☐ **NO** ☒

DEVELOPMENT COST [do not include any fit-out costs]: $ 228,517,000

I acknowledge that copies of this application and supporting documentation may be provided to interested persons in accordance with the Development Regulations 2008.

SIGNATURE: Dated: 14 / 01 / 19

DEVELOPMENT REGULATIONS 1993
Form of Declaration
(Schedule 5 clause 2A)

To: SCAP

From: COHEN GROUP

Date of Application: 14 / 01 / 2019

Location of Proposed Development: BURNSIDE VILLAGE……

House No: 447 Lot No: …. Street: PORTRUSH RD. Town/Suburb. GLENSIDE..

Section No (full/part): MULTIPLE ……Hundred: ……..

Volume: …… Folio: …….

Nature of Proposed Development:
REDEVELOPMENT OF EXISTING SHOPPING CENTRE

I ……TOM HATELEY……..~~**being the applicant/**~~ **a person acting on behalf of the applicant (delete the inapplicable statement) for the development described above declare that the proposed development will involve the construction of a building which would, if constructed in accordance with the plans submitted, not be contrary to the regulations prescribed for the purposes of section 86 of the *Electricity Act 1996*. I make this declaration under clause 2A(1) of Schedule 5 of the *Development Regulations 1993*.**

Date: 14 / 01 / 2019

Signed: ……..

Note 1
This declaration is only relevant to those development applications seeking authorisation for a form of development that involves the construction of a building (there is a definition of 'building' contained in section 4(1) of the *Development Act 1993*), other than where the development is limited to –

a) an internal alteration of a building; or
b) an alteration to the walls of a building but not so as to alter the shape of the building.

Note 2
The requirements of section 86 of the *Electricity Act 1996* do not apply in relation to:

a) a fence that is less than 2.0 m in height; or
b) a service line installed specifically to supply electricity to the building or structure by the operator of the transmission or distribution network from which the electricity is being supplied.

Note 3
Section 86 of the *Electricity Act 1996* refers to the erection of buildings in proximity to powerlines. The regulations under this Act prescribe minimum safe clearance distances that must be complied with.

Note 4
The majority of applications will not have any powerline issues, as normal residential setbacks often cause the building to comply with the prescribed powerline clearance distances. Buildings/renovations located far away from powerlines, for example towards the back of properties, will usually also comply.

Particular care needs to be taken where high voltage powerlines exist; where the development:

- is on a major road;
- commercial/industrial in nature; or
- built to the property boundary.

Note 5
Information brochures 'Powerline Clearance Declaration Guide' and 'Building Safely Near Powerlines' have been prepared by the Technical Regulator to assist applicants and other interested persons. Copies of these brochures are available from council and the Office of the Technical Regulator. The brochures and other relevant information can also be found at www.technicalregulator.sa.gov.au

Note 6
In cases where applicants have obtained a written approval from the Technical Regulator to build the development specified above in its current form within the prescribed clearance distances, the applicant is able to sign the form.

AECOM Imagine it. Delivered.

AECOM Australia Pty Ltd
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Adelaide SA 5000
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+61 8 7223 5499 fax
ABN 20 093 846 925

14 January 2019

Presiding Member
State Commission Assessment Panel
GPO Box 1815
ADELAIDE SA 5001

Attention: Mr Ben Scholes

Dear Mr Scholes

Proposed Expansion of the Burnside Village Shopping Centre

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) has been engaged by the Cohen Group (the proponent), as owners of the centre, to provide planning advice and support in respect to their proposed expansion to the Burnside Village Shopping Centre at Glenside. The proposal constitutes development in accordance with the *Development Act 1993*. An application is required in accordance with sections 32 and 33 of the Development Act.

The proposed development has been considered by the State Coordinator-General, who has assigned the State Commission Assessment Panel (SCAP) as the relevant authority in accordance with Clause 20 of Schedule 10 of the *Development Regulations 2008*. The proponent has participated in a Pre-Lodgement Process with the Department of Planning, Transport and Infrastructure (DPTI) and the City of Burnside (the Council). We are grateful for the opportunity to obtain early feedback on various iterations of the project's design and are now confident that the proposed development is ready for lodgement with SCAP.

Please accept this letter and the attached documents as a formal application in accordance with sections 33(2) and 39 of the Development Act and Regulation15(3) of the Development Regulations. The development application has addressed the matters specifically identified by the State Coordinator-General in his letter dated 16 November.

2.0 The subject land

The subject land comprises 42 allotments with a combined area of approximately 4.7 hectares. It includes the entire block bounded by Greenhill and Portrush Roads and Sydney and Cator Streets.

The subject land is located within the District Centre Zone of the *Burnside (City) Development Plan* (consolidated 19 December 2017) and is located within Policy Area 1 of that Zone.

Further description of the subject land and the locality is provided in Section 2.0 of the attached Planning Report. Copies of the relevant Certificates of Title are included as an Appendix to that report.

3.0 Proposed development

The nature of the proposed development is best described as alterations and additions to an existing shopping centre, including demolition of existing buildings and removal of four regulated trees. The specific components of the proposed development include:

- Demolition of existing buildings and structures.

- Expansion of the existing main shopping centre building into the northern and eastern portions of the site, comprising:
    - Two levels of basement car parking in the northern portion of the site, with connections to the existing basement car parking located on-site.
    - Retail floor space expansion of 20,686 square metres gross leasable area (GLA) over two levels, including new supermarket, speciality retail and restaurants.
    - New multi-screen cinema complex (entertainment venue), situated above two levels of retail in the north-western corner of the site adjacent to the intersection of Greenhill Road and Sydney Street.
    - Five levels of office floor space of 5,350 square metres GLA situated above two levels of retail in the north-eastern corner of the site adjacent to the intersection of Greenhill and Portrush roads.
    - Two levels of roof-top car parking in the southern and eastern portion of the site above redeveloped and new retail floor space.
    - One level of office floor space of 1,500 square metres GLA situated over the roof-top car parking levels in the south-eastern corner of the site.
- Construction of a new stormwater drain with dimensions of 1.0 metres deep by 5.0 metres wide, which traverses the site from east to west.
- Removal of three Significant trees (onsite) and one Regulated Tree (Cator Street).

The proposed development will result in a single building that spans the subject land and ranges in height from single storey above ground level (existing retail development adjacent to Sydney Street) to seven storeys above ground level (two levels of retail and five levels of office) in the north-eastern corner of the site.

Further details of the proposed development are set out in Section 3.0 of the attached Planning Report.

3.1 Staging of the proposed development

The proponent is seeking a staged Development Approval to allow for the project to progress in stages over a 10-year timeframe. As such, should SCAP grant Development Plan Consent to the development application, a 10-year timeframe to complete the development is sought, rather than the standard three years. This length of time is sought to enable:

- 12 months to engage a contractor, complete detailed designs and substantially commence the development;
- construction to commence in the northern portion of the site first (defined by the proponent as Stage 6 in the long-term redevelopment of Burnside Village), increasing car parking for the shopping centre and minimising disturbance to the existing shopping centre tenants;
- a two to three-year construction program for Stage 6 – estimated completion December 2021;
- Stage 7, focused on the southern and eastern areas of the site, to be commenced approximately three years after the completion of Stage 6, allowing the market to adjust and the new tenancies to establish; and
- A two to three-year construction program for Stage 7 – estimated completion December 2028.

An alternative approach would be to apply now for only Stage 6 of the Burnside Village Expansion, with a separate application for Stage 7 later. However, we believe that the approach undertaken allows for a wholistic assessment of the development and a clear understanding of the impacts of full

redevelopment of the site as proposed in this application. It allows all parties (i.e. the proponent, Council and DPTI) to be aware of the impacts of the full development and agree on interventions to infrastructure and the public realm, even if these may be staged.

These two broader stages that align to the proponent's redevelopment plans are intended to be broken down into further sub-stages for the purposes of staged Development Approvals, as outlined below. This approach provides the greatest flexibility to the proponent's contractor for the works, and allows the proponent to respond to the market by accelerating or slowing individual stages.

Staging for Development Approval purposes	Description
Burnside Village Expansion Stage 6 (northern expansion to Greenhill Road) - Estimated Completion December 2021	
Stage 6.1	Demolition and Regulated Tree Removal (within site)
Stage 6.2	Substructure (basement levels, ground level slab), excavation and stormwater
Stage 6.3	Retail expansion (2 levels), Level 2 roof top bars and sky walk and changes in use at Level 1 of existing centre
Stage 6.4	Office tower (Level 2 only)
Stage 6.5	Cinema complex
Stage 6.6	Landscaping and public realm
Burnside Village Expansion Stage 7 (southern redevelopment and eastern expansion to Portrush Road) - Estimated Completion December 2028	
Stage 7.1	Demolition (south-east) and Regulated Tree Removal (Cator Street)
Stage 7.2	Retail expansion and Level 1 car park (southeast)
Stage 7.3	Demolition (south-west)
Stage 7.4	Retail redevelopment and Level 1 car park (southwest)
Stage 7.5	Retail expansion (2 levels) (eastern/main entrance)
Stage 7.6	Internal Level 1 retail expansion and redevelopment
Stage 7.7	Office tower (Levels 3-6)
Stage 7.8	Level 2 car park
Stage 7.9	Level 3 office (south-eastern)
Stage 7.10	Landscaping and public realm

These stages have a three-dimensional component and are illustrated in the plans attached to the Planning Report (Appendix B).

4.0 Consultation

To inform the design, the project team has consulted with DPTI and the City of Burnside on numerous occasions. The proponent has also commenced early consultation with adjoining residents of the centre.

In addition to the statutory consultation requirements that will form part of the assessment process, the applicant intends to further consult with the community and key stakeholders. Such activities will include:

- Letterbox drop to adjoining residents upon lodgement of the application;
- Public display/information at Burnside Village;
- Ongoing tenant briefings as required.

5.0 Procedural matters

The State Coordinator-General has determined that SCAP is the most appropriate authority to assess the proposed development in accordance with Clause 20 of Schedule 10 of the Development Regulations. SCAP must make its assessment of the application against the relevant provisions of the Burnside (City) Development Plan.

The nature of the proposed development is such that it is neither listed as complying or non-complying development within the District Centre Zone. As such the application must be assessed on its merits.

As part of its assessment, SCAP must refer the development application to the Council in accordance with Regulation 38(2)(b) of the Development Regulations. Council has six weeks within which to provide its comments to SCAP.

Schedule 8 of the Development Regulations identifies that the proposed development requires referral to:

- the Commissioner of Highways in accordance with:
  - Clause 3—Development adjacent to main roads.
  - Clause 4—Advertising displays on or abutting arterial roads.
- SCAP in accordance with Clause 13—Retail developments in Metropolitan Adelaide exceeding a prescribed size, which can be addressed directly by SCAP in its assessment as the relevant authority.

The proposed development comprises development within a District Centre Zone on a site that is adjacent to land in another zone. Therefore, the development is categorised as Category 2 for the purpose of public notification in accordance with Clause 18(c) of Schedule 9 of the Development Regulations. As such, the application must be referred to the owners or occupiers of adjacent land in accordance with Section 38(4) of the Development Act.

Our view on the categorisation of the development has been confirmed by the Hon Brian Hayes QC, whose opinion has previously been provided to DPTI.

6.0 Development application fees

The cost of the proposed development is $228,517,000 for the purpose of determining application fees in accordance with Schedule 6 of the Development Regulations. As such, we have determined the following fees are payable to SCAP:

Clause	Description	Fee Amount
1(1)(c)	Lodgement Fee (base amount and development involving building work)	$136.00
1(2)(e)	Development Plan Assessment Fee	$200,000.00
1(5)(a)(ii)	Referral Fee to Commissioner of Highways	$379.00
1(6)	Category 2 Public Notification Fee	$109.00
	Total Fees Payable	**$200,624.00**

To assist with the processing of the application a cheque for the above amount is attached. It would be greatly appreciated if SCAP could provide a tax invoice for fees payable.

7.0 Development Assessment

A detailed assessment of the proposed development against the relevant provisions of the Development Plan is provided in Section 5.0 of the attached Planning Report. The assessment is divided into themes that address provisions of the District Centre Zone, Policy Area 1 and the General Provisions of the Development Plan.

The Planning Report also includes detailed technical reports which are included as Appendices.

Our assessment finds that the proposed development is appropriate and, on balance, satisfies the relevant provisions of the Development Plan in that it:

- Is of a scale of development appropriate to a District Centre Zone in an inner urban location;
- is consistent with the desired and existing forms of development in the District Centre Zone and will reinforce the role of the Policy Area as the retail focus for the Council area;
- provides a building form and layout, material and finishes and landscaping design that respects the desired village character of the centre, while allowing for an integrated development across the entire Burnside Village site;
- includes a landmark building desired by the Zone provisions to be located at the corner of Greenhill and Portrush Roads;
- delivers a high standard of architectural treatment across the development, which will result in significant visual amenity improvements;
- includes an integrated landscape design on site and improvements to the adjoining streetscapes, including planting of additional trees to offset the removal of Significant and Regulated Trees;
- provides appropriate car park levels and safe vehicle access to the site;
- will improve safety on the adjoining road network by removing the existing signalised pedestrian crossing and creating a new signalised intersection at the junction of Greenhill Road and Sydney Street;
- accommodates the requirements for future widening of both Greenhill and Portrush Roads;

- upgrades the capacity and increases the resilience of the local stormwater system; and
- results in minimal adverse impacts to the amenity of dwellings in the adjoining Residential Zone.

8.0 Conclusion

The Cohen Group's overall $350 million staged redevelopment and expansion of the Burnside Village Shopping Centre over the next 10 years will generate substantial economic benefits, create additional employment opportunities and create a revitalised place at the heart of the City of Burnside. It will be an exemplar in shopping centre design in South Australia and set new benchmarks for built form, character and materiality that befits its prominent location at the intersection of two major transport routes through the Council area.

We believe that the proposal is an exceptional standard of development that is consistent with the Development Plan and will make a substantial positive contribution to the locality.

Please do not hesitate to contact me on 0404 033 705 if you have any questions in respect to the development application and the materials submitted in its support.

We look forward to SCAP's consideration of the application.

Yours sincerely

Brenton Burman
Technical Director, Transport Planning & Urban Development
brenton.burman@aecom.com

Mobile: +61 404 033 705

encl: Development Application Form
Electricity Act Declaration Form
Planning Report
Plans and Drawings
Supporting Reports
Certificates of Title

cc: Mr Peter Cohen, Cohen Group
Mr Richard Hamilton, Titanium Property Investment

AECOM Imagine it. Delivered.

Burnside Village Redevelopment
Cohen Group Property Services Pty. Ltd.
14-Jan-2019

Development Application Planning Report

Burnside Village Redevelopment

Development Application Planning Report

Burnside Village Redevelopment

Client: Cohen Group Property Services Pty. Ltd.

ABN: 19007731231

Prepared by

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14-Jan-2019

Job No.: 60557901

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Quality Information

Document	Development Application Planning Report
	60557901
Ref	\\auadl1fp001\aecom_projects\605x\60557901 burnside village exp\6. draft docs\6.1 reports\da\burnside village development application planning report final for lodgement.docx
Date	14-Jan-2019
Prepared by	Tom Hateley & Chris Childs
Reviewed by	Brenton Burman

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
0	14-Jan-2019	Final for Lodgement	Brenton Burman Technical Director	

Table of Contents

1.0 **Introduction** 1
2.0 **Site and Locality** 2
2.1 Subject Land 2
2.1.1 Existing interests 3
2.1.2 Existing development 4
2.1.3 Zone and Policy Area 4
2.2 Locality 5
3.0 **Proposed Development** 7
3.1 Summary 7
3.2 Construction Staging 8
3.3 Land Use and Floor Areas 10
3.4 Built Form 10
3.5 Design and Appearance 12
3.6 Regulated and Significant Trees 17
3.7 Landscaping and Public Realm 19
3.8 Car Parking, Access and Traffic 25
3.9 Signage 27
3.10 Stormwater Management 27
3.11 Operational Detail 28
4.0 **Procedural Matters** 29
4.1 Relevant Authority 29
4.2 Nature of development 29
4.3 Public Notification 29
4.4 Agency Referrals 30
5.0 **Development Plan Assessment** 31
5.1 Introduction 31
5.2 Assessment 31
5.2.1 Land Use 31
5.2.2 Design and Siting 33
5.2.3 Traffic/Parking/Access 35
5.2.4 Amenity and Interface Impacts 37
5.2.5 Landscaping 39
5.2.6 Signage 40
5.2.7 Stormwater Management 40
5.2.8 Waste Management 40
5.2.9 Ecologically Sustainable Development 41
6.0 **Conclusion** 42

Appendix A
Certificates of Title A

Appendix B
Proposal Architectural Plans and Drawings B

Appendix C
Landscape Plans C

Appendix D
Traffic Impact Assessment D

Appendix E
Economic Impact Assessment E

Appendix F
Stormwater Management Strategy F

Appendix G
Acoustic Services Planning Report G

Appendix H
Waste Management Advice H

1.0 Introduction

Cohen Group Property Services Pty Ltd (Cohen Group), as the owners of the centre, is proposing a major redevelopment and expansion of the existing Burnside Village Shopping Centre to realise its long-term vision for a single integrated development across the entire site bounded by Greenhill Road, Portrush Road, Cator Street and Sydney Street. Having pursued a series of developments over the 45-year history of Burnside Village, the Cohen Group is seeking to demolish the existing disparate buildings in the northern portion of the site to create a new frontage to Greenhill Road and expansion of the main shopping centre building. The expanded centre will include a collection of individual spaces and precincts connecting to the main shopping centre that preserves the signature 'village' atmosphere for which Burnside Village is known.

AECOM Australia Pty Ltd (AECOM) has been engaged by the Cohen Group to provide planning advice and to assist in obtaining a development approval for the proposed development in accordance with the *Development Act 1993*. This has included seeking a call-in of the proposal by the State Coordinator-General, who has declared the State Commission Assessment Panel (SCAP) is the relevant authority for assessment of this development application.

Prior to the lodgement of the development application, the project team has been involved in three Pre-Lodgement meetings with the Department of Planning, Transport and Infrastructure (DPTI) and the City of Burnside (the Council).

This Planning Report has been prepared to support the development application and provides:

- a description of the subject site and locality;
- details of the proposed development, including:
  - land uses;
  - architecture and built form;
  - landscaping and public realm;
  - car parking and access;
  - external transport improvements agreed with DPTI;
  - staging of works over a 10-year period.
- an outline of procedural matters related to the assessment of the development, particularly as they apply to the Development Act and the *Development Regulations 2008*; and
- our assessment of the development against the relevant provisions of the *Burnside (City) Development Plan*.

The following plan packages and technical reports have supported the preparation of this Planning Report:

- Architectural plans and drawings by Buchan (Appendix B).
- Landscape plans and drawings by Oxigen, including Tree Report by Dean Nicolle (Appendix C).
- AIMSUM Scenario Model Analysis Report by Jacobs (Appendix D).
- Economic Impact Assessment by Urbis (Appendix E).
- Stormwater Management Strategy and Siteworks plans by Wallbridge Gilbert Aztec (WGA) (Appendix F).
- Acoustic Services Planning Report by AECOM (Appendix G).
- Waste Management Advice (letter) by Colby Industries (Appendix H).

2.0 Site and Locality

2.1 Subject Land

The Burnside Village Shopping Centre at Glenside is well established and has played a key role in providing retail services for the local community for 45 years. It is the retail anchor for the District Centre, which is the main retail, commercial and civic focal point for the City of Burnside and the eastern suburbs of metropolitan Adelaide.

For the purpose of this Planning Report, Burnside Village is used to refer to the main shopping centre, together with separate retail and commercial premises that front Greenhill and Portrush Roads. The site is bounded by Portrush Road to the east, Greenhill Road to the north, Sydney Street to the west and Cator Street to the south.

The subject land comprises all 42 allotments within the block formed by these roads, consisting of a site with an overall area of approximately 4.7 hectares, as identified in Figure 1. For the purpose of the development application, the site also includes the portion of the road reserves between the property boundary and kerb line of each road.

Figure 1 Subject Land and Allotments

The 42 allotments that comprise the subject land are identified by the Certificates of Title listed in Table 1. Copies of these Titles are included in Appendix A.

Table 1. Certificates of Title and Parcel Details

Figure 1 Reference	Certificate of Title	Allotment No.	Plan No.	Figure 1 Reference	Certificate of Title	Allotment No.	Plan No.
1	CT6142/776	30	F15722	22	CT5432/65	49	F15722
2	CT6145/850	31	F15722	23	CT5432/63	50	F15722
3	CT6145/817	32	F15722	24	CT5251/549	51	F15722
4	CT5241/577	33	F15722	25	CT5251/548	52	F15722
5	CT5363/573	34	F15722	26	CT5251/547	53	F15722
6	CT6122/470	3	F18930	27	CT5431/842	54	F15722
7	CT5128/795	36	F15722	28	CT5092/421	11	D21914
8	CT5157/926	37	F15722	29	CT5562/878	12	D21914
9	CT5084/389	38	F15722	30	CT5322/225	55	F15722
10	CT5432/64	91	F206849	31	CT5099/248	66	D14823
11	CT5097/984	39	F15722	32	CT6080/165	58	F15722
12	CT6122/466	40	F15722	33	CT5787/893	21	F15722
13	CT6122/459	41	F15722	34	CT5143/941	22	F15722
14	CT6122/464	42	F15722	35	CT5143/940	23	F15722
15	CT6122/462	43	F15722	36	CT5407/745	24	F15722
16	CT6122/463	44	F15722	37	CT6129/44	25	F15722
17	CT6122/465	45	F15722	38	CT5453/700	26	F15722
18	CT6122/460	2	F18930	39	CT5571/855	27	F15722
19	CT6122/461	1	F18930	40	CT5440/785	28	F15722
20	CT5193/218	47	F15722	41	CT5418/857	11	F6446
21	CT5193/219	48	F15722	42	CT5360/934	29	F15722

2.1.1 Existing interests

The site is subject to easements for services, including a large stormwater easement to the City of Burnside, which traverses Allotment 31 in an east-west direction. Statutory easements also exist for overhead power lines located within the adjoining road reserves.

A right of way exists over Allotments 29, 30 and 31, which provides access to Allotment 26 from Portrush Road. The right of way was required when the allotments were in various ownership to ensure access to car parking and loading areas accessed from Portrush Road. However, with the acquisition of all the allotments by the Cohen Group, the right of way is no longer a relevant consideration.

Allotment 31 is subject to a Land Management Agreement (LMA) with the City of Burnside. This LMA governs the retention of the at-grade car park in the northern section of the site that is accessed via Portrush Road, as well as stormwater management associated with the stormwater easement and overland flows.

In respect to car parking, the intention of the LMA was to ensure car parking remained available to retail premises fronting Greenhill Road (under separate ownership at the time) when the Cohen Group acquired a Council-owned car park. Again, with the acquisition of all allotments by the Cohen Group, this aspect of the LMA is no longer relevant. Discussions with the City of Burnside in respect to extinguishing these clauses of the existing LMA have commenced.

Proposed changes to stormwater will also require changes to the relevant clauses of the LMA. Again, discussions have commenced and will progress outside the development application process.

2.1.2 Existing development

At present, the site is developed for retail and commercial purposes, with a large main shopping centre building that incorporates indoor and outdoor malls, and smaller retail and commercial premises that front Greenhill Road, Portrush Road and internal car parking areas within the northern part of the site.

The main shopping centre building consists of a wide range of uses including a supermarket, approximately 100 specialty shops, offices, cafes and a gym. Currently the total gross leasable area (GLA) provided on the site is 24,196 square metres.

The site is generally flat due to excavation, but the natural ground level features a fall of approximately 5.0 to 6.0 metres from the south-east corner of the site to the north-west corner. The site is graded such that the ground floor level of the main shopping centre sits approximately 4.0 metres below the natural ground level at the corner of Portrush Road and Cator Street.

The shopping centre is orientated towards Portrush Road and is setback between 35 and 40 metres along this frontage. Open-air car parking currently is located along the full length of the frontage along Portrush Road, with a portion of deck car parking adjacent to Cator Street at the level of the street. The main entrance to the shopping centre is oriented to Portrush Road beneath the signature curved roof form. Additional entrances to the centre are located closer to Cator Street, along the northern frontage and a small entrance from Sydney Street adjacent to the supermarket.

Nine further buildings are located in the northern portion of the site, which feature minimal or no setbacks to Portrush and Greenhill Roads. There is no consistent built form character to these buildings, which vary in style, appearance and height, but are generally single storey in nature.

Vehicular access is provided via 11 different crossovers:

- four crossovers on Portrush Road, of which two provide general car park access and two provide limited access;
- three crossovers on Cator Street, including one used exclusively for the main loading dock; and
- three crossovers on Sydney Street (including one used exclusively for a loading dock).

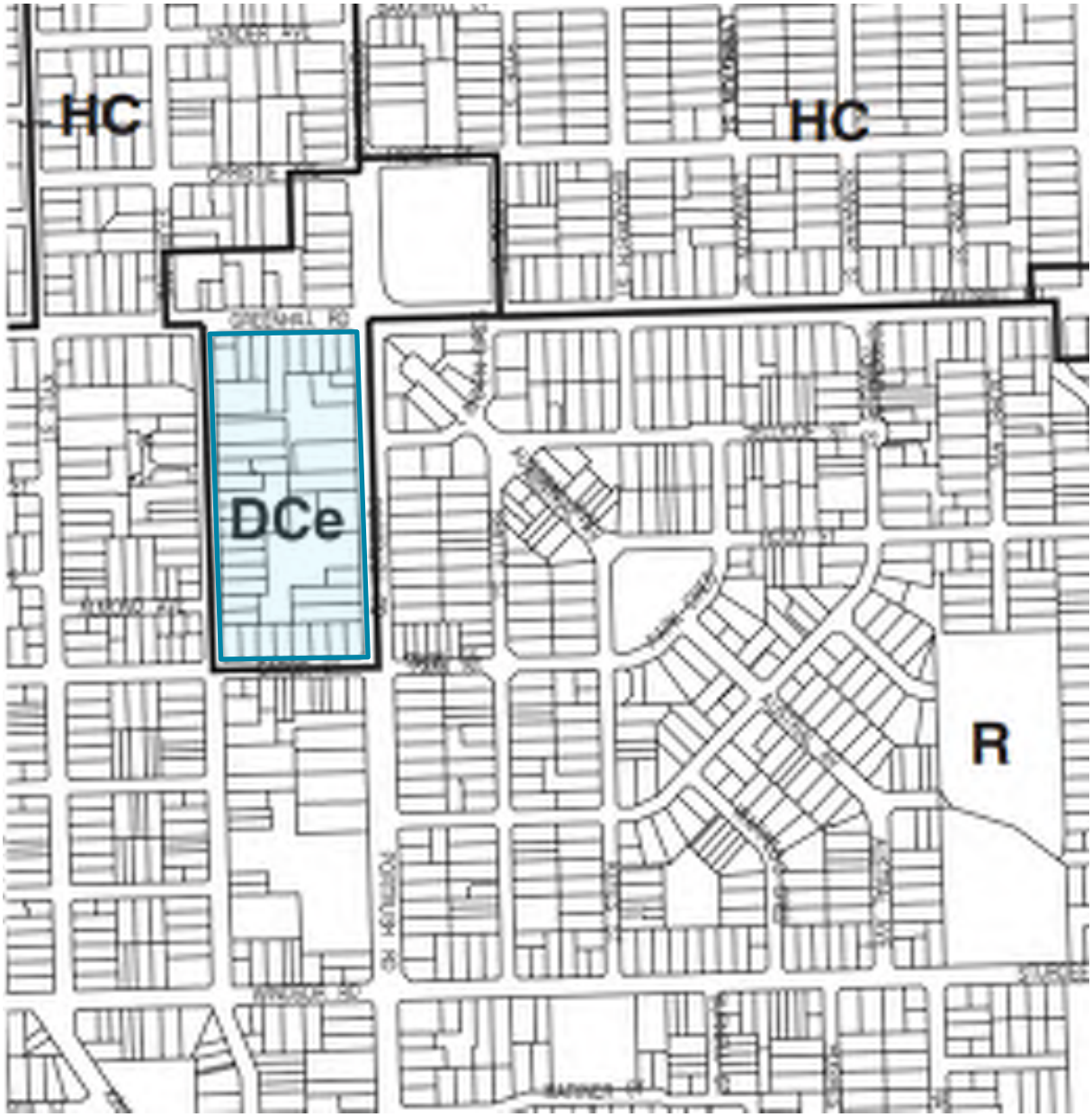
No vehicle access is provided from Greenhill Road. A series of walkways between buildings provide pedestrian access into the site from Greenhill Road.

Minor landscaping is found within and surrounding the car parking areas fronting Portrush Road. Four significant trees are located within the northern portion of the site.

2.1.3 Zone and Policy Area

The subject site is located entirely within the District Centre Zone of the *Burnside (City) Development Plan* as illustrated in Figure 2. The land is also within District Centre Policy Area 1.

Figure 2 Zoning within the locality



Source Map Bur/7 of the Burnside Council Development Plan

2.2 Locality

The subject site is surrounded by low density (one and two-storey detached dwellings), along with medium density (one, two and three-storey residential flat buildings) residential development immediately to the west and south. A mix of retail and commercial businesses are located directly adjacent to the north on the opposite side of Greenhill Road.

The City of Burnside's council chambers, library and community centre, incorporating the State Heritage listed Burnside Town Hall, are located on the corner of Greenhill and Portrush Roads diagonally opposite the site to the north-east. Public open space, low density residential and commercial properties (including a child care centre, offices and consulting rooms) are located opposite the site along the eastern side of Portrush Road.

The land use mix within the locality is highlighted in Figure 3.

Figure 3 Land uses within the locality

Source: Location SA

The zoning of the adjoining land (see Figure 2) comprises the following:

- Residential Zone (Residential Policy Area 20 Glenside (Village) to the south and west.
- Residential Zone (Residential Policy Area 21 Linden Park) to the east.
- District Centre Zone (Policy Area 2) to the north.
- District Centre Zone (Policy Area 3) to the north east.

Portrush Road is identified as a primary arterial road; the portion of the road which adjoins the site accommodates a daily traffic volume of approximately 37,800 vehicles[1]. It is of strategic importance as part of the National Highway Network and a significant freight route connecting the South Eastern Freeway to industrial areas in the north and west of Adelaide, the Port of Adelaide and Outer Harbor, and strategic freight routes that connect to areas in the north of the State.

Greenhill Road is a secondary arterial road with an estimated daily traffic volume of approximately 30,500 vehicles[2]. Cator Street is a collector street, whilst Sydney Street is a local road.

[1] DPTI Annual Average Daily Traffic Estimates 24 two-way flows, 14 September 2015
[2] ibid

3.0 Proposed Development

3.1 Summary

The proposal is for a full redevelopment of the Burnside Village site, to be delivered in stages over a 10-year timeframe.

The nature of the proposed development is best described as alterations and additions to an existing shopping centre, including demolition of existing buildings and removal of three Significant trees and one Regulated tree.

The specific components of the proposed development include:

- Demolition of existing buildings and structures.
- Expansion of the existing main shopping centre building into the northern and eastern portions of the site, comprising:
    - Two levels of basement car parking in the northern portion of the site, with connections to the existing basement car parking located on-site.
    - Retail floor space expansion over two levels, including new supermarket, five new mini majors, speciality retail and restaurants.
    - New multi-screen cinema complex (entertainment venue), situated above two levels of retail in the north-western corner of the site adjacent to the intersection of Greenhill Road and Sydney Street.
    - Five levels of office floor space situated above two levels of retail in the north-eastern corner of the site adjacent to the intersection of Greenhill and Portrush roads.
    - Two levels of roof top car parking in the southern and eastern portion of the site above redeveloped and new retail floor space.
- One level of office floor space situated over the roof top car parking levels in the south-eastern corner of the site.
- Construction of a new stormwater drain with dimensions of 1.0 metre deep by 5.0 metres wide, which traverses the site from east to west. This drain will be located within the basement of the building.
- Removal of three Significant trees (within the Burnside Village site) and one Regulated tree (street tree in Cator Street).

The proposed development will result in a single building that spans the subject land and ranges in height from single storey above ground level (existing retail development adjacent to Sydney Street) to seven storeys above ground level (two levels of retail and five levels of office) in the north-eastern corner of the site.

The site will be developed into a series of precincts as illustrated in Figure 4.

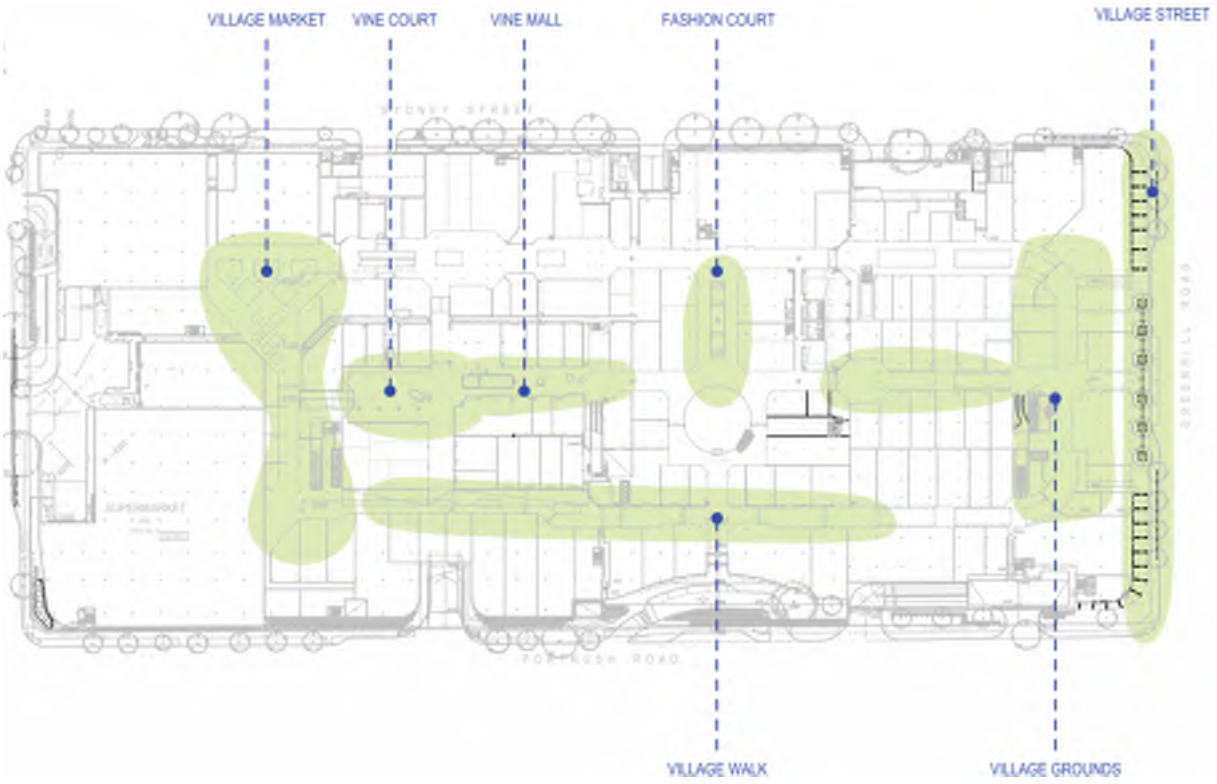
To inform the design, the project team has consulted with DPTI and the City of Burnside on numerous occasions. The proponent has also commenced early consultation with adjoining residents of the centre.

In addition to the statutory consultation requirements that will form part of the assessment process, the applicant intends to further consult with the community and key stakeholders. Such activities will include:

- Letterbox drop to adjoining residents upon lodgement of the application;
- Public display/information at Burnside Village;

- Ongoing tenant briefings as required.

Figure 4 Precinct Plan



3.2 Construction Staging

A staged Development Approval is sought to allow for the project to progress in two major stages (defined by the Cohen Group as Stages 6 and 7 in their long-term redevelopment of Burnside Village) over a 10-year timeframe. As such, should SCAP grant Development Plan Consent to the development application, a 10-year timeframe to complete the development is sought, rather than the standard three years. This length of time is sought to enable:

- 12 months to engage a contractor, complete detailed designs and substantially commence the development;
- construction to commence in the northern portion of the site first (Stage 6), which increases car parking for the shopping centre and minimises disturbance to the existing shopping centre tenants;
- a two to three-year construction program for Stage 6 – estimated completion December 2021;
- Commencement of Stage 7, focused on the southern and eastern areas of the site, approximately three years after the completion of Stage 6, allowing the market to adjust and the new tenancies to establish; and
- a two to three-year construction program for Stage 7 – estimated completion December 2028.

An alternative approach would be to apply now for only Stage 6 of the Burnside Village Expansion, with a separate application for Stage 7 later. However, we believe that the approach undertaken allows for a wholistic assessment of the development and a clear understanding of the impacts of full redevelopment of the site as proposed in this application. It allows all parties (i.e. the Cohen Group, Council, DPTI and the local community) to be aware of the impacts of the full development and agree on interventions to infrastructure and the public realm, even if these may be staged.

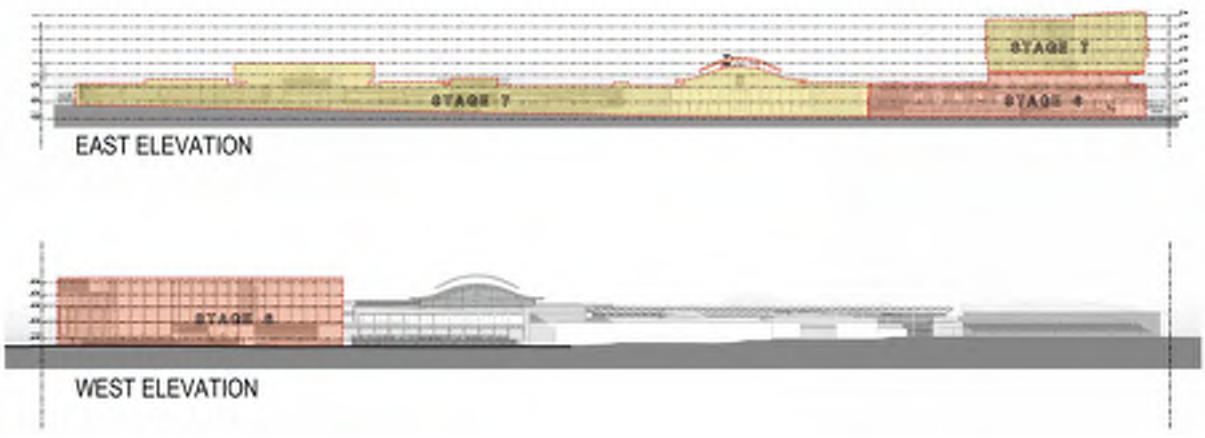
These two broader stages are intended to be broken down into further sub-stages for the purpose of staged Development Approvals, as outlined in Table 2. This approach provides the greatest flexibility to a future contractor for the works and allows the Cohen Group to respond to the market by accelerating or slowing individual stages.

Table 2 Construction Staging

Staging for Development Approval purposes	Description
Burnside Village Expansion Stage 6	**Estimated Completion December 2021**
Stage 6.1	Demolition and Significant Tree Removal (within site)
Stage 6.2	Substructure (basement levels, ground level slab), excavation and stormwater
Stage 6.3	Retail expansion (2 levels), Level 2 roof top bars and sky walk and changes in use at Level 1 of existing centre
Stage 6.4	Office tower (Level 2 only)
Stage 6.5	Cinema complex
Stage 6.6	Landscaping and public realm
Burnside Village Expansion Stage 7	**Estimated Completion December 2028**
Stage 7.1	Demolition (south-east) and Regulated Tree Removal (Cator Street)
Stage 7.2	Retail expansion and Level 1 car park (south-east)
Stage 7.3	Demolition (south-west)
Stage 7.4	Retail redevelopment and Level 1 car park (south-west)
Stage 7.5	Retail expansion (2 levels) (eastern/main entrance)
Stage 7.6	Internal Level 1 retail expansion and redevelopment
Stage 7.7	Office tower (Levels 3-6)
Stage 7.8	Level 2 car park
Stage 7.9	Level 3 office (south-eastern)
Stage 7.10	Landscaping and public realm

These stages have a three-dimensional component and are illustrated in Figure 5 and in attached plan number ATP-10155 in Appendix B.

Figure 5 Construction Staging Elevations



3.3 Land Use and Floor Areas

The proposed development will maintain the current mix of land uses (i.e. shops, restaurants, offices, banks, personal services establishments, consulting rooms) on the site. A new land use in the form of a cinema will be introduced to the site.

The additional retail floor space will accommodate a mixture of retail uses on ground level and Level 1, including an additional supermarket, flagship retail tenants (defined on the plans as mini majors), a new dining precinct within the north portion of the site and multiple speciality retail tenancies.

The introduction of the mid-rise commercial office tower allows for a greater range of commercial land uses to exist on the site. This building component will be made up of a mix of offices and consulting rooms. Investigations have identified community and market interest for well-located commercial space in this part of metropolitan Adelaide.

The proposed development will increase the total gross leasable area (GLA) of Burnside Village to 52,103 square metres, an increase of 27,907 square metres. A total of 9,255 square metres of GLA will be demolished to accommodate the new development. The increase in floor space comes from 27,847 square metres GLA of new retail, 2,311 square metres GLA of cinema and 7,004 square metres of new office floor space. The breakdown of changes in floor space by land use is outlined in Table 3.

Table 3. Floor area changes

Category of Use	Existing GLA (m^2)	Stage 6 Net Increase GLA (m^2)	Stage 7 Net Increase GLA (m^2)	Final GLA (m^2)
Supermarkets	3,854	0	1,546	5,400
Retail, Food & Commercial	18,399	10,196	8,308	36,903
Office / Consulting Rooms	1,943	456	5,090	7,489
Cinema	0	2,311	0	2,311
TOTAL	**24,196**	**12,963**	**14,944**	**52,103**

3.4 Built Form

The proposed development will result in a single, integrated building with seven levels above ground and two basement levels, whilst maintaining the existing and desired "village" character of the site. The maximum height of the development proposed on the site (i.e. mid-rise commercial tower) will be approximately 30 metres above ground level.

The works proposed for each level of the development are summarised below:

Basement B2:

- Excavation and creation of an additional basement level (B2) carpark with 316 car spaces, including eight disabled spaces, within the northern portion of the site.
- Two ramps to basement level B1 created on the western and eastern sides of the basement car park
- A new mall entry-point, including an escalator and two elevators.
- Reconfiguration and expansion of the stormwater drain.

Basement B1:

- Reconfiguration of existing basement carpark and extension of this level into the northern portion of the site to create 1097 car spaces.
- Two additional ramps to ground level created on the western and eastern sides of the basement car park in the northern portion of the site, providing direct access from Sydney Street and Portrush Road.
- Removal of the existing ramp up to the current ground level car park on the eastern side of the main shopping centre building.
- New and upgraded mall entry-points, including escalators, elevators, and a grand staircase in the northern portion of the site.

Ground Level:

- Demolition of nine existing buildings within the northern portion of the site.
- Retail area extended to the Greenhill Road site boundary, extending from Sydney Street to Portrush Road, which will contain additional retail tenancies.
- Existing retail area extended east to the Portrush Road site boundary, which will contain a supermarket and additional retail tenancies across two levels.
- Three new pedestrian entries created from Greenhill Road, and relocating the main pedestrian entrance closer to Portrush Road, which will also be served by a porte cochere for taxi and rideshare pick up and drop off.
- A new food and beverage precinct (Village Grounds) created in the northern portion of the site.
- Two escalators and continuation of grand staircase to provide access to the proposed upper retail level within the northern portion of the site.
- New ramp from Portrush Road to provide vehicle access to the Level 1 car park, replacing the existing ramp down to the at-grade car parking.
- New ramp from Cator Street to provide vehicle access to the Level 1 and Level 2 car parks.
- Two new ramps within northern portion of the site to Basement B1 car park from Portrush Road and Sydney Street, utilising existing crossovers.
- Two new loading docks within northern portion of site, one adjacent to each of Portrush Road and Sydney Street.
- Reconfiguration of the existing Cator Street loading dock to serve two supermarkets and additional retail.
- New car elevator adjacent northern Sydney Street loading dock.
- Office lobby adjacent to the intersection of Portrush and Greenhill Roads.

Level 1:

- Creation of an additional retail level above the existing atrium and along the western and eastern sides of the new northern section.
- New food and beverage precinct within central section of northern portion, including balconies to Greenhill Road.
- New 309 space car park, including 54 bicycle parking spaces, accessible via ramps from Portrush Road and Cator Street and with ramps up to the Level 2 car park.
- One mall entry point from the car park.

- Reconfiguration of existing office space.

Level 2:

- New 340 space car park, directly accessible via the Cator Street ramp.
- Two separate mall entry points via elevators.
- A multi-screen complex in the north-western corner, including a balcony overlooking Greenhill Road.
- Two rooftop bars overlooking Greenhill Road.
- Commercial office space within the north-eastern corner, including a balcony overlooking Portrush and Greenhill Roads.
- Extension of atrium roof over new Portrush Road entry.
- Six plant rooms to be provided throughout the central area of the shopping centre roof.

Level 3:

- Commercial space above the Level 2 car park within the south-eastern portion of the site.
- Commercial office space within the north-eastern corner overlooking Portrush and Greenhill Roads.
- Multiple solar panel zones (not specifically proposed as part of this development application) on the shopping centre roof within northern portion.

Level 4:

- Commercial office space within the north-eastern corner overlooking Portrush and Greenhill Roads.

Level 5:

- Commercial office space within the north-eastern corner overlooking Portrush and Greenhill Roads.

Level 6:

- Commercial office space within the north-eastern corner overlooking Portrush and Greenhill Roads.

3.5 Design and Appearance

Key features of the proposed development include:

- Inclusion and integration of the northern portion of the site into the existing centre, and activation of the Greenhill Road frontage through the 'Village Street' design enhancements.
- A new contemporary 'Village Grounds' restaurant and dining area within the northern portion of the site, which will incorporate significant landscaping and public realm improvements.
- Extending the built form to and along the Portrush Road frontage, which will assist to activate the street frontage.
- Use of high-quality natural materials, including stone, timber and copper.
- Screening of major parking areas, including the proposed multistorey car park with a mixture of vertical timber slats and landscaping.
- A contemporary commercial building on the corner of Portrush and Greenhill Roads providing a desired landmark feature and will complement the design of the retail development below.

Figure 6 Portrush Road and Greenhill Road (Stage 7)

Significant design work has gone into the façade treatment for the proposed development, particularly along Greenhill and Portrush Roads. This has recognised:

- the horizontal scale of the proposed building along Portrush Road;
- the role and function of Portrush Road as part of the National Highway Network and a significant freight route;
- the addition and integration of the northern portion of the site into the existing centre, and the opportunity this presents to create an improved frontage and entry to Greenhill Road;
- aspirations of the District Centre Zone for a 'village feel' to development;
- the desire for a landmark building at the corner of Greenhill and Portrush Roads; and
- the importance of using building materials and landscaping to create a human scale and welcoming environment for pedestrians.

Development along Greenhill Road will be in the form of a 'Village Street', designed in response to the local context. Two iconic, architectural anchors on each corner speak to the adjacent civic precincts, as well as the suburb of Glenside as a whole. They are designed to be viewed from a distance, and act as 'beacons' for Burnside Village within its wider context.

They also act as architectural "book ends" for the new Village Grounds precinct, creating a buffer from busy intersections, and as a transition zone between the existing language of Burnside Village and this new precinct.

The multi-storey commercial tower on the corner of Greenhill and Portrush Roads will feature precast concrete panels, aluminium framed glazing, and timber louvres. The three-level retail and cinema development located on the corner of Greenhill Road and Sydney Street will consist of precast concrete panels and aluminium framed glazing.

The strong, simple forms and material palette of these buildings provide a simple background that contrasts with and accentuates the tactile, multi-layered and intricate language of the Village Grounds precinct.

Figure 7 Greenhill Road Façade (Stage 7)

The Village Grounds are nestled back into the cove created by the anchors, distinguishing this space as a more human-scale, contemporary village. This intimate space is a collection of intricate details, textures and materials, overlaid and curated to create a new village high street on the northern edge of the site. These local materials and unique architectural moments make the Village Grounds a feature destination.

The massing of the northern end of the site is a way of further distinguishing the Village Grounds as an extension of its context in the local community, rather than a new stage of the shopping centre development. Instead of carving up the site into tenancies, clusters of buildings are placed on the site as individual elements, creating laneways and junctions that are more like streets than malls, and more like a village than a shopping centre.

Figure 8 Portrush Road Façade (Stage 7)

The materiality of the Greenhill Road frontage will be adapted along Portrush Road, which will comprise a combination of a local Basket Range stone plinth and walls, vertical timber screens and patina copper signage. These materials provide a link to the building materials of the early villages of Adelaide and a connection to the landscape that is less apparent from the current Portrush Road frontage.

The design of the Portrush Road frontage also provides a continuation of the character of stone and masonry walls that have been constructed by necessity due to traffic noise along Portrush Road in the locality. A wall will be extended from Portrush Road around the corner into Cator Street to provide a visual and acoustic barrier from the expanded loading dock to service the proposed second supermarket and additional retail floor space.

Figure 9 Portrush Road Façade (Stage 7)

The timber screens provide views into and out of, but also effectively screen, the two levels of rooftop car parking positioned along the Portrush Road frontage. The façade of timber and stone is broken up by recessed green walls that can be maintained from within the car park. Greenery is also proposed around key signage and entry elements.

A window framed by stone provides views down into the retail space from the footpath. A copper patina sign, maintaining the Burnside Village logo and signage theme, will sit atop the aluminium framed glass windows. Similar use of copper will frame the entrance to the rooftop car park, which is placed at the existing entry point from Portrush Road.

The single storey commercial building atop the car park is set back from the main building line and comprises a simple façade of glazing with aluminium frames and precast concrete panels, which is consistent in architectural style with the multi-storey office tower.

The main entrance to the shopping centre will maintain the built form of the existing curved roof, which will be extended east towards Portrush Road. A lightweight GRC cladding system is proposed in a 'criss-cross' pattern either side of the entry way, which features copper-look signage boards and aluminium framed glass windows. A low-level basket stone wall will be located on the site boundary adjacent to the main entry, as well as extending between the B1 carpark entry and northern loading dock.

The façade of the northern extension consists of a combination of locally sourced timber, copper-look signage boards, and aluminium framed glazing.

Figure 10. Portrush Road and Cator Street (Stage 7)

The Cator Street façade will be modified through the use of stone walls, steel framed entry portals to the two car parking entrances and vertical timber screens for the rooftop car park and associated ramp. No changes are proposed to the brick walling of the existing supermarket and shopping centre buildings to be retained.

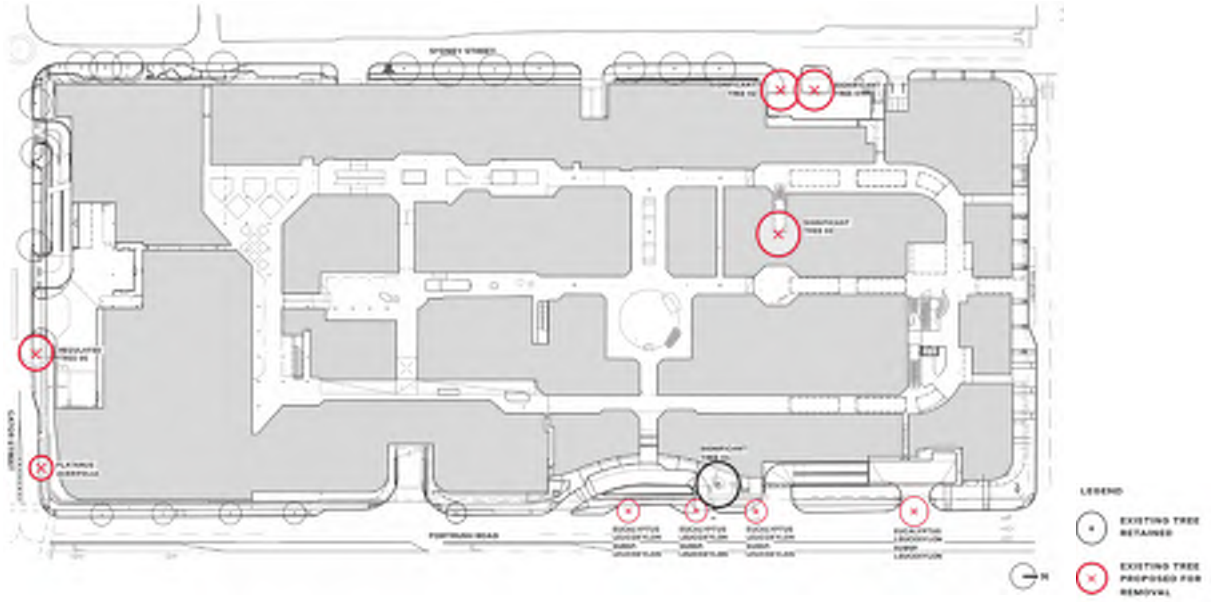
Figure 11. New Cator Street rooftop car park entry (Stage 7)

No amendments to the existing Sydney Street façade are proposed, although the existing brickwork will be extended south towards Cator Street. The extension of the centre north to Greenhill Road will feature precast concrete panels, and a steel framed entry portal to the new car parking entrance consistent with other entry portals across the site.

3.6 Regulated and Significant Trees

The proposed development seeks the removal of three Significant Trees and one Regulated Tree, as shown in Figure 12.

Figure 12. Site Tree Management Plan



As shown in Figure 13, and detailed in Table 4 there are currently four regulated trees within the subject site; all classified as Significant trees. Trees 1, 2 and 3 are proposed for removal. A Regulated Tree located within the road reserve of Cator Street is also proposed for removal, as shown in Figure 14 and detailed in Table 4

Figure 13. Regulated and Significant Trees Located Within Burnside Village Site

Figure 14. Cator Street trees

Table 4. Significant and Regulated Tree details

Reference Number	Species	Status	Comments
1	*Eucalyptus camaldulensis* (River Red Gum)	Significant (trunk circ. > 3 metres)	Remove
2	*Eucalyptus camaldulensis* (River Red Gum)	Significant (trunk circ. > 3 metres)	Remove
3	*Eucalyptus camaldulensis* (River Red Gum)	Significant (trunk circ. > 3 metres)	Remove
4	*Eucalyptus camaldulensis* (River Red Gum)	Significant (combined trunk circ. > 3 metres)	Retain
5	*Melia azederach* (White Cedar)	Regulated (trunk circ. 2.40 metres)	Remove

Extension of the main shopping centre north will require the removal of Tree 3, which cannot be avoided without compromising the ability to effectively redevelop the site.

The proposed development includes the reconstruction of the existing stormwater drain and flood chamber to provide significantly increased capacity (increase from 1 in 5 to 1 in 100 flood level capability). The works, further detailed in 3.10, will detrimentally impact upon Trees 1 and 2, necessitating an application for their removal.

Tree 5 is required to be removed to lengthen the left turn lane on Cator Street at the intersection of Portrush Road. As a street tree, separate approval is also required from the City of Burnside.

A further four street trees along Portrush Road (i.e. *Eucalyptus Leucoxylon* [SA Blue Gum]) and a street tree in Cator Street (i.e. *Platanus Acerifolia* [Plane Tree]) are required to be removed to facilitate the development. None are Regulated, but separate approval will be required from the City of Burnside.

More than 60 new trees will be planted around the perimeter of the centre and road reserves surrounding the site as part of the development.

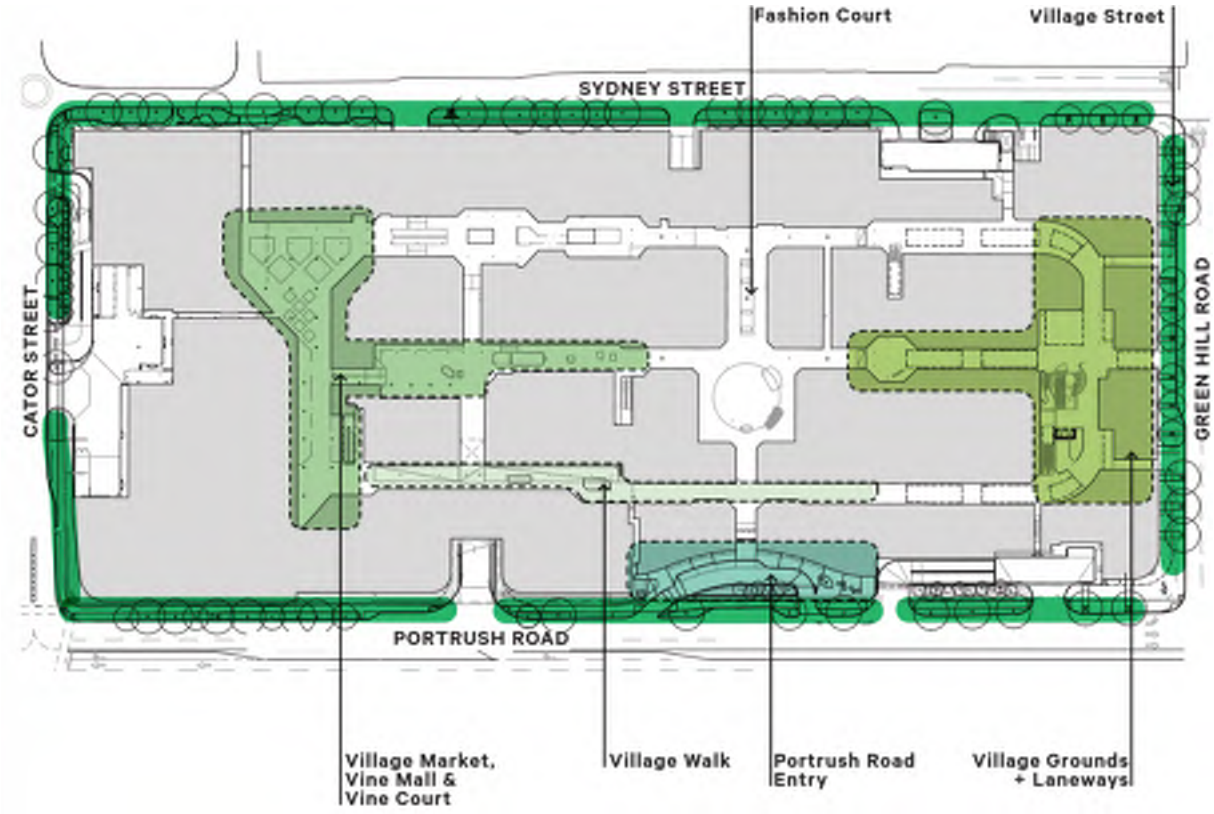
3.7 Landscaping and Public Realm

The approach to the overall public realm site organisation and detailed design of the proposed development is a pedestrian focused precinct that encourages public activity, use by people of all backgrounds and mobility levels, and comfort in use. A variety of spaces are proposed that are comfortable to use at different times of the day and year.

Spaces within the proposed development are arranged to work with adjacent building uses, creating active frontages wherever possible. Whilst different spaces are proposed to have different and individual characters that match their location and use, there is a continuity of pedestrian scale and common materiality throughout the whole of Burnside Village.

The plans prepared by Oxigen (Appendix C) divide the site into ten key public realm precincts as illustrated in Figure 15. Key components of landscape design that will contribute to the amenity of each precinct and the appearance of the development are discussed below.

Figure 15 Public Realm Precincts



Village Grounds and Laneways

The Village Grounds and Laneways are located in the northern portion of the site adjacent to Greenhill Road. The design of the Village Grounds area draws inspiration from other successful market squares like Britomart in New Zealand and the Grounds of Alexandria in Sydney.

The uses of the buildings within this area are proposed to be restaurants, cafes and related retail uses with active frontages that spill into the public realm.

The proposed layout is flexible and versatile in function allowing for smaller, more intimate uses and the occasional larger gathering within an event space. Trading and activity is maintained throughout the year by a canopy to provide the upper levels protection from the weather.

Portrush Road pedestrian entry

The existing main pedestrian entry from Portrush Road is relocated closer to Portrush Road and a new porte cochere is proposed at the Portrush Road interface, providing a place for taxi and ride share pick up and drop off. It is proposed to be an active place to meet and wait in. The theme will include native gardens, possible public art installations, as well as furniture and amenity lighting. The existing large eucalyptus tree is retained, and its growing conditions will be improved by installation of a flowering native garden within its canopy.

The entry will be a comfortable place to rest in and to greet users of the village, including pedestrians using the adjacent public bus stop. The entry is visible from Portrush Road and will add to the everyday public contribution the village makes to the broader precinct and motorists travelling along Portrush Road.

Figure 16 Main entry plaza – Portrush Road

Village Walk

The village walk is a new internal walkway located along the eastern portion of the shopping centre. This walkway provides a north-south connection within the proposed retail area. This space will be a green passage achieved by planting in pots and selected furniture and lighting.

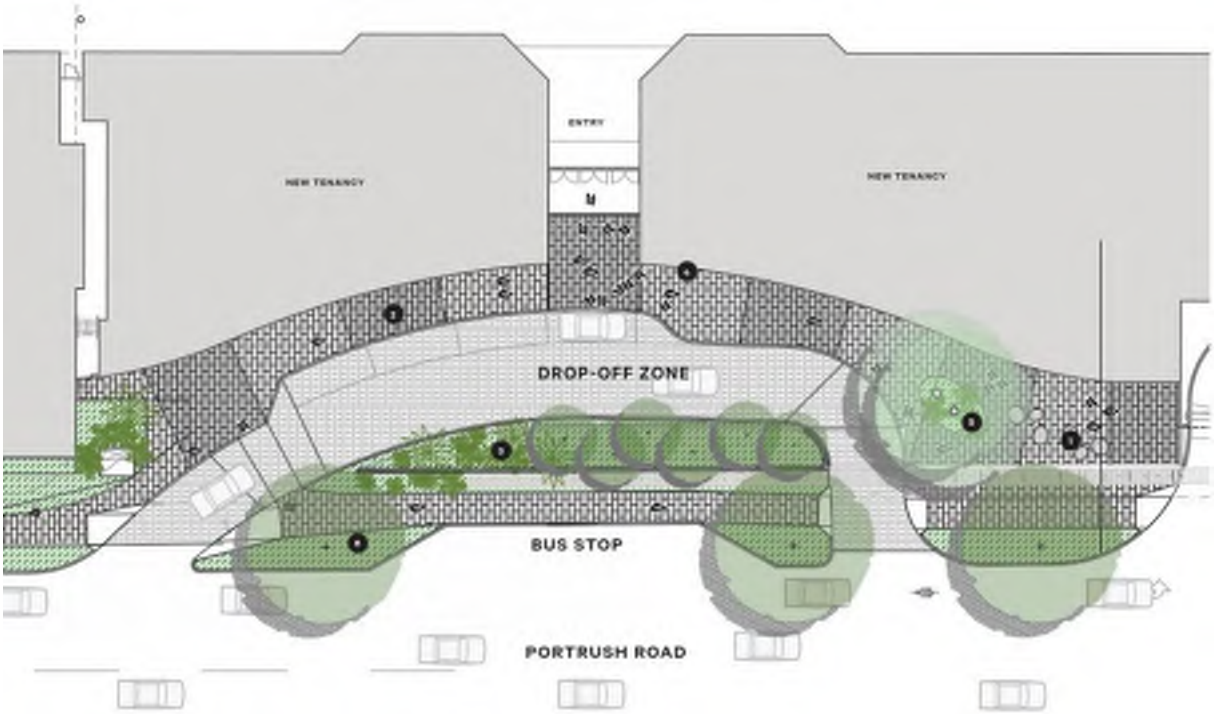
Skylights will be provided to maximise access to natural daylight within this space and provide views down into this space from the Level 3 office located above the roof top car park.

Village Market

The Village Market encompasses the existing covered central courtyard adjacent to the supermarkets. The design principles for this area include:

- an updated Village Market based around the new supermarkets;
- a contemporary, welcoming, open plan community destination with a genuine ‘market feel’;
- greenery and furniture located within laneways and nodes, in addition to the existing Vine Mall.

Figure 17 Landscaping and public realm improvements to Portrush Road entry



Streetscapes

Improvements to the streetscapes of Portrush Road, Greenhill Road, Sydney Street and Cator Street are also proposed as part of this development.

The proposed streetscape upgrades within the road verges have been discussed with the City of Burnside and DPTI, and the Cohen Group intends to continue to work with Council on this aspect of the development.

Works proposed along each road are summarised below.

Portrush Road streetscape

With the exception one plane tree to be removed adjacent the porte cochere entrance, the existing plane trees planted as street trees along the Portrush Road verge are retained and additional infill plane trees are proposed, which will reinforce the existing planting pattern and replace the three eucalypts and one plane tree proposed to be removed. The existing rubble and block paving footpath is replaced by irrigated lawn and a new high quality in-situ concrete footpath (exposed aggregate finish). New planting of low growing flowering species is also proposed adjacent to the new built form between the façade and the new footpath.

Figure 18 Portrush Road looking north (Stage 7)

Greenhill Road streetscape

This will include new street trees along the boundary and the introduction of greenery along the façade of new buildings, leading into the Village Grounds area. For Stage 6, an indented kerb will provide a pick up and drop off zone in front of the main pedestrian entrance, with provision made to indent the bus stop.

Public art is proposed at the corner of Greenhill and Portrush roads, adjacent to the office lobby.

Figure 19. Landscaping and public realm improvements to Greenhill Road

Figure 20 Greenhill Road frontage (Stage 6)

Figure 21 Greenhill Road (Stage 6)

Figure 22 Greenhill Road and Sydney Street (Stage 7)

Subject to discussions with DPTI, in conjunction with Stage 7 the kerb line will be likely set back along the length of the Greenhill Road frontage to provide a third westbound lane to through traffic. These road-widening requirements may result in the removal of some street trees installed on Greenhill Road towards the corners of Portrush Road and Sydney Street as part of Stage 6 (as denoted in Figure 19 and shown in Figure 22). The trees to be located centrally along the Greenhill Road frontage (as seen in Figure 20) are not expected to be impacted by any future road-widening requirements.

Sydney Street streetscape

All of the existing jacaranda trees along Sydney Street are proposed to be retained, along with additional in-fill jacarandas. The additional trees will act to offset the removal of the two existing large eucalypts within the site adjacent to Sydney Street. Over-mature shrubs will be replaced by irrigated lawn maintained by the proponent.

Cator Street streetscape

Cator Street will feature a lengthened left turn lane to accommodate additional traffic from the proposed development as well as cater to existing local and through traffic seeking to bypass the signalised intersection of Greenhill and Portrush Roads. This requires the removal of two trees, however trees further west along Cator Street will be retained. Subject to council approval, infill trees (Sophora Japonica) are proposed for the northern verge, and existing box brush trees located on the southern verge would be replaced with gingko trees.

An in-situ concrete footpath will replace the existing paved footpath. The existing over-mature shrub planting within the northern verge are proposed to be replaced by irrigated lawn maintained by the proponent.

3.8 Car Parking, Access and Traffic

Car parking numbers will increase by 836 spaces to 2,062 spaces. The majority of parking spaces, as detailed in Table 5, will be provided in the expanded basement over two levels (1,413 spaces) with the balance provided by the roof top car park (649 spaces).

Table 5. Car parking by level

Level	Parking Numbers
Basement 2	316
Basement 1	1,097
Ground	-
Level 1	309
Level 2	340
TOTAL	**2,062**

The proposed development, when fully completed, will provide a parking rate of approximately 3.95 spaces per 100 square metres of GLA. This is a reduction from the current parking rate 5.06 spaces per 100 square metres. After Stage 6, the ratio is 4.67 spaces per 100 square metres of GLA.

The proposed mix of uses within the centre will assist in spreading the traffic and parking demands over an extended period. Further, with the increased use in active transport, ride sharing and public transport, the long term parking rate is considered to be acceptable.

A total of 82 bicycle parking spaces are to be provided within the Basement 1 (28) and Level 1 (54) car parks. Bicycle parking areas are located close to entrances into the shopping centre for convenient access.

Existing access points to the external road network will largely be maintained, with one access point additional in net terms. Access points include:

- retention of the two principal car park access points from Portrush Road, with the southern access point reconfigured to provide access to the new roof top car park and the northern one to provide access to the expanded basement car park.
- consolidation of the two access points to Portrush Road at the rear of the existing post office into a single access point for the new loading dock.
- retention of the two access points to Sydney Street in the northern section of the site, but with some reconfiguration to provide greater separation between them. These access points will provide:
  - direct access to the basement car park; and
  - access to a new loading dock.
- retention of the existing access points to the basement car park located on Sydney Street and Cator Street.
- removal of the existing access point from Cator Street to the deck car park adjacent to Portrush Road.
- new access point from Cator Street, near the intersection with Sydney Street, which will provide access to a new ramp to the roof top car park; and
- relocation of the access to the Cator Street loading dock.

Additional access points will be provided from Portrush Road in the form of a one-way porte cochere adjacent to the main entrance. This will be utilised by taxis and rideshare vehicles.

The proposed development will increase traffic generation on the adjoining network. A portion of the existing network, particularly the Portrush Road / Greenhill Road intersection, already operates at capacity with respect to traffic movements. To assist address current constraints and minimise the impact of the proposed development, potential improvements to the external road network as part of this development have been recommended by Jacobs (Appendix D).

These works will be staged in line with the development, and include:

Stage 6

- Changes to the Burnside Village access system as defined above.
- Removal of existing mid-block Greenhill Road pedestrian crossing between Sydney Street and Portrush Road.
- Signalisation of the Greenhill Road / Sydney Street intersection, to include pedestrian crossing movements and retain right turns out from Sydney Street.
- Lengthening of left turn lane on Sydney Street approach to Greenhill Road (formalising line work within existing road width, without impact to on-street parking in front of the residences).
- Lengthening of right turn lane on Greenhill Road into Sydney Street (utilising space within existing central median).
- Installation of "raised tables" speed control devices on approach to Cator Street / Sydney Street roundabout.
- 40 km/h speed limit introduced along Cator Street and Sydney Street adjacent the Burnside Village.
- Lengthening of the existing eastbound left turn lane on Greenhill Road into Portrush Road (reconfiguration of approach lanes and utilising space within existing central median).
- Relocation of existing Greenhill Road bus stop between Sydney Street and Portrush Road and make indented (reconfiguration of approach lanes and utilising space within existing central median).

Stage 7

- Third lane on Greenhill Road westbound between Portrush Road and Sydney Street (subject to DPTI requirements).
- Existing left turn lane at Greenhill Road eastern approach converted to a shared left and through lane.
- Greenhill Road eastern approach to Portrush Road intersection reconfigured so that shared through / left turn lane and right turn lane lengths are switched.
- Lane Use Management System provided on the Greenhill Road eastern approach to Portrush Road intersection, to enable management of the shared through / left turn lane so that the lane operates as a:
    - Shared through / left turn lane during the AM Peak period
    - Left turn lane only during the PM and Saturday Midday Peaks

Future network capacity improvements and road widening requirements for Greenhill and Portrush Roads have been key design considerations for the proposed development, particularly within the northern portion of the site.

3.9 Signage

New signage is proposed to be incorporated into the expanded built form, particularly along Greenhill and Portrush Roads. The proposed signs comprise a combination of Burnside Village logo signs and tenant signs.

All proposed Burnside Village signage will be consistent and finished in a Patina Copper.

Whilst the location, type and size of the proposed tenant signs are shown on the plans, the final design detail of the tenant signs is not provided. The design of these signs will be developed once tenants are confirmed. It is expected that the design of the signs will complement the overall signage character for the wider centre and be suitably designed, having regard to the site's position adjacent an arterial road.

The proposed signage includes:

- LED signs around the south-east and north-west corners of the centre adjacent to the Portrush Road/Cator Street and Greenhill Road/Sydney Street intersections.
- Illuminated signs displaying the Burnside Village logo above new pedestrian entrances throughout the site.
- Illuminated entry signage displaying the Burnside Village logo on the entrance portal to all site car parks.
- Illuminated hanging signage displaying the Burnside Village logo at the village ground entry.
- Illuminated tenancy signage along the Portrush and Greenhill Road frontages.
- Individual block letter signage on the north-western corner to Greenhill Road and Sydney Street.

None of the advertising signage is freestanding nor extends above the height of the building.

Further details regarding proposed signage are provided in plans ATP-40404; ATP-40405; ATP-40406; and ATP-40407 in Appendix B.

3.10 Stormwater Management

The site lies at the confluence of several stormwater systems in Portrush Road. These direct the major flow path that extends from Linden Crescent and Portrush Road to the low point at the eastern frontage of the site. It is understood that Council is in the process of making upgrades to their stormwater network upstream of the site in Linden Crescent and therefore this may reduce the frequency and extent of overland flow towards the site at the low point in Portrush Road.

As outlined previously, a Council stormwater easement exists over the site, which connects existing infrastructure within Portrush Road and Sydney Street. The capacity of this system is a 1 in 5 year ARI event.

Currently the shopping centre site comprises of three main stormwater systems, which generally operate in the same manner.

Stormwater in the site is intercepted within the car park via a series of pits to prevent stormwater flooding at the car park and shopping centre. Stormwater runoff from the three main areas is controlled via surface drainage and inlet pits. These are then conveyed via pipes down the basement support columns to the basement level car park where they are then treated via a gross pollutant traps (GPT). Stormwater is then conveyed to a pump chamber where it is pumped via separate rising mains to:

- existing flood chamber – GPT and pump to discharge point;

- flood inlet grate – Pump to discharge point (no GPT); and
- Council's 900 millimetre diameter drain in Portrush Road – GPT and pump to discharge point.

Part of the main building drains into rainwater storage tanks, where it is re-used on-site for non-potable uses. Overflow from the tanks is discharged to Sydney Street.

Overall the development is proposed to incorporate the following stormwater management features:

- Removal of existing Minor System 1450mm RCP, 750mm RCP, and 1950mm RCP from existing stormwater system to be replaced with upgraded underground flood conveyance chamber and surcharge chamber.
- Decommissioning of the existing 100 year ARI gap flow flood chamber and connecting the existing flood protection grate chamber at the Portrush Road boundary and other internal drainage systems to the proposed underground flood conveyance chamber which will be provided with 100 year ARI capacity. Construction of a wall bund around the grate to increase the inlet capacity of the flood protection grate as part of Stage 6.
- Stage 6 roof runoff generated from retail roof areas and office roof area to be directed and connected to the new underground flood conveyance chamber.
- Modification of existing internal stormwater systems to suit changes in level within the basement car park.
- Intercept and treatment of stormwater from the new car park deck via an oil, sediment and gross pollutant trap before connection into existing stormwater systems.
- Provide a new grated trench grate and GPT at the base of the new ramps off Cator Street, Sydney Street and Portrush Road and connect to Council's stormwater network.
- Stage 7 roof runoff generated from commercial tower block and retail roof areas to be directed and connected to the Council's underground stormwater network.

Further details regarding proposed stormwater management are provided in Appendix F.

Council has agreed in principle to the stormwater solution for their infrastructure, which will be formally agreed through an amended/new Land Management Agreement.

3.11 Operational Detail

Burnside Village will change its operating hours to accommodate the change of activity in the Village Grounds precinct, which will have restaurants, cafes, bars and cinemas. It is expected that hours of operation will generally extend from 7:00am until 1:00am seven days per week to accommodate the wide variety of uses within the centre. This includes supermarkets, cafes and some retail trading from 7:00am, and cinemas, restaurant and bars operating through to 1:00am.

Waste management procedures and servicing and delivery practices will remain largely the same, albeit these will be appropriately updated and expanded onsite to cater for the additional floor space and additional loading docks. Further details regarding proposed waste management are provided in Appendix H.

4.0 Procedural Matters

4.1 Relevant Authority

The State Coordinator-General has determined that SCAP is the most appropriate authority to assessment the proposed development in accordance with Clause 20 of Schedule 10 of the Development Regulations. SCAP must make its assessment of the application against the relevant provisions of the Burnside (City) Development Plan.

The nature of the proposed development is such that it is neither listed as complying or non-complying development within the District Centre Zone. As such, the application must be assessed on its merits.

4.2 Nature of development

The nature of the proposed development is best described as alterations and additions to an existing shopping centre, including demolition of existing buildings and removal of three Significant and one Regulated tree, and addition of a multi-screen cinema complex, and office/medical facilities.

A variety of uses are proposed within the new tenancies that are to be created by the development. Having regard to the definitions provided in Schedule 1 of the Development Regulations the proposed uses include:

- shops (including restaurants);
- offices;
- personal services establishments; and
- consulting rooms.

The proposed integrated development and associated proposed uses are not identified as complying nor non-complying development within the District Centre Zone; therefore the proposal represents a 'merit' form of development.

It is noted that the following types of advertisement are non-complying within the zone.

> *Advertisement or advertising display that:*
>
> *(a) if freestanding, is more than six metres above natural ground level at any point; or*
>
> *(b) is attached to a building and protrudes above the highest level of that building*

The proposed advertising does not involve freestanding advertisements or advertisements that protrude above the building level.

4.3 Public Notification

The District Centre Zone does not assign specific categories of public notification but instead refers to the categories of public notification prescribed in Schedule 9 of the Development Regulations.

Pursuant to Part 1 clause 6(h) of Schedule 9 of the Regulations, any kind of development within a District Centre Zone (unless non-complying or adjacent a different zone) is Category 1. The subject land adjoins land in a different zone; therefore the development is not a Category 1 form of development.

It is considered that the proposed development falls under Part 2, clauses 18(c) and 19 of Schedule 9, which state:

18 *Except where the development falls within Part 1 of this Schedule, is within the City of Adelaide, or is classified as non-complying development under the relevant Development Plan, any development which consists of the construction of the following, or a change of land use consequent on the construction of the following:*

(c) a building in a situation referred to in clause 6 of this Schedule where the site of the proposed development is adjacent land to land in a zone under the relevant Development Plan which is different to the zone that applies to the site of the development.

19 *Except where the development falls within Part 1 of this Schedule, is within the City of Adelaide, or is classified as non-complying development under the relevant Development Plan, a change of use of land in a situation referred to in clause 6 of this Schedule where the site is adjacent land to land in a zone under the relevant Development Plan which is different to the zone that applies to the site of the development.*

Accordingly, the proposed development represents a Category 2 form of development for public notification purposes.

Our view on the categorisation of the development has been confirmed by Hon Brian Hayes QC, whose opinion has previously been provided to DPTI.

4.4 Agency Referrals

As part of its assessment, SCAP must refer the development application to the Council in accordance with Regulation 38(2)(b) of the Development Regulations. Council has six weeks within which to provide its comments to SCAP.

Schedule 8 of the Development Regulations identifies that the proposed development requires referral to:

- the Commissioner of Highways in accordance with:
  - Clause 3—Development adjacent to main roads.
  - Clause 4—Advertising displays on or abutting arterial roads.
- SCAP in accordance with Clause 13—Retail developments in Metropolitan Adelaide exceeding a prescribed size, which can be addressed directly by SCAP in its assessment as the relevant authority.

Discussions have been held with representatives of the Commissioner of Highways to discuss traffic modelling, external road impacts, infrastructure improvements and developing within the area required for future widening of Greenhill and Portrush Roads.

5.0 Development Plan Assessment

5.1 Introduction

The subject land is contained within the *Burnside (City) Development Plan* (consolidated on 19 December 2017). It is located within the District Centre Zone and District Centre Policy Area 1, as illustrated respectively on Maps Bur/7 and Bur/16.

The following provides an assessment of the application against the relevant provisions of the Development Plan.

5.2 Assessment

5.2.1 Land Use

Land Use – Relevant Provisions		
Development Plan Section	**Objective**	**Principle of Development Control**
District Centre Zone	1, 2	1, 2
District Centre – Policy Area -1	1	1
General	4	3
Retailing and Centres	68, 69, 71	238

The District Centre Zone is the economic and cultural focus of the City of Burnside and envisages a range of employment, community, educational, tourism and entertainment facilities. Policy Area 1 seeks to be the focus for retailing, service, entertainment and recreational activities within the district centre.

The proposed expansion of the existing shopping centre is consistent with the desired and existing forms of development on the land and will reinforce the role of the Policy Area as the retail focus within the Council area.

The additional retail floor space will accommodate a mixture of retail uses at ground level and Level 1, including, an additional supermarket, flagship retail tenants, a new dining and entertainment precinct within the north portion of the site and multiple speciality retail tenancies spaces. The proposed low-rise commercial building will contain commercial office floor space.

The proposed land uses are entirely consistent with what is contemplated within the Zone and Policy Area. The development is also consistent with the types of uses envisaged in a District Centre as outlined in Council wide Objective 72.

Council wide Objective 71 states that district centres should include shopping facilities that provide 'convenience' goods and a range of 'comparison' goods to serve the major weekly household shopping needs of the district community. The proposed development will allow Burnside Village to increase its retail offering which will improve the range of 'convenience' and 'comparison' goods it currently offers to the community.

Council wide Objective 4 states:

Objective 4: Provision and maintenance of employment opportunities.

The proposed expansion of the Burnside Village Shopping Centre will have significant direct and indirect benefits to the South Australian economy. Key economic benefits associated with the development are estimated at:

- 921 jobs generated during the construction phase, including 263 direct and 658 indirect

- 2,782 ongoing jobs, including 1,530 direct and 1,252 indirect
- 1,793 total direct jobs created by the project (construction and ongoing phases)
- Approximately $334 million in new economic activity for the South Australian economy during the construction phase
- $297 million (per annum) in new economic activity for the South Australian economy during the operational phase.

Burnside Village is a key employment centre within the Council area and the proposed development will increase employment opportunities. It is estimated that the project will generate 921 jobs during the construction phase (263 direct and 658 indirect) and 2,782 ongoing jobs (1,530 direct and 1,252 indirect).

Additionally, it is estimated that proposed development will contribute approximately $334 million and $297 million (per annum) in new economic activity for the South Australian economy respectively during the construction and operational phases.

Objective 69: Centres established and developed in accordance with a hierarchy based on function, so that each type of centre provides a proportion of the total requirement of goods and services commensurate with its role.

Objective 70: A hierarchy of centres located in centre zones or areas.

The intention of Council wide Objectives 69 and 70 is to ensure each type of centre provides a proportion of the total community requirement for goods and services commensurate with its role. The commentary within the Development Plan after Objective 70 further outlines that new development in centres, should:

- result in the expansion of the total range of retail goods and services available to the population to be served;
- have regard to the location and role of other existing and proposed centre zones; and
- be of a size and type which would not demonstrably lead to the physical deterioration of any existing centre zone.

In consideration of the above, Urbis were engaged to prepare an Economic Impact Assessment for the project. This assessment included an analysis of market need, demand and economic impacts. The key conclusions of the assessment are summarised below:

- There is a market need and demand for the scale and type of development proposed at Burnside Village. The centre serves an important role for convenience and discretionary shopping needs in the eastern suburbs and wider Adelaide market, most notably as a destination for fashion and other discretionary retail brands. The proposed next stage of expansion of the centre will improve the range of shops and services provided in the centre, and also introduce new elements including cinemas and an external dining precinct, offices and leisure/community facilities. These enhancements will enable the centre to better service the needs of the growing and evolving market.
- The expansion of Burnside Village aligns with the objectives of the Burnside (City) Development Plan, underpinning the location's position and place in the hierarchy as a District Centre, as well as providing new employment opportunities for residents in the City of Burnside and other surrounding municipalities.
- The scale and composition of expansion is supportable by the market and is not expected to have an adverse impact on existing and planned centres in the region of relevance to Burnside Village. Rather the development would enhance access to retail shops and services while supporting the intended retail hierarchy.

- The proposed expansion would have a range of economic benefits, including a sizeable amount of new employment generation, greater choice and convenience for shoppers and the capacity to induce improvements in the overall retail offer in the region through the effects of greater competition.

In summary, the proposed expansion of Burnside Village will result in a net community benefit. The range of choice available to local residents will be enhanced, with existing and planned centres still continuing to serve their role in the retail hierarchy.

5.2.2 Design and Siting

Design and Siting – Relevant Provisions		
Development Plan Section	**Objective**	**Principle of Development Control**
District Centre Zone	4, 5	3, 5, 7, 8
District Centre – Policy Area -1	2, 3	2, 3, 4, 5, 6, 7, 8
Design and Appearance		29
Visual Amenity	55, 56, 57	238

The proposed development represents a relatively major redevelopment of the shopping centre. The project has gone through a significant design development process, which has resulted in a high quality and contemporary outcome. The design, particularly the internal upgrades and improvements, seek to create a pedestrian focused environment that preserves and enhances the desirable village character of the existing shopping centre. The need to retain the village character is reinforced by numerous provisions within both the Zone and Policy Area.

The design intent of the proposed development is to continue the unique village characteristics of the existing shopping centre by extending them north towards Greenhill Road. These malls merge into the Village Grounds precinct, which features a landscaped open plaza and smaller, individual buildings separated by laneways. Double height spaces contrast with intimate places to linger over coffee and food with friends.

Key design features of the proposed development include:

- Extending the built form to and along the Portrush Road frontage, which will assist to activate the street frontage and provide a more welcoming and attractive entrance.
- Use of high-quality natural materials, including stone, timber and copper.
- Screening of major parking areas, including the proposed multistorey car park with a mixture of vertical timber slats and landscaping.
- A new contemporary 'village grounds' restaurant and dining area within the northern portion of the site, which will incorporate significant landscaping and public realm improvements.
- A contemporary landmark commercial building within the north-east corner of the site that will complement the design of the retail development below.

The proposed façade treatments to Portrush Road and Cator Street are coordinated, well-articulated and incorporate a high standard of design which will significantly improve the visual amenity of the centre, both internally and externally.

Zone Principle 8 states that upper level car parking should not occur unless:

(a) access ramps are screened from view from public roads but with access points being clearly visible to motorists;

(b) parked vehicles are screened from view from ground level; and

(c) landscaping is provided:

(i) around the perimeter utilizing trees of sufficient mature height to reach above the levels at which vehicles are parked; and

(ii) planter boxes or the like are used to provide landscaping at the level on which vehicles are parked in a manner which visually enhances that parking area and provides shade.

The design of the proposed upper level car park complies with the requirements of Principle 8. The car park is to be screened, whilst incorporating open elements, articulation and landscaping to create visual interest and reduce the bulk and scale of this element of the project. It is considered the proposed car park design is a substantial improvement on the current situation where large expanses of car parking are provided along the centre's main frontage, between Portrush Road and the shopping centre.

The Development Plan does not provide quantitative road setback requirements; however, Policy Area Principle 3 seeks that development be set-back from the junction of Portrush Road and Cator Street. Whilst the building will be sited close to the intersection, the development comprises a two-storey scale at this location, which is consistent with development along Cator Street and Portrush Road. The building is not anticipated to become a visually imposing element particularly to the adjoining dwellings on the southern side of Cator Street, particularly with the use of stone and timber.

In addition, the south-east low-rise commercial component is proposed to be set back approximately 10 metres from Portrush Road, 35 metres from Cator Street and 70 metres from Sydney Street. Being relatively centrally located within the site, the height and design of the building will not result in adverse visual impacts to the surrounding residential properties.

In accordance with Council Wide Principle 29, the proposed design has considered road widening requirements, associated with the setback from the Greenhill Road / Portrush Road intersection. The proposed development has deliberately factored future road-widening requirements into the design, proposing encroachment within the designated area, which has been discussed with DPTI. The encroachment is limited to:

- basement car parking, which would be located beneath the footpath zone of a future widened road;
- colonnades, providing shelter to pedestrians along Greenhill Road; and
- balconies over the footpath zone of a future widened road.

The proposed development will comprise a maximum building height of approximately 30 metres above existing ground level. No building height restrictions currently apply within the Zone or Policy Area and the building is located below the Commonwealth Airport referral height limits as outlined in the Development Plan.

Policy Area Principle 9 envisages a landmark building adjacent the intersection of Portrush and Greenhill Roads, which is delivered by the proposed multi storey commercial building. The building will act as a beacon for Burnside Village and become an iconic symbol of the locality. The curved façade plays with the curved roof line of the existing centre and softens its impact at the intersection.

By locating the lobby of the office at the intersection, the development pays homage to the civic uses opposite, including the Burnside Town Hall, City of Burnside offices and library.

Policy Area Principle 5 states:

5 *Development should provide a system of pedestrian pathways which:*

(a) link or facilitate linkages between surrounding roads and car parking areas and the central open mall;

(b) are secondary in function to the open mall;

(c) are clearly defined and minimise conflict between pedestrian and vehicular movements; (d) should where possible incorporate shelter from sun and rain for pedestrians;

(e) should incorporate resting places where distances may be excessive for physically impaired persons; and

(f) should be designed and constructed to facilitate ease of movement for the disabled

It is considered that the proposed development largely complies with the intent of Principle 5 as a key intent of the design is to establish a pedestrian focused precinct that encourages public activity. The project will improve pedestrian connection from Portrush and Greenhill Roads and enhance connectivity across the site. The existing pedestrian entrance from Sydney Street will be retained, providing an effective back door for local residents.

Further pedestrian connectivity, particularly in the south-eastern corner of the site, is hampered by differences in level between the natural ground level at the street and the ground floor of the centre. However, the care taken to design an attractive and inviting walk along Portrush Road invites pedestrians from the south to the main entrance.

In summary, the proposed development consists of a contemporary high-quality design, which will result in significant visual amenity improvements for the current centre. Notwithstanding that the development represents a major expansion, the proposed building form and layout, material and finishes and landscaping design will maintain and enhance the desired village feel of the centre.

5.2.3 Traffic/Parking/Access

Traffic/ Parking/Access – Relevant Provisions		
Development Plan Section	**Objective**	**Principle of Development Control**
District Centre Zone	6	10
Movement and Parking of Vehicles	94, 95, 96, 98, 99, 100, 112, 113	2, 3, 4, 5, 6, 7, 8
Design and Appearance		28
Visual Amenity	55, 56, 57	238

5.2.3.1 Traffic Generation

The Development Plan identifies a shopping centre as a high traffic generating use. Zone Objective 6 seeks that development be undertaken in a manner which minimises:

- the interference of the free flow of traffic on arterial roads; and
- traffic volumes in streets in adjoining residential areas.

The proposed development will undoubtedly increase traffic generation on the adjoining road network. A portion of the existing network, particularly the Portrush Road / Greenhill Road

intersection already operates at capacity with respect to traffic movements. To assist in addressing current constraints and minimise the impact of the proposed development, improvements to the external road network have been recommended by Jacobs. It is considered that the proposed development will have an acceptable impact on the adjoining network, particularly for the nature of the development, the aspirations of the District Centre Zone and the context of the Zone in strategic planning for inner metropolitan Adelaide.

The proposed upgrades to the road network will be confirmed and resolved via the statutory referral process as part of the assessment of the application and ongoing discussions with DPTI and the City of Burnside, and the establishment of appropriate conditions of approval and deeds to address these issues.

5.2.3.2 Access

Council wide Principles 94, 95, 96 and 97 are considered to be most relevant for the assessment of the proposed vehicle access to the site. In summary these provisions seek:

- that access points be located and designed to minimise impacts to the free flow of traffic on the adjoining roads;
- the number of access points to arterial roads be minimised;
- development on land abutting an arterial road be designed to ensure all vehicles can enter and exit the site in a forward direction; and
- no access should be nearer to another access or egress point than six metres, nor be located within ten metres of the carriageway of an intersection.

The proposed design largely complies with the above requirements. The proposal will not fundamentally alter the number or function of access points to the shopping centre from the adjoining roads.

The design and location of the proposed access points are considered appropriate with respect to minimising impact to the free flow of traffic on the adjoining network and are positioned to satisfy the minimum setbacks required to other access points and intersections.

In addition, the design of the on-site car parking layout and manoeuvring areas, including loading areas, allow all vehicles to enter and exit the site in a forward direction and meet relevant Australian Standards.

5.2.3.3 Parking and Manoeuvring

Car parking numbers on site will increase by 836 spaces to 2,062 spaces. The majority of parking spaces will be provided at basement level with the remaining within the proposed two-level roof top car park.

With the increase in floor area proposed, the proposed development reduces the parking ratio on the site to 3.95 per 100 square metres of GLA. This ratio complies with the relevant Development Plan requirements as outlined in *Table Bur/6 Off-street Vehicle Parking Requirements for Designated Areas*, which assigns the following vehicle parking rates for non-residential development excluding tourist accommodation within Designated Areas:

- Minimum 3 spaces per 100 square metres of gross leasable floor area
- Maximum 6 spaces per 100 square metres of gross leasable floor area

The subject land meets the requirements for a designated area as outlined in part 2 of *Table Bur/6* as the site is situated within a District Centre Zone and located within 200 metres of high frequency bus services on Greenhill Road.

5.2.3.4 Loading Areas

Upgrades to the existing loading dock off Cator Street are proposed, along with two new loading docks within the northern portion utilising existing crossovers from Portrush Road and Sydney Street.

The proposed upgrades will involve expanding the existing loading dock to provide greater manoeuvring area on-site for delivery vehicles, which will ensure trucks will able to enter and exit the site in a forward direction. In addition, the proposed development will incorporate greater screening of the loading area along the Cator Street boundary, which has an interface with residential properties to the south.

Currently service and delivery vehicle access point and parking areas are separated from customer access points and parking areas. This arrangement will remain as a result of the proposed development.

New loading docks are proposed on Sydney Street and Portrush Road to service the new retail and commercial uses. The new Sydney Street loading dock is in the location of existing bin collection areas and loading and unloading that occurs within the at-grade car park. The Portrush Road loading dock is in the location of existing accessways that provide access for waste collection and delivery vehicles to the premises that front Greenhill Road.

It is considered that the proposed works will result in improvements to the existing Cator Street loading arrangements and formalise and improve existing loading and waste collection arrangements on Sydney Street and Portrush Road. In this regard they are consistent with the relevant principles of the Development Plan.

5.2.4 Amenity and Interface Impacts

Amenity and Interface Considerations – Relevant Provisions		
Development Plan Section	**Objective**	**Principle of Development Control**
Amenity	20, 21 & 22	51, 52
Retailing and Centres		236

With respect to amenity and interface impacts Retailing and Centres Principle 236 states:

236 Development located within any centre zone should be designed and located to minimise its impact on existing or potential dwellings in an adjacent zone due to:

(a) vehicular access, egress and circulation within the site of the development;

(b) the location and arrangement of service, refuse and waste storage and collection facilities;

(c) the scale, height and bulk of buildings where located close to the boundaries of the zone;

(d) unreasonably adverse visual impact when viewed from the site of any dwelling;

(e) loss of privacy or overshadowing; and

(f) the generation of noise, odour, light or particulate matter.

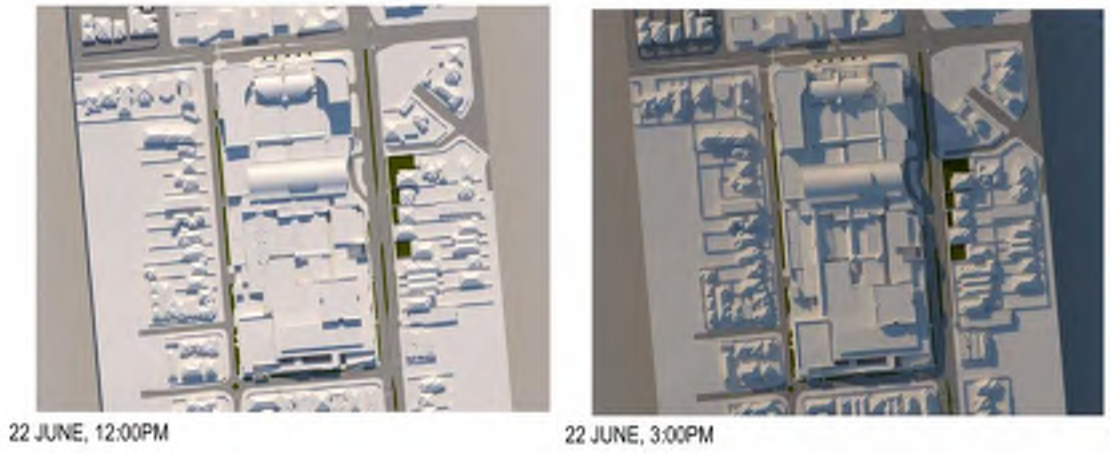
The subject land shares its western, southern and eastern boundary with residential development, albeit the dwellings to the east are separated from the subject land by an arterial road. A majority of the proposed development is focused within the northern portion and south-east corner of the site and as a result, the dwellings to the north-west, south and east are most likely to be affected by the development.

Whilst the expansion will occur wholly within the District Centre Zone the design has considered potential impacts to adjoining properties within the Residential Zone. It is considered that the proposal will not result in any adverse impacts as described in Principle 236.

Impacts associated with traffic, access, loading and servicing, bulk and scale and visual impacts have been addressed in the previous sections. The following considers the potential impacts associated with overshadowing, privacy, light spill, noise and odour.

An overshadowing assessment has been undertaken and is included as plans ATP-10160 and ATP-10161 within Appendix B. The shadow plans show that impact upon adjoining properties is acceptable within the parameters of Development Plan policy in respect to minimum periods of access to sunlight. The properties to the east most affected by the development are not impacted by overshadowing until the late afternoon on the winter solstice (as shown in Figure 23).

Figure 23 Overshadowing Plans (excerpt from ATP-10161)



To minimise any light spill impact to the adjoining residents and passing traffic, proposed lighting, including illuminated signage, will be designed to meet relevant Australian Standards.

Light or noise arising from night time activity within the Village Grounds precinct should cause little disturbance to adjoining residents due to shielding provided by the cinema building and mid-rise office tower. These night time uses are oriented to Greenhill Road, which is an arterial road with significant volumes of traffic, including at night.

To inform the overall design, an acoustic assessment was undertaken by AECOM (see Appendix G). This assessment considered noise impacts associated with:

- rooftop bar patrons;
- additional car parking;
- rubbish collection and loading dock activities; and
- mechanical services.

The assessment identified some partial exceedances of planning criteria are expected due to carpark noise and noise from activities at loading docks. However, given the significantly elevated noise environment due to high levels of traffic noise from both Portrush Roads and Greenhill Roads, the partial exceedances represent negligible impacts upon the existing noise environment.

It was recommended that additional mitigation measures beyond those already proposed is not considered reasonable and practicable to achieve the planning limits under the *Environment Protection (Noise) Policy 2007* for a development authorisation application.

In addition, the management of waste resulting from the additional development can be appropriately accommodated by the current waste management procedures; as such odour impacts are not expected.

5.2.5 Landscaping

Landscaping – Relevant Provisions		
Development Plan Section	**Objective**	**Principle of Development Control**
Amenity		66, 67, 68
Regulated Trees	25 26	79, 80, 87, 89
Significant Trees	27	82, 83

The proposal includes the integration of high-quality landscaping throughout the site. The overall intent of the landscaping strategy has been to design a pedestrian focused precinct that encourages public activity, use by people of all backgrounds and abilities, and comfort in use. This has included proposing a variety of spaces that are comfortable to use at different times of the day and year.

The proposed landscaping assists the creation of green spaces and laneways, which will maintain and enhance the village feel of the complex as desired by the Zone.

Landscaping will comprise a variety of species which are appropriate for their location and use of the associated precinct. The project also seeks significant public realm improvements along the road frontages which border the site. These will be focussed on Greenhill Road, Portrush Road, Cator Street and Sydney Street.

The proposed landscaping is considered to be consistent with the intent of the relevant Development Plan provisions and results in significant improvements to the existing landscaping character of the shopping centre.

Three Significant trees and one Regulated tree are required to be removed to facilitate the proposed development. With the exception of Tree 3, for which removal could not be avoided due to site constraints, the Cohen Group has sought multiple design solutions to retain the other trees.

Of most concern has been Trees 1 and 2 adjacent to Sydney Street, which are required to be removed to facilitate upgrade to Council's stormwater system. Alternatives explored have included diverting the drain around the site completely or diverting the drain around the root zone of the trees. Neither solution provides an acceptable or optimal hydraulic solution for the stormwater system, which conveys runoff from residential areas upstream of Burnside Village.

Tree 5, a white cedar (*Melia azedarach*) street tree in Cator Street, needs to be removed to facilitate the lengthening of the left lane in Cator Street. The local road network carries a significant volume of traffic that seeks to avoid the Greenhill Road / Portrush Road intersection. When combined with centre traffic, undue delays will be caused to traffic without lengthening the lane. A preliminary arborist assessment of this tree has indicated that the structure of the tree is poor.

It is acknowledged that the removal of the trees does not necessarily meet all of the provisions of the Development Plan related to Regulated and Significant Trees. However, their removal is considered appropriate in the context of the improvements being made to essential public infrastructure and the positive impact this will have on the locality.

The Cohen Group has proposed more than 60 replacement trees (location and species to be agreed with Council), with the view to also upgrading the road reserves adjacent to the site. The new trees and additional landscaping will more than offset the loss of these trees, which the Cohen Group has endeavoured to avoid as much as possible.

5.2.6 Signage

Signage – Relevant Provisions		
Development Plan Section	**Objective**	**Principle of Development Control**
District Centre Zone		9
Outdoor Advertisements	83	246, 248, 249, 250

The advertisements will be designed in a manner consistent with existing form and character of signage on the site and have regard to the relevant Development Plan policy and in particular, the non-complying triggers relating to advertisements within the District Centre Zone.

New signage is proposed to be incorporated into the expanded built form, particularly along Portrush Road. Signage location, size and type have been identified on plans ATP-40404; ATP-40405; ATP-40406; and ATP-40407 in Appendix B; however, the final design of the proposed tenant signs has not been finalised at this stage. Further information will be provided once the final design and tenants are known.

The Burnside Village logo signs comprise a consistent design and finish which results in a coordinated character being established throughout the centre. These signs are well incorporated into the design and form a design feature of the building façade.

In addition, the proposed signage has been designed and sited to avoid a proliferation of advertisements on the site. The proposed signage is consistent with what would be anticipated to be found within a contemporary shopping complex.

5.2.7 Stormwater Management

Stormwater Management – Relevant Provisions		
Development Plan Section	**Objective**	**Principle of Development Control**
Environmental Protection	15 & 16	32, 33, 35, 36, 37, 38, 39, 40, 41, 42 & 43

The overall intent of the relevant stormwater management provisions is to ensure development appropriately manages stormwater on-site and minimise impacts on downstream systems. A Stormwater Management Strategy has been prepared by WGA (Appendix F). This report assessed the current management of stormwater on the site and the proposed method of water runoff from the redeveloped site.

Of most relevance is the upgrading of the stormwater system to contemporary standards (i.e. 1 in 100-year ARI capacity). This improvement will be of significant benefit to Council and communities upstream and downstream of the centre due to reduced flood risk.

5.2.8 Waste Management

Waste Management – Relevant Provisions		
Development Plan Section	**Objective**	**Principle of Development Control**
Environmental Protection	17	45, 46, 47, 48, 49 & 50

Waste management practices and facilities are provided to ensure waste is appropriately managed on the site.

An assessment of the waste management practices was undertaken by Colby Industries (Appendix H) to inform the overall design. The assessment concluded that existing and proposed waste systems at the site could cope with the management demands resulting from the redevelopment.

The waste collection for the shopping centre will be assisted through the addition of the two new loading docks in the northern portion of the site and the proposed expansion of the southern (Cator Street) loading dock.

5.2.9 Ecologically Sustainable Development

Ecologically Sustainable Development – Relevant Provisions		
Development Plan Section	**Objective**	**Principle of Development Control**
Ecologically Sustainable Development	19	30 & 31

Objective 19 encourages development consistent with principles of ecologically sustainable development. Principles 30 and 31 require development to take advantage of renewable sources of energy, particularly solar and to minimise energy use.

A sustainability assessment undertaken by BESTEC identified that the Burnside Village presents good practice sustainability from the perspective of energy, waste and water consumption.

Numerous ecological sustainable design initiatives are incorporated into the overall design of the development to continue to improve the sustainability performance of the shopping centre, some of these initiatives include:

- Potential for an extensive number of solar panels on the roof shopping centre. This will be explored separate to this development application and will be subject to its own business case.
- Natural ventilation to malls.
- LED lighting.
- Water harvesting for use in toilets and low water flow tapware/sanitary ware.

Bicycle parking is provided in the centre, which is easily accessible from car park entrances and entries to the shopping centre,

On this basis the proposal appropriately addresses the Ecologically Sustainable Development provisions.

6.0 Conclusion

The Cohen Group's $350 million redevelopment and expansion of the Burnside Village Shopping Centre (proposed to be pursued in two stages over a 10 year period) will generate substantial ongoing economic benefits, create additional employment opportunities and, as each stage is completed, create a revitalised commercial, retail and leisure destination in the heart of the City of Burnside. Retaining the "village" character, the Centre will be an exemplar in shopping centre design both within South Australia and nationally, and will set new benchmarks for built form, character and materiality that will benefit its prominent location at the intersection of two major transport routes through the Council area.

In assessing this application against the relevant provisions of the *Burnside (City) Development Plan* as consolidated on 19 December 2017, the proposed development is considered appropriate in that it:

- is of a scale of development appropriate to a District Centre Zone in an inner urban location;
- is consistent with the desired and existing form of development in the District Centre Zone and will reinforce the role of the Policy Area as the retail focus for the Council area;
- provides a building form and layout, material and finishes and landscaping design that respects the desired village character of the centre, while allowing for an integrated development across the entire Burnside Village site;
- includes a landmark building desired by the Zone provisions to be located at the corner of Greenhill and Portrush Roads;
- delivers a high standard of architectural treatment across the development, which will result in significant visual amenity improvements;
- includes an integrated landscape design for the entire site, delivering improvements to the adjoining streetscapes, and planting of additional trees to offset the removal of Significant and Regulated Trees;
- provides appropriate car park levels and safe vehicle access to the site;
- will improve safety on the adjoining road network by removing the existing signalised pedestrian crossing and creating a new signalised intersection at Greenhill Road and Sydney Street;
- accommodates the requirements for future widening of both Greenhill and Portrush Roads;
- upgrades the capacity and increases the resilience of the local stormwater system; and
- results in minimal adverse impacts to the amenity of dwellings in the adjoining Residential Zone.

We believe that the proposal is an exceptional standard of development that is consistent with the Development Plan and will make a substantial positive contribution to the locality, and as such warrants approval by SCAP.

Appendix A

Certificates of Title

Government of South Australia

Product	Register Search (CT 5084/389)
Date/Time	15/06/2018 11:34AM
Customer Reference	Cohen
Order ID	20180615004790
Cost	$28.25

REAL PROPERTY ACT, 1886

South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 5084 Folio 389

Parent Title(s) CT 2293/17

Creating Dealing(s) CONVERTED TITLE

Title Issued 19/08/1992 **Edition** 6 **Edition Issued** 12/10/2012

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 38 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768797	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
12276827	UNDERLEASE OF PORTION OF LAND IN LEASE 11768797 TO LIQUORLAND (AUSTRALIA) PTY. LTD. COMMENCING ON 3/12/2014 AND EXPIRING ON 2/12/2024 (SHOP 58BB IN FP 55629)

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G424/1993
PLAN FOR LEASE PURPOSES VIDE G43/1998

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PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G609/1996
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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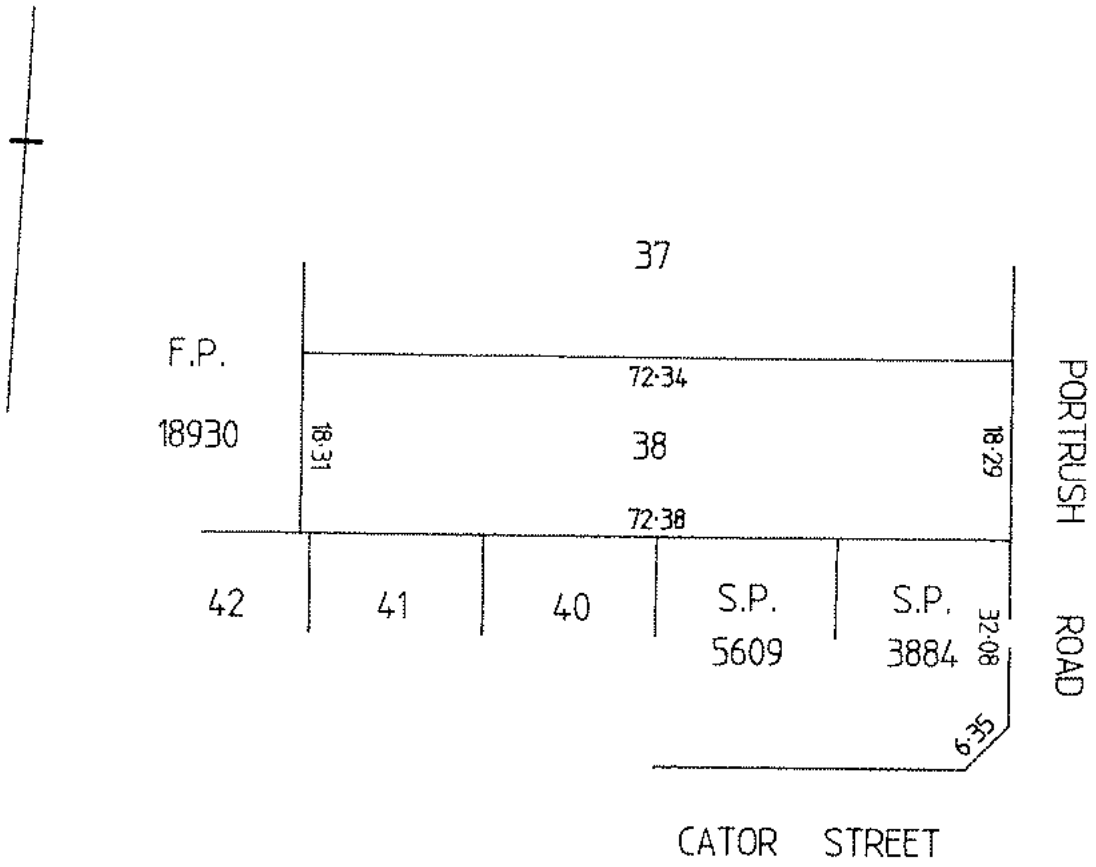

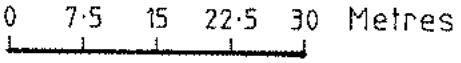

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Government of South Australia

Product	Register Search (CT 5092/421)
Date/Time	15/06/2018 12:20PM
Customer Reference	Cohen
Order ID	20180615005850
Cost	$28.25

REAL PROPERTY ACT, 1886
South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 5092 Folio 421

Parent Title(s)	CT 4331/485				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	09/10/1992	**Edition**	10	**Edition Issued**	08/02/2018

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE (TWO) PTY. LTD. (ACN: 116 156 113)
OF SUITE 1 THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065
99 / 100 SHARE

TOOLEYBUC INVESTMENTS PTY. LTD. (ACN: 094 117 389)
OF SUITE 1 THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 100 SHARE

Description of Land

ALLOTMENT 11 DEPOSITED PLAN 21914
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED B TO THE MINISTER OF WATER RESOURCES (T 4469312)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A FOR DRAINAGE PURPOSES (RE 6616343)

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED C

Schedule of Dealings

Dealing Number	Description
10386209	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11720546B	LEASE TO GROUP ZARA AUSTRALIA PTY. LTD. COMMENCING ON 22/06/2011 AND EXPIRING ON 22/06/2026 OF PORTION (SHOP 103 AND SHOP 201 IN FP 55867)
11768807	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
12461923	UNDERLEASE OF LAND IN LEASE 11768807 TO CAMILLA AUSTRALIA PTY. LTD. (ACN: 135 300 382) COMMENCING ON 12/11/2015 AND EXPIRING ON 11/11/2022 OF PORTION (SHOP 102 IN F56570)

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL

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Notations on Plan NIL

Registrar-General's Notes

APPROVED FILED PLAN FOR LEASE PURPOSES FX55867
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570
APPROVED FX26993

Administrative Interests NIL

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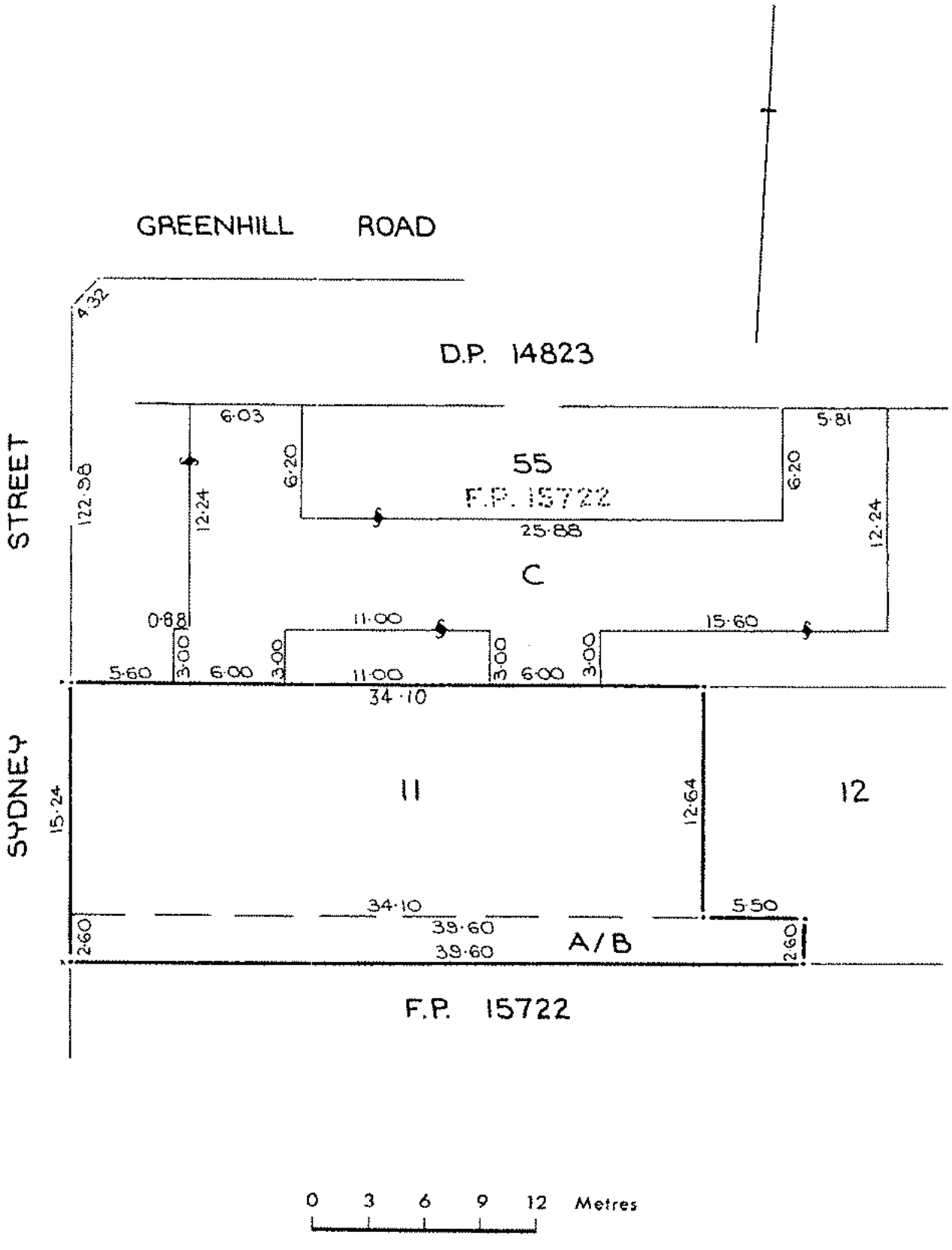

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South Australia

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Certificate of Title - Volume 5097 Folio 984

Parent Title(s)	CT 5018/240, CT 5018/241, CT 5018/242, CT 5018/243 AND OTHERS				
Creating Dealing(s)	CS 7348037				
Title Issued	25/11/1992	**Edition**	5	**Edition Issued**	12/10/2012

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 39 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768797	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G424/1993
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344

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APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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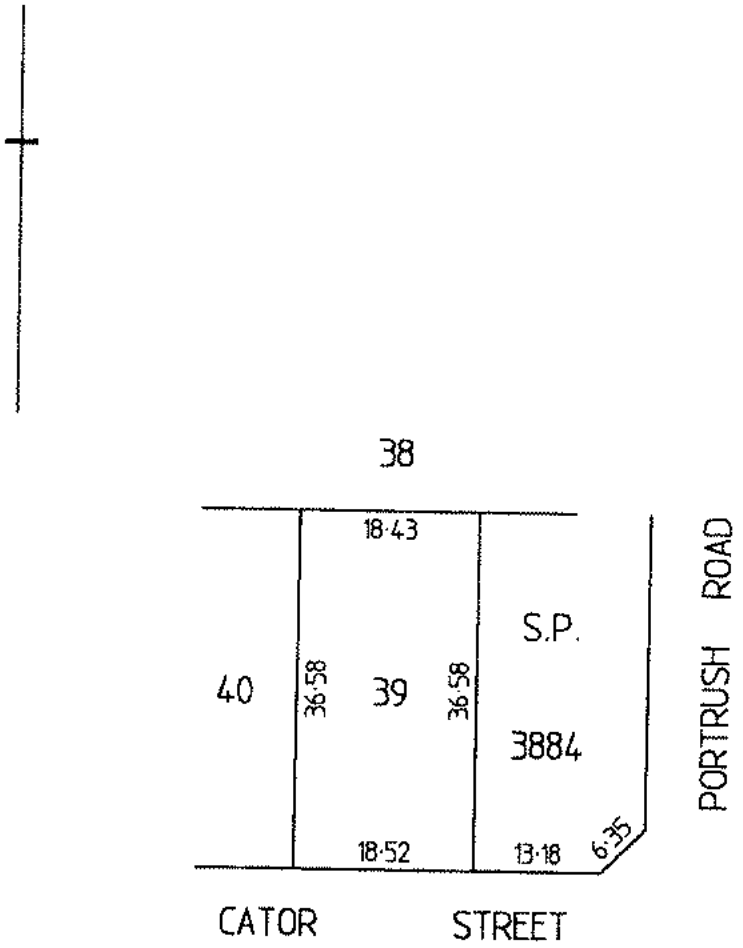

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Certificate of Title - Volume 5099 Folio 248

Parent Title(s) CT 4331/487

Creating Dealing(s) CONVERTED TITLE

Title Issued 04/12/1992 **Edition** 16 **Edition Issued** 08/02/2018

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE (TWO) PTY. LTD. (ACN: 116 156 113)
OF SUITE 1 THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 66 DEPOSITED PLAN 14823
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO RIGHT(S) OF WAY ON FOOT OVER THE LAND MARKED D (T 5235101)

SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED F

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED C AND E

Schedule of Dealings

Dealing Number	Description
10386212	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11720546	LEASE TO GROUP ZARA AUSTRALIA PTY. LTD. COMMENCING ON 22/06/2011 AND EXPIRING ON 22/06/2026 OF PORTION (SHOP 103 AND SHOP 201 IN FP 55867)
11760771	LEASE TO STEAMBROOK PTY. LTD. COMMENCING ON 1/11/2011 AND EXPIRING ON 31/10/2019 OF PORTION (SHOP 130 IN FP 56570)
11768809	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G289/1995
PLAN FOR LEASE PURPOSES VIDE G44/2004

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APPROVED FILED PLAN FOR LEASE PURPOSES FX55867
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570
APPROVED FX26993

Administrative Interests NIL

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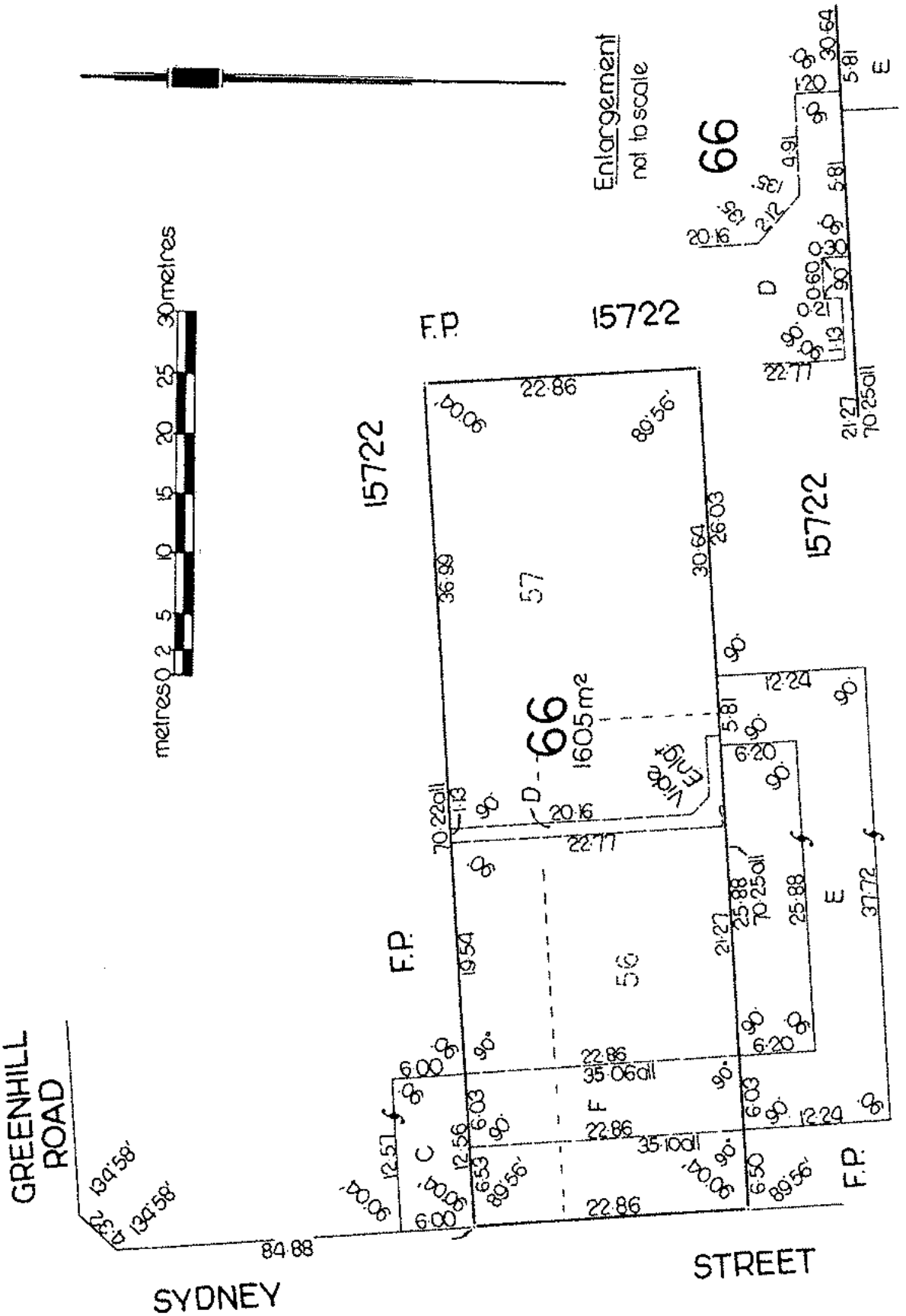

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South Australia

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Certificate of Title - Volume 5128 Folio 795

Parent Title(s) CT 4003/371

Creating Dealing(s) CONVERTED TITLE

Title Issued 25/06/1993 **Edition** 11 **Edition Issued** 12/10/2012

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
99 / 100 SHARE

RSC NOMINEES PTY. LTD. (ACN: 007 770 792)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 100 SHARE

Description of Land

ALLOTMENT 36 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494735	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768811	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G43/1998

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PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G73/2001
PLAN FOR LEASE PURPOSES VIDE G85/1994
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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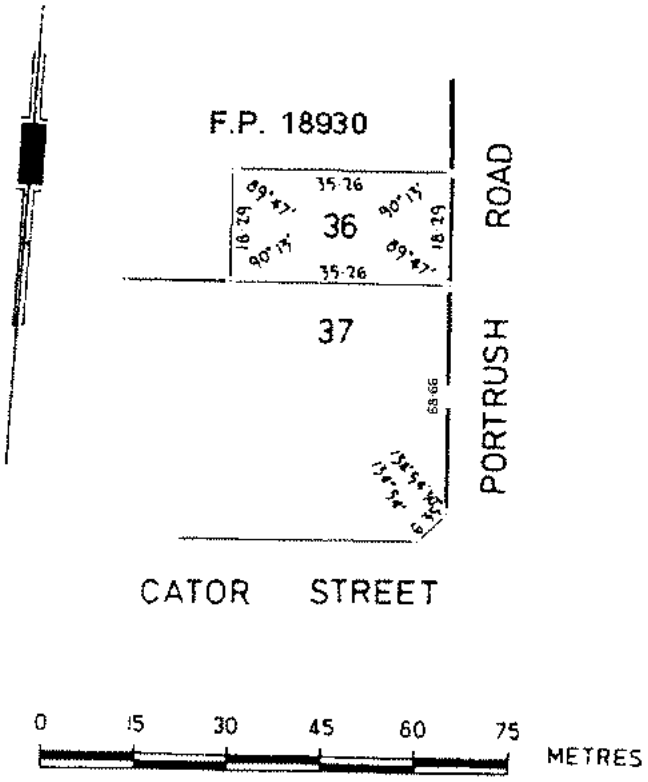
Product	Register Search (CT 5128/795)
Date/Time	15/06/2018 12:29PM
Customer Reference	Cohen
Order ID	20180615006018
Cost	$28.25



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REAL PROPERTY ACT, 1886
South Australia

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Certificate of Title - Volume 5143 Folio 940

Parent Title(s) CT 3637/191

Creating Dealing(s) CONVERTED TITLE

Title Issued 16/09/1993 **Edition** 15 **Edition Issued** 12/10/2012

Estate Type

FEE SIMPLE

Registered Proprietor

QUARK INVESTMENTS PTY. LTD. (ACN: 081 092 177)
OF SUITE 1/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 23 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED A APPURTENANT ONLY TO THE LAND MARKED X

Schedule of Dealings

Dealing Number	Description
11745159	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11760805	LEASE TO AUSTRALIA & NEW ZEALAND BANKING GROUP LTD. COMMENCING ON 1/11/2011 AND EXPIRING ON 31/10/2018 OF PORTION (BANK BBB IN FP 56915)
11760789	LEASE TO BENDIGO & ADELAIDE BANK LTD. COMMENCING ON 12/12/2011 AND EXPIRING ON 11/12/2021 OF PORTION (BANK AAA IN FP56915)
11768820	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G123/1983
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56915

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Administrative Interests NIL

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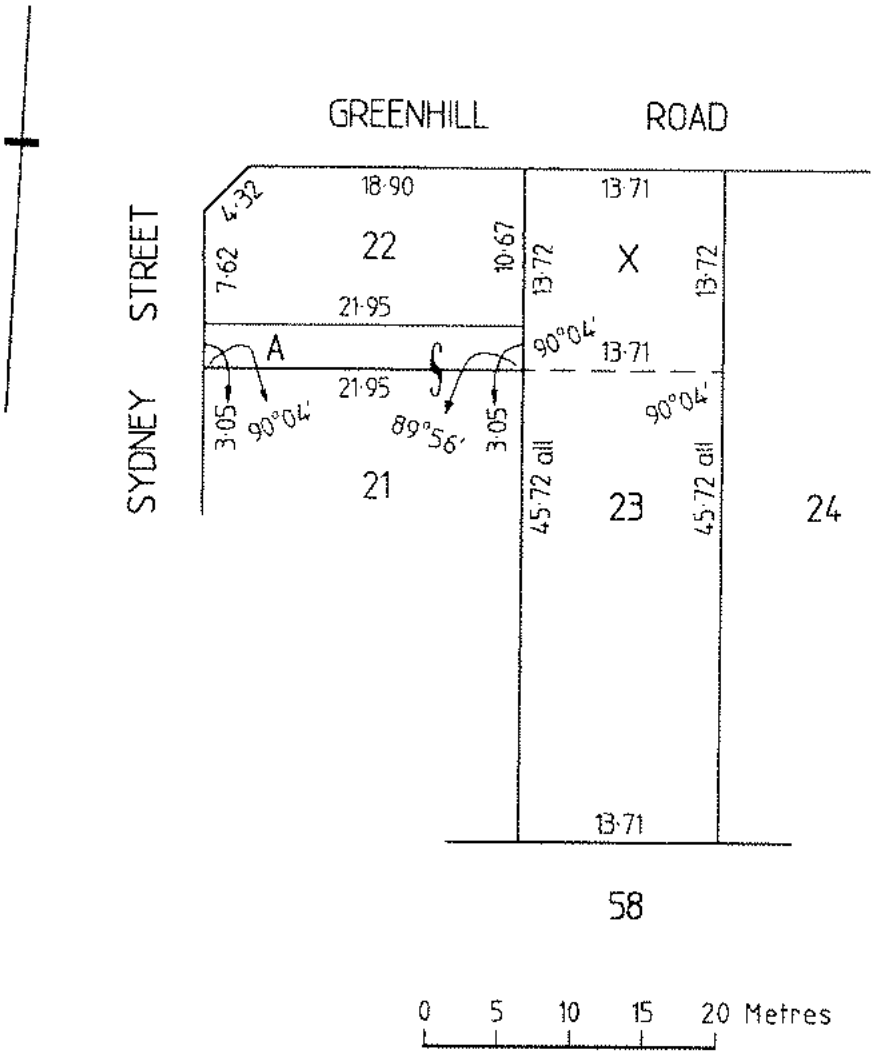
Product	Register Search (CT 5143/940)
Date/Time	15/06/2018 12:31PM
Customer Reference	Cohen
Order ID	20180615006051
Cost	$28.25



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Product	Register Search (CT 5143/941)
Date/Time	15/06/2018 12:33PM
Customer Reference	Cohen
Order ID	20180615006093
Cost	$28.25

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The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 5143 Folio 941

Parent Title(s) CT 3637/192

Creating Dealing(s) CONVERTED TITLE

Title Issued 16/09/1993 **Edition** 13 **Edition Issued** 12/10/2012

Estate Type

FEE SIMPLE

Registered Proprietor

QUARK INVESTMENTS PTY. LTD. (ACN: 081 092 177)
OF SUITE 1/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 22 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED A

Schedule of Dealings

Dealing Number	Description
11745159	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11760805	LEASE TO AUSTRALIA & NEW ZEALAND BANKING GROUP LTD. COMMENCING ON 1/11/2011 AND EXPIRING ON 31/10/2018 OF PORTION (BANK BBB IN FP 56915)
11760789	LEASE TO BENDIGO & ADELAIDE BANK LTD. COMMENCING ON 12/12/2011 AND EXPIRING ON 11/12/2021 OF PORTION (BANK AAA IN FP56915)
11768821	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G123/1983
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56915

Administrative Interests NIL

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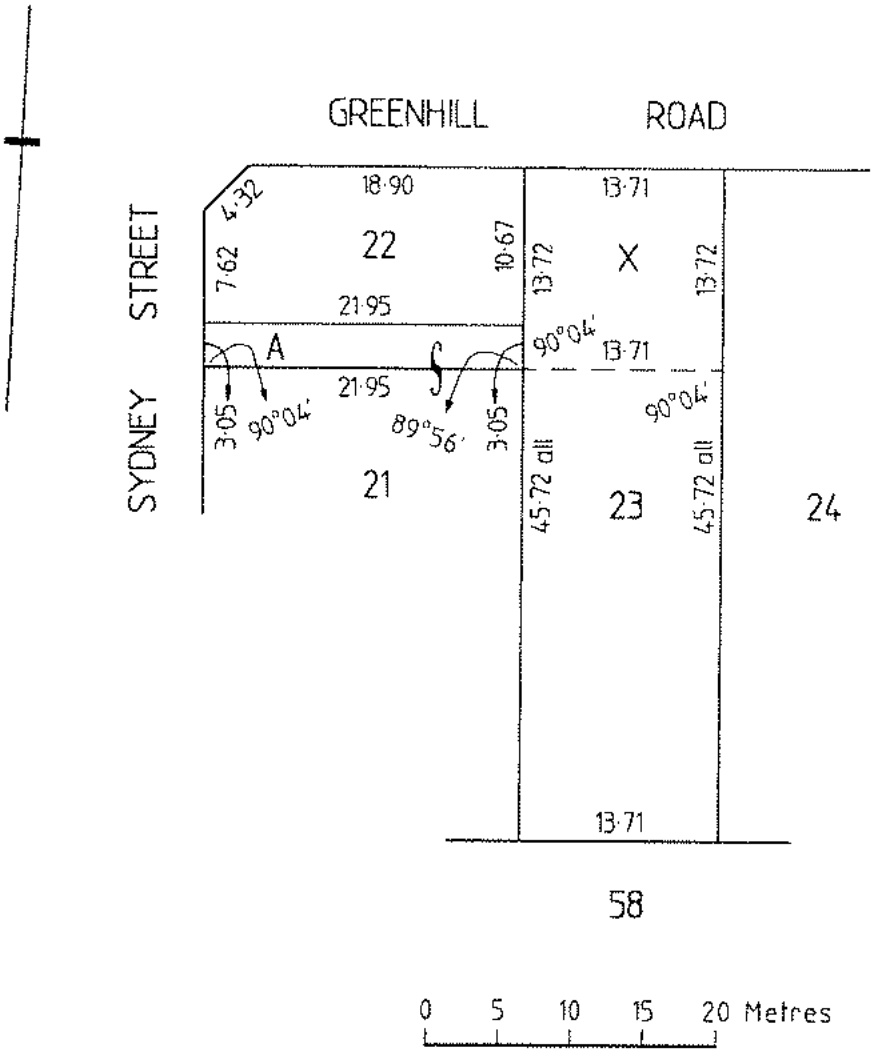
Product	Register Search (CT 5143/941)
Date/Time	15/06/2018 12:33PM
Customer Reference	Cohen
Order ID	20180615006093
Cost	$28.25



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Product	Register Search (CT 5157/926)
Date/Time	15/06/2018 12:36PM
Customer Reference	Cohen
Order ID	20180615006133
Cost	$28.25

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South Australia

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Certificate of Title - Volume 5157 Folio 926

Parent Title(s)	CT 2336/79				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	30/11/1993	**Edition**	8	**Edition Issued**	12/10/2012

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
99 / 100 SHARE

WETUNGA PTY. LTD. (ACN: 007 719 280)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 100 SHARE

Description of Land

ALLOTMENT 37 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494739	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768810	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
12276827A	UNDERLEASE OF PORTION OF LAND IN LEASE 11768810 TO LIQUORLAND (AUSTRALIA) PTY. LTD. COMMENCING ON 3/12/2014 AND EXPIRING ON 2/12/2024 (SHOP 58BB IN FP 55629)

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998

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PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G424/1993
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G609/1996
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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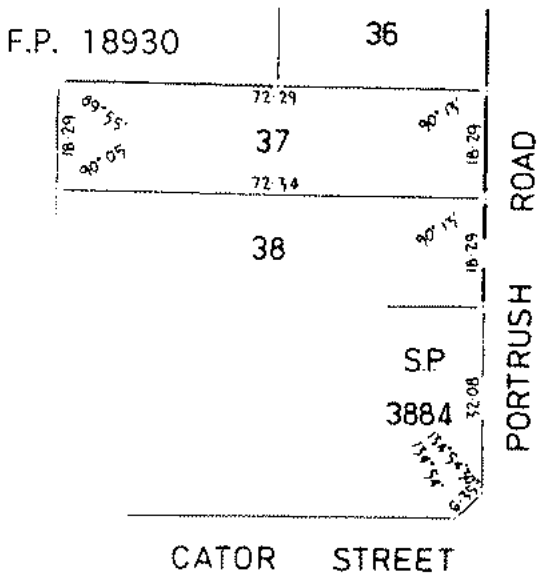

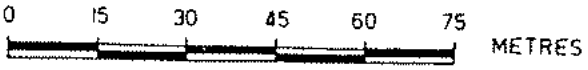

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Product	Register Search (CT 5193/218)
Date/Time	15/06/2018 12:39PM
Customer Reference	Cohen
Order ID	20180615006176
Cost	$28.25

REAL PROPERTY ACT, 1886

South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 5193 Folio 218

Parent Title(s) CT 4003/369

Creating Dealing(s) CONVERTED TITLE

Title Issued 08/06/1994 **Edition** 7 **Edition Issued** 12/10/2012

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 47 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11746272	LEASE TO BAKERS DELIGHT HOLDINGS LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2022 OF PORTION (SHOP 29 IN GP 120/2002)
11768799	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G424/1993
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997

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PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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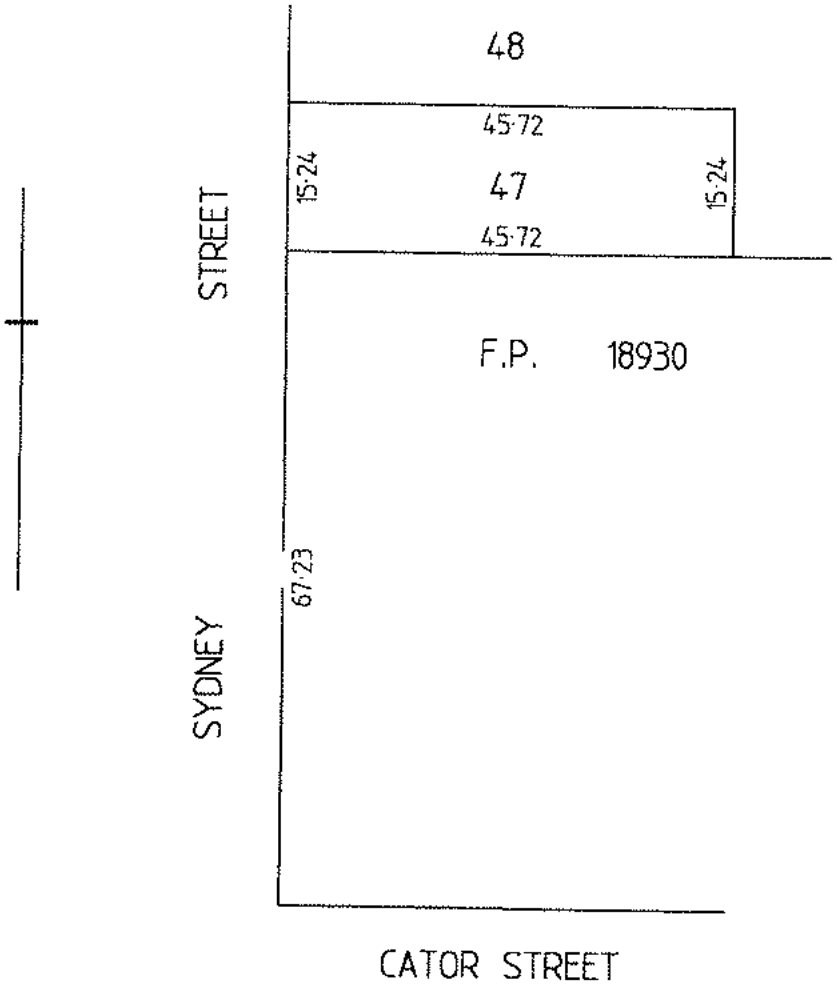

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Product	Register Search (CT 5193/219)
Date/Time	15/06/2018 12:41PM
Customer Reference	Cohen
Order ID	20180615006207
Cost	$28.25

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South Australia

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Certificate of Title - Volume 5193 Folio 219

Parent Title(s) CT 4226/98

Creating Dealing(s) CONVERTED TITLE

Title Issued 08/06/1994 **Edition** 7 **Edition Issued** 12/10/2012

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 48 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED A

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED B

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768800	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
12036287	UNDERLEASE OF PORTION OF LAND IN LEASE 11768800 TO ROIX PTY. LTD. COMMENCING ON 1/3/2013 AND EXPIRING ON 28/2/2023 OF PORTION (32 IN GP 120/2002)

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G424/1993

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PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G673/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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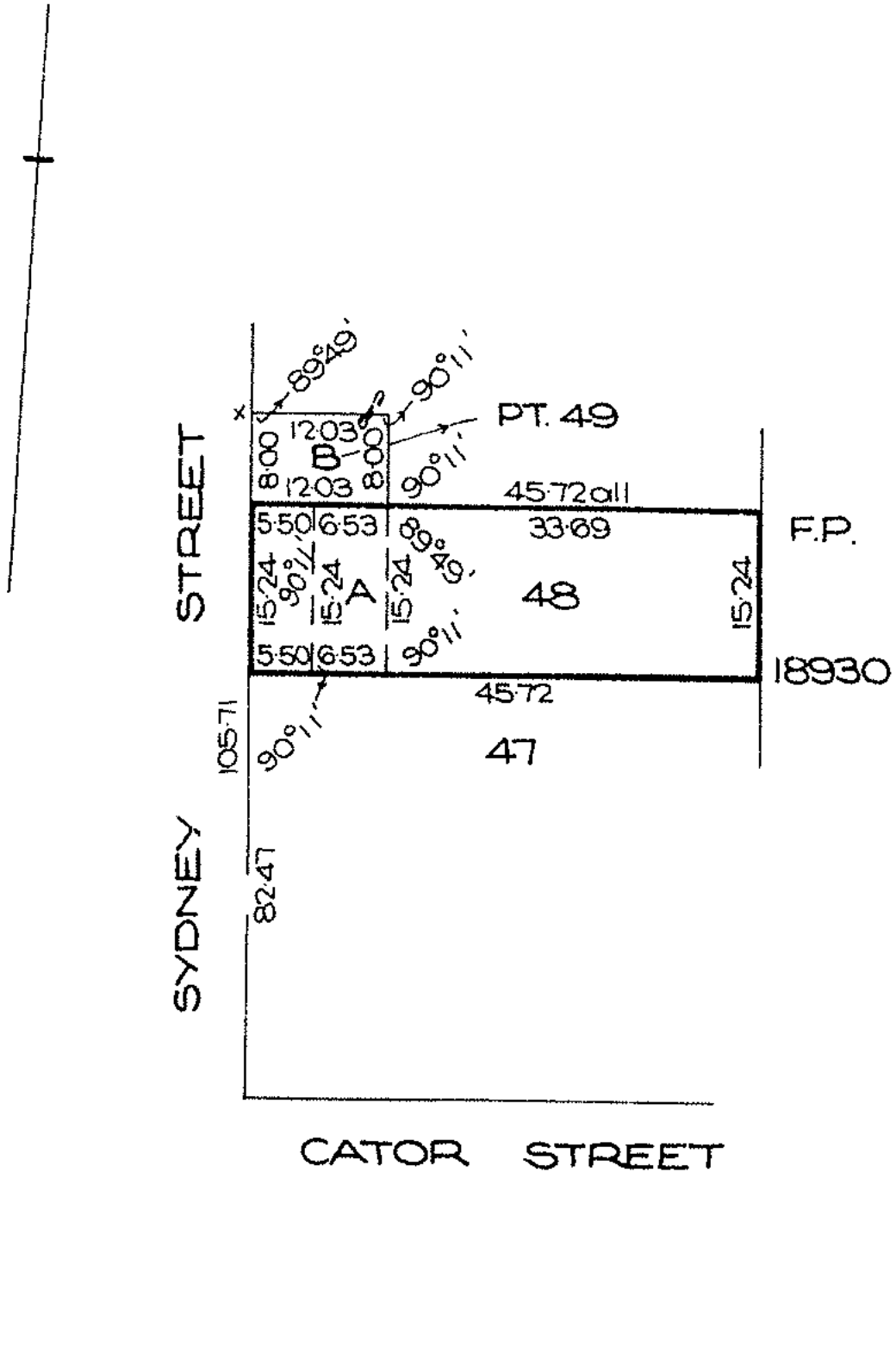

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REAL PROPERTY ACT, 1886
South Australia

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Certificate of Title - Volume 5241 Folio 577

Parent Title(s) CT 1878/95

Creating Dealing(s) CONVERTED TITLE

Title Issued 17/01/1995 **Edition** 8 **Edition Issued** 12/10/2012

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
99 / 100 SHARE

BERRIMA DISTRICT INVESTMENTS PTY. LTD. (ACN: 000 098 902)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 100 SHARE

Description of Land

ALLOTMENT 33 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494737	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768813	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997

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PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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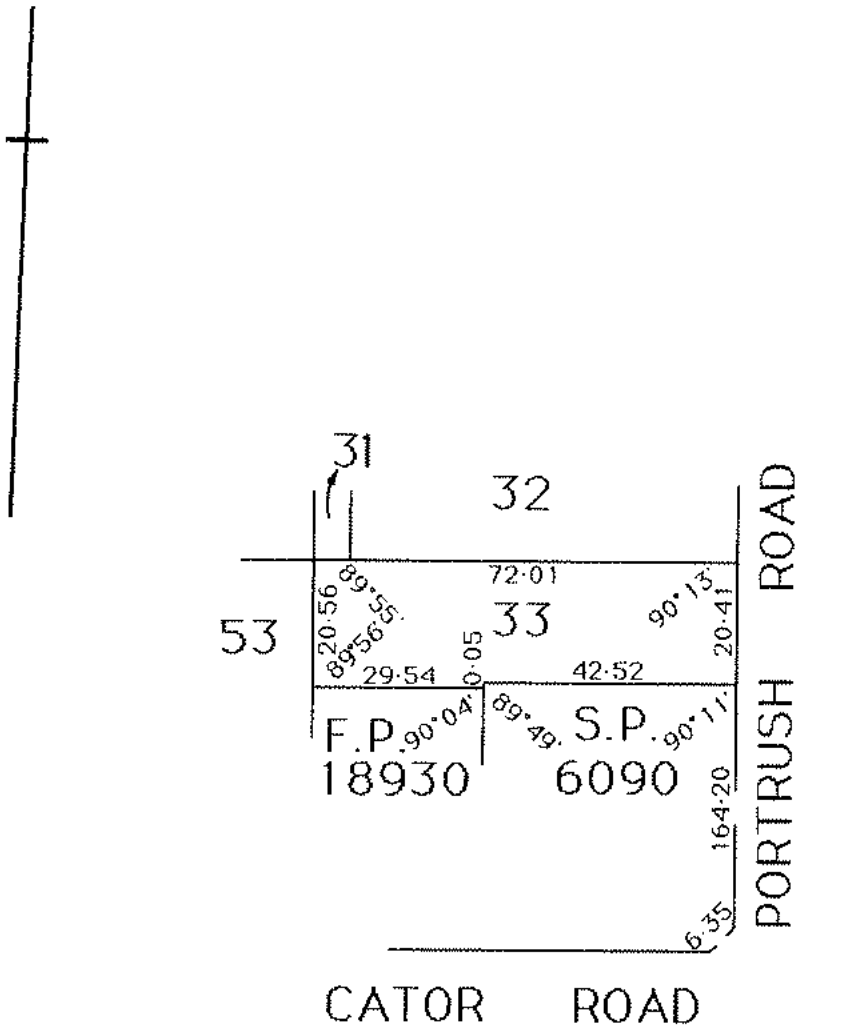
Product	Register Search (CT 5241/577)
Date/Time	15/06/2018 12:44PM
Customer Reference	Cohen
Order ID	20180615006255
Cost	$28.25



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Product	Register Search (CT 5251/547)
Date/Time	15/06/2018 12:46PM
Customer Reference	Cohen
Order ID	20180615006305
Cost	$28.25

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Certificate of Title - Volume 5251 Folio 547

Parent Title(s) CT 4283/110

Creating Dealing(s) CONVERTED TITLE

Title Issued 01/03/1995 **Edition** 16 **Edition Issued** 29/01/2018

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF SUITE G THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 53 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768803	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
12158799	UNDERLEASE OF PORTION OF LAND IN LEASE 11768803 TO SMIGGLE PTY. LTD. COMMENCING ON 1/11/2013 AND EXPIRING ON 31/10/2018 (SHOP SS16 IN FP 55629)
12423332	UNDERLEASE OF LAND IN LEASE 11768803 TO BLUE ILLUSION AUSTRALIA PTY. LTD. (ACN: 006 678 566) COMMENCING ON 01/08/2015 AND EXPIRING ON 31/07/2023 OF PORTION (SHOP 125 IN F56570)
12691608	UNDERLEASE OF LAND IN LEASE 11768803 TO TH AUSTRALIA HOLDINGS PTY. LTD. (ACN: 168 790 485) COMMENCING ON 13/09/2016 AND EXPIRING ON 12/09/2022 OF PORTION (SHOP 127 IN F56570)

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000

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PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G17/1989
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G380/1989
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G673/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570
NEW EDITION CREATED DUE TO EXPIRATION OF LEASE

Administrative Interests NIL

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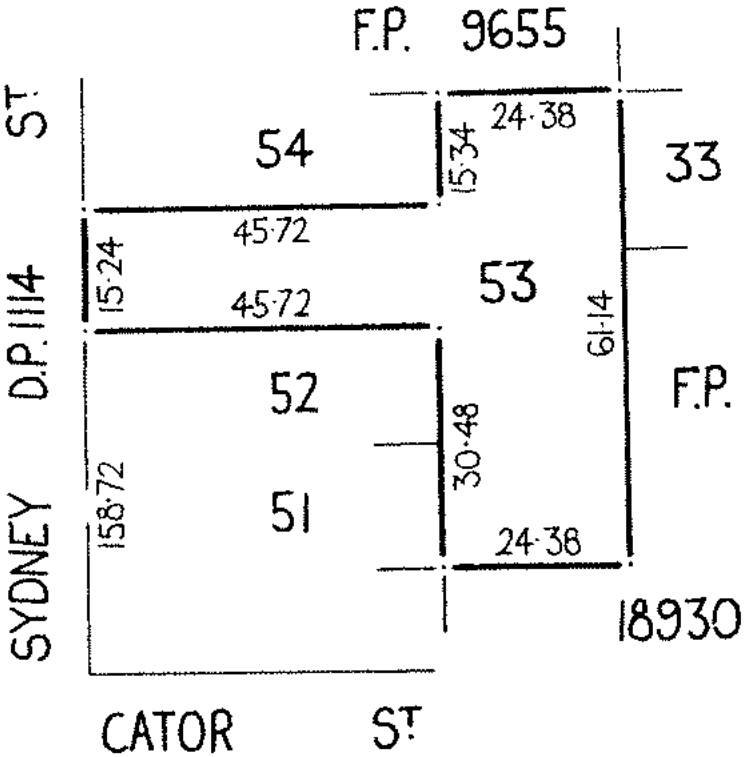

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Department of Planning, Transport and Infrastructure

Product	Register Search (CT 5251/548)
Date/Time	15/06/2018 12:48PM
Customer Reference	Cohen
Order ID	20180615006332
Cost	$28.25

REAL PROPERTY ACT, 1886
South Australia

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Certificate of Title - Volume 5251 Folio 548

Parent Title(s) CT 4003/363

Creating Dealing(s) CONVERTED TITLE

Title Issued 01/03/1995 **Edition** 6 **Edition Issued** 12/10/2012

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 52 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768797	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G673/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344

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APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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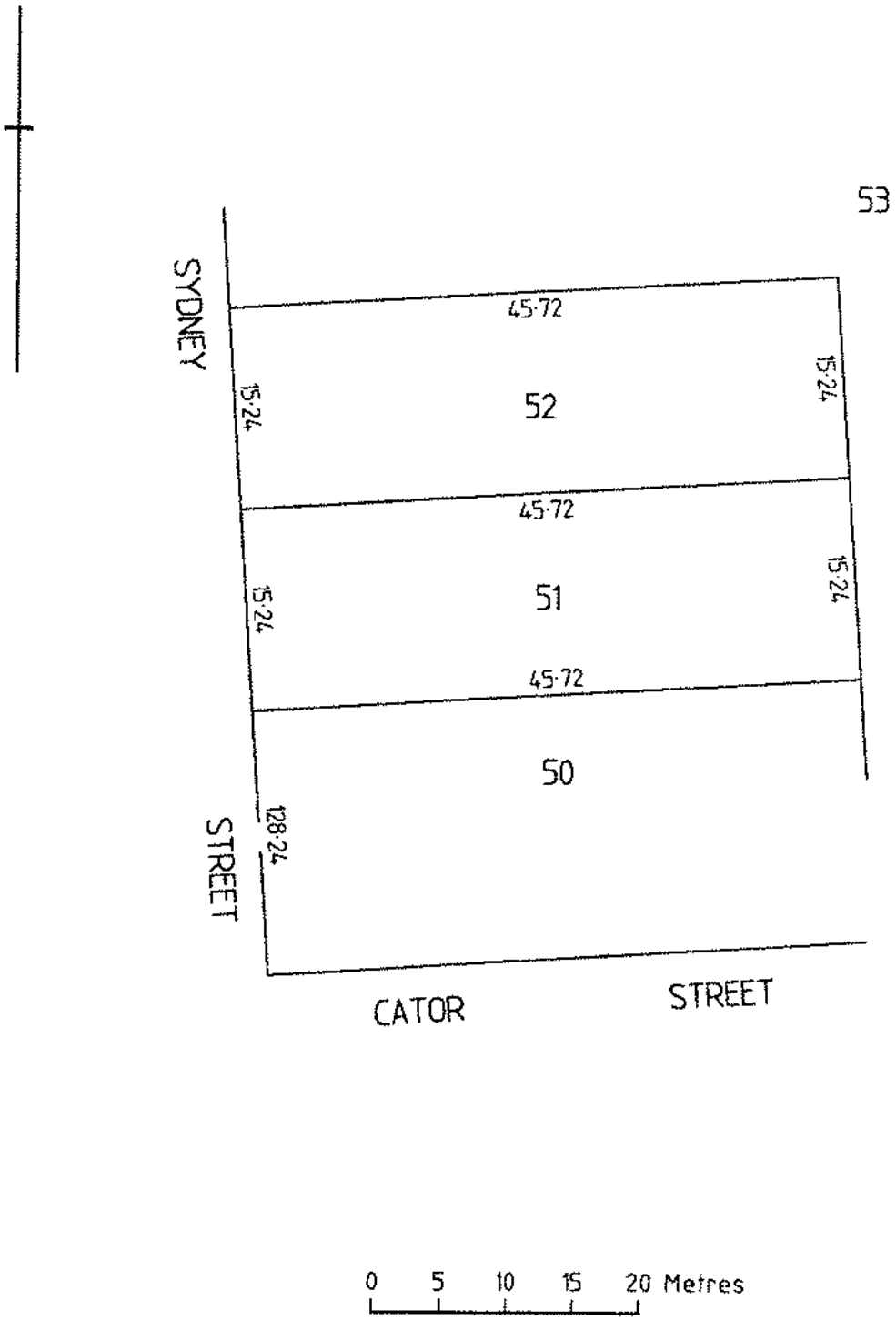

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Certificate of Title - Volume 5251 Folio 549

Parent Title(s) CT 4003/368

Creating Dealing(s) CONVERTED TITLE

Title Issued 01/03/1995 **Edition** 8 **Edition Issued** 16/12/2017

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 51 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768797	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G673/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344

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APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570
NEW EDITION CREATED DUE TO EXPIRATION OF LEASE

Administrative Interests NIL

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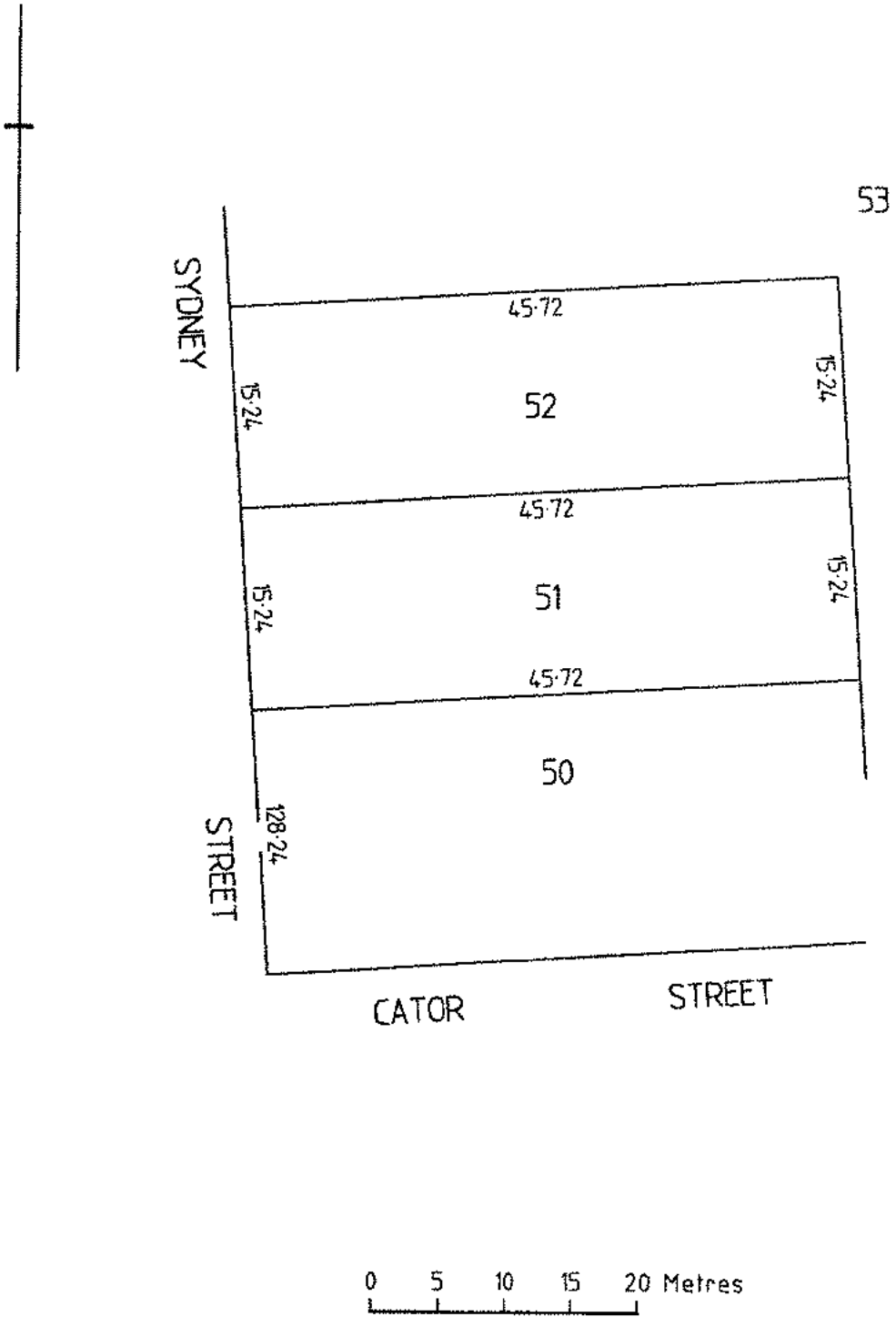

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Certificate of Title - Volume 5322 Folio 225

Parent Title(s)	CT 5179/378				
Creating Dealing(s)	DDA 8054283				
Title Issued	02/02/1996	**Edition**	14	**Edition Issued**	08/02/2018

Estate Type

FEE SIMPLE

Registered Proprietor

TOOLEYBUC INVESTMENTS PTY. LTD. (ACN: 094 117 389)
OF SUITE 1 THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 55 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED D

SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED A

TOGETHER WITH RIGHT(S) OF WAY ON FOOT ONLY OVER THE LAND MARKED C (T 5235101)

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED B

Schedule of Dealings

Dealing Number	Description
11462028	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11720546A	LEASE TO GROUP ZARA AUSTRALIA PTY. LTD. COMMENCING ON 22/06/2011 AND EXPIRING ON 22/06/2026 OF PORTION (SHOP 103 AND SHOP 201 IN FP 55867)
11760772	LEASE TO STEAMBROOK PTY. LTD. COMMENCING ON 1/11/2011 AND EXPIRING ON 31/10/2019 OF PORTION (SHOP 130 IN FP 56570)
11768806	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	

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PLAN FOR LEASE PURPOSES VIDE G405/1987
PLAN FOR LEASE PURPOSES VIDE G85/1984
APPROVED FILED PLAN FOR LEASE PURPOSES FX55867
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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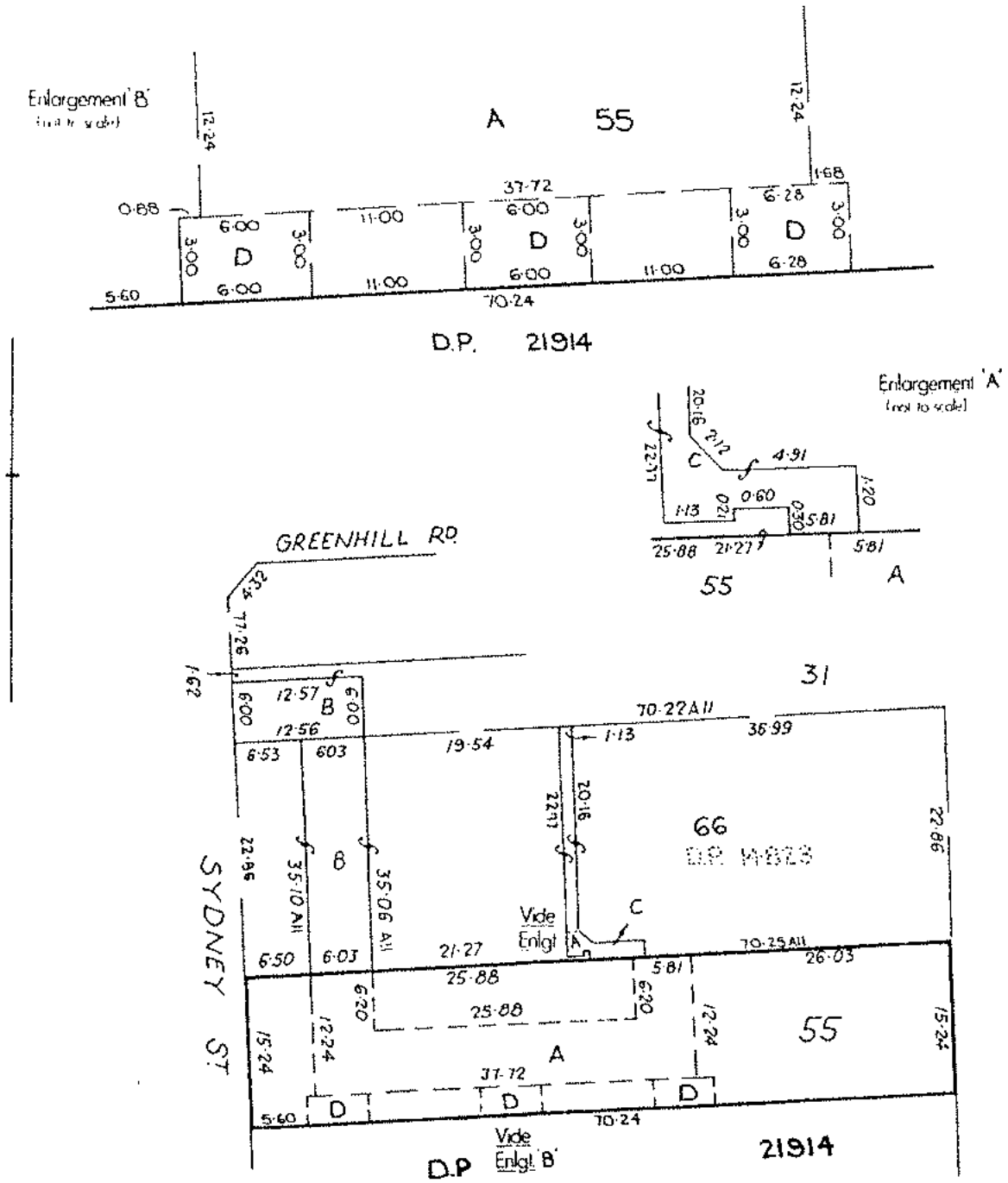

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Certificate of Title - Volume 5360 Folio 934

Parent Title(s) CT 4339/560

Creating Dealing(s) CONVERTED TITLE

Title Issued 11/09/1996 **Edition** 14 **Edition Issued** 12/10/2012

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE (FIVE) PTY. LTD. (ACN: 149 020 119)
OF 447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 29 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED C TO THE ETSA CORPORATION (TG 6709799)

SUBJECT TO PARTY WALL RIGHT(S) OVER THE LAND MARKED A (T 2401963)

SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED C

TOGETHER WITH PARTY WALL RIGHT(S) OVER THE LAND MARKED B (T 2401963)

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED D

Schedule of Dealings

Dealing Number	Description
11745161	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768817	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL

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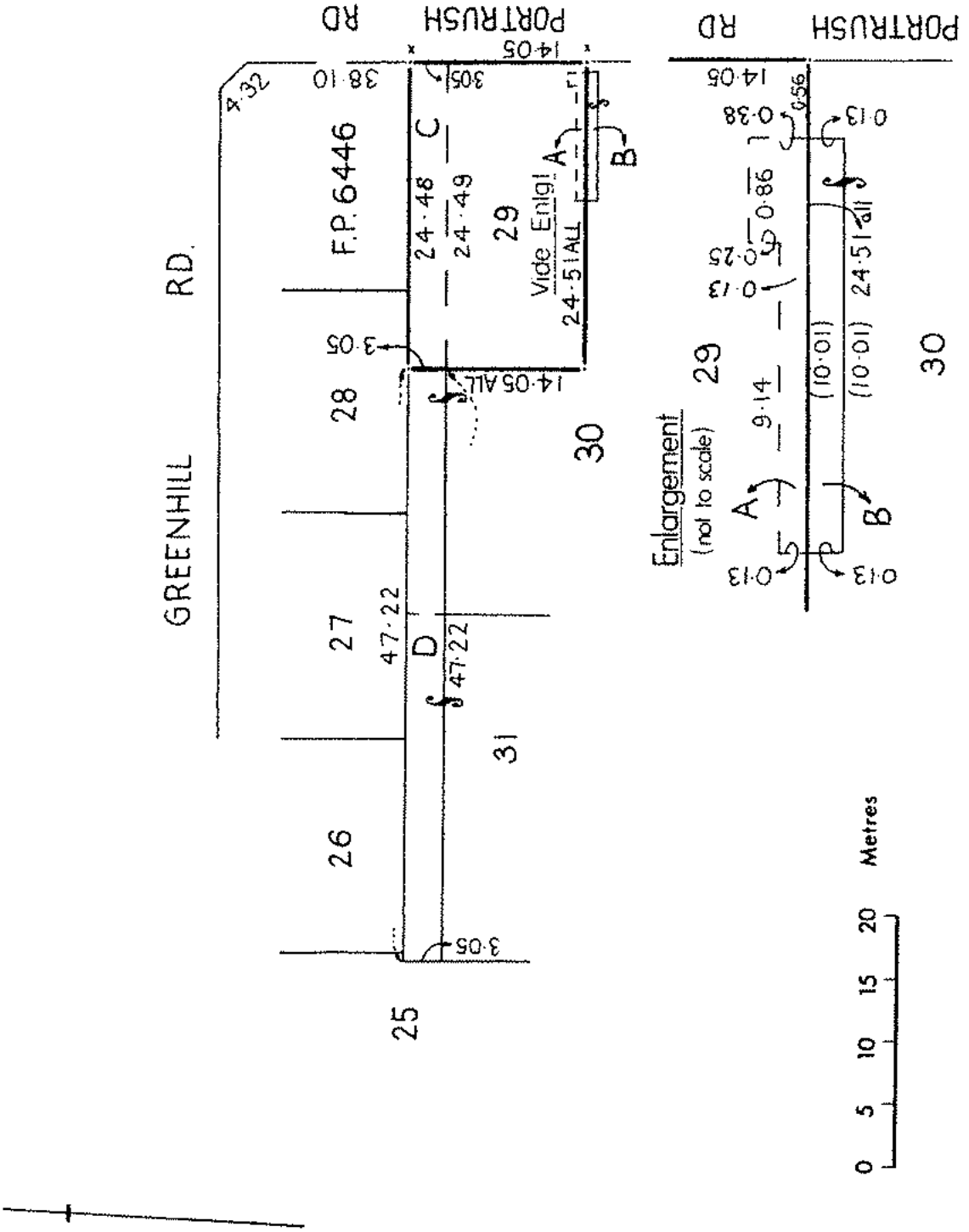

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Certificate of Title - Volume 5363 Folio 573

Parent Title(s)	CT 5027/644, CT 5027/645, CT 5027/646, CT 5027/647 AND OTHERS				
Creating Dealing(s)	CS 8102503				
Title Issued	23/09/1996	**Edition**	7	**Edition Issued**	12/10/2012 [Previous Edition]
Diagram Reference	5027644				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
594 / 600 SHARE

BURRADOO NOMINEES PTY. LTD. (ACN: 007 840 253)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 600 SHARE

LELAND INVESTMENTS PTY. LTD. (ACN: 007 706 612)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 600 SHARE

ORSOVA PROPERTIES PTY. LTD. (ACN: 007 693 629)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 600 SHARE

P.M.C. SECURITIES PTY. LTD. (ACN: 000 142 129)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 600 SHARE

QUIBERON PTY. LTD. (ACN: 002 534 536)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 600 SHARE

RICHARDS (TRADING) PTY. LTD. (ACN: 000 069 465)
OF C/- BURNSIDE VILLAGE LEVEL 1 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 600 SHARE

Description of Land

ALLOTMENT 34 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

TOGETHER WITH RIGHT(S) OF WAY AND EASEMENT(S) OVER THE LAND MARKED A (T 3458540)

Schedule of Dealings

Dealing Number	Description
9494738	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768812	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

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Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G555/1996
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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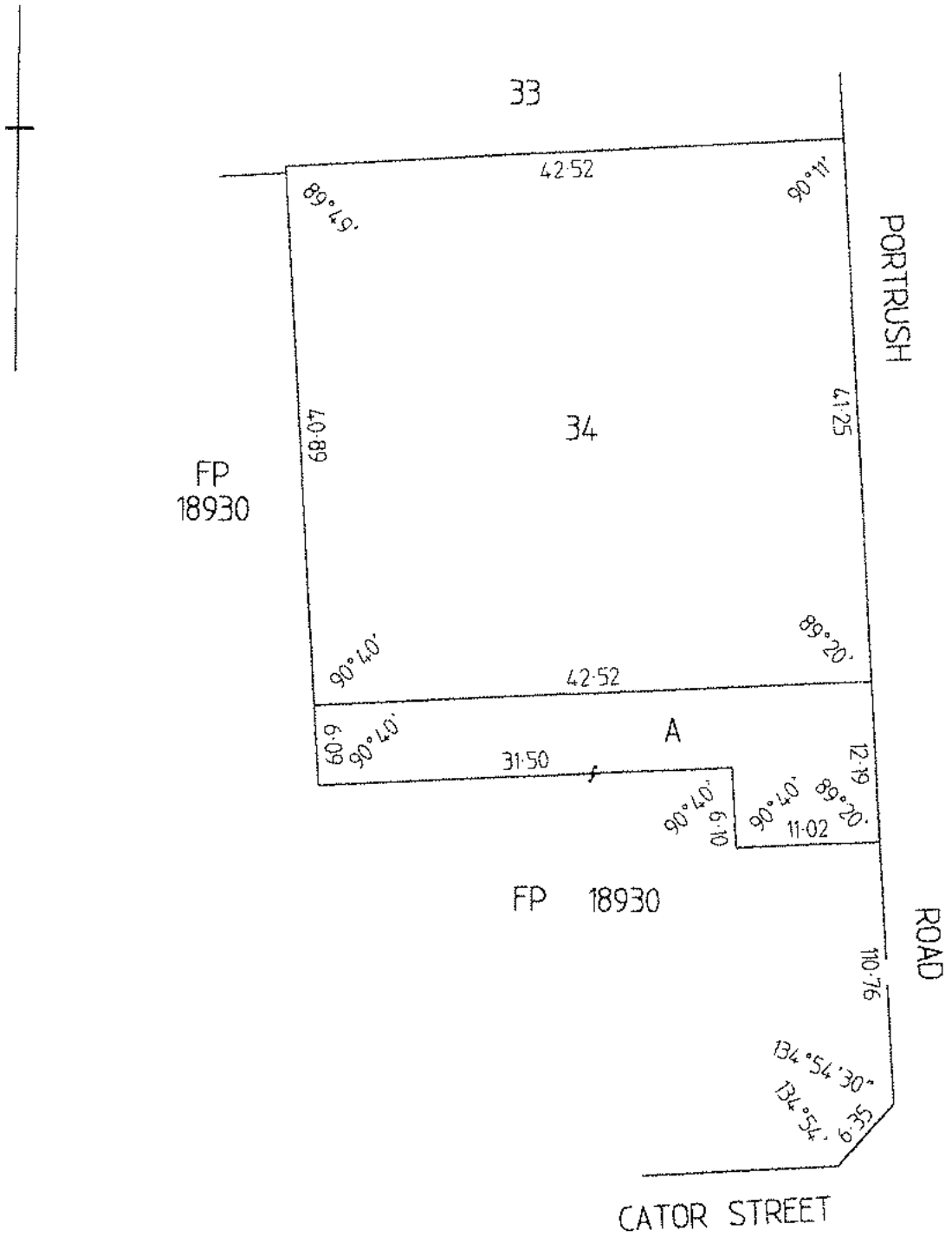

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Certificate of Title - Volume 5407 Folio 745

Parent Title(s)	CT 5071/852				
Creating Dealing(s)	TG 8230645				
Title Issued	26/03/1997	**Edition**	2	**Edition Issued**	05/02/2014 [Previous Edition]
Diagram Reference	5071852				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE (SIX) PTY. LTD. (ACN: 166 428 940)
OF 372 GREENHILL ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 24 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO THE ETSA CORPORATION (TG 8230645)

Schedule of Dealings

Dealing Number	Description
12063677	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL

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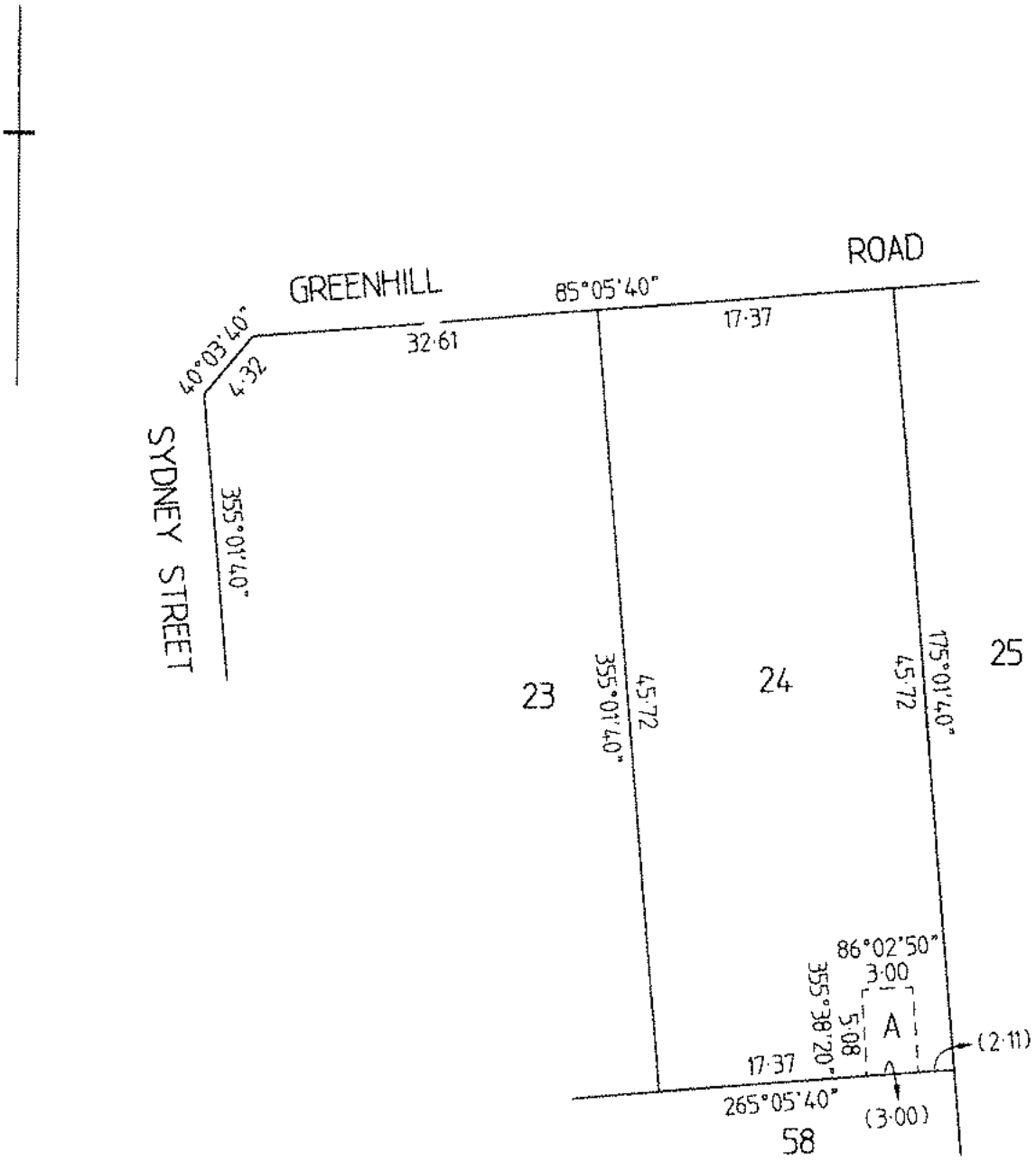

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Product	Register Search (CT 5418/857)
Date/Time	15/06/2018 04:29PM
Customer Reference	Cohen
Order ID	20180615010406
Cost	$28.25

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Certificate of Title - Volume 5418 Folio 857

Parent Title(s) CT 4134/393

Creating Dealing(s) CONVERTED TITLE

Title Issued 12/05/1997 **Edition** 3 **Edition Issued** 05/04/2016

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE (SEVEN) PTY. LTD. (ACN: 609 908 750)
OF CARE COHEN GROUP SUITE 202 447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 11 FILED PLAN 6446
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
12504858	LEASE TO AUSTRALIAN POSTAL CORPORATION COMMENCING ON 01/03/2016 AND EXPIRING ON 28/02/2021

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G588/1996

Administrative Interests NIL

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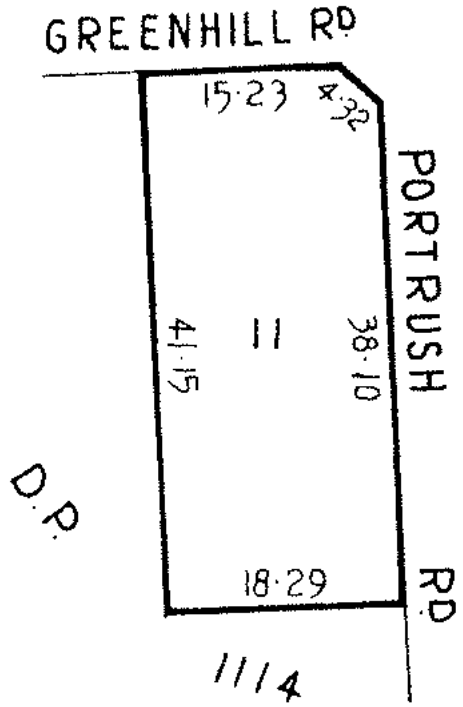

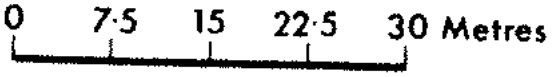

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Certificate of Title - Volume 5431 Folio 842

Parent Title(s)	CT 4003/367				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	03/07/1997	**Edition**	13	**Edition Issued**	29/01/2018 [Previous Edition]
Diagram Reference	4003367				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF SUITE G THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 54 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768804	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
12461922	UNDERLEASE OF LAND IN LEASE 11768804 TO CAMILLA AUSTRALIA PTY. LTD. (ACN: 135 300 382) COMMENCING ON 12/11/2015 AND EXPIRING ON 11/11/2022 OF PORTION (SHOP 102 IN F56570)

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G424/1993
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997

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PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570
NEW EDITION CREATED DUE TO EXPIRATION OF LEASE

Administrative Interests NIL

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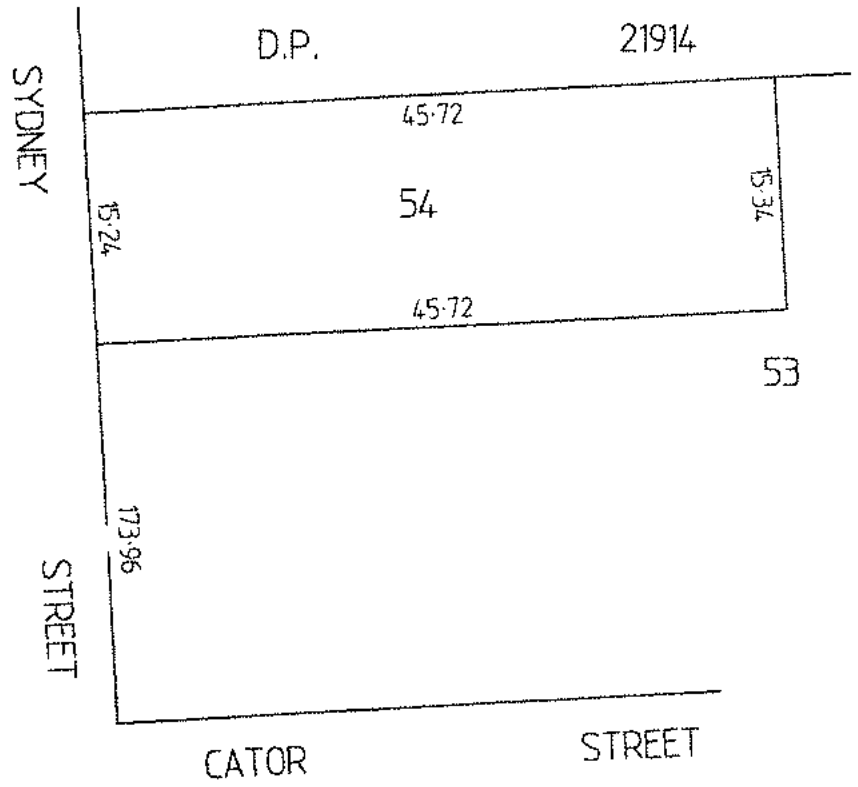

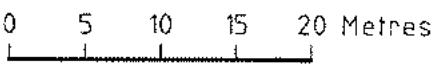

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Certificate of Title - Volume 5432 Folio 63

Parent Title(s)	CT 4002/802				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	03/07/1997	**Edition**	9	**Edition Issued**	16/12/2017 [Previous Edition]
Diagram Reference	4002802				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 50 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768802	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
12192301A	UNDERLEASE OF PORTION OF LAND IN LEASE 11768802 TO PORTMANS PTY. LTD. COMMENCING ON 1/11/2013 AND EXPIRING ON 31/10/2018 OF PORTION (SHOP SS44 IN FP 55629)

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G424/1993
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G673/1988

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PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570
NEW EDITION CREATED DUE TO EXPIRATION OF LEASE

Administrative Interests NIL

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Certificate of Title - Volume 5432 Folio 64

Parent Title(s)	CT 4398/641				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	03/07/1997	**Edition**	5	**Edition Issued**	12/10/2012 [Previous Edition]
Diagram Reference	F206849				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 91 FILED PLAN 206849
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768797	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

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Administrative Interests NIL

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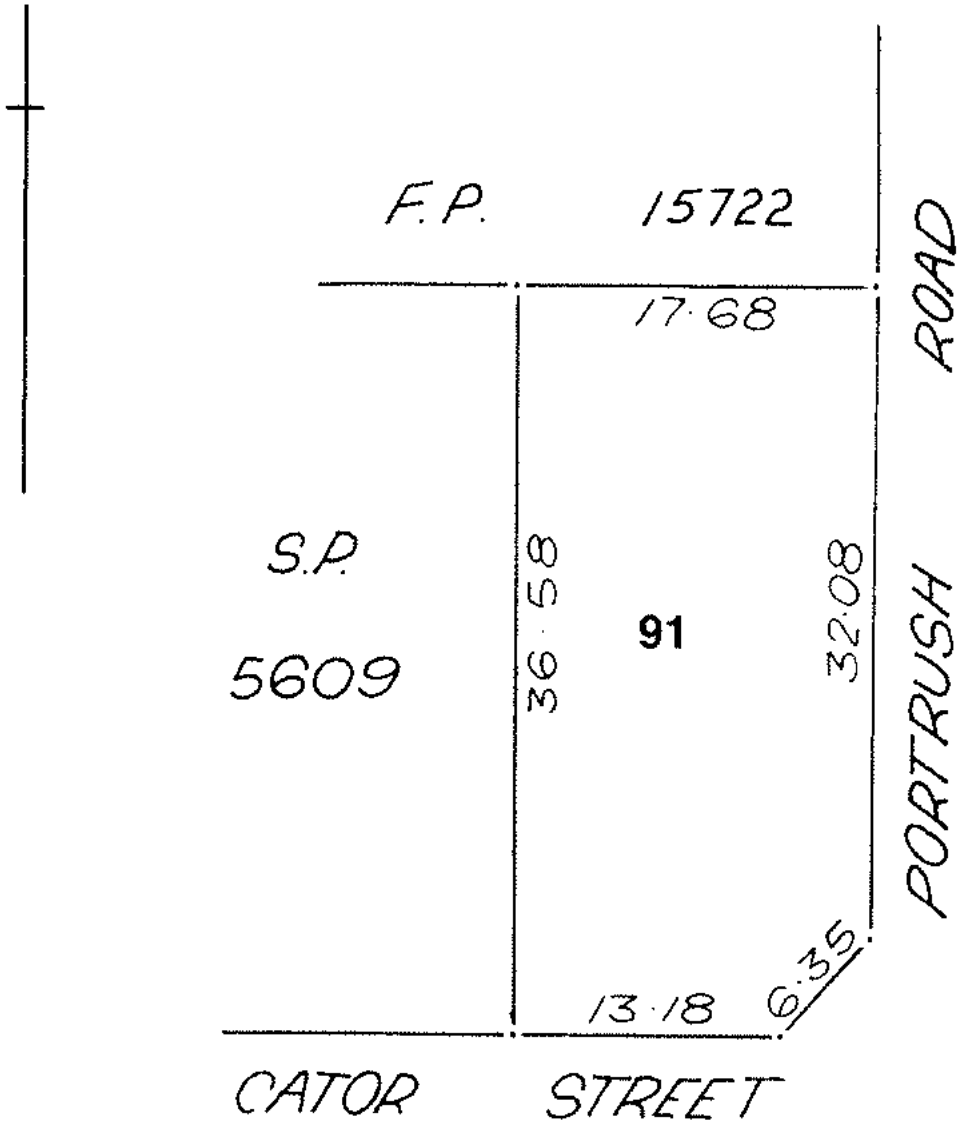
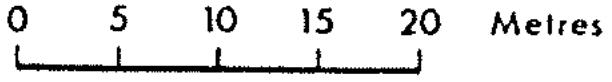
THIS PLAN IS SCANNED FOR CERTIFICATE OF TITLE 4398/641

LAST PLAN REF: DP 1114





NOTE: SUBJECT TO ALL LAWFULLY EXISTING PLANS OF DIVISION

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Certificate of Title - Volume 5432 Folio 65

Parent Title(s)	CT 4226/97				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	03/07/1997	**Edition**	8	**Edition Issued**	12/10/2012 [Previous Edition]
Diagram Reference	4226097				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 49 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED A

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED B

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768801	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
12192301	UNDERLEASE OF PORTION OF LAND IN LEASE 11768801 TO PORTMANS PTY. LTD. COMMENCING ON 1/11/2013 AND EXPIRING ON 31/10/2018 OF PORTION (SHOP SS44 IN FP 55629)

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997

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PLAN FOR LEASE PURPOSES VIDE G673/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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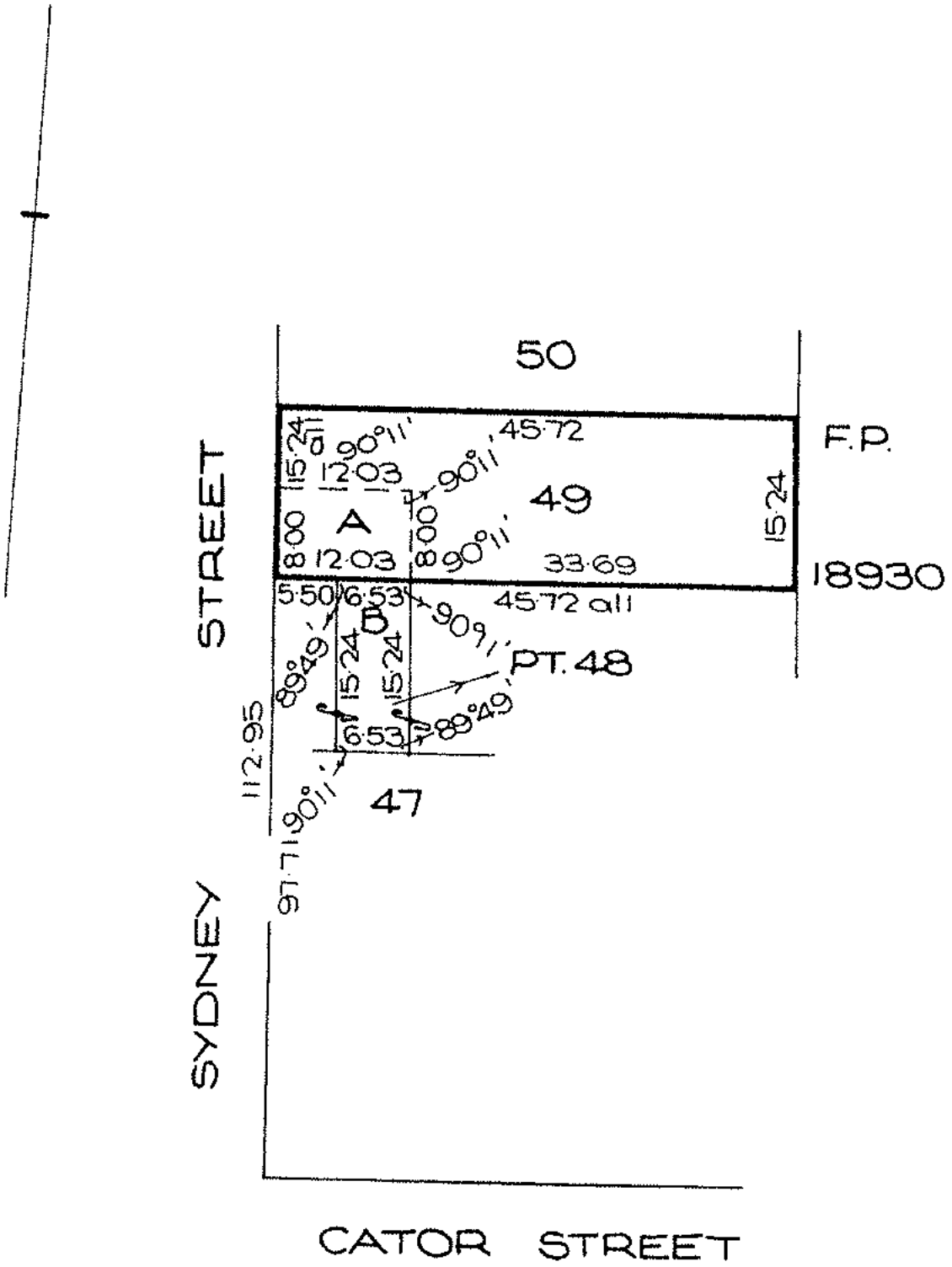

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Certificate of Title - Volume 5440 Folio 785

Parent Title(s)	CT 4316/92				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	07/08/1997	**Edition**	4	**Edition Issued**	02/12/2016 [Previous Edition]
Diagram Reference	4316092				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE (EIGHT) PTY. LTD. (ACN: 614 611 282)
OF CARE COHEN GROUP SE 202 L 1 BURNSIDE VILLAGE 447 PORT RUSH ROAD GLENSIDE SA 5066

Description of Land

ALLOTMENT 28 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED A

Schedule of Dealings

Dealing Number	Description
12659125	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA (ACN: 123 123 124)

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL

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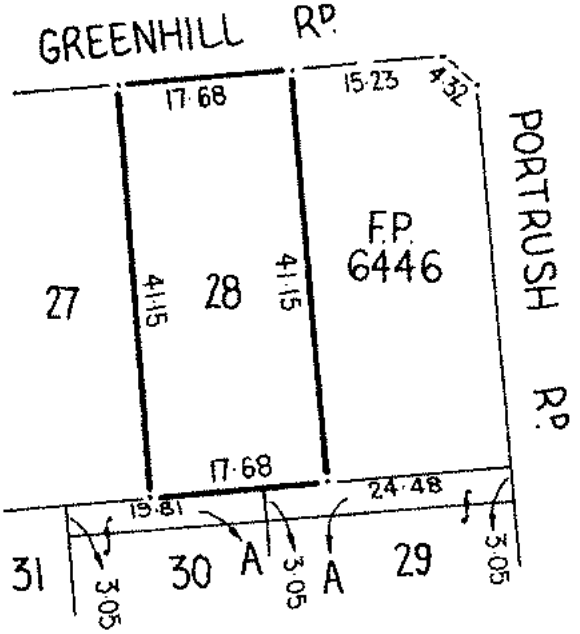

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Certificate of Title - Volume 5562 Folio 878

Parent Title(s)	CT 4331/484				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	10/08/1998	**Edition**	11	**Edition Issued**	29/01/2018 [Previous Edition]
Diagram Reference	4331484				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF SUITE 1 THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065
99 / 100 SHARE

TOOLEYBUC INVESTMENTS PTY. LTD. (ACN: 094 117 389)
OF SUITE 1 THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 100 SHARE

Description of Land

ALLOTMENT 12 DEPOSITED PLAN 21914
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED B TO THE MINISTER FOR INFRASTRUCTURE (T 4469312)

TOGETHER WITH EASEMENT(S) OVER THE LAND MARKED A FOR DRAINAGE PURPOSES (RE 6616343)

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED C

Schedule of Dealings

Dealing Number	Description
11462032	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768808	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
12691607	UNDERLEASE OF LAND IN LEASE 11768808 TO TH AUSTRALIA HOLDINGS PTY. LTD. (ACN: 168 790 485) COMMENCING ON 13/09/2016 AND EXPIRING ON 12/09/2022 OF PORTION (SHOP 127 IN F56570)

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	

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PLAN FOR LEASE PURPOSES VIDE G789/1988
APPROVED FILED PLAN FOR LEASE PURPOSES FX55867
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570
NEW EDITION CREATED DUE TO EXPIRATION OF LEASE

Administrative Interests NIL

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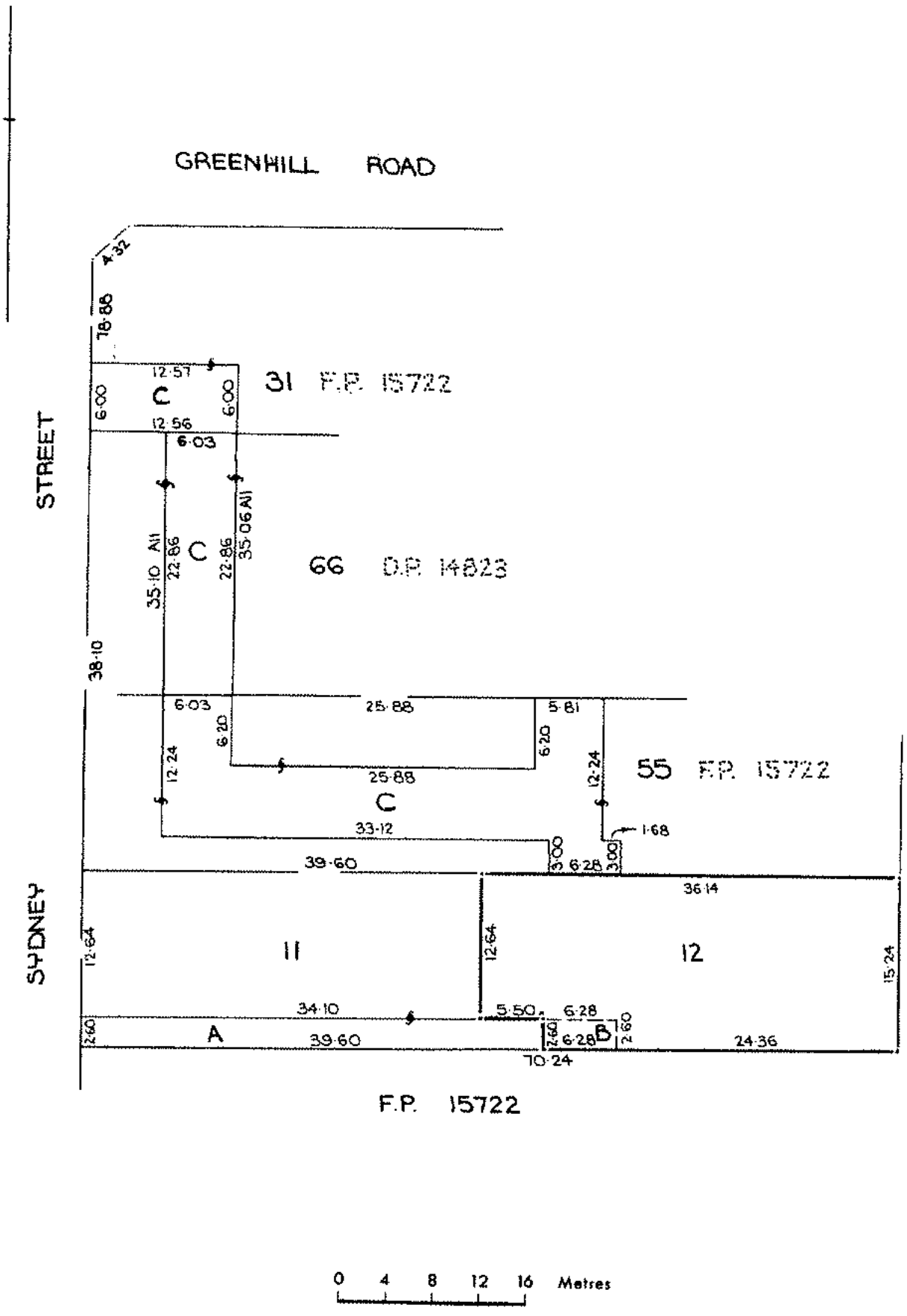

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Certificate of Title - Volume 5571 Folio 855

Parent Title(s)	CT 3522/76				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	04/09/1998	**Edition**	6	**Edition Issued**	02/12/2016 [Previous Edition]
Diagram Reference	3522076				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE (EIGHT) PTY. LTD. (ACN: 614 611 282)
OF CARE COHEN GROUP SE 202 L 1 BURNSIDE VILLAGE 447 PORTRUSH ROAD GLENSIDE SA 5066

Description of Land

ALLOTMENT 27 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED A

Schedule of Dealings

Dealing Number	Description
12659124	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA (ACN: 123 123 124)

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

APPROVED FILED PLAN FOR LEASE PURPOSES FX53445

Administrative Interests NIL

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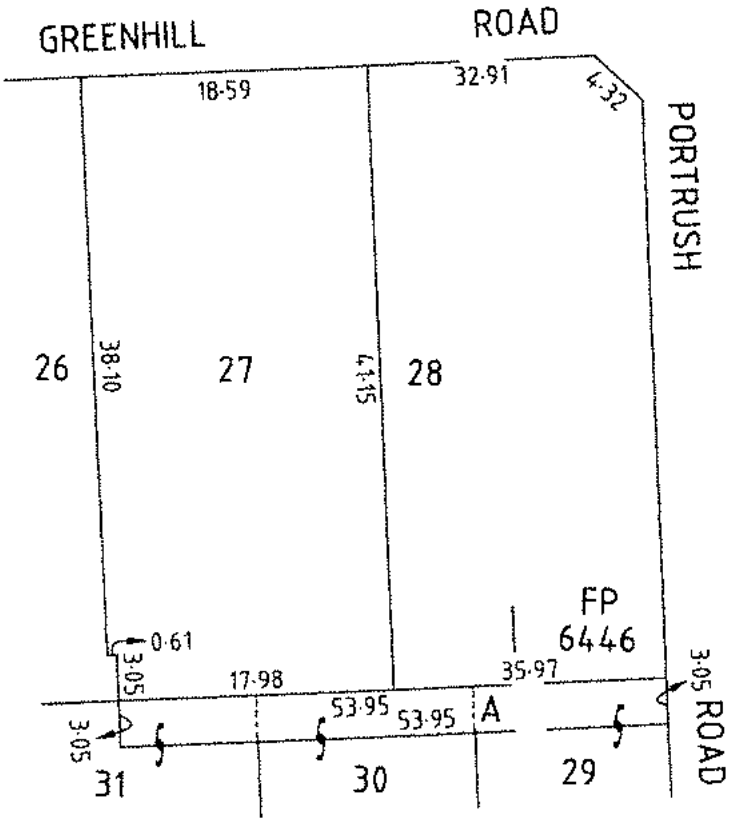

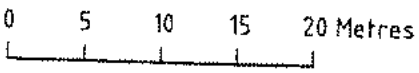

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Certificate of Title - Volume 5787 Folio 893

Parent Title(s)	CT 2697/30				
Creating Dealing(s)	CONVERTED TITLE				
Title Issued	07/07/2000	**Edition**	3	**Edition Issued**	12/10/2012 [Previous Edition]
Diagram Reference	2697030				

Estate Type

FEE SIMPLE

Registered Proprietor

CHIOLIS PTY. LTD. (ACN: 087 274 333)
OF PO BOX 145 GLENSIDE SA 5065

Description of Land

ALLOTMENT 21 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED A

Schedule of Dealings

Dealing Number	Description
11768822	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL

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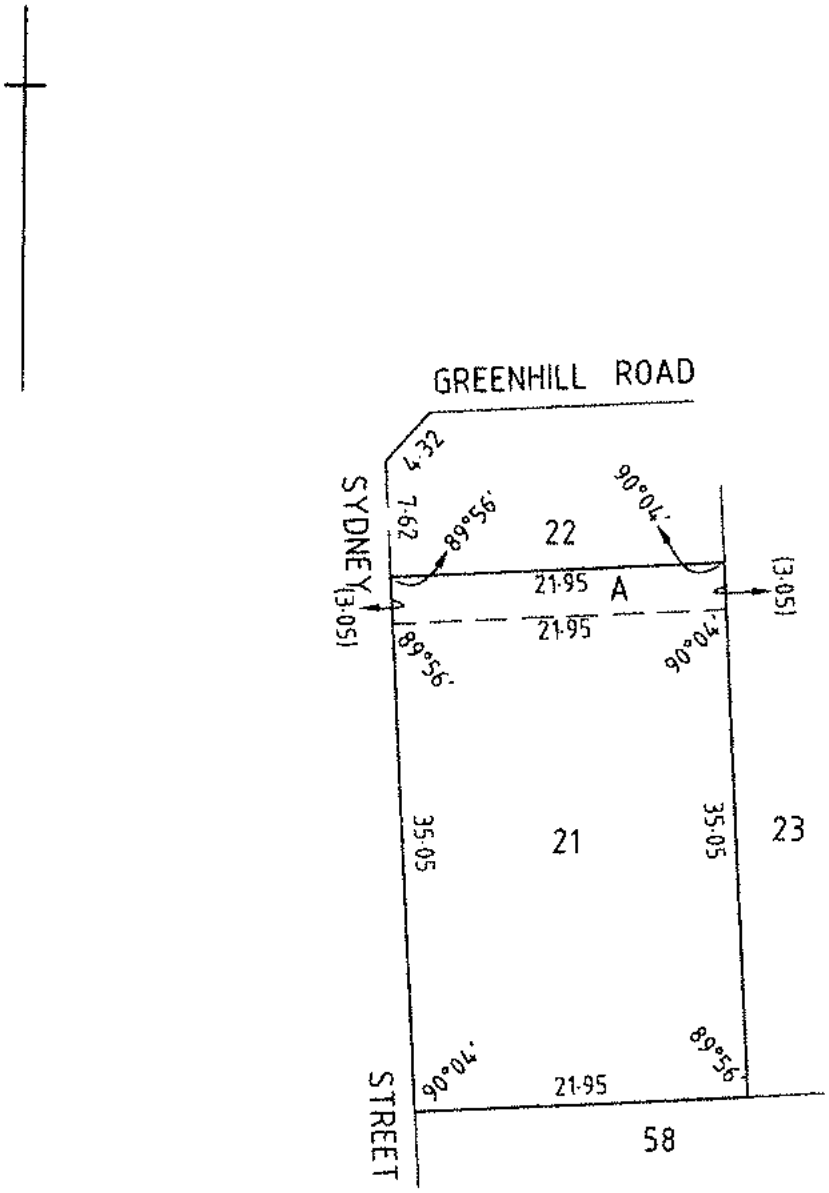

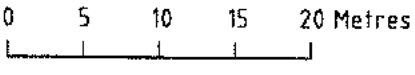

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Certificate of Title - Volume 6080 Folio 165

Parent Title(s)	CT 5101/297				
Creating Dealing(s)	TG 11590551				
Title Issued	13/07/2011	**Edition**	3	**Edition Issued**	12/10/2012 [Previous Edition]
Diagram Reference	5101297				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE (FOUR) PTY. LTD. (ACN: 124 886 979)
OF 447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 58 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO DISTRIBUTION LESSOR CORPORATION (SUBJECT TO LEASE 8890000) (TG 6931598)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED B (TG 11590551)

Schedule of Dealings

Dealing Number	Description
10737650	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768818	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL

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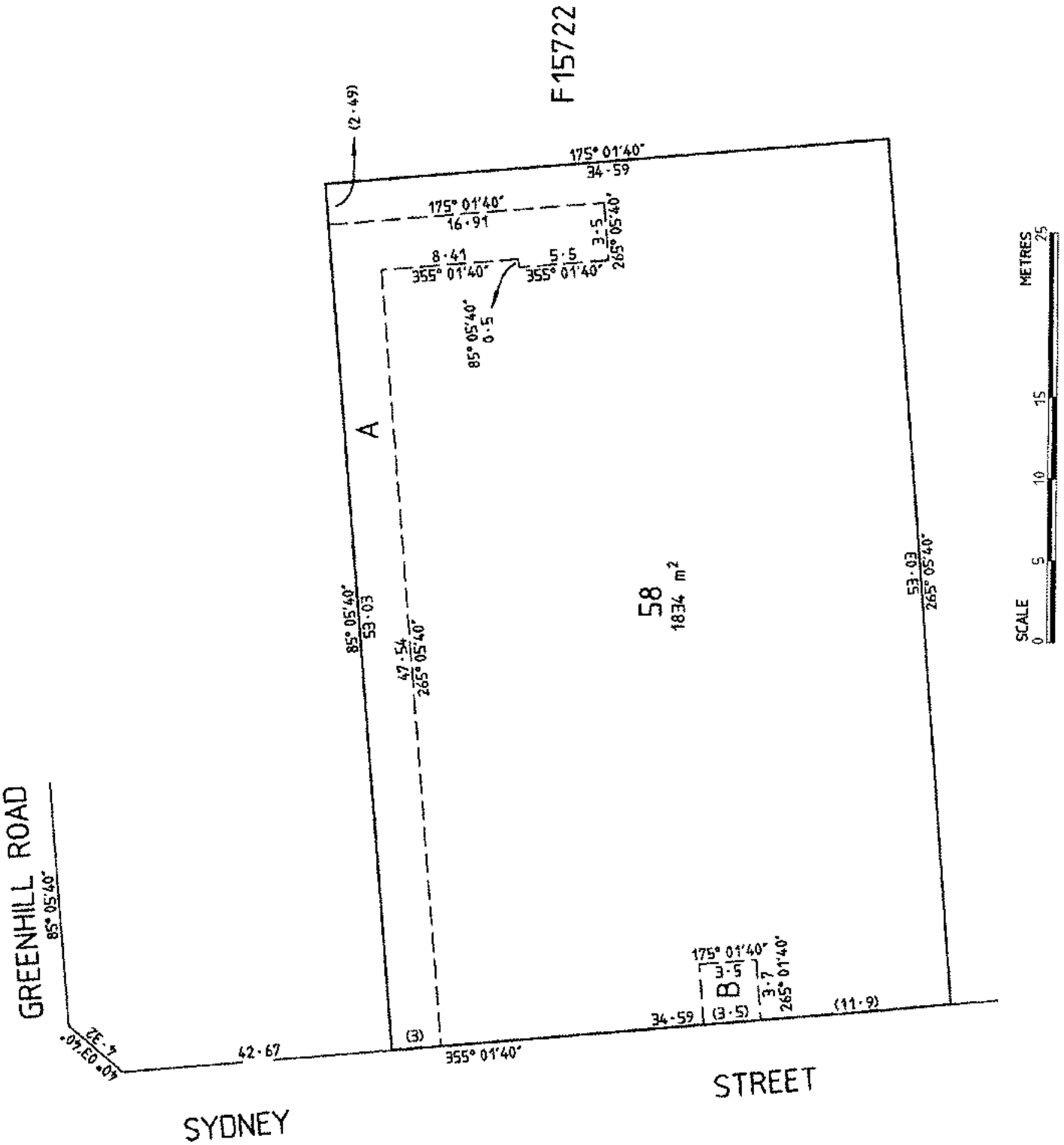

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Certificate of Title - Volume 6122 Folio 459

Parent Title(s)	CT 5236/295				
Creating Dealing(s)	DDA 12026246				
Title Issued	28/10/2013	**Edition**	1	**Edition Issued**	28/10/2013
Diagram Reference	4273652				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 41 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11516007	LEASE TO COLES SUPERMARKETS AUSTRALIA PTY. LTD. COMMENCING ON 2/12/2010 AND EXPIRING ON 2/12/2025 OF PORTION (SHOP 54E AND SHOP 59D IN FP 52320)
11768798	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G544/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001

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APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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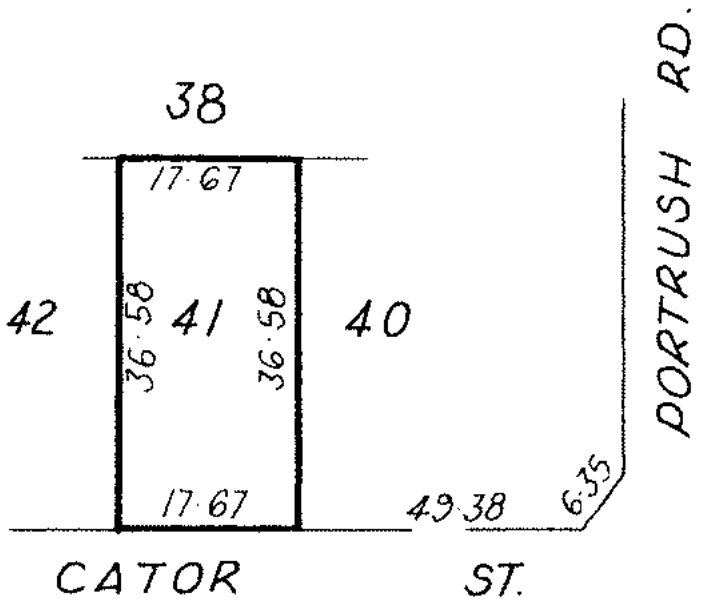

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Certificate of Title - Volume 6122 Folio 460

Parent Title(s)	CT 5236/504				
Creating Dealing(s)	DDA 12026246				
Title Issued	28/10/2013	**Edition**	1	**Edition Issued**	28/10/2013
Diagram Reference	4225753				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 2 FILED PLAN 18930
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11516007	LEASE TO COLES SUPERMARKETS AUSTRALIA PTY. LTD. COMMENCING ON 2/12/2010 AND EXPIRING ON 2/12/2025 OF PORTION (SHOP 54E IN FP 52320)
11768798	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G544/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001

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APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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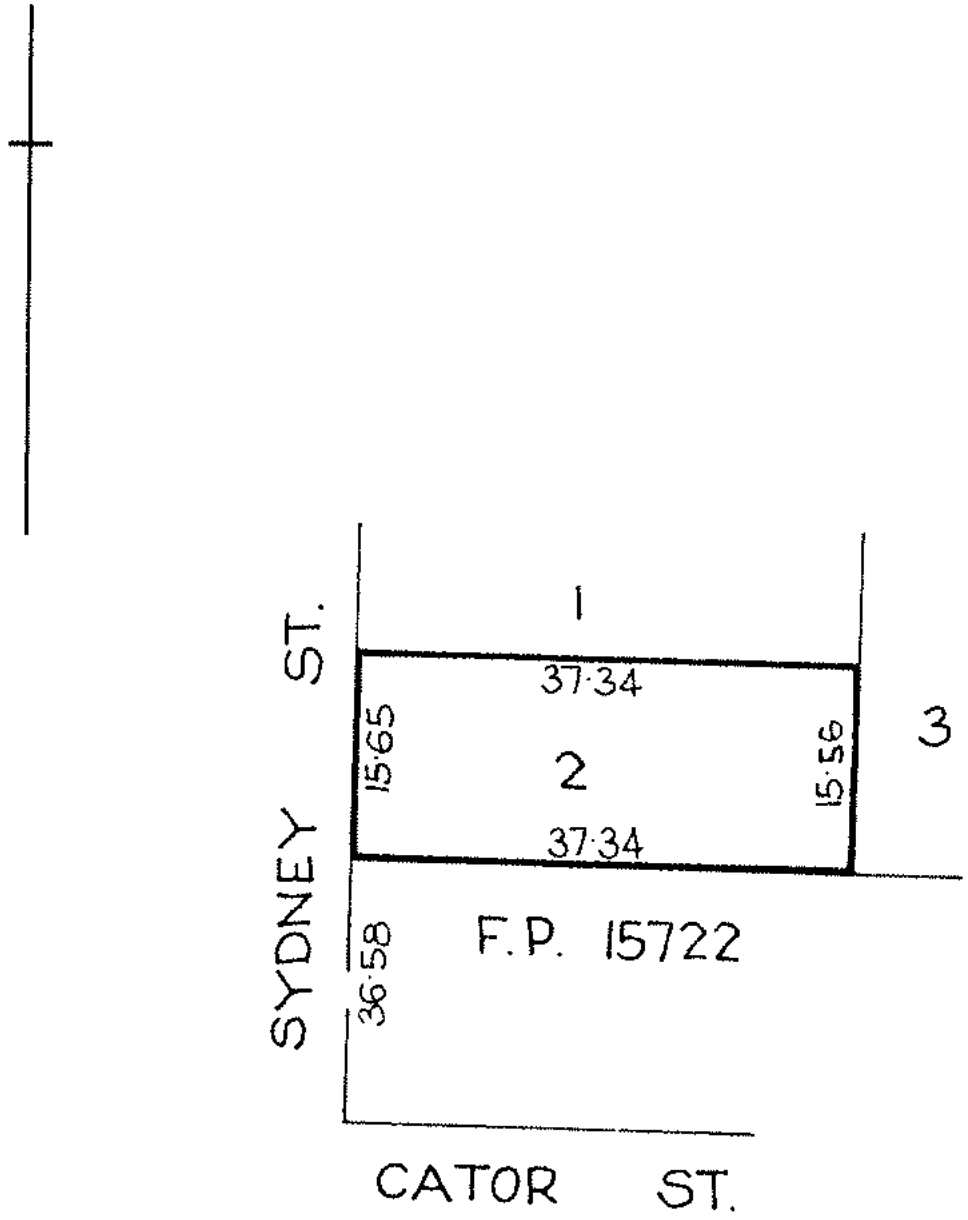

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Certificate of Title - Volume 6122 Folio 461

Parent Title(s)	CT 5236/470				
Creating Dealing(s)	DDA 12026246				
Title Issued	28/10/2013	**Edition**	1	**Edition Issued**	28/10/2013
Diagram Reference	4225752				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE 1/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 1 FILED PLAN 18930
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11516007	LEASE TO COLES SUPERMARKETS AUSTRALIA PTY. LTD. COMMENCING ON 2/12/2010 AND EXPIRING ON 2/12/2025 OF PORTION (SHOP 54E IN FP 52320)
11768798	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G544/1988
PLAN FOR LEASE PURPOSES VIDE G673/1988

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PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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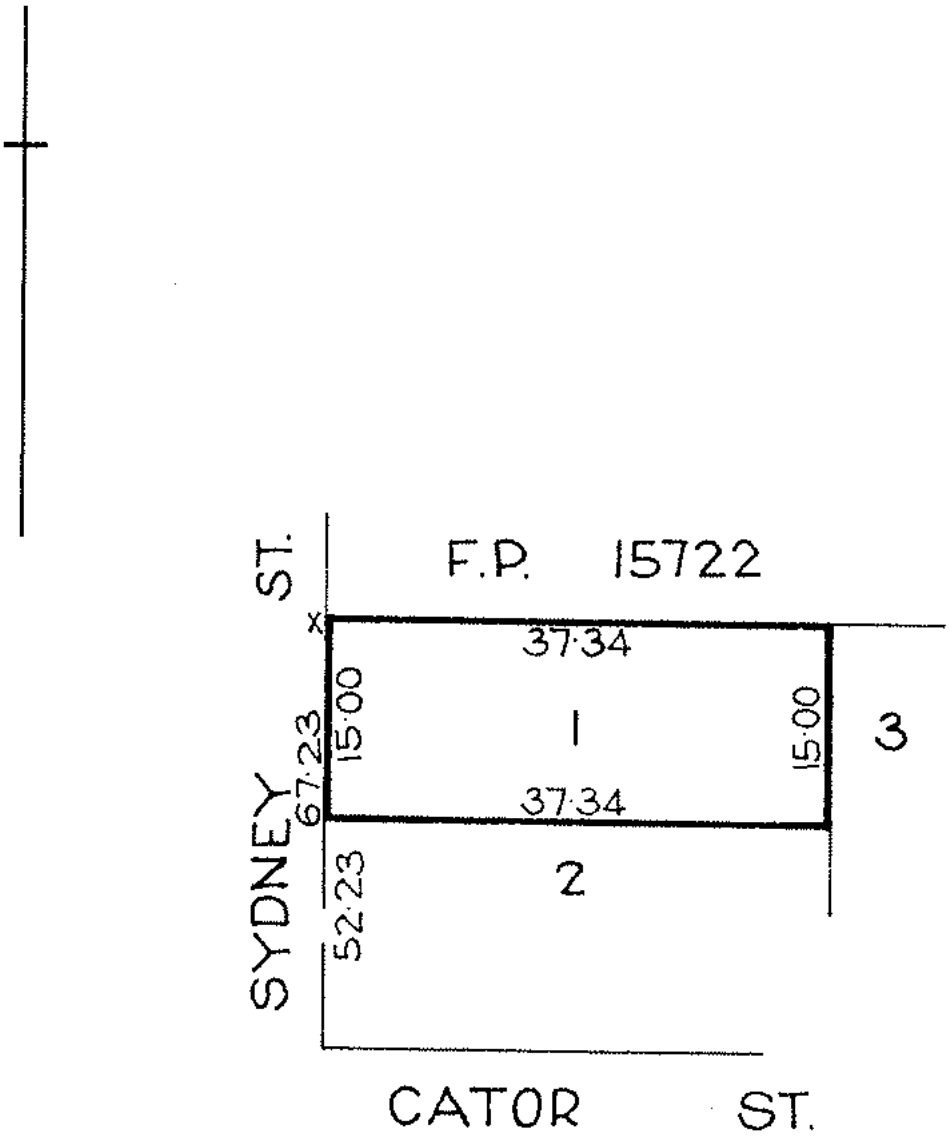

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Certificate of Title - Volume 6122 Folio 462

Parent Title(s)	CT 5236/471				
Creating Dealing(s)	DDA 12026246				
Title Issued	28/10/2013	**Edition**	1	**Edition Issued**	28/10/2013
Diagram Reference	1367182				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 43 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11516007	LEASE TO COLES SUPERMARKETS AUSTRALIA PTY. LTD. COMMENCING ON 2/12/2010 AND EXPIRING ON 2/12/2025 OF PORTION (SHOP 54E IN FP 52320)
11768798	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G544/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001

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APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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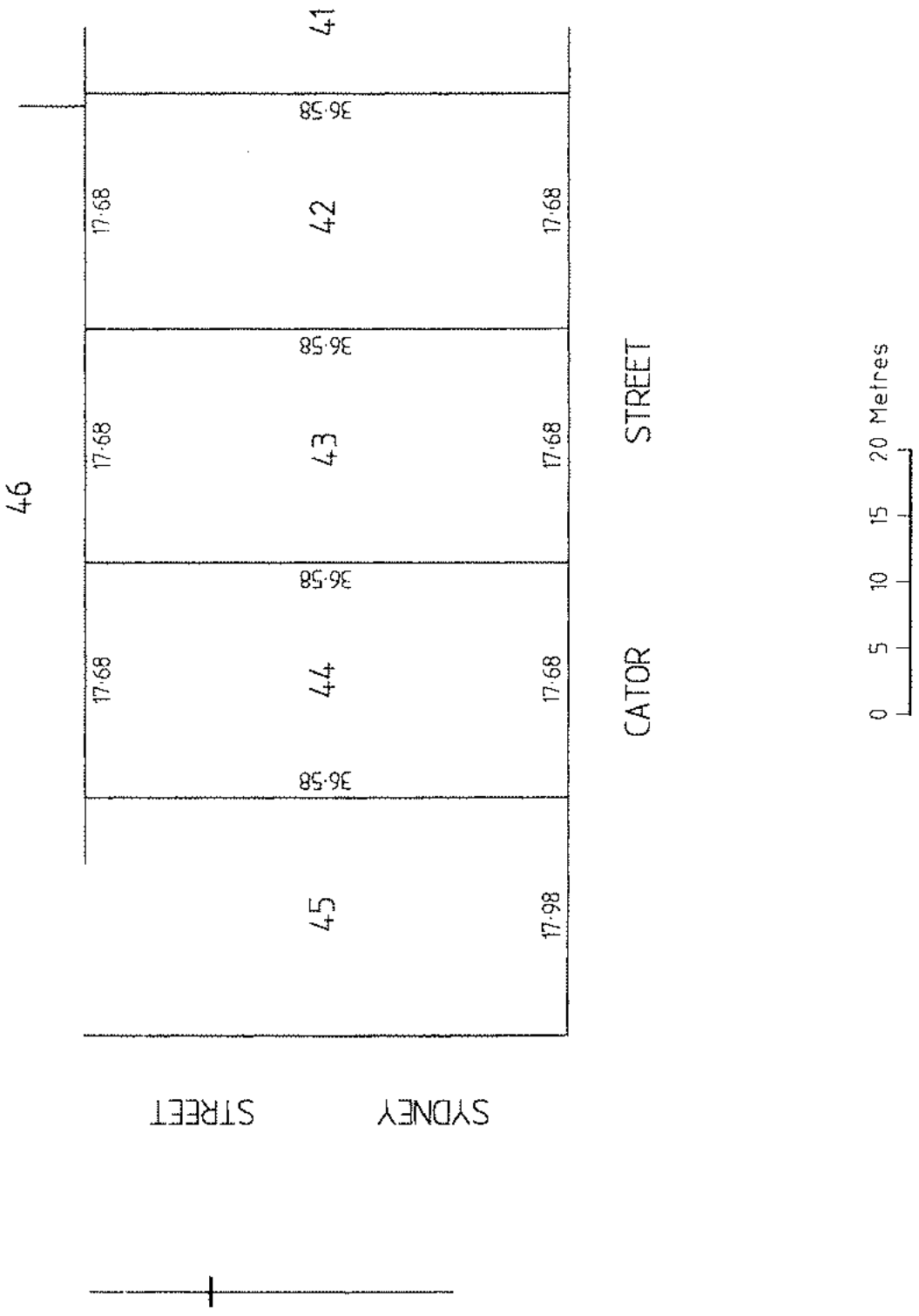

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Certificate of Title - Volume 6122 Folio 463

Parent Title(s)	CT 5236/472				
Creating Dealing(s)	DDA 12026246				
Title Issued	28/10/2013	**Edition**	1	**Edition Issued**	28/10/2013
Diagram Reference	1367182				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- COHEN GROUP OF COMPANIES 32 RICHMOND ROAD KESWICK SA 5035

Description of Land

ALLOTMENT 44 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11516007	LEASE TO COLES SUPERMARKETS AUSTRALIA PTY. LTD. COMMENCING ON 2/12/2010 AND EXPIRING ON 2/12/2025 OF PORTION (SHOP 54E IN FP 52320)
11768798	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G544/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001

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APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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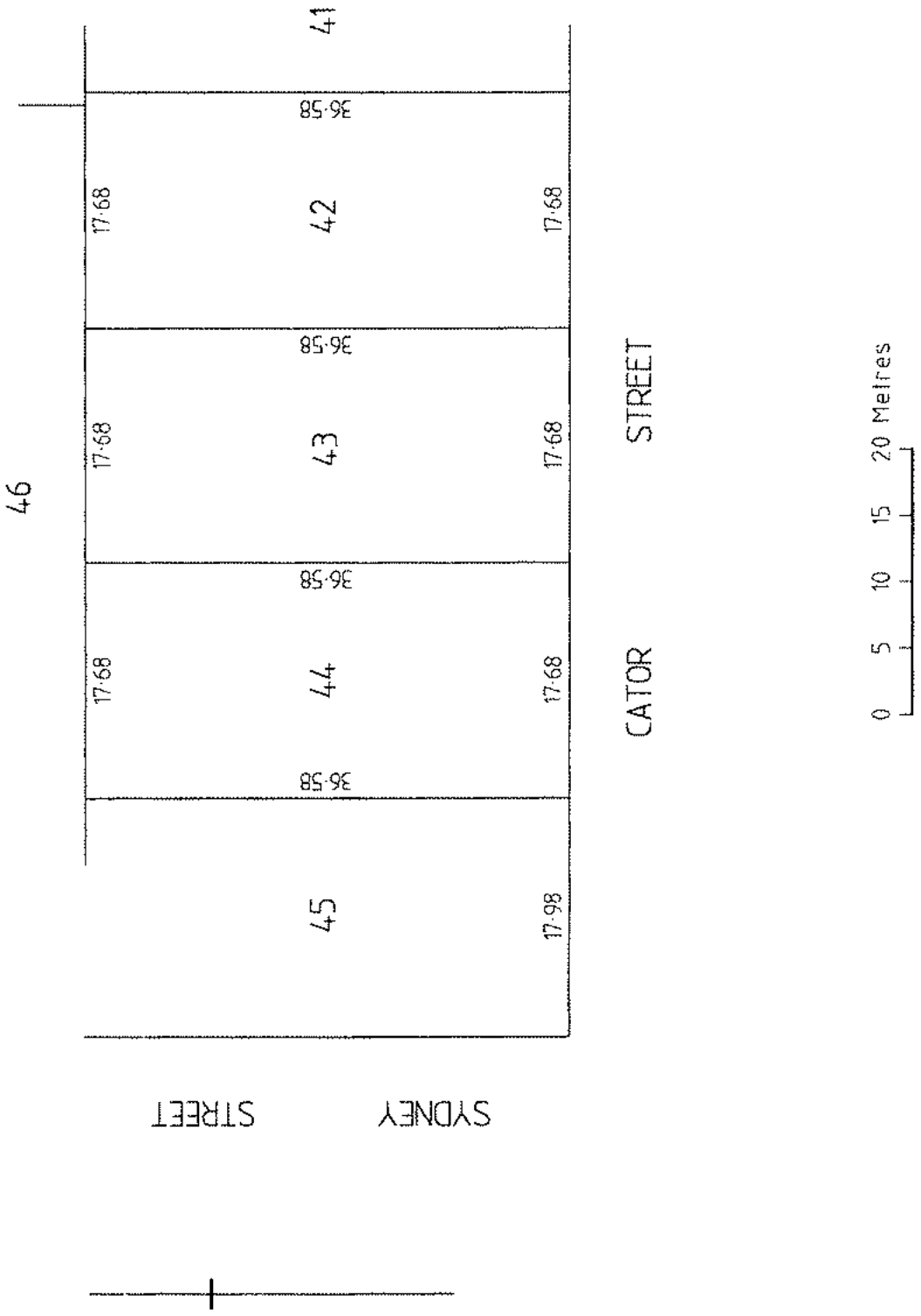

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Certificate of Title - Volume 6122 Folio 464

Parent Title(s)	CT 5236/473				
Creating Dealing(s)	DDA 12026246				
Title Issued	28/10/2013	**Edition**	1	**Edition Issued**	28/10/2013
Diagram Reference	1367182				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 42 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11516007	LEASE TO COLES SUPERMARKETS AUSTRALIA PTY. LTD. COMMENCING ON 2/12/2010 AND EXPIRING ON 2/12/2025 OF PORTION (SHOP 54E AND SHOP 59D IN FP 52320)
11768798	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G544/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001

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APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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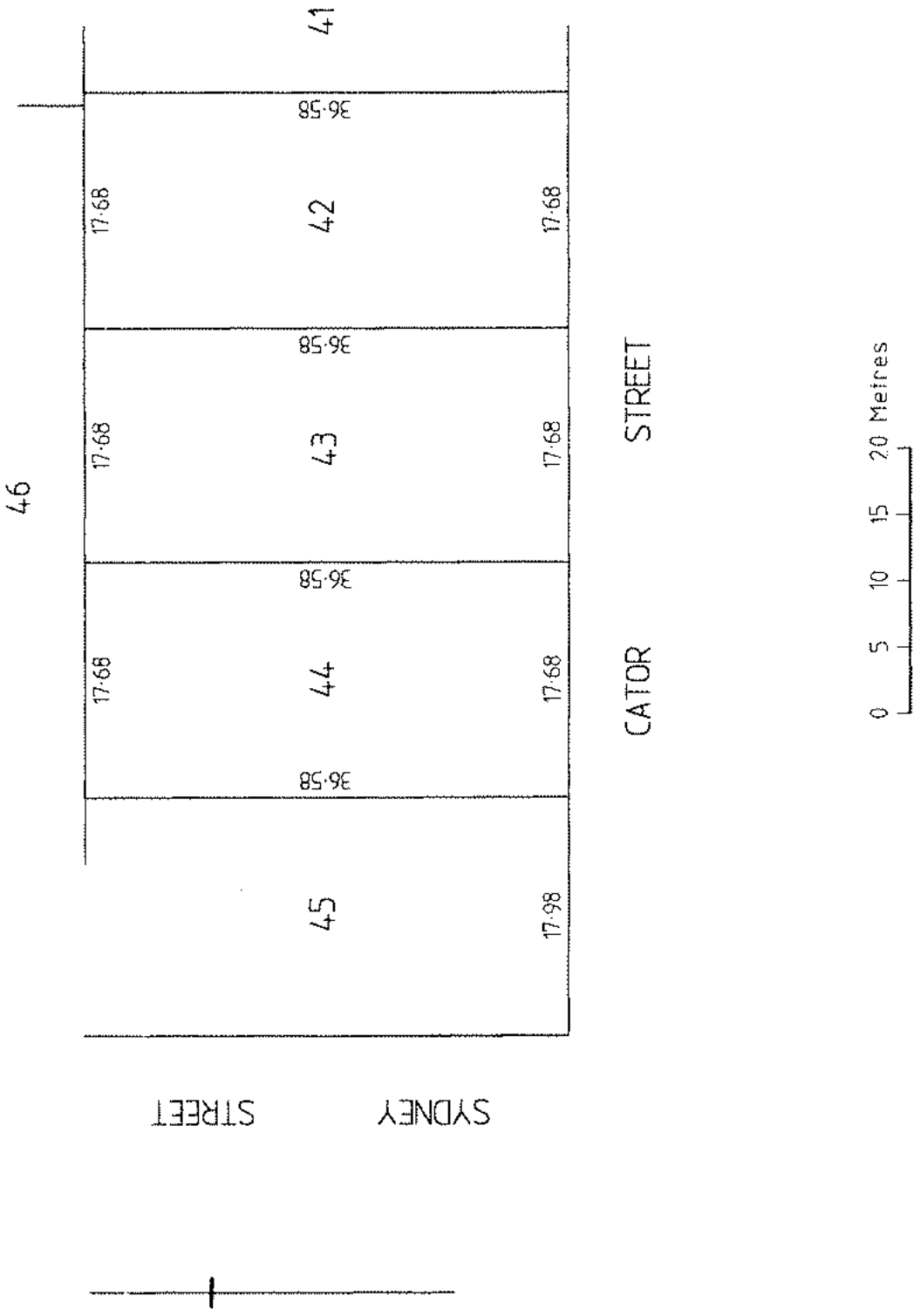

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Certificate of Title - Volume 6122 Folio 465

Parent Title(s)	CT 5240/184				
Creating Dealing(s)	DDA 12026246				
Title Issued	28/10/2013	**Edition**	1	**Edition Issued**	28/10/2013
Diagram Reference	4128330				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 45 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11516007	LEASE TO COLES SUPERMARKETS AUSTRALIA PTY. LTD. COMMENCING ON 2/12/2010 AND EXPIRING ON 2/12/2025 OF PORTION (SHOP 54E IN FP 52320)
11768798	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G544/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001
UNAPPROVED FILED PLAN FOR LEASE PURPOSES FX50132

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APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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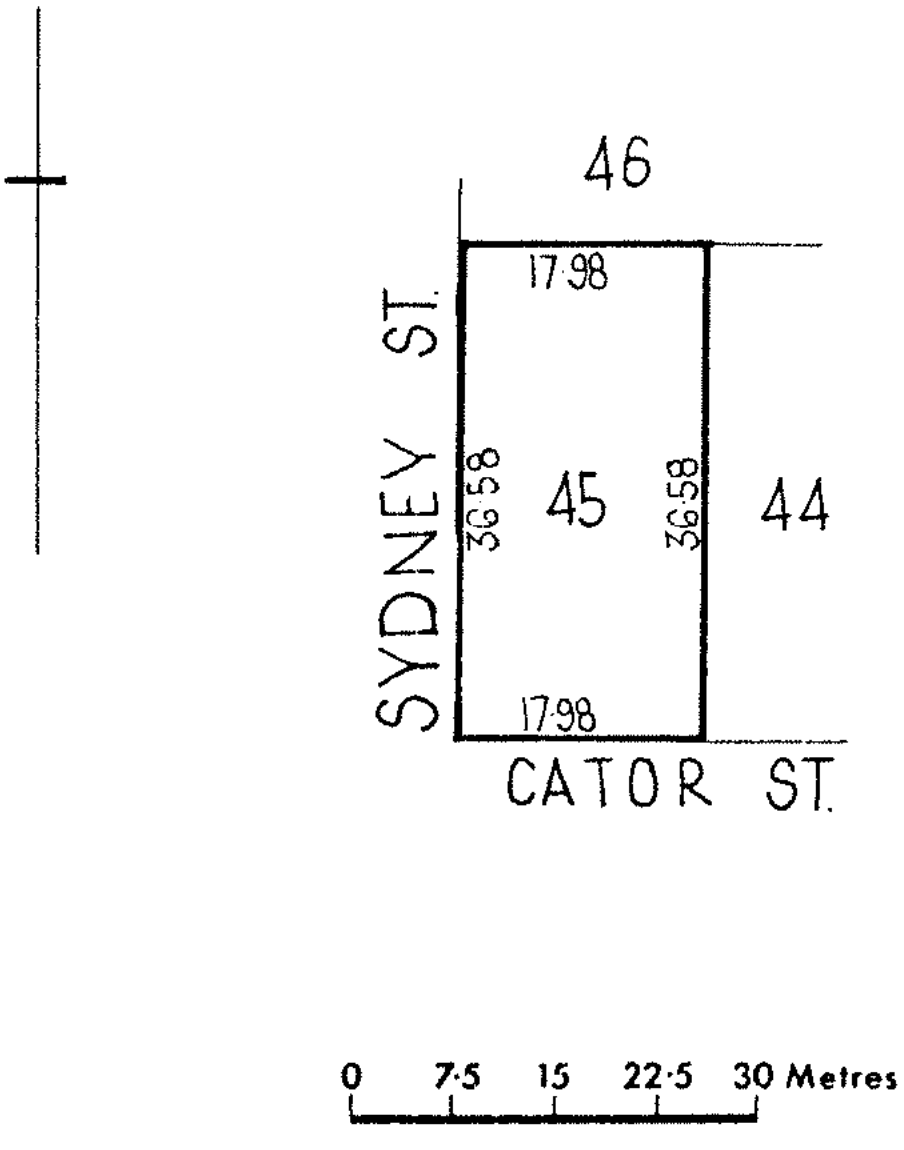

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Certificate of Title - Volume 6122 Folio 466

Parent Title(s)	CT 5432/62				
Creating Dealing(s)	DDA 12026246				
Title Issued	28/10/2013	**Edition**	1	**Edition Issued**	28/10/2013
Diagram Reference	4005333				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF C/- BURNSIDE VILLAGE SUITE I/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 40 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11516007	LEASE TO COLES SUPERMARKETS AUSTRALIA PTY. LTD. COMMENCING ON 2/12/2010 AND EXPIRING ON 2/12/2025 OF PORTION (SHOP 54E IN FP 52320)
11768798	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G544/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132

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APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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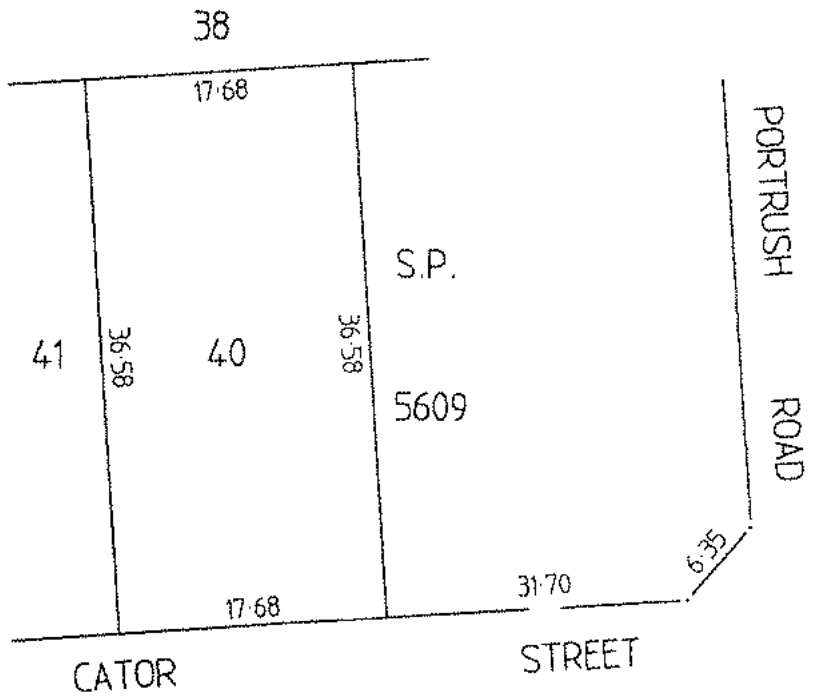

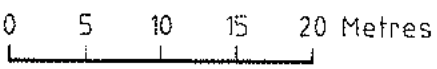

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Certificate of Title - Volume 6122 Folio 470

Parent Title(s)	CT 6080/167				
Creating Dealing(s)	DDA 12026246				
Title Issued	28/10/2013	**Edition**	3	**Edition Issued**	17/01/2018 [Previous Edition]
Diagram Reference	5195942				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF TENANCY 202 LEVEL 1/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 3 FILED PLAN 18930
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A (T 3458540)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED B (TG 11590559)

SUBJECT TO RIGHT(S) OF WAY OVER THE LAND MARKED A (T 3458540)

Schedule of Dealings

Dealing Number	Description
9494734	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11516007	LEASE TO COLES SUPERMARKETS AUSTRALIA PTY. LTD. COMMENCING ON 2/12/2010 AND EXPIRING ON 2/12/2025 OF PORTION (SHOP 54E IN FP 52320)
11745928	LEASE TO PEACHESTER PTY. LTD. COMMENCING ON 1/1/2012 AND EXPIRING ON 31/12/2021 OF PORTION (AREA G IN GP 120/2002)
11760769	LEASE TO LUXOTTICA RETAIL AUSTRALIA PTY. LTD. COMMENCING ON 25/5/2011 AND EXPIRING ON 24/5/2018 OF PORTION (SHOP 69 IN GP 120/2002)
11768805	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
11954850	LEASE TO J.L. FOOTWEAR PTY. LTD. COMMENCING ON 1/11/2011 AND EXPIRING ON 31/10/2018 OF PORTION (SHOP SS72 IN FP 55629)
12131328	UNDERLEASE OF PORTION OF LAND IN LEASE 11768805 TO ANGELAKIS BROS BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/7/2014 AND EXPIRING ON 30/6/2022 (SHOP SS60 IN FP 55629)
12192297	UNDERLEASE OF PORTION OF LAND IN LEASE 11768805 TO TEA TOO PTY. LTD. COMMENCING ON 24/7/2014 AND EXPIRING ON 23/7/2020 (SHOP S2BB IN FP 55629)
12192301B	UNDERLEASE OF PORTION OF LAND IN LEASE 11768805 TO PORTMANS PTY. LTD.

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COMMENCING ON 1/11/2013 AND EXPIRING ON 31/10/2018 OF PORTION (SHOP SS44 IN FP 55629)

Notations

Dealings Affecting Title

Lodgement Date	Dealing Number	Description	Status
08/11/2017	12823907	UNDERLEASE OF LEASE/UNDERLEASE	UNREGISTERED
08/11/2017	12823908	TRANSFER OF UNDERLEASE	UNREGISTERED

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G130/1992
PLAN FOR LEASE PURPOSES VIDE G132/1991
PLAN FOR LEASE PURPOSES VIDE G17/1989
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G323/1994
PLAN FOR LEASE PURPOSES VIDE G424/1993
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G487/1990
PLAN FOR LEASE PURPOSES VIDE G539/1990
PLAN FOR LEASE PURPOSES VIDE G54/1994
PLAN FOR LEASE PURPOSES VIDE G555/1996
PLAN FOR LEASE PURPOSES VIDE G609/1996
PLAN FOR LEASE PURPOSES VIDE G673/1988
PLAN FOR LEASE PURPOSES VIDE G73/2001
PLAN FOR LEASE PURPOSES VIDE G90/1994
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570
NEW EDITION CREATED DUE TO EXPIRATION OF LEASE

Administrative Interests NIL

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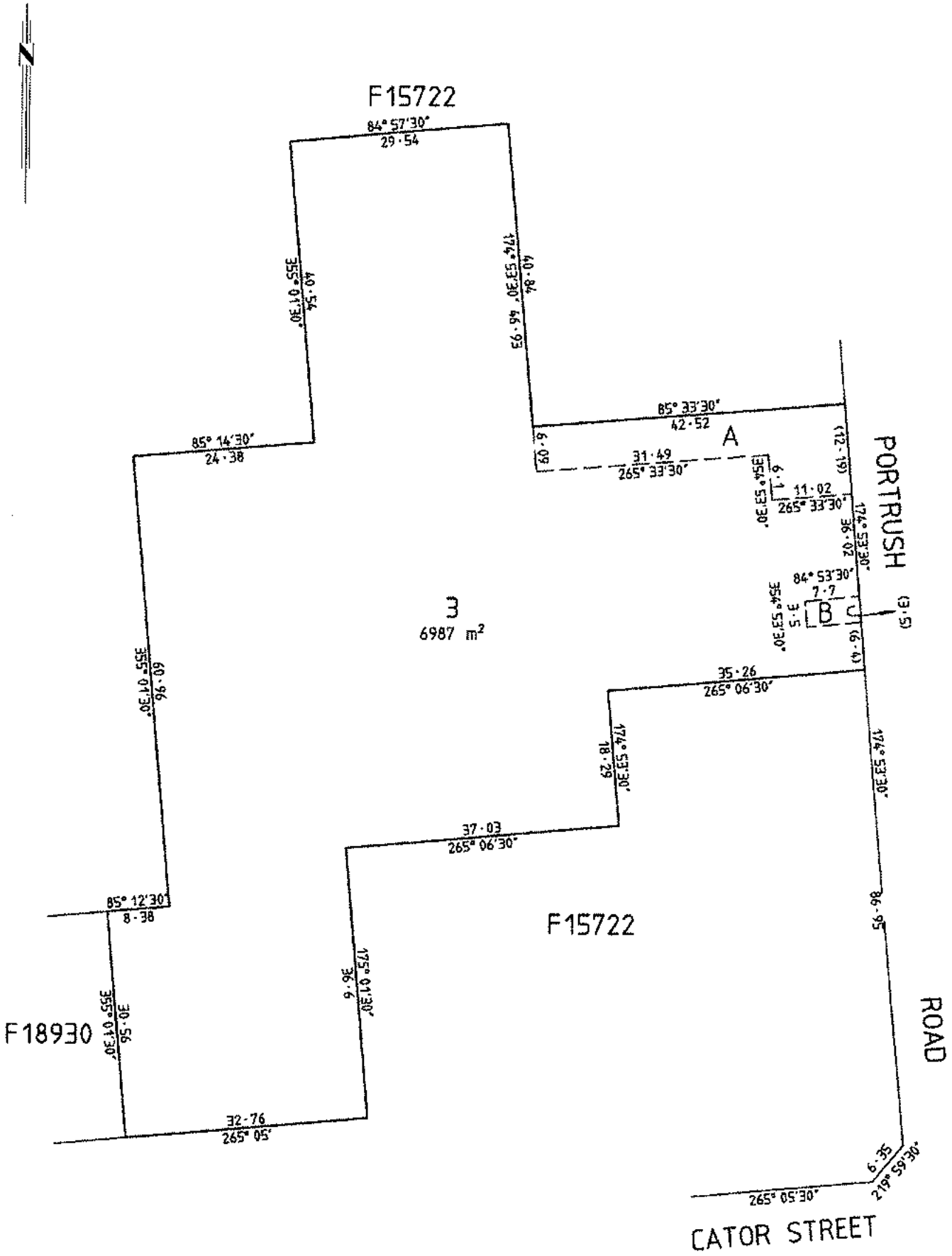

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Certificate of Title - Volume 6129 Folio 44

Parent Title(s)	CT 5101/296				
Creating Dealing(s)	DDA 12055237				
Title Issued	28/01/2014	**Edition**	2	**Edition Issued**	12/10/2015 [Previous Edition]
Diagram Reference	2331158				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE (FOUR) PTY. LTD. (ACN: 124 886 979)
OF 447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 25 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO PARTY WALL RIGHT(S) OVER THE LAND MARKED A (T 1837882)

TOGETHER WITH PARTY WALL RIGHT(S) OVER THE LAND MARKED B (T 1837882)

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED C APPURTENANT ONLY TO THE LAND MARKED X

Schedule of Dealings

Dealing Number	Description
10737650	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768819	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G534/1992
PLAN FOR LEASE PURPOSES VIDE G607/1996
PLAN FOR LEASE PURPOSES VIDE G670/1989
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
NEW EDITION CREATED DUE TO EXPIRATION OF LEASE

Administrative Interests NIL

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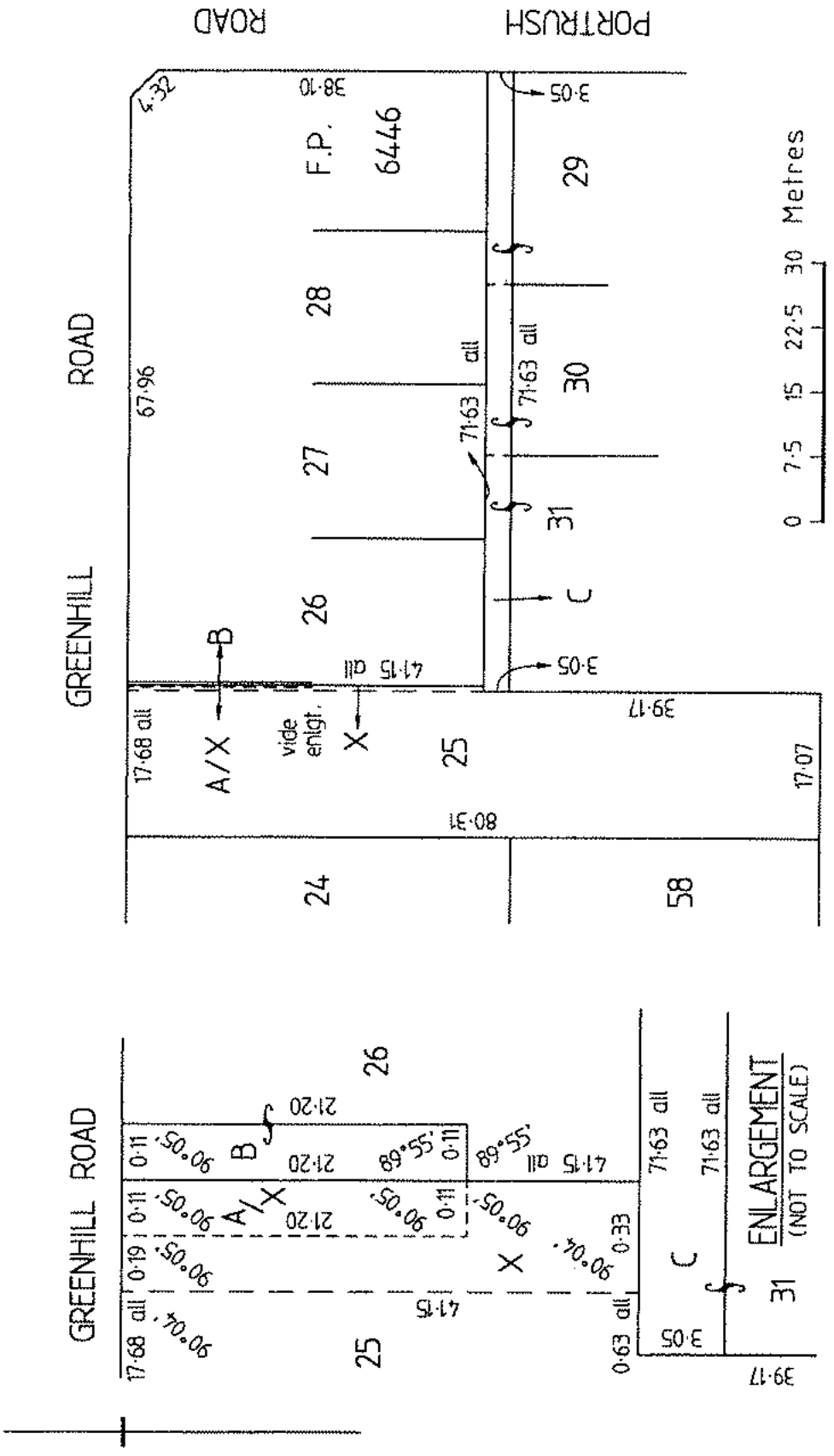

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Certificate of Title - Volume 6142 Folio 776

Parent Title(s)	CT 6134/243				
Creating Dealing(s)	DDA 12163585				
Title Issued	12/08/2014	**Edition**	3	**Edition Issued**	11/10/2016 [Previous Edition]
Diagram Reference	4344560				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE (FIVE) PTY. LTD. (ACN: 149 020 119)
OF LEVEL 1/447 PORTRUSH ROAD GLENSIDE SA 5065

Description of Land

ALLOTMENT 30 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED A TO THE ELECTRICITY TRUST OF SOUTH AUSTRALIA (TG 6740607)

SUBJECT TO PARTY WALL RIGHT(S) OVER THE LAND MARKED C (T 2401963)

SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED A

TOGETHER WITH PARTY WALL RIGHT(S) OVER THE LAND MARKED D (T 2401963)

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED B

Schedule of Dealings

Dealing Number	Description
11274735	LEASE TO KRISTIFOR STAMENKOVIC AND IOULIA STAMENKOVIC COMMENCING ON 01/04/2009 AND EXPIRING ON 31/03/2018 00:00 OF PORTION (LOADING BAY 8 IN GP 206/1989) AS JOINT TENANTS
11363029	CAVEAT BY EASTWEST SOLUTIONS PTY. LTD. OVER PORTION (SHOP 1 IN GP 206/89)
11745161	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11768816	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
12158984	UNDERLEASE OF PORTION OF LAND IN LEASE 11768816 TO FLIGHT CENTRE TRAVEL GROUP LTD. COMMENCING ON 1/5/2014 AND EXPIRING ON 30/4/2021 (SHOP 5 IN GP 206/1989)

Notations

Dealings Affecting Title NIL

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Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G206/1989
PLAN FOR LEASE PURPOSES VIDE G599/1990
NEW EDITION CREATED DUE TO EXPIRATION OF LEASE

Administrative Interests NIL

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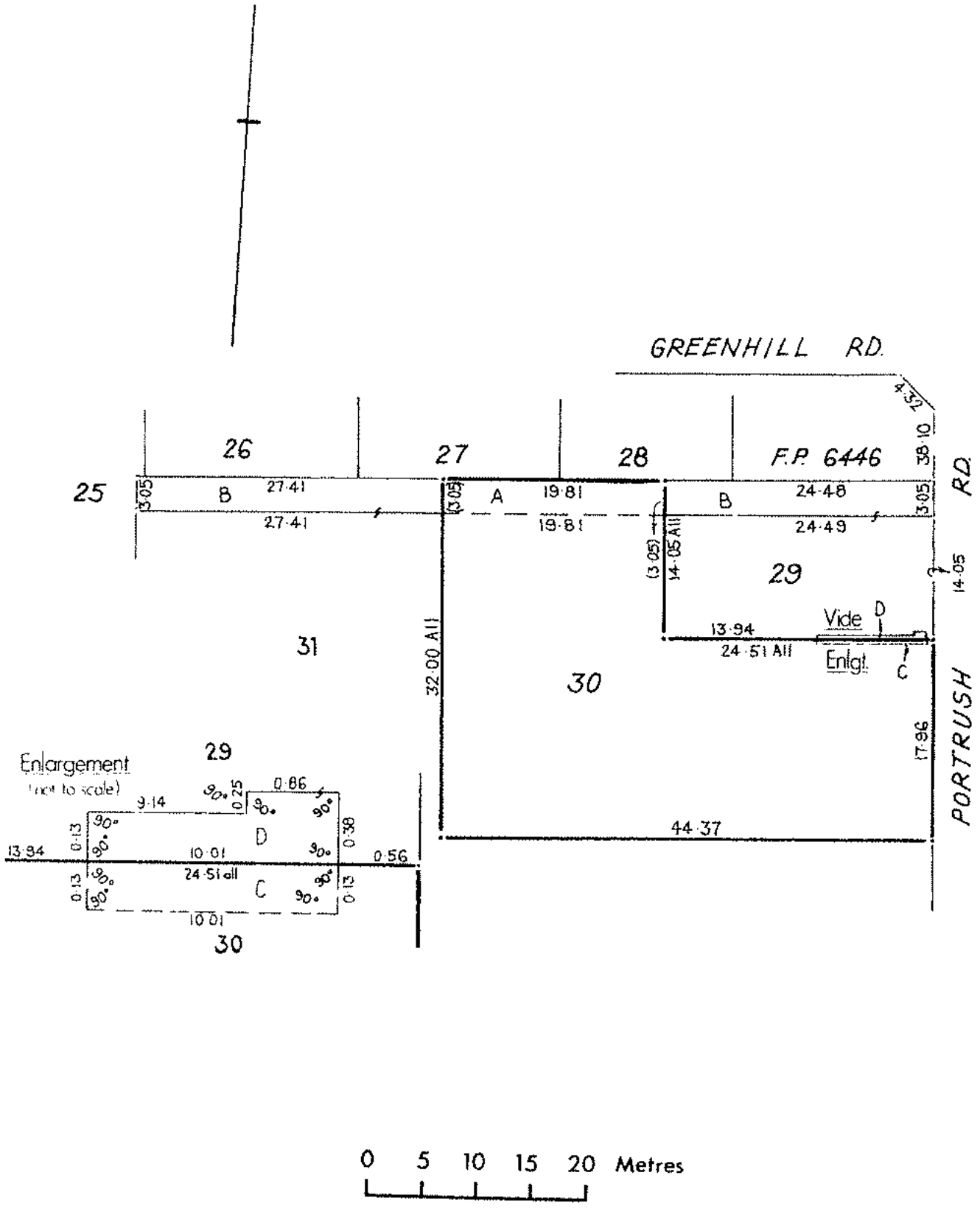

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REAL PROPERTY ACT, 1886
South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

Certificate of Title - Volume 6145 Folio 817

Parent Title(s)	CT 5138/225				
Creating Dealing(s)	DDA 12194748				
Title Issued	30/09/2014	**Edition**	1	**Edition Issued**	30/09/2014
Diagram Reference	4006268				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF SUITE 1 THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065
99 / 100 SHARE

ALTUNGA PTY. LTD. (ACN: 007 716 583)
OF SUITE 1 THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 100 SHARE

Description of Land

ALLOTMENT 32 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

NIL

Schedule of Dealings

Dealing Number	Description
9494736	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11760752	LEASE TO VILLAGE PHARMACY BURNSIDE PTY. LTD. COMMENCING ON 1/11/2011 AND EXPIRING ON 31/10/2026 OF PORTION (SHOP 111 IN FP 56570)
11760803	LEASE TO MIMCO PTY. LTD. COMMENCING ON 1/11/2011 AND EXPIRING ON 31/10/2018 OF PORTION (SHOP 117 IN FP 56570)
11768814	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
11925057	UNDERLEASE OF PORTION OF LAND IN LEASE 11768814 TO AESOP RETAIL PTY. LTD. COMMENCING ON 1/12/2012 AND EXPIRING ON 30/11/2018 (SHOP 112 IN FP 56570)
12283706	UNDERLEASE OF PORTION OF LAND IN LEASE 11768814 TO CIBO ESPRESSO AUSTRALIA PTY. LTD. COMMENCING ON 1/11/2011 AND EXPIRING ON 31/10/2023 (K101 IN FP 56570)
12812426	MORTGAGE OF LEASE 11760752 TO WESTPAC BANKING CORPORATION (ACN: 007 457 141)

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Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

PLAN FOR LEASE PURPOSES VIDE G112/2000
PLAN FOR LEASE PURPOSES VIDE G120/2002
PLAN FOR LEASE PURPOSES VIDE G243/1998
PLAN FOR LEASE PURPOSES VIDE G263/1997
PLAN FOR LEASE PURPOSES VIDE G302/1999
PLAN FOR LEASE PURPOSES VIDE G343/1995
PLAN FOR LEASE PURPOSES VIDE G43/1998
PLAN FOR LEASE PURPOSES VIDE G458/1997
PLAN FOR LEASE PURPOSES VIDE G674/1989
PLAN FOR LEASE PURPOSES VIDE G73/2001
APPROVED FILED PLAN FOR LEASE PURPOSES FX50132
APPROVED FILED PLAN FOR LEASE PURPOSES FX52320
APPROVED FILED PLAN FOR LEASE PURPOSES FX54344
APPROVED FILED PLAN FOR LEASE PURPOSES FX55629
APPROVED FILED PLAN FOR LEASE PURPOSES FX56570

Administrative Interests NIL

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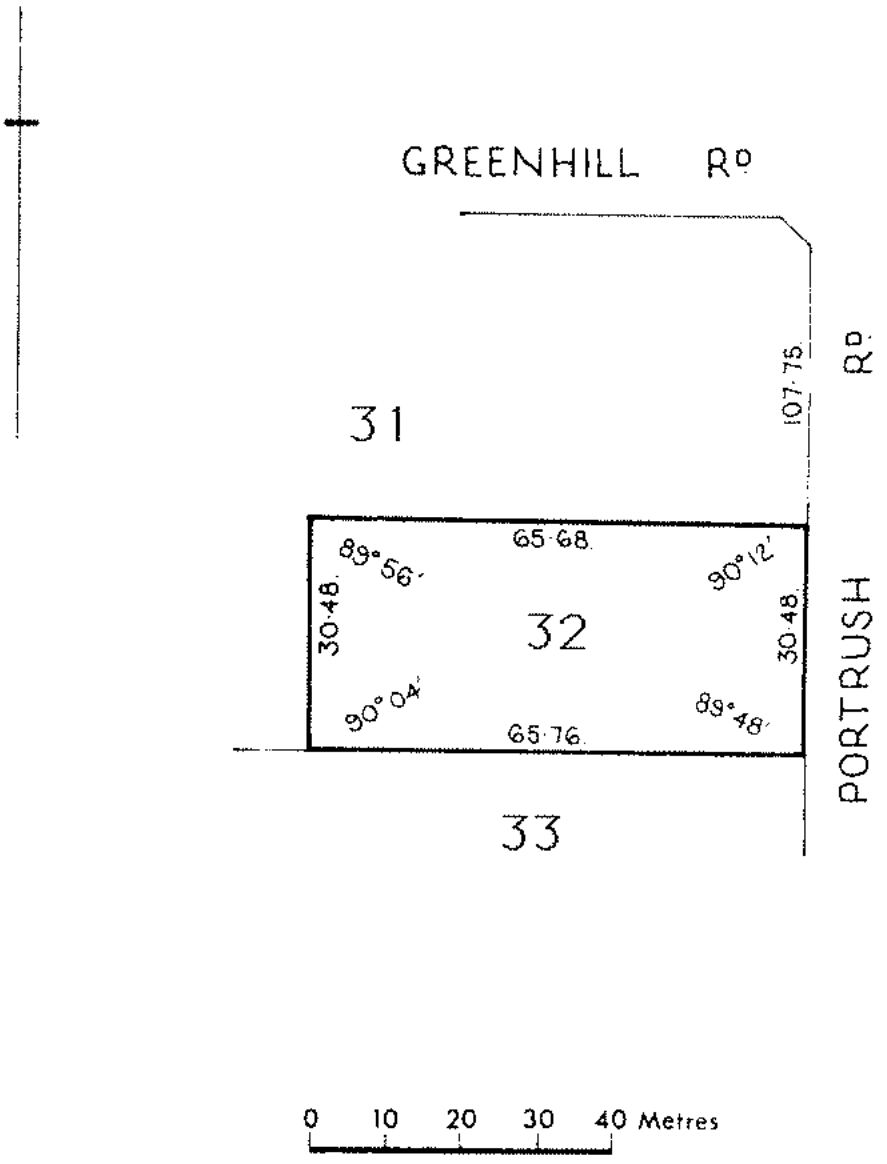

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South Australia

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Certificate of Title - Volume 6145 Folio 850

Parent Title(s)	CT 6064/432				
Creating Dealing(s)	DDA 12194748				
Title Issued	30/09/2014	**Edition**	1	**Edition Issued**	30/09/2014
Diagram Reference	F53416 01				

Estate Type

FEE SIMPLE

Registered Proprietor

BURNSIDE VILLAGE PTY. LTD. (ACN: 007 731 231)
OF SUITE 1 THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065
99 / 100 SHARE

BURNSIDE VILLAGE (THREE) PTY. LTD. (ACN: 121 267 776)
OF SUITE 1 THE BALCONY 447 PORTRUSH ROAD GLENSIDE SA 5065
1 / 100 SHARE

Description of Land

ALLOTMENT 31 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED C TO DISTRIBUTION LESSOR CORPORATION (SUBJECT TO LEASE 8890000) (TG 6710087)

SUBJECT TO EASEMENT(S) OVER THE LAND MARKED F FOR DRAINAGE PURPOSES TO THE COUNCIL FOR THE AREA (TG 8673055)

SUBJECT TO FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED A

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED B APPURTENANT ONLY TO THE LAND MARKED X

Schedule of Dealings

Dealing Number	Description
10734672	AGREEMENT UNDER DEVELOPMENT ACT, 1993 PURSUANT TO SECTION 57(2)
11383699	AMENDMENT OF AGREEMENT 10734672
11462027	MORTGAGE TO COMMONWEALTH BANK OF AUSTRALIA
11760753	LEASE TO VILLAGE PHARMACY BURNSIDE PTY. LTD. COMMENCING ON 1/11/2011 AND EXPIRING ON 31/10/2026 OF PORTION (SHOP 111 IN FP 56570)
11768815	LEASE TO BURNSIDE VILLAGE PTY. LTD. COMMENCING ON 1/2/2012 AND EXPIRING ON 31/1/2062
12283706A	UNDERLEASE OF PORTION OF LAND IN LEASE 11768815 TO CIBO ESPRESSO AUSTRALIA PTY. LTD. COMMENCING ON 1/11/2011 AND EXPIRING ON 31/10/2023 (K101 IN FP 56570)

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12812427 MORTGAGE OF LEASE 11760753 TO WESTPAC BANKING CORPORATION (ACN: 007 457 141)

Notations

Dealings Affecting Title NIL

Priority Notices NIL

Notations on Plan NIL

Registrar-General's Notes

APPROVED FILED PLAN FOR LEASE PURPOSES FX56570
APPROVED FX26993

Administrative Interests NIL

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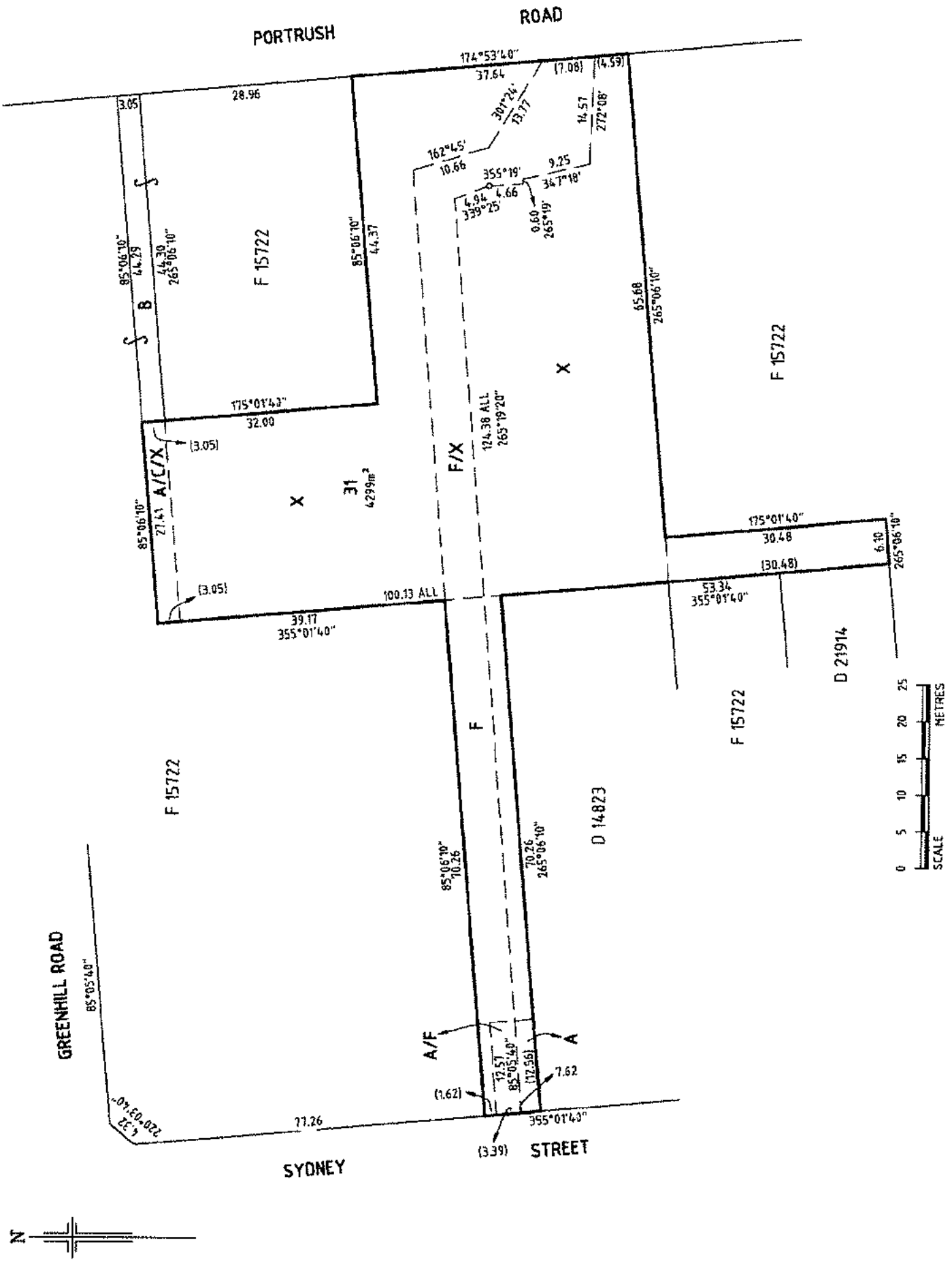

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Government of South Australia
Department of Planning, Transport and Infrastructure

Product	Register Search (CT 5453/700)
Date/Time	12/07/2018 04:40PM
Customer Reference	BV 60557901
Order ID	20180712009882
Cost	$28.75

REAL PROPERTY ACT, 1886
South Australia

The Registrar-General certifies that this Title Register Search displays the records maintained in the Register Book and other notations at the time of searching.

REGISTRAR-GENERAL SOUTH AUSTRALIA

Certificate of Title - Volume 5453 Folio 700

Parent Title(s) CT 4293/587

Creating Dealing(s) CONVERTED TITLE

Title Issued 30/09/1997 **Edition** 4 **Edition Issued** 28/06/2018

Estate Type

FEE SIMPLE

Registered Proprietor

IAN BAKER WALL
PAMELA MAUNSELL WALL
OF 11 GLENWOOD ROAD SPRINGFIELD SA 5062
AS JOINT TENANTS

Description of Land

ALLOTMENT 26 FILED PLAN 15722
IN THE AREA NAMED GLENSIDE
HUNDRED OF ADELAIDE

Easements

SUBJECT TO PARTY WALL RIGHT(S) OVER THE LAND MARKED A (T 1837882)

TOGETHER WITH PARTY WALL RIGHT(S) OVER THE LAND MARKED B (T 1837882)

TOGETHER WITH FREE AND UNRESTRICTED RIGHT(S) OF WAY OVER THE LAND MARKED C

Schedule of Dealings

Dealing Number	Description
7326026	LEASE TO PAMIAN PROPERTIES PTY. LTD. COMMENCING ON 21/10/1991 AND EXPIRING ON 20/10/2082
12945633	CAVEAT BY NATIONAL AUSTRALIA BANK LTD. (ACN: 004 044 937) OVER LEASE 7326026

Notations

Dealings Affecting Title	NIL
Priority Notices	NIL
Notations on Plan	NIL
Registrar-General's Notes	NIL
Administrative Interests	NIL

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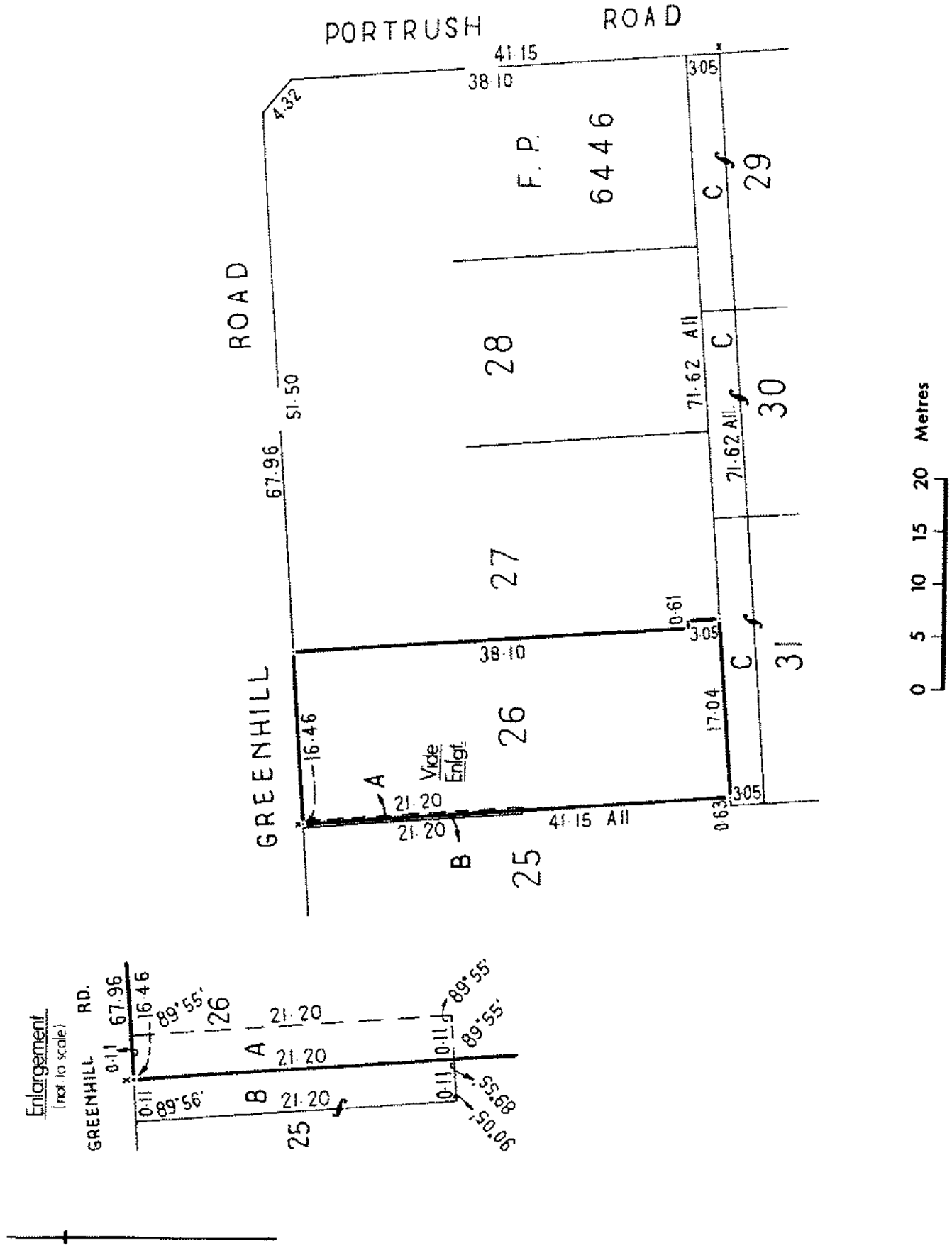
Product	Register Search (CT 5453/700)
Date/Time	12/07/2018 04:40PM
Customer Reference	BV 60557901
Order ID	20180712009882
Cost	$28.75



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Appendix B

Proposal Architectural Plans and Drawings

BURNSIDE VILLAGE REDEVELOPMENT

447 PORTRUSH RD, GLENSIDE SA 5065

DEVELOPMENT APPLICATION
JANUARY 2019

NOTES:
ARCHITECTURAL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIALIST CONSULTANTS DRAWINGS AND REPORTS.

REFER TO LANDSCAPE ARCHITECTS DRAWINGS FOR HARD & SOFT LANDSCAPING COMPONENT
DRAWINGS ENCOMPASS INFORMATION FOR TOWN PLANNING PURPOSES.

ARCHITECTURAL DRAWING LIST

ATP-10001	COVER SHEET	ATP-20199	PROPOSED BASEMENT B2 PLAN	ATP-60000	PHOTO MONTAGE
ATP-10002	EXISTING BASEMENT B1 PLAN	ATP-20200	PROPOSED BASEMENT B1 PLAN	ATP-60001	PHOTO MONTAGE
ATP-10003	EXISTING GROUND PLAN	ATP-20201	PROPOSED GROUND PLAN	ATP-60002	PHOTO MONTAGE
ATP-10004	EXISTING LEVEL 1 PLAN	ATP-20202	PROPOSED LEVEL 1 PLAN	ATP-60003	PHOTO MONTAGE
		ATP-20203	PROPOSED LEVEL 2 PLAN	ATP-60004	PHOTO MONTAGE
ATP-10050	PRECINCT SHEET	ATP-20204	PROPOSED LEVEL 3 PLAN	ATP-60005	PHOTO MONTAGE
ATP-10051	PRECINCT VILLAGE MARKET	ATP-20205	PROPOSED LEVEL 4 PLAN	ATP-60006	PHOTO MONTAGE
ATP-10052	PRECINCT VILLAGE MARKET	ATP-20206	PROPOSED LEVEL 5 PLAN	ATP-60007	PHOTO MONTAGE
ATP-10054	PRECINCT VILLAGE WALK	ATP-20207	PROPOSED LEVEL 6 PLAN	ATP-60008	PHOTO MONTAGE
ATP-10055	PRECINCT FASHION COURT	ATP-20210	PROPOSED ROOF PLAN	ATP-60009	PHOTO MONTAGE
ATP-10056	PRECINCT FASHION COURT			ATP-60010	PHOTO MONTAGE
ATP-10057	PRECINCT VILLAGE GROUNDS	ATP-40000	ELEVATIONS STAGE 7 (OVER ALL)	ATP-60011	PHOTO MONTAGE
ATP-10058	PRECINCT VILLAGE GROUNDS	ATP-40400	ELEVATION STAGE 7 PORTRUSH ROAD	ATP-60012	PHOTO MONTAGE
ATP-10059	PRECINCT VILLAGE STREET	ATP-40401	ELEVATION STAGE 7 CATOR STREET		
ATP-10060	PRECINCT VILLAGE STREET	ATP-40402	ELEVATION STAGE 7 GREENHILL ROAD		
ATP-10061	PRECINCT VILLAGE STREET	ATP-40403	ELEVATION STAGE 7 SYDNEY STREET		
		ATP-40404	ELEVATION PORTRUSH ROAD SIGNAGE LOCATION		
ATP-10070	EXISTING / PROPOSED COMPARISON	ATP-40405	ELEVATION CATOR STREET SIGNAGE LOCATION		
ATP-10071	EXISTING / PROPOSED COMPARISON	ATP-40406	ELEVATION GREENHILL ROAD SIGNAGE LOCATION		
ATP-10072	EXISTING / PROPOSED COMPARISON	ATP-40407	ELEVATION SYDNEY STREET SIGNAGE LOCATION		
		ATP-41000	ELEVATIONS STAGE 6 (OVER ALL)		
ATP-10150	AERIAL PHOTOGRAPH	ATP-41001	ELEVATION STAGE 6 PORTRUSH ROAD		
ATP-10151	EXTERNAL PRECINCT PLAN	ATP-41002	ELEVATION STAGE 6 GREENHILL ROAD		
ATP-10152	SITE CONTEXT PLAN	ATP-41003	ELEVATION STAGE 6 SYDNEY STREET		
ATP-10153	SITE CONTEXT PLAN - SERVICE VEHICLES				
ATP-10154	LOADING DOCK PLANS	ATP-50500	SECTIONS		
ATP-10155	PROPOSED STAGING DIAGRAM				
		ATP-50520	ROAD ALIGNMENT FUTURE PLANNING - PLANS		
ATP-10160	SHADOW DIAGRAMS - EXISTING	ATP-50521	ROAD ALIGNMENT FUTURE PLANNING - SECTIONS		
ATP-10161	SHADOW DIAGRAMS - PROPOSED				

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

1. DO NOT SCALE DRAWINGS
2. CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR FABRICATION.
3. ALL LEVELS ARE TO AHD UNLESS NOTED OTHERWISE.

BURNSIDE VILLAGE

Ti Titanium Property Investment

BUCHAN

The Buchan Group Melbourne Pty Ltd
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Email: melbourne@buchangroup.com.au

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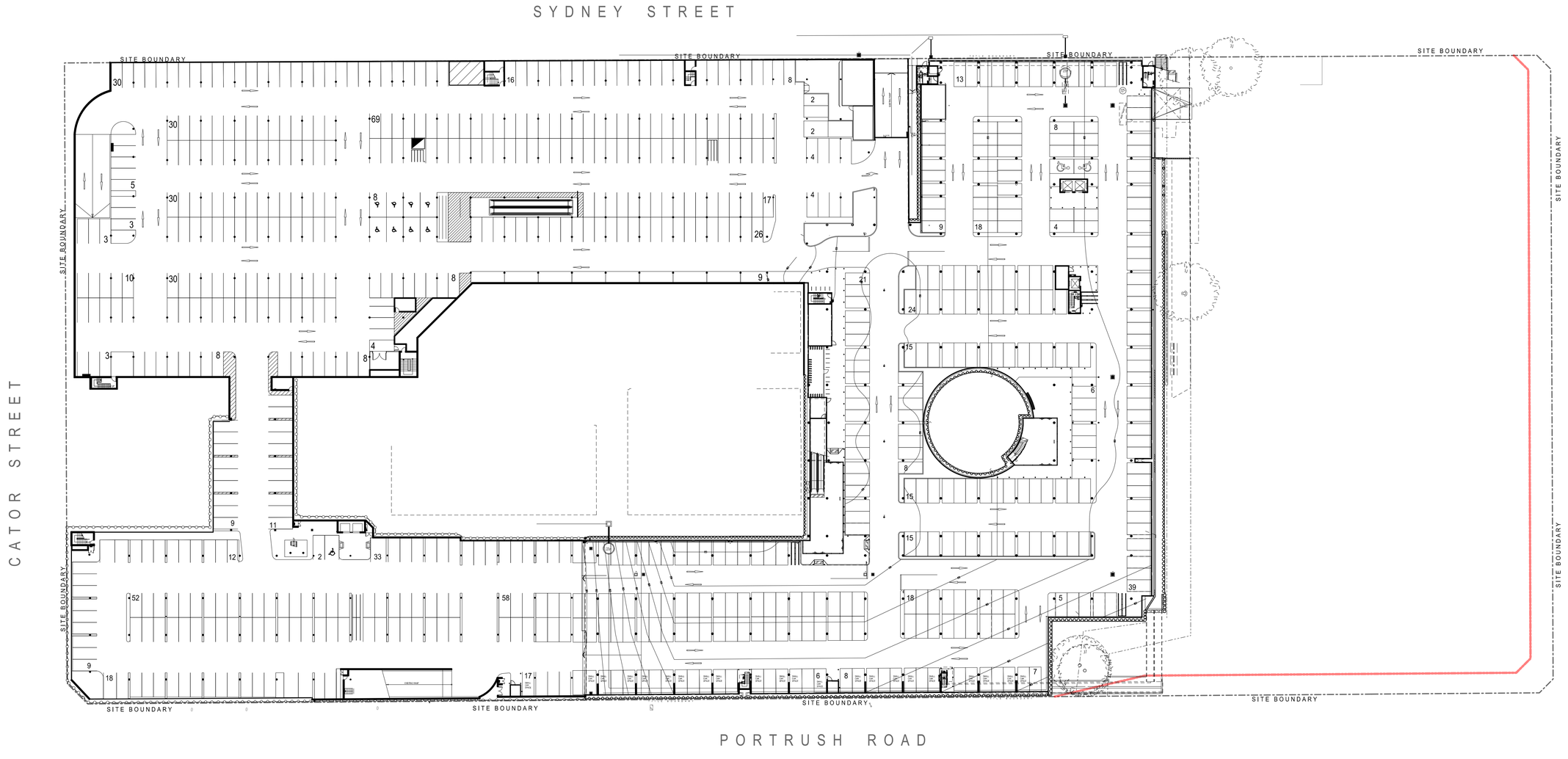
Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

COVER SHEET

Status: TOWN PLANNING
Checked by:
Drawn By: VB1
Approved By:
Scale @ A1: NTS
Date: 07/02/18
Drawing Number: ATP-10001
File Name: BV-TBG-ZA-00-DR-ATP-10001
Revision: P01
Purpose Of Issue: FOR INFORMATION



Revisions

No.	Description	By	Date
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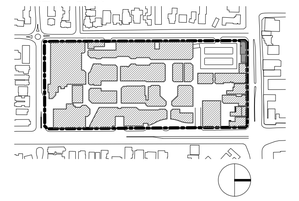
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

EXISTING
BASEMENT FLOOR PLAN

Status: TOWN PLANNING
Checked by:

Drawn By: VB1
Approved By:

Scale @ A1: VARIES
Date: 07/02/18

Drawing Number: ATP-10002
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-10002

Purpose Of Issue: FOR INFORMATION

HOUSE 2 LEVELS
HOUSE 1 LEVEL
HOUSE 2 LEVELS
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
APARTMENTS 2 LEVELS
APARTMENTS 2 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
APARTMENTS 2 LEVELS
GARAGE
HOUSE 1 LEVEL
APARTMENTS 2 LEVELS

SYDNEY STREET

SITE BOUNDARY

COLES SUPERMARKET

EXISTING ATRIUM MALL

EXISTING VINE MALL

VILLAGE SQUARE

EXISTING COLES LOADING

EXISTING CARPARK
70 CAR SPACES

EXISTING BUILDING

ANZ G1

URBANE WAREHOUSE G2

EXISTING BUILDING

EXISTING CARPARK
52 CAR SPACES

EXISTING BUILDING

EXISTING BUILDING

EXISTING BUILDING

EXISTING BUILDING

RAMP

EXISTING GROUND CARPARK

EXTENT OF LEVEL 1 CARPARK OVER

RAMP

UP FROM BASEMENT

UP TO LEVEL 1

EXISTING GROUND CARPARK

CATOR STREET

GREENHILL ROAD

PORTRUSH ROAD

HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 2 LEVELS
HOUSE 1 LEVEL
HOUSE 1 LEVEL
APARTMENTS 1 LEVEL
CHILD CARE 1 LEVEL
DENTIST 1 LEVEL
COMMERCIAL 1 LEVEL
MEDICAL CLINIC 1 LEVEL
HOUSE 2 LEVELS
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL
HOUSE 1 LEVEL

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN

1. DO NOT SCALE DRAWINGS
2. CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR FABRICATION.
3. ALL LEVELS ARE TO AHD UNLESS NOTED OTHERWISE.

BURNSIDE VILLAGE

Ti Titanium Property Investment

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Email: melbourne@buchangroup.com.au

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

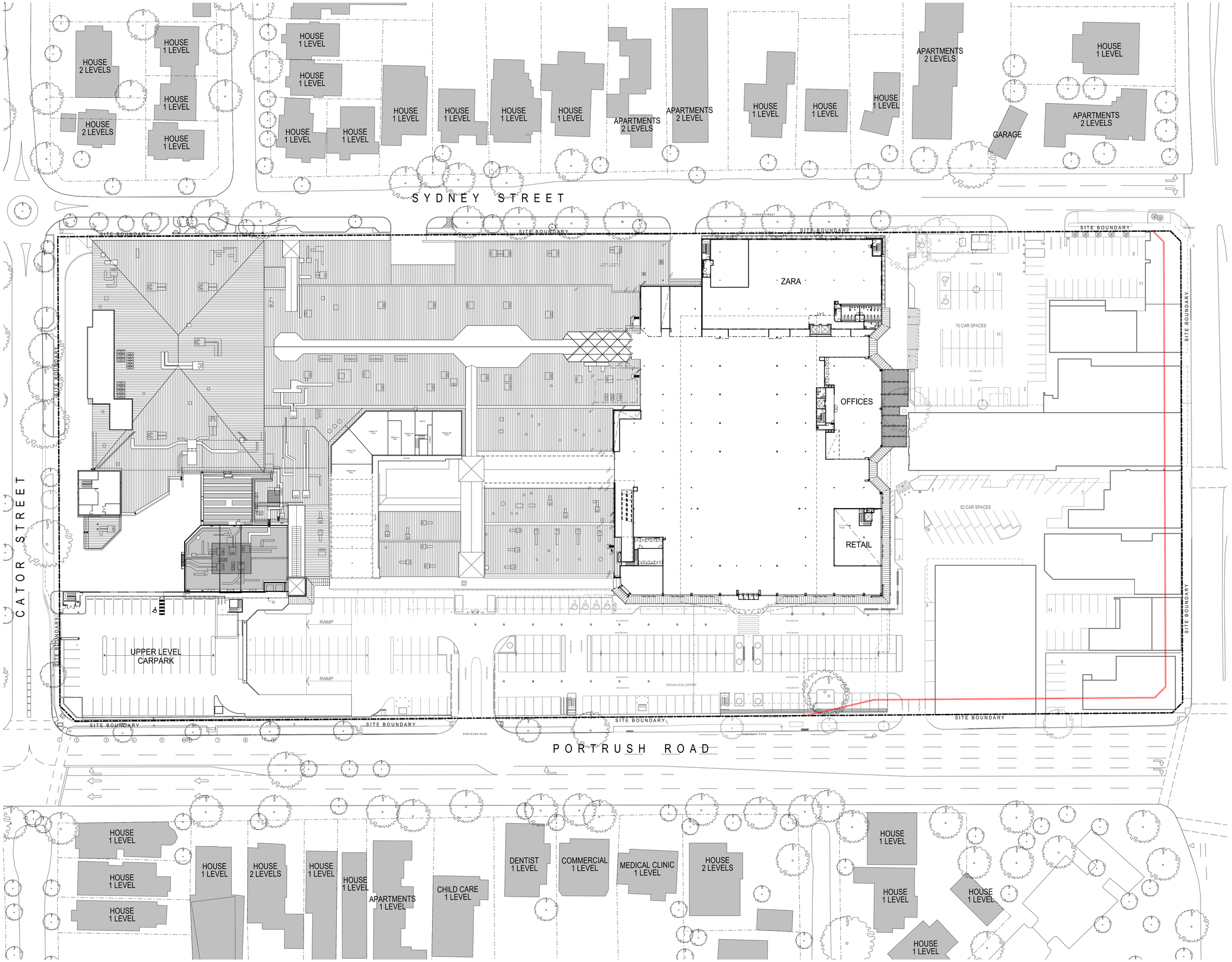
EXISTING
SITE FLOOR PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
VB1	
Scale @ A1	Date
1:500	07/02/18
Drawing Number	Revision
ATP-10003	P01

File Name: BV-TBG-ZA-00-DR-ATP-10003

Purpose Of Issue

FOR INFORMATION



Revisions			
No.	Description	By	Date
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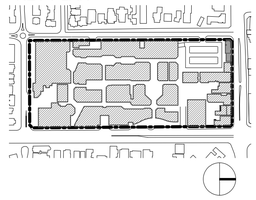
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



1. DO NOT SCALE DRAWINGS
2. CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR FABRICATION.
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BURNSIDE VILLAGE

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

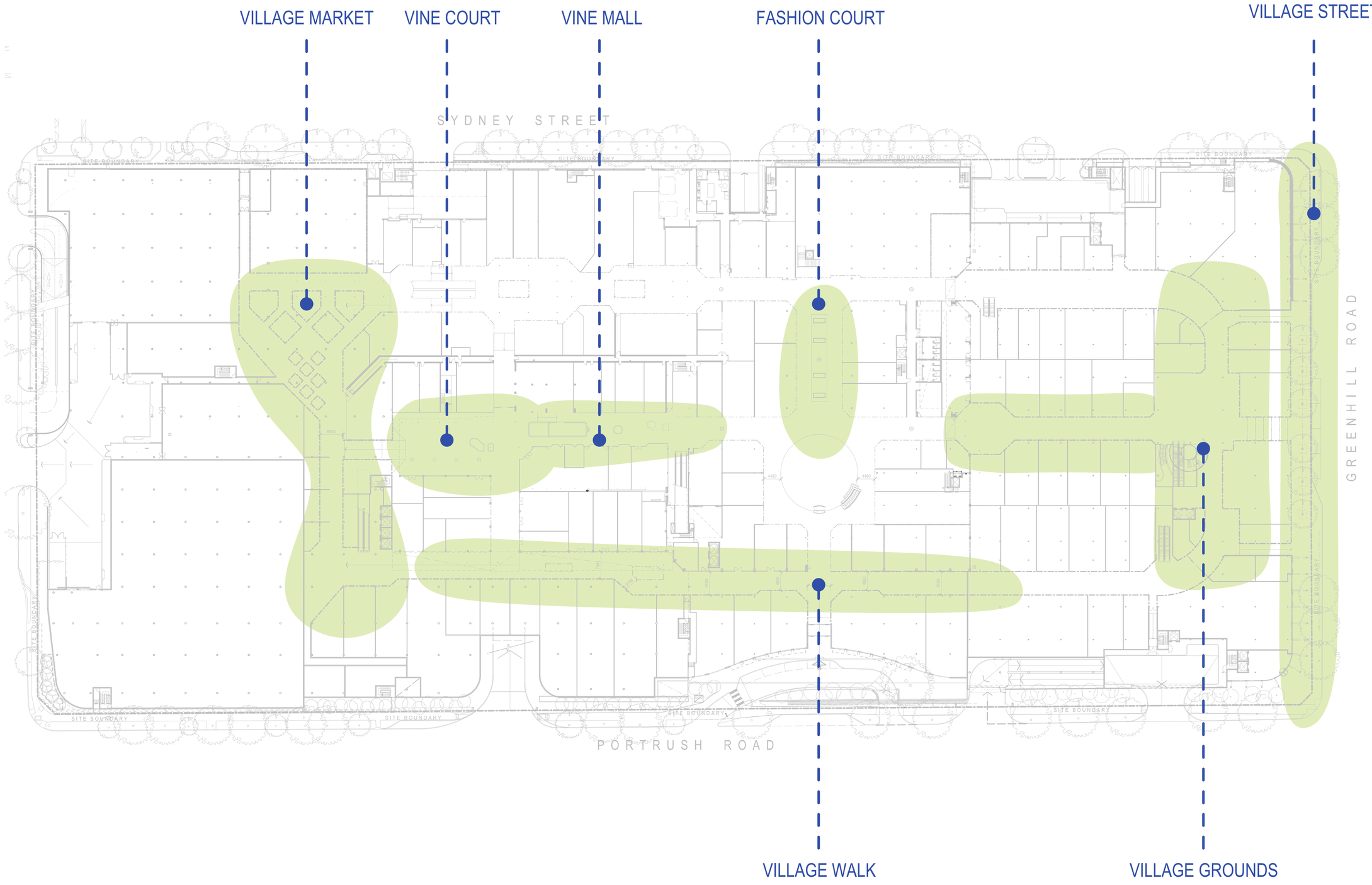
EXISTING
LEVEL 01 FLOOR PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	**Approved By**
HD	
Scale @ A1	**Date**
1:500	07/02/18
Drawing Number	**Revision**
ATP-10004	P01

File Name: BV-TBG-ZA-00-DR-ATP-10004

Purpose Of Issue

FOR INFORMATION



Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PRECINCT PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	**Approved By**
HD	
Scale @ A1	**Date**
VARIES	06/04/18
Drawing Number	**Revision**
ATP-10050	P01

File Name: BV-TBG-ZA-00-DR-ATP-10050

Purpose Of Issue

FOR INFORMATION

PRECINCTS

Village Market

ROBINA TOWN CENTRE, QLD

ROBINA TOWN CENTRE, QLD

EATALY, NEW YORK

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE

Ti Titanium Property Investment

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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PRECINCT
VILLAGE MARKET

Status: TOWN PLANNING
Checked by:

Drawn By: HD
Approved By:

Scale @ A1: VARIES
Date: 06/04/18

Drawing Number: ATP-10051
File Name: BV-TBG-ZA-00-DR-ATP-10051
Revision: P01

Purpose Of Issue: FOR INFORMATION

PRECINCTS

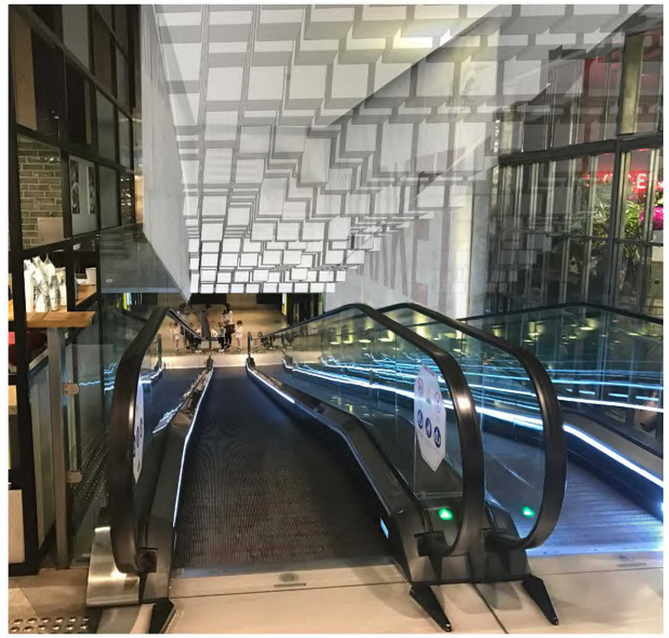
Village Market

WARRINGAH MALL, NSW

WARRINGAH MALL, NSW

WARRINGAH MALL, NSW

WARRINGAH MALL, NSW



Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PRECINCT
VILLAGE MARKET

Status: TOWN PLANNING	Checked by:
Drawn By: HD	Approved By:
Scale @ A1: VARIES	Date: 06/04/18
Drawing Number: ATP-10052	Revision: P01

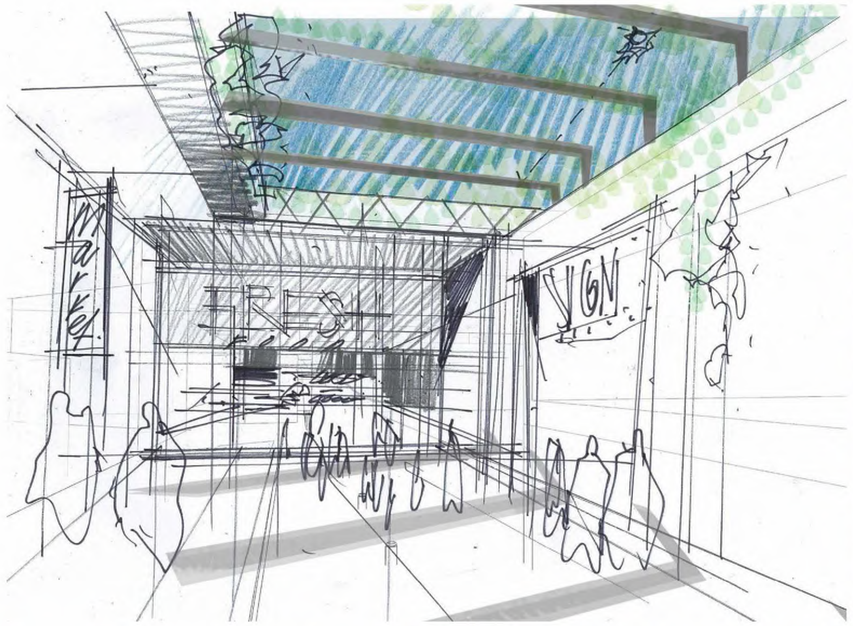
File Name: BV-TBG-ZA-00-DR-ATP-10052

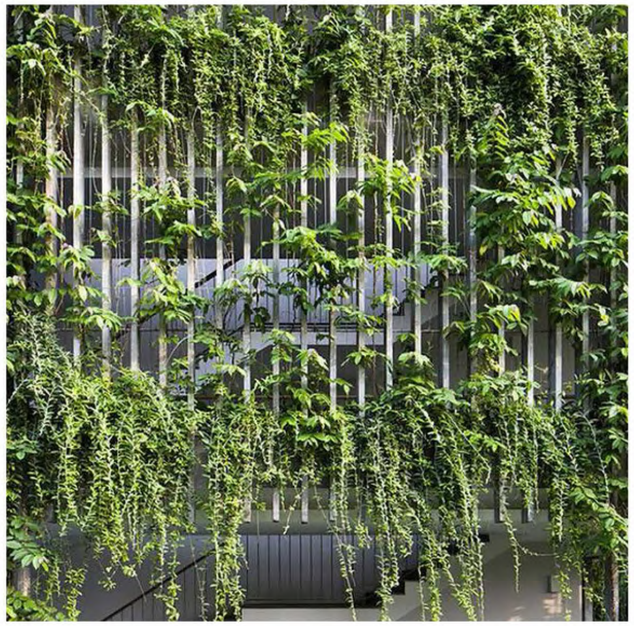
Purpose Of Issue

FOR INFORMATION

PRECINCTS

Village Walk





BURNSIDE VILLAGE - EXISTING VINE MALL

BURNSIDE VILLAGE - EXISTING VINE MALL

KITTY BURNS, VIC

COFFEE LAB, USA

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE

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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PRECINCT
VILLAGE WALK

Status: TOWN PLANNING
Checked by:

Drawn By: VB1
Approved By:

Scale @ A1: VARIES
Date: 06/04/18

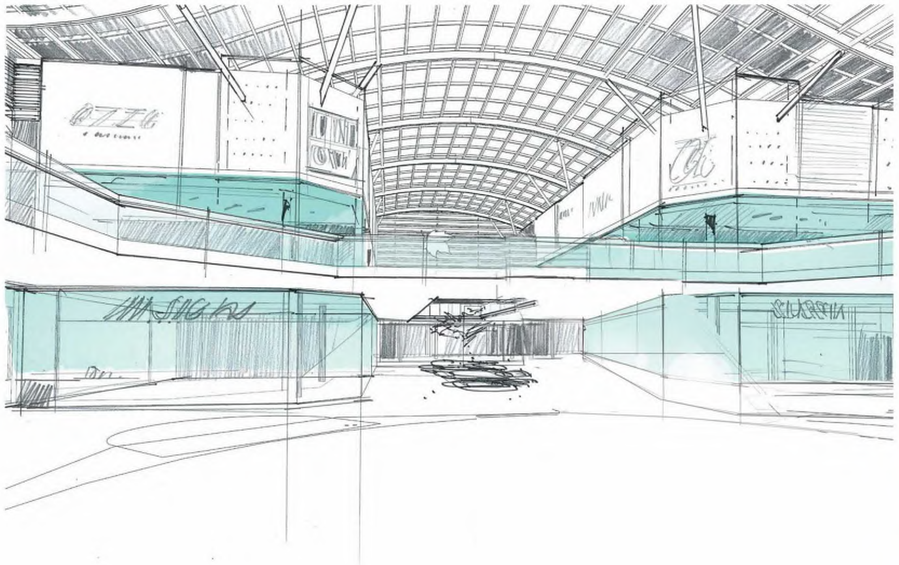
Drawing Number: ATP-10054
File Name: BV-TBG-ZA-00-DR-ATP-10054
Revision: P01

Purpose Of Issue
FOR INFORMATION

PRECINCTS

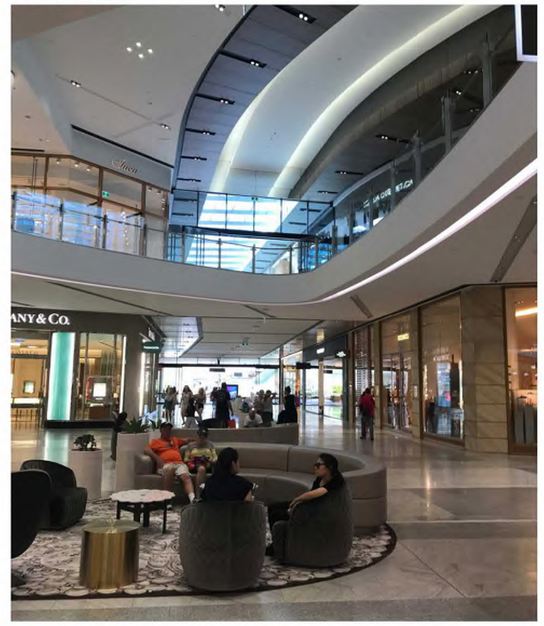
Fashion Court

BURNSIDE VILLAGE, SA



CHADSTONE, VIC

PACIFIC FAIR, QLD



PACIFIC FAIR, QLD

PACIFIC FAIR, QLD

EMPORIUM, VIC

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PRECINCT
FASHION COURT

Status: TOWN PLANNING	Checked by:
Drawn By: VB1	Approved By:
Scale @ A1: VARIES	Date: 06/04/18
Drawing Number: ATP-10055	Revision: P01

File Name: BV-TBG-ZA-00-DR-ATP-10055

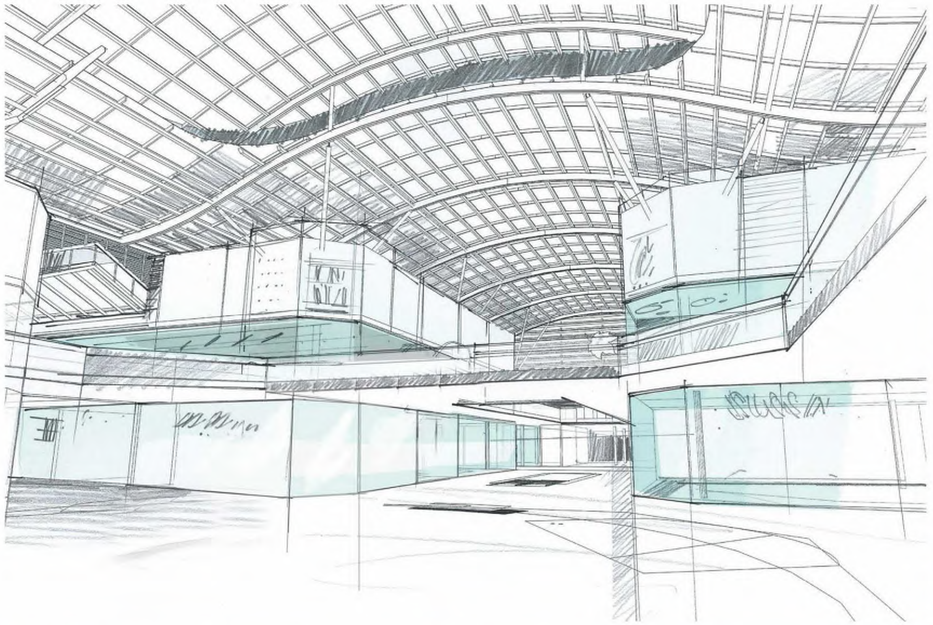
Purpose Of Issue

FOR INFORMATION

PRECINCTS

Fashion Court

BURNSIDE VILLAGE, SA



CHADSTONE, VIC

CHADSTONE, VIC

HIGHPOINT, VIC

EASTLAND, VIC

CHADSTONE, VIC

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PRECINCT
FASHION COURT

Status: TOWN PLANNING
Checked by:

Drawn By: HD
Approved By:

Scale @ A1: VARIES
Date: 06/04/18

Drawing Number: ATP-10056
File Name: BV-TBG-ZA-00-DR-ATP-10056
Revision: P01

Purpose Of Issue

FOR INFORMATION

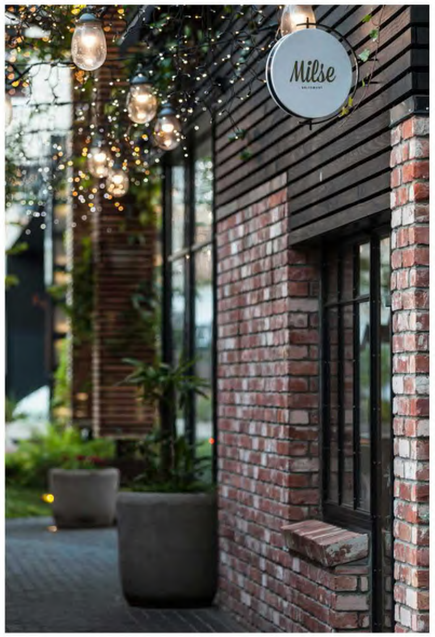
PRECINCTS

Village Grounds Restaurant Precinct

BRITOMART, AUKLAND

GROUNDS OF ALEXANDRIA, NSW

GROUNDS OF ALEXANDRIA, NSW



FEATHERDALE PARK, NSW

GROUNDS OF ALEXANDRIA, NSW

BRITOMART, AUKLAND

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PRECINCT
VILLAGE GROUND
RESTAURANTS

Status: TOWN PLANNING
Checked by:
Drawn By: HD
Approved By:
Scale @ A1: VARIES
Date: 06/04/18
Drawing Number: ATP-10057
File Name: BV-TBG-ZA-00-DR-ATP-10057
Revision: P01

Purpose Of Issue

FOR INFORMATION

PRECINCTS

Village Grounds Restaurant Precinct

GROUNDS OF ALEXANDRIA, NSW

GROUNDS OF ALEXANDRIA, NSW

WELCOME TO THORNBURY, VIC

LEIGH STREET, SA

BOMBA ROOFTOP BAR, VIC

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE

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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PRECINCT
VILLAGE GROUND
RESTAURANTS

Status: TOWN PLANNING
Checked by:

Drawn By: HD
Approved By:

Scale @ A1: VARIES
Date: 06/04/18

Drawing Number: ATP-10058
File Name: BV-TBG-ZA-00-DR-ATP-10058
Revision: P01

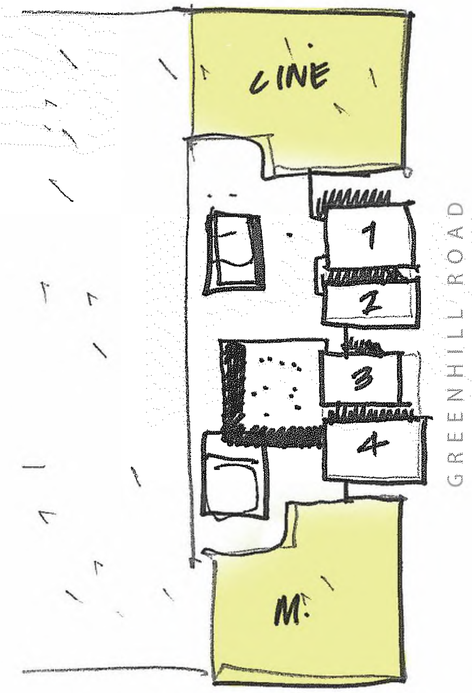
Purpose Of Issue

FOR INFORMATION

PRECINCTS

Village Street

GREENHILL RD ELEVATION - CONCEPT SKETCH



PLAN - CONCEPT SKETCH

Anchors

The Village Street was designed in response to its local context.

Two iconic, architectural anchors on each corner speak to the adjacent civic precincts, as well as the suburb of Glenside as a whole.

They are designed to be viewed from a distance, and act as beacons for Burnside Village within its wider context.

They also act as architectural "book-ends" for the new Village Grounds precinct, creating a buffer from busy intersections, and as a transition zone between the existing language of Burnside Village and this new precinct.

The strong, simple forms and material palette of these buildings provides a simple background that contrasts with and accentuates the intricacies of the Village Grounds precinct.

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE; DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

1. DO NOT SCALE DRAWINGS
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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PRECINCT
VILLAGE STREET

Status: TOWN PLANNING
Checked by:

Drawn By: HD
Approved By:

Scale @ A1: VARIES
Date: 06/04/18

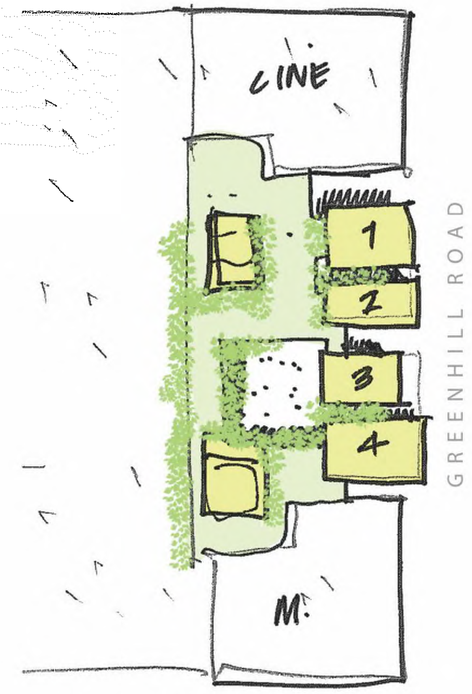
Drawing Number: ATP-10059
File Name: BV-TBG-ZA-00-DR-ATP-10059
Revision: P00

Purpose Of Issue
FOR INFORMATION

PRECINCTS

Village Street

GREENHILL RD ELEVATION - CONCEPT SKETCH



PLAN - CONCEPT SKETCH

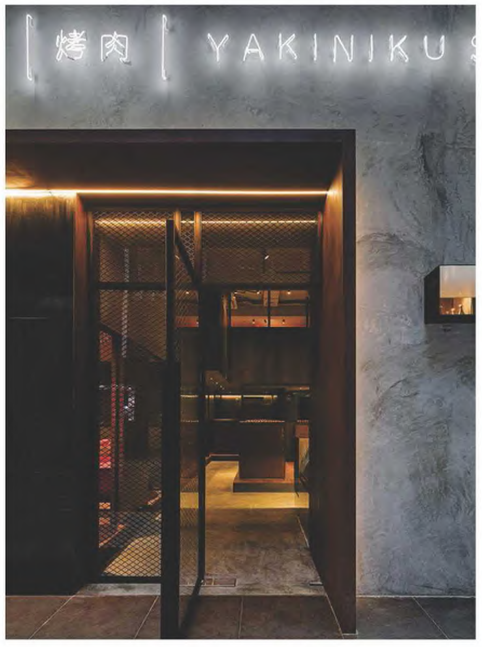
Village Grounds

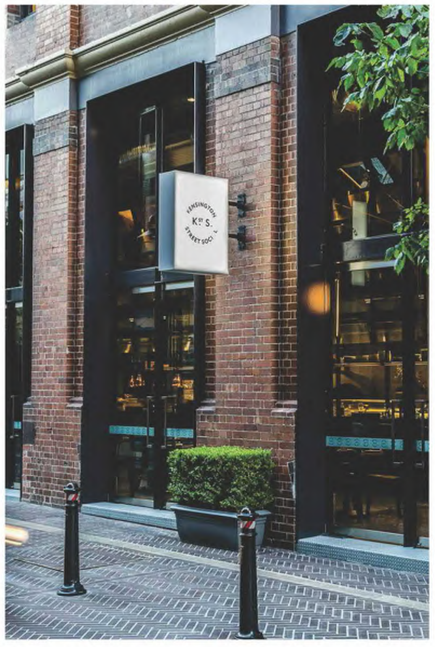
Contrasting with the simpler forms and materials of the anchor buildings, the language of the Village Grounds is tactile, multi-layered and intricate.

The grounds are nestled back into the cove created by the anchors, distinguishing this space as a more human-scale, contemporary village.

This intimate space is a collection of intricate details, textures and materials, overlayed and curated to create a new village high street on the northern edge of the site.

These local materials and unique architectural moments make the Village Grounds a feature destination, and a potential catalyst for further future development in the area.





Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

1. DO NOT SCALE DRAWINGS
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BURNSIDE VILLAGE

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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PRECINCT
VILLAGE STREET

Status: TOWN PLANNING
Checked by:

Drawn By: HD
Approved By:

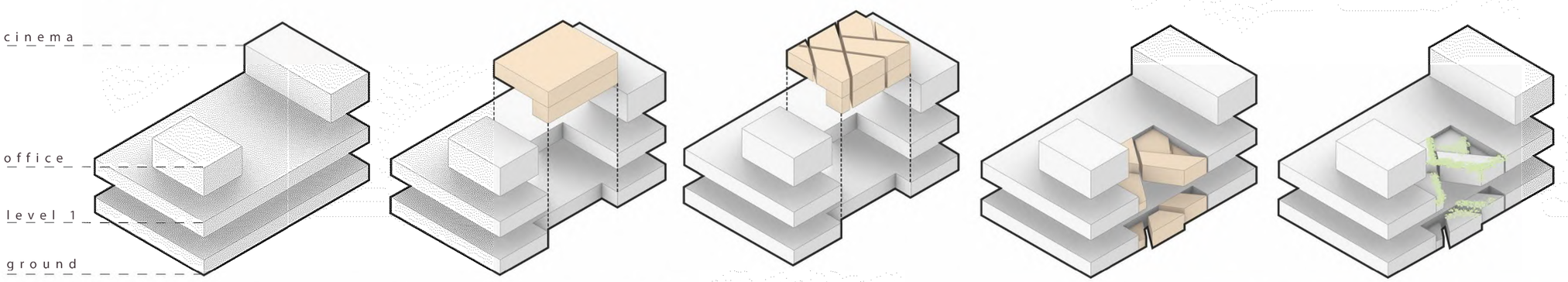
Scale @ A1: VARIES
Date: 06/04/18

Drawing Number: ATP-10060
File Name: BV-TBG-ZA-00-DR-ATP-10060
Revision: P00

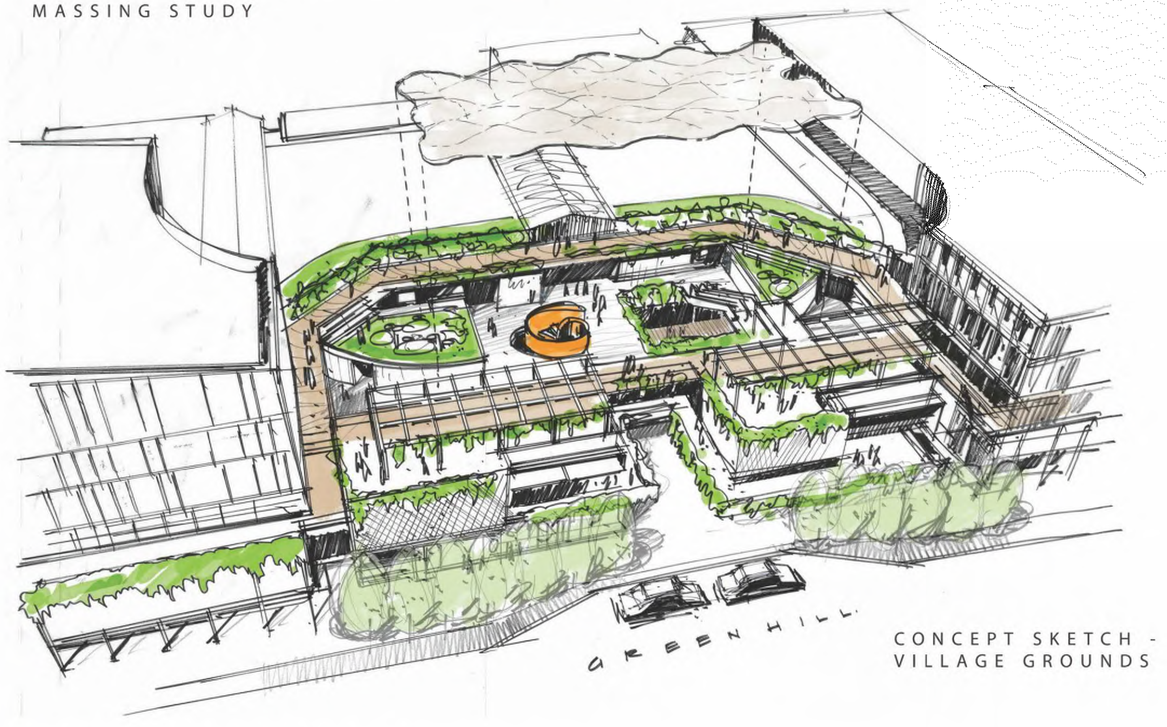
Purpose Of Issue: FOR INFORMATION

PRECINCTS

Village Street



MASSING STUDY



CONCEPT SKETCH - VILLAGE GROUNDS

Cluster of Buildings

The massing of the northern end of the site was a way of further distinguishing the Village Grounds as an extension of its context and the local community, rather than a new stage of shopping centre development.

Instead of carving up the site into tenancies, clusters of buildings are placed on the site as individual elements, creating laneways and junctions that are more like streets than malls, and more like a village than a shopping centre.

BRICKWORKS, VIC

CASTLE TOWERS, NSW

Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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Project 317043

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PRECINCT
VILLAGE STREET

Status: TOWN PLANNING
Checked by:
Drawn By: HD
Approved By:
Scale @ A1: VARIES
Date: 06/04/18
Drawing Number: ATP-10061
File Name: BV-TBG-ZA-00-DR-ATP-10061
Revision: P00
Purpose Of Issue: FOR INFORMATION

01 EXISTING VIEW - EAST ALONG GREENHILL ROAD
Full Size 1:1

02 PROPOSED VIEW - EAST ALONG GREENHILL ROAD - STAGE 6
Full Size 1:1

03 PROPOSED VIEW - EAST ALONG GREENHILL ROAD - STAGE 7
Full Size 1:1

Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE

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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

EXISTING/PROPOSED
COMPARISON GREENHILL ROAD
EAST VIEW ALONG GREENHILL ROAD

Status: TOWN PLANNING
Checked by:

Drawn By: GS
Approved By:

Scale @ A1: VARIES
Date: 11/12/18

Drawing Number: ATP-10070
Revision: P00
File Name: BV-TBG-ZA-00-DR-ATP-10070

Purpose Of Issue: FOR INFORMATION

01 EXISTING VIEW - WEST ALONG GREENHILL ROAD

Full Size 1:1

02 PROPOSED VIEW - WEST ALONG GREENHILL ROAD - STAGE 6

Full Size 1:1

03 PROPOSED VIEW - WEST ALONG GREENHILL ROAD - STAGE 7

Full Size 1:1

Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

EXISTING/PROPOSED
COMPARISON GREENHILL ROAD
WEST VIEW ALONG GREENHILL ROAD

Status: TOWN PLANNING
Checked by:
Drawn By: GS
Approved By:
Scale @ A1: VARIES
Date: 11/12/18
Drawing Number: ATP-10071
Revision: P00
File Name: BV-TBG-ZA-00-DR-ATP-10071
Purpose Of Issue: FOR INFORMATION

01 EXISTING VIEW - GREENHILL ROAD
Full Size 1:1

02 PROPOSED VIEW - GREENHILL ROAD - STAGE 6
Full Size 1:1

03 PROPOSED VIEW - GREENHILL ROAD - STAGE 7
Full Size 1:1

Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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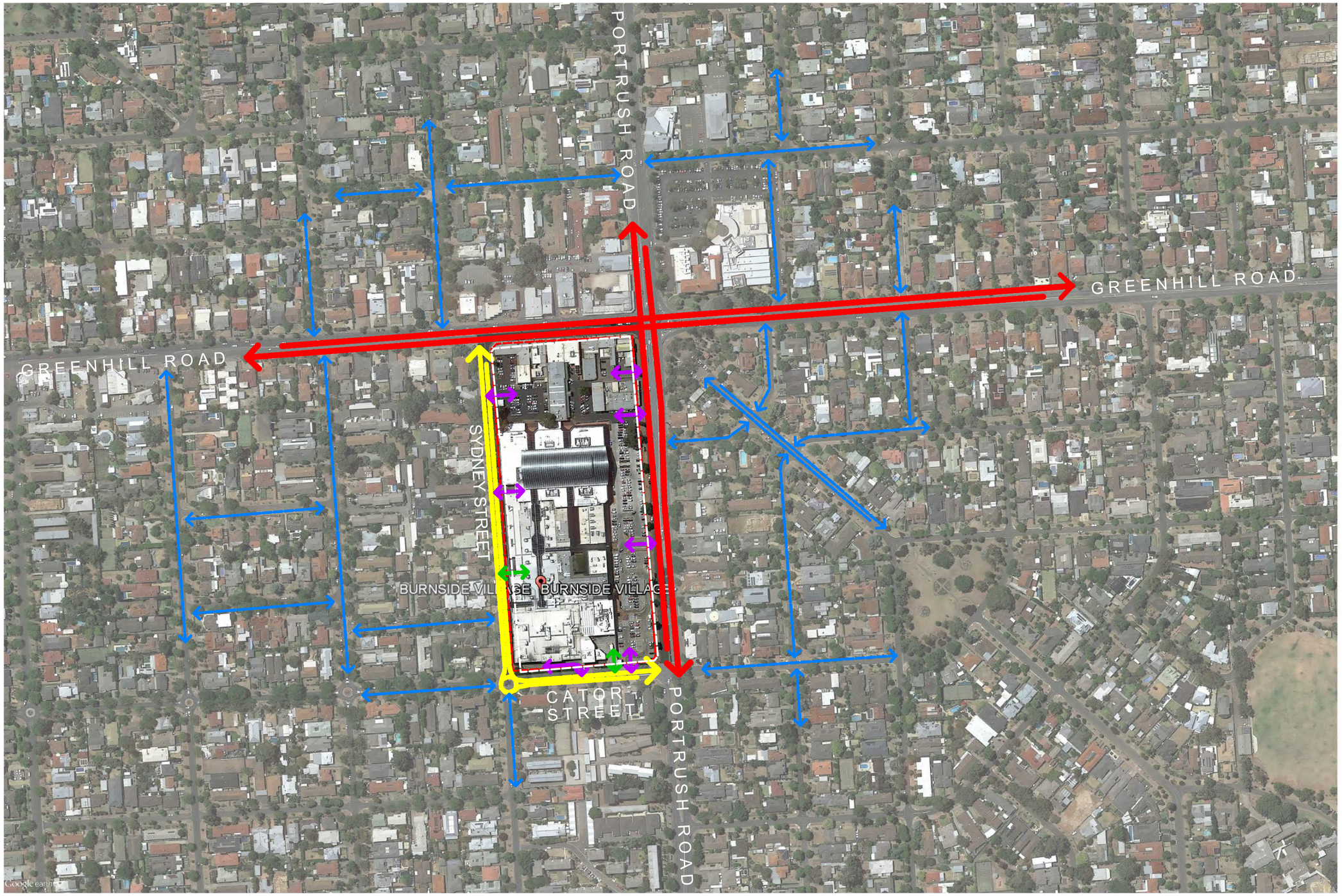
BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

EXISTING/PROPOSED
COMPARISON GREENHILL ROAD
GREENHILL ROAD ELEVATION

Status: TOWN PLANNING
Checked by:
Drawn By: GS
Approved By:
Scale @ A1: VARIES
Date: 11/12/18
Drawing Number: ATP-10072
File Name: BV-TBG-ZA-00-DR-ATP-10072
Revision: P00
Purpose Of Issue: FOR INFORMATION



MAJOR VEHICLE CURCULATION

MINOR VEHICLE CURCULATION

LOCAL VEHICLE CIRCULATION

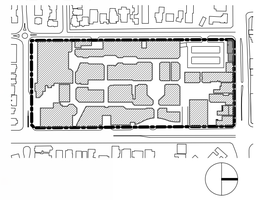
VEHICLE ENTRY / EXIT FROM SITE

SERVICE ENTRY / EXIT FROM SITE

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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BURNSIDE VILLAGE

Ti Titanium Property Investment

BUCHAN

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Project 317043

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

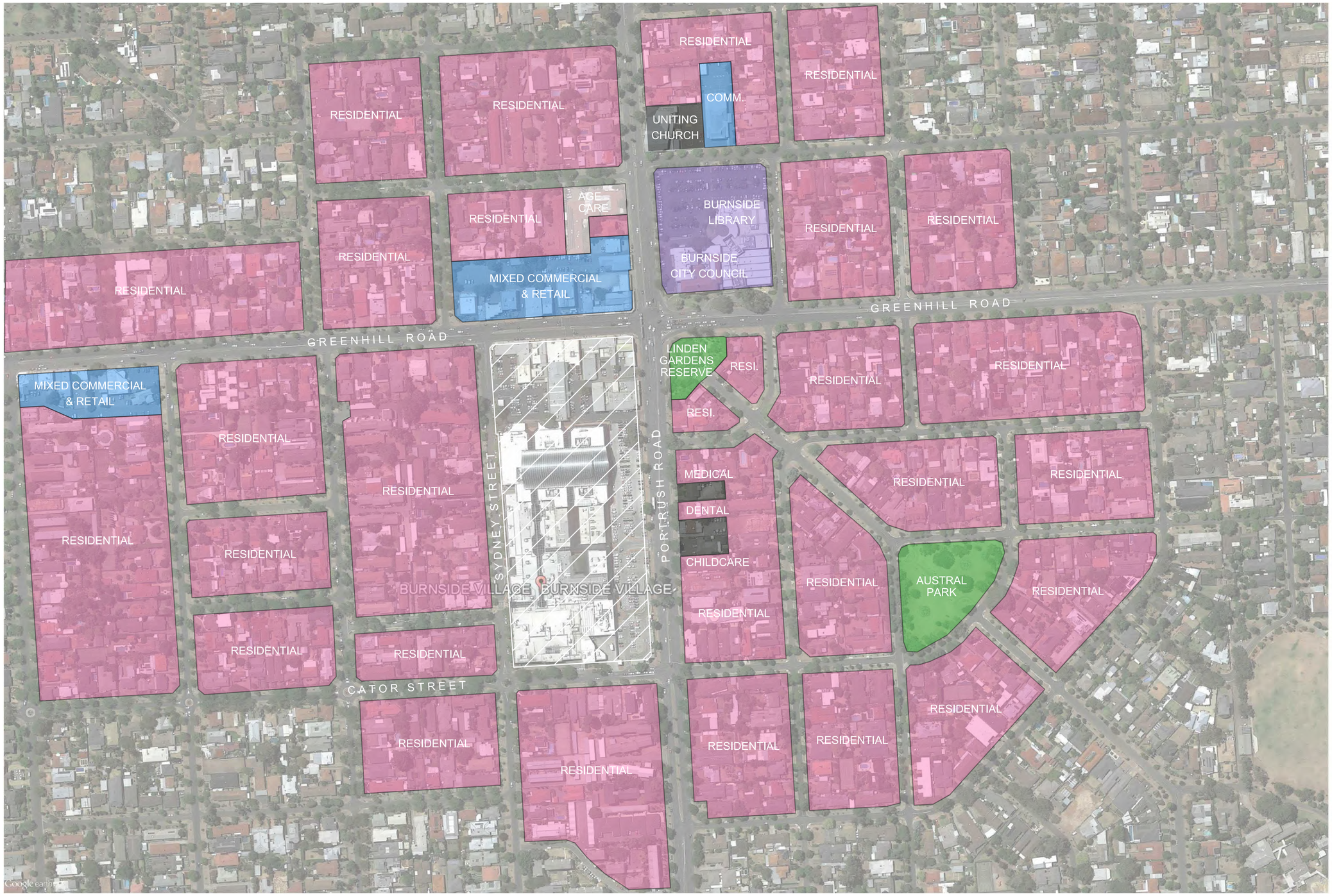
AERIAL PHOTOGRAPH

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
VB1	
Scale @ A1	Date
1:2000	07/02/18
Drawing Number	Revision
ATP-10150	P01

File Name: BV-TBG-ZA-00-DR-ATP-10150

Purpose Of Issue

FOR INFORMATION



RESIDENTIAL & APARTMENTS

COMMERCIAL AND RETAIL

CIVIC USE

PARKLAND

SCHOOL / EDUCATION / RELIGIOUS

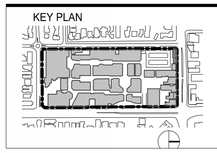
MEDICAL / DENTAL

AGE CARE

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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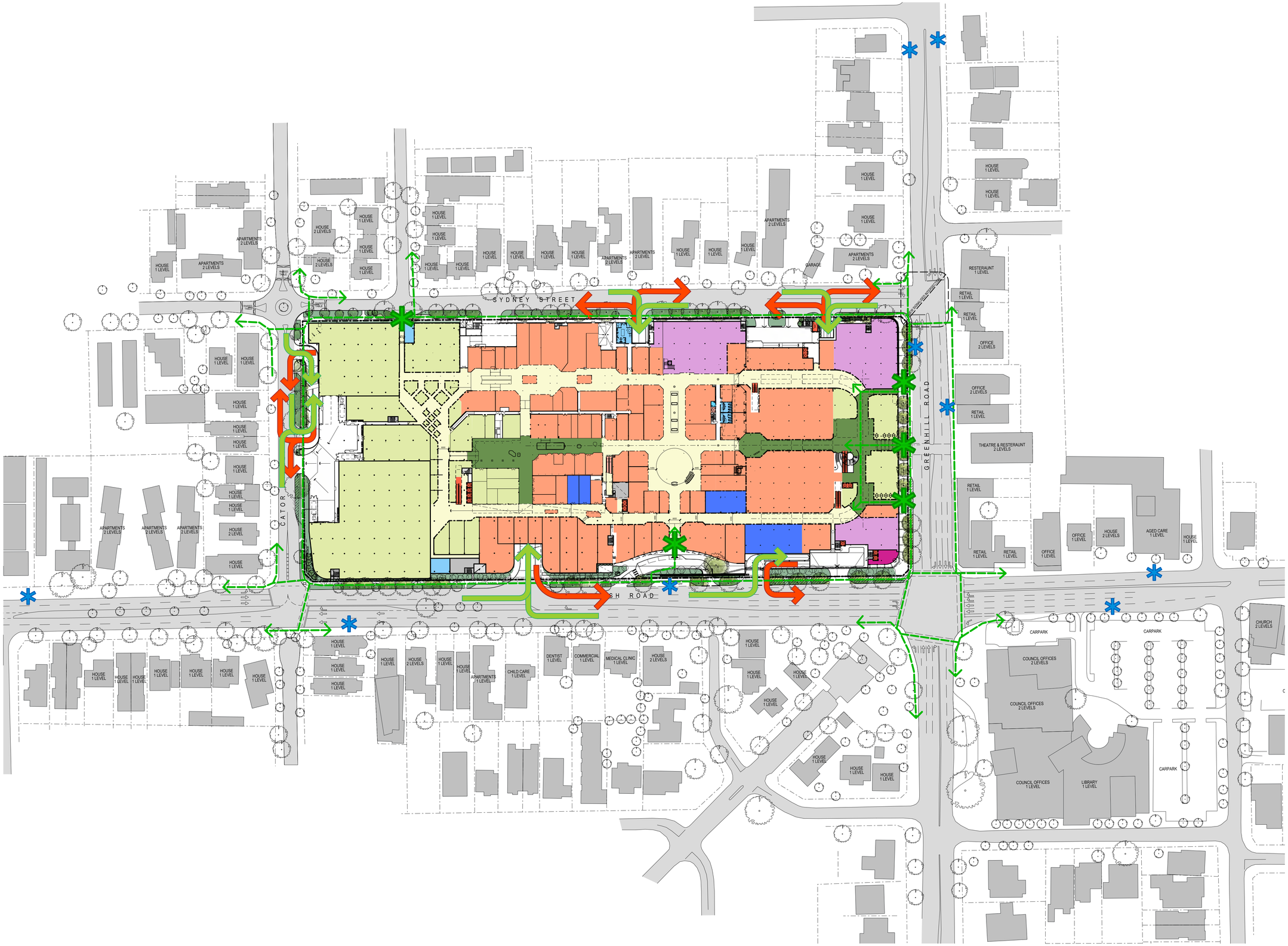
Project 317043

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

EXTERNAL PRECINCT PLAN

Status: TOWN PLANNING
Checked by:
Drawn By: VB1
Approved By:
Scale @ A1: 1:2000
Date: 07/02/18
Drawing Number: ATP-10151
File Name: BV-TBG-ZA-00-DR-ATP-10151
Revision: P01
Purpose Of Issue: FOR INFORMATION



BUS STOP LOCATION

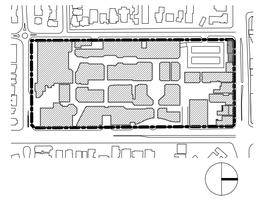
PEDESTRIAN ENTRANCE

PEDESTRIAN MOVEMENT AND CIRULATION

PUBLIC VEHICLE ENTRY AND EXITS

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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BURNSIDE VILLAGE

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
CONTEXT PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
VB1	
Scale @ A1	Date
1:1000	07/02/18
Drawing Number	Revision
ATP-10152	P01

File Name: BV-TBG-ZA-00-DR-ATP-10152

Purpose Of Issue

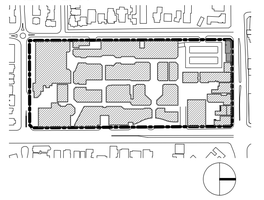
FOR INFORMATION

SERVICE VEHICLE ENTRY AND EXITS

Revisions

No.	Description	By	Date
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
CONTEXT PLAN
SERVICE VEHICLES

Status: TOWN PLANNING
Checked by:

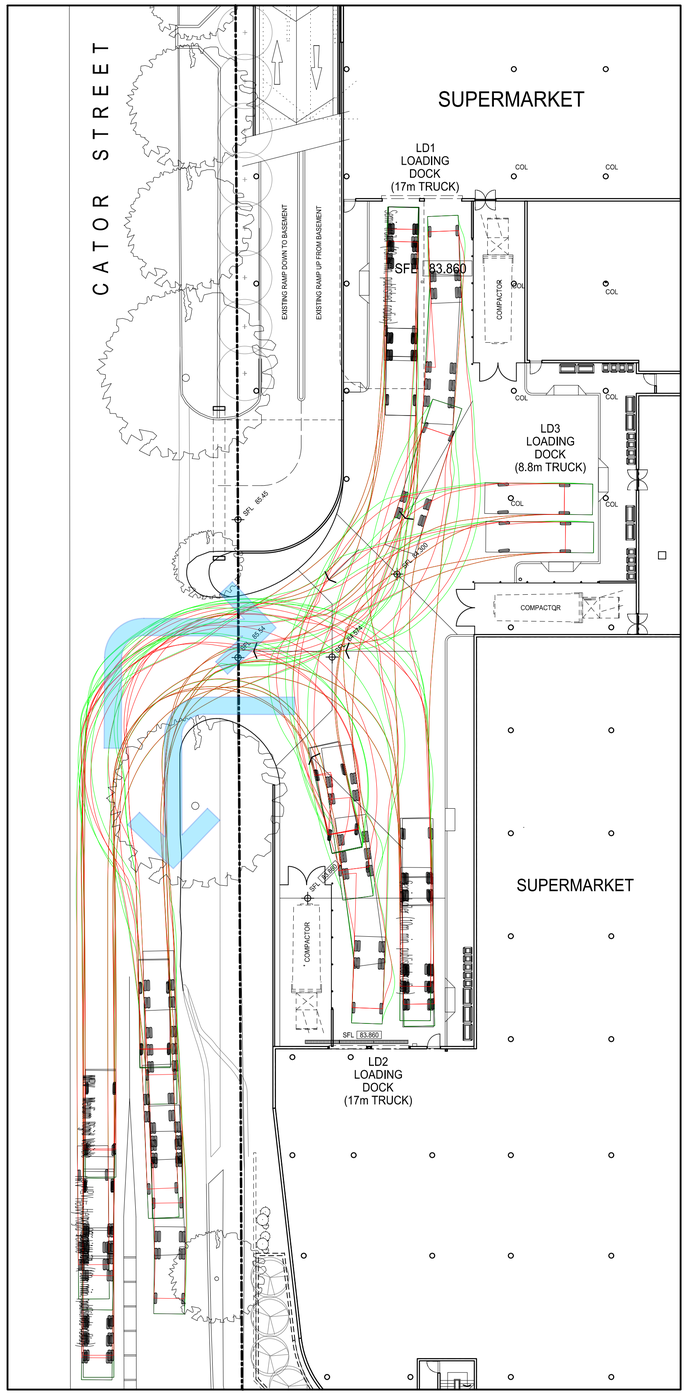
Drawn By: VB1
Approved By:

Scale @ A1: 1:1000
Date: 07/02/18

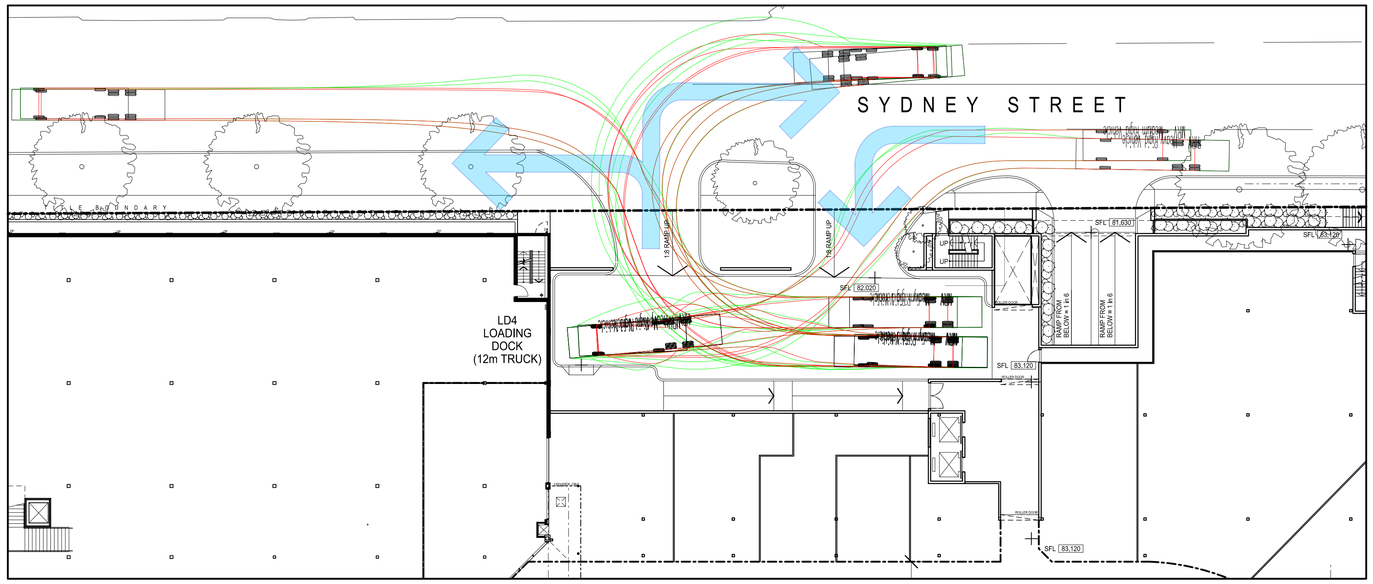
Drawing Number: ATP-10153
Revision: P01

File Name: BV-TBG-ZA-00-DR-ATP-10153

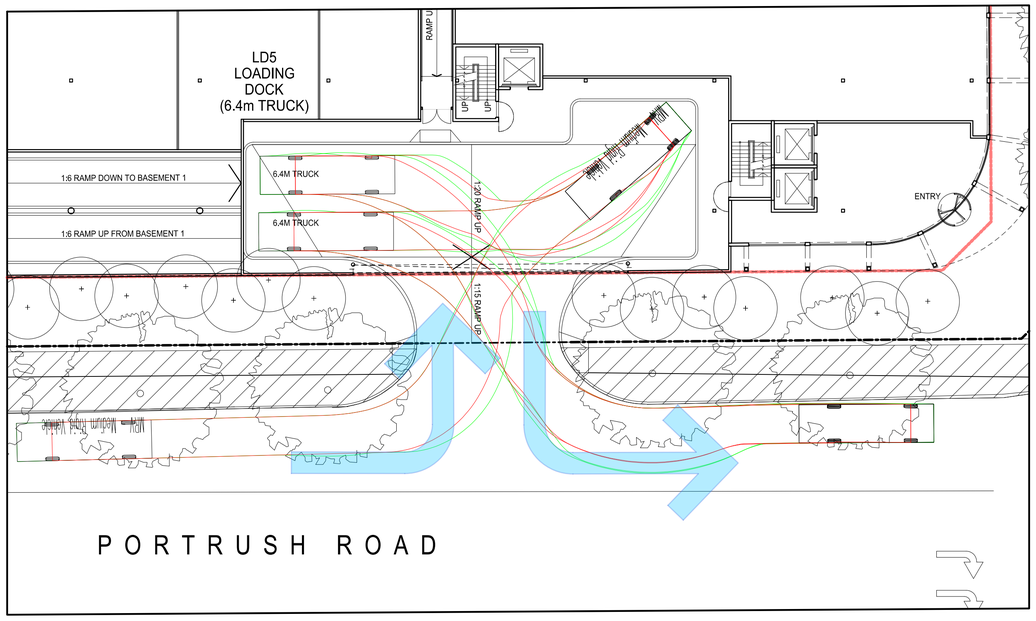
Purpose Of Issue: FOR INFORMATION



01 — LOADING DOCK 1 & 3
1:250



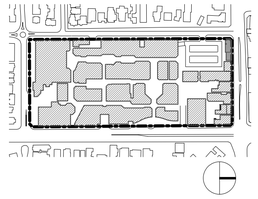
02 — LOADING DOCK 4
1:250



01 — LOADING DOCK 5
1:250

Revisions			
No.	Description	By	Date
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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TRUCK OVERHANG

TRUCK WHEELS

BURNSIDE VILLAGE

Ti Titanium Property Investment

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

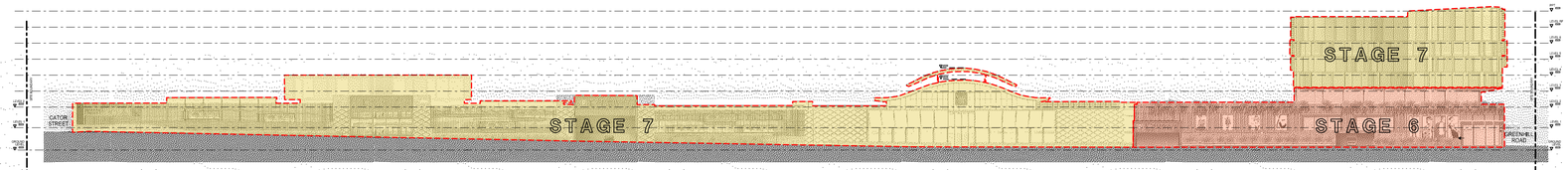
PROPOSED
LOADING DOCK - SERVICE VEHICLE
ACCESS DIAGRAMS

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
VB1	
Scale @ A1	Date
VARIES	07/02/18
Drawing Number	Revision
ATP-10154	P01

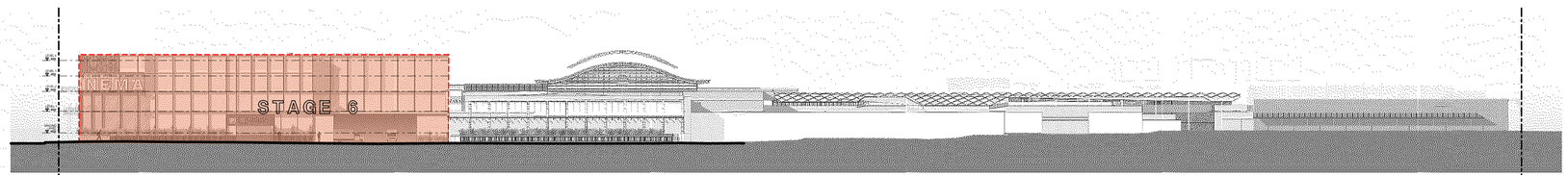
File Name: BV-TBG-ZA-00-DR-ATP-10154

Purpose Of Issue

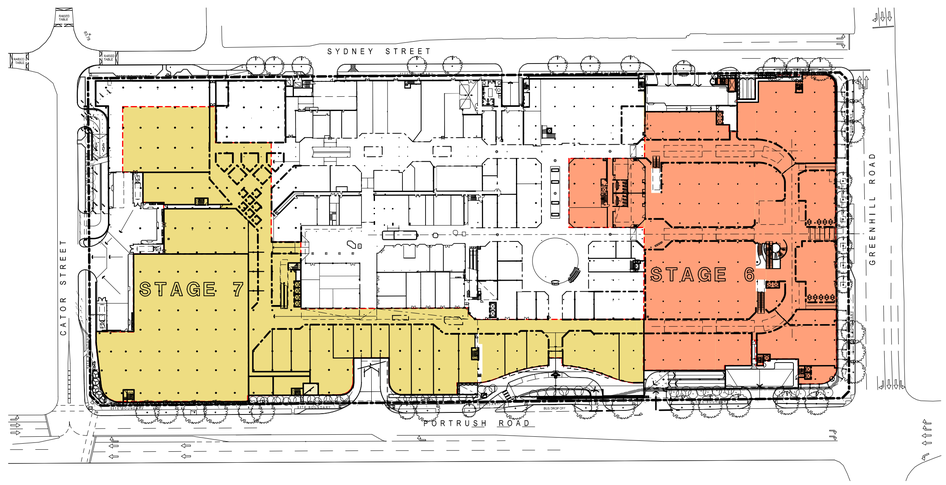
FOR INFORMATION



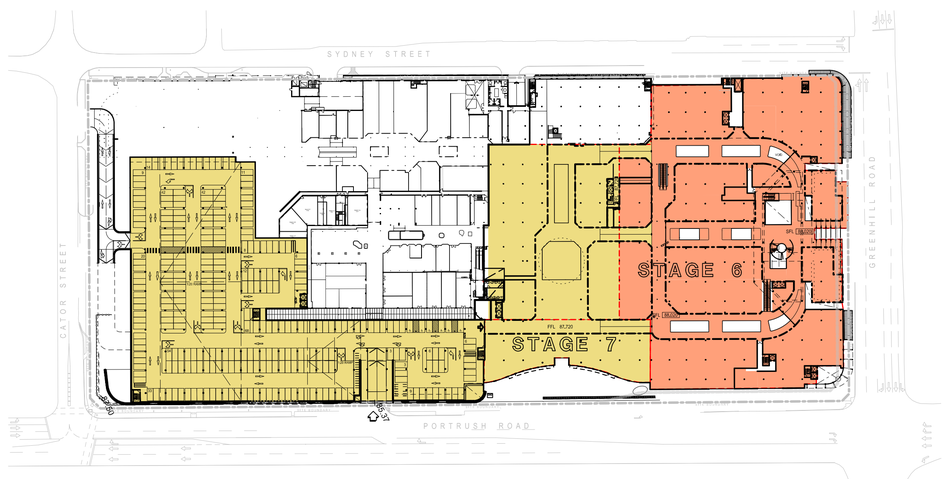
EAST ELEVATION



WEST ELEVATION



GROUND PLAN

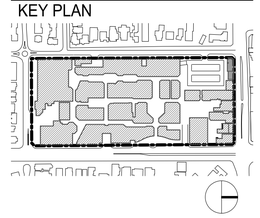


LEVEL 1 PLAN

Revisions

No.	Description	By	Date
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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STAGE 6

STAGE 7

BURNSIDE VILLAGE

Ti Titanium Property Investment

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
STAGING DIAGRAM

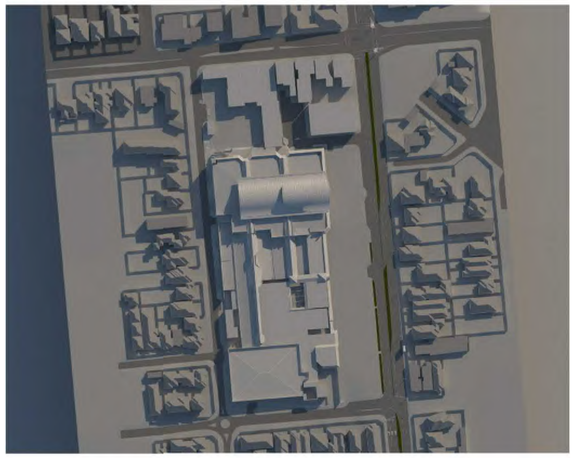
Status: TOWN PLANNING
Checked by:

Drawn By: VB1
Approved By:

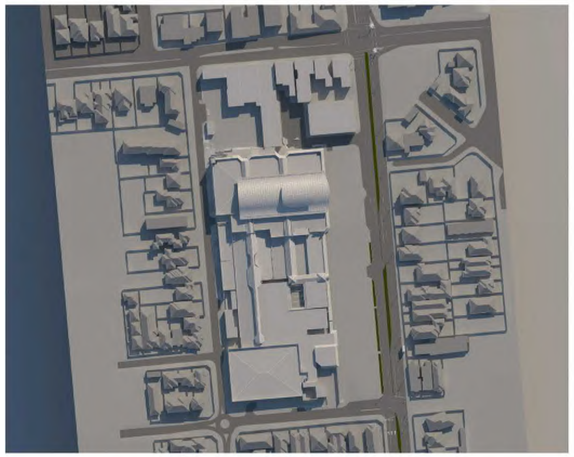
Scale @ A1: N.T.S.
Date: 07/02/18

Drawing Number: ATP-10155
File Name: BV-TBG-ZA-00-DR-ATP-10155
Revision: P01

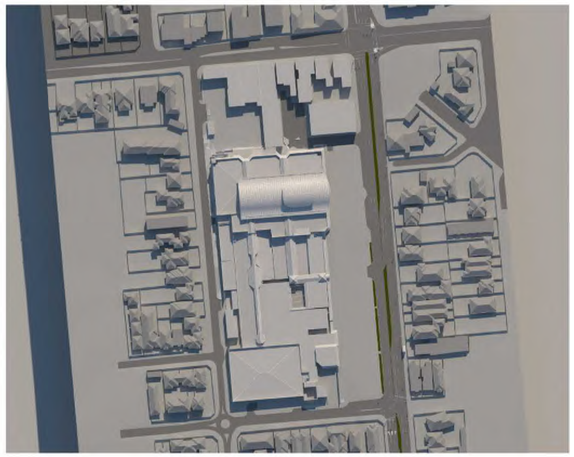
Purpose Of Issue: FOR INFORMATION



22 JUNE, 9:00AM



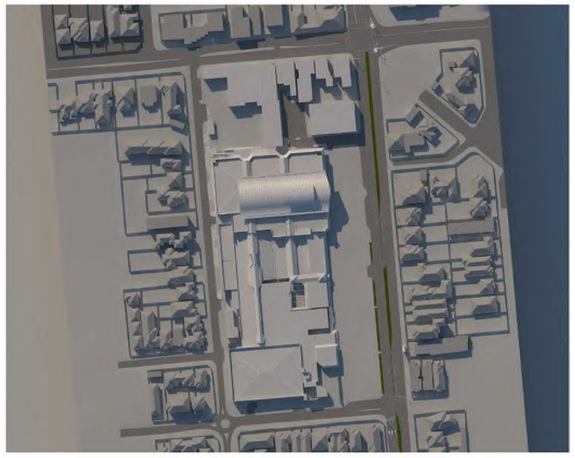
22 JUNE, 10:00AM



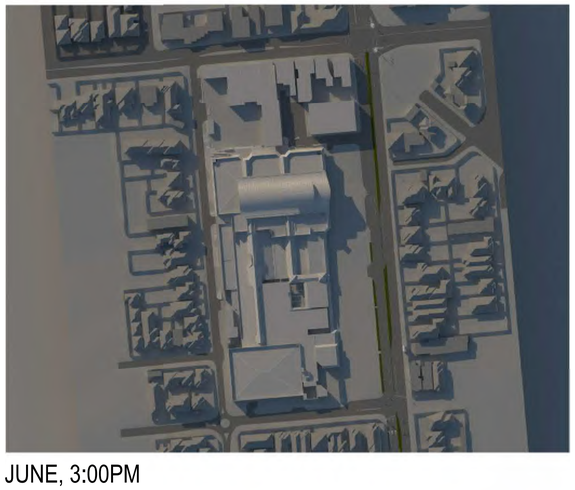
22 JUNE, 11:00AM

22 JUNE, 12:00PM

22 JUNE, 1:00PM



22 JUNE, 2:00PM



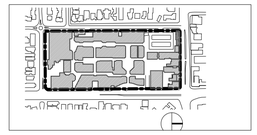
22 JUNE, 3:00PM

22 JUNE, 4:00PM

22 JUNE, 5:00PM

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18



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BURNSIDE VILLAGE

Ti Titanium Property Investment

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

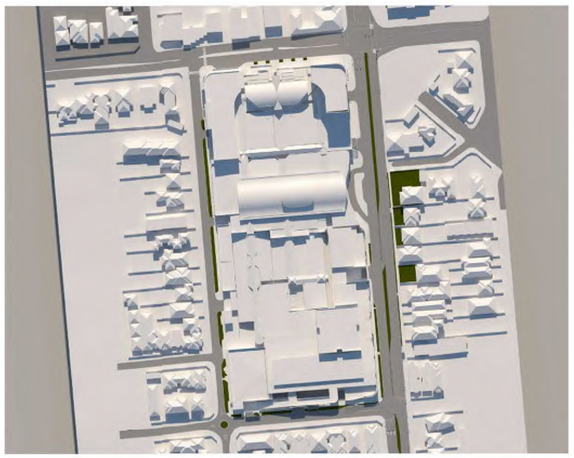
EXISTING BUILDING
SHADOW DIAGRAMS

Status: TOWN PLANNING
Checked by:
Drawn By: VB1
Approved By:
Scale @ A1
Date: 07/02/18
Drawing Number: ATP-10160
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-10160
Purpose Of Issue: FOR INFORMATION

22 JUNE, 9:00AM

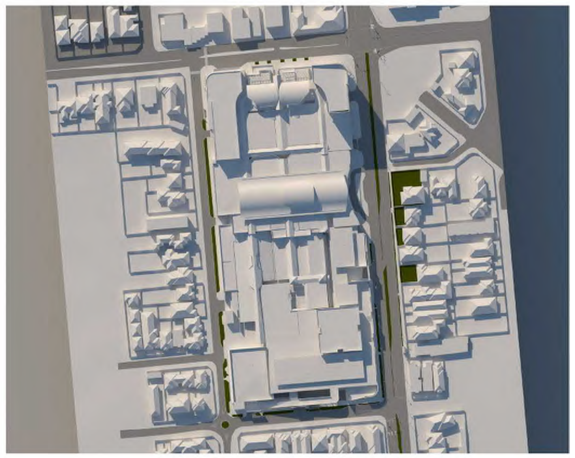
22 JUNE, 10:00AM

22 JUNE, 11:00AM

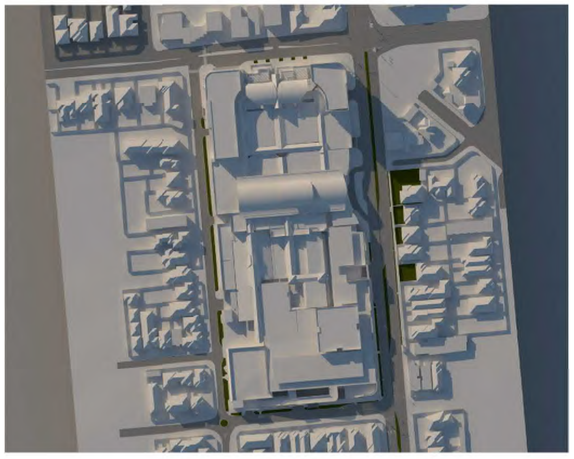


22 JUNE, 12:00PM

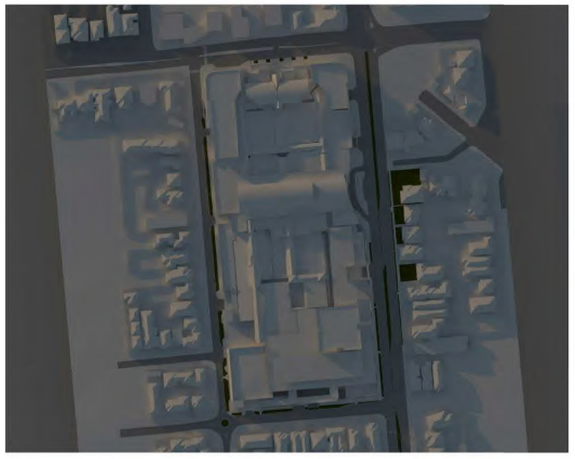
22 JUNE, 1:00PM



22 JUNE, 2:00PM



22 JUNE, 3:00PM

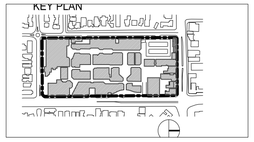


22 JUNE, 4:00PM

22 JUNE, 5:00PM

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED BUILDING
SHADOW DIAGRAMS

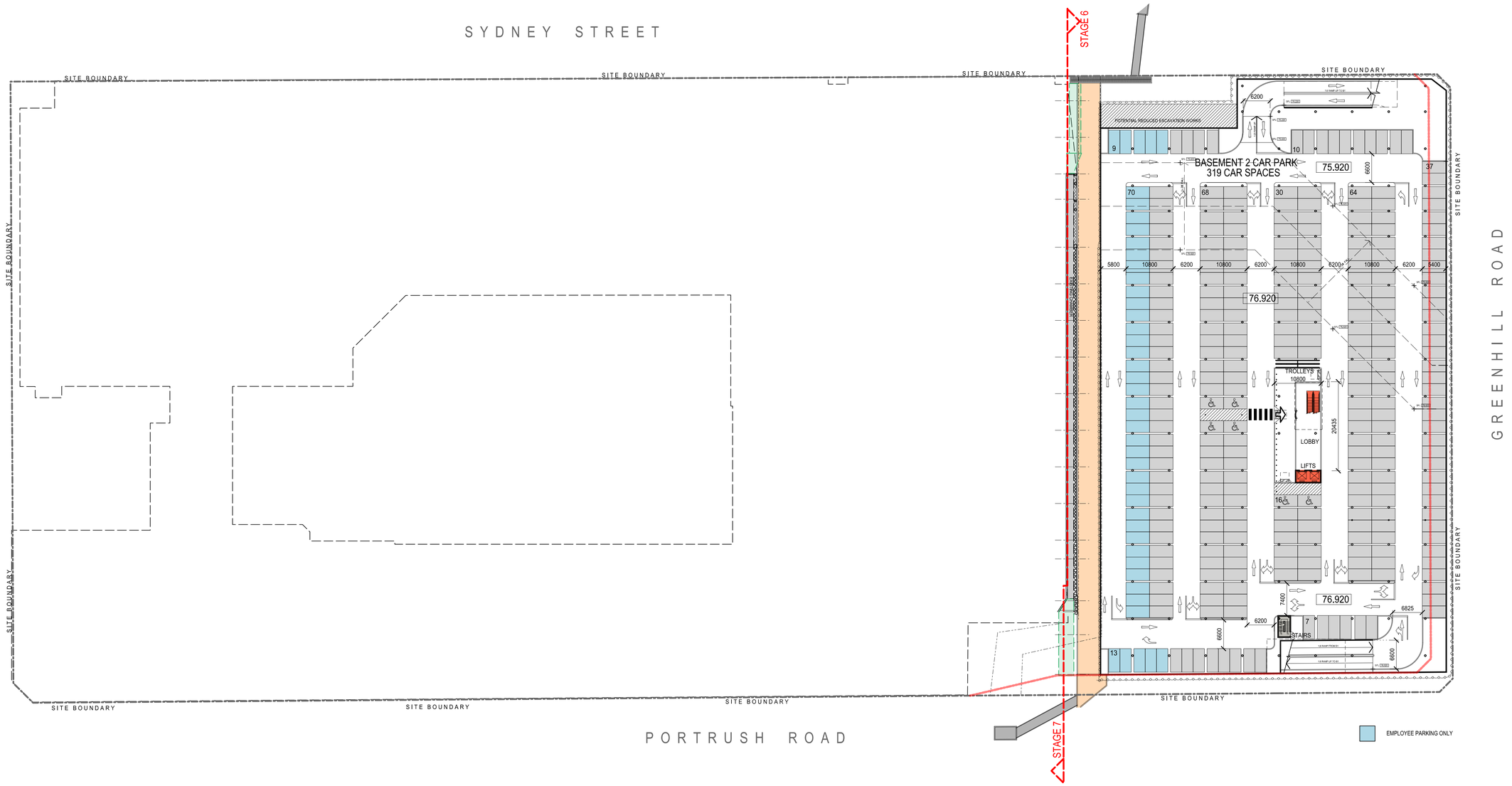
Status: TOWN PLANNING
Checked by:

Drawn By: VB1
Approved By:

Scale @ A1
Date: 07/02/18

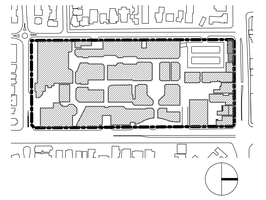
Drawing Number: ATP-10161
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-10161

Purpose Of Issue
FOR INFORMATION



Revisions			
No.	Description	By	Date
P00	ISSUE FOR COORDINATOR GENERAL	HD	24/10/18
P01	ISSUED FOR INFORMATION	HD	13/11/18
P02	ISSUED FOR INFORMATION	HD	20/11/18
P03	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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LEGEND

- VERTICAL TRANSPORT LOCATIONS
- NEW CARPARK
- MALL SPACE
- SEATING ZONES
- RETAIL TENANCIES
- FOOD & BEVERAGE TENANCIES
- MINI-MAJOR TENANCIES
- MAJOR TENANCIES
- OFFICE
- AMENITIES
- BANKS & SERVICES

BURNSIDE VILLAGE

Ti Titanium Property Investment

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
BASEMENT B2 FLOOR PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
HD	
Scale @ A1	Date
1:500	24/10/18
Drawing Number	Revision
ATP-20199	P03

File Name: BV-TBG-ZA-00-DR-ATP-20199

Purpose Of Issue

FOR INFORMATION

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	ISSUE	HD	24/09/18
P02	ISSUE FOR COORDINATOR GENERAL	GS	24/10/18
P03	ISSUED FOR INFORMATION	HD	13/11/18
P04	ISSUED FOR INFORMATION	HD	20/11/18
P05	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

SYDNEY STREET

PORTRUSH ROAD

CATOR STREET

GREENHILL ROAD

SITE BOUNDARY

EXISTING RECONFIGURED BASEMENT CARPARK
600 CAR SPACES

BASEMENT 1 CARPARK TOTAL SPACES
1097 CAR SPACES

B1 CARPARK LEVEL
205 CAR SPACES

BASEMENT 1 CARPARK (NORTH)
296 CAR SPACES

HYDRAULIC DAF PLANT
ST 1A,1B, 2, 3

EXISTING OLED OVER

LOADING OVER

13 BIKES

15 BIKES

MALL ENTRY

STAIRS

LIFT LOBBY

EXISTING BUILDING OVERHEAD

SMALL CARS

NEW SWITCHROOM ST. 1A

NEW SWITCHROOM ST. 1B

NEW SWITCHROOM ST. 1B & 2

EXIST SUBST.

GREEN VOID ABOVE

STAGE 6

STAGE 7

SURCHARGE CHAMBER

1No. EXISTING TREES TO REMOVE

STORAGE

GOODS LIFT

TROLLEY

RAMP UP

RAMP DOWN

SCREED UP

PIT

LIFT STAIRS

STAIRS & ESCALATORS

LIFT LOBBY

LIFT ABOVE

UNDER BASEMENT

NEW SIGNALISED INTERSECTION

79.020

80.020

80.500

KEY PLAN

1. DO NOT SCALE DRAWINGS
2. CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR FABRICATION.
3. ALL LEVELS ARE TO AHD UNLESS NOTED OTHERWISE.

LEGEND

- VERTICAL TRANSPORT LOCATIONS
- CAR PARKING SPACES
- MALL SPACE
- SEATING ZONES
- RETAIL TENANCIES
- FOOD & BEVERAGE TENANCIES
- MINI-MAJOR TENANCIES
- MAJOR TENANCIES
- OFFICE
- AMENITIES
- BANKS & SERVICES

NOTE: EXISTING AREAS SHADED IN MATCHING LIGHTER COLOURS

BURNSIDE VILLAGE

Titanium Property Investment

BUCHAN

The Buchan Group Melbourne Pty Ltd
A.C.N. 606 569 653
Architects Planners & Interior Designers
Level 1, 696 Bourke Street, Melbourne
Victoria 3000, AUSTRALIA
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Email: melbourne@buchangroup.com.au

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
BASEMENT B1 FLOOR PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
HD	
Scale @ A1	Date
1:500	24/10/18
Drawing Number	Revision
ATP-20200	P05

File Name: BV-TBG-ZA-00-DR-ATP-20200

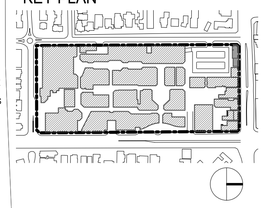
Purpose Of Issue

FOR INFORMATION

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	ISSUED FOR INFORMATION	VB1	NYI
P02	ISSUE FOR COORDINATOR GENERAL	HD	24/10/18
P03	ISSUED FOR INFORMATION	HD	13/11/18
P04	ISSUED FOR INFORMATION	HD	20/11/18
P05	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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LEGEND

- VERTICAL TRANSPORT LOCATIONS
- CAR PARKING SPACES
- MALL SPACE
- SEATING ZONES
- RETAIL TENANCIES
- FOOD & BEVERAGE TENANCIES
- MINI-MAJOR TENANCIES
- MAJOR TENANCIES
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Project 317043

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
GROUND FLOOR PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
VB1	
Scale @ A1	Date
1:500	24/10/18
Drawing Number	Revision
ATP-20201	P05

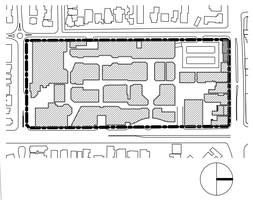
File Name: BV-TBG-ZA-00-DR-ATP-20201

Purpose Of Issue

FOR INFORMATION

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	ISSUED FOR INFORMATION	VB1	NYI
P02	ISSUE FOR COORDINATOR GENERAL	GS	24/10/18
P03	ISSUED FOR INFORMATION	HD	13/11/18
P04	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



LEGEND

- VERTICAL TRANSPORT LOCATIONS
- NEW CARPARK
- MALL SPACE
- SEATING ZONES
- RETAIL TENANCIES
- FOOD & BEVERAGE TENANCIES
- MINI-MAJOR TENANCIES
- MAJOR TENANCIES
- OFFICE
- AMENITIES
- BANKS & SERVICES

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
LEVEL 1 PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	**Approved By**
VB1	
Scale @ A1	**Date**
1:500	24/10/18
Drawing Number	**Revision**
ATP-20202	P04

File Name: BV-TBG-ZA-00-DR-ATP-20202

Purpose Of Issue

FOR INFORMATION

SYDNEY STREET

CATOR STREET

PORTRUSH ROAD

GREENHILL ROAD

STAGE 6

STAGE 7

ST

CINEMA 6 | CINEMA 5 | CINEMA 4 | CINEMA 3 | CINEMA 2 | CINEMA 1

CINEMAS
2311 Sq. m
SFL 92.520

AMENITIES

STAIRS

BAR

LOBBY

LIFT

WALKWAY

VOID

ESCALATORS

WALKWAY LINK

ROOFTOP BAR
216 Sq. m
SFL 92.520

ROOFTOP BAR
235 Sq. m
SFL 92.520

UP

POSSIBLE SOLAR PANEL ZONE

PLANTROOM
8500(W)
X 3000(D)

PLANT
14500(W)
X 4500(D)
3m HIGH
ACOUSTIC
SCREEN

PLANT
4500(W)
X 6500(D)
3m HIGH
ACOUSTIC
SCREEN

PLANTROOM
10000(W)
X 4500(D)
3m HIGH
ACOUSTIC
SCREEN

PLANT
4500(W)
X 3000(D)

PLANTROOM
10000(W)
X 4500(D)
3m HIGH
ACOUSTIC
SCREEN

OFFICES L2
902 Sq. m
SFL 92.520

LIFTS/
STAIRS

BALCONY

LEVEL 2 CARPARK
335 CAR SPACES

9756 Sq. m

91.710

90.570

93.360

90.720

L1 MALL ENTRY

LIFTS/
LOBBY

GLAZED ROOF SKYLIGHT

NEW GLAZED ATRIUM

1:20 RAMP

1:12 RAMP UP TO L1

1:12 RAMP UP TO L2

SPEED HUMP

TROLLEY

LIFTS

STAIRS

VOID

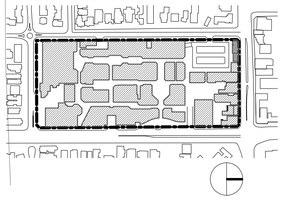
7000
6010
6600
6805
6827
6684
6400
6800
9500

14
22
10
40
8
6
12
32
88
5
52
30

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	ISSUED FOR INFORMATION	VB1	NYI
P02	ISSUE FOR COORDINATOR GENERAL	HD	24/10/18
P03	ISSUED FOR INFORMATION	HD	13/11/18
P04	ISSUED FOR INFORMATION	HD	20/11/18
P05	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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2. CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR FABRICATION.
3. ALL LEVELS ARE TO AHD UNLESS NOTED OTHERWISE.

LEGEND

- VERTICAL TRANSPORT LOCATIONS
- CAR PARKING SPACES
- MALL SPACE
- SEATING ZONES
- RETAIL TENANCIES
- FOOD & BEVERAGE TENANCIES
- MINI-MAJOR TENANCIES
- MAJOR TENANCIES
- OFFICE
- AMENITIES
- BANKS & SERVICES

NOTE: EXISTING AREAS SHADED IN MATCHING LIGHTER COLOURS

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Ti Titanium Property Investment

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
LEVEL 2 PLAN

Status: TOWN PLANNING
Checked by:

Drawn By: VB1
Approved By:

Scale @ A1: 1:500
Date: 24/10/18

Drawing Number: ATP-20203
Revision: P05
File Name: BV-TBG-ZA-00-DR-ATP-20203

Purpose Of Issue: FOR INFORMATION

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	ISSUED FOR INFORMATION	VB1	NYI
P02	ISSUE FOR COORDINATOR GENERAL	HD	24/10/18
P03	ISSUED FOR INFORMATION	HD	13/11/18
P04	ISSUED FOR INFORMATION	HD	20/11/18
P05	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

SYDNEY STREET

PORTRUSH ROAD

CATOR STREET

GREENHILL ROAD

SITE BOUNDARY

STAGE 6

STAGE 7

POSSIBLE SOLAR PANEL ZONE

PLANTROOM
4500(W)
X 3000(D)

PLANT
4500(W)
X 4500(D)
3m HIGH
ACOUSTIC
SCREEN

PLANTROOM
10000(W)
X 4500(D)
3m HIGH
ACOUSTIC
SCREEN

PLANT
4500(W)
X 3000(D)

PLANT
4500(W)
X 6500(D)
3m HIGH
ACOUSTIC
SCREEN

STAIRS

LIFT/
LOBBY

VOID

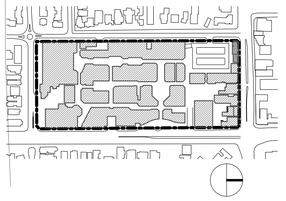
OFFICES
1500 Sq. m

AMENITIES

OFFICES L3-L6
1112 Sq. m

LIFTS/
STAIRS

KEY PLAN



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LEGEND

- VERTICAL TRANSPORT LOCATIONS
- CAR PARKING SPACES
- MALL SPACE
- SEATING ZONES
- RETAIL TENANCIES
- FOOD & BEVERAGE TENANCIES
- MINI-MAJOR TENANCIES
- MAJOR TENANCIES
- OFFICE
- AMENITIES
- BANKS & SERVICES

NOTE: EXISTING AREAS SHADED IN MATCHING LIGHTER COLOURS

BURNSIDE VILLAGE

Ti Titanium Property Investment

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
LEVEL 3 PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
VB1	
Scale @ A1	Date
1:500	24/10/18
Drawing Number	Revision
ATP-20204	P05

File Name: BV-TBG-ZA-00-DR-ATP-20204

Purpose Of Issue

FOR INFORMATION

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	ISSUED	HD	24/09/18
P02	ISSUE FOR COORDINATOR GENERAL	GS	24/10/18
P03	ISSUED FOR INFORMATION	HD	20/11/18
P04	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

SYDNEY STREET

PORTRUSH ROAD

CATOR STREET

GREENHILL ROAD

SITE BOUNDARY

STAGE 6

STAGE 7

PLANTROOM 10000(W) X 4500(D) 3m HIGH ACOUSTIC SCREEN

VOID

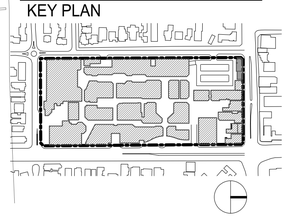
AMENITIES

STAIRS

OFFICES L3-L6
1112 Sq. m

LIFTS/ STAIRS

KEY PLAN



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LEGEND

- VERTICAL TRANSPORT LOCATIONS
- CAR PARKING SPACES
- MALL SPACE
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- RETAIL TENANCIES
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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
LEVEL 4 PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
VB1	
Scale @ A1	Date
1:500	24/10/18
Drawing Number	Revision
ATP-20205	P04

File Name: BV-TBG-ZA-00-DR-ATP-20205

Purpose Of Issue

FOR INFORMATION

SYDNEY STREET

PORTRUSH ROAD

GREENHILL ROAD

CATOR STREET

SITE BOUNDARY

STAGE 6

STAGE 7

PLANTROOM 10000(W) X 4500(D) 3m HIGH ACOUSTIC SCREEN

PLANTROOM 10000(W) X 4500(D) 3m HIGH ACOUSTIC SCREEN

VOID

AMENITIES

STAIRS

OFFICES L3-L6
1112 Sq. m

LIFTS/ STAIRS

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	ISSUED	HD	24/09/18
P02	ISSUE FOR COORDINATOR GENERAL	GS	24/10/18
P03	ISSUED FOR INFORMATION	HD	20/11/18
P04	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN

1. DO NOT SCALE DRAWINGS
2. CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR FABRICATION.
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LEGEND

- VERTICAL TRANSPORT LOCATIONS
- CAR PARKING SPACES
- MALL SPACE
- SEATING ZONES
- RETAIL TENANCIES
- FOOD & BEVERAGE TENANCIES
- MINI-MAJOR TENANCIES
- MAJOR TENANCIES
- OFFICE
- AMENITIES
- BANKS & SERVICES

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BURNSIDE VILLAGE

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
LEVEL 5 PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
VB1	
Scale @ A1	Date
1:500	24/10/18
Drawing Number	Revision
ATP-20206	P04

File Name: BV-TBG-ZA-00-DR-ATP-20206

Purpose Of Issue

FOR INFORMATION

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

SYDNEY STREET

SITE BOUNDARY

STAGE 6

STAGE 7

CATOR STREET

GREENHILL ROAD

PORTRUSH ROAD

PLANTROOM 10000(W) X 4500(D) 3m HIGH ACOUSTIC SCREEN

PLANTROOM 10000(W) X 4500(D) 3m HIGH ACOUSTIC SCREEN

PLA 450(X 30

VOID

90.570

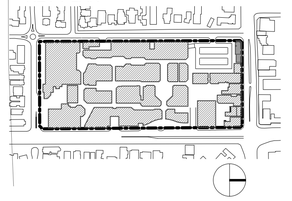
AMENITIES 7

STAIRS

OFFICES L3-L6
1112 Sq. m

LIFTS/ STAIRS

KEY PLAN



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LEGEND

- VERTICAL TRANSPORT LOCATIONS
- CAR PARKING SPACES
- MALL SPACE
- SEATING ZONES
- RETAIL TENANCIES
- FOOD & BEVERAGE TENANCIES
- MINI-MAJOR TENANCIES
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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

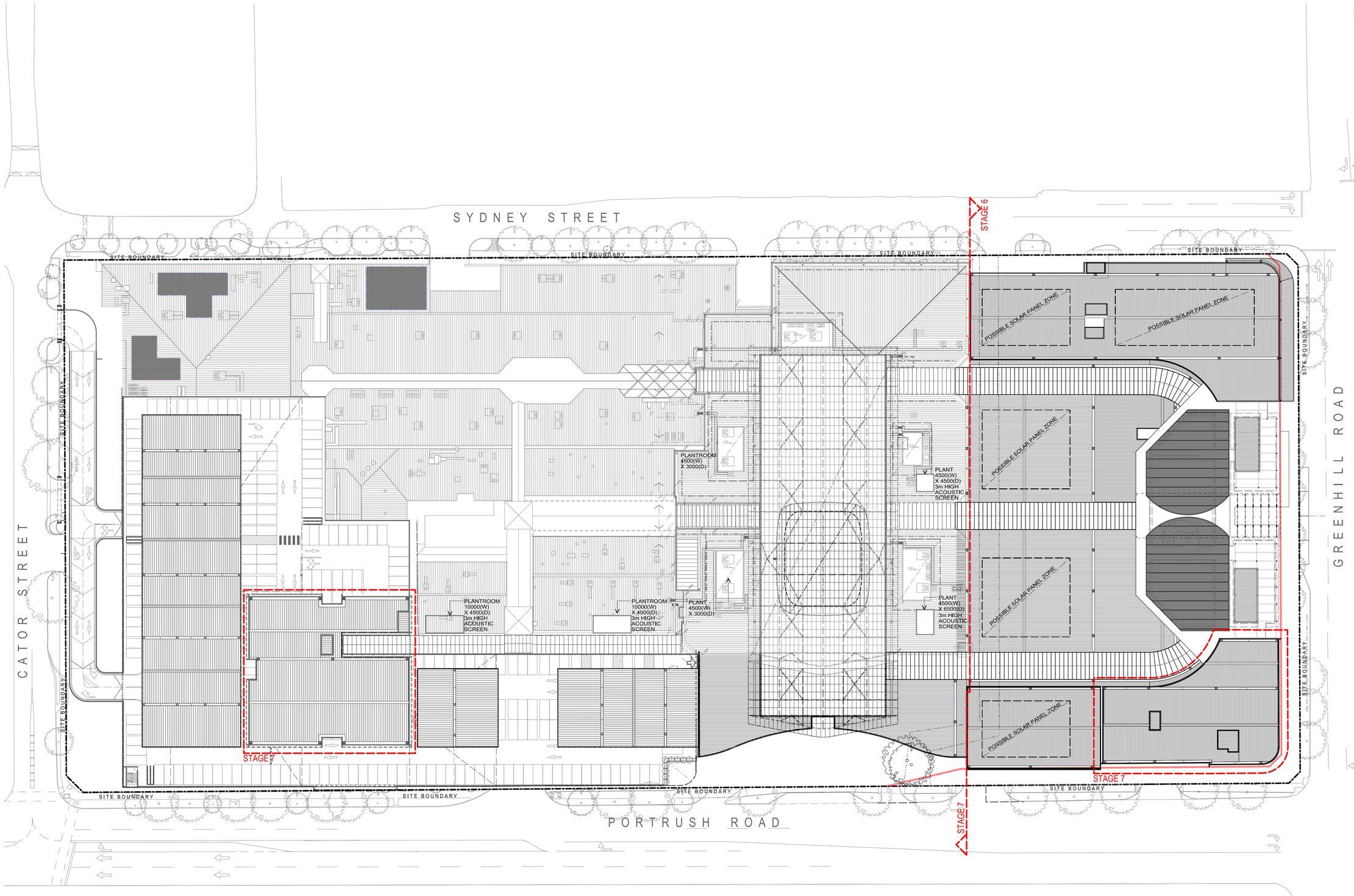
PROPOSED
LEVEL 6 PLAN

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
HD	
Scale @ A1	Date
VARIES	24/10/18
Drawing Number	Revision
ATP-20207	P01

File Name: BV-TBG-ZA-00-DR-ATP-20207

Purpose Of Issue

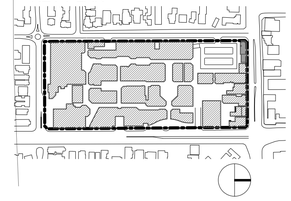
FOR INFORMATION



Revisions

No.	Description	By	Date
P00	ISSUE FOR COORDINATOR GENERAL	HD	24/10/18
P01	ISSUED FOR INFORMATION	HD	20/11/18
P02	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PROPOSED
ROOF PLAN

Status: TOWN PLANNING
Checked by:

Drawn By: VB1
Approved By:

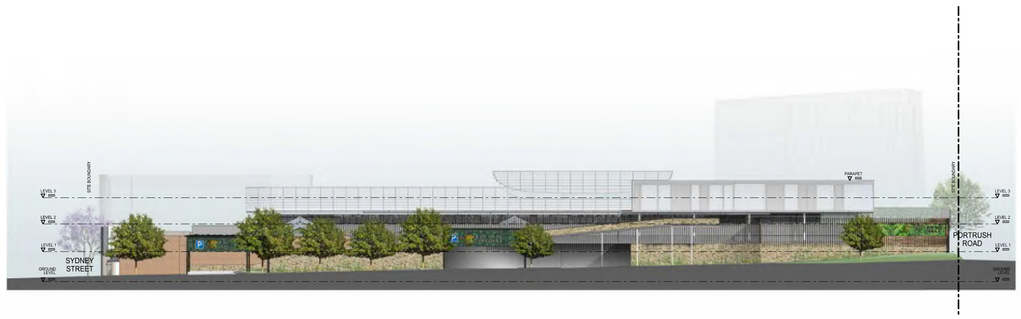
Scale @ A1: 1:500
Date: 24/10/18

Drawing Number: ATP-20210
Revision: P02
File Name: BV-TBG-ZA-00-DR-ATP-20210

Purpose Of Issue: FOR INFORMATION

1 - EAST ELEVATION - PORTRUSH RD

1:500



2 - SOUTH ELEVATION - CATOR ST

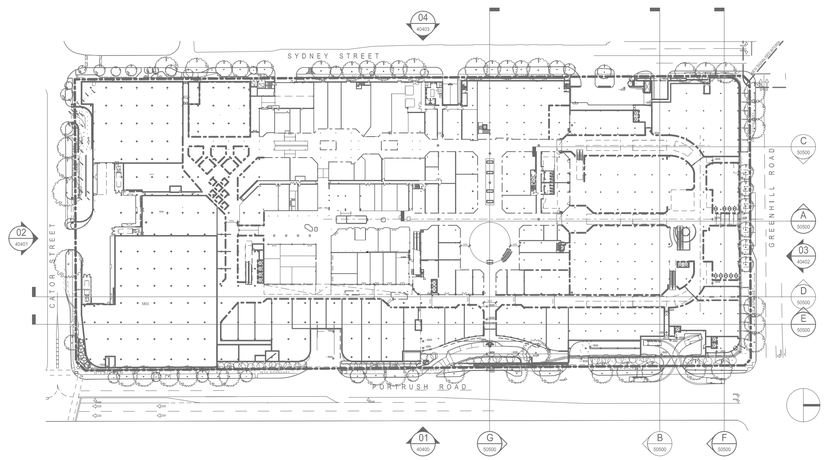
1:500

3 - NORTH ELEVATION - GREENHILL RD

1:500

4 - WEST ELEVATION - SYDNEY ST

1:500



Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

1. DO NOT SCALE DRAWINGS
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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

ELEVATIONS
STAGE 7

Status: TOWN PLANNING
Checked by:
Drawn By: GS
Approved By:
Scale @ A1: 1:500
Date: 20/02/18
Drawing Number: ATP-40000
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-40000
Purpose Of Issue: FOR INFORMATION

A LOCAL ADELAIDE BASKET STONE

B BAGGED BRICK

C PATINA COPPER TO MATCH EXISTING SIGNAGE

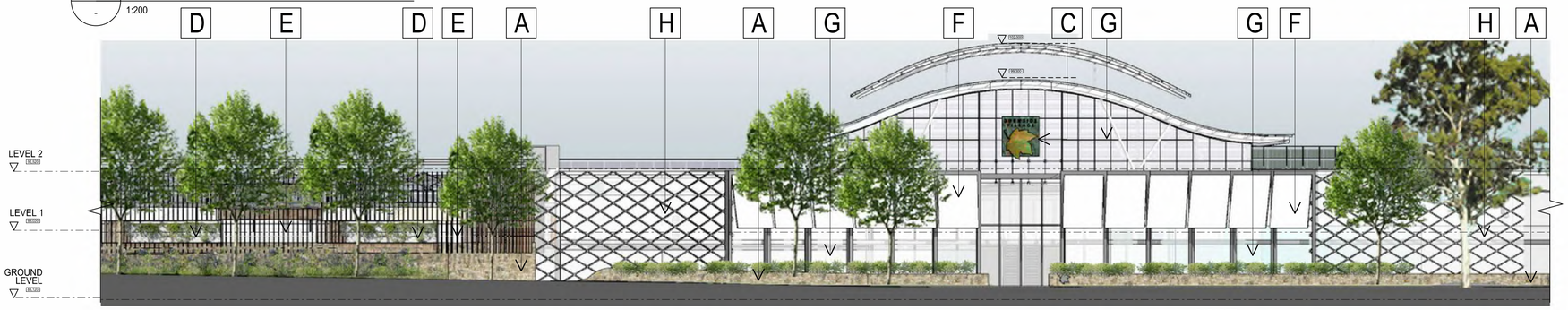
D RECESSED GREEN WALL. REFER TO LANDSCAPE ARCHITECT

E TIMBER SCREEN

F COPPER-LOOK SIGNAGE BOARDS

G GLAZING WITH ALUMINIUM FRAME

01 - EAST ELEVATION - PORTRUSH RD
1:200

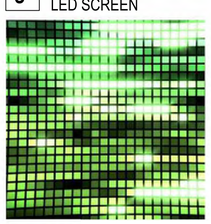


01 - EAST ELEVATION - PORTRUSH RD (CONTINUED)
1:200

H LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

I STEEL FRAME

J LED SCREEN

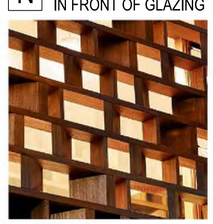


K PRECAST CONCRETE PANEL

L LOCALLY SOURCED ADELAIDE TIMBER

M TIMBER LOUVRES

N LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING



Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

1. DO NOT SCALE DRAWINGS
2. CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR FABRICATION.
3. ALL LEVELS ARE TO AHD UNLESS NOTED OTHERWISE.

BURNSIDE VILLAGE

Ti Titanium Property Investment

BUCHAN

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Email: melbourne@buchangroup.com.au

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Project **317043**

BURNSIDE VILLAGE DEVELOPMENT APPLICATION

Drawing Title

ELEVATION
STAGE 7
PORTRUSH ROAD

Status: TOWN PLANNING
Checked by:

Drawn By: GS
Approved By:

Scale @ A1: 1:200
Date: 07/02/18

Drawing Number: ATP-40400
Revision: P01

File Name: BV-TBG-ZA-00-DR-ATP-40400

Purpose Of Issue: FOR INFORMATION

A LOCAL ADELAIDE BASKET STONE

B BAGGED BRICK

C PATINA COPPER TO MATCH EXISTING SIGNAGE

D RECESSED GREEN WALL. REFER TO LANDSCAPE ARCHITECT

E TIMBER SCREEN

F COPPER-LOOK SIGNAGE BOARDS

G GLAZING WITH ALUMINIUM FRAME

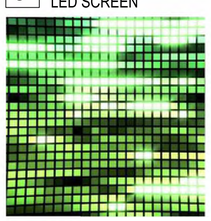
Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

02 - SOUTH ELEVATION - CATOR ST
1:200

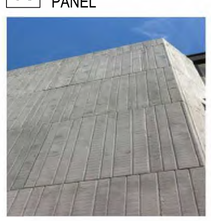
H LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

I STEEL FRAME

J LED SCREEN



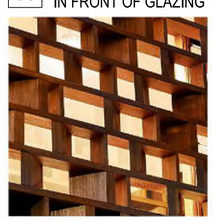
K PRECAST CONCRETE PANEL



L LOCALLY SOURCED ADELAIDE TIMBER

M TIMBER LOUVRES

N LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING



BURNSIDE VILLAGE

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

ELEVATION
STAGE 7
CATOR STREET

Status: TOWN PLANNING
Checked by:
Drawn By: GS
Approved By:
Scale @ A1: 1:200
Date: 07/02/18
Drawing Number: ATP-40401
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-40401
Purpose Of Issue: FOR INFORMATION

A LOCAL ADELAIDE BASKET STONE

B BAGGED BRICK

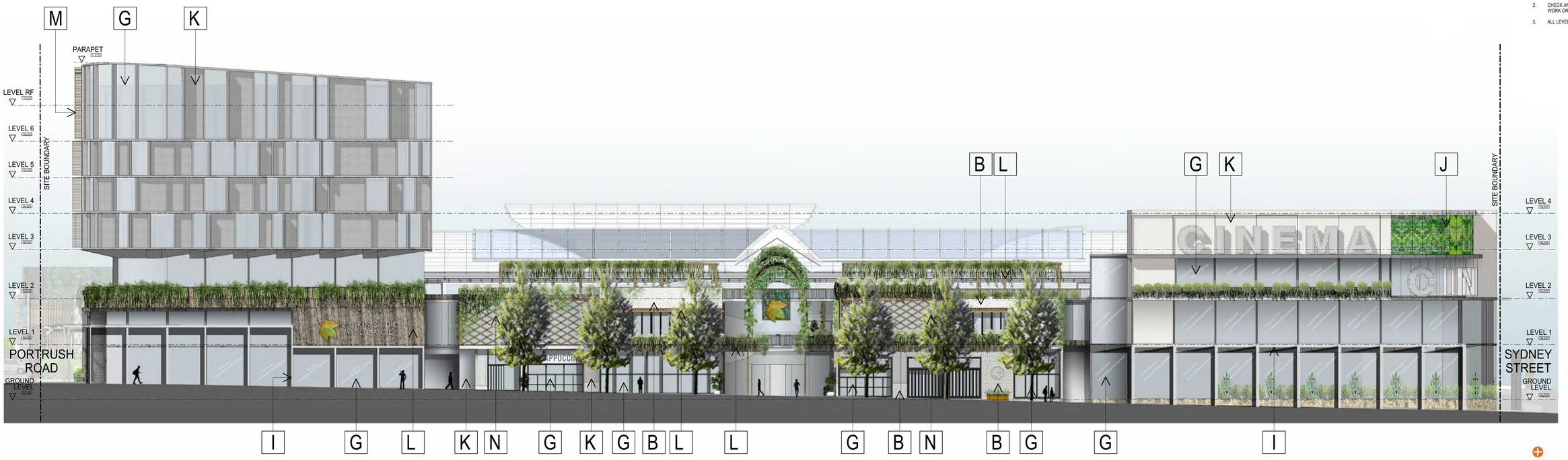
C PATINA COPPER TO MATCH EXISTING SIGNAGE

D RECESSED GREEN WALL. REFER TO LANDSCAPE ARCHITECT

E TIMBER SCREEN

F COPPER-LOOK SIGNAGE BOARDS

G GLAZING WITH ALUMINIUM FRAME

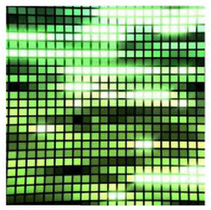


03 - NORTH ELEVATION - GREENHILL RD
1:200

H LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

I STEEL FRAME

J LED SCREEN



K PRECAST CONCRETE PANEL

L LOCALLY SOURCED ADELAIDE TIMBER

M TIMBER LOUVRES

N LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

Revisions

No.	Description	By	Date
		VB1	09/04/18
		GK	21/12/18

A LOCAL ADELAIDE BASKET STONE

B BAGGED BRICK

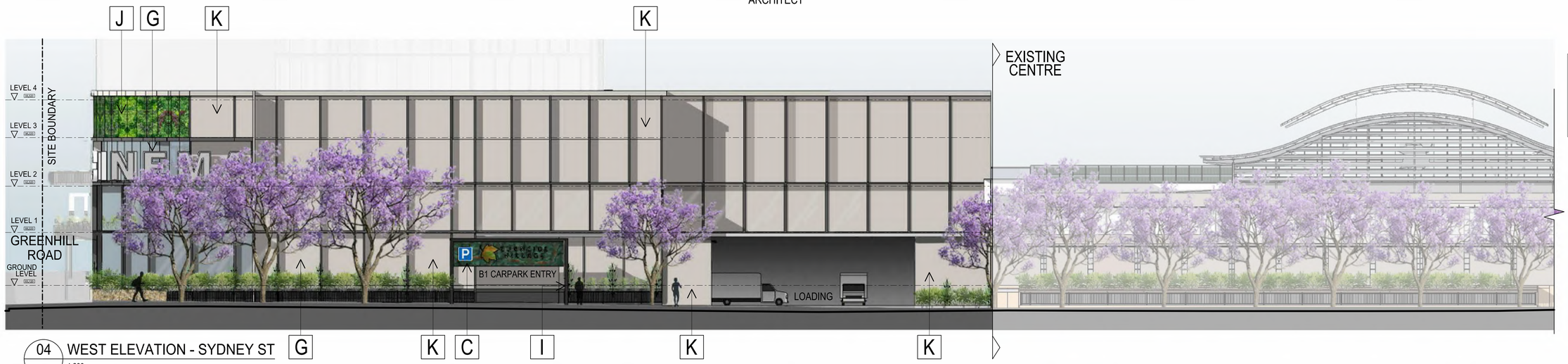
C PATINA COPPER TO MATCH EXISTING SIGNAGE

D RECESSED GREEN WALL. REFER TO LANDSCAPE ARCHITECT

E TIMBER SCREEN

F COPPER-LOOK SIGNAGE BOARDS

G GLAZING WITH ALUMINIUM FRAME



04 - WEST ELEVATION - SYDNEY ST
1:200

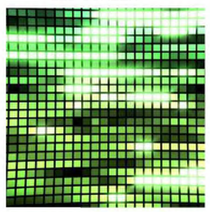
04 - WEST ELEVATION - SYDNEY ST (CONTINUED)
1:200

04 - WEST ELEVATION - SYDNEY ST (CONTINUED)
1:200

H LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

I STEEL FRAME

J LED SCREEN



K PRECAST CONCRETE PANEL

L LOCALLY SOURCED ADELAIDE TIMBER

M TIMBER LOUVRES

N LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE

Tj Titanium Property Investment
317043

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Project
BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title
ELEVATION
STAGE 7
SYDNEY STREET

Status: TOWN PLANNING
Checked by:
Drawn By: GS
Approved By:
Scale @ A1: 1:200
Date: 07/02/18
Drawing Number: ATP-40403
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-40403
Purpose Of Issue: FOR INFORMATION

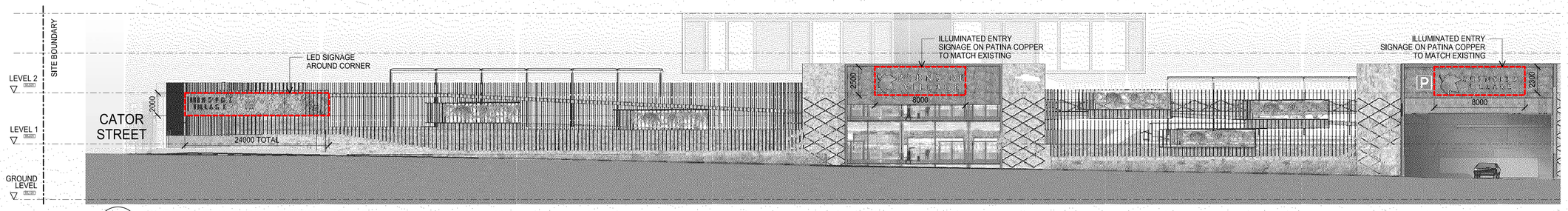
COPPER-LOOK SIGNAGE BOARDS

ILLUMINATED ENTRY SIGNAGE

LED SCREEN

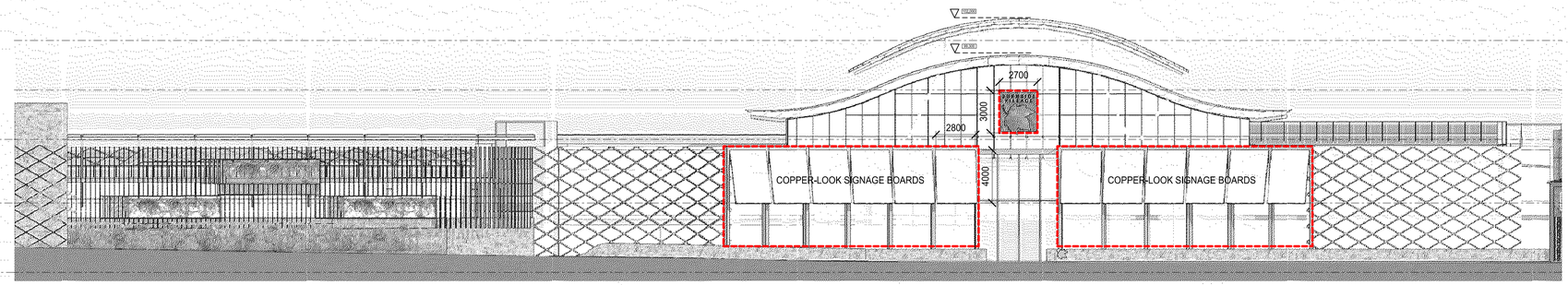
ILLUMINATED SIGNAGE BOARDS

INDIVIDUAL BLOCK LETTER SIGNAGE



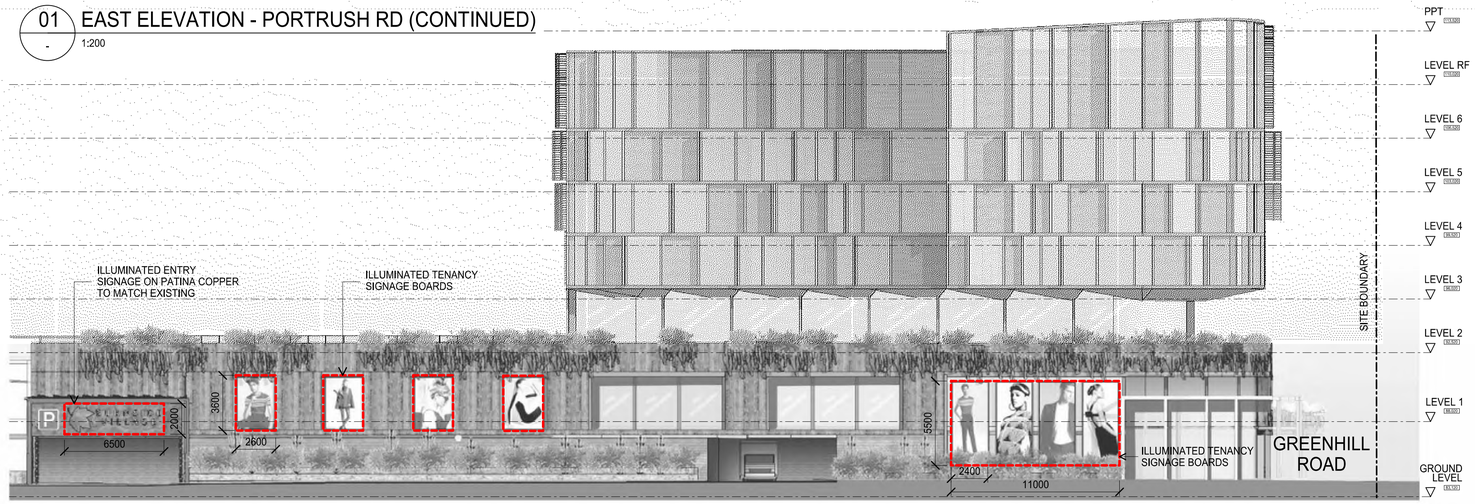
01 - EAST ELEVATION - PORTRUSH RD

1:200



01 - EAST ELEVATION - PORTRUSH RD (CONTINUED)

1:200

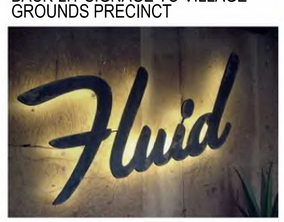


BLADE SIGNAGE

HANGING / PENDANT SIGNAGE

FEATURE SIGNAGE TO VILLAGE GROUNDS TENANCIES

BACK-LIT SIGNAGE TO VILLAGE GROUNDS PRECINCT



LANDSCAPE INTEGRATED SIGNAGE

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

1. DO NOT SCALE DRAWINGS
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BURNSIDE VILLAGE

Ti Titanium Property Investment

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

ELEVATION
PORTRUSH ROAD
SIGNAGE LOCATIONS

Status: TOWN PLANNING
Checked by:
Drawn By: VB1
Approved By:
Scale @ A1: 1:200
Date: 29/03/18
Drawing Number: ATP-40404
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-40404
Purpose Of Issue: FOR INFORMATION

COPPER-LOOK SIGNAGE BOARDS

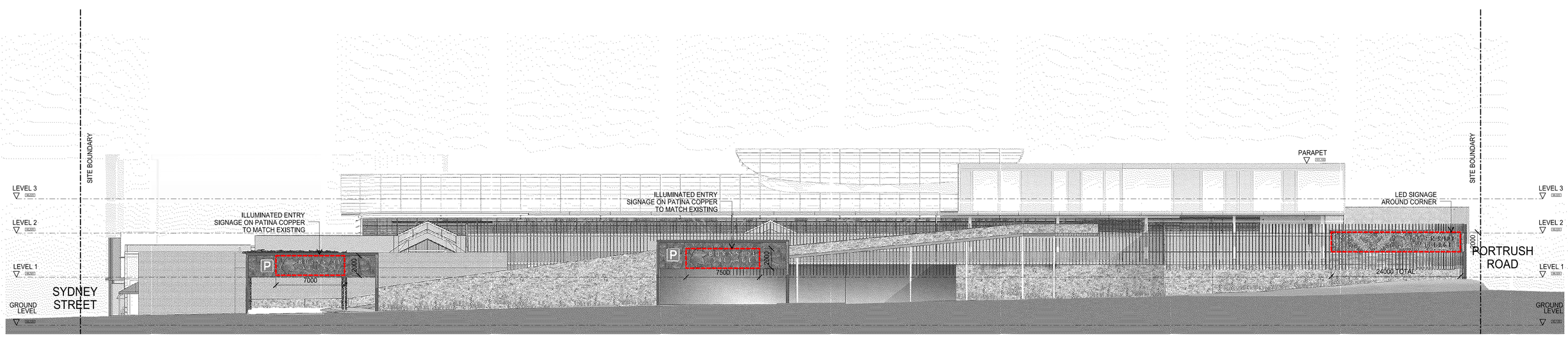
ILLUMINATED ENTRY SIGNAGE

LED SCREEN

ILLUMINATED SIGNAGE BOARDS

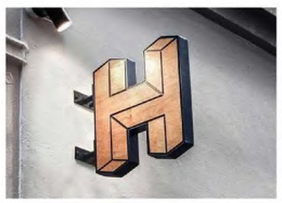
INDIVIDUAL BLOCK LETTER SIGNAGE

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18



02 SOUTH ELEVATION - CATOR ST
1:200

BLADE SIGNAGE



HANGING / PENDANT SIGNAGE

FEATURE SIGNAGE TO VILLAGE GROUNDS TENANCIES

BACK-LIT SIGNAGE TO VILLAGE GROUNDS PRECINCT

LANDSCAPE INTEGRATED SIGNAGE

BURNSIDE VILLAGE

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

ELEVATION
CATOR STREET
SIGNAGE LOCATIONS

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
VB1	
Scale @ A1	Date
1:200	29/03/18
Drawing Number	Revision
ATP-40405	P01

File Name: BV-TBG-ZA-00-DR-ATP-40405

Purpose Of Issue
FOR INFORMATION

COPPER-LOOK SIGNAGE BOARDS

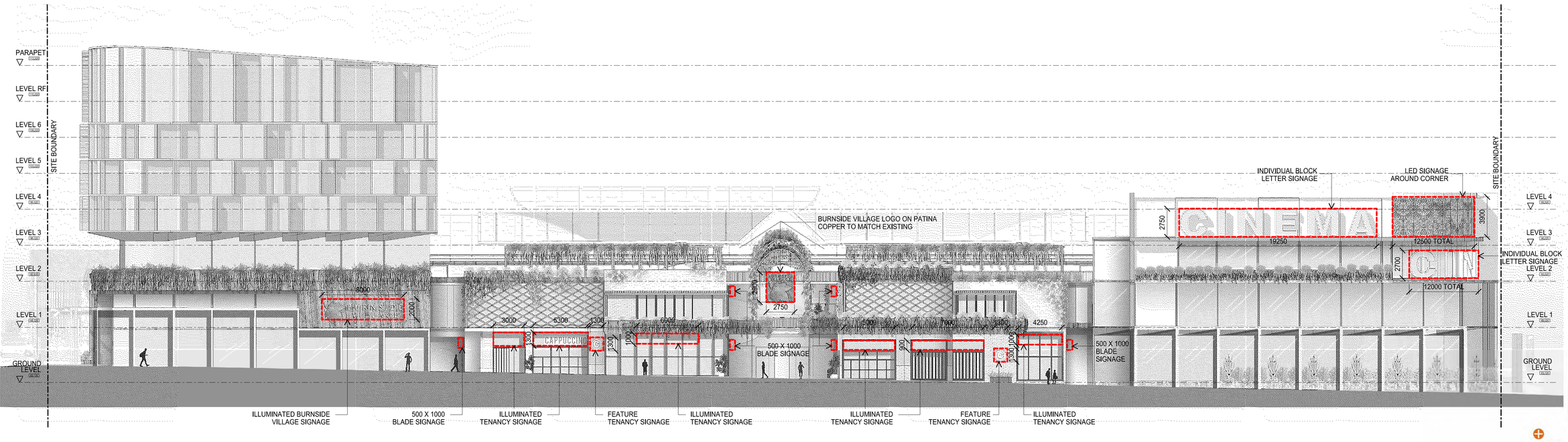
ILLUMINATED ENTRY SIGNAGE

LED SCREEN

ILLUMINATED SIGNAGE BOARDS

INDIVIDUAL BLOCK LETTER SIGNAGE

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18



03 - NORTH ELEVATION - GREENHILL RD

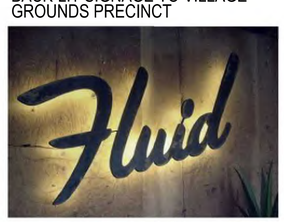
1:200

BLADE SIGNAGE

HANGING / PENDANT SIGNAGE

FEATURE SIGNAGE TO VILLAGE GROUNDS TENANCIES

BACK-LIT SIGNAGE TO VILLAGE GROUNDS PRECINCT



LANDSCAPE INTEGRATED SIGNAGE

Ti Titanium Property Investment

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

ELEVATION
GREENHILL ROAD
SIGNAGE LOCATIONS

Status: TOWN PLANNING
Checked by:
Drawn By: VB1
Approved By:
Scale @ A1: 1:200
Date: 29/03/18
Drawing Number: ATP-40406
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-40406

Purpose Of Issue: FOR INFORMATION

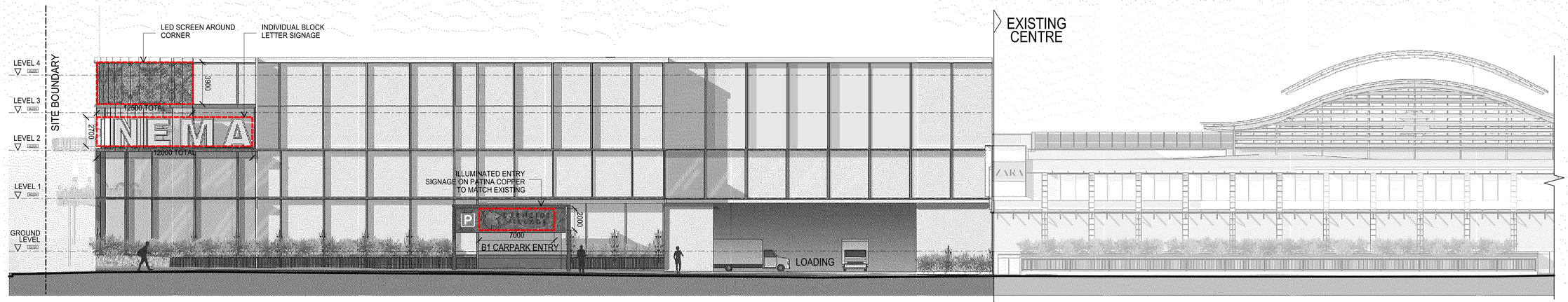
COPPER-LOOK SIGNAGE BOARDS

ILLUMINATED ENTRY SIGNAGE

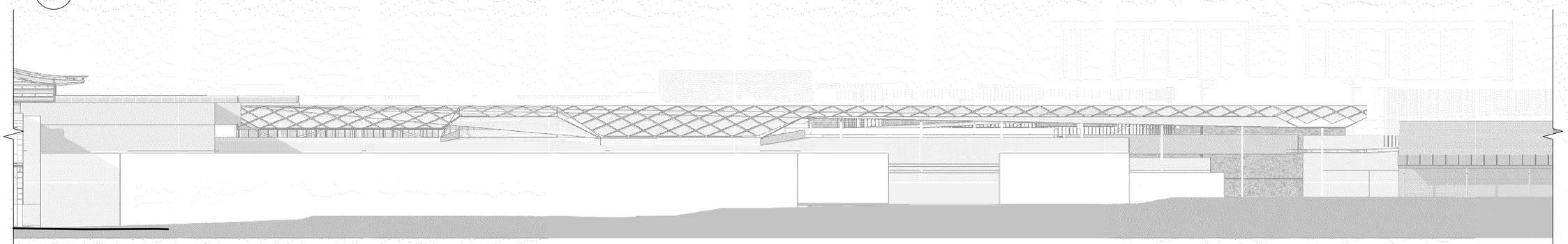
LED SCREEN

ILLUMINATED SIGNAGE BOARDS

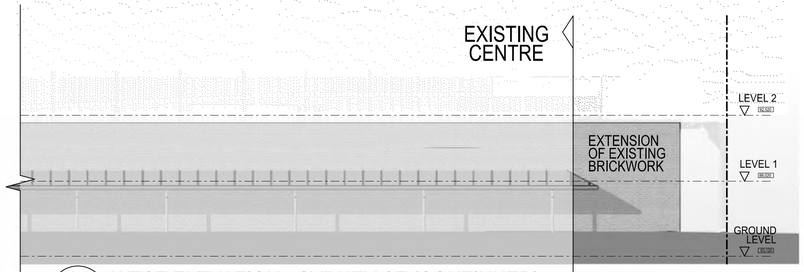
INDIVIDUAL BLOCK LETTER SIGNAGE



04 - WEST ELEVATION - SYDNEY ST
1:200



04 - WEST ELEVATION - SYDNEY ST (CONTINUED)
1:200



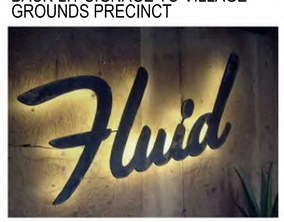
04 - WEST ELEVATION - SYDNEY ST (CONTINUED)
1:200

BLADE SIGNAGE

HANGING / PENDANT SIGNAGE

FEATURE SIGNAGE TO VILLAGE GROUNDS TENANCIES

BACK-LIT SIGNAGE TO VILLAGE GROUNDS PRECINCT



LANDSCAPE INTEGRATED SIGNAGE

Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

1. DO NOT SCALE DRAWINGS
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BURNSIDE VILLAGE

Ti Titanium Property Investment

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Project **317043**

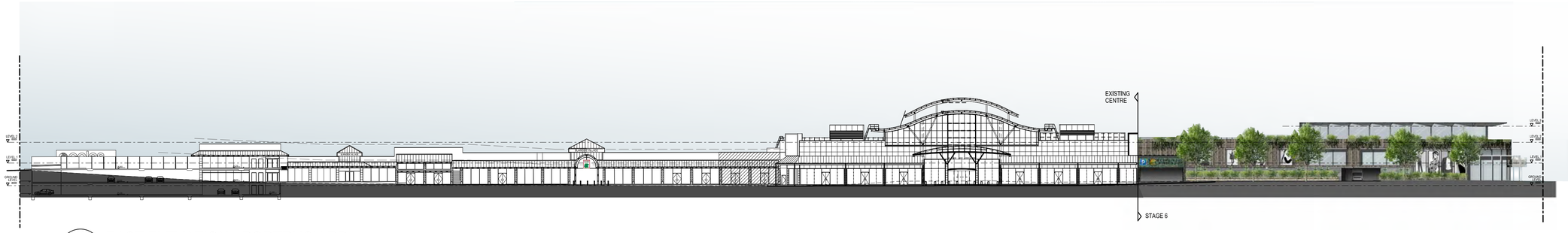
BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

ELEVATION
SYDNEY STREET
SIGNAGE LOCATIONS

Status: TOWN PLANNING
Checked by:
Drawn By: AM
Approved By:
Scale @ A1: 1:200
Date: 04/12/18
Drawing Number: ATP-40407
Revision: P00
File Name: BV-TBG-ZA-00-DR-ATP-40407

Purpose Of Issue
FOR INFORMATION



1 - EAST ELEVATION - PORTRUSH RD

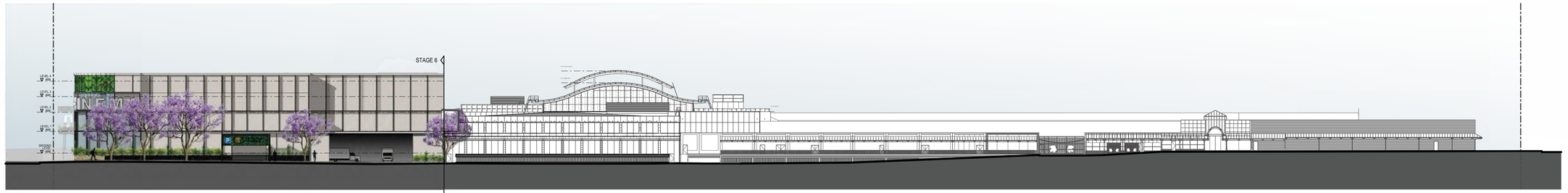
1:500

2 - SOUTH ELEVATION - CATOR ST

1:500

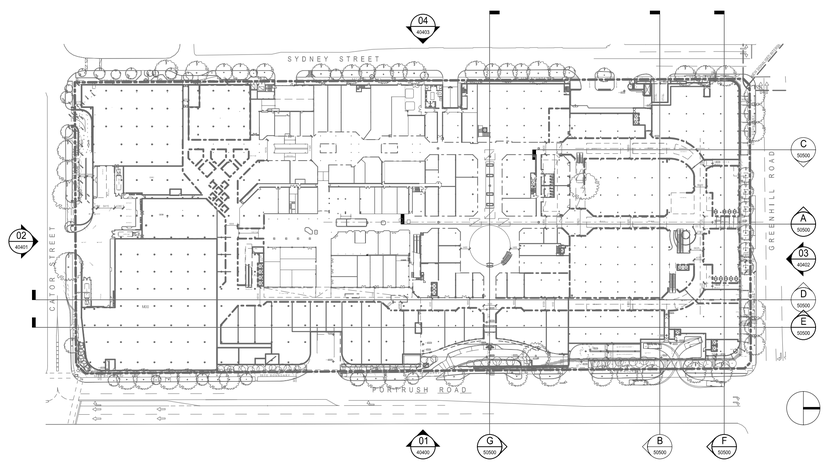
3 - NORTH ELEVATION - GREENHILL RD

1:500



4 - WEST ELEVATION - SYDNEY ST

1:500



Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

ELEVATIONS
STAGE 6

Status: TOWN PLANNING
Checked by:

Drawn By: VB1
Approved By:

Scale @ A1: 1:500
Date: 20/02/18

Drawing Number: ATP-41000
Revision: P00
File Name: BV-TBG-ZA-00-DR-ATP-41000

Purpose Of Issue: FOR INFORMATION

A LOCAL ADELAIDE BASKET STONE

B BAGGED BRICK

C PATINA COPPER TO MATCH EXISTING SIGNAGE

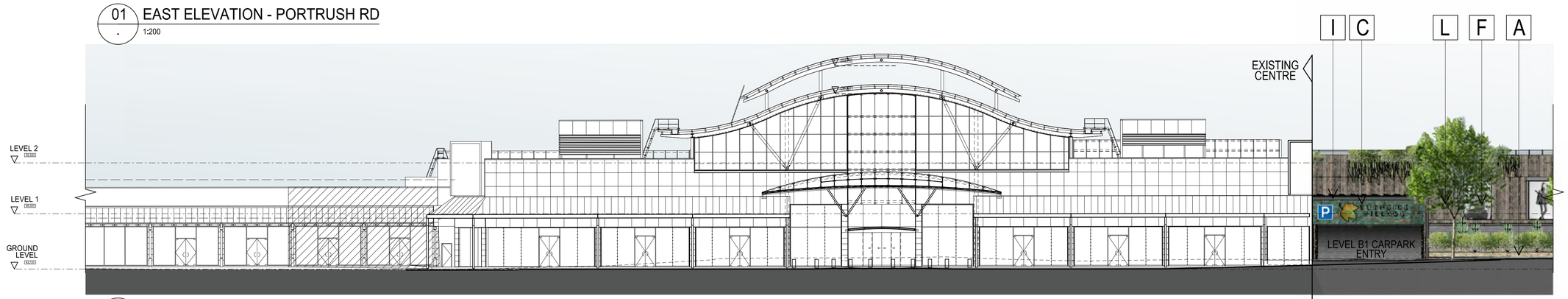
D RECESSED GREEN WALL. REFER TO LANDSCAPE ARCHITECT

E TIMBER SCREEN

F COPPER-LOOK SIGNAGE BOARDS

G GLAZING WITH ALUMINIUM FRAME

01 - EAST ELEVATION - PORTRUSH RD
1:200



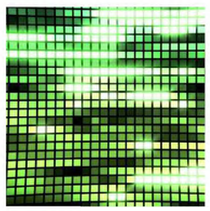
01 - EAST ELEVATION - PORTRUSH RD (CONTINUED)
1:200

01 - EAST ELEVATION - PORTRUSH RD (CONTINUED)
1:200

H LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

I STEEL FRAME

J LED SCREEN



K PRECAST CONCRETE PANEL

L LOCALLY SOURCED ADELAIDE TIMBER

M TIMBER LOUVRES

N LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

1. DO NOT SCALE DRAWINGS
2. CHECK AND VERIFY ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK OR FABRICATION.
3. ALL LEVELS ARE TO AHD UNLESS NOTED OTHERWISE.

BURNSIDE VILLAGE

Ti Titanium Property Investment

BUCHAN

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Email: melbourne@buchangroup.com.au

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Project 317043

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

ELEVATION
STAGE 6
PORTRUSH ROAD

Status: TOWN PLANNING
Checked by:
Drawn By: GS
Approved By:
Scale @ A1: 1:200
Date: 07/02/18
Drawing Number: ATP-41001
Revision: P00
File Name: BV-TBG-ZA-00-DR-ATP-41001
Purpose Of Issue: FOR INFORMATION

A LOCAL ADELAIDE BASKET STONE

B BAGGED BRICK

C PATINA COPPER TO MATCH EXISTING SIGNAGE

D RECESSED GREEN WALL. REFER TO LANDSCAPE ARCHITECT

E TIMBER SCREEN

F COPPER-LOOK SIGNAGE BOARDS

G GLAZING WITH ALUMINIUM FRAME

Revisions			
No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

1. DO NOT SCALE DRAWINGS
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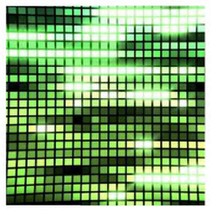
03 - NORTH ELEVATION - GREENHILL RD
1:200

H LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

I STEEL FRAME

J LED SCREEN



K PRECAST CONCRETE PANEL

L LOCALLY SOURCED ADELAIDE TIMBER

M TIMBER LOUVRES

N LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

BURNSIDE VILLAGE

Ti Titanium Property Investment

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

ELEVATION
STAGE 6
GREENHILL ROAD

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
GS	
Scale @ A1	Date
1:200	07/02/18
Drawing Number	Revision
ATP-41003	P00

File Name: BV-TBG-ZA-00-DR-ATP-41003

Purpose Of Issue
FOR INFORMATION

A LOCAL ADELAIDE BASKET STONE

B BAGGED BRICK

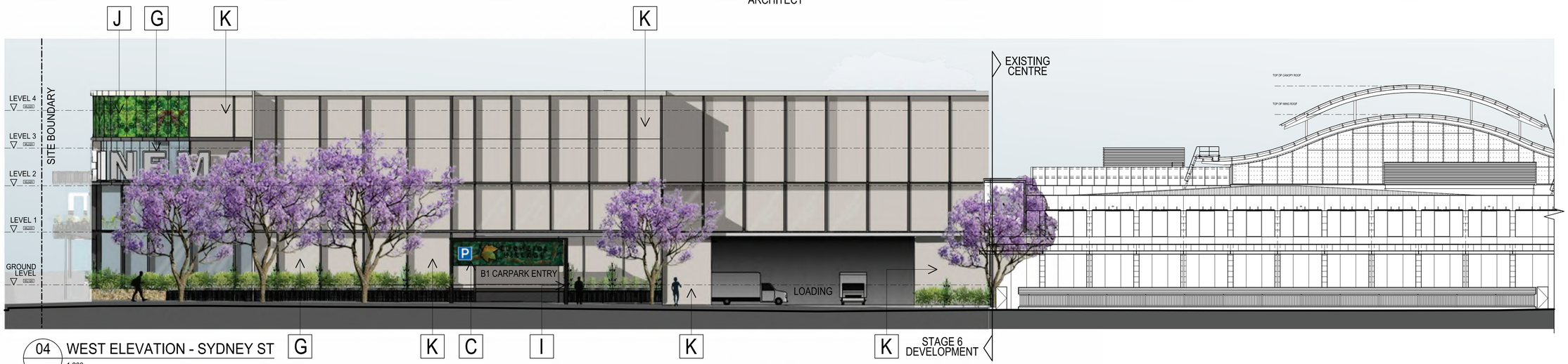
C PATINA COPPER TO MATCH EXISTING SIGNAGE

D RECESSED GREEN WALL. REFER TO LANDSCAPE ARCHITECT

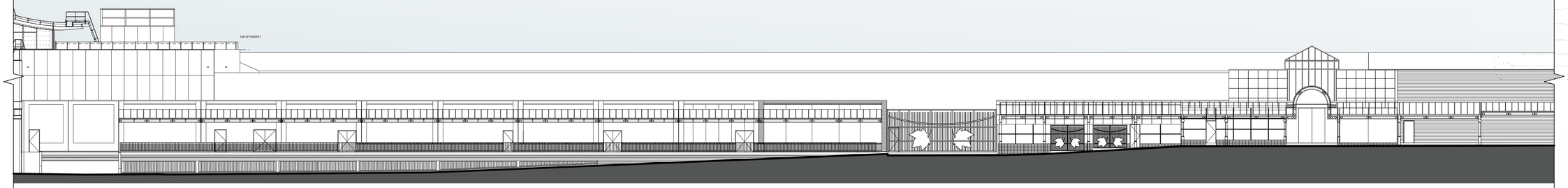
E TIMBER SCREEN

F COPPER-LOOK SIGNAGE BOARDS

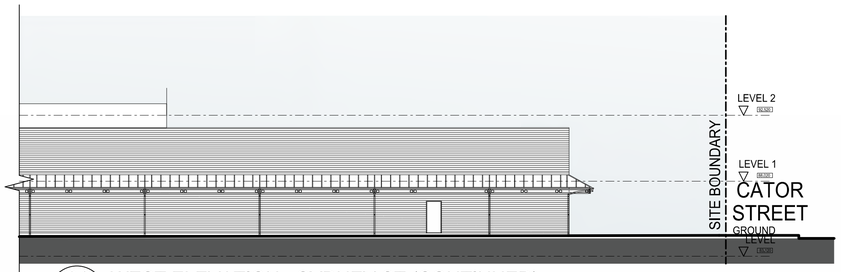
G GLAZING WITH ALUMINIUM FRAME



04 - WEST ELEVATION - SYDNEY ST
1:200



04 - WEST ELEVATION - SYDNEY ST (CONTINUED)
1:200

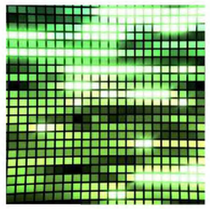


04 - WEST ELEVATION - SYDNEY ST (CONTINUED)
1:200

H LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

I STEEL FRAME

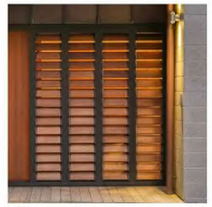
J LED SCREEN



K PRECAST CONCRETE PANEL

L LOCALLY SOURCED ADELAIDE TIMBER

M TIMBER LOUVRES



N LIGHTWEIGHT ARCHITECTURAL SCREEN IN FRONT OF GLAZING

Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE

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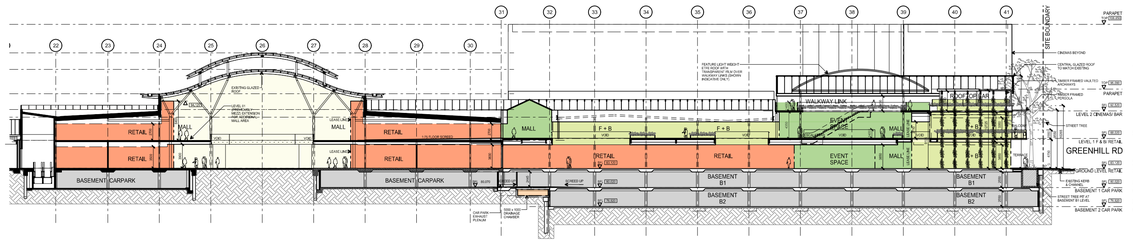
Project 317043

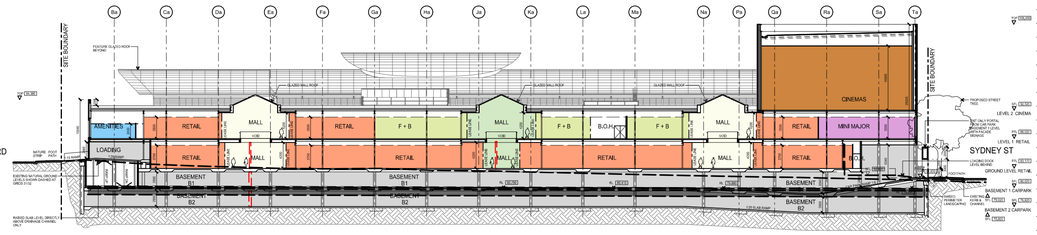
BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

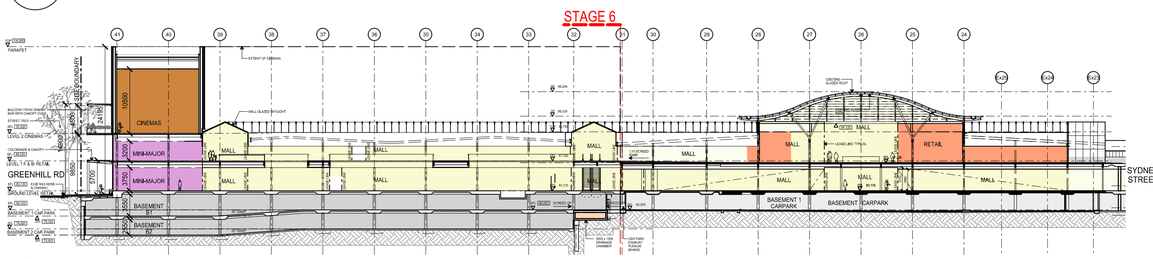
ELEVATION
STAGE 6
SYDNEY STREET

Status: TOWN PLANNING
Checked by:
Drawn By: GS
Approved By:
Scale @ A1: 1:200
Date: 07/02/18
Drawing Number: ATP-41004
File Name: BV-TBG-ZA-00-DR-ATP-41004
Revision: P00
Purpose Of Issue: FOR INFORMATION

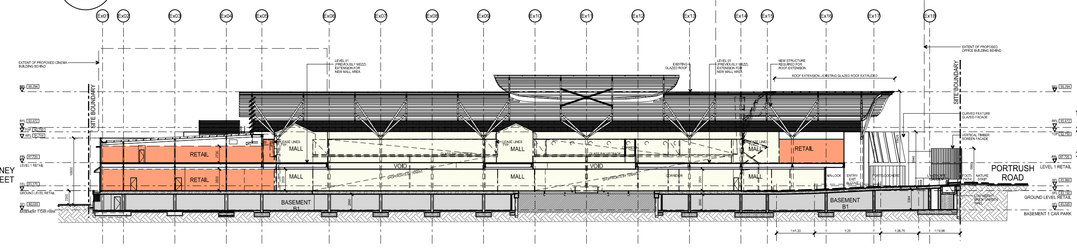




AA SECTION
20201 1:500



BB SECTION
20201 1:500



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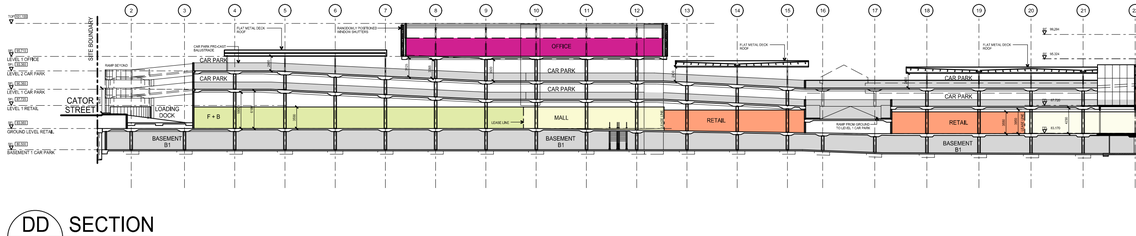
20201 1:500



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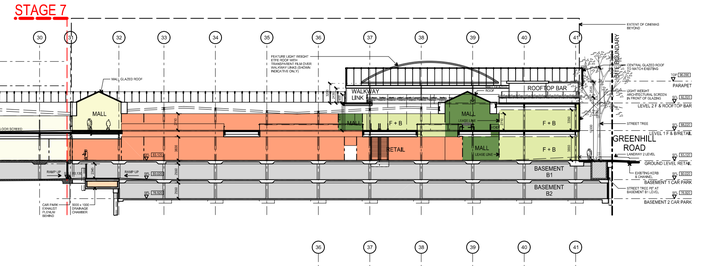
20201 1:500



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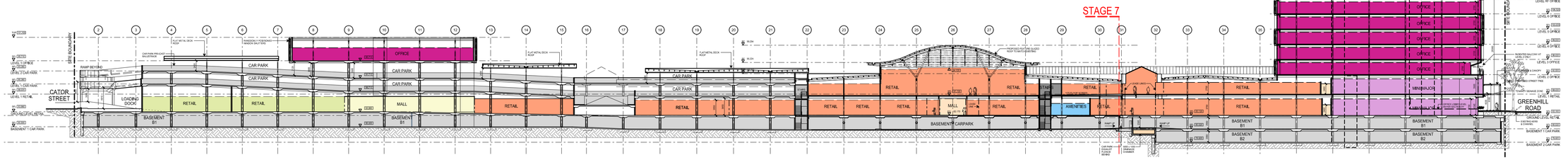
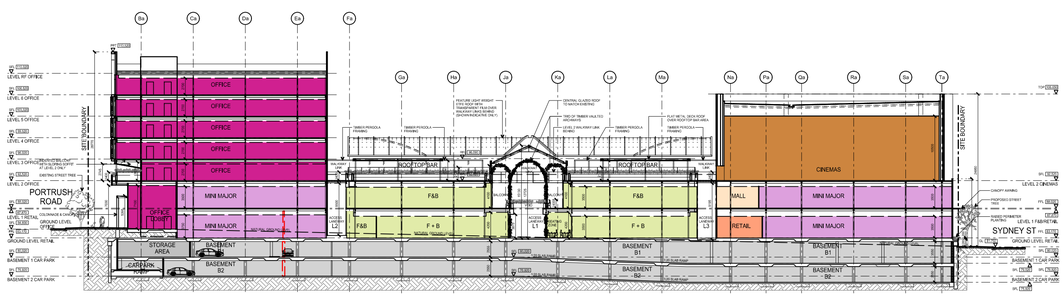


EE SECTION
20201 1:500



FF SECTION
20201 1:500

5 REFERENCE PLAN
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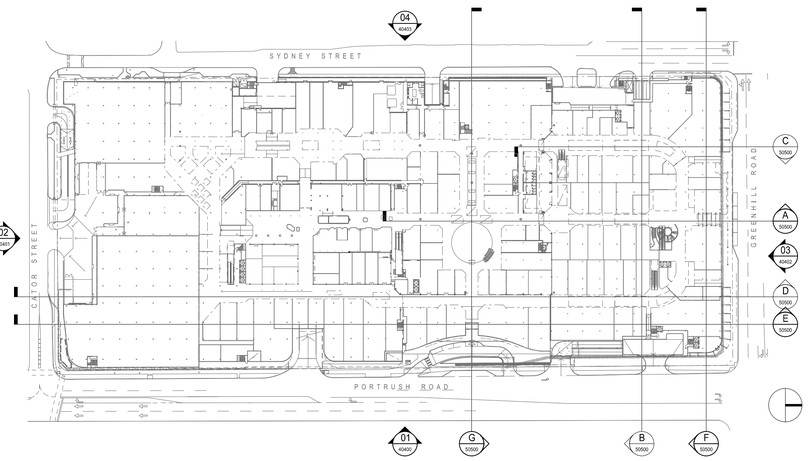
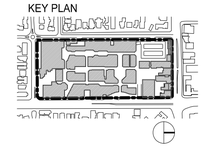


Revisions

No.	Description	By	Date

KEY PLAN



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BURNSIDE VILLAGE

Ti Titanium Property Investment

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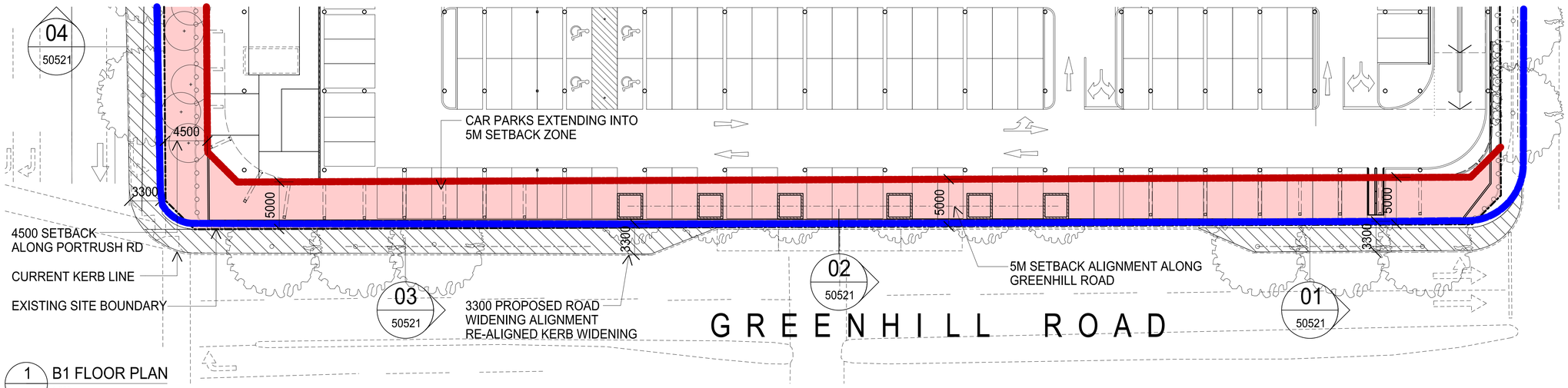
Project **317043**

BURNSIDE VILLAGE DEVELOPMENT APPLICATION

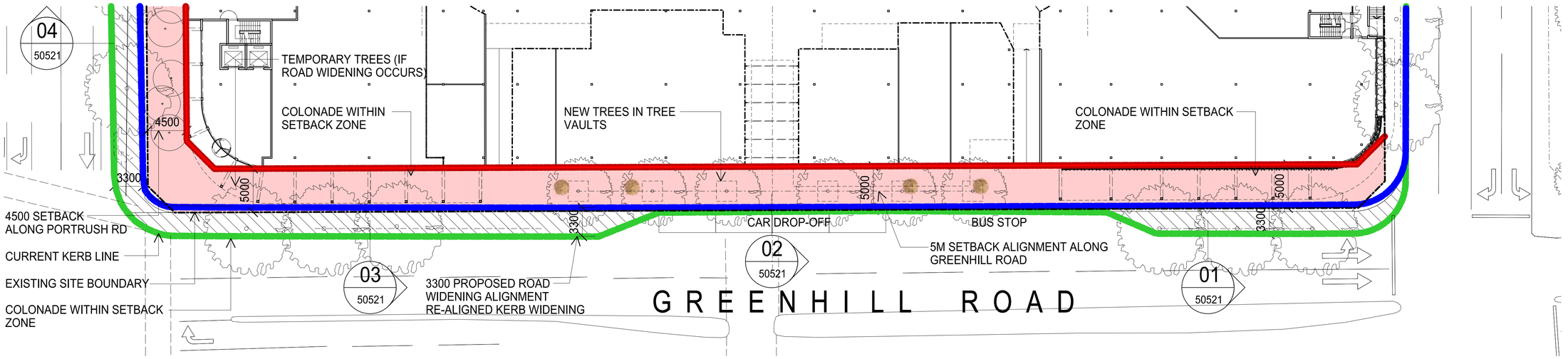
Drawing Title

SECTIONS

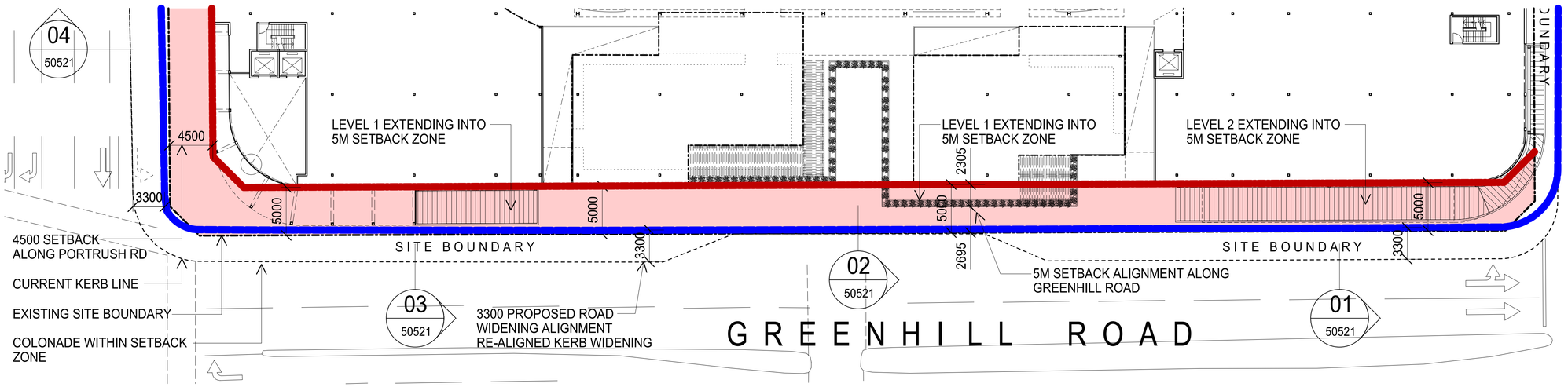
Status: TOWN PLANNING
Checked by:
Drawn By: VB1
Approved By:
Scale @ A1: 1:500
Date: 07/02/18
Drawing Number: ATP-50500
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-50500
Purpose Of Issue: FOR INFORMATION



1 - B1 FLOOR PLAN
1:250



2 - GROUND FLOOR PLAN
1:250

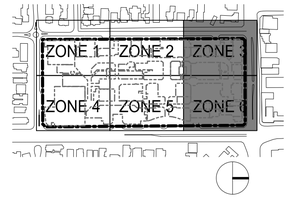


3 - LEVEL ONE FLOOR PLAN
1:250

Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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ROAD WIDENING ZONE
BUILDING LINE
WIDENED ROAD KERB LINE - STAGE 7
EXISTING MODIFIED KERB LINE - STAGE 6

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

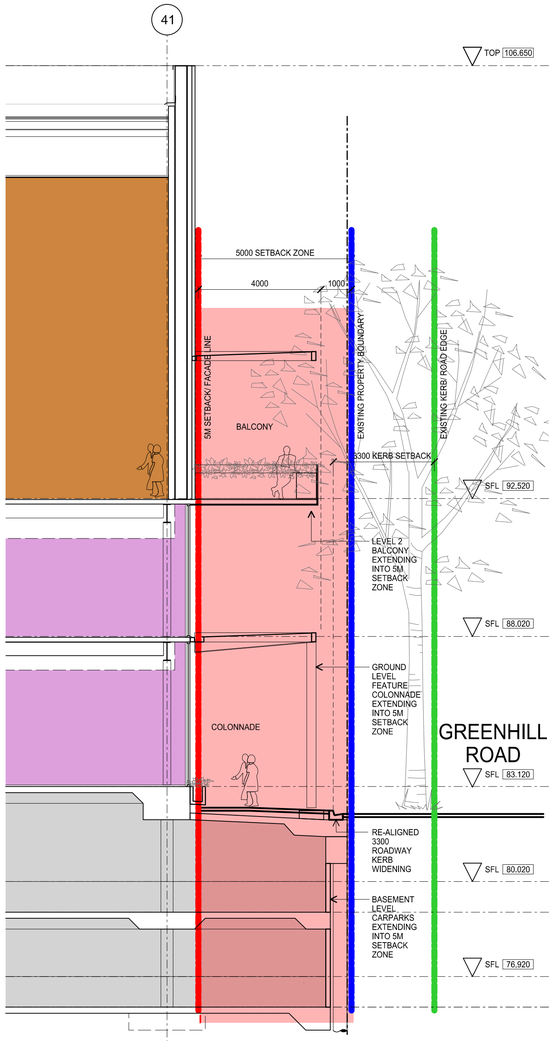
ROAD ALIGNMENT
FUTURE PLANNING
PLANS

Status	Checked by
TOWN PLANNING	
Drawn By	Approved By
HD	
Scale @ A1	Date
1:250	21/11/18
Drawing Number	Revision
ATP-50520	P00

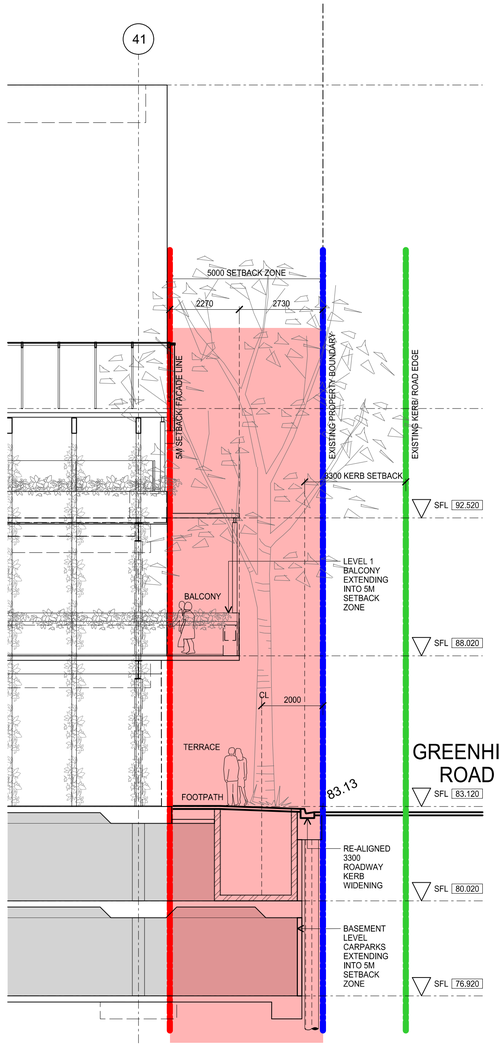
File Name: BV-TBG-ZA-00-DR-ATP-50520

Purpose Of Issue

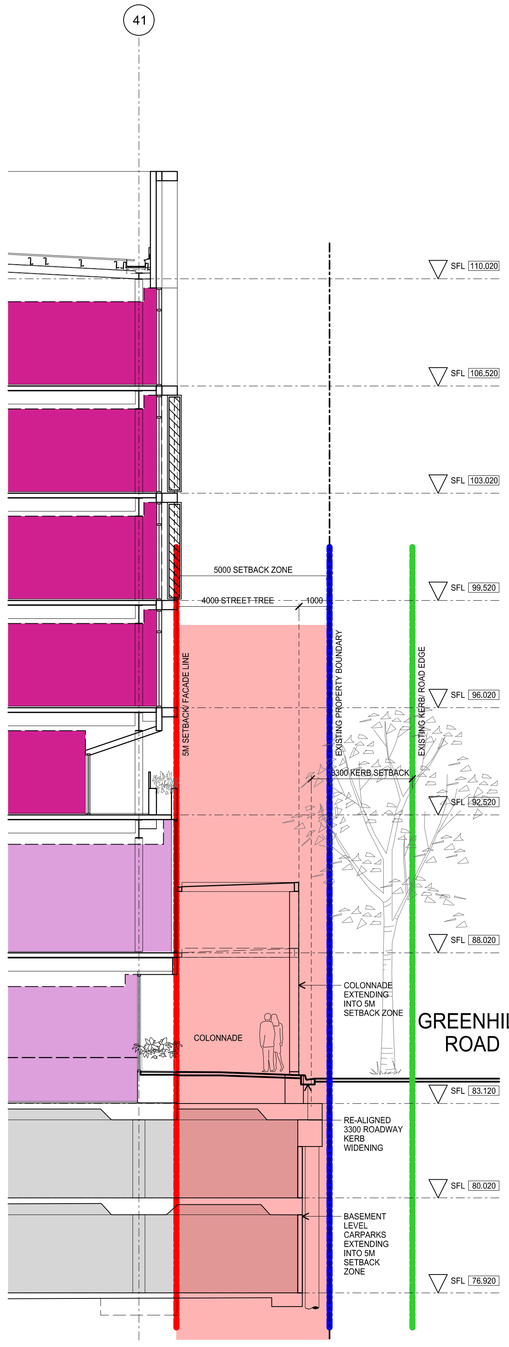
FOR INFORMATION



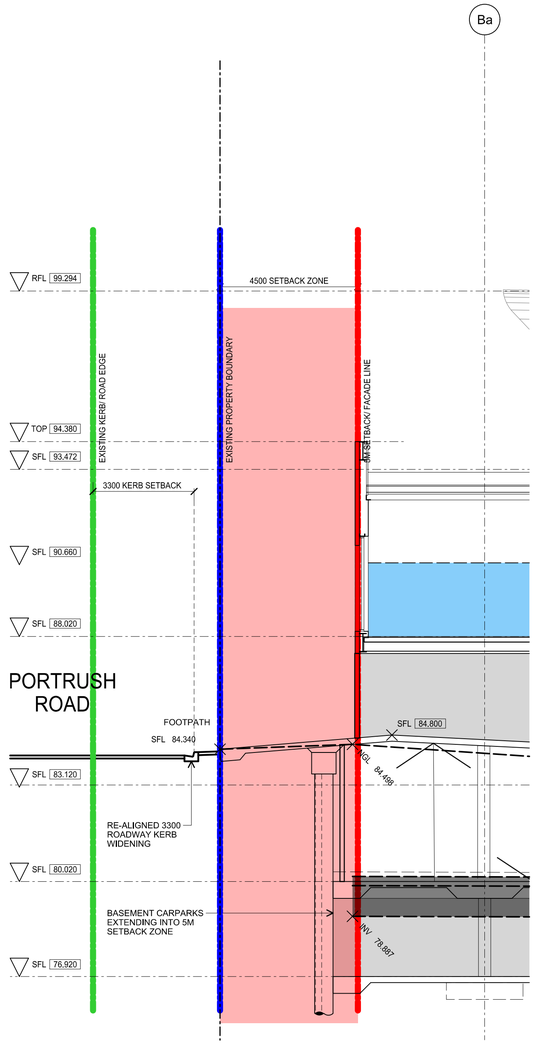
1 50520 1:100 SECTION THRU GREENHILL RD & SYDNEY ST CINEMAS CORNER



2 50520 1:100 SECTION THRU GREENHILL RD MAIN LANEWAY SITE ACCESS



3 50520 1:100 SECTION THRU GREENHILL RD & PORTRUSH RD OFFICE CORNER

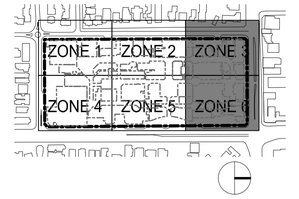


4 50520 1:100 SECTION THRU PORTRUSH RD LOADING DOCK LD5

Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

KEY PLAN



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LEGEND

- VERTICAL TRANSPORT LOCATIONS
- CAR PARKING SPACES
- MALL SPACE
- SEATING ZONES
- RETAIL TENANCIES
- FOOD & BEVERAGE TENANCIES
- MINI-MAJOR TENANCIES
- MAJOR TENANCIES
- OFFICE
- AMENITIES
- BANKS & SERVICES

NOTE: EXISTING AREAS SHADED IN MATCHING LIGHTER COLOURS

- ROAD WIDENING ZONE
- BUILDING LINE
- WIDENED ROAD KERB LINE - STAGE 7
- EXISTING MODIFIED KERB LINE - STAGE 6

BUCHAN

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Project **317043**

BURNSIDE VILLAGE DEVELOPMENT APPLICATION

Drawing Title

ROAD ALIGNMENT FUTURE PLANNING SECTIONS

Status: TOWN PLANNING
Checked by:
Drawn By: HP1
Approved By:
Scale @ A1: 1:100
Date: 22/11/18
Drawing Number: ATP-50521
Revision: P00
File Name: BV-TBG-ZA-00-DR-ATP-50521

Purpose Of Issue: FOR INFORMATION

01 PERSPECTIVE VIEW - NORTH ALONG PORTRUSH ROAD - STAGE 6 + 7

Full Size 1:1

Revisions			
No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PHOTO MONTAGE

Status	Checked by
TOWN PLANNING	
Drawn By	**Approved By**
HD	
Scale @ A1	**Date**
VARIES	06/04/18
Drawing Number	**Revision**
ATP-60000	P01

File Name: BV-TBG-ZA-00-DR-ATP-60000

Purpose Of Issue

FOR INFORMATION

01 PERSPECTIVE VIEW - SOUTH ALONG PORTRUSH ROAD - STAGE 6 + 7

Full Size 1:1

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PHOTO MONTAGE

Status: TOWN PLANNING
Checked by:
Drawn By: HD
Approved By:
Scale @ A1: VARIES
Date: 06/04/18
Drawing Number: ATP-60001
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-60001
Purpose Of Issue: FOR INFORMATION

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

01 PERSPECTIVE VIEW - SOUTH ALONG PORTRUSH ROAD - STAGE 6 + 7

Full Size 1:1

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PHOTO MONTAGE

Status: TOWN PLANNING
Checked by:
Drawn By: HD
Approved By:
Scale @ A1: VARIES
Date: 06/04/18
Drawing Number: ATP-60002
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-60002
Purpose Of Issue: FOR INFORMATION

01 PERSPECTIVE VIEW - EAST ALONG CATOR STREET - STAGE 6 + 7

Full Size 1:1

Revisions

No.	Description	By	Date
P00	DA APPLICATION ISSUE	VB1	09/04/18
P01	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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Project **317043**

BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

PHOTO MONTAGE

Status: TOWN PLANNING
Checked by:
Drawn By: HD
Approved By:
Scale @ A1: VARIES
Date: 06/04/18
Drawing Number: ATP-60003
Revision: P01
File Name: BV-TBG-ZA-00-DR-ATP-60003
Purpose Of Issue: FOR INFORMATION

01 PERSPECTIVE VIEW - NORTH ALONG PORTRUSH ROAD - STAGE 6 + 7

Full Size 1:1

Revisions

No.	Description	By	Date
P00	DEVELOPMENT APPLICATION ISSUE	GK	21/12/18

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BURNSIDE VILLAGE

Ti Titanium Property Investment

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BURNSIDE VILLAGE
DEVELOPMENT APPLICATION

Drawing Title

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HD	
Scale @ A1	Date
VARIES	06/04/18
Drawing Number	Revision
ATP-60004	P00

File Name: BV-TBG-ZA-00-DR-ATP-60004

Purpose Of Issue

FOR INFORMATION

01 PERSPECTIVE VIEW - SOUTH ALONG PORTRUSH ROAD - STAGE 6 + 7
Full Size 1:1

Revisions

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Purpose Of Issue

FOR INFORMATION

01 PERSPECTIVE VIEW - SOUTH ALONG SYDNEY STREET - STAGE 6 + 7
Full Size 1:1

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File Name: BV-TBG-ZA-00-DR-ATP-60006
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Purpose Of Issue: FOR INFORMATION

01 PERSPECTIVE VIEW - EAST ALONG GREENHILL ROAD - STAGE 6 + 7

Full Size 1:1

Revisions

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ATP-60007	P00

File Name: BV-TBG-ZA-00-DR-ATP-60007

Purpose Of Issue

FOR INFORMATION

01 PERSPECTIVE VIEW - EAST ALONG GREENHILL ROAD - STAGE 6

Full Size 1:1

Revisions

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Purpose Of Issue

FOR INFORMATION

01 PERSPECTIVE VIEW - WEST ALONG GREENHILL ROAD - STAGE 6 + 7

Full Size 1:1

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01 PERSPECTIVE VIEW - WEST ALONG GREENHILL ROAD - STAGE 6

Full Size 1:1

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Approved By:

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Date: 06/04/18

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Revision: P00

File Name: BV-TBG-ZA-00-DR-ATP-60010

Purpose Of Issue: FOR INFORMATION

01 PERSPECTIVE VIEW - GREENHILL ROAD - STAGE 6 + 7

Full Size 1:1

Revisions

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Purpose Of Issue

FOR INFORMATION

01 PERSPECTIVE VIEW - GREENHILL ROAD - STAGE 6

Full Size 1:1

Revisions

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Scale @ A1	**Date**
VARIES	06/04/18
Drawing Number	**Revision**
ATP-60012	P00

File Name: BV-TBG-ZA-00-DR-ATP-60012

Purpose Of Issue

FOR INFORMATION

Appendix C

Landscape Plans

Issue —
PLANNING

Date—
14 January 2019

Project—
18.012

BURNSIDE VILLAGE PUBLIC REALM

PLANNING APPLICATION

oxigen

cohen group

Ti Titanium Property Investment

Architect + Lead:
Buchan Group

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CONTENTS	00
SITE CONTEXT	01
EXISTING LANDSCAPE CHARACTER	02
PUBLIC REALM: DESIGN INTENT	03
PRINCIPLES	04
TREE MANAGEMENT PLAN	05
PROPOSED TREE PLAN	06
KEY PLAN: PUBLIC REALM PRECINCTS	07
VILLAGE GROUNDS + LANEWAYS_01	08
PORTRUSH ROAD ENTRY_02	09-10
VILLAGE WALK_03	11
VILLAGE SQUARE_04	12
GREENHILL ROAD STREETSCAPE_05	13-14
CATOR STREET VERGE_06	15
PORTRUSH ROAD VERGE_07	16
SYDNEY STREET VERGE_08	17
ELEVATIONS	18
MATERIALS & ELEMENTS	19

Issue —
PLANNING

Prepared For —
TITANIUM PROPERTY INVESTEMENT

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SITE CONTEXT

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Drawing Title
LANDSCAPING

Status: TOWN PLANNING	Checked by: AG
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Scale @ A1: VARIES	Date: 14.01.2019
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File Name: BV-TBG-ZA-00-DR-ATP-70000

Purpose Of Issue
DEVELOPMENT APPLICATION

EXISTING LANDSCAPE CHARACTER

BURNSIDE PLAZA
ACCESS LANE

CATOR STREET
CARPARK ENTRY

PORTRUSH ROAD

VILLAGE SQUARE

BURNSIDE PLAZA CARPARK

NORTHERN ENTRY DECK

BURNSIDE PLAZA ENTRY

NORTHERN CARPARK DECK

VINE WALKWAY

SYDNEY STREET ENTRY

SYDNEY STREET

CATOR STREET

Existing Landscape Character

— Eastern portion of site dominated by surface carparking.
— North-western surface carparking open and confusing to use.
— Public realm external to mall dominated by vehicle movement and carparking.
— Public realm internal to mall developed over various stages. Attractive and well used as a destination.
— Four significant trees (eucalypts) visually dominate.
— Lack of other tree planting overall on the site.
— Entries to the mall not well marked or celebrated.
— Lower quality paving materials used externally.
— Variety of furniture, colours, materials and lighting used externally.
— Portrush Road verge has incomplete and widely-spaced tree planting.
— Cator Street verge has over-mature shrub planting. Street trees (white cedar) fruit prolifically causing pedestrian hazard.
— Sydney Street verge also has over-mature and incomplete shrub planting. Opportunity to infill jacaranda street trees.

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BURNSIDE VILLAGE

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Drawing Number: **L 2**
File Name: BV-TBG-ZA-00-DR-ATP-70000
Revision: E
Purpose Of Issue: DEVELOPMENT APPLICATION

PUBLIC REALM: DESIGN INTENT

Overview

The approach to the overall public realm site organisation and detailed design is a pedestrian focused precinct that encourages public activity, use by people of all backgrounds and abilities, and comfort in use. A variety of spaces are proposed that are comfortable to use at different times of the day and year.

Spaces are arranged to work with adjacent building uses creating active frontages wherever possible.

Whilst different spaces are proposed to have different and individual characters that match their location and use, there is a continuity of pedestrian scale and common materiality throughout the whole village.

Village grounds

— A new enclosed village market with a range of boutique artisan shops and F+B with active frontages.
— Greenery through planting in pots and vines, incorporating seasonality.
— Clear and clean sightlines with access to natural light enhance the space.

Greenhill Road streetscape

— The existing streetscape has no street trees and narrow footpaths due to planters, fencing and building frontages.
— The proposed building facade line is set back to allow for widened footpaths, tree planting and the possible future widening to Greenhill Road.
— 6 tree vaults within the basement carpark, provide deep root zones for street trees within the property boundary ensuring a green public realm, taking into account the proposed road widening.
— The proposed streetscape will provide a welcoming frontage to the Village, with active frontages and permeable laneways creating a pedestrian friendly environment.

Portrush Road streetscape

— The existing plane trees planted as street trees along the Portrush Road verge are retained and additional infill plane trees proposed.
— The existing rubble and block paving footpath is replaced by irrigated lawn and a new high quality insitu concrete footpath (exposed aggregate finish).
— New planting of low growing flowering species is also proposed adjacent to the new built form between the façade and the new footpath.

Portrush Road pedestrian entry

— The existing main pedestrian entry from Portrush Road is maintained and a new drop-off is proposed at the Portrush Road interface.
— The existing large eucalyptus is retained. Growing conditions improved by installation of a flowering native garden within the canopy.
— The drop-off plaza is proposed to be an active place to meet and wait in. Native gardens, possible public art installation, as well as furniture and amenity lighting.
— The entry will be a comfortable place to rest in and to greet users of the village, including pedestrians using the adjacent public bus stop.
— The entry is visible from Portrush Road and will add to the everyday public contribution the village makes to the broader precinct and motorists travelling along Portrush Road.

Cator Street streetscape

— One plane tree and one regulated tree are proposed for removal within the northern Cator Street verge to allow for road widening.
— Continuous pedestrian crossings giving priority to pedestrians are proposed for the loading and public carpark entries.
— The existing over-mature shrub planting within the northern verge is proposed to be replaced by irrigated lawn.

Sydney Street streetscape

— All of the existing jacaranda trees along Sydney Street are proposed to be retained.
— Over-mature shrubs will be replaced by irrigated lawn.
— The two existing large eucalypts adjacent to Sydney Street are proposed for removal.

Planting palette

— Throughout the precinct, species are chosen to contribute towards common, but also varied, themes.
— The planting supports an attractive and comfortable pedestrian environment.
— Trees are chosen to display seasonality, including the selection of deciduous trees in high use pedestrian areas to maintain winter sunlight.
— Low shrubs and groundcovers are selected to manage all aspects of CPTED. Species recognise the limitations of maintenance and are selected for their ultimate form and horticultural characteristics, including pruning and habit over the medium to long term.

Public art

— An integrated public art program is proposed as part of the development. This is intended to work with the existing public art program managed by the proponent, in particular extending this to the public realm.
— This program extends to the design of furniture, lighting, and wayfinding.

Wayfinding and identity

— Wayfinding is considered as an integral component of the proposal contributing towards the legibility, identity and safety for uses of the village.
— The proposals continue the existing Burnside Village logo and corporate signage, extending this typology to include wayfinding identifying key components like the village grounds and connections to adjacent pedestrian passages and key facilities.

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BURNSIDE VILLAGE

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Approved By: JH
Scale @ A1: VARIES
Date: 14.01.2019
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Revision: E
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Purpose Of Issue: DEVELOPMENT APPLICATION

PRINCIPLES

A green agenda reinforced by the following key moves:

— Potted plants provide the backbone. These define flexible spaces.
— A great variety of species that display colour and texture, partnering with a nursery for supply and sales. A mini nursery to sell plants.
— Allocation of funds annually for maintenance.
— External spaces made more comfortable by including misting and heating of outdoor areas to extend comfort and trading hours.
— Many smaller intimate spaces created that can be used according to size of group, occasion and time of day/season.
— Colour (flowers, plants, paint), sculpture and signage incorporated and carefully curated.
— Water in various forms, including interactive water features incorporated.
— A direct relationship between indoors and out achieved by fudging the interface.
— Lighting to define space (no area lighting) and mood incorporated.
— A focus on comfort and familiarity – physical and psychological (eg. Seats back on to greenery or boundaries).
— Public participation (educated) and interest encouraged - eg, key plant species labelled.
— Enclosure, intimacy and comfort at all times of the year achieved through arrangement and organisation of space and choice of furniture, lighting and plant material.

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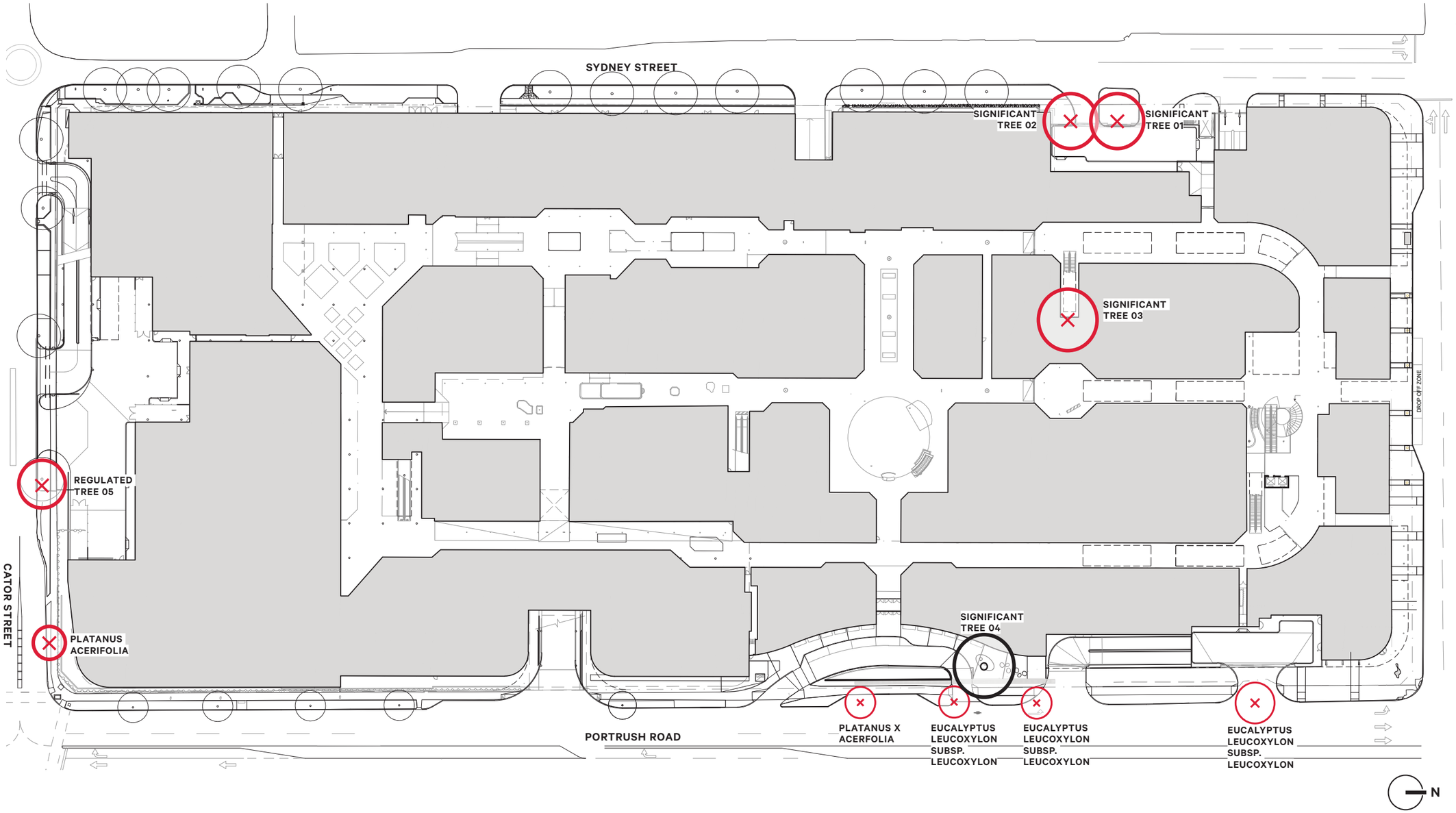
DEVELOPMENT APPLICATION

SITE TREE MANAGEMENT PLAN



LEGEND

- EXISTING TREE RETAINED
- EXISTING TREE PROPOSED FOR REMOVAL

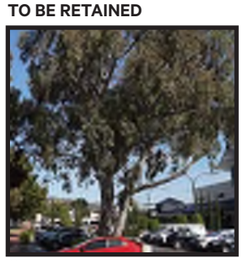
Significant trees (within property boundary)

TO BE RETAINED

01
Eucalyptus camaldulensis

02
Eucalyptus camaldulensis

03
Eucalyptus camaldulensis



04
Eucalyptus camaldulensis

Refer to the Aboricultural assessment of significant trees for Burnside Village by Dean Nicolle for further information.

Regulated trees (within Council verge)

05
Melia azederach

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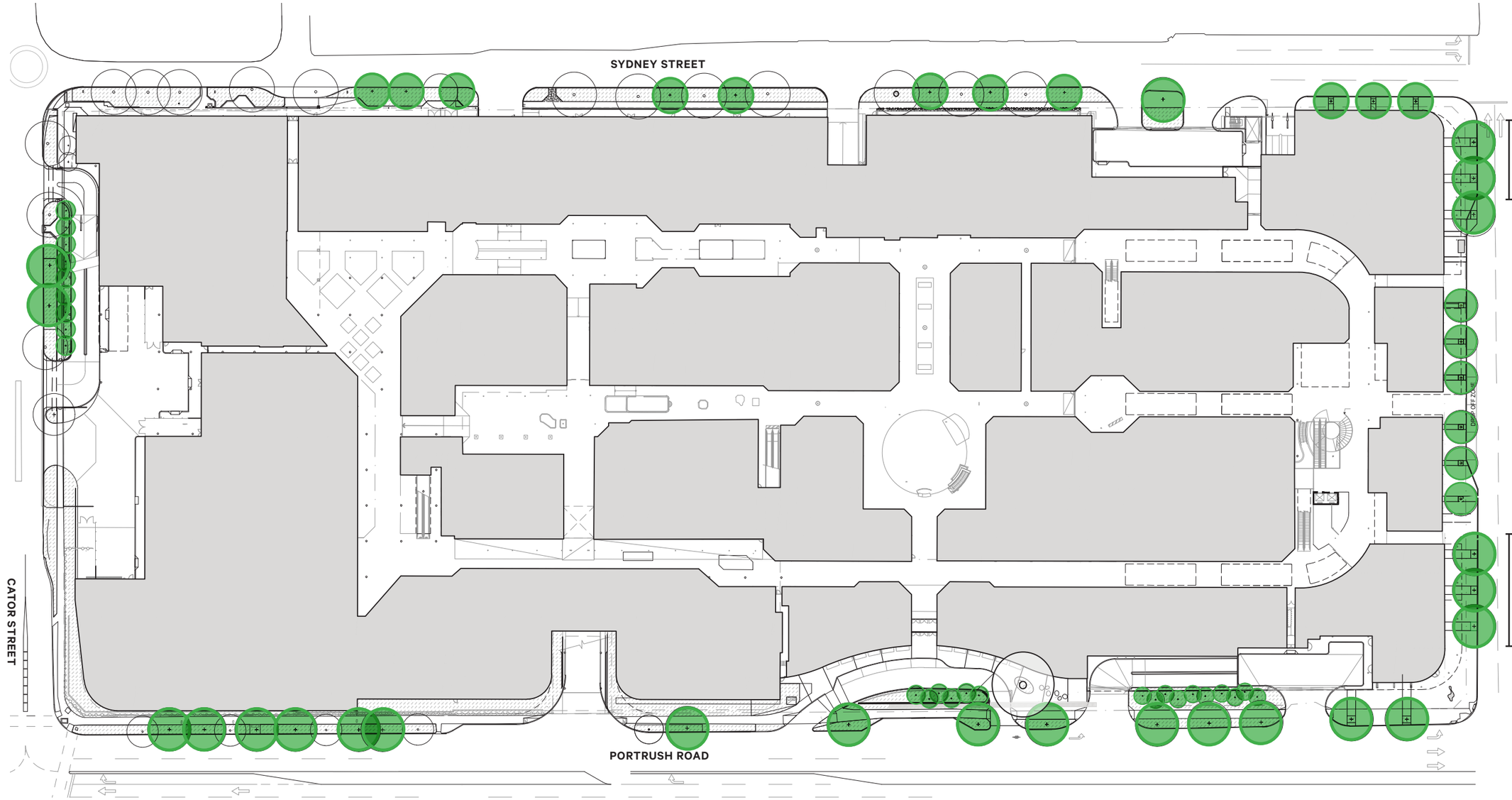
Purpose Of Issue: DEVELOPMENT APPLICATION

PROPOSED TREE PLAN



New Trees

Jacaranda mimosifolia

Platanus orientalis

Sophora japonica

Zelkova serrata

Lagerstroemia

Quercus Rubra

60+ new trees

N

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Drawing Number	Revision
L 6	E

File Name: BV-TBG-ZA-00-DR-ATP-70000

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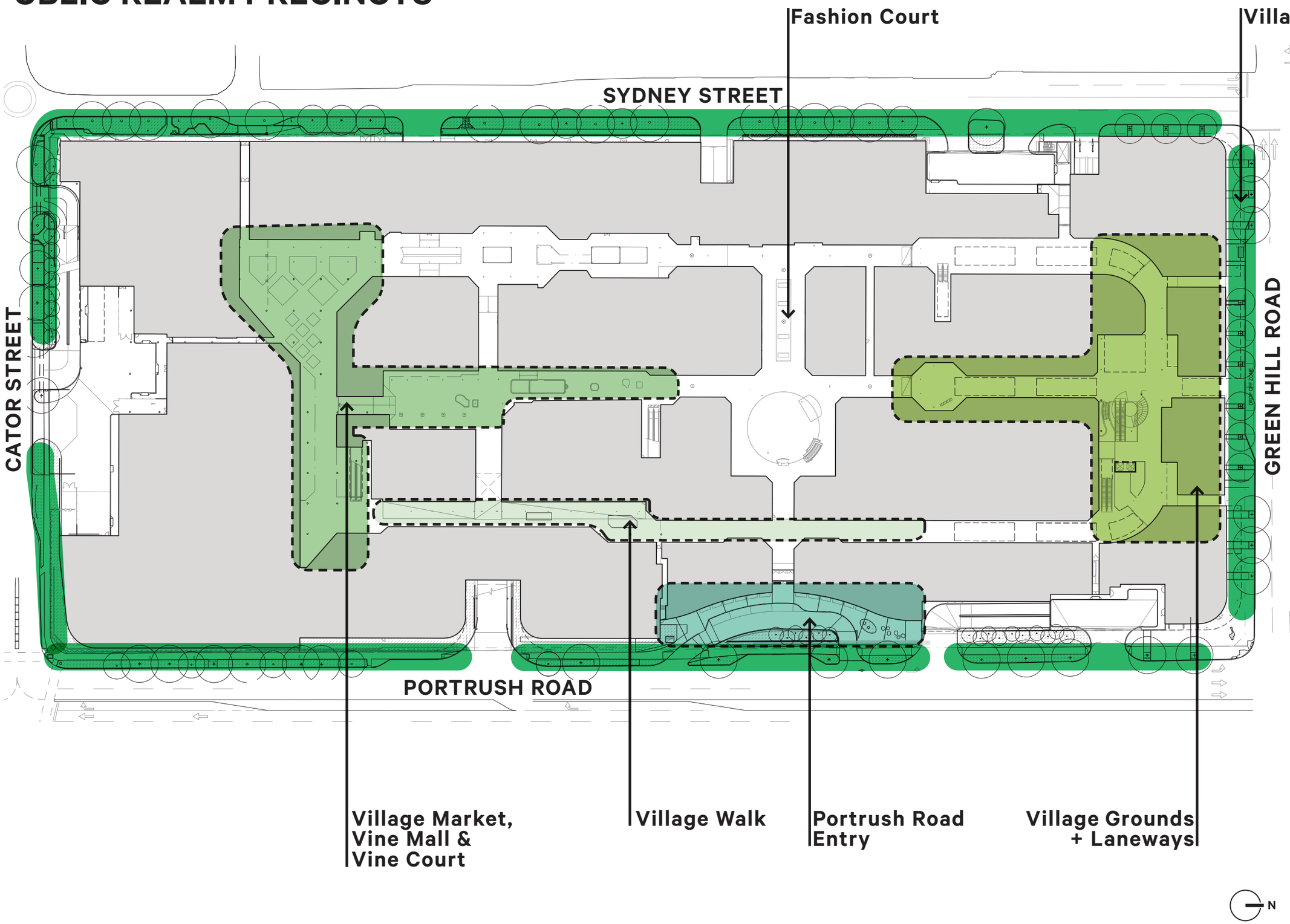
KEY PLAN:
PUBLIC REALM PRECINCTS



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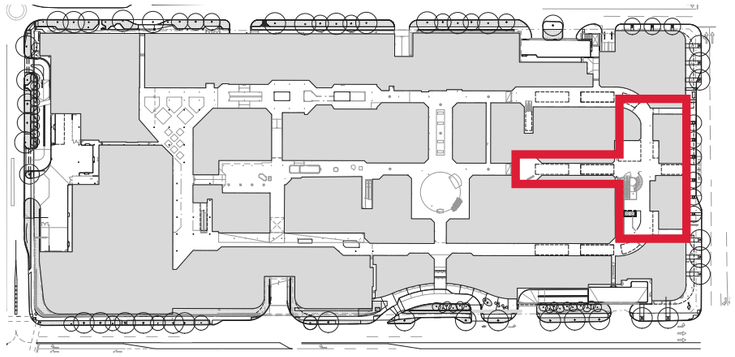
Purpose Of Issue: DEVELOPMENT APPLICATION

01_VILLAGE GROUNDS + LANEWAYS



PRINCIPLES

— Greenery through planting in pots and vines.
— Controlled lighting.
— Ground plane accessible at grade with varying surface paving materials.
— Direct relationship to adjacent F+B.
— Potted plants extend out from the village grounds.
— Varied species selection favouring colour and green texture.
— Incorporates seasonality and variety.
— Display boxes.

PLANTING LIST

Shrubs:
Alocasia macrorrhizos
Dianella 'Little Jess'
Liriope 'Evergreen Giant'
Monstera delicosa
Philiodendron selloum
Philiodendron xanadu
Philiodendron 'Congo'
Polypodium vulgare
Blechnum brasiliense
Ficus elastica 'Elastica'
Cordyline stricta
Dichondra repens
Trachelospernum Jasminoides
Strelitzia reginae
Vitis coignetiae

Trees:
Betula nigra 'Dura Heat'
Acer sp.

Planter trees:
Catalpa bignonioides
Acer sp.
Plumeria rubra
Citrus limon
Magnolia grandiflora 'Little Gem'

Precedent Images

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BURNSIDE VILLAGE

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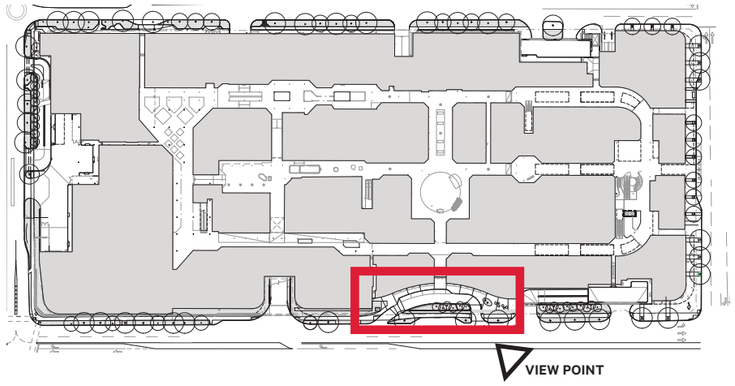
02_PORTRUSH ROAD ENTRY



PRINCIPLES

— Meeting place at the main public realm entry to Burnside Village.
— Key drop-off + pick-up location including bus stop.
— Public face to Burnside Village achieving an attractive entry and destination.

PERSPECTIVE

PLANTING LIST

Shrubs:
Liriope 'Evergreen Giant'
Agave attenuata
Anigozanthos flavidus
Philiodendron xanadu
Trachelospernum jasminoides
Banksia spinulosa 'Honey Pots'
Berberis thunbergii atropurpurea
Clivia miniata
Juniperus sabina
Xanthorrhoea semiplana
Senecio serpens

Trees:
Lagerstroemia indica 'Natchez'
Eucalyptus Camaldulensis
Cercis canadensis 'Forest Pansy'

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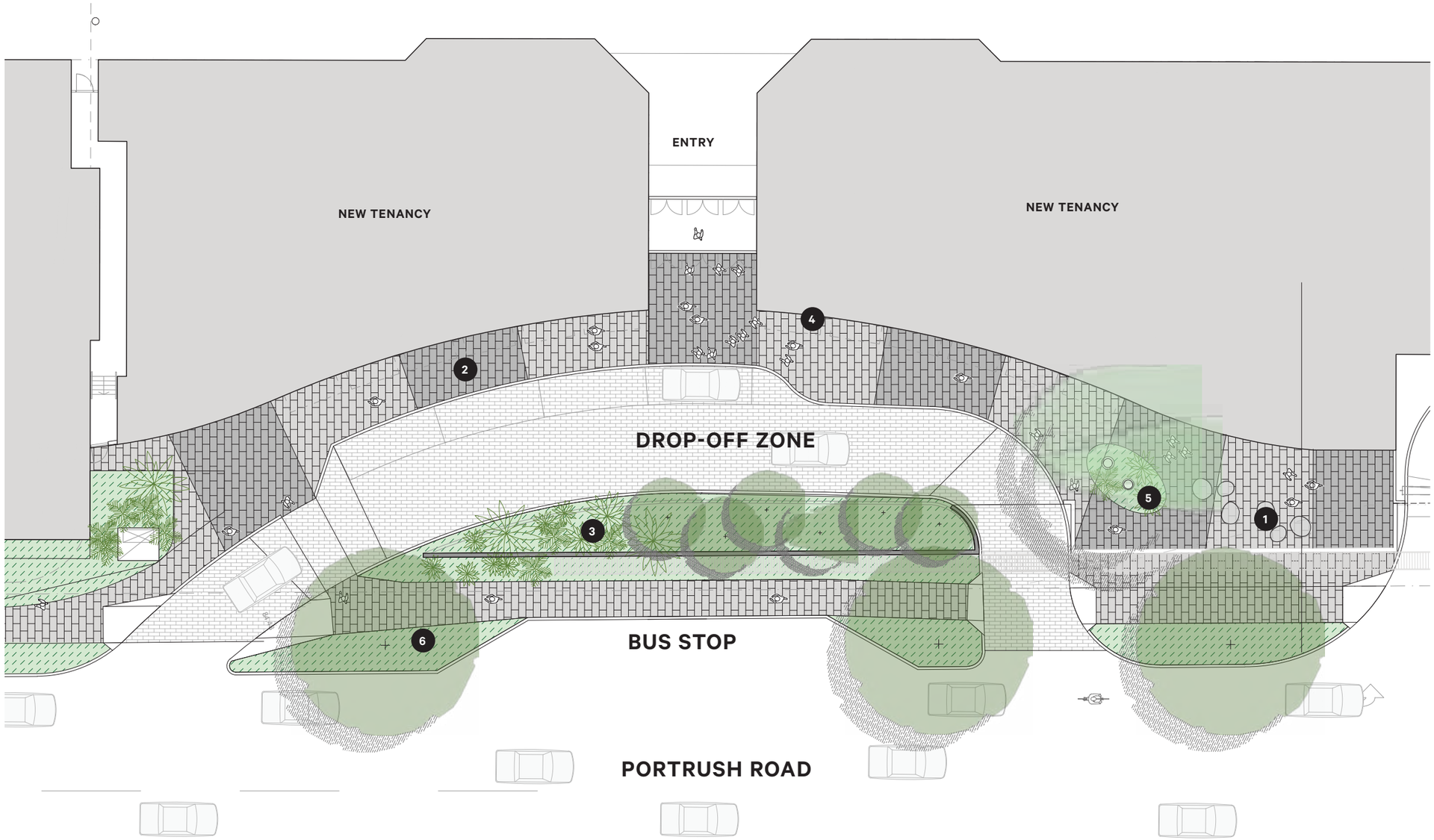

02_PORTRUSH ROAD ENTRY DETAILED LANDSCAPE PLAN

LEGEND

- NEW TREE
- NEW PLANTING
- FEATURE PLANTING
- SMALL FORMAT STONE PAVING
- LARGE FORMAT STONE PAVING
- PUBLIC ART

NORTH

KEY MOVES

1. Possible public art
2. Paved entry carpet
3. Feature garden
4. Seating area
5. Existing significant tree with improved growing conditions
6. Verge planting with deciduous street tree planting

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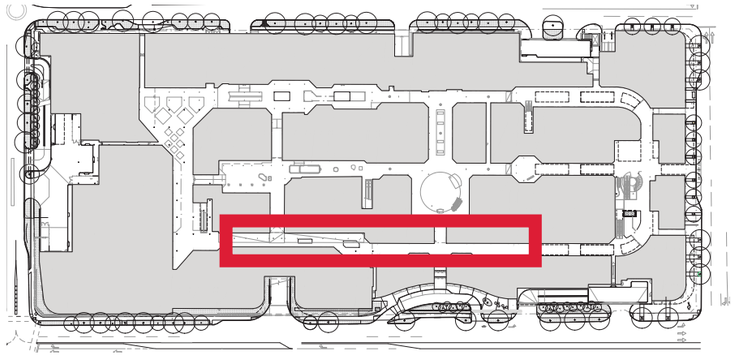
03_VILLAGE WALK



KEY MOVES

— New green passage achieved by planting in pots and selected furniture and lighting.

— Skylight provides natural daylight.

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Purpose Of Issue
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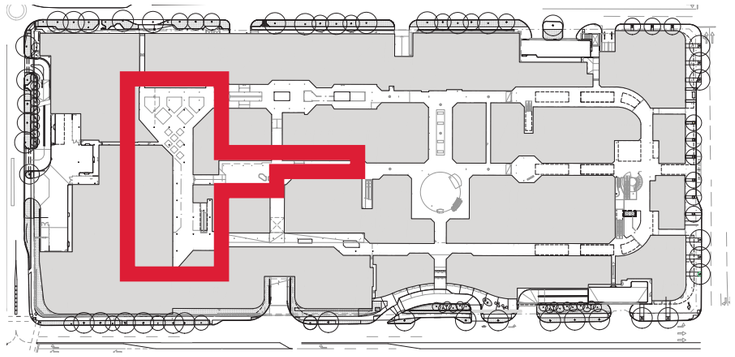
04_VILLAGE MARKET



KEY MOVES

— Updated Village Market based around new shopping centre.

— Contemporary, welcoming, open-plan community destination with a genuine ‘market feel’.

— Greenery and furniture located within laneways and nodes, in addition to existing Vine Mall.

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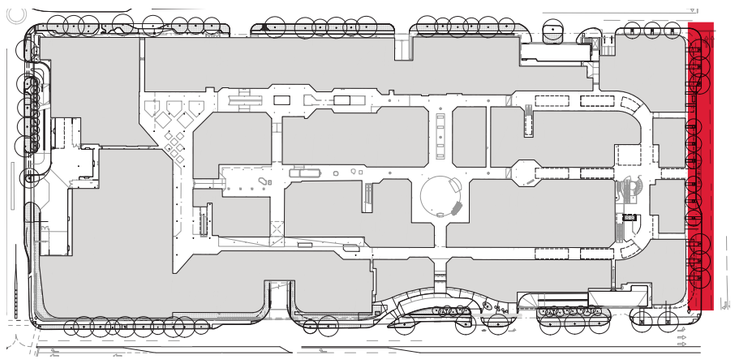
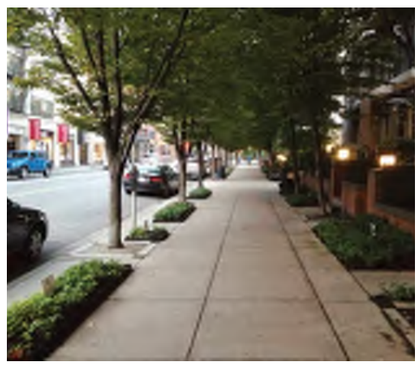
Purpose Of Issue

DEVELOPMENT APPLICATION

05_GREENHILL ROAD STREETSCAPE





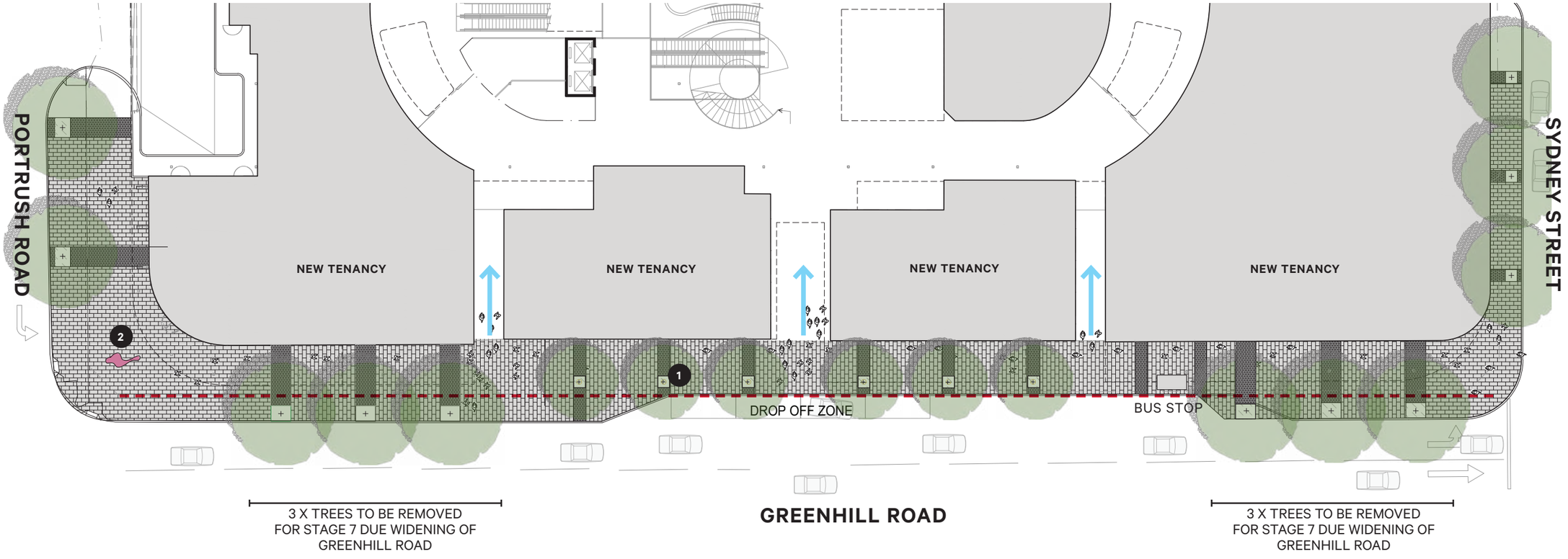
NORTH

KEY

1 Tree Vaults

2 Potential artwork to corner

Possible future road widening



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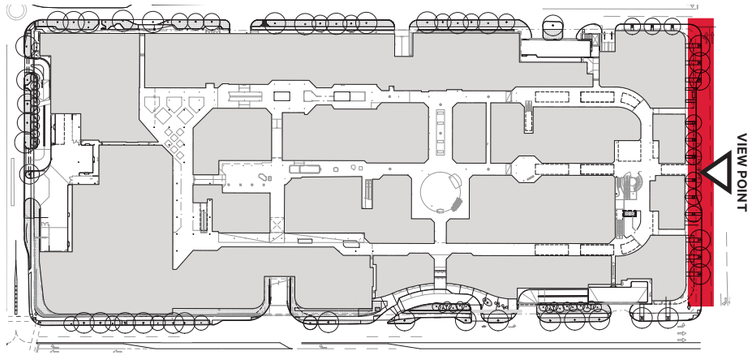
05_GREENHILL ROAD STREETSCAPE



KEY MOVES

— Tree avenue along boundary.
— Green frontage to Greenhill Road.
— Drop off + pick up zone including bus stop.
— Public art at Portrush Road corner interface.
— Maintenance by Burnside Village (subject to discussions with Council).

PERSPECTIVE

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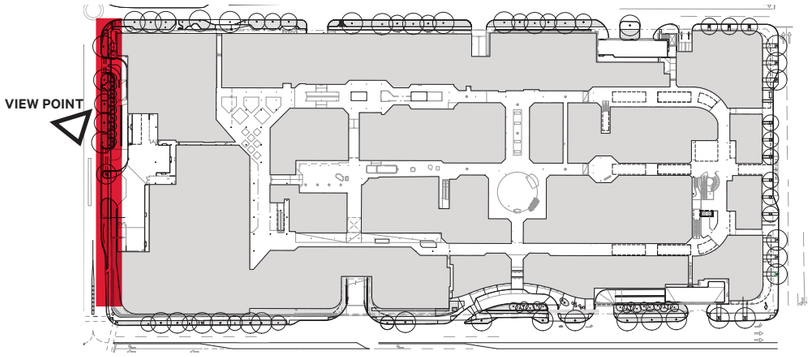
Purpose Of Issue
DEVELOPMENT APPLICATION

06_CATOR STREET VERGE



KEY MOVES

— Infill trees (Sophora Japonica) subject to council approval.
— In-situ concrete footpath.
— Irrigated lawn verge.
— Maintenance by Burnside Village (subject to discussions with Council).

Cator Street verge plantings:
Santolina chamaecyparissus
Westringia fruticosa mundi
Westringia fruiticosa 'Smokey'
Russelia equisetiformis
Grevillea 'Robyn Gordon'
Teucrium fruticans
Correa reflexa
Goodenia 'Gold Cover'
Eremophila glabra 'Kalbarri Carpet'
Eremophila glabra 'Kalgoorlie'

Trees:
Sophora japonica
Zelkova serrata
Melia azedarach
Lagerstroemia indica 'Natchez'

PERSPECTIVE

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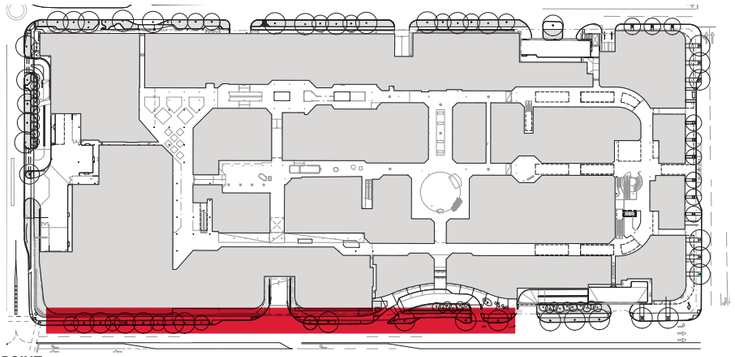
Revision: E
Purpose Of Issue: DEVELOPMENT APPLICATION

07_PORTRUSH ROAD VERGE



VIEW POINT

PERSPECTIVE

KEY MOVES

— In-situ concrete footpath.
— Irrigated lawn verge.
— In-fill street trees.
— Maintenance by Burnside Village (subject to discussions with Council).

Portrush Road verge plantings:

Santolina chamaecyparissus
Westringia fruticosa mundi
Westringia fruiticosa 'Smokey'
Russelia equisetiformis
Grevillea 'Robyn Gordon'
Teucrium fruticans
Correa reflexa
Goodenia 'Gold Cover'
Eremophila glabra 'Kalbarri Carpet'
Eremophila glabra 'Kalgoorlie'

Climbers:
Trachelospernum jasminoides
Hibertia scandens

Trees:
Platanus orientalis

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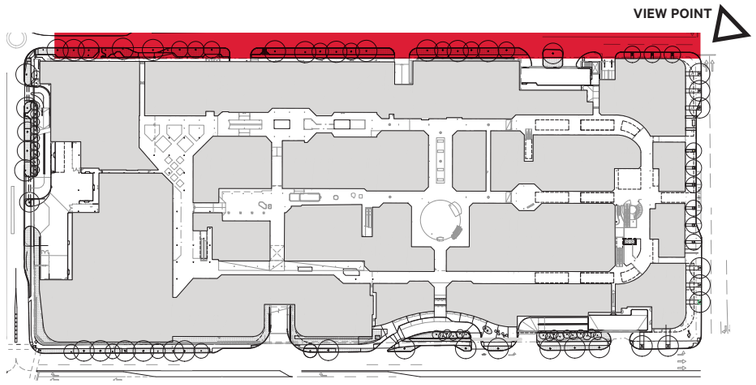
08_SYDNEY STREET VERGE



KEY MOVES

— In-situ concrete footpath.
— Irrigated lawn verge.
— Infill street trees with further jacarandas.
— Maintenance by Burnside Village (subject to discussions with Council).

Sydney St. verge plantings:

Santolina chamaecyparissus
Westringia fruticosa mundi
Westringia fruiticosa ‘Smokey’
Russelia equisetiformis
Grevillea ‘Robyn Gordon’
Teucrium fruticans
Correa reflexa
Goodenia ‘Gold Cover’
Eremophila glabra ‘Kalbarri Carpet’

<u>Trees:</u>
Jacaranda mimosifolia

PERSPECTIVE

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ELEVATIONS

STREET TREES

1 NORTH ELEVATION - GREENHILL RD
1:500

2 SOUTH ELEVATION - CATOR ST
1:500

3 EAST ELEVATION - PORTRUSH RD
1:500

4 WEST ELEVATION - SYDNEY ST
1:500

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MATERIALS & ELEMENTS

VILLAGE GROUNDS

LARGE FORMAT PAVING

PAVED PLAZA

OUTDOOR DINING

PUBLIC ART

FLEXIBLE PLANTING

SHARED ZONES

PORTRUSH ROAD ENTRY

PAVING BANDS

SMALL FORMAT PAVING

MOUNDED PLANTING BEDS

WATER FEATURE

MIXED PLANTING

PUBLIC FURNITURE

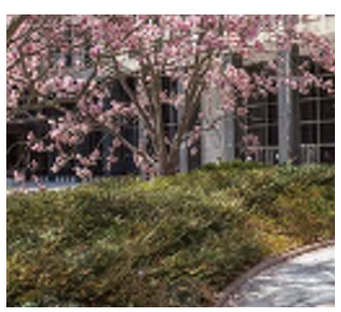
VERGES

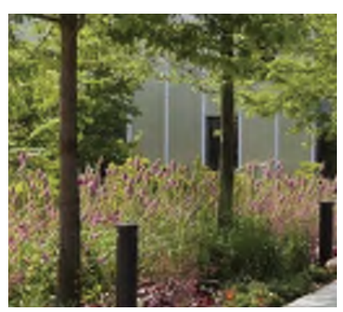
INSITU CONCRETE PATHS

VERGE PLANTING

TURF VERGES

CLIMBING TRELLIS
(ADJACENT BUILDING)


MOUNDED PLANTING
(ADJACENT BUILDING)



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Arboriculture - Botany - Ecology - Eucalypt Research

Tree Report – Burnside Village, Glenside, SA

Arboricultural assessment of four significant trees in relation to a proposed development

Arboricultural assessment and report requested by Edward Meyers of *Oxigen Landscape Architects* on the 28th March 2018.

Arboricultural report prepared by Dean Nicolle following a site inspection and tree assessments on the 1st of April 2018.

Report dated the 1st of April 2018.

CONTENTS

BACKGROUND 4

METHODOLOGY 4

STRUCTURAL ROOT ZONES (SRZs) – Generic information 6

TREE PROTECTION ZONES (TPZs) – Generic information 6

TREE ONE
- Assessment 8
- Worthiness for retention 9
- Structural Root Zone 9
- Tree Protection Zone 9

TREE TWO
- Assessment 10
- Worthiness for retention 11
- Structural Root Zone 11
- Tree Protection Zone 11

TREE THREE
- Assessment 12
- Worthiness for retention 13
- Structural Root Zone 13
- Tree Protection Zone 13

TREE FOUR
- Assessment 14
- Worthiness for retention 15
- Structural Root Zone 15
- Tree Protection Zone 15

SUMMARY of FINDINGS and RECOMMENDATIONS 16

Figure 1. Google Earth image of the Burnside Village site, indicating the location of the four trees subject to this report.

BACKGROUND

The potential redevelopment of the Burnside Village shopping centre has the potential to impact on four significant trees located on the subject site (Figure 1).

This report assesses the four trees with regard to their worthiness for retention, and calculates an appropriate Structural Root Zone (SRZ) and Tree Protection Zone (TPZ) and for each tree.

Important generic information regarding the Structural Root Zones and Tree Protection Zones is provided, following which each of the trees is individually assessed. The report is concluded by a summary of findings and recommendations.

METHODOLOGY

This tree assessment has been conducted in accordance with Australian Standard *AS4970-2009 Protection of Trees on Development Sites* (2009), which provides best practices for the planning and protection of trees on development sites. The Standard provides guidance on how to determine which trees are appropriate for retention, and on the means of protecting those trees during construction.

The Tree Protection Zone (TPZ) and Structural Root Zone (SRZ) have been calculated using methods which conform to *AS 4970*, as detailed below. Information and recommendations provided in this report concerning variations to the calculated TPZ and SRZ, and allowable encroachments within the TPZ and SRZ are in accordance with the guidelines provided in the Australian Standard (*AS 4970*).

The retention worthiness of each tree reflects its overall 'value', and is based on the following data:

- Trunk circumference at 1 metre above ground level;
- Tree origin;
- Current health;
- Further life expectancy;
- Biodiversity value;
- Landscape value;
- Tree structure; and
- Risk to safety

Each tree was scored for each of these eight characteristics (see Table 1). The sum of scores for the tree provides a total score - The higher the total score, the more valuable the tree (see Table 2). The total score for a tree can vary from -110 (lowest point value for all eight characteristics) to 80 points (highest point value for all eight characteristics).

Table 1. Scoring for retention worthiness. *The characteristics and character states used to score each tree to determine its retention priority.*

Legal status	*Trunk >3 m circ.* **Score: 10**		*Trunk 2–3 m circ.* **Score: 5**		*Trunk <2 m circ.* **Score: 0**			
Origin	*Remnant* **Score: 10**	*Remnant/semi* **Score: 8**	*Semi-remnant* **Score: 5**	*Semi- / planted* **Score: 3**	*Planted* **Score: 0**	*Planted / weed* **Score: -5**	*Weed* **Score: -10**	
Health	*Excellent* **Score: 10**	*Above average* **Score: 8**	*Average* **Score: 5**	*Below average* **Score: 3**	*Poor* **Score: 0**		*Very poor* **Score: -10**	*Dead* **Score: -20**
Further life expectancy	*30+ years* **Score: 10**	*20+ years* **Score: 8**	*10–20+ years* **Score: 5**	*10–20 years* **Score: 2**	*<10–20 yrs* **Score: 0**	*<5–10 yrs* **Score: -5**	*<5 years* **Score: -10**	*<2 yrs* **Score: -20**
Biodiversity	*Very high* **Score: 10**	*High* **Score: 8**	*Moderate* **Score: 5**	*Low* **Score: 2**	*Negligible* **Score: 0**		*Invasive* **Score: -10**	
Landscape	*Very high* **Score: 10**	*High* **Score: 8**	*Mod to high* **Score: 5**	*Moderate* **Score: 3**	*Low to mod* **Score: 0**		*Low* **Score: -10**	
Structure	*Excellent* **Score: 10**		*Above average* **Score: 5**		*Average* **Score: 0**	*Below average* **Score: -5**	*Poor* **Score: -10**	*Very poor* **Score: -20**
Risk to safety	*Very low* **Score: 10**	*Low* **Score: 7**	*Low to mod* **Score: 4**		*Moderate* **Score: 0**	*Mod to high* **Score: -5**	*High* **Score: -10**	*Very high* **Score: -20**

Table 2. Retention worthiness by tree score. *The five retention worthiness categories, indicating for each category the score required, the general description of the retention worthiness category, and the development constraints appropriate for that retention worthiness category.*

Retention worthiness	Score	General description	Development constraints
Very highly worthy of retention	>60 points	Remnant or semi-remnant trees in sound health, with a long life expectancy, of superior structure, and with a significant biodiversity value and landscape value	Priority 1A trees are relatively rare and should be retained by appropriate development design and construction.
Highly worthy of retention	45 to 60 points	Trees in sound health and/or with a long life expectancy, of generally sound structure (or where defects can be practically mitigated or managed), and usually with a significant biodiversity value and/or landscape value.	Priority 1 trees should be retained by appropriate development design and construction.
Moderately worthy of retention	30 to 44 points	Trees in sound healthy and/or with an expected moderate to long-life expectancy, of reasonable structure (or where defects can be mostly mitigated or managed), and of moderate to high biodiversity value and/or landscape value	Priority 2 trees should be retained wherever possible, by appropriate development design and construction.
Scarcely worthy of retention	10 to 29 points	Trees often of reduced health and/or having a short to moderate life expectancy, and/or may have some structural flaws, and are generally of lower biodiversity value and/or lower landscape value	Priority 3 trees should not constrain site development but may be retained if the proposed design and construction allows.
Not worthy of retention	<10 points	Trees in poor health and/or having a short life expectancy, and/or have significant structural flaws that cannot be practically mitigated or managed, and/or are of no of little biodiversity value and/or landscape value	Priority 4 trees should not constrain site development and should be removed in the case of site development, even if they do not constrain site development.

STRUCTURAL ROOT ZONES (SRZs) – Generic information

The Structural Root Zone (SRZ) relates to the *roots of the tree*, and is the area required to *maintain the stability of the tree* during and following any development of the site.

The SRZ is effectively an 'exclusion zone' for all activities and development, as it defines the area around the tree in which major structural (anchorage) roots are likely to occur.

The SRZs has been calculated as recommended in the *Australian Standard for the Protection of Trees on Development Sites (AS 4970)*. This is a formula-based method which uses the diameter of the tree at above the root buttress (effectively at ground level in most trees) multiplied by a non-linear factorial (the calculated SRZ tapers-off with larger diameter trees, and varies from a minimum of 1.5 metres radius from the centre of the tree to a maximum of around 5 metres radius from the centre of the tree, depending on trunk diameter).

Activities that should be excluded from the SRZ include any mechanical soil removal (excavation), deposition (storage of fill) or cultivation (disturbance) associated with the proposed development, whether for earthworks, trenching, landscaping, or other associated works, and *including* non-linear fence or pylon footings (i.e. bored pier/post holes and screw-pile piers), *unless it can be demonstrated that the design and construction techniques do not interfere with the roots of the tree where within the SRZ (in accordance with* AS 4970-2009*)*.

TREE PROTECTION ZONES (TPZs) – Generic information

The Tree Protection Zone (TPZ) also relates to the *roots of the tree*, and is necessary to *maintain the health of the tree* during and following the proposed development of the site, by limiting construction activities and machinery access within the TPZ.

The Tree Protection Zone does not indicate the root extent (root spread) of the tree, as the root extent is usually greater than the TPZ in most trees. The TPZ merely designates the area in which soil disturbance must be minimised (and therefore root damage minimised) in order to maintain the health, longevity and stability of the tree.

A Tree Protection Zone is not a 'sterile zone' or an 'exclusion zone' for all activities and development, but instead defines the area around the tree in which tree-sensitive design and construction techniques *must* be employed, in order to maintain the health, longevity and structure of the tree.

The TPZ has been calculated using a method that conforms to the *Australian Standard for the Protection of Trees on Development Sites (AS 4970)*. The Australian Standard allows for the use of species- and tree-specific data to modify the factorial (up or down) to be more specific to the tree being assessed; i.e. relating to the tolerance of the species to root disturbance and the age class of the tree for its species.

The adjustment of the factorial from a minimum of 6 (for young trees of species highly tolerant of soil disturbance) to a maximum of 18 (for old trees of species highly susceptible to soil disturbance) will result in a larger or smaller TPZ for individual trees compared to the generic factorial of 12 which is used where data on the species and individual tree have not been taken into account.

Tree Protection Zones are capped at a minimum of 2.0 metres from the centre of the tree (in accordance with *AS 4970*), regardless of whether the calculated TPZ is actually smaller than this figure. Likewise, the TPZs have been capped at a maximum of 15.0 metres from the centre of the tree (in accordance with *AS 4970*), regardless of whether the calculated TPZ is actually larger than this figure. All TPZ distances are a minimum distance required (in metres) from the centre (trunk) of the tree at natural ground level.

Encroachment of up to 10% of the area of the TPZ is acceptable provided the encroached area of TPZ is gained elsewhere on the subject site and adjoining the outer edge of the TPZ. Encroachment within more than 10% of the area of the recommended TPZ may detrimentally affect the health of the tree by extensively severing or otherwise damaging the root system of the tree. *Pre-existing developed areas (e.g. fully sealed surfaces) within the calculated TPZ radius are not considered part of the effective TPZ area*.

Activities that should be excluded from the TPZ include any mechanical soil removal (excavation), deposition (storage of fill) or cultivation (disturbance) associated with the proposed development, whether for earthworks, trenching, landscaping, or other associated works.

Non-linear fence or pylon footings (i.e. bored pier/post holes and screw-pile piers) are acceptable within the TPZ. As such, structures constructed using pier and beam footings are possible within the TPZ. Other structures and construction activities within the TPZ (such as residential driveways, footpaths, roadways, built-form structures, etc.) may be acceptable in some cases, provided tree-sensitive design and construction methods are employed, which may include:

1) Laying services within piping or conduits under the TPZ using directional under-boring.
2) Construction of hard surfaces (including roadways, driveways, footpaths and floors) over existing soil levels (to avoid the excavation of natural soil) and using structural soil as fill and open-sealed or permeable paving where necessary.
3) Pier & beam or screw-pile constructed structures that do not require area-excavation (cut) or linear-excavation (trenching) of soil.
4) Hand excavation in association with other root-sensitive excavation (e.g. a soil vacuum) to enable larger-sized roots to be retained in-situ. Such excavation is usually used as an exploratory method to ascertain the location and depth of larger-sized roots, which may dictate the required levels/positions of infrastructure.
5) Like-for-like replacement of any exiting surfaces or structures in the TPZ with new surfaces or structures constructed in the same position where within the TPZ.

TREE ONE

Figure 2. Tree One. *Looking approximately west from the subject site on the 1st April 2018.*

TREE ASSESSMENT – *Tree One*

Species: *Eucalyptus camaldulensis* subsp. *camaldulensis* (river red gum).

Legal status: A **significant** tree as defined by the *Development Act 1993*.

- *Species*:	*Eucalyptus camaldulensis*
- *Trunk circ. at one metre*:	> 3 metres
- *Distance to dwelling/pool*:	Not applicable for this species
- *Bushfire Risk*:	Excluded area
- *Living/dead status*:	Alive
- *Exemptions*:	No generic exemptions
- *Listed on Development Plan*:	Yes

Biodiversity value: Very high. A reproductively mature specimen of a locally indigenous species; some bird-habitable hollows are evident.

Landscape value:	High. The tree is conspicuous from Sydney Street.
Estimated age:	90 – 180 years.
Health:	Above average.
Actual life expectancy:	Another 30+ years.
Useful life expectancy:	Another 30+ years.
Structure:	Above average.
Risk to safety:	Currently considered to be low to moderate and acceptable.

WORTHINESS FOR RETENTION – *Tree One*

Tree One is considered to be **highly worthy of retention** (score 60).

STRUCTURAL ROOT ZONE (SRZ) – *Tree One*

A SRZ of 3.8 metres radius from the centre of the tree has been calculated.

This SRZ is based on the tree having a buttress trunk diameter of 1.353 metres – SRZ formula calculation: $((1.353 \times 50)^{0.42}) \times 0.64 = 3.8$ metres.

Any development proposed within the SRZ of the tree should consider the information and guidelines provided in the *STRUCTURAL ROOT ZONES (SRZs) – Generic information* section of this report.

TREE PROTECTION ZONE (TPZ) – *Tree One*

A TPZ of 11.9 metres radius from the centre of the tree has been calculated.

This TPZ is based on the species having a high tolerance to soil disturbances and the tree being a mature specimen of the species (50 to 180 years old) = multiplying factor of nine. Thus: 1.321 (trunk diameter at breast height) x 9 = 11.9 metres.

Any development proposed within the TPZ of the tree should consider the information and guidelines provided in the *TREE PROTECTION ZONES (TPZs) – Generic information* section of this report.

TREE TWO

Figure 3. Tree Two. *Looking approximately south-west (left image) and south (right image) from the subject site on the 1st April 2018.*

TREE ASSESSMENT – *Tree Two*

Species:	*Eucalyptus camaldulensis* subsp. *camaldulensis* (river red gum).
Legal status:	A **significant** tree as defined by the *Development Act 1993*.

- *Species*:	*Eucalyptus camaldulensis*
- *Trunk circ. at one metre*:	> 3 metres
- *Distance to dwelling/pool*:	Not applicable for this species
- *Bushfire Risk*:	Excluded area
- *Living/dead status*:	Alive
- *Exemptions*:	No generic exemptions
- *Listed on Development Plan*:	Yes

Biodiversity value:	Very high. A reproductively mature specimen of a locally indigenous species; some bird-habitable hollows are evident.
Landscape value:	Very high. The tree is conspicuous from Sydney Street.

Estimated age:	80 – 160 years.
Health:	Excellent.
Actual life expectancy:	Another 30+ years.
Useful life expectancy:	Another 20+ years.
Structure:	Average.
Risk to safety:	Currently considered to be moderate and marginally unacceptable.

WORTHINESS FOR RETENTION – *Tree Two*

Tree Two is considered to be **highly worthy of retention** (score 48).

STRUCTURAL ROOT ZONE (SRZ) – *Tree Two*

A SRZ of 3.6 metres radius from the centre of the tree has been calculated.

This SRZ is based on the tree having a buttress trunk diameter of 1.194 metres – SRZ formula calculation: $((1.194 \times 50)^{0.42}) \times 0.64 = 3.6$ metres.

Any development proposed within the SRZ of the tree should consider the information and guidelines provided in the *STRUCTURAL ROOT ZONES (SRZs) – Generic information* section of this report.

TREE PROTECTION ZONE (TPZ) – *Tree Two*

A TPZ of 10.0 metres radius from the centre of the tree has been calculated.

This TPZ is based on the species having a high tolerance to soil disturbances and the tree being a mature specimen of the species (50 to 180 years old) = multiplying factor of nine. Thus: 1.114 (trunk diameter at breast height) x 9 = 10.0 metres.

Any development proposed within the TPZ of the tree should consider the information and guidelines provided in the *TREE PROTECTION ZONES (TPZs) – Generic information* section of this report.

TREE THREE

Figure 4. Tree Three. *Looking approximately south-east (left image) and north) right image) from the subject site on the 1st April 2018.*

TREE ASSESSMENT – *Tree Three*

Species:	*Eucalyptus camaldulensis* subsp. *camaldulensis* (river red gum).
Legal status:	A **significant** tree as defined by the *Development Act 1993*.

- *Species*:	*Eucalyptus camaldulensis*
- *Trunk circ. at one metre*:	> 3 metres
- *Distance to dwelling/pool*:	Not applicable for this species
- *Bushfire Risk*:	Excluded area
- *Living/dead status*:	Alive
- *Exemptions*:	No generic exemptions
- *Listed on Development Plan*:	Yes

Biodiversity value: High. A reproductively mature specimen of a locally indigenous species; no bird-habitable hollows are evident.

Landscape value: Very high. The tree is the dominant tree on the Burnside Village site.

Estimated age: 70 – 140 years.

Health: Above average.
Actual life expectancy: Another 30+ years.
Useful life expectancy: Another 30+ years.

Structure: Above average.
Risk to safety: Currently considered to be low and acceptable.

WORTHINESS FOR RETENTION – *Tree Three*

Tree Three is considered to be **very highly worthy of retention** (score 63).

STRUCTURAL ROOT ZONE (SRZ) – *Tree Three*

A SRZ of 3.6 metres radius from the centre of the tree has been calculated.

This SRZ is based on the tree having a buttress trunk diameter of 1.210 metres – SRZ formula calculation: $((1.210 \times 50)^{0.42}) \times 0.64 = 3.6$ metres.

Any development proposed within the SRZ of the tree should consider the information and guidelines provided in the *STRUCTURAL ROOT ZONES (SRZs) – Generic information* section of this report.

TREE PROTECTION ZONE (TPZ) – *Tree Three*

A TPZ of 10.0 metres radius from the centre of the tree has been calculated.

This TPZ is based on the species having a high tolerance to soil disturbances and the tree being a mature specimen of the species (50 to 180 years old) = multiplying factor of nine. Thus: 1.114 (trunk diameter at breast height) x 9 = 10.0 metres.

Any development proposed within the TPZ of the tree should consider the information and guidelines provided in the *TREE PROTECTION ZONES (TPZs) – Generic information* section of this report.

TREE FOUR

Figure 5. Tree Four. *Looking approximately south-east from the subject site.*

TREE ASSESSMENT – *Tree Four*

Species:	*Eucalyptus camaldulensis* subsp. *camaldulensis* (river red gum).
Legal status:	A **significant** tree as defined by the *Development Act 1993*.

- *Species*:	*Eucalyptus camaldulensis*
- *Trunk circ. at one metre*:	Combined > 3 metres
- *Distance to dwelling/pool*:	Not applicable for this species
- *Bushfire Risk*:	Excluded area
- *Living/dead status*:	Alive
- *Exemptions*:	No generic exemptions
- *Listed on Development Plan*:	Yes

Biodiversity value:	Very high. A reproductively mature specimen of a locally indigenous species; some bird-habitable hollows are evident.
Landscape value:	Very high. The tree is conspicuous from Portrush Road.

Estimated age: 100 – 200 years.

Health: Above average.
Actual life expectancy: Another 30+ years.
Useful life expectancy: Another 30+ years.

Structure: Above average.
Risk to safety: Currently considered to be low to moderate and acceptable.

WORTHINESS FOR RETENTION – *Tree Four*

Tree Four is considered to be **very highly worthy of retention** (score 62).

STRUCTURAL ROOT ZONE (SRZ) – *Tree Four*

A SRZ of 3.6 metres radius from the centre of the tree has been calculated.

This SRZ is based on the tree having a combined buttress trunk diameter of 1.219 metres (calculated using the square root of each trunk diameter squared) – SRZ formula calculation: $((1.219 \times 50)^{0.42}) \times 0.64 = 3.6$ metres.

Any development proposed within the SRZ of the tree should consider the information and guidelines provided in the *STRUCTURAL ROOT ZONES (SRZs) – Generic information* section of this report.

TREE PROTECTION ZONE (TPZ) – *Tree Four*

A TPZ of 10.6 metres radius from the centre of the tree has been calculated.

This TPZ is based on the species having a high tolerance to soil disturbances and the tree being a mature specimen of the species (50 to 180 years old) = multiplying factor of nine. Thus: 1.179 (the combined trunk diameter at breast height, calculated using the square root of each trunk diameter squared) x 9 = 10.6 metres.

Any development proposed within the TPZ of the tree should consider the information and guidelines provided in the *TREE PROTECTION ZONES (TPZs) – Generic information* section of this report.

SUMMARY of FINDINGS and RECOMMENDATIONS

A summary of my arboricultural findings for the four trees subject of this report is provided below.

Tree One
- Highly worthy of retention.
- Calculated Structural Root Zone of 3.8 metres radius.
- Calculated Tree Protection Zone of 11.9 metres radius.

Tree Two
- Highly worthy of retention.
- Calculated Structural Root Zone of 3.6 metres radius.
- Calculated Tree Protection Zone of 10.0 metres radius.

Tree Three
- Very highly worthy of retention.
- Calculated Structural Root Zone of 3.6 metres radius.
- Calculated Tree Protection Zone of 10.0 metres radius.

Tree Four
- Very highly worthy of retention.
- Calculated Structural Root Zone of 3.6 metres radius.
- Calculated Tree Protection Zone of 10.6 metres radius.

I thank you for the opportunity to provide this arboricultural assessment and report. If you require further information or clarification please contact me for assistance.

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Arboriculture - Botany - Ecology - Eucalypt Research

Tree Report – Cator Street, Burnside, SA

Arboricultural assessment of a regulated *Melia azedarach* (white cedar)

Arboricultural assessment and report requested by Alex Game of *Oxigen Landscape Architects*, on the 10th of January 2018.

Arboricultural report prepared by Dean Nicolle following a site inspection and tree assessment on the 31st of January 2018.

Report dated the 31st of January 2018.

TREE ASSESSMENT

Figure 1. The subject tree, looking approximately west-north-west from Cator Street.

Location: Immediately west of crossover to the Burnside Village receiving area on Cator Street in Burnside, South Australia.

Species: *Melia azedarach* (white cedar).

Legal status: A **regulated** tree as defined by the *Development Act 1993*.

- *Species*:	*Melia azedarach*
- *Trunk circ. at one metre*:	2.40 metres
- *Distance to dwelling/pool*:	>10 metres
- *Bushfire Risk*:	Excluded area
- *Living/dead status*:	Currently alive
- *Exemptions*:	No generic exemptions

Current size: Approximately 10 metres tall, average of 12 metres wide.

Trunk structure: Single trunk up to 2.5 metres above ground level, from where four primary leaders divaricate (one of which has failed and been removed).

Canopy structure:	Generally rounded in shape, slightly dense in density, and weighted slightly to the north.
Anticipated size:	Fully-grown under the existing environmental and site conditions and considering the species, age, health and structure of the tree.
Species origin:	The species is exotic to the locality. It is indigenous to southern Asia including parts of far northern Australia.
Tree origin:	Certainly planted.
Biodiversity value:	Low. A reproductively mature specimen of a locally exotic Australian native species; no habitable hollows are evident in the tree.
Landscape value:	Moderate to high. The tree is conspicuous from Cator Street.
Estimated age:	30 – 60 years.
Actual life expectancy:	Another 20+ years.
Useful life expectancy:	Another 10 – 20+ years.
Health:	Above average and apparently stable.
Vigour:	Moderate.
Borer activity:	None visibly evident.
Termite activity:	None visibly evident.
Fungal wood decay:	Substantial wood decay is evident in the removed central leader and the storm-damaged northern leader (Figures 2, 3 and 4), and is also likely to be present in the trunk of the tree.
Basal structure:	Well buttressed, healthy and apparently sound.
Trunk structure:	Healthy and apparently sound.
WTSF likelihood:	The likelihood of Whole-of-Tree Structural Failure is currently considered to be **very low**.
Branch structure:	Poor, due to past storm damage. The central leader has been lopped back to near the trunk (Figures 2, 3 and 4), presumably due to past storm damage, which has opened up the canopy of the tree. The northern leader also has a failure scar from past storm damage (Figures 2 and 3).
BF likelihood:	The likelihood of Branch Failure is currently considered to be **Low to moderate.**
Failure history:	The primary central leader of the tree has been lopped back to near the trunk, presumably due to past storm damage, which has opened up the canopy of the tree (Figures 2, 3 and 4). The northern leader also has a failure scar from past storm damage (Figures 2 and).

Risk to safety: Currently considered to be **low to moderate and acceptable.**

Tree-caused damage: The tree has not caused any substantial and visible damage to substantial structures of value.

Figure 2. The upper trunk and primary leaders of the subject tree, looking approximately east from the Cator Street verge. The central leader has been lopped back to near the trunk where indicated by the superimposed red ring, presumably due to past storm damage. The northern leader also has a failure scar from past storm damage (superimposed yellow ring). Extensive wood decay is evident at both scars.

Figure 3. The trunk and primary leaders of the subject tree, looking approximately east from the Cator Street verge. The central leader has been lopped back to near the trunk where indicated by the superimposed red ring, presumably due to past storm damage. The northern leader also has a failure scar from past storm damage (superimposed yellow ring). Extensive wood decay is evident at both scars.

Figure 4. Close-up of the pruning scar of the central leader, which has been lopped back to near the trunk, presumably due to past storm damage. Extensive wood decay is evident at this pruning scar.

RETENTION VALUE

The retention value of the tree is based on the following data, recorded as part of this tree assessment:

- Historical significance (*National Trust of South Australia*);
- Legal status (*Development Act 1993*);
- Tree origin;
- Current health;
- Further Useful Life Expectancy (ULE);
- Biodiversity value;
- Landscape value;
- Tree structure; and
- Risk to safety

The tree has been scored for each of these nine characteristics (see Table 1). The sum of scores for the tree provides a total score - The higher the total score, the more valuable the tree (see Table 2). The total score for a tree can vary from -110 (lowest point value for all nine characteristics) to 120 points (highest point value for all nine characteristics).

In this case, the tree has a score of 24 (see Table 1), and is therefore assessed to be of low retention value (see Table 2).

Table 1. Scoring for retention value. *The characteristics and character states used to score the tree to determine its retention value. The character states for the subject tree are highlighted green.*

Historical significance (NTSA*)	*National importance* **Score: 40**	*State importance* **Score: 30**	*Regional importance* **Score: 20**	*Local importance* **Score: 10**	*Not listed on NTSA*[1] **Score: 0**			
Legal status	*Significant* **Score: 10**		*Regulated* **Score: 5**		*Other* **Score: 0**			
Origin	*Remnant* **Score: 10**	*Remnant/semi* **Score: 8**	*Semi-remnant* **Score: 5**	*Semi- / planted* **Score: 3**	*Planted* **Score: 0**	*Planted / weed* **Score: -5**	*Weed* **Score: -10**	
Health	*Excellent* **Score: 10**	*Above average* **Score: 8**	*Average* **Score: 5**	*Below average* **Score: 3**	*Poor* **Score: 0**		*Very poor* **Score: -10**	*Dead* **Score: -20**
Further ULE	*30+ years* **Score: 10**	*20+ years* **Score: 8**	*10–20+ years* **Score: 5**	*10–20 years* **Score: 2**	*<10–20 yrs* **Score: 0**	*<5–10 yrs* **Score: -5**	*<5 years* **Score: -10**	*<2 yrs* **Score: -20**
Biodiversity	*Very high* **Score: 10**	*High* **Score: 8**	*Moderate* **Score: 5**	*Low* **Score: 2**	*Negligible* **Score: 0**		*Invasive* **Score: -10**	
Landscape	*Very high* **Score: 10**	*High* **Score: 8**	*Mod to high* **Score: 5**	*Moderate* **Score: 3**	*Low to mod* **Score: 0**		*Low* **Score: -10**	
Structure	*Excellent* **Score: 10**		*Above average* **Score: 5**		*Average* **Score: 0**	*Below average* **Score: -5**	*Poor* **Score: -10**	*Very poor* **Score: -20**
Risk to safety	*Very low* **Score: 10**	*Low* **Score: 7**	*Low to mod* **Score: 4**		*Moderate* **Score: 0**	*Mod to high* **Score: -5**	*High* **Score: -10**	*Very high* **Score: -20**

[1] *National Trust of South Australia* register of significant trees.

Table 2. Retention value by tree score. *The five retention value categories, indicating the score, general description, and the development constraints appropriate for each category. The retention value of the subject tree (score 24) is highlighted green.*

Retention value	Score	General description	Development constraints
Very high	>60 points	Remnant or semi-remnant trees in sound health, with a long Useful Life Expectancy, of superior structure, and with a significant biodiversity value and landscape value	Very high value trees are relatively rare and should be retained by appropriate development design and construction.
High	45 to 60 points	Trees in sound health and/or with a long Useful Life Expectancy, of generally sound structure (or where defects can be practically mitigated or managed), and usually with a significant biodiversity value &/or landscape value	High value trees should be retained by appropriate development design and construction.
Moderate	30 to 44 points	Trees in sound healthy and/or with an expected moderate to long Useful Life Expectancy, of reasonable structure (or where defects can be mostly mitigated or managed), and of moderate to high biodiversity value &/or landscape value	Moderate value trees should be retained wherever possible, by appropriate development design and construction.
Low	10 to 29 points	Trees often of reduced health and/or having a short to moderate Useful Life Expectancy, and/or may have some structural flaws, and are generally of lower biodiversity value &/or lower landscape value	Low value trees should not constrain site development but may be retained if the proposed design and construction allows.
No value	<10 points	Trees in poor health and/or having a short or exceeded Useful Life Expectancy, and/or have significant structural flaws that cannot be practically mitigated or managed, &/or are of no of little biodiversity value &/or landscape value	Trees assessed as being of no value should not constrain site development and should be removed in the case of site development, even if they do not constrain the development.

ADDRESSING THE DEVELOPMENT PLAN
Burnside (City), consolidated 19 December 2017

REGULATED TREES
OBJECTIVES

Objective 25: The conservation of regulated trees that provide important aesthetic and/or environmental benefit.

The tree does not provide an *important* aesthetic benefit to the local area. Nonetheless, the tree is highly visible from Cator Street.

The tree does not provide an *important* environmental benefit, due to its locally exotic status and the lack of any habitable faunal hollows in the tree.

Objective 26: Development in balance with preserving regulated trees that demonstrate one or more of the following attributes:

(a) significantly contributes to the character or visual amenity of the locality;
The tree does not provide a *significant* contribution to the character and amenity of the local area. Nonetheless, the tree is highly visible from Cator Street.

(b) indigenous to the local area;
The tree is of a species that is not indigenous to the local area.

(c) a rare or endangered species;
The tree is of a species that is not listed as rare or endangered.

(d) an important habitat for native fauna.
The tree is a reproductively mature specimen of a locally exotic Australian native species. No habitable faunal hollows are evident in the tree. Therefore, the tree does not represent an *important* habitat for native fauna.

PRINCIPLES OF DEVELOPMENT CONTROL

79 Development should have minimum adverse effects on regulated trees.
The tree is not considered to be worthy of constraining site development.

80 A regulated tree should not be removed or damaged other than where it can be demonstrated that one or more of the following apply:

(a) the tree is diseased and its life expectancy is short;
The tree is not unusually diseased and its life expectance is not anticipated to be short.

(b) the tree represents a material risk to public or private safety;
The tree currently represents a low to moderate and acceptable (although arguably material) risk to safety.

(c) The tree is causing damage to a building;
The tree is not currently causing or threatening to cause substantial damage to a building.

(d) development that is reasonable and expected would not otherwise be possible;
The tree is not considered to be worthy of constraining site development.

(e) the work is required for the removal of dead wood, treatment of disease, or is in the general interests of the health of the tree.
No work is proposed for the removal of dead wood, treatment of disease, or that is in the general interests of the health of the trees.

81 Tree damaging activity other than removal should seek to maintain the health, aesthetic appearance and structural integrity of the tree.
Not applicable.

SUMMARY of FINDINGS and RECOMMENDATIONS

Legal status of the tree
The subject tree is regulated as defined by the *Development Act 1993*. As such, local government development approval is needed to remove or otherwise damage the tree.

Retention value
The subject tree is considered to be of low value (score 24, see Tables 1 and 2).

Recommendations
The tree is not worthy of constraining site development, but is suitable for retention if the proposed development allows.

I thank you for the opportunity to provide this arboricultural assessment and report.
If you require further information or clarification please contact me for assistance.

Dean Nicolle
OAM, BAppSc Natural Resource Management, BSc Botany (Hons), Ph.D

Appendix D

Traffic Impact Assessment

Burnside Village Redevelopment

Cohen Group

AIMSUN Scenario Model Analysis Report

IW197400-TP-RP-0002 | C

January 14, 2019

Stage 5, 6 and 7

Document history and status

Revision	Date	Description	By	Review	Approved
A	17/12/2018	Issued as draft for comment	M Heintze	S Elaurant	S. Elaurant
B	20/12/2018	Completion of interim stage modelling	M Heintze	S Elaurant	S. Elaurant
C	14/01/2019	Corrections to Medical Centre and Cinema Traffic Generations, and addition of Appendix C	M Heintze		M Heintze

Distribution of copies

Revision	Issue approved	Date issued	Issued to	Comments
B	20/12/2018	20/12/2018	DPTI	
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Burnside Village Redevelopment

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Contents

1. Introduction 1
1.1 Background 1
1.2 Proposed Development 2
1.3 Related Documentation 3
1.4 Intellectual Property and Model Purpose 4
2. Existing Conditions 5
3. Scenario Models 9
3.1 Modelled Scenarios 9
3.2 Scenario Road Network Improvements 11
3.2.1 Scenario 0A – Modified Base Model 11
3.2.2 Scenario 0B – Modified Base with Third lane on Greenhill Road westbound 12
3.2.3 Scenario 4B – Signalised Sydney Street / Greenhill Road intersection with Indented Bus Bay on Greenhill Road 13
3.2.4 Scenario 4C – Stage 6 Interim Staging Test of Scenario 4B without Cator Street road network modifications 17
3.2.5 Scenario 5 –Third lane on Greenhill Road westbound 17
3.2.6 Scenario 0B and 5 Sensitivity Testing – Third Lane on Greenhill Road westbound 18
4. Scenario Demand 19
4.1 Development Traffic Generation 19
4.2 Development Traffic Distribution 21
4.3 Development traffic demand reductions 25
4.3.1 Multi-purpose trips 25
4.3.2 Background traffic demand reduction for pass-by traffic 25
4.4 Other development distributions considered 26
4.4.1 Right turn banned at Sydney Street approach onto Greenhill Road eastbound 26
5. Summary of Scenario Performance 27
6. Operational Issues 36
6.1 Rat Running via Sydney Street and Cator Street 36
6.2 Greenhill Road Eastbound Bus Stop between Portrush Road and Sydney Street 36
6.3 Third westbound lane on Greenhill Road between Portrush Road and Sydney Street 37
7. Preferred Scenario 38
8. Summary and Conclusions 39

Appendix A. Travel Time Performance Summaries
A.1 Stage 6 Development
A.2 Stage 7 Development
Appendix B. Burnside Village Development Masterplan Scheme
Appendix C. Supplementary Traffic Assessment

1. Introduction

Jacobs Group (Australia) Pty Ltd has been commissioned by the Cohen Group to develop an AIMSUN microsimulation traffic model of proposed expansion scenarios for the Burnside Village shopping centre. This report documents the AIMSUN scenario model development for the Burnside Village Redevelopment (Stages 5, 6 and 7), and is intended to document the modelled performance of the proposed expansion scenarios based on the outputs of the AIMSUN microscopic scenario testing models.

The original scope of this AIMSUN model was agreed with DPTI staff in October 2017 to include a Thursday PM peak period model assessment only, and later expanded upon in February 2018 to include a Thursday AM peak and Saturday peak period models.

This report updates a previous report submitted by Jacobs on 13 June 2018, noting a change in the proposed new development for the Burnside Village. The calibration of the base model used for both assessments was the subject of a previous report and accepted by DPTI in July 2018.

The resultant impact to the modelled scenario options (Stages 5, 6 and 7) tested is documented in this report, which supersedes previous scenario model reports.

*NOTE: A Supplementary Traffic Assessment memorandum (refer **Appendix C**) documents one further piece of analysis subsequent to the TIA:*

(a) A further test of traffic performance of the ultimate (2026) package of roadworks identified for Stage 7 of the Burnside Village Redevelopment, (Scenario 5) assuming the three-lane westbound section of Greenhill Road terminated at the Sydney Street intersection, with two through and one left-turning lane.

1.1 Background

Burnside Village is a unique major retail destination in inner suburban Adelaide, located between Portrush Road, Greenhill Road, Cator Street and Sydney Street in Glenside approximately 4 km east of the Adelaide CBD. Over the years, the site has undergone continual development in response to growing community needs to provide a contemporary retail offering. Currently, the village covers more than 20,000 m^2 gross leasable floor area (GFLA), including a supermarket, and is owned by the Cohen Group who are proposing the first major upgrade for the village in almost 10 years.

A previous traffic impact assessment was undertaken in 2016 of the now-superseded Stage 5 development masterplan scheme (dated 22/03/2016, as provided by Gensler) to inform the traffic impact of the then-presented development scheme. The previously assessed scheme proposed a 16,700 m^2 nett increase in FSA for the Stage 5 Burnside Village Redevelopment, plus an additional Stage 6 with an additional 4,100 m^2 FSA of retail space and 22,000 m^2 FSA for a hotel. That assessment included a SIDRA modelling assessment, which recommended the following for the existing road network (and will be considered further in the revised traffic assessment of the revised scheme):

1) Stage 5 (and Stage 6) Burnside Village development (for the now-outdated scheme as previously assessed) would have a significant and negative impact on the performance of the Greenhill Road – Sydney Street and Greenhill Road – Portrush Road intersections, if no changes to the existing local traffic network are made.
2) Modifying the local traffic network by:
    a) signalising the Greenhill Road – Sydney Street intersection (and relocating the existing pedestrian signal crossing on Greenhill Road to this new intersection);

b) banning the right turn from Sydney Street onto Greenhill Road; and,

c) introducing a third, westbound lane on Greenhill Road, that passes through both northern junctions, will result in Greenhill Road intersections that perform better, following both stages of development, than they do under existing road and Burnside Village traffic conditions.

3) Review of the minimum westbound approach lane length on Portrush Road corresponding to optimal Greenhill Road – Portrush Road intersection performance (approximately 125 m, for the now-outdated scheme as previously assessed).

To provide more supporting evidence of the development's impact on the road network traffic distribution (particularly to support the previous claimed benefits from moving the existing pedestrian signal on Greenhill Road between Portrush Road and Sydney Street), the Department of Planning, Transport and Infrastructure (DPTI) requested that the revised Stage 5 development masterplan scheme be modelled in AIMSUN.

Since then, additional land has been obtained by the Cohen Group, which has resulted in a revised Stage 5, 6 and 7 development masterplan scheme that has been developed and modelled in AIMSUN.

1.2 Proposed Development

The current redevelopment masterplan scheme for the Burnside Village (dated 19/11/2018, as provided by Titanium Property Investments / The Buchan Group) proposes the following stages:

- **Stage 5 –** ***no change in net floor space area proposed.***
- **Stage 6 –** an increase of approximately 13,302 m^2 nett floor space area (FSA) over the existing village. Parking for up to 1733, cars is also proposed as part of the Stage 6 Redevelopment – an increase of 509 car parking spaces over the existing provision.
- **Stage 7 –** an increase of approximately 27,231 m^2 nett floor space area (FSA) over the existing village. Parking for up to 2,079 cars is also proposed as part of the Stage 7 Redevelopment – an increase of 855 car parking spaces over the existing provision (346 car parking spaces over the Stage 6 provision).

The proposed breakdown of development areas (split by land use), as considered for this assessment, is shown in Table 1.1 and Table 1.2 below.

Table 1.1: Proposed Stage 6 development gross leasable areas (GLA)

Areas (m^2)	Existing	Stage 6 Development		Total Development	Nett Change
		Existing - Demolished	Proposed - Shopping Centre		
Office	**2,571**	1,088	1,159	**2,642**	**71**
Supermarket	**3,854**	-	-	**3,854**	**-**
Retail	**17,439**	4,239	12,117	**25,317**	**7,878**
Restaurant	**-**	-	3,072	**3,072**	**3,072**
Gym	**332**	-	-	**332**	**-**
Childcare Centre	**-**		-	**-**	**-**
Cinema	**-**		2,281	**2,281**	**2,281**
Total	**24,196**	5,327	18,629	**37,498**	**13,302**

Table 1.2: Proposed Stage 7 development gross leasable areas (GLA)

Areas (m^2)	Existing	Stage 6&7 Development		Total Development	Nett Change
		Existing - Demolished	Proposed - Shopping Centre		
Office	**2,571**	2,546	4,495	**4,520**	**1,949**
Supermarket	**3,854**	254	1,800	**5,400**	**1,546**
Retail	**17,439**	6,583	18,662	**29,518**	**12,079**
Restaurant	**-**	-	6,908	**6,908**	**6,908**
Gym**	**332**	332	600	**600**	**268**
Childcare Centre* **	**-**	-	1,600	**1,600**	**1,600**
Cinema	**-**	-	2,281	**2,281**	**2,281**
Medical Centre**	**-**	-	600	**600**	**600**
Total	**24,196**	9,715	36,946	**51,427**	**27,231**

* The Childcare Centre is assumed to cater for 128 children

** The above table has included potential alternate traffic generating uses for the office tower, such as, gym, child care centre and medical centre to allow long term flexibility and to ensure traffic generation is appropriately considered.

It is noted that further refinements to the masterplan scheme have occurred since the traffic impact assessment modelling was undertaken. As a result, there are slight differences to the floor areas quoted in this report versus the latest masterplan scheme. However, such changes result in negligible impact to the total peak hour traffic generations attributable to the development's nett change in area.

1.3 Related Documentation

This report forms part of the overall documentation of the proposed Burnside Village Redevelopment and should be read in conjunction with the related documentation detailed in **Table 1.3**.

Table 1.3: Related documentation

Document number	Type	Title/Description
IW177300-TP-RP-0001	Report	Burnside Village Redevelopment - AIMSUN Base Model Development Report
IW177300-TP-RP-0002	Report	AIMSUN Scenario Model Analysis Report (Previous Stage 5 Assessment)

Note that both reports were 'accepted in principle' by DPTI on 12/07/2018.

This ***AIMSUN Scenario Model Analysis Report*** for the Revised Stage 6 and 7 Burnside Village Redevelopment builds upon the scenario modelling undertaken as part of the previous considered Stage 5 development.

1.4 Intellectual Property and Model Purpose

This report and accompanying model has been prepared by Jacobs for the Cohen Group, who own the intellectual property contained within the model. It is supplied to DPTI for the purposes of impact assessment. Any use of this model for purposes other than the impact assessment of the Burnside Village shopping centre is not permitted without the written permission of the Cohen Group.

2. Existing Conditions

The Burnside Village shopping centre is bounded by Portrush Road to the east, Greenhill Road to the north, Sydney Street to the west and Cator Street to the south. The extent of the base model is illustrated in **Figure 2-1**.

Greenhill Road has been modelled between Devereux Rd (TS438) and Conyngham Street (TS531). Portrush Road has been modelled between the pedestrian crossing at the Loreto College frontage (north of Burnside Village between Alexandra Avenue and Grant Avenue) (PC094) and the pedestrian crossing at the Glenunga Mitre 10 frontage (south of Burnside Village between Hay Road and Highfield Avenue) (PC103). These model limits are as per previous reports and as agreed with DPTI in earlier meetings.

The following junctions are included in the model road network:

- Greenhill Road / Portrush Road (TS088) Signalised intersection
- Cator Street / Portrush Road (TS229) Signalised intersection
- Greenhill Road / Sydney Street Un-signalised junction (Sydney Street stop sign controlled)
- Cator Street / Sydney Street Roundabout
- Greenhill Road midblock pedestrian crossing between Portrush Road and Sydney Street (PC221).

Note that the Calibrated Base Model Network considers the Greenhill Road / Portrush Road intersection geometry as observed in February 2018, with uncontrolled left turn slip lanes from the northern and eastern intersection approaches, as illustrated in **Figure 2-3** below.

Greenhill Road and Portrush Road are four-lane divided urban arterial roads under the care and control of the Department of Planning Transport and Infrastructure (DPTI). The posted speed limit is 60 km/h along both roads.

Cator Street and Sydney Street are both two lane roads with on-street parking that operate under the care and control of the City of Burnside, providing a local collector function with posted speed of 50 km/h.

There are in total six accesses to the shopping centre car park via Sydney Street, Cator Street and Portrush Road. All have been included in the model network. There is no vehicle access from Greenhill Road into the shopping centre car park.

All existing public transport stops are included in the model network. At bus stops where the kerbside lane width is sufficient to allow a vehicle to pass a stationary bus, the stop has been modelled as a bus bay. Elsewhere, bus stops are modelled as regular non-indented stops.

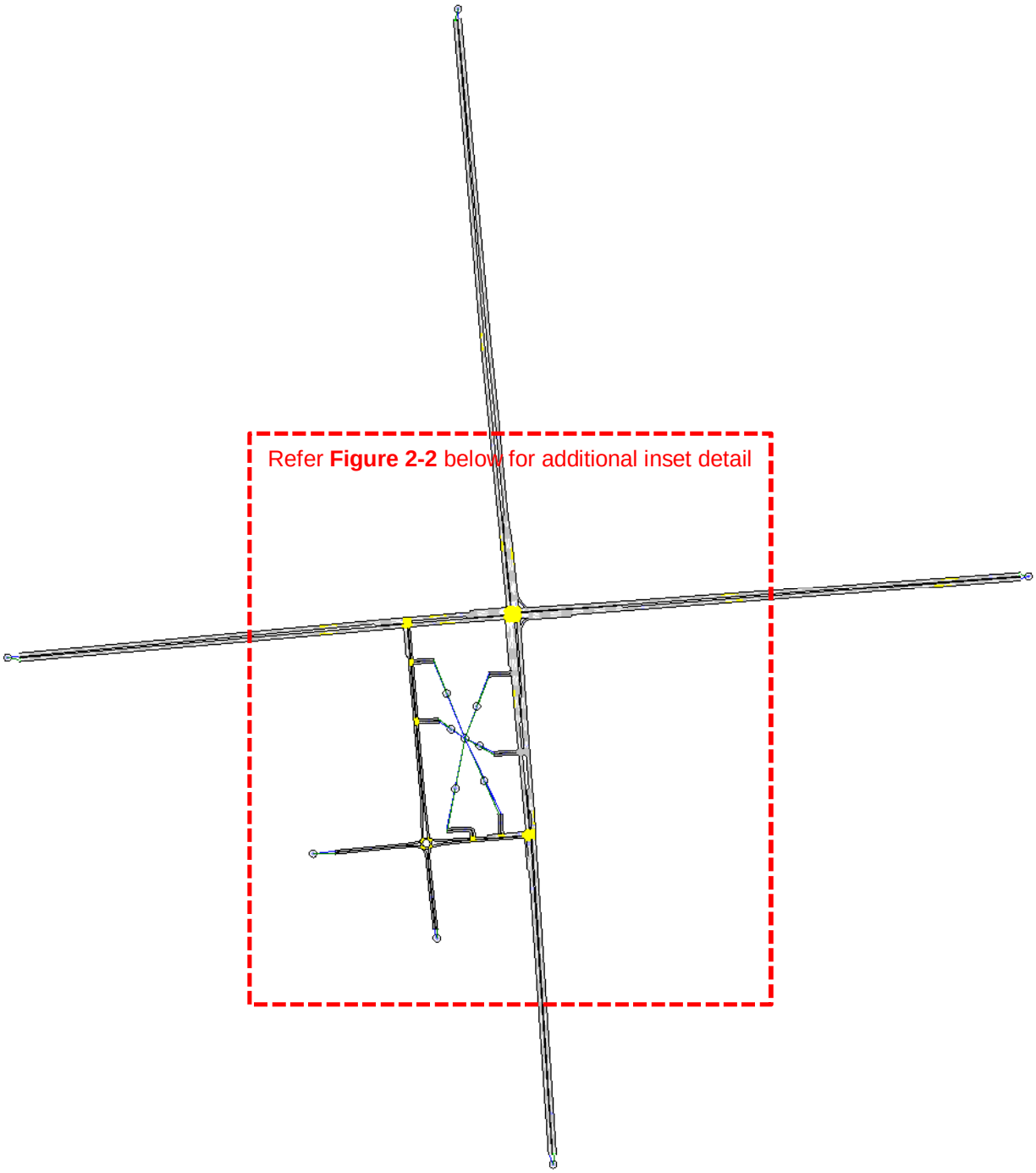

Figure 2-1: Calibrated Base Model Network (full model extents)

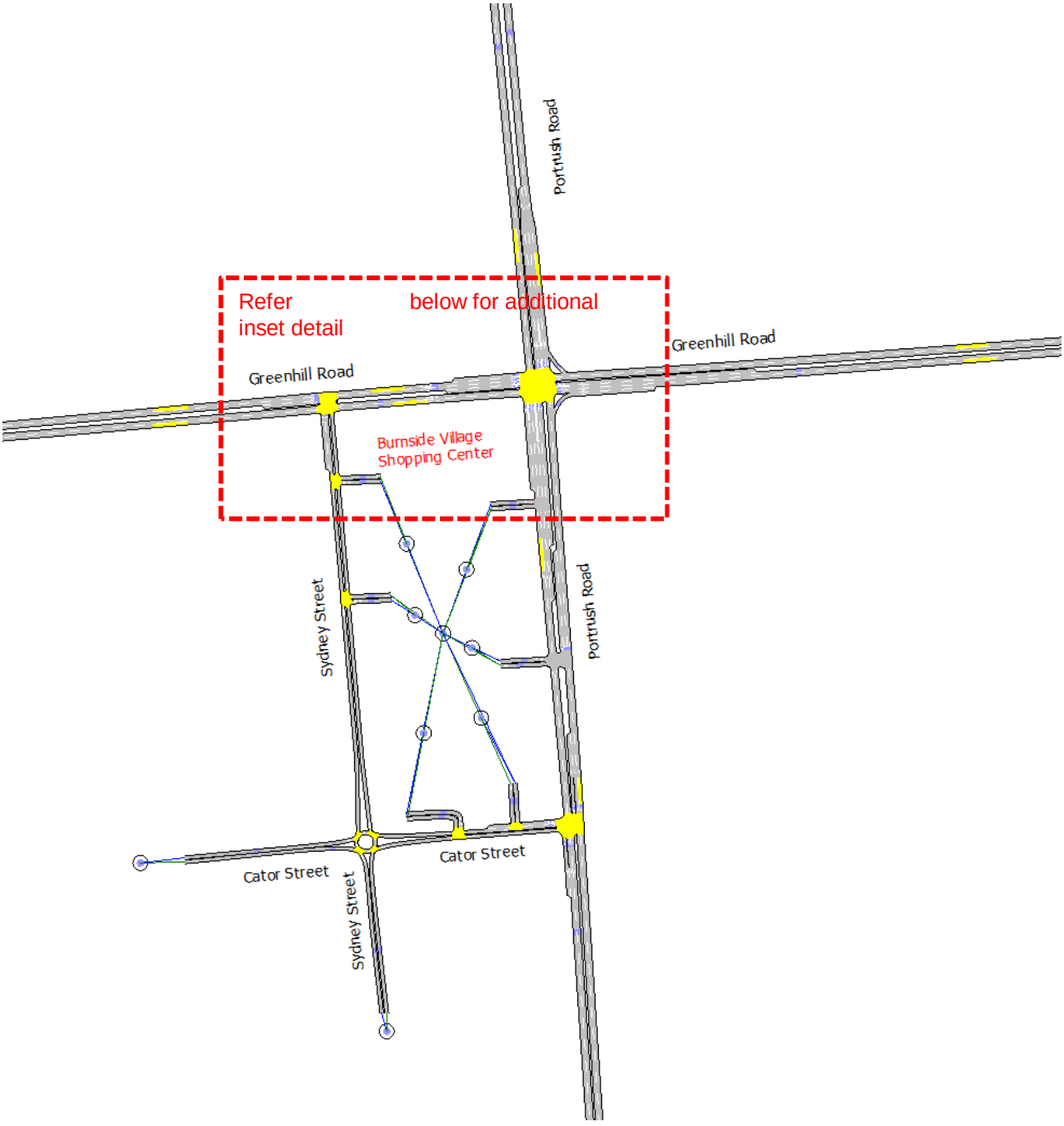

Figure 2-2: Calibrated Base Model Network (detail about Burnside Village)

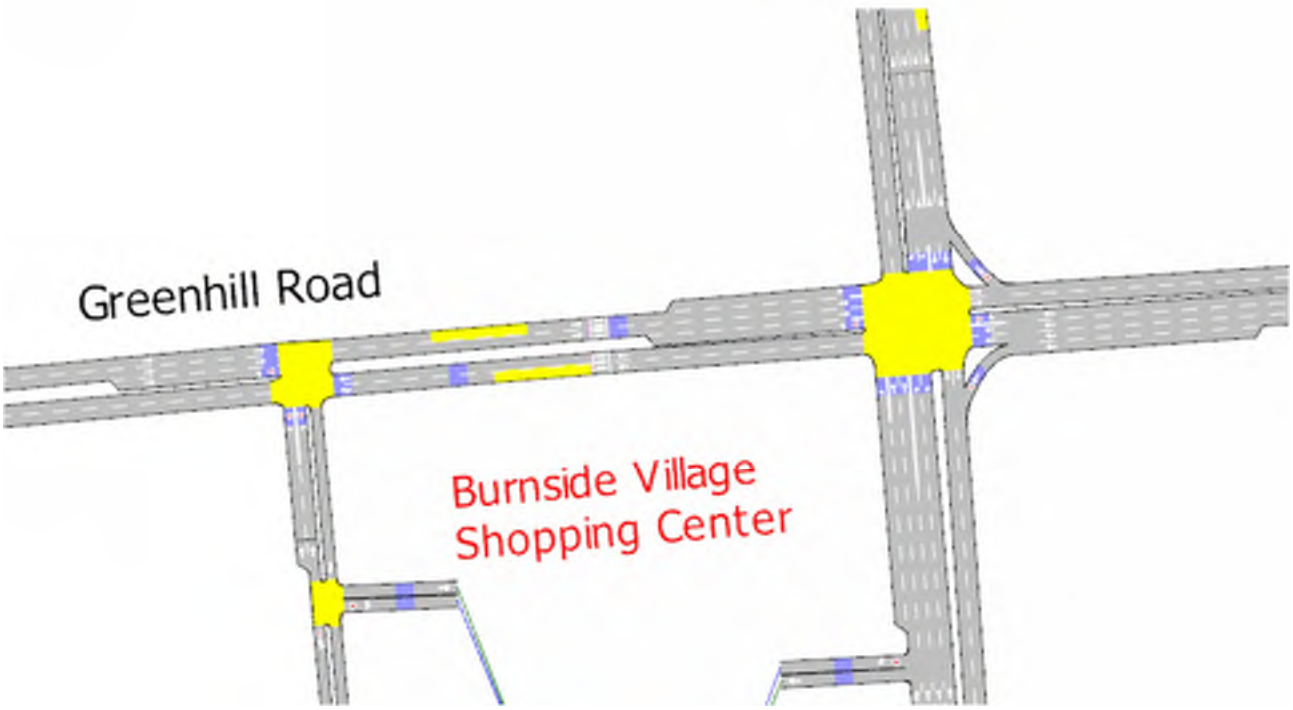

Figure 2-3: Calibrated Base Model Network (detail about Portrush Road / Greenhill Road intersection)

3. Scenario Models

3.1 Modelled Scenarios

Numerous scenario models (including the base model) have been developed as part of this project, as detailed in **Table 3.1**. Across all Stage 6 scenarios, background traffic demand is based on existing observed traffic volumes. The Stage 7 scenarios incorporate forecast future demand for 2026. Scenarios including the impact of Burnside Village Stages 6 and 7 development traffic are labelled “Stage 6” and “Stage 7”. The existing traffic scenario including BV Stage 4 is labelled “Base”. As Stage 5 is a refurbishment of Burnside Village only, it is not considered in the Scenario modelling.

Table 3.1: Summary of modelled scenarios

Scenario	Road network geometry & signal operation improvements	Traffic Demand	
		Background	Development
Base Models			
0 – Calibrated Base Model	Existing (as at February 2018)	Existing observed	Stage 4 (existing development)
0A – Modified Base Model	As per Calibrated Base Model, except: - Upgrade of Portrush Road / Greenhill Road uncontrolled slip lanes from both the northern and eastern intersection approaches to fully controlled (signalised) left turn movements. (Existing as at mid-October 2018)	Existing observed	Stage 4 (existing development)
		2026 Future Traffic Demand	Stage 4 (existing development)
0B – Modified Base Model WITH Third Lane on Greenhill westbound	As per Scenario 0A, except: - Third lane on Greenhill Road westbound between Portrush Road and Sydney Street - Existing left turn lane at Greenhill Road eastern approach converted to a shared left and through lane - A short 30m auxiliary lane provided on the Greenhill Road western exit at Sydney Street / Greenhill Road intersection	2026 Future Traffic Demand	Stage 4 (existing development)
0B – Sensitivity Test	*As per Scenario 0B, except:* - *Greenhill Road eastern approach to Portrush Road intersection reconfigured so that shared through / left turn lane and right turn lane lengths are switched*	*2026 Future Traffic Demand*	Stage 4 (existing development)

Burnside Village Redevelopment Stages 6 & 7			
4B – Signalised Sydney Street / Greenhill Road Intersection with Right Turn Permitted, and Geometry Changes including Indented Bus Bay on Greenhill Road	As per Scenario 0A (Base Model Modified), except: - Relocated Cator Street Entrance - Removal of Existing Greenhill Road Pedestrian Crossing - Signalised Sydney Street / Greenhill Road Intersection with Right Turn from Sydney Street - Speed Limit of Sydney Street and Cator Street adjacent the BV development reduced to 40km/h - Cator Street left turn lane at Portrush Road extended to BV Cator Street Entrance - Sydney Street left turn lane at Greenhill Road extended to 85 m - Greenhill Road right turn lane at Sydney Street extended to 60 m - Optimisation of existing signalised intersection phasing times (AM Peak) - Greenhill Road left turn lane at Portrush Road extended to existing pedestrian crossing to be removed - Greenhill Road north kerbside bus stop between Sydney Street and Portrush Road relocated east to existing pedestrian crossing to be removed	Existing observed with 20% pass-by trips[1]	Stage 6 BV Redevelopment traffic demand[2]
		2026 Future Traffic Demand with 20% pass-by trips[1]	Stage 7 BV Redevelopment traffic demand[2]
4C – Interim Scenario	As per Scenario 4B, except: - Cator Street Entrance has not been relocated and remains as per existing (base case)	Existing observed with 20% pass-by trips[1]	Stage 6 BV Redevelopment traffic demand[2]
5 -Third Lane on Greenhill Road westbound	As per Scenario 4B, except: - Third lane on Greenhill Road westbound between Portrush Road and Sydney Street - Existing left turn lane at Greenhill Road eastern approach converted to a shared left and through lane - A short 30m auxiliary lane provided on the Greenhill Road	2026 Future Traffic Demand with 20% pass-by trips[1]	Stage 7 BV Redevelopment traffic demand[2]

	western exit at Sydney Street / Greenhill Road intersection		
5 – Alternate	*As per Scenario 5, except:* - *Greenhill Road eastern approach to Portrush Road intersection reconfigured so that shared through / left turn lane and right turn lane lengths are switched*	*2026 Future Traffic Demand with 20% pass-by trips[1]*	*Stage 7 BV Redevelopment traffic demand[2]*

1. *Existing observed traffic demand has been reduced by 20% of the Stage 6 BV Redevelopment traffic demand for consideration of diverted pass-by trips. 2026 Future traffic demand has been reduced by 20% of the Stage 7 BV Redevelopment traffic demand for consideration of diverted pass-by trips. Refer Section 4.3.2 for further details.*
2. *Both Stage 6&7 BV Redevelopment traffic demands considers a 15% reduction for multi-use trips. Refer Section 4.3.1 for further details.*

The Stage 6 Burnside Village Redevelopment is expected to be completed within the next five years. As such, the current (existing observed) traffic demand and not forecast future demand has been considered for the base traffic level for the Stage 6 scenarios. This is consistent with previous traffic assessments of Burnside Village and as agreed with DPTI in late 2017 (for the previous proposed Stage 5 development) and confirmed October 2018 (for this new revised Stage 6 development.

The Stage 7 development is expected to be completed within the next five to ten years. For this reason, forecast future demand for 2026 has been assumed for the base traffic level for the Stage 7 scenarios, as agreed with DPTI in October 2018.

3.2 Scenario Road Network Improvements

The Burnside Village Redevelopment design road networks modelled as part of this AIMSUN assessment are shown in sub-sections following. Modelled changes to the road network are marked in red on each Scenario figure.

For comparison, the existing road network (as modelled in the calibrated base model) is shown in **Figure 2-1** above.

3.2.1 Scenario 0A – Modified Base Model

Scenario 0A tests the impact of the recent Portrush Road / Greenhill Road intersection upgrade on the existing road network, such that road network modifications (from existing calibrated base model) are limited to:

- The Intersection of Portrush Road and Greenhill Road has been modified to reflect the recent upgrade - to convert the uncontrolled left turn slip lanes movements from both the northern intersection approach and the eastern intersection approach to controlled movements. Minor changes to the signal operations have been made to facilitate the controlled movements within the existing control plan operations.

No other road network changes have been modelled.

Note that Scenario 0A is to be the new base line comparator for the assessment of impacts of the proposed Burnside Village Stage 6 and 7 Redevelopment.

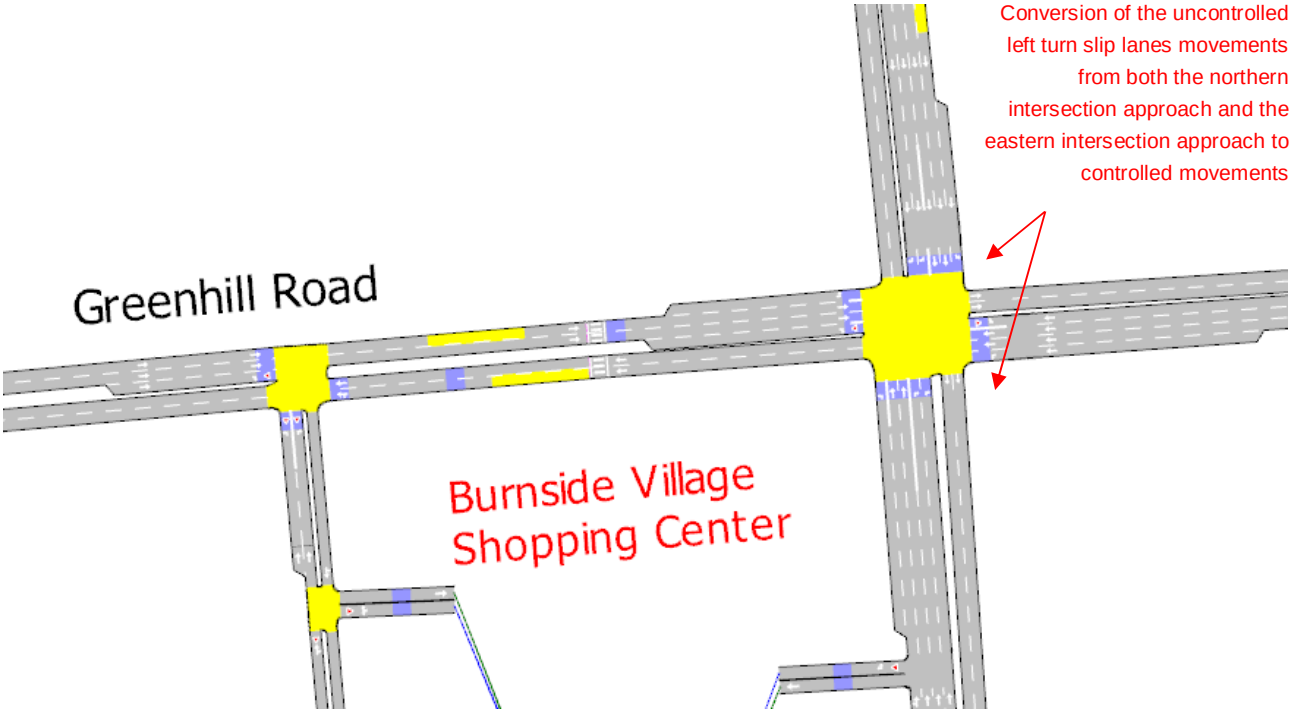

Figure 3-1: Scenario 0A – Modified Base Model Network Geometry Changes

3.2.2 Scenario 0B – Modified Base with Third lane on Greenhill Road westbound

Scenario 0A tests the impact of the Modified Base Model with additional geometry changes (refer **Figure 3-8**) as follows:

- Provision of a third lane on Greenhill Road westbound between Portrush Road and Sydney Street
- Existing left turn lane at Greenhill Road eastern approach converted to a shared left and through lane
- A short 30m auxiliary lane provided on the Greenhill Road western exit at Sydney Street / Greenhill Road intersection.

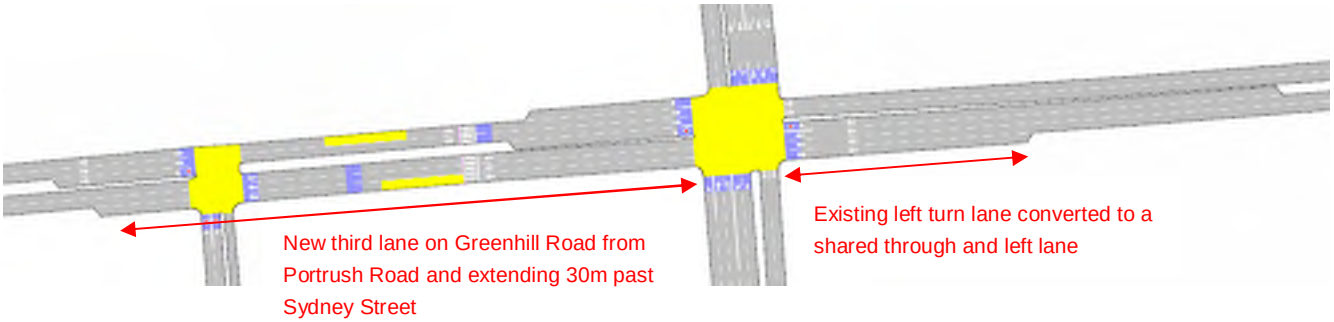

Figure 3-2: Scenario 0B – Modified Base Model Network with Third Lane Greenhill Road westbound

No other road network changes have been modelled.

3.2.3 Scenario 4B – Signalised Sydney Street / Greenhill Road intersection with Indented Bus Bay on Greenhill Road

Scenario 4B tests the impact of the Stage 6 and 7 developments, with road network modifications as per Scenario 0A (refer Section 3.2.1 for details of the Scenario 0A modelled network), with additional geometric changes as follows:

- The relocation of the existing eastern Cator Street Burnside Village access driveway to approximately 20 m east of the Cator Street / Sydney Street roundabout to match the proposed Stage 6 and 7 development site changes. Refer **Figure 3-6** and Appendix B. Although relocated, the existing movement restrictions at the driveway access (left in, left out only) have been maintained due to proximity to the roundabout.
- To better permit entry from Portrush Road into the southern BV access driveway along the same road, the intersection has been modelled as a yellow box to limit the blockage for right turning vehicles entering the site (to better reflect vehicle behaviour).
- The existing Pedestrian Crossing on Greenhill Road between Sydney Street and Portrush Road has been removed.
- The Intersection of Sydney Street and Greenhill Road has been modified to a signalised intersection with right turn movement permitted from Sydney Street. The eastern and southern intersection approaches have pedestrian crossings along them. Filter right turn movements are not permitted from Greenhill Road or across pedestrian movements (in line with new DPTI policy for new signalised intersections outside the CBD), resulting in a four-phase signalisation (refer **Figure 3-3** below).

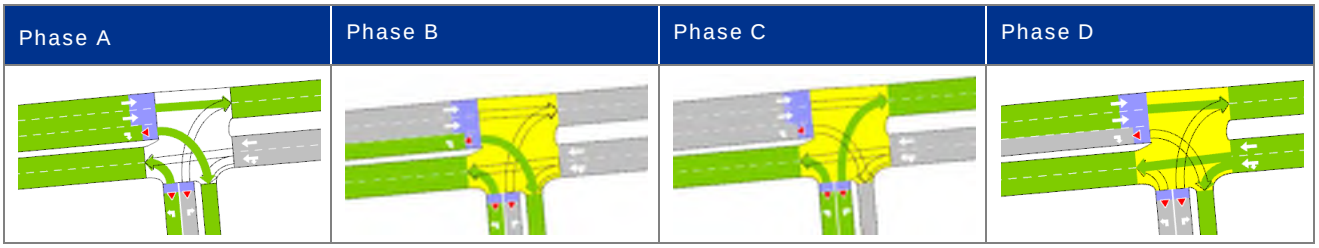

Figure 3-3: Phase diagram proposed for the Sydney Street / Greenhill Road intersection signalisation

- Greenhill Road right turn lane into Sydney Street extended to 60 m length. This extension can be facilitated within the existing central median without impact to the right turn lane facility from Greenhill Road into Sturt Avenue. Refer **Figure 3-5**;

- Sydney Street left turn lane into Greenhill Road extended to 85 m length. This extension is considered a formalisation of the line marking for better utilisation of the left and right turn lanes within the existing kerb alignment. This change does not impact the existing on-street parking conditions permitted along the western kerb side of Sydney Street (adjacent the residential properties). Refer **Figure 3-5**.

- The Cator Street (kerbside) shared left and right turn lane at Portrush Road intersection extended up to the existing (maintained) Cator Street Burnside Village access driveway. The Burnside Village access driveway junction with Cator Street has been modelled so that the left turn movement out from the site has its own dedicated slip lane to turn into. Refer **Figure 3-6**.

- The speed limit adjacent the Burnside Village site along Cator Street and Sydney Street (including the roundabout) has been reduced to 40km/h to provide a safer road environment adjacent to the activity centre that better promotes active transport, given the increased trip generation proposed by the development. The Burnside Village Stage 6 development proposes to introduce raised tables on the

western, southern and northern approaches to the Sydney Street / Cator Street roundabout given the proximity of the relocated Burnside Village access driveway on Cator Street. These will also better manage traffic entry speed to the roundabout and improve pedestrian safety at that intersection.

- Greenhill Road left turn lane into Portrush Road extended to the existing pedestrian crossing, which is to be removed. This extension can be facilitated within the existing wide central median (with minor lane reconfiguration on the western intersection approach), as the pedestrian crossing relocation proposed negates the need for the wide median width for pedestrian refuge. Refer **Figure 3-7**.

- Greenhill Road north kerbside bus stop between Sydney Street and Portrush Road relocated east and made indented. The bus stop relocation is positioned west of the existing pedestrian crossing to be removed, and leads into the extended left turn lane. Refer **Figure 3-7**

No other road network changes have been modelled.

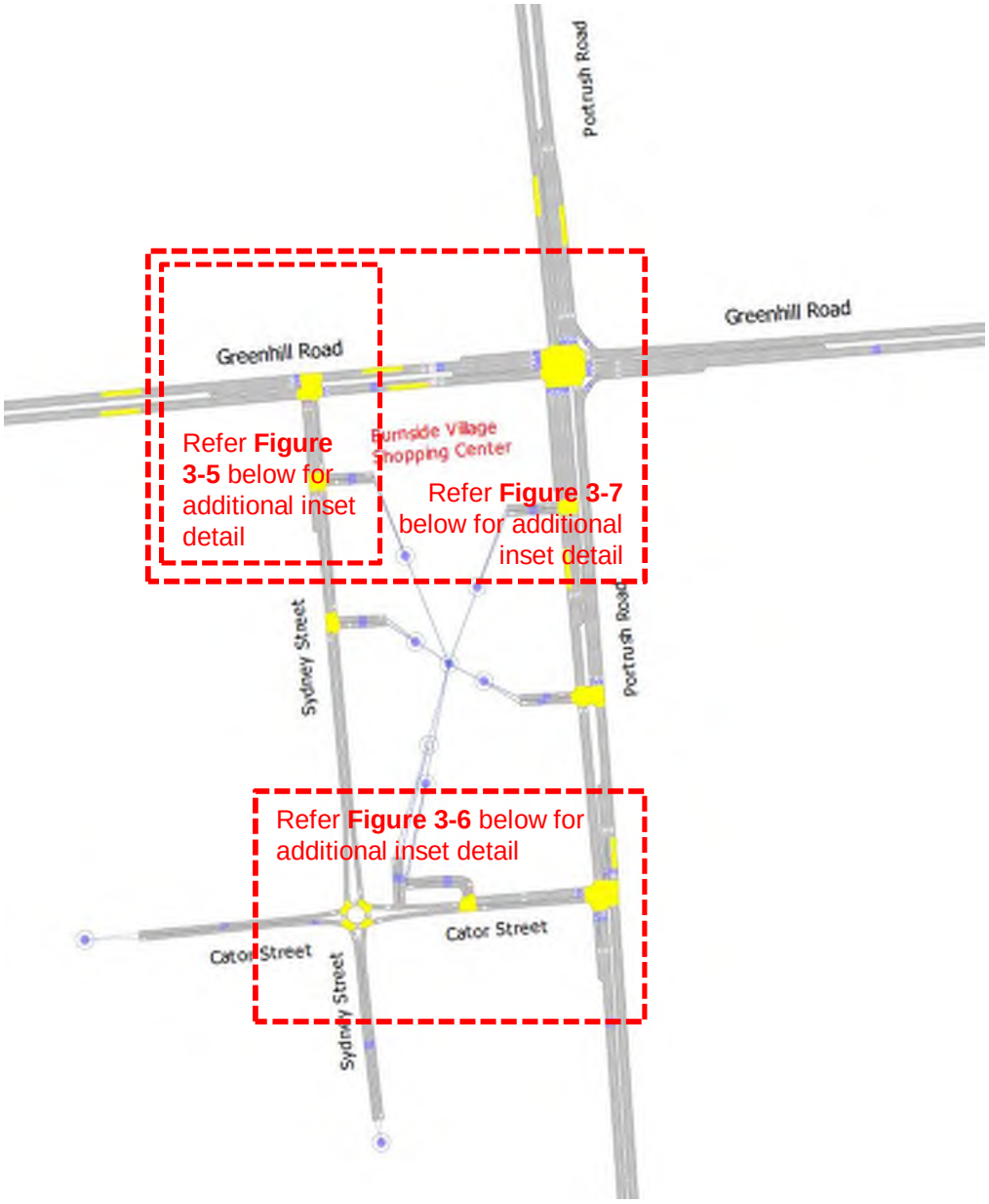

Figure 3-4: Scenario 4B –Signalised Sydney Street / Greenhill Road Intersection with Right Turn Permitted and Geometry Changes

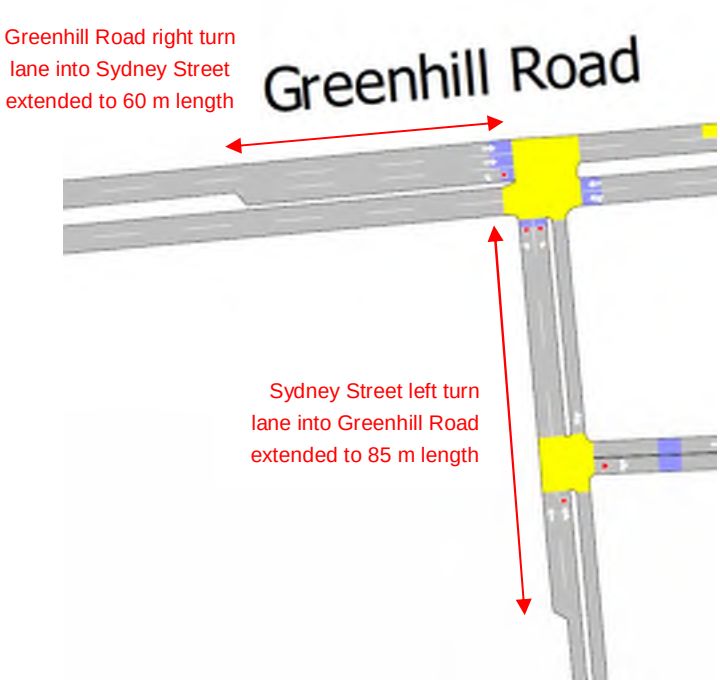

Figure 3-5: Sydney Street / Greenhill Road geometry changes as part of Scenario 4B

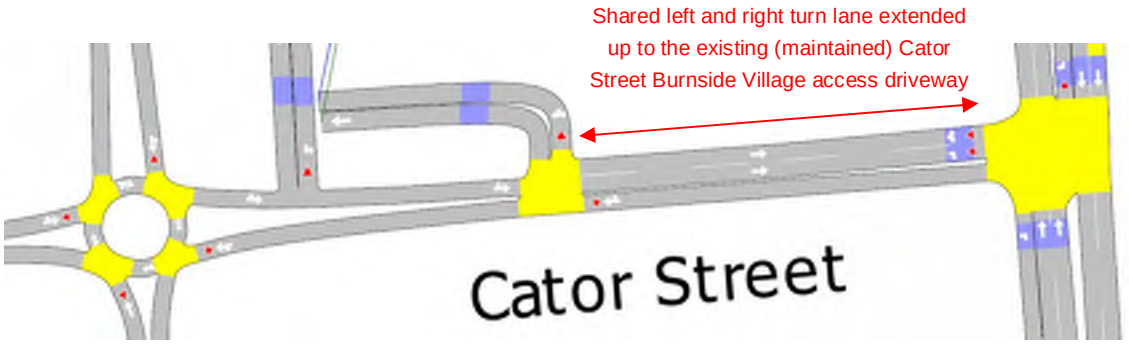

Figure 3-6: Cator Street geometry changes as part of Scenario 4B

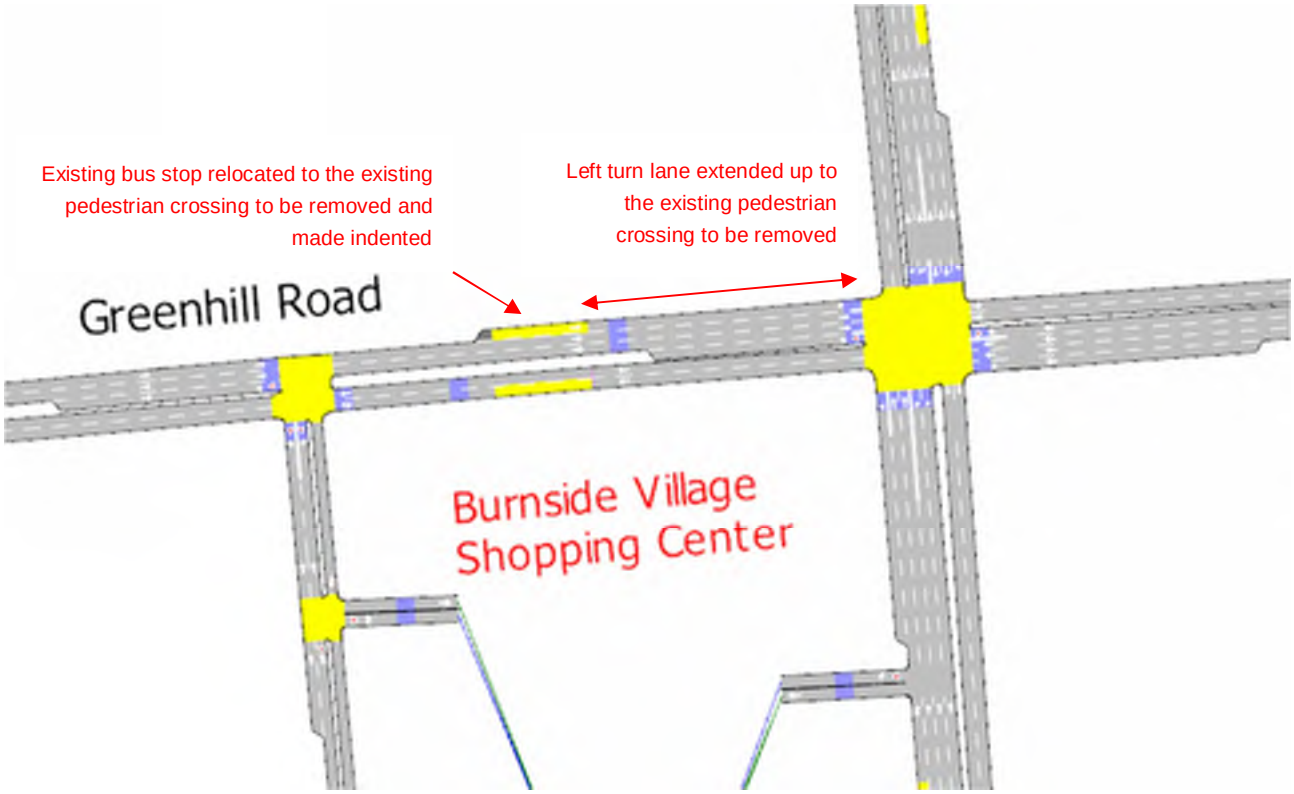

Figure 3-7: Greenhill Road geometry changes as part of Scenario 4B

3.2.4 Scenario 4C – Stage 6 Interim Staging Test of Scenario 4B without Cator Street road network modifications

Scenario 4C tests the impact of the Stage 6 and 7 developments, with road network modifications as per Scenario 4B (refer Section 3.2.3 for details of the Scenario 4B modelled network), including Greenhill Road changes but excluding Cater Street changes. That is, Scenario 4C *excludes* the geometric changes as follows:

- The relocation of the existing eastern Cator Street Burnside Village access driveway to approximately 20 m east of the Cator Street / Sydney Street roundabout to match the proposed Stage 6 and 7 development site changes (refer Appendix B). Although relocated, the existing movement restrictions to the driveway access (left in, left out only) have been maintained due to proximity to the roundabout.

- The Cator Street (kerbside) shared left and right turn lane at Portrush Road intersection extended up to the existing (maintained) Cator Street Burnside Village access driveway. The Burnside Village access driveway junction with Cator Street has been modelled so that the left turn movement out from the site has its own dedicated slip lane to turn into. Refer **Figure 3-6**.

No other road network changes have been modelled.

3.2.5 Scenario 5 –Third lane on Greenhill Road westbound

Scenario 5 tests the impact of the ultimate Stage 7 development, with road network modifications as per Scenario 4B (refer Section 3.2.3 for details of the Scenario 4B modelled network), with additional geometry changes (refer **Figure 3-8**) as follows:

- Provision of a third lane on Greenhill Road westbound between Portrush Road and Sydney Street
- Existing left turn lane at Greenhill Road eastern approach converted to a shared left and through lane
- A short 30m auxiliary departure lane provided on the Greenhill Road western exit at Sydney Street / Greenhill Road intersection. This ensures any vehicle in the kerbside westbound lane that travels straight ahead is able to safely merge downstream with the through lanes.

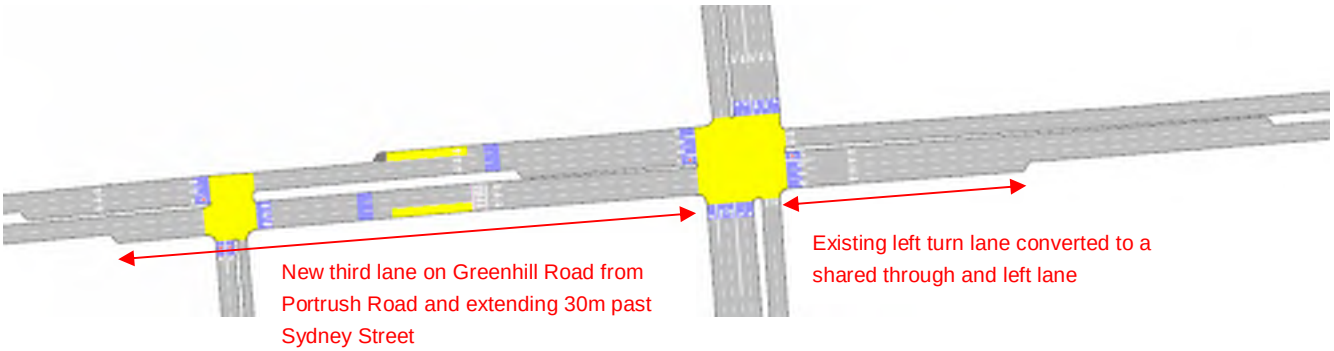

Figure 3-8: Scenario 5 – Third Lane Greenhill Road westbound

No other road network changes have been modelled.

3.2.6 Scenario 0B and 5 Sensitivity Testing – Third Lane on Greenhill Road westbound

Sensitivity Tests of Scenarios 0B and 5 were considered to test the impact of switching the left turn lane and right turn lane lengths on the Greenhill Road eastern approach to Portrush Road intersection.

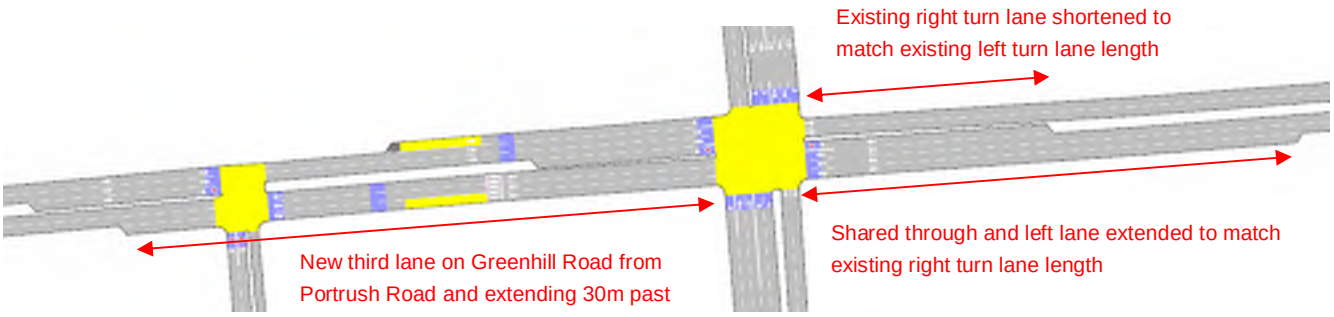

Figure 3-9: Scenario 5 Sensitivity Test geometry changes at Greenhill Road eastern approach to Portrush Road intersection

4. Scenario Demand

Traffic demand across all modelled scenarios incorporates existing observed background demand (light, heavy, public transport) as well as estimated new traffic generation associated with the proposed Stage 6 and 7 developments. Estimation of existing base traffic demand is detailed in the Burnside Village Redevelopment AIMSUN Base Model Development Report (Jacobs 2018). Future 2026 base traffic demand is as provided by DPTI on date 7/11/2018.

Calculation of likely development traffic generation and distribution has been based on the NSW Roads and Traffic Authority (now RMS) Guide to Traffic Generating Development[1] and the ITE Trip Generation Manual[2] (noting that the DPTI trip generation guidelines[3] considered in previous assessments has recently been withdrawn by DPTI). As many of the peak hour RMS trip rates do not consider trip proportions for time of day, the ITE peak period variation data was used as the basis for trip proportions during each of the peak periods modelled.

4.1 Development Traffic Generation

Adopted traffic generation rates are summarised in **Table 4.1** for each land use considered in the Stage 6 and 7 developments.

Table 4.1: Trip Generation Rates

Land use	Description of Land Use	Peak Hour Trip Rate	Units	Source of Trip Generation Rate
Office	Building if places used as an office or other businesses of commercial purposes	2.00	100 m^2	RMS (2013)
Supermarket (Shopping Centres)	Larger forms of the traditional grocery stores	9.6*	100 m^2	RMS (2013)
Retail (Shopping Centres)	A building (s) forming a complex of shops representing merchandisers	9.6*	100 m^2	RMS (2013)
Restaurant	High turnover dine-in restaurant	5	100 m^2	RTA (2002) & WAPC (2016)
Gym	Gymnasium in a metropolitan sub reginal area	9	100 m^2	RTA (2002)
Childcare Centre	Long day care centre	0.8	Child	RTA (2002)
Medical Centre	Extended hours medical centre	10.4	100 m^2	RTA (2002)
Cinema	Multiplex Cinema	5.5	100 m^2	ITE (9th Edition)

* *The 'Shopping Centres' peak hour trip generation rate assumed considers the RMS (2013) trip generation rates for Thursday PM (4.6 trips per 100m^2) and Saturday Midday (6.1 trips per 100m^2) Peaks for a 30,000 – 40,000 m^2 development, and has been backwards-calculated noting the scaling factors in* Table 4.2 *below (e.g. for the Thursday PM Peak Period, 48% of 9.6 trips per 100m^2 is*

[1] NSW Roads and Traffic Authority (now RMS) Guide to Traffic Generating Development, Version 2.2, 2002.
[2] Institute of Transportation Engineers, Trip Generation Manual, 9th Edition
[3] Trip generation rates for assessment of development proposals, Department of Planning, Transport and Infrastructure

approximately 4.6 trips per 100m^2). The Shopping Centre peak hour trip generation rate considered has been applied to both Retail and Supermarket land uses.

For each modelled hour outside the peak hour for a particular land use, a scaling factor has been applied to the peak hour trip generation rate, as detailed in **Table 3.3**. Scaling factors for each land use have been derived from Austroads[4] (consistent with Jacob's previous traffic (SIDRA) assessment of the Burnside Village redevelopment).

Table 4.2: Scaling factors applied to the Peak Hour Trip Generation Rates

Land use	Thursday 7:30 AM – 8:30 AM	Thursday 5:00 PM – 6:00 PM	Saturday 11:30 AM – 12:30 PM
Office	20.0%	31.7%	0.0%*
Supermarket	15.7%	48.0%	67.0%
Retail	15.7%	48.0%	67.0%
Restaurant	0.0%	40.0%	36.7%
Gym	50.0%	91.7%	40.0%
Childcare Centre	30%	20%	0.0%*
Medical Centre	53.3%	60.0%	56.7%
Cinema	5.0%	36.7%	10%

* *It has been assumed that the development's office and childcare centre land uses would not generate traffic on weekends*

An additional allowance for multi-purpose trips has also been applied, with a 15% reduction has been considered (refer Section 4.3.1 for further details).

The result is the following total peak hour traffic generation attributable to the Stage 6 development's net increase in area.

Table 4.3: Stage 6 Burnside Village Redevelopment Total Peak Hour Traffic Generation

Land use	Thursday 7:30 AM – 8:30 AM	Thursday 5:00 PM – 6:00 PM	Saturday 11:30 AM – 12:30 PM
Office	-	-	-
Supermarket	-	-	-
Retail	100	309	431
Restaurant	-	52	48
Gym	-	-	-
Childcare Centre	-	-	-
Medical Centre	-	-	-
Cinema	5	39	11
Total	105	400	490

[4] Austroads Guide to Traffic Management, Part 11 – Parking, 2017

* *Includes a 15% reduction for the allowance of multi-purpose trips (combined trips) within the new development*

The total peak hour traffic generation attributable to the Stage 7 development's net increase in area is as follows.

Table 4.4: Stage 7 Burnside Village Redevelopment Total Peak Hour Traffic Generation

Land use	Thursday 7:30 AM – 8:30 AM	Thursday 5:00 PM – 6:00 PM	Saturday 11:30 AM – 12:30 PM
Office	7	10	-
Supermarket	20	60	84
Retail	155	473	660
Restaurant	-	117	108
Gym	10	19	9
Childcare Centre	3	3	-
Medical Centre	28	31	30
Cinema	5	39	11
Total	228	753	902

* *Includes a 15% reduction for the allowance of multi-purpose trips (combined trips) within the new development*

No allowance has been made for non-car mode share, however, an allowance has been considered for diverted or pass-by traffic, as detailed further in Section 4.3.2.

Note that it has been assumed that no additional heavy vehicle movements are generated by the new development during the peak periods modelled.

4.2 Development Traffic Distribution

Trip distributions for development generated traffic have been applied based on the land use type, and the Burnside Village trip distribution determined from analysis of existing access and distribution of traffic.

These distribution assumptions are as follows:

- Inbound / outbound splits are as provided in the ITE Trip Generation Manual for specific land use types (refer **Table 4.5** to **Table 4.7** following)
- Origin / destination directions, and entry / exit road proportions are based on the distribution of existing centre traffic generation, as calculated from the Calibrated Base Model (refer **Table 4.8** to **Table 4.16** following). Note that this means the directional distribution varies between analysis periods.

The development traffic distributions following assume that vehicles are permitted to turn right at the Sydney Street approach onto Greenhill Road eastbound.

It has also been assumed that Stage 7 development traffic exiting the site from Portrush Road can only turn right onto Greenhill Road from the Portrush Road intersection southern approach when departing from the southern site access (e.g. Stage 7 development traffic exiting from the northern Portrush Road site access is not able to turn right onto Greenhill Road during peak periods owing to queuing back from the intersection).

Table 4.5: Development traffic distribution – directional splits – Thursday AM peak period

Land use	In	Out	Total	Source (ITE Trip Generation Manual, 9th ed)
Office	0.88	0.12	1	General Office (710)
Supermarket	0.62	0.38	1	Supermarket (850)
Retail	0.62	0.38	1	Shopping Centre (820)
Restaurant	0.55	0.45	1	High turnover / sit-down restaurant (932)
Gym	0.5	0.5	1	Health / fitness club (492)
Childcare Centre	0.53	0.47	1	Daycare Centre (565)
Medical Centre	0.5	0.5	1	Clinic (630)
Cinema	0.5	0.5	1	Multiplex Cinema (445)

Table 4.6: Development traffic distribution – directional splits – Thursday PM peak period

Land use	In	Out	Total	Source (ITE Trip Generation Manual, 9th ed)
Office	0.17	0.83	1	General Office (710)
Supermarket	0.51	0.49	1	Supermarket (850)
Retail	0.48	0.52	1	Shopping Centre (820)
Restaurant	0.6	0.4	1	High turnover / sit-down restaurant (932)
Gym	0.57	0.43	1	Health / fitness club (492)
Childcare Centre	0.47	0.53	1	Daycare Centre (565)
Medical Centre	0.41	0.59	1	Clinic (630)
Cinema	0.62	0.38	1	Multiplex Cinema (445)

Table 4.7: Development traffic distribution – directional splits – Saturday peak period

Land use	In	Out	Total	Source (ITE Trip Generation Manual, 9th ed)
Office*	-	-	-	-
Supermarket	0.51	0.49	1	Supermarket (850)
Retail	0.48	0.52	1	Shopping Centre (820)
Restaurant	0.6	0.4	1	High turnover / sit-down restaurant (932)
Gym	0.57	0.43	1	Health / fitness club (492)
Childcare Centre*	-	-	-	-
Medical Centre	0.41	0.59	1	Clinic (630)
Cinema	0.62	0.38	1	Multiplex Cinema (445)

* *It has been assumed that the development's office and childcare centre land uses would not generate traffic on weekends*

Table 4.8: Development traffic distribution – entrance use proportions by origin of travel – Thursday AM peak period

Entrance	Proportions per origin of travel				
	North	East	South	West	Total
Portrush Road	0.47	0.06	0.47	0.00	**1.00**
Sydney Street	0.13	0.32	0.12	0.43	**1.00**
Cator Street	0.21	0.05	0.10	0.64	**1.00**
Greenhill Road*	-	-	-	-	**-**

* *There are no driveway accesses to the Burnside Village site along Greenhill Road*

Table 4.9: Development traffic distribution – exit use proportions by direction of travel – Thursday AM peak period

Exit	Proportions per direction of travel				
	North	East	South	West	Total
Portrush Road	0.58	0.28	0.00	0.14	**1.00**
Sydney Street	0.00	0.02	0.57	0.41	**1.00**
Cator Street	0.44	0.08	0.40	0.08	**1.00**
Greenhill Road*	-	-	-	-	**-**

* *There are no driveway accesses to the Burnside Village site along Greenhill Road*

Table 4.10: Development traffic distribution – access use proportions – Thursday AM peak period

Road	Entry proportion	Exit proportion
Portrush Road	0.282	0.151
Sydney Street	0.433	0.521
Cator Street	0.285	0.328
Total	**1**	**1**

Table 4.11: Development traffic distribution – entrance use proportions by origin of travel – Thursday PM peak period

Entrance	Proportions per origin of travel				
	North	East	South	West	Total
Portrush Road	0.39	0.21	0.38	0.02	**1.00**
Sydney Street	0.21	0.18	0.04	0.57	**1.00**
Cator Street	0.07	0.03	0.39	0.51	**1.00**
Greenhill Road*	-	-	-	-	**-**

* *There are no driveway accesses to the Burnside Village site along Greenhill Road*

Table 4.12: Development traffic distribution – exit use proportions by direction of travel – Thursday PM peak period

Exit	Proportions per direction of travel				
	North	East	South	West	Total
Portrush Road	0.54	0.26	0.00	0.19	**1.00**
Sydney Street	0.00	0.02	0.58	0.40	**1.00**
Cator Street	0.24	0.21	0.52	0.03	**1.00**
Greenhill Road*	-	-	-	-	**-**

* *There are no driveway accesses to the Burnside Village site along Greenhill Road*

Table 4.13: Development traffic distribution – access use proportions – Thursday PM peak period

Road	Entry proportion	Exit proportion
Portrush Road	0.2736	0.264
Sydney Street	0.5295	0.482
Cator Street	0.1969	0.254
Total	**1**	**1**

Table 4.14: Development traffic distribution – entrance use proportions by origin of travel – Saturday peak period

Entrance	Proportions per origin of travel				
	North	East	South	West	Total
Portrush Road	0.51	0.18	0.31	0.00	**1.00**
Sydney Street	0.16	0.31	0.10	0.44	**1.00**
Cator Street	0.16	0.07	0.41	0.36	**1.00**
Greenhill Road*	-	-	-	-	**-**

* *There are no driveway accesses to the Burnside Village site along Greenhill Road*

Table 4.15: Development traffic distribution – exit use proportions by direction of travel – Saturday peak period

Exit	Proportions per direction of travel				
	North	East	South	West	Total
Portrush Road	0.54	0.27	0.00	0.19	**1.00**
Sydney Street	0.01	0.03	0.48	0.48	**1.00**
Cator Street	0.28	0.13	0.48	0.11	**1.00**
Greenhill Road*	-	-	-	-	**-**

* *There are no driveway accesses to the Burnside Village site along Greenhill Road*

Table 4.16: Development traffic distribution – access use proportions – Saturday peak period

Road	Entry proportion	Exit proportion
Portrush Road	0.321	0.269
Sydney Street	0.503	0.393
Cator Street	0.176	0.338
Total	**1**	**1**

It is noted that, due to the model route selection, it is possible for traffic assignment to switch between different routes in different simulations. This is due to the scale of the model and the small differences in travel times.

4.3 Development traffic demand reductions

4.3.1 Multi-purpose trips

Stage 6 and 7 Burnside Village Redevelopment traffic demand assumes a 15 percent reduction in total generated traffic to allow for multi-use trips, in line with the recommendations noted in the RTA Guide to Generating Traffic Development (2002) for a total shopping centre development over 30,000 m^2 GLFA. The 2002 RTA recommendation has been applied due to lack of more recent data to split the multi-purpose internal trip distributions according to the land use origin and destinations proposed for this development.

Note, that the ITE Transport Planning Handbook (2016, 4th edition) provides recommendations for internal trip distributions and cross-utilisation according to the land use origin and destinations for the six most frequent land use components of multi-use sites (office, retail, restaurant, residential, cinema and hotel), however, much of the Stage 6 and 7 Burnside Village land uses proposed fall outside these broad land use categories (e.g. gym, childcare centre and medical centre land uses). Hence the RTA recommendation is preferred.

4.3.2 Background traffic demand reduction for pass-by traffic

All Stage 6 and 7 development scenario testings assume 20 percent of the revised Stage 6 and 7 development light vehicle / car traffic generation is diverted background (pass-by) traffic. This is as per Austroads Guide to Traffic Management guidelines[5]. To account for pass-by traffic trip diversion:

- Stage 6 considered the reduction of the existing observed traffic demands by 20 percent of the Stage 6 development car traffic generation, and
- Stage 7 considered the reduction of the 2026 future year traffic demands (as provided by DPTI) by 20 percent of the Stage 7 development car traffic generation.

A 20 percent reduction for trips generated from pass-by traffic has been agreed with DPTI previously, and is consistent with the Austroads approach for undiverted drop-in linked (pass-by) trips for a development of this size[6].

Note that more recent research into pass-by trips, as noted in the ITE Transport Planning Handbook (2016, 4th edition), suggests that pass-by trips could account for 25 percent of the trips generated by a new shopping centre development a with net floor area between approximately 23,500 m^2 to 46,500 m^2, however the more conservative Austroads approach (20 percent pass-by trips) has been adopted for this model.

[5] *Austroads Guide to Traffic Management, Part 12 – Traffic Impacts of Development, Commentary 8 – Linked Trips (2009)*, suggests 19% pass-by trips for shopping centres greater than 20,000 m^2

[6] *Austroads Guide to Traffic Management, Part 12 – Traffic Impacts of Development, Commentary 8 – Linked Trips (2009)*, suggests 19% pass-by trips for shopping centres greater than 20,000 m^2

4.4 Other development distributions considered

4.4.1 Right turn banned at Sydney Street approach onto Greenhill Road eastbound

A previous traffic assessment by Jacobs in 2015, undertaken as a SIDRA assessment, recommended that the right turn at the Sydney Street approach onto Greenhill Road eastbound be banned for improved signal cycle time and capacity on Greenhill Road.

A sensitivity test was run as part of the previous Stage 5 development AIMSUN scenario modelling, to assess whether traffic improvements could be achieved by signalising the intersection of Greenhill Road / Sydney Street, with right turns out of Sydney Street banned. This allowed for re-phasing of the Greenhill Road / Sydney Street intersection and re-coordination of the traffic signals on Greenhill Road.

This sensitivity test resulted in a significant worsening of congestion for other intersections on the arterial road network and for access points to Burnside Village. The test resulted in Burnside Village generated traffic shifting from exiting via Sydney Street (no right turns out would be possible) to exiting via Cator Street. The capacity of the Portrush Road / Cator Street intersection was then exceeded, and higher congestion resulted.

As a result of this finding (which considered a smaller nett increase in trip generation to the development than the ultimate Stage 7 development now considered), scenarios including the banning of right turns out of Sydney Street onto Greenhill Street were abandoned.

5. Summary of Scenario Performance

Results of AIMSUN modelling for all scenarios in each time period (Thursday AM peak, Thursday PM peak and Saturday midday peak) are shown in **Table 5.1 to**

Table 5.3 for the Stage 6 development and **Table 5.4 to Table 5.6** for Stage 7 development. Results have also been reported as modelled travel times (end to end) in each direction for Greenhill Road and Portrush Road. This is reported for each road and time period in **Appendix B**.

The results of the AIMSUN modelling for Stage 6 under 2018 base traffic demands are summarised as follows:

- The Portrush Road/Greenhill Road intersection is the most congested point in the model road network in all scenarios and time periods.
- The Portrush Road/Greenhill Road intersection operates at LOS E and LOS F for the Thursday AM peak and the Thursday PM peak respectively for Scenario 0, with a maximum average delay of approximately 82 seconds. The LOS is increased to F during both the Thursday AM and PM peaks for Scenario 0A (existing), and the average delay is increased to approximately 130 seconds (+50 seconds) and 174 seconds (+93 seconds) respectively. This indicates that removal of the left turn slip lanes on the northern and eastern approached worsens congestion at this intersection, for the base traffic demand.
- In general, the road network mitigations proposed as part of Scenario 4B shows similar performance to Scenario 0A, even with the additional Stage 6 development traffic. That is, the road improvements modelled in Scenario 4B mitigate the impacts of Stage 6 development traffic in what is an already congested location.
- The Cator Street / Portrush Road intersection works with LOS B, C and B for the Thursday AM peak, the Thursday PM peak and the Saturday midday peak, respectively, for Scenarios 0 and 0A. The LOS and average delay for the Thursday AM peak, and the Saturday midday peak remain largely unchanged for Scenario 4B. This indicates Stage 6 development traffic does not have a significant impact at this intersection. The Thursday PM peak does see an increase in LOS and average delay, largely due to a change in signal coordination along Portrush Road, however, the average network delay time has decreased by approximately 3 seconds.
- The Greenhill Road / Sydney Street intersection provides LOS A for the Thursday AM peak and Saturday midday peak and LOS E for the Thursday PM peak, with an average delay of approximately 49 seconds for Scenario 0. The LOS during the Thursday AM and Saturday midday peak remains largely unchanged in Scenario 0A. The LOS during the Thursday PM peak is reduced to LOS F for Scenario 0A (the reduction in average delay is 90 seconds between Scenario 0 and 0A), indicating the change in signal operations at Greenhill Road / Portrush Road intersection has a major impact on the unsignalized intersection's performance due to queuing. Signalisation of the Greenhill Road / Sydney Street intersection, together with the other road network mitigations proposed as part of Scenario 4B shows improved performance for the intersection. This indicates that there is significant benefit in lane geometry reconfiguration of the Greenhill Road approach to Portrush Road intersection, including indenting the existing bus stop which lead in to the left turn lane.
- The Cator Street / Sydney Street intersection provides LOS A for Scenario 0, with short average delays ranging between 1 second and 3 seconds. This LOS remains relatively unchanged for all other modelled scenarios (0A and 4B), indicating that Stage 6 has no significant impact on this intersection. However, signalisation of Sydney Street / Greenhill Road may impact on the traffic volumes through and the performance of the roundabout if other road network modifications are not implemented in conjunction.
- The Burnside Village shopping centre accesses to Sydney Street and Cator Street generally perform best in Scenarios 4B when compared to Scenario 0A. This indicates that Stage 6 development traffic with Cator Street and Sydney Street geometry and speed modifications does not negatively impact accesses to Sydney Street and Cator Street. The new access system appears to be a net improvement over the existing system.

- The Burnside Village shopping centre accesses to Portrush Road (PR X1 and PR X2) provide LOS D, for the Thursday AM peak for Scenario 0A. The LOS for the southern Portrush Road access (PR X1) (located 200 m from the Portrush Road / Greenhill Road intersection) remains relatively unchanged for Scenario 4B, with average delays within 8 seconds for all scenarios for the Thursday PM and Saturday peaks, and similar for the Thursday AM peak. This indicates that Stage 6 development traffic, with proposed works, only slightly increases congestion along Portrush Road.
- A possible interim staging option, Scenario 4C, has also been modelled. This is equivalent to Scenario 4B for works in Greenhill Road but with existing access works (no change) in Cator Street. Average delay under Scenario 4C is within +/- 1 to 6 seconds of average delay in Scenario 4B for all intersections and periods modelled. The performance conclusions for these two Scenarios under 2018 (base) traffic demands are effectively the same.

The results of the AIMSUN modelling for Stage 7 under 2026 base traffic demands are summarised as follows:

- The Portrush Road/Greenhill Road intersection remains the most congested point in the road network.
- The Portrush Road/Greenhill Road intersection operates at LOS E and LOS F for the Thursday AM peak and the Thursday PM peak respectively. In 2026, the base level of average delay at Greenhill Road / Portrush Road in Scenario 0A will have increased to 138 seconds per vehicle in the Thursday AM Peak, to 183 seconds per vehicle in the Thursday PM Peak and to 57 seconds per vehicle in the Saturday Midday period. With the third lane westbound in Greenhill Road added, including Stage 7 traffic generation and other improvements as per Scenario 5 Alternate, delay is reduced to 105 seconds per vehicle in the Thursday AM Peak (-24%). For the other time periods it will be preferable to operate the additional lane in Greenhill Road as a left turn lane, via a Lane Use Management System (LUMS) on the eastern approach (equivalent to Scenario 4B). This results in average delay of 188 seconds per vehicle in the Thursday PM Peak (+3%), and to 64 seconds (+14%) if Greenhill Road is operated as two lanes westbound (equivalent to Scenario 4B).
- In general, the road network mitigations proposed as part of Scenario 5 Alternate shows similar or better performance than Scenario 0A, even with the additional Stage 7 development traffic. That is, the road improvements modelled in Scenario 5 Alternate mitigate the impacts of Stage 7 development traffic in what is an already congested location, with a significant benefit in the AM peak.
- The Cator Street / Portrush Road intersection works with LOS D, E and B for the Thursday AM peak, the Thursday PM peak and the Saturday midday peak, respectively, for Scenarios 0A. The LOS and average delay for the Thursday AM peak and Thursday PM peak for Scenario 5 Alternate worsen to LOS E and F respectively. The LOS and delay for the Saturday midday peak remain largely unchanged for Scenario 5 Alternate. The Thursday AM peak and Thursday PM peak do see an increase in LOS and average delay, largely due to a change in signal coordination along Portrush Road, however, the average network delay time has decreased by approximately 3 seconds.
- The Greenhill Road / Sydney Street intersection provides LOS A for the Thursday AM peak, LOS F for the Thursday PM peak and LOS B for the Saturday midday peak, with an average delay of 152 seconds for the Thursday PM peak in Scenario 0A. The LOS during the Thursday AM and Saturday midday peak remains largely unchanged in Scenario 0A and with the addition of the Stage 7 development traffic under Scenario 5 Alternate. The LOS during the Thursday PM peak remains at LOS F for Scenario 0A and Scenario 5 Alternate, but average delay is reduced from 152 seconds per vehicle to 113 seconds per vehicle between Scenario 0A and Scenario 5 Alternate. This indicates the signalisation of the Greenhill Road / Sydney Street intersection, together with the other road network mitigations proposed as part of Scenario 5 Alternate are necessary to combat congestion likely at the unsignalized intersection by 2026 with or without the Stage 6 and Stage 7 redevelopments.
- The Portrush Road accesses Road (PR X1 and PR X2) will operate at LOS F in 2026, for the Thursday AM peak for Scenario 0A and Scenario 5 Alternate. This is due to queuing back from the Portrush Road Greenhill Road intersection. This will not affect operations of the external road system (the queue will be internal) however it will limit the ability of vehicles exiting Burnside Village from this access to turn

right at the Portrush Road / Greenhill Road intersection. Internal signing is recommended within Burnside village to direct patrons to other access points when exiting in that direction. During non-peak periods these accesses will operate without significant delay.

Table 5.1: Scenario model performance summary – Thursday AM models (2018 Stage 6)

		0		0A		4B		4C	
		Existing Volume - Existing Network (Base)		Existing Volume - Modifed Existing Network (Modified Base)		Future Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation)		Future Development Volume - Interim Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation)	
Intersection	Type	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS
Greenhill Rd/Portrush Road	Signalized	79.9	E	130.9	F	143.6	F	146.7	F
Cator Street/Portrush Road	Signalized	12.3	B	14.8	B	27.1	C	20.7	C
Greenhill Road/Sydney Street	Unsignalized	2.2	A	2.0	A				
	Signalized					20.9	C	20.8	C
Cator Street/Sydney Street	Roundabout	0.8	A	0.9	A	0.8	A	0.9	A
Burnside Village Shopping Centre Access-Sydney Street A1 (SS-X1)	Unsignalized	2.4	A	2.5	A	2.4	A	2.4	A
Burnside Village Shopping Centre Access-Sydney Street A2 (SS-X2)	Unsignalized	3.8	A	3.7	A	3.0	A	3.3	A
Burnside Village Shopping Centre Access-Cator Street A1 (CS-X1)	Unsignalized	5.2	A	5.4	A	3.2	A	4.7	A
Burnside Village Shopping Centre Access-Cator Street A2 (CS-X2)	Unsignalized	0.0	-	0.0	-				
Burnside Village Shopping Centre Access-Cator Street A2 (CS-2)	Unsignalized					2.0	A	7.7	A
Burnside Village Shopping Centre Access-Portrush Road A1 (PR-X1)	Unsignalized	28.1	D	31.9	D	27.1	D	26.5	D
Burnside Village Shopping Centre Access-Portrush Road A2 (PR-X2)	Unsignalized	32.1	D	105.3	F	47.9	E	57.5	F

Table 5.2: Scenario model performance summary – Thursday PM models (2018 Stage 6)

		0		0A		4B		4C	
		Existing Volume - Existing Network (Base)		Existing Volume - Modifed Existing Network (Modified Base)		Future Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation)		Future Development Volume - Interim Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation)	
Intersection	Type	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS
Greenhill Rd/Portrush Road	Signalized	81.8	F	174.3	F	165.0	F	170.5	F
Cator Street/Portrush Road	Signalized	24.0	C	32.1	C	63.5	E	56.2	E
Greenhill Road/Sydney Street	Unsignalized	49.5	E	139.6	F				
	Signalized					77.5	E	60.8	E
Cator Street/Sydney Street	Roundabout	2.7	A	2.7	A	3.9	A	2.8	A
Burnside Village Shopping Centre Access-Sydney Street A1 (SS-X1)	Unsignalized	4.3	A	4.3	A	5.0	A	4.8	A
Burnside Village Shopping Centre Access-Sydney Street A2 (SS-X2)	Unsignalized	8.0	A	7.5	A	7.5	A	7.7	A
Burnside Village Shopping Centre Access-Cator Street A1 (CS-X1)	Unsignalized	18.7	C	25.0	D	7.3	A	16.5	C
Burnside Village Shopping Centre Access-Cator Street A2 (CS-X2)	Unsignalized	21.1	C	36.1	E				
Burnside Village Shopping Centre Access-Cator Street A2 (CS-2)	Unsignalized					7.2	A	23.9	C
Burnside Village Shopping Centre Access-Portrush Road A1 (PR-X1)	Unsignalized	23.8	C	55.5	F	48.6	E	51.1	F
Burnside Village Shopping Centre Access-Portrush Road A2 (PR-X2)	Unsignalized	24.4	C	68.3	F	291.9	F	235.2	F

Table 5.3: Scenario model performance summary – Saturday Midday models (2018 Stage 6)

		0		0A		4B		4C	
		Existing Volume - Existing Network (Base)		Existing Volume - Modified Existing Network (Modified Base)		Future Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation)		Future Development Volume - Interim Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation)	
Intersection	Type	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS
Greenhill Rd/Portrush Road	Signalized	44.5	D	55.2	E	58.7	E	59.1	E
Cator Street/Portrush Road	Signalized	10.7	B	11.2	B	12.0	B	12.1	B
Greenhill Road/Sydney Street	Unsignalized	6.5	A	7.6	A				
	Signalized					15.5	B	15.6	B
Cator Street/Sydney Street	Roundabout	1.0	A	1.0	A	1.0	A	1.1	A
Burnside Village Shopping Centre Access-Sydney Street A1 (SS-X1)	Unsignalized	4.0	A	4.0	A	4.1	A	4.2	A
Burnside Village Shopping Centre Access-Sydney Street A2 (SS-X2)	Unsignalized	7.3	A	7.5	A	7.5	A	7.7	A
Burnside Village Shopping Centre Access-Cator Street A1 (CS-X1)	Unsignalized	8.0	A	11.1	B	4.5	A	6.7	A
Burnside Village Shopping Centre Access-Cator Street A2 (CS-X2)	Unsignalized	34.0	D	32.0	D				
Burnside Village Shopping Centre Access-Cator Street A2 (CS-2)	Unsignalized					1.9	A	25.4	D
Burnside Village Shopping Centre Access-Portrush Road A1 (PR-X1)	Unsignalized	24.2	C	24.2	C	28.8	D	30.9	D
Burnside Village Shopping Centre Access-Portrush Road A2 (PR-X2)	Unsignalized	15.9	C	15.5	C	20.0	C	20.4	C

Table 5.4: Scenario model performance summary – Thursday AM models (2026 Stage 7)

		0		0A		0B		0B - Alternate		4B		5		5 - Alternate	
		Existing Volume - Existing Network (Base)		2026 Volume - Modified Existing Network (Modified Base)		2026 Volume - Modified Existing Network (Modified Base) WITH Third Lane on Greenhill		2026 Volume -Modified Existing Network (Modified Base) WITH Third Lane on Greenhill AND Reconfiguration of Greenhill East Approach to Portrush		Future 2026 Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation)		Future 2026 Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation) WITH Third Lane on Greenhill		Future 2026 Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation) WITH Third Lane on Greenhill AND Reconfiguration of Greenhill East Approach to Portrush	
Intersection	Type	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS
Greenhill Rd/Portrush Road	Signalized	79.9	E	138.4	F	108.9	F	89.5	F	150.3	F	121.1	F	105.1	F
Cator Street/Portrush Road	Signalized	12.3	B	39.6	D	48.3	D	49.6	D	46.2	D	58.2	E	56.8	E
Greenhill Road/Sydney Street	Unsignalized	2.2	A	2.3	A	4.0	A	3.0	A						
	Signalized									21.5	C	23.8	C	24.2	C
Cator Street/Sydney Street	Roundabout	0.8	A	2.6	A	2.3	A	1.8	A	3.7	A	3.9	A	2.6	A
Burnside Village Shopping Centre Access-Sydney Street A1 (SS-X1)	Unsignalized	2.4	A	3.1	A	3.3	A	3.1	A	3.5	A	3.2	A	3.2	A
Burnside Village Shopping Centre Access-Sydney Street A2 (SS-X2)	Unsignalized	3.8	A	4.4	A	4.2	A	4.3	A	3.0	A	3.2	A	3.3	A
Burnside Village Shopping Centre Access-Cator Street A1 (CS-X1)	Unsignalized	5.2	A	14.2	B	12.4	B	14.0	B	5.0	A	5.5	A	4.5	A
Burnside Village Shopping Centre Access-Cator Street A2 (CS-X2)	Unsignalized	0.0	-	0.0	-	0.0	-	0.0	-						
Burnside Village Shopping Centre Access-Cator Street A2 (CS-2)	Unsignalized									6.2	A	8.4	A	5.6	A
Burnside Village Shopping Centre Access-Portrush Road A1 (PR-X1)	Unsignalized	28.1	D	27.0	D	26.3	D	25.2	D	26.0	D	27.3	D	27.9	D
Burnside Village Shopping Centre Access-Portrush Road A2 (PR-X2)	Unsignalized	32.1	D	84.6	F	99.8	F	102.0	F	104.8	F	92.1	F	91.0	F

Table 5.5: Scenario model performance summary – Thursday PM models (2026 Stage 7)

		0		0A		0B		0B - Alternate		4B		5		5 - Alternate	
		Existing Volume - Existing Network (Base)		2026 Volume - Existing Network (Base)		2026 Volume - Existing Network (Base) WITH Third Lane on Greenhill		2026 Volume - Existing Network (Base) WITH Third Lane on Greenhill AND Reconfiguration of Greenhill East Approach to Portrush		Future 2026 Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation)		Future 2026 Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation) WITH Third Lane on Greenhill		Future 2026 Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation) WITH Third Lane on Greenhill AND Reconfiguration of Greenhill East Approach to Portrush	
Intersection	Type	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS
Greenhill Rd/Portrush Road	Signalized	81.8	F	182.9	F	213.6	F	213.2	F	188.2	F	246.1	F	239.1	F
Cator Street/Portrush Road	Signalized	24.0	C	57.4	E	61.1	E	61.3	E	105.4	F	98.1	F	92.1	F
Greenhill Road/Sydney Street	Unsignalized	49.5	E	151.5	F	147.2	F	149.0	F						
	Signalized									130.5	F	113.9	F	113.0	F
Cator Street/Sydney Street	Roundabout	2.7	A	23.2	C	30.8	D	27.7	D	13.4	B	18.6	C	22.4	C
Burnside Village Shopping Centre Access-Sydney Street A1 (SS-X1)	Unsignalized	4.3	A	9.6	A	12.8	B	12.3	B	8.0	A	9.9	A	11.4	B
Burnside Village Shopping Centre Access-Sydney Street A2 (SS-X2)	Unsignalized	8.0	A	12.8	B	16.0	C	15.1	C	9.4	A	10.0	A	12.0	B
Burnside Village Shopping Centre Access-Cator Street A1 (CS-X1)	Unsignalized	18.7	C	54.2	F	62.9	F	69.6	F	12.2	B	13.1	B	14.5	B
Burnside Village Shopping Centre Access-Cator Street A2 (CS-X2)	Unsignalized	21.1	C	62.6	F	55.2	F	49.4	E						
Burnside Village Shopping Centre Access-Cator Street A2 (CS-2)	Unsignalized									17.6	C	21.4	C	29.4	D
Burnside Village Shopping Centre Access-Portrush Road A1 (PR-X1)	Unsignalized	23.8	C	74.8	F	81.3	F	84.0	F	78.5	F	52.0	F	58.3	F
Burnside Village Shopping Centre Access-Portrush Road A2 (PR-X2)	Unsignalized	24.4	C	112.3	F	88.8	F	68.5	F	237.3	F	140.1	F	190.5	F

Table 5.6: Scenario model performance summary – Saturday Midday models (2026 Stage 7)

		0		0A		0B		0B - Alternate		4B		5		5 - Alternate	
		Existing Volume - Existing Network (Base)		2026 Volume - Modified Existing Network (Modified Base)		2026 Volume - Modified Existing Network (Modified Base) WITH Third Lane on Greenhill		2026 Volume -Modified Existing Network (Modified Base) WITH Third Lane on Greenhill AND Reconfiguration of Greenhill East Approach to Portrush		Future 2026 Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation)		Future 2026 Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation) WITH Third Lane on Greenhill		Future 2026 Development Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT Lane, and Greenhill Bus Stop Relocation) WITH Third Lane on Greenhill AND Reconfiguration of Greenhill East Approach to Portrush	
Intersection	Type	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS	Intersection Average Delay	LOS
Greenhill Rd/Portrush Road	Signalized	44.5	D	56.5	E	156.9	F	166.2	F	63.8	E	158.1	F	170.8	F
Cator Street/Portrush Road	Signalized	10.7	B	12.9	B	12.2	B	13.6	B	15.9	B	17.0	B	18.0	B
Greenhill Road/Sydney Street	Unsignalized	6.5	A	20.0	C	17.7	C	20.2	C						
	Signalized									19.1	B	17.9	B	17.5	B
Cator Street/Sydney Street	Roundabout	1.0	A	1.2	A	1.2	A	2.2	A	2.9	A	4.5	A	4.5	A
Burnside Village Shopping Centre Access-Sydney Street A1 (SS-X1)	Unsignalized	4.0	A	4.7	A	4.5	A	4.7	A	5.8	A	5.8	A	6.1	A
Burnside Village Shopping Centre Access-Sydney Street A2 (SS-X2)	Unsignalized	7.3	A	8.3	A	7.6	A	8.2	A	9.7	A	8.4	A	9.0	A
Burnside Village Shopping Centre Access-Cator Street A1 (CS-X1)	Unsignalized	8.0	A	24.1	C	17.9	C	27.8	D	12.1	B	13.0	B	15.3	C
Burnside Village Shopping Centre Access-Cator Street A2 (CS-X2)	Unsignalized	34.0	D	48.5	E	43.2	E	52.3	F						
Burnside Village Shopping Centre Access-Cator Street A2 (CS-2)	Unsignalized									7.1	A	7.8	A	10.3	B
Burnside Village Shopping Centre Access-Portrush Road A1 (PR-X1)	Unsignalized	24.2	C	24.9	C	26.1	D	24.3	C	37.9	E	46.6	E	44.8	E
Burnside Village Shopping Centre Access-Portrush Road A2 (PR-X2)	Unsignalized	15.9	C	15.5	C	16.5	C	15.4	C	23.7	C	36.4	E	37.5	E

6. Operational Issues

6.1 Rat Running via Sydney Street and Cator Street

It is noted that, during the Thursday PM peak period, up to half of vehicles travelling east on Cator Street to the Cator Street / Portrush Road intersection are pass-by trips (i.e. are not generated by the Burnside Village shopping centre). It is likely that these trips are caused by drivers who wish to avoid the congested Greenhill Road / Portrush Road intersection, and instead choose to turn left off Greenhill Road onto either Sydney Street or another local road west of Portrush Road. This is an issue with or without the Stage 6 and 7 developments.

While the use of this route reduces congestion at the Greenhill Road / Portrush Road intersection, it creates amenity impacts on Cator Street and is possible that, with increased use, it will result in congestion at the Cator Street / Portrush Road intersection. Therefore, it is recommended that a raised table be constructed on approaches at the Cator Street / Sydney Street intersection, as shown below in **Figure 6-1**, in order to discourage more drivers from taking this route, without preventing drivers from using this route altogether.

Figure 6-1: Cator Street passing trips and proposed raised table

6.2 Greenhill Road Eastbound Bus Stop between Portrush Road and Sydney Street

There is a bus stop on Greenhill Road between Portrush Road and Sydney Street. The eastbound bus stop on the north side of Greenhill Road causes a significant amount of turbulence in the passing traffic stream. With the removal of the Greenhill Road pedestrian signals, there is an opportunity to narrow the current Greenhill Road

median at this point, and use the space created to provide an indented bus bay for the bus stop. This will improve traffic capacity of the Portrush Road / Greenhill Road intersection. This improvement has been modelled in Scenario 4B and Scenario 5. The results presented in this report indicate that this change has the greatest benefit to the PM Peak period road network performance with the development, which in combination with other proposed network improvements and traffic diversions generated by the development, is able to improve performance of the bottleneck Portrush Road / Greenhill Road intersection when compared to existing.

6.3 Third westbound lane on Greenhill Road between Portrush Road and Sydney Street

It was observed that the addition of a third westbound lane on Greenhill Road between Portrush Road and Sydney Street (with short auxiliary lanes on the approach and exit of the intersections) provides significant improvement for the AM Peak overall network operation and for westbound travel times. However, during the PM and Saturday Peaks, it was observed that the shared through and left turn lane on the Portrush Road / Greenhill Road intersection eastern approach has significant impact on the intersection's performance, as the larger volume of left turning vehicles becomes blocked by vehicles utilising the lane to travel straight through the intersection. As such, it is recommended that a gantry sign (Lane Use Management System) be installed on the Portrush Road / Greenhill Road intersection eastern approach to control the turn movements permitted via each lane depending on the time of day.

An additional separate left turn lane, in addition to a third through lane on the same intersection approach is not considered necessary, given the intersection performance without a third westbound lane (refer Scenario 4B for comparison against Scenario 5).

Modification of the short auxiliary right turn lane, and the shared left and through lane on the Portrush Road / Greenhill Road intersection eastern approach (i.e. switching the lane lengths) is considered a better utilisation of the existing road space given the traffic demands observed in the 2026 future year (refer Scenario 5 – Alternate for comparison against Scenario 5).

*NOTE: A Supplementary Traffic Assessment memorandum (refer **Appendix C**) documents one further piece of analysis subsequent to the TIA:*

(a) A further test of traffic performance of the ultimate (2026) package of roadworks identified for Stage 7 of the Burnside Village Redevelopment, (Scenario 5) assuming the three-lane westbound section of Greenhill Road terminated at the Sydney Street intersection, with two through and one left-turning lane.

7. Preferred Scenario

As noted in in the previous AIMSUN Scenario Model Report, it is necessary to undertake some network improvements in order to mitigate the impacts of additional Burnside Village development traffic on the existing network. The preferred improvements are considered separately for Stage 6 and Stage 7.

Signalising the Sydney Street / Greenhill Road intersection adds some delay in Greenhill Road, but creates more traffic capacity and improved pedestrian safety at that intersection. In combination with the removal of the existing pedestrian signals in Greenhill Road it enables rephasing of signals to achieve better coordination of traffic movements along Greenhill Road, and reduced delay at the Portrush Road/Greenhill Road intersection. Therefore, all development scenarios (Stage 6 and Stage 7) have included signalisation of the Greenhill Road / Sydney Street intersection and removal of the Greenhill Road pedestrian signals.

Of the network improvement scenarios for Stage 6, 4B work best across most time periods. Average delay at Greenhill Road / Portrush Road in the Thursday PM Peak is increased from 81 seconds per vehicle in Scenario 0 to 174 seconds per vehicle (+115%) in Scenario 0A. Delay then reduced to 165 seconds per vehicle (-5%) in Scenario 4B. This assumes 20 percent pass-by trips, considered to be a realistic representation of the network operation, and consistent with Austroads Guidelines.

For Stage 7 traffic generation, some additional improvement would be desirable. As noted in Section 5, provision of an additional third westbound through lane on Greenhill Road during the Thursday AM peak has significant benefit to the overall network performance and intersection performance at Portrush Road / Greenhill Road. In 2026, the base level of average delay at Greenhill Road / Portrush Road in Scenario 0A will have increased to 138 seconds per vehicle in the Thursday AM Peak, to 183 seconds per vehicle in the Thursday PM Peak and to 57 seconds per vehicle in the Saturday Midday period. With the third lane westbound in Greenhill Road added, including Stage 7 traffic generation and other improvements as per Scenario 5 Alternate, delay is altered to 105 seconds per vehicle in the Thursday AM Peak (-24%). For the other time periods it will be preferable to operate the additional lane in Greenhill Road as a left turn lane, via a Lane Use Management System (LUMS) on the eastern approach (equivalent to Scenario 4B). This results in average delay of 188 seconds per vehicle in the Thursday PM Peak (+3%), and to 64 seconds (+14%) if Greenhill Road is operated as two lanes westbound (equivalent to Scenario 4B).

Therefore, given the benefits gained in Scenario 4B for both the proposed Burnside Village shopping centre accesses and the surrounding network intersections, and the demonstrated improvements of providing a third through westbound lane in the Thursday AM Peak, *Scenario 5 - Alternate* is the preferred roadworks improvement scenario for the ultimate future Stage 7 development. This will use a LUMS implemented on the Greenhill Road eastern approach to Portrush Road intersection to provide three westbound through lanes in the AM peak and a dedicated left turn lane during the Thursday PM Peak and Saturday Midday Peak periods with only two through lanes.

8. Summary and Conclusions

Road Network Scenario 4B is the preferred roadworks improvement Scenario for the Stage 6 development. Scenario 4B results in an increase in average delay at the Portrush Road / Greenhill Road intersection of 8 seconds in the Thursday AM peak, 3 seconds in the Thursday PM peak, and remains unchanged in the Saturday midday peak. This is for an intersection that operates at LOS E (at capacity) or worse at present (refer Modified Base Model 2018) in every time period, with a total modelled journey time along Greenhill Road of 3 to 7 minutes, and along Portrush Road of 3 to 5 minutes. All other affected intersections operate at lower levels of delay and have lower levels of development impact. In Jacobs view, this level of impact (worst impact +8 seconds average delay per vehicle) is acceptable within the context of current traffic conditions along Greenhill and Portrush Roads.

Road Network Scenario 5 Alternate is the preferred roadworks improvement scenario for 2026 and beyond, to address delay increases primarily associated with increased commuter traffic. This will also have associated benefits for the Stage 7 development. Scenario 5 Alternate, augmented with LUMS, results in a reduction in average delay at the Portrush Road / Greenhill Road intersection of 33 seconds in the Thursday AM peak, and increases in average delay of 5 seconds in the Thursday PM peak, and 7 seconds in the Saturday midday peak. In Jacobs view, this level of impact (worst impact +7 seconds average delay per vehicle) is acceptable within the context of current traffic conditions along Greenhill and Portrush Roads - that is, the road improvements modelled in Scenario 5 Alternate mitigate the impacts of Stage 7 development traffic in what is an already congested location The Thursday AM peak reduction in delay is a significant benefit to traffic capacity on Portrush Road and Greenhill Road.

Note that the addition of a relocated and indented bus bay in Greenhill Road (eastbound), in conjunction with the signalisation of the Sydney Street / Greenhill Road intersection, results in reduced delay at the Portrush Road / Greenhill Road intersection in all cases. These are considered necessary to combat congestion likely at the unsignalized intersection by 2026 with or without the Stage 6 and Stage 7 redevelopments.

The recommended roadworks to support the Burnside Village Stage 6 redevelopment are:

- Changes to BV access system as defined in Buchan architects plan.
- Removal of existing mid-block Greenhill Road pedestrian crossing between Sydney Street and Portrush Road.
- Signalisation of Greenhill Road / Sydney Street intersection, to include pedestrian crossing movements and retain right turns out from Sydney Street.
- Lengthening of shared left and right turn lane on Cator Street approach to Portrush Road to existing Burnside Village Cator Street access to be retained.
- Lengthening of left turn lane on Sydney Street approach to Greenhill Road (formalising line work within existing road width, without impact to on-street parking in front of the residents).
- Lengthening of right turn lane on Greenhill Road into Sydney Street (utilising space within existing central median).
- Installation of “raised tables” speed control devices on approach to Cator Street / Sydney Street roundabout.
- 40 km/h speed limit introduced along Cator Street and Sydney Street adjacent the Burnside Village.

- Lengthening of left turn lane on Greenhill Road into Portrush Road (reconfiguration of approach lanes and utilising space within existing central median).
- Relocation of existing Greenhill Road bus stop between Sydney Street and Portrush Road and make indented (reconfiguration of approach lanes and utilising space within existing central median).
- The works identified in Cator Street could be staged to match the timing of shopping centre redevelopment on the Cator Street frontage, given the minimal difference in performance between Scenarios 4B and 4C.

The recommended roadworks to support the Burnside Village Stage 7 redevelopment (in addition to those recommended above for the Stage 6 redevelopment), and to address delay increases primarily associated with increased commuter traffic in 2026 are

- Third lane on Greenhill Road westbound between Portrush Road and Sydney Street
- Existing left turn lane at Greenhill Road eastern approach converted to a shared left and through lane
- Greenhill Road eastern approach to Portrush Road intersection reconfigured so that shared through / left turn lane and right turn lane lengths are switched
- Lane Use Management System provided on the Greenhill Road eastern approach to Portrush Road intersection, to enable management of the shared through / left turn lane so that the lane operates as a:
    - Shared through / left turn lane during the AM Peak period
    - Left turn lane only during the PM and Saturday Midday Peaks

*NOTE: Although a short 30m auxiliary lane on the Greenhill Road western exit at Street / Greenhill Road intersection was tested, subsequent traffic assessment indicates that this is not required for the Stage 7 redevelopment. Refer **Appendix C** for analysis findings.*

A Staging Option, Scenario 4C, has also been modelled. This allows for Stage 6 development and Greenhill Road roadworks to be constructed with no changes to Cator Street. That represents the possibility that Stage 6 may be delivered in stages, with Cator Street unchanged in the first phase if there is no redevelopment of Burnside Village along the Cator Street frontage. The results indicate Scenario 4C has very similar performance to Scenario 4B for 2018 traffic demands. Scenario 4C could be used as a staging option for Stage 6 for 2018 traffic demands with minimal change to traffic network performance.

Appendix A. Travel Time Performance Summaries

A.1 Stage 6 Development

Travel time results of AIMSUN modelling for all Stage 6 scenarios in each time period (Thursday AM peak, Thursday PM peak and Saturday midday peak) are shown in the following **Table A.1 to Table A.3** and **Figure 8-1 to Figure 8-12**.

Results are reported as modelled travel times (end to end) in each direction for Greenhill Road and Portrush Road. This gives a representation of aggregate performance looking at the close spacing and interactions between intersections on each road.

Table A.1: Scenario model performance summary – Thursday AM Peak models – Stage 6

	Scenario 0	Scenario 0A	Scenario 4B	Scenario 4C
General Statistics				
Average Delay Travel Time (sec/km) - All	60.89	89.31	104.09	104.51
Average Speed (km/h) - All	32.94	29.24	27.29	27.37
Route Statistics				
Greenhill Road (westbound)				
Travel Time (sec)	307.74	447.68	476.94	477.24
Delay (sec)	206.84	346.9	376.12	376.41
Greenhill Road (eastbound)				
Travel Time (sec)	214.46	189.87	186.61	186.93
Delay (sec)	112.45	88.01	84.93	85.25
Portrush Road (northbound)				
Travel Time (sec)	189.49	213.66	242.06	228.34
Delay (sec)	74.75	98.87	127.29	113.56
Portrush Road (southbound)				
Travel Time (sec)	160.7	192.05	210	224.66
Delay (sec)	45.61	77.1	95.01	109.67

Table A.2: Scenario model performance summary – Thursday PM Peak models – Stage 6

	Scenario 0	Scenario 0A	Scenario 4B	Scenario 4C
General Statistics				
Average Delay Travel Time (sec/km) - All	74.22	139.28	136.64	133
Average Speed (km/h) - All	29.5	23.01	21.71	22.1
Route Statistics				
Greenhill Road (westbound)				
Travel Time (sec)	180.41	169.67	226.96	224.87
Delay (sec)	79.25	68.75	125.98	123.9
Greenhill Road (eastbound)				
Travel Time (sec)	285.04	452.03	304.83	271.00
Delay (sec)	183.99	351.07	203.95	170.12
Portrush Road (northbound)				
Travel Time (sec)	182.42	234.73	322.91	303.36
Delay (sec)	67.32	119.61	207.76	188.15
Portrush Road (southbound)				
Travel Time (sec)	259.86	490.61	472.27	494.08
Delay (sec)	144.56	375.59	357.38	379.15

Table A.3: Scenario model performance summary – Saturday Peak models – Stage 6

	Scenario 0	Scenario 0A	Scenario 4B	Scenario 4C
General Statistics				
Average Delay Travel Time (sec/km) - All	40.64	46.56	51.88	53.39
Average Speed (km/h) - All	37.03	35.38	33.51	33.3
Route Statistics				
Greenhill Road (westbound)				
Travel Time (sec)	174.95	181.00	194.46	193.34
Delay (sec)	74.02	80.23	93.64	92.53
Greenhill Road (eastbound)				
Travel Time (sec)	202.51	205.35	195.73	195.92
Delay (sec)	101.62	104.47	94.9	95.12
Portrush Road (northbound)				
Travel Time (sec)	157.54	157.80	160.98	163.78
Delay (sec)	42.99	43.24	46.41	49.19
Portrush Road (southbound)				
Travel Time (sec)	161.34	177.31	181.46	180.97
Delay (sec)	46.67	62.68	66.82	66.34

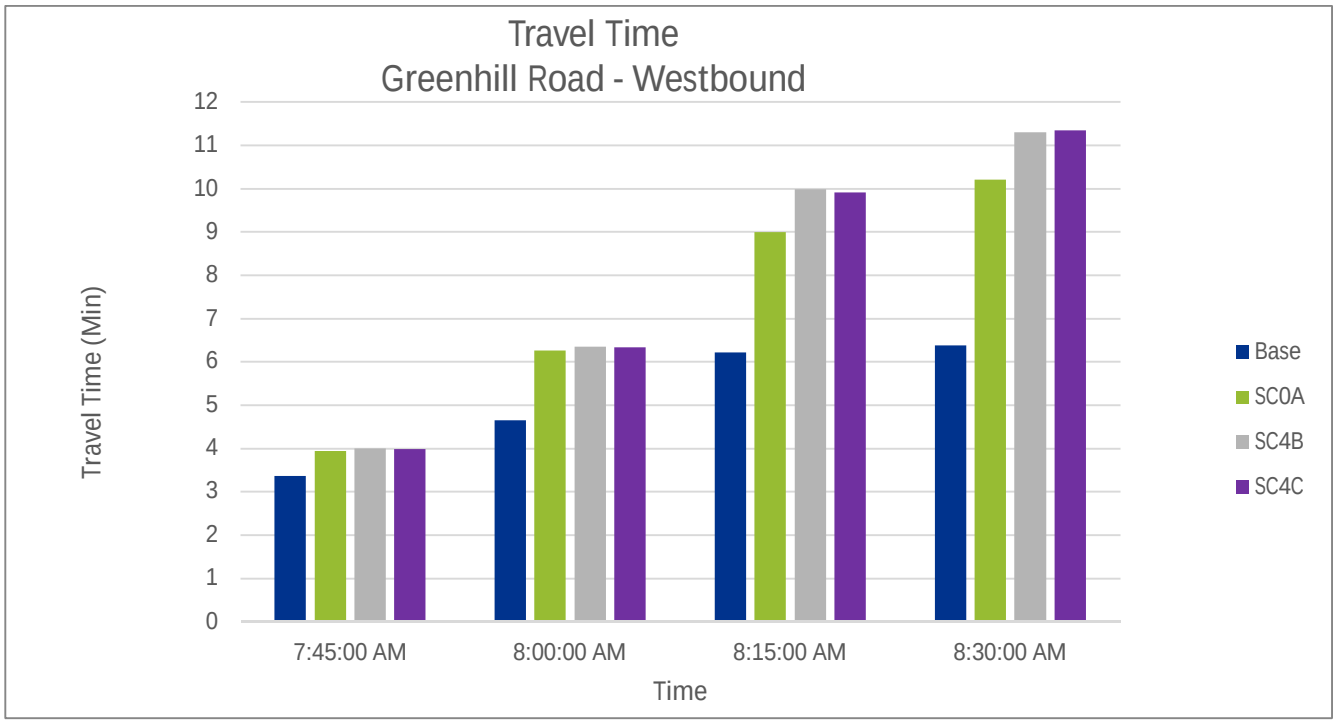

Figure 8-1: Greenhill Road Travel Time, Westbound, AM Peak – Stage 6

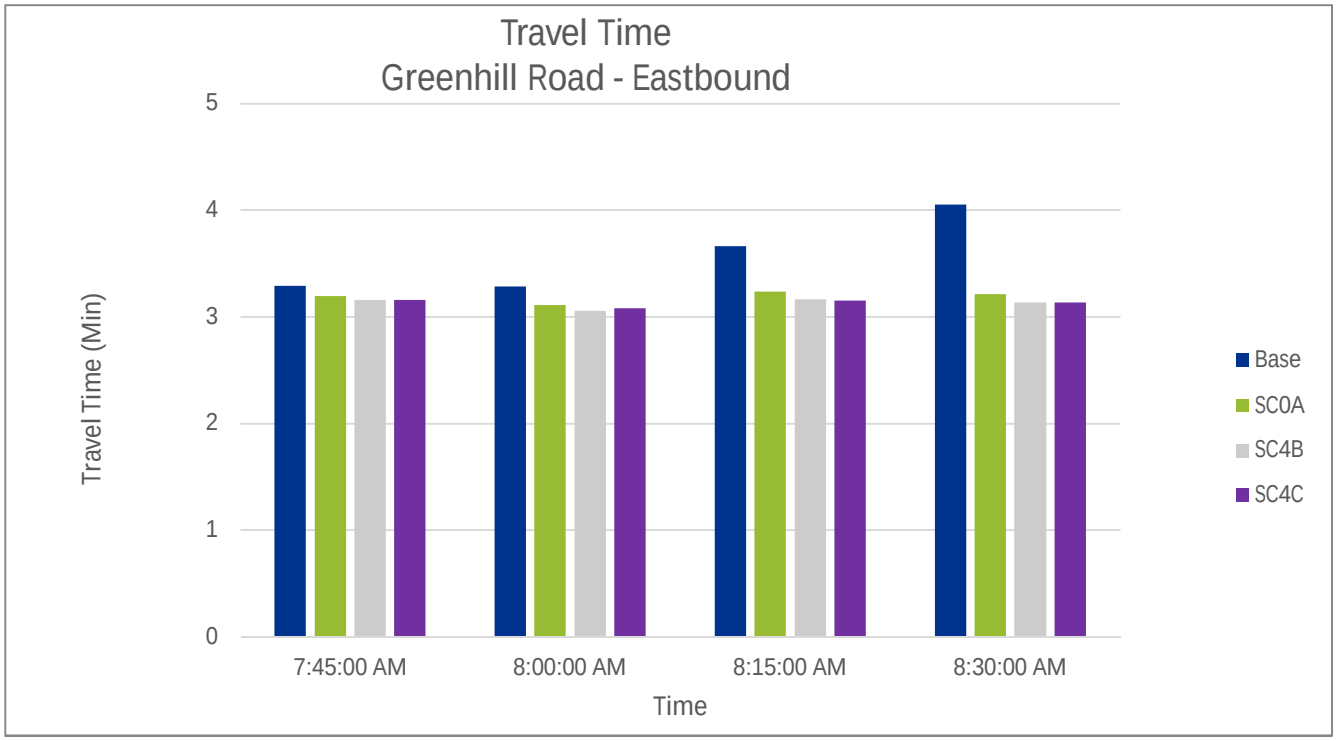

Figure 8-2: Greenhill Road Travel Time, Eastbound, AM Peak – Stage 6

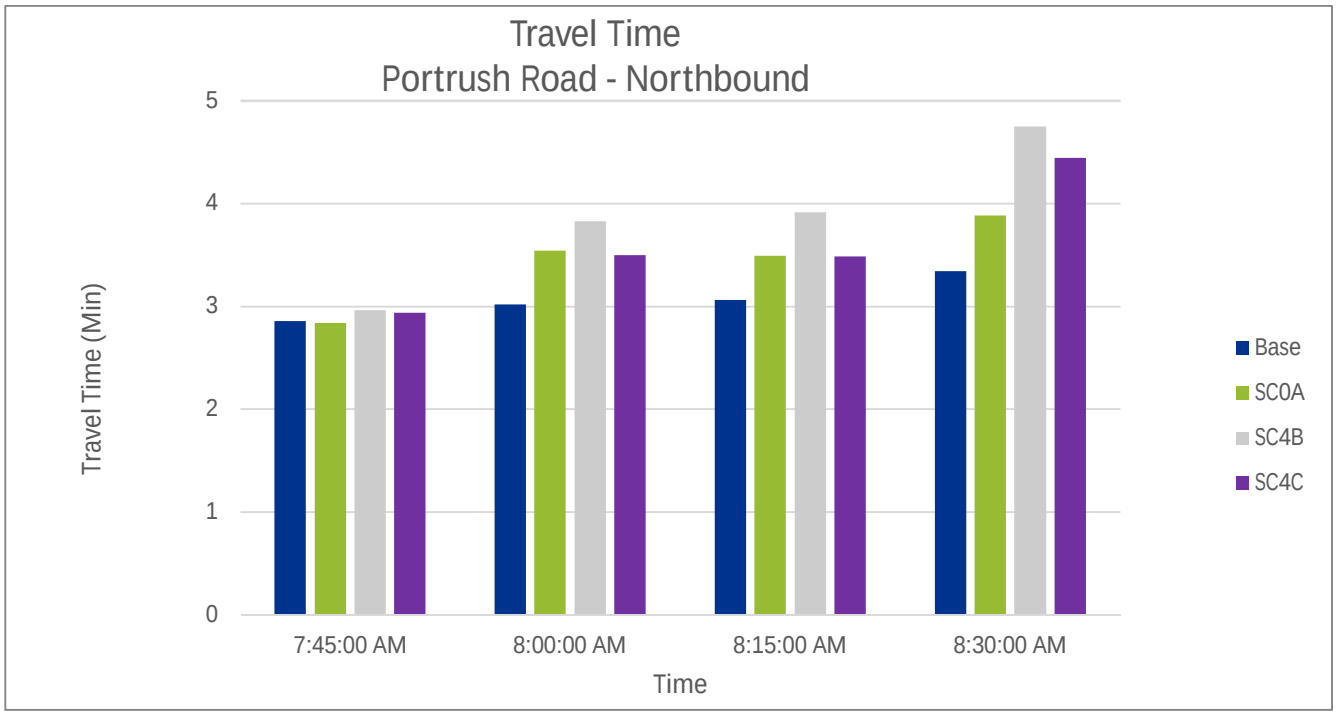

Figure 8-3: Portrush Road Travel Time, Northbound, AM Peak – Stage 6

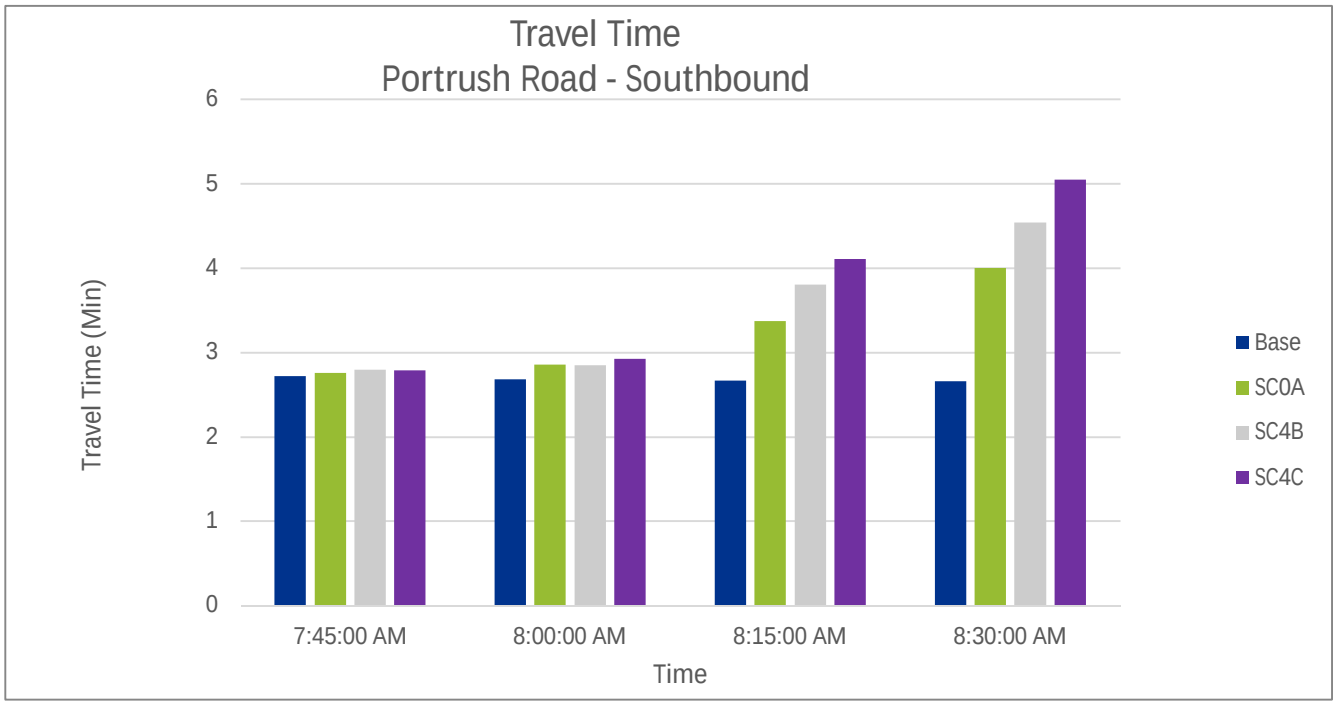

Figure 8-4: Portrush Road Travel Time, Southbound, AM Peak – Stage 6

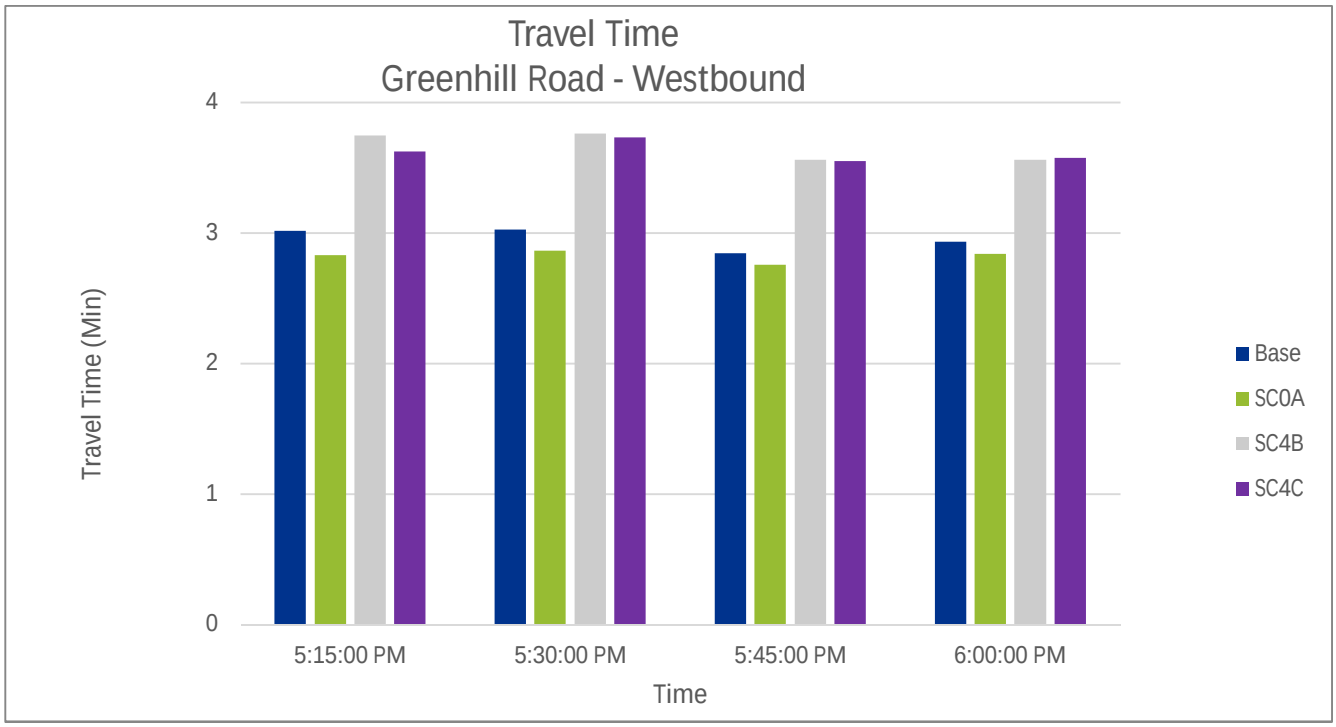

Figure 8-5: Greenhill Road Travel Time, Westbound, PM Peak – Stage 6

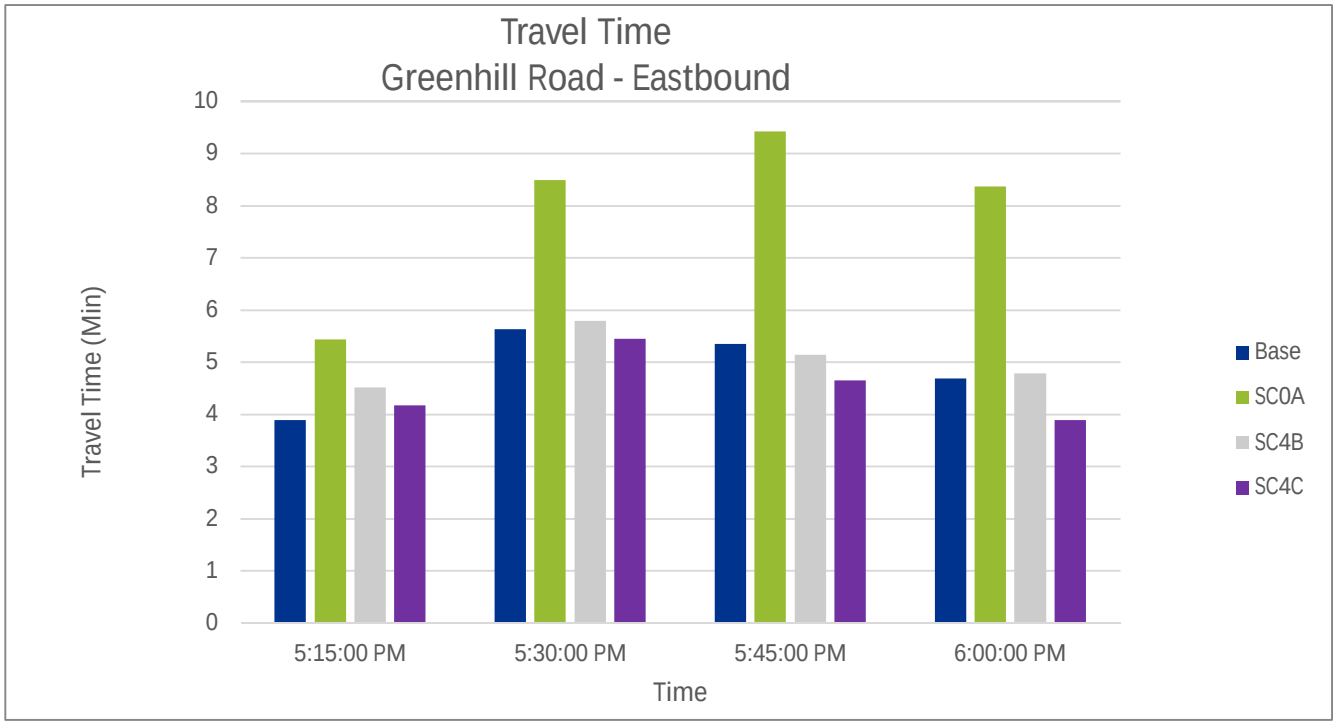

Figure 8-6: Greenhill Road Travel Time, Eastbound, PM Peak – Stage 6

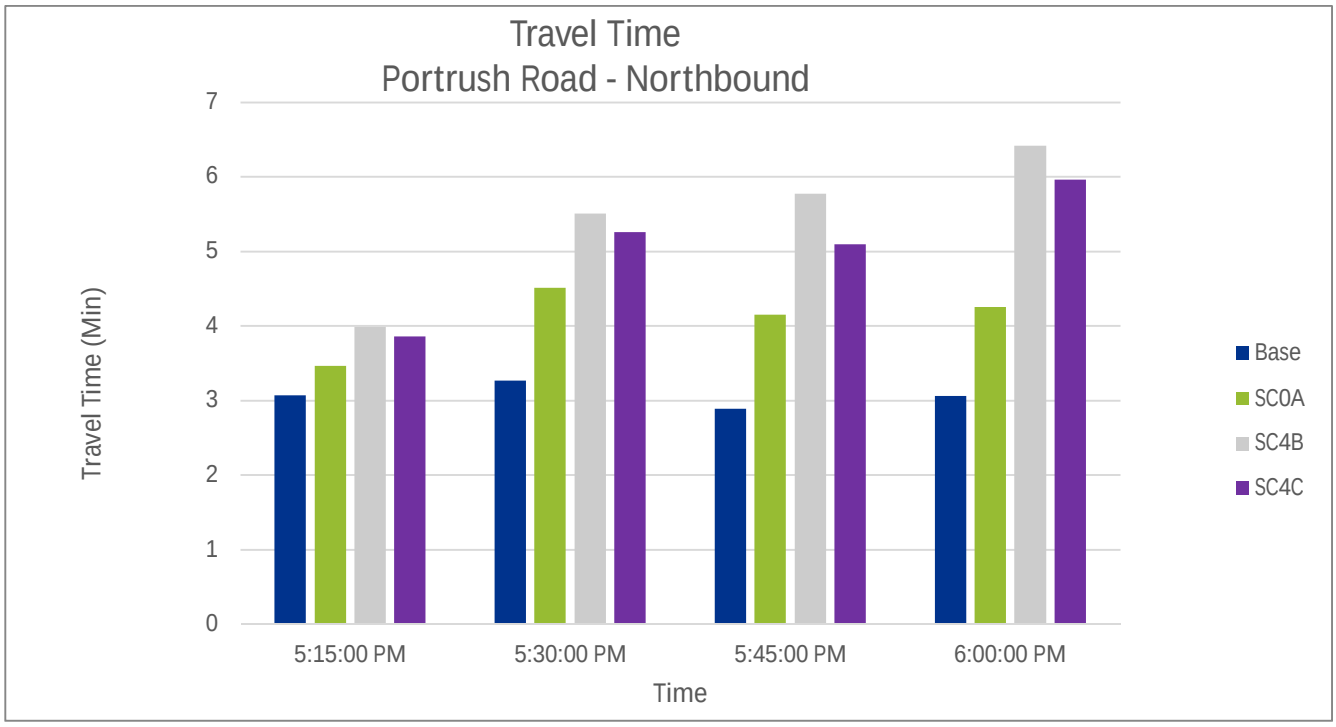

Figure 8-7: Portrush Road Travel Time, Northbound, PM Peak – Stage 6

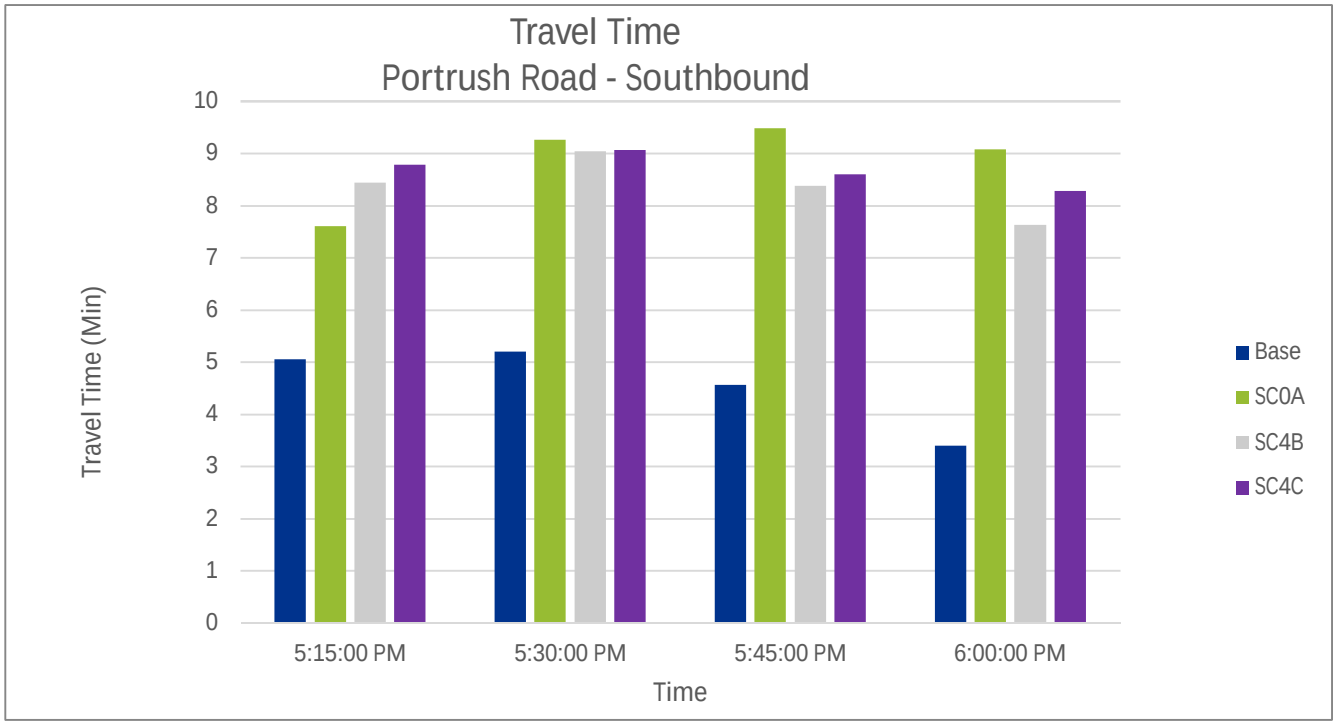

Figure 8-8: Portrush Road Travel Time, Southbound, PM Peak – Stage 6

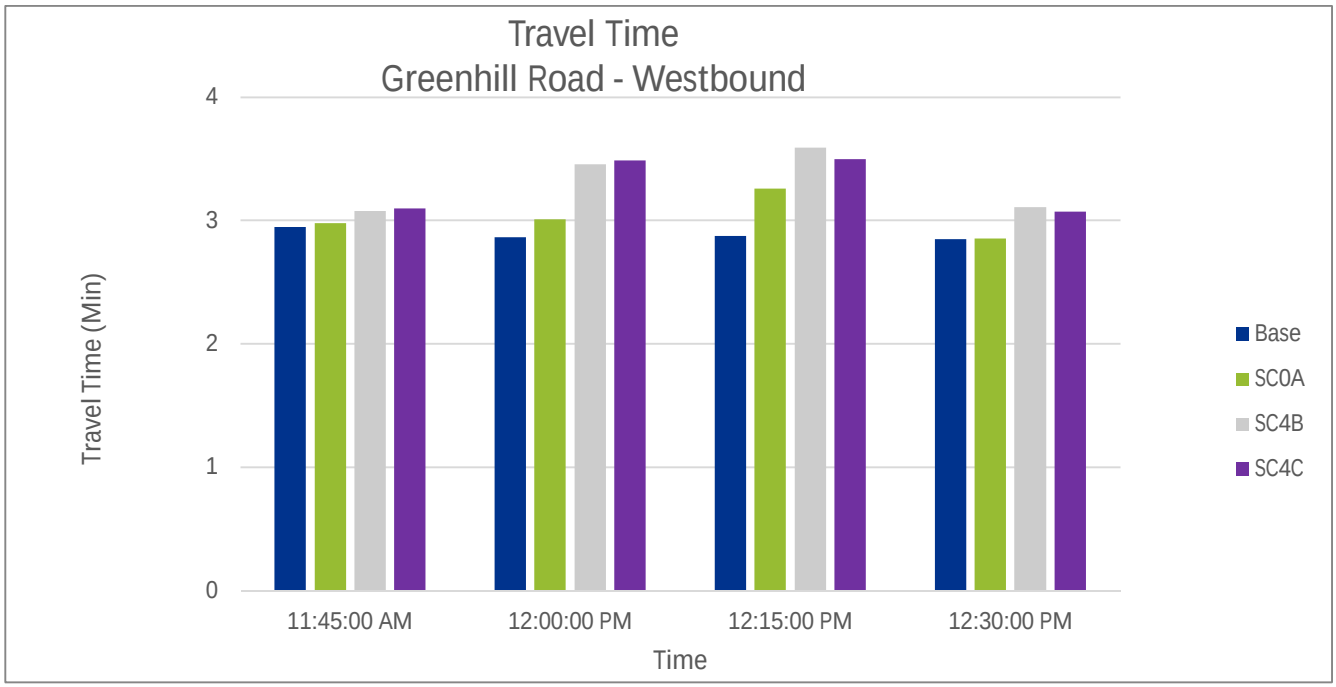

Figure 8-9: Greenhill Road Travel Time, Westbound, Saturday Midday Peak – Stage 6

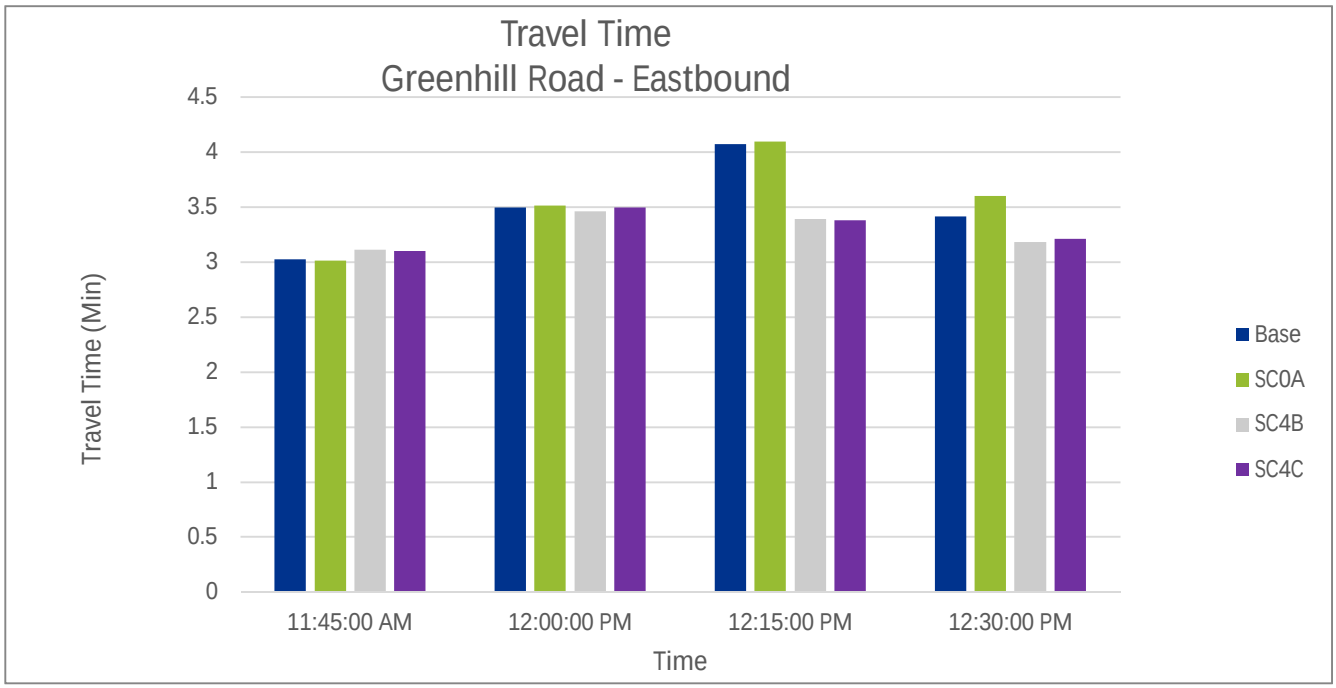

Figure 8-10: Greenhill Road Travel Time, Eastbound, Saturday Midday Peak – Stage 6

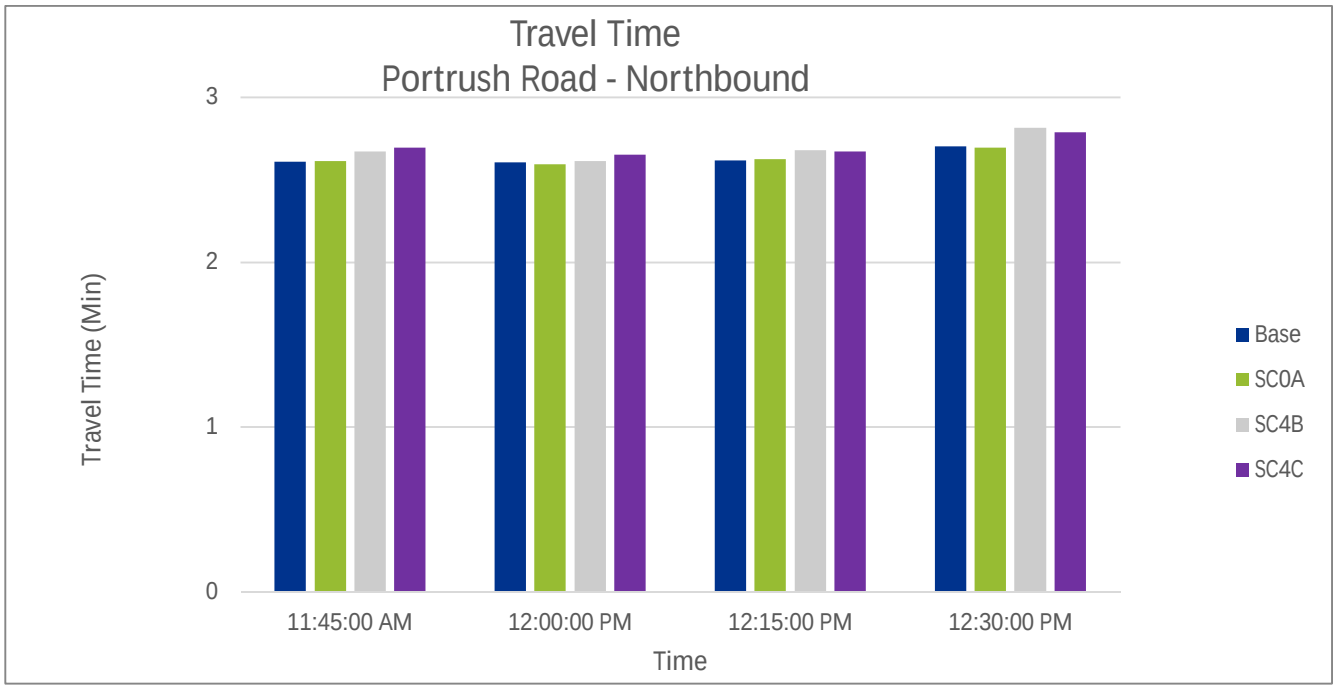

Figure 8-11: Portrush Road Travel Time, Northbound, Saturday Midday Peak – Stage 6

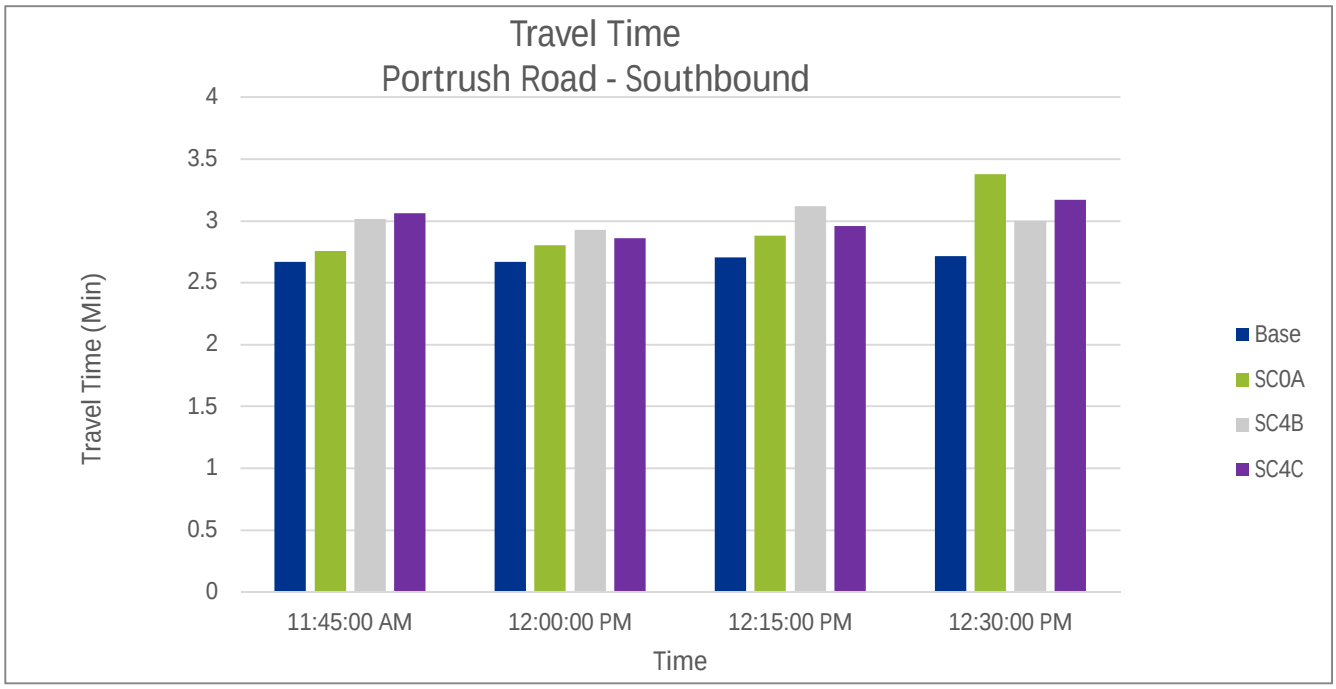

Figure 8-12: Portrush Road Travel Time, Southbound, Saturday Midday Peak – Stage 6

A.2 Stage 7 Development

Travel time results of AIMSUN modelling for all Stage 7 scenarios in each time period (Thursday AM peak, Thursday PM peak and Saturday midday peak) are shown in the following **Table A.4 to Table A.6** and **Figure 8-13 to Figure 8-24**.

Results are reported as modelled travel times (end to end) in each direction for Greenhill Road and Portrush Road. This gives a representation of aggregate performance looking at the close spacing and interactions between intersections on each road.

Table A.4: Scenario model performance summary – Thursday AM Peak models – Stage 7

	Scenario 0	Scenario 0A	Scenario 0B	Scenario 0B - Alternate	Scenario 4B	Scenario 5	Scenario 5 - Alternate
General Statistics							
Average Delay Travel Time (sec/km) - All	60.89	102.27	86.34	77.59	114.73	102.34	92.3
Average Speed (km/h) - All	32.94	28.11	28.03	28.88	25.98	25.76	26.63
Route Statistics							
Greenhill Road (westbound)							
Travel Time (sec)	307.74	512.04	318.38	233.85	510.00	343.28	270.22
Delay (sec)	206.84	411.15	217.56	133.02	409.05	242.46	169.4
Greenhill Road (eastbound)							
Travel Time (sec)	214.46	190.52	199.69	192.28	187.35	190.31	188.50
Delay (sec)	112.45	89.41	98.59	91.17	86.25	89.22	87.40
Portrush Road (northbound)							
Travel Time (sec)	189.49	266.76	281.56	287.00	279.52	305.43	301.64
Delay (sec)	74.75	152.09	166.91	172.32	164.89	190.80	187.01
Portrush Road (southbound)							
Travel Time (sec)	160.7	176.84	185.03	200.58	204.35	209.27	218.47
Delay (sec)	45.61	62.05	70.23	85.78	89.58	94.48	103.70

Table A.5: Scenario model performance summary – Thursday PM Peak models – Stage 7

	Scenario 0	Scenario 0A	Scenario 0B	Scenario 0B - Alternate	Scenario 4B	Scenario 5	Scenario 5 - Alternate
General Statistics							
Average Delay Travel Time (sec/km) - All	74.22	160.55	160.55	177.24	179.89	197.4	195.07
Average Speed (km/h) - All	29.5	21.31	21.31	19.52	17.82	16.86	17.03
Route Statistics							
Greenhill Road (westbound)							
Travel Time (sec)	180.41	176.75	289.89	250.79	252.87	555.87	520.34
Delay (sec)	79.25	76.01	189.14	150.08	152.07	455.14	419.6
Greenhill Road (eastbound)							
Travel Time (sec)	285.04	476.50	463.24	469.49	401.26	358.37	353.40
Delay (sec)	183.99	375.69	362.48	368.72	300.51	257.58	252.64
Portrush Road (northbound)							
Travel Time (sec)	182.42	293.09	296.72	288.92	399.41	359.80	349.44
Delay (sec)	67.32	178.01	181.61	173.78	284.36	244.77	234.38
Portrush Road (southbound)							
Travel Time (sec)	259.86	498.69	507.21	534.07	529.50	510.78	506.77
Delay (sec)	144.56	383.73	392.27	419.12	414.55	395.92	391.88

Table A.6: Scenario model performance summary – Saturday Peak models – Stage 7

	Scenario 0	Scenario 0A	Scenario 0B	Scenario 0B - Alternate	Scenario 4B	Scenario 5	Scenario 5 - Alternate
General Statistics							
Average Delay Travel Time (sec/km) - All	40.64	52.42	52.42	105.42	58.87	106.69	112.43
Average Speed (km/h) - All	37.03	34.35	34.35	30.78	32	29.38	28.64
Route Statistics							
Greenhill Road (westbound)							
Travel Time (sec)	174.95	181.84	579.93	584.74	207.69	605.40	600.74
Delay (sec)	74.02	81.3	479.2	484.01	107.12	504.73	500.04
Greenhill Road (eastbound)							
Travel Time (sec)	202.51	238.81	232.98	238.42	207.29	204.35	204.14
Delay (sec)	101.62	138.07	132.24	137.66	106.58	103.65	103.44
Portrush Road (northbound)							
Travel Time (sec)	157.54	159.08	159.04	159.16	162.79	168.77	170.08
Delay (sec)	42.99	44.5	44.5	44.62	48.23	54.2	55.51
Portrush Road (southbound)							
Travel Time (sec)	161.34	174.60	167.74	169.72	182.09	182.47	195.97
Delay (sec)	46.67	59.88	53.06	55.05	67.27	67.72	81.16

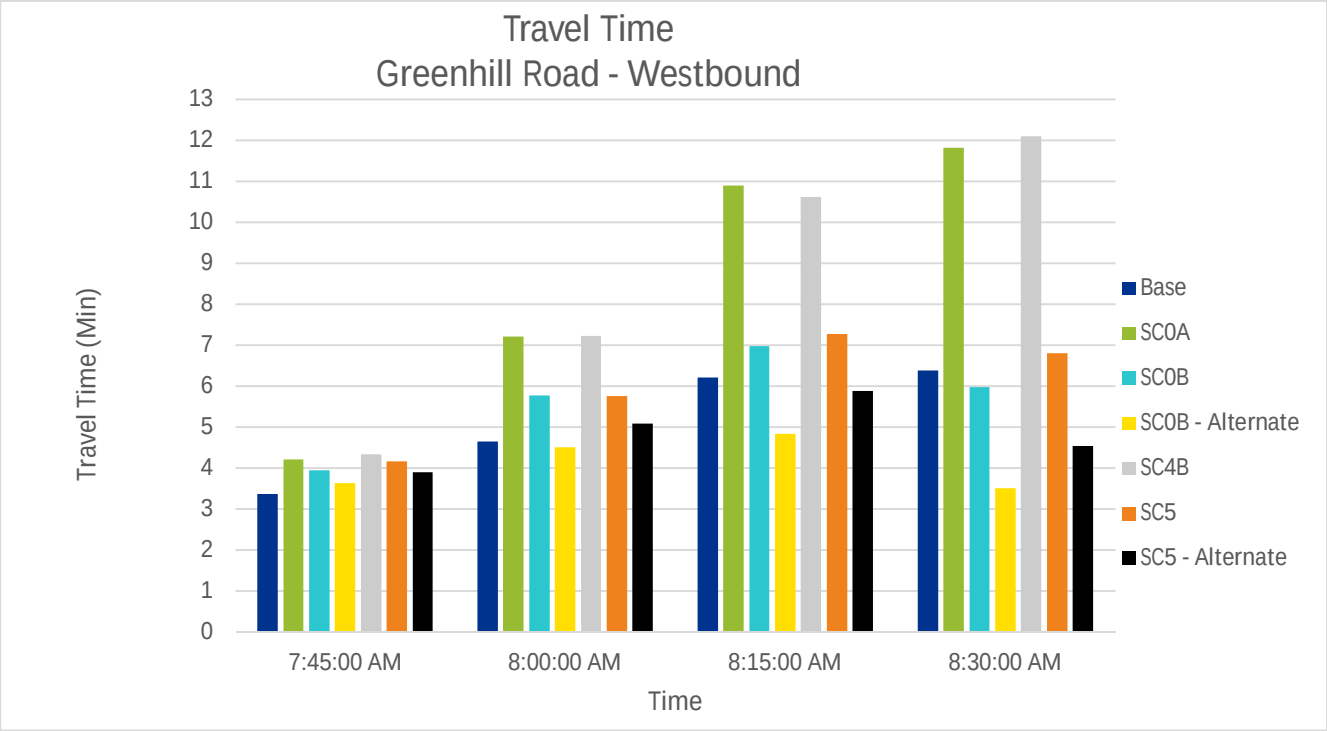

Figure 8-13: Greenhill Road Travel Time, Westbound, AM Peak – Stage 7

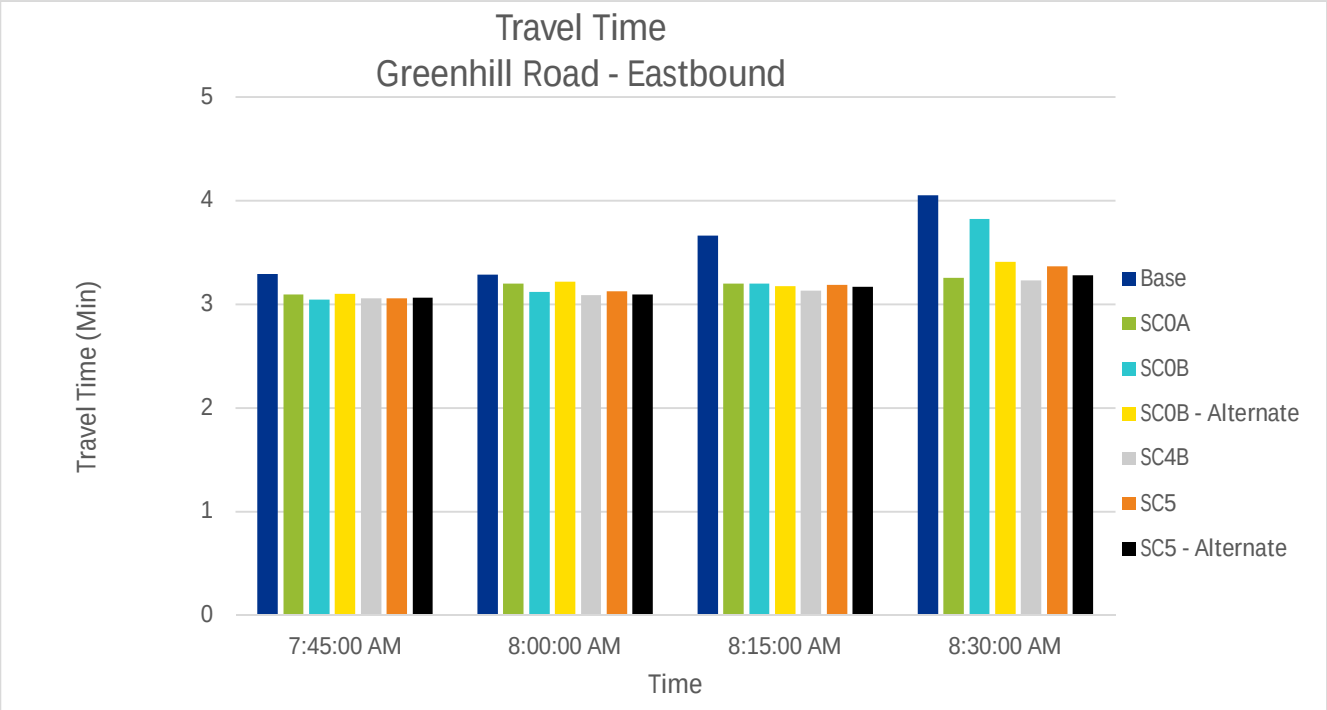

Figure 8-14: Greenhill Road Travel Time, Eastbound, AM Peak – Stage 7

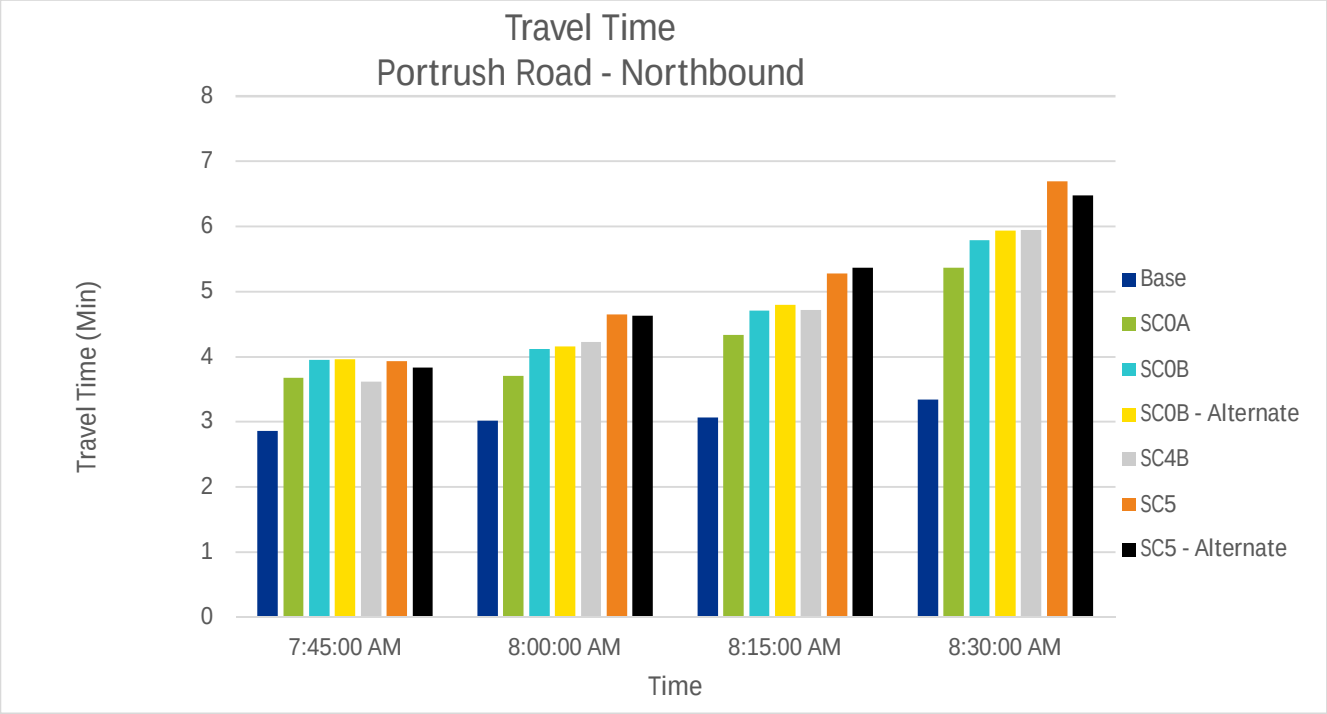

Figure 8-15: Portrush Road Travel Time, Northbound, AM Peak – Stage 7

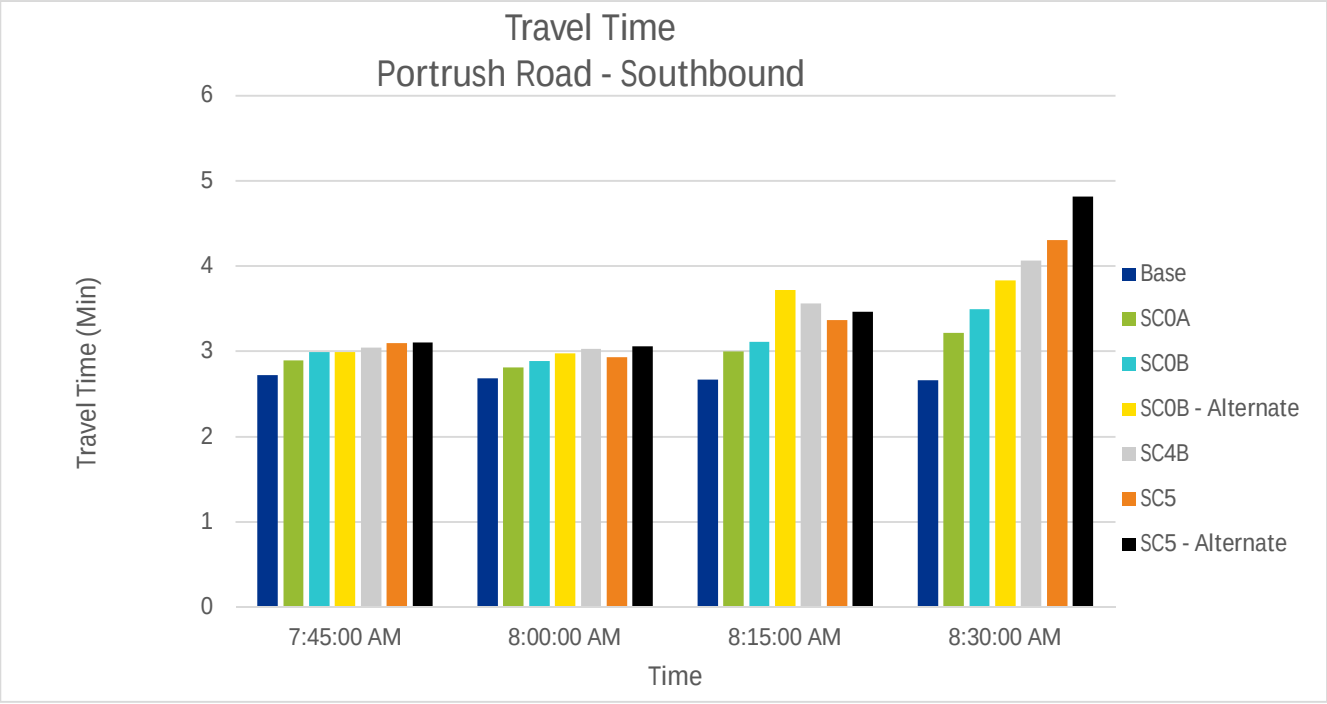

Figure 8-16: Portrush Road Travel Time, Southbound, AM Peak – Stage 7

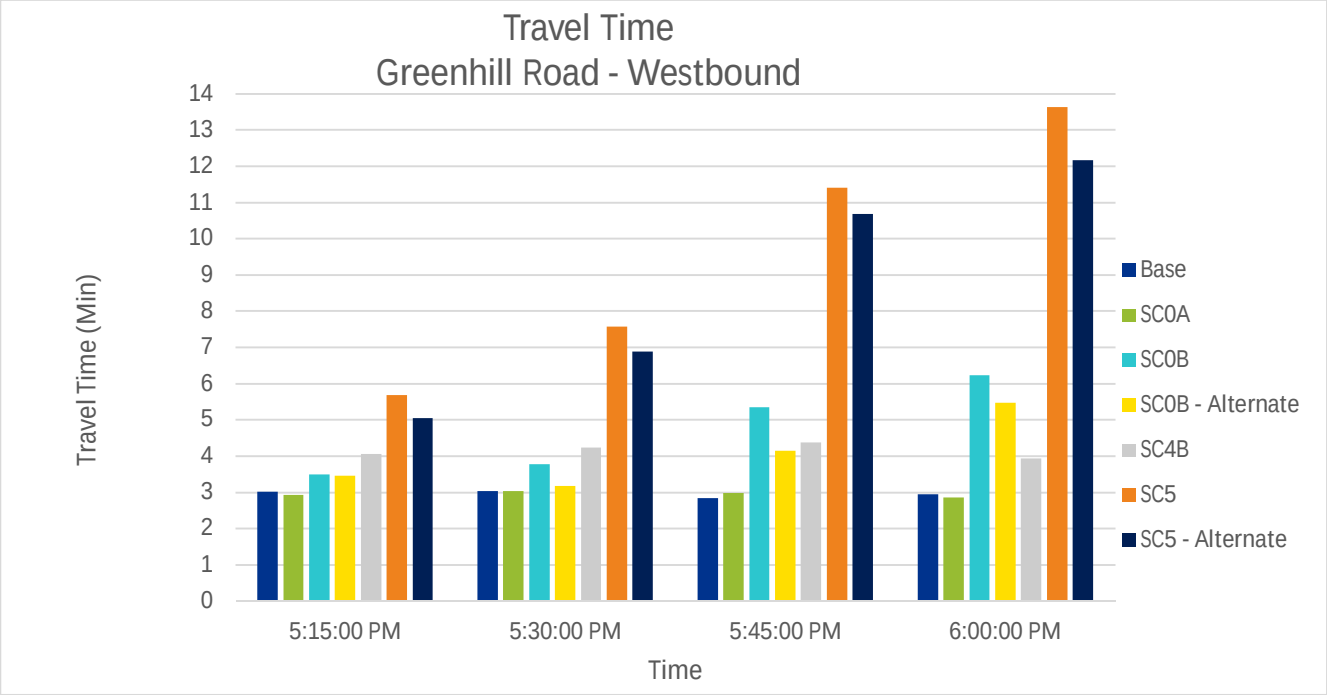

Figure 8-17: Greenhill Road Travel Time, Westbound, PM Peak – Stage 7

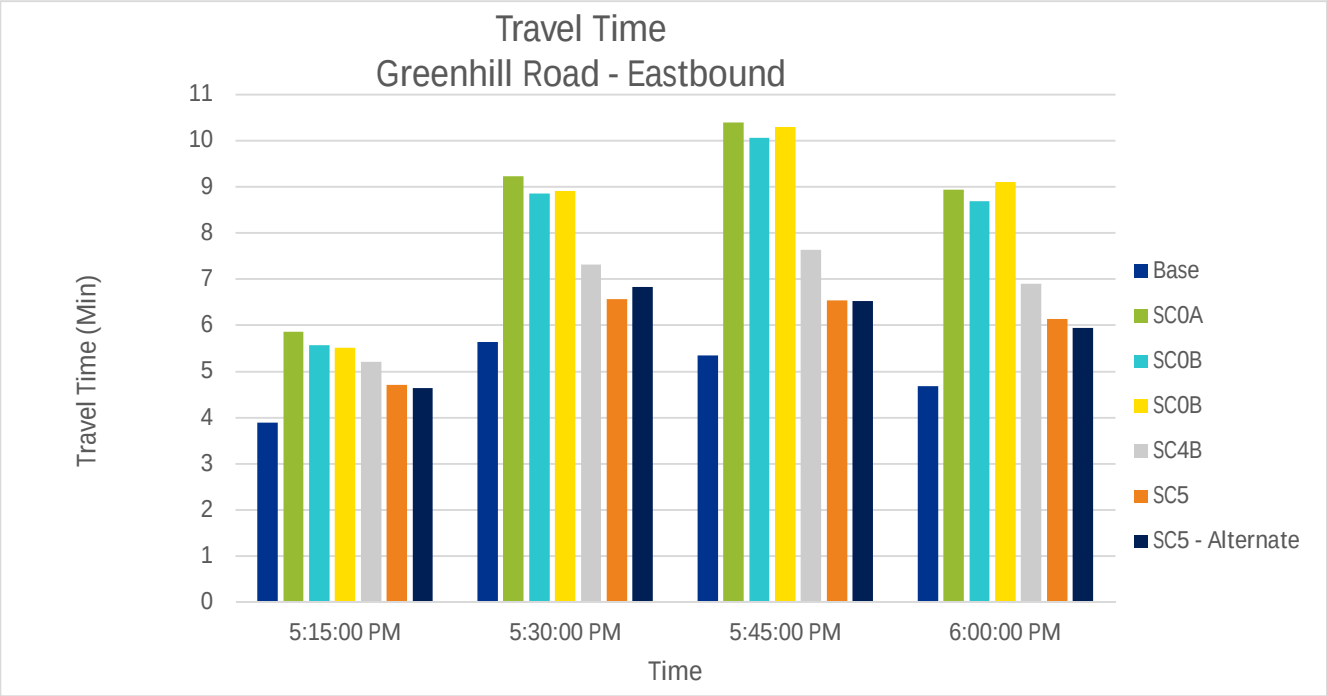

Figure 8-18: Greenhill Road Travel Time, Eastbound, PM Peak – Stage 7

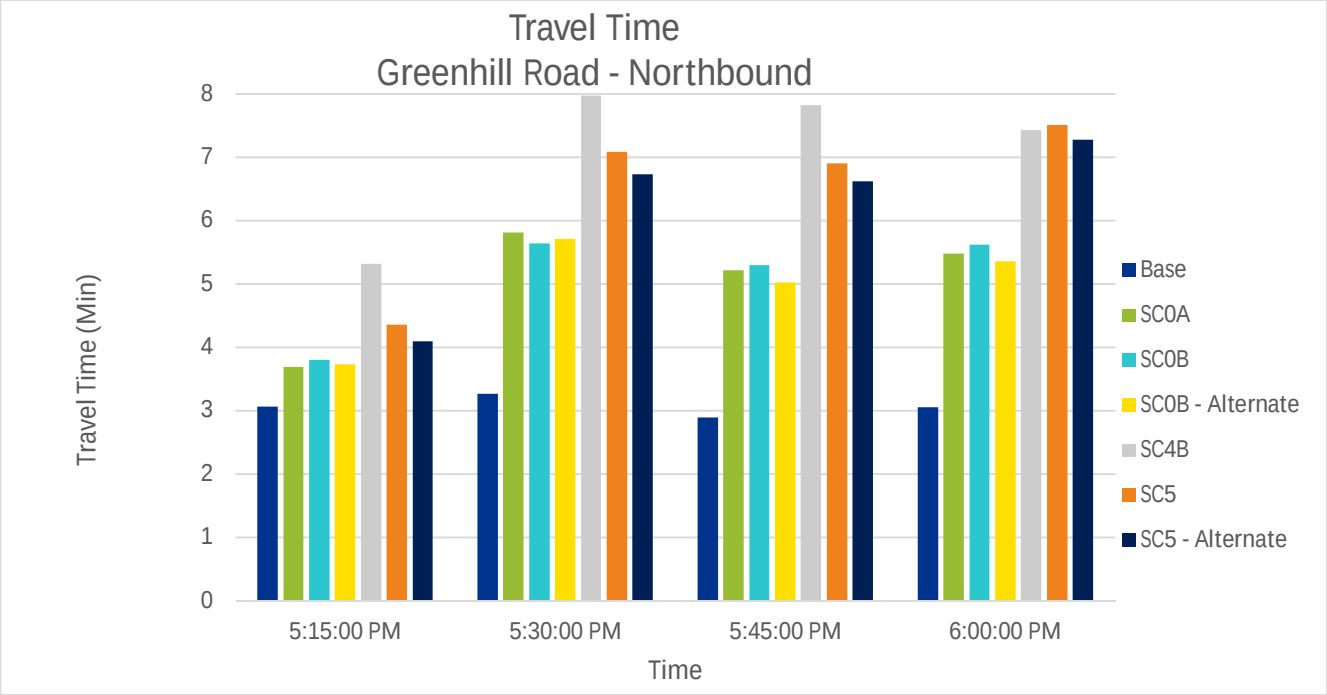

Figure 8-19: Portrush Road Travel Time, Northbound, PM Peak – Stage 7

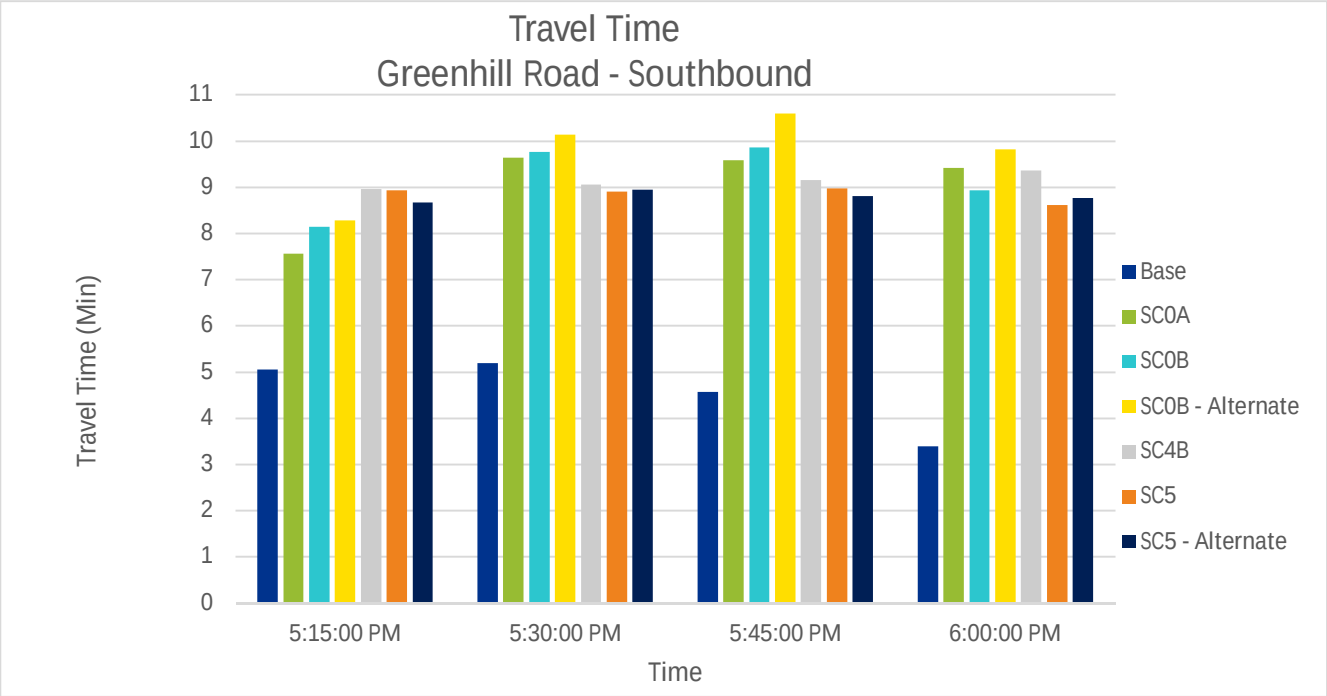

Figure 8-20: Portrush Road Travel Time, Southbound, PM Peak – Stage 7

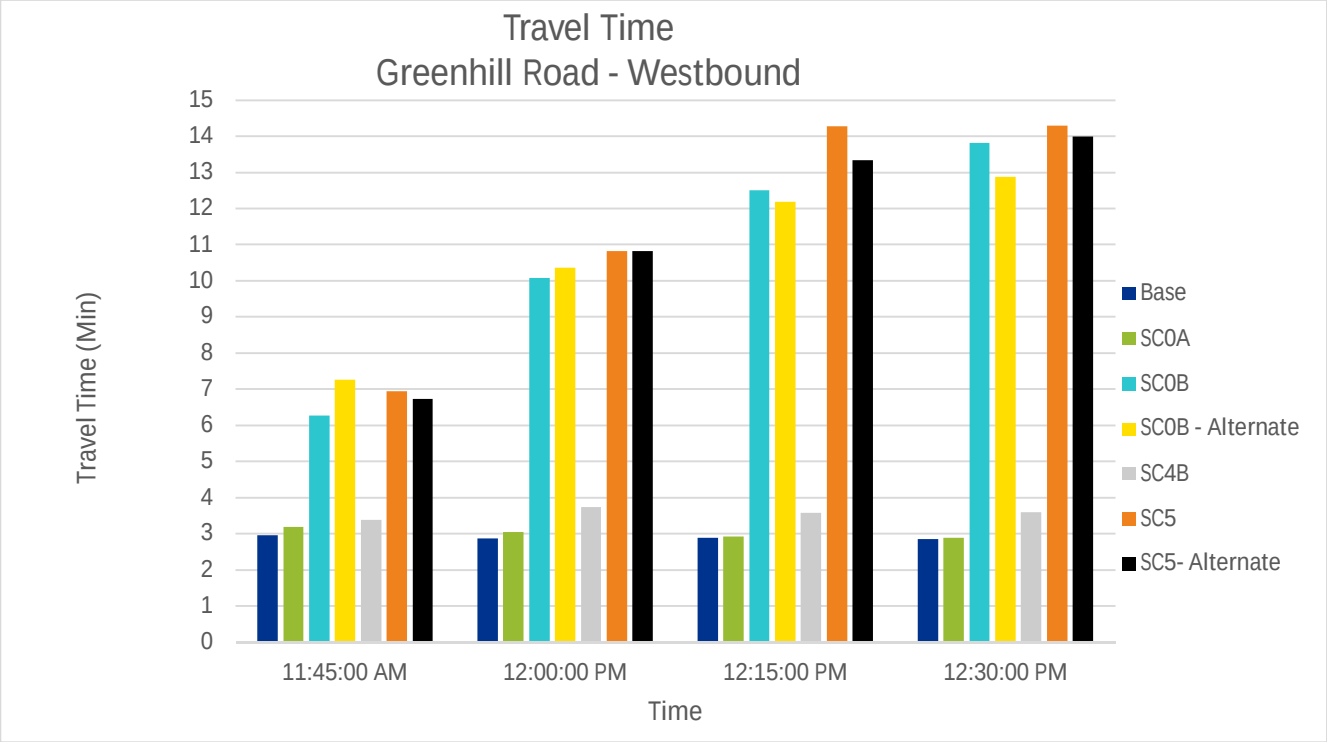

Figure 8-21: Greenhill Road Travel Time, Westbound, Saturday Midday Peak – Stage 7

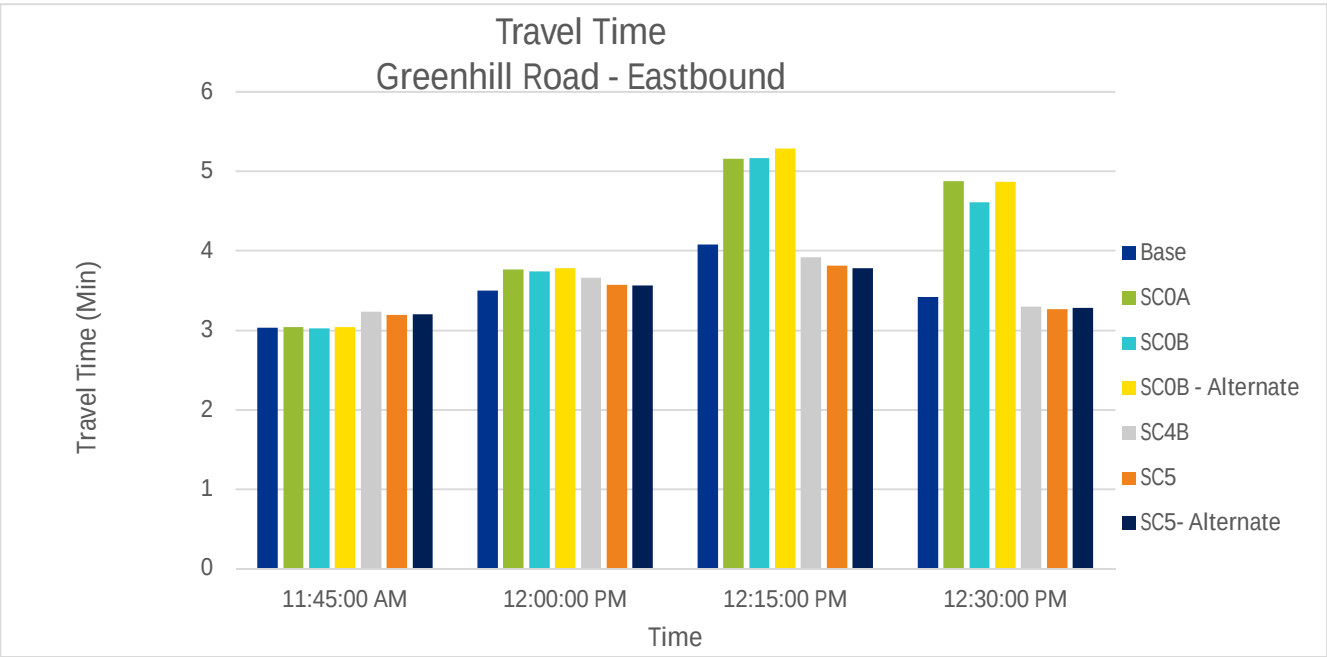

Figure 8-22: Greenhill Road Travel Time, Eastbound, Saturday Midday Peak – Stage 7

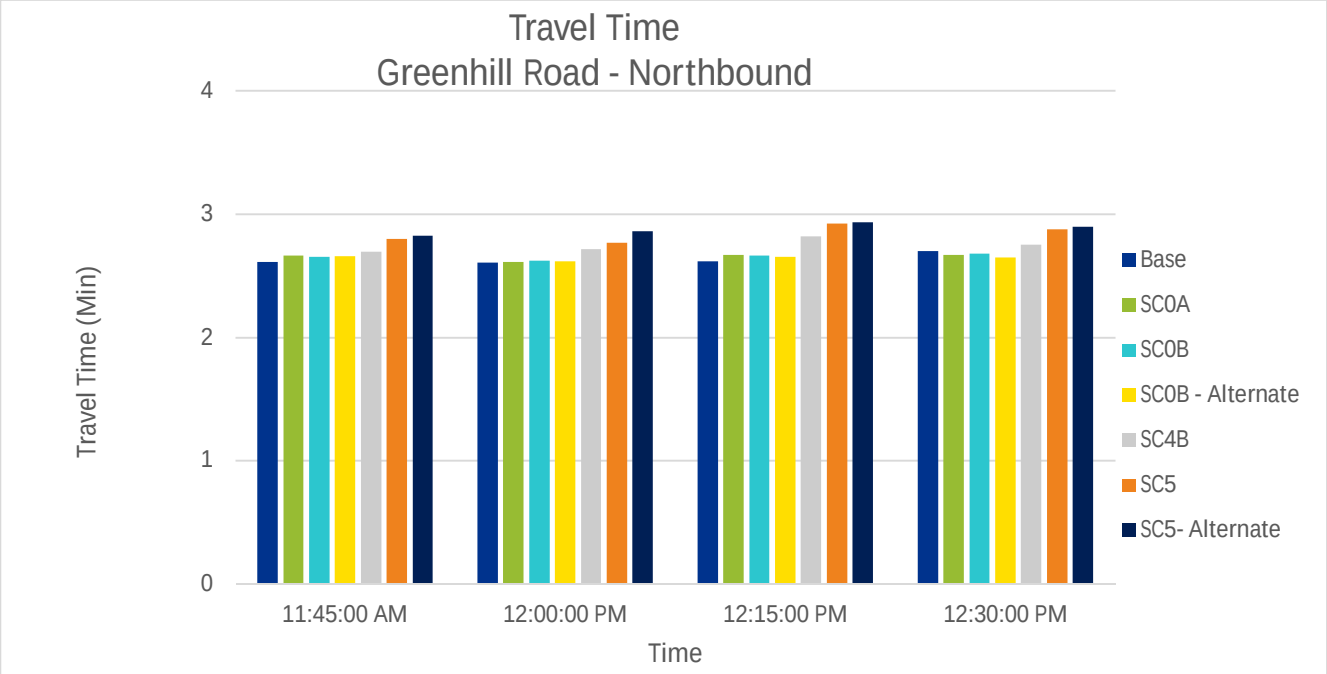

Figure 8-23: Portrush Road Travel Time, Northbound, Saturday Midday Peak – Stage 7

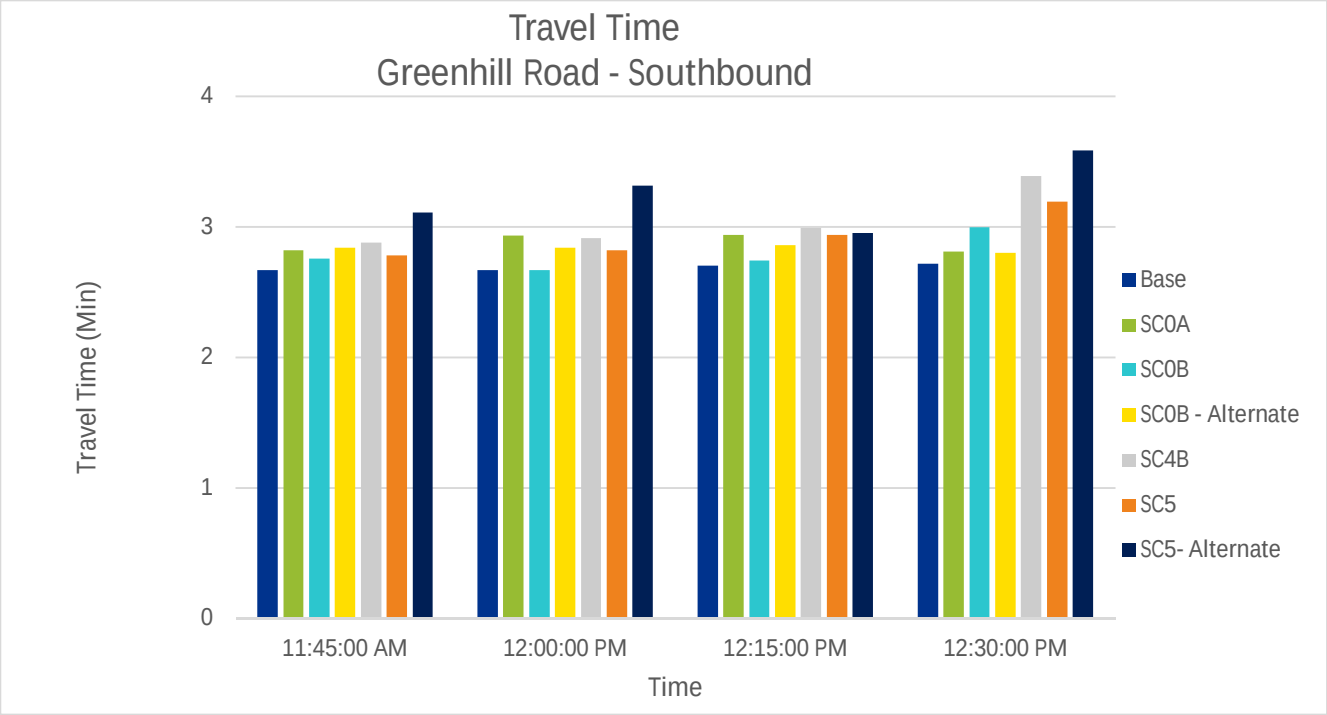

Figure 8-24: Portrush Road Travel Time, Southbound, Saturday Midday Peak – Stage 7

2017 AM - General Statistics

Base Time Series	Value	Standard Deviation	Units
Delay Time - All	60.89	6.19	sec/km
Delay Time - Bus DPTI	45.5	4.93	sec/km
Delay Time - Car AM	61.6	6.39	sec/km
Delay Time - Truck & Semi AM	49.59	3.16	sec/km
Density - All	18.52	0.97	veh/km
Density - Bus DPTI	0.1	0	veh/km
Density - Car AM	17.46	0.93	veh/km
Density - Truck & Semi AM	0.96	0.05	veh/km
Flow - All	5807.07	42.61	veh/h
Flow - Bus DPTI	23.73	0.37	veh/h
Flow - Car AM	5471.07	40.16	veh/h
Flow - Truck & Semi AM	312.27	17.86	veh/h
Harmonic Speed - All	28.75	0	km/h
Harmonic Speed - Bus DPTI	23.29	0	km/h
Harmonic Speed - Car AM	28.66	0	km/h
Harmonic Speed - Truck & Semi AM	31.07	0	km/h
Input Count - All	8792.6	N/A	veh
Input Count - Bus DPTI	35	N/A	veh
Input Count - Car AM	8290.6	N/A	veh
Input Count - Truck & Semi AM	467	N/A	veh
Input Flow - All	5861.73	19.02	veh/h
Input Flow - Bus DPTI	23.33	0.67	veh/h
Input Flow - Car AM	5527.07	20.2	veh/h
Input Flow - Truck & Semi AM	311.33	15.51	veh/h
Max. Virtual Queue - All	4.6	0.55	veh
Max. Virtual Queue - Bus DPTI	1	0	veh
Max. Virtual Queue - Car AM	4.6	0.55	veh
Max. Virtual Queue - Truck & Semi AM	2	0	veh
Mean Queue - All	122.14	15.83	veh
Mean Queue - Bus DPTI	0.62	0.06	veh
Mean Queue - Car AM	116.3	15.37	veh
Mean Queue - Truck & Semi AM	5.22	0.5	veh
Mean Virtual Queue - All	0.22	0.01	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	0.2	0.01	veh
Mean Virtual Queue - Truck & Semi AM	0.02	0	veh
Missed Turns - All	2.4	2.3	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	2.2	2.49	
Missed Turns - Truck & Semi AM	0.2	0.45	
Number of Lane Changes - All	991.04	14.46	#/km
Number of Lane Changes - Bus DPTI	1.96	0.29	#/km
Number of Lane Changes - Car AM	950.12	13.02	#/km
Number of Lane Changes - Truck & Semi AM	38.96	2.63	#/km
Number of Stops - All	0.07	0	#/veh/km
Number of Stops - Bus DPTI	0.12	0	#/veh/km
Number of Stops - Car AM	0.07	0	#/veh/km
Number of Stops - Truck & Semi AM	0.06	0	#/veh/km
Speed - All	32.94	0.62	km/h
Speed - Bus DPTI	24.96	0.61	km/h
Speed - Car AM	32.89	0.63	km/h
Speed - Truck & Semi AM	34.4	0.59	km/h
Stop Time - All	49.25	5.3	sec/km
Stop Time - Bus DPTI	39.87	4.59	sec/km
Stop Time - Car AM	49.91	5.47	sec/km
Stop Time - Truck & Semi AM	38.4	2.84	sec/km
Total Number of Lane Changes - All	17505.2	255.37	
Total Number of Lane Changes - Bus DPTI	34.6	5.13	
Total Number of Lane Changes - Car AM	16782.4	229.92	
Total Number of Lane Changes - Truck & Semi AM	688.2	46.48	
Total Number of Stops - All	10098.86	483.82	
Total Number of Stops - Bus DPTI	72.79	2.81	
Total Number of Stops - Car AM	9562.31	475.89	
Total Number of Stops - Truck & Semi AM	463.76	26.03	
Total Travel Time - All	485.58	23.26	h
Total Travel Time - Bus DPTI	2.62	0.08	h
Total Travel Time - Car AM	457.61	22.6	h
Total Travel Time - Truck & Semi AM	25.35	1.53	h
Total Travelled Distance - All	14095.7	117.66	km
Total Travelled Distance - Bus DPTI	61.5	1.04	km
Total Travelled Distance - Car AM	13239.09	105.46	km
Total Travelled Distance - Truck & Semi AM	795.11	46.44	km

2017 AM - General Statistics

Travel Time - All	125.22	6.19 sec/km
Travel Time - Bus DPTI	154.58	5.85 sec/km
Travel Time - Car AM	125.63	6.39 sec/km
Travel Time - Truck & Semi AM	115.87	3.29 sec/km
Vehicles Inside - All	322.2	35.53 veh
Vehicles Inside - Bus DPTI	1	0.71 veh
Vehicles Inside - Car AM	306.4	32.44 veh
Vehicles Inside - Truck & Semi AM	14.8	3.9 veh
Vehicles Lost Inside - All	0	0 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car AM	0	0 veh
Vehicles Lost Inside - Truck & Semi AM	0	0 veh
Vehicles Lost Outside - All	0	0 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car AM	0	0 veh
Vehicles Lost Outside - Truck & Semi AM	0	0 veh
Vehicles Outside - All	8710.6	63.91 veh
Vehicles Outside - Bus DPTI	35.6	0.55 veh
Vehicles Outside - Car AM	8206.6	60.24 veh
Vehicles Outside - Truck & Semi AM	468.4	26.79 veh
Vehicles Waiting to Enter - All	0	0 veh
Vehicles Waiting to Enter - Bus DPTI	0	0 veh
Vehicles Waiting to Enter - Car AM	0	0 veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0 veh
Waiting Time Virtual Queue - All	0.16	0.01 sec
Waiting Time Virtual Queue - Bus DPTI	0.11	0.03 sec
Waiting Time Virtual Queue - Car AM	0.15	0.01 sec
Waiting Time Virtual Queue - Truck & Semi AM	0.24	0.02 sec

2017 AM - General Statistics

SC0A

Time Series	Value	Standard Deviation	Units
Delay Time - All	89.31	6.34	sec/km
Delay Time - Bus DPTI	64.93	4.3	sec/km
Delay Time - Car AM	90.6	6.54	sec/km
Delay Time - Truck & Semi AM	68.75	3.9	sec/km
Density - All	22.55	0.96	veh/km
Density - Bus DPTI	0.1	0	veh/km
Density - Car AM	21.34	0.95	veh/km
Density - Truck & Semi AM	1.11	0.06	veh/km
Flow - All	5703.87	52.04	veh/h
Flow - Bus DPTI	23.33	0.94	veh/h
Flow - Car AM	5371.07	50.24	veh/h
Flow - Truck & Semi AM	309.47	18.31	veh/h
Harmonic Speed - All	23.43	0	km/h
Harmonic Speed - Bus DPTI	21.6	0	km/h
Harmonic Speed - Car AM	23.28	0	km/h
Harmonic Speed - Truck & Semi AM	26.65	0	km/h
Input Count - All	8767.2	N/A	veh
Input Count - Bus DPTI	35.8	N/A	veh
Input Count - Car AM	8266.2	N/A	veh
Input Count - Truck & Semi AM	465.2	N/A	veh
Input Flow - All	5844.8	30.99	veh/h
Input Flow - Bus DPTI	23.87	0.56	veh/h
Input Flow - Car AM	5510.8	35	veh/h
Input Flow - Truck & Semi AM	310.13	14.66	veh/h
Max. Virtual Queue - All	53	45.18	veh
Max. Virtual Queue - Bus DPTI	1	0	veh
Max. Virtual Queue - Car AM	51.8	44.34	veh
Max. Virtual Queue - Truck & Semi AM	3.6	2.19	veh
Mean Queue - All	187.43	15.14	veh
Mean Queue - Bus DPTI	0.71	0.05	veh
Mean Queue - Car AM	179	14.92	veh
Mean Queue - Truck & Semi AM	7.73	0.49	veh
Mean Virtual Queue - All	8.13	9.12	veh
Mean Virtual Queue - Bus DPTI	0.01	0.02	veh
Mean Virtual Queue - Car AM	7.88	8.85	veh
Mean Virtual Queue - Truck & Semi AM	0.24	0.27	veh
Missed Turns - All	15.6	5.13	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	14.8	4.82	
Missed Turns - Truck & Semi AM	0.8	0.84	
Number of Lane Changes - All	948.09	24.65	#/km
Number of Lane Changes - Bus DPTI	1.73	0.14	#/km
Number of Lane Changes - Car AM	908.35	24.4	#/km
Number of Lane Changes - Truck & Semi AM	38.02	2.71	#/km
Number of Stops - All	0.08	0	#/veh/km
Number of Stops - Bus DPTI	0.11	0.01	#/veh/km
Number of Stops - Car AM	0.08	0	#/veh/km
Number of Stops - Truck & Semi AM	0.07	0	#/veh/km
Speed - All	29.24	0.5	km/h
Speed - Bus DPTI	24.16	0.65	km/h
Speed - Car AM	29.17	0.5	km/h
Speed - Truck & Semi AM	30.95	0.53	km/h
Stop Time - All	73.6	5.15	sec/km
Stop Time - Bus DPTI	57.9	4.03	sec/km
Stop Time - Car AM	74.73	5.32	sec/km
Stop Time - Truck & Semi AM	55.19	3.21	sec/km
Total Number of Lane Changes - All	17031.4	442.77	
Total Number of Lane Changes - Bus DPTI	31	2.55	
Total Number of Lane Changes - Car AM	16317.4	438.37	
Total Number of Lane Changes - Truck & Semi AM	683	48.66	
Total Number of Stops - All	12828.82	508.43	
Total Number of Stops - Bus DPTI	69.64	4.81	
Total Number of Stops - Car AM	12186.22	511.06	
Total Number of Stops - Truck & Semi AM	572.96	35.69	
Total Travel Time - All	588.22	22.17	h
Total Travel Time - Bus DPTI	2.79	0.1	h
Total Travel Time - Car AM	556.07	21.98	h
Total Travel Time - Truck & Semi AM	29.36	1.85	h
Total Travelled Distance - All	13856.68	139.02	km
Total Travelled Distance - Bus DPTI	60.5	2.44	km
Total Travelled Distance - Car AM	13007.29	127.96	km
Total Travelled Distance - Truck & Semi AM	788.89	47.71	km

2017 AM - General Statistics

Travel Time - All	153.63	6.31	sec/km
Travel Time - Bus DPTI	166.69	2.79	sec/km
Travel Time - Car AM	154.65	6.52	sec/km
Travel Time - Truck & Semi AM	135.07	3.9	sec/km
Vehicles Inside - All	463.6	37.62	veh
Vehicles Inside - Bus DPTI	1	1.22	veh
Vehicles Inside - Car AM	444.8	32.89	veh
Vehicles Inside - Truck & Semi AM	17.8	4.71	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Outside - All	1	1.22	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	1	1.22	veh
Vehicles Lost Outside - Truck & Semi AM	0	0	veh
Vehicles Outside - All	8555.8	78.06	veh
Vehicles Outside - Bus DPTI	35	1.41	veh
Vehicles Outside - Car AM	8056.6	75.36	veh
Vehicles Outside - Truck & Semi AM	464.2	27.47	veh
Vehicles Waiting to Enter - All	26.2	26.09	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	24.4	24.03	veh
Vehicles Waiting to Enter - Truck & Semi AM	1.8	2.49	veh
Waiting Time Virtual Queue - All	2.82	2.72	sec
Waiting Time Virtual Queue - Bus DPTI	1.93	2.34	sec
Waiting Time Virtual Queue - Car AM	2.87	2.78	sec
Waiting Time Virtual Queue - Truck & Semi AM	2.02	2.12	sec

2017 AM - General Statistics

SC4B

Time Series	Value	Standard Deviation	Units
Delay Time - All	104.09	9.57	sec/km
Delay Time - Bus DPTI	73.18	13.02	sec/km
Delay Time - Car AM	105.65	9.8	sec/km
Delay Time - Truck & Semi AM	78.34	8.91	sec/km
Delay Time - Car AM - copy	107.95	5.45	sec/km
Density - All	24.79	1.49	veh/km
Density - Bus DPTI	0.11	0.01	veh/km
Density - Car AM	23.27	1.37	veh/km
Density - Truck & Semi AM	1.18	0.13	veh/km
Density - Car AM - copy	0.22	0.03	veh/km
Flow - All	5679.47	51.22	veh/h
Flow - Bus DPTI	22.67	0.67	veh/h
Flow - Car AM	5272.4	57.18	veh/h
Flow - Truck & Semi AM	305.07	16.99	veh/h
Flow - Car AM - copy	79.33	11.52	veh/h
Harmonic Speed - All	21.3	0	km/h
Harmonic Speed - Bus DPTI	20.77	0	km/h
Harmonic Speed - Car AM	21.15	0	km/h
Harmonic Speed - Truck & Semi AM	24.83	0	km/h
Harmonic Speed - Car AM - copy	19.83	0	km/h
Input Count - All	8838	N/A	veh
Input Count - Bus DPTI	35.4	N/A	veh
Input Count - Car AM	8218.4	N/A	veh
Input Count - Truck & Semi AM	465	N/A	veh
Input Count - Car AM - copy	119.2	N/A	veh
Input Flow - All	5892	28.59	veh/h
Input Flow - Bus DPTI	23.6	0.6	veh/h
Input Flow - Car AM	5478.93	33.92	veh/h
Input Flow - Truck & Semi AM	310	14.36	veh/h
Input Flow - Car AM - copy	79.47	11.24	veh/h
Max. Virtual Queue - All	81	37.46	veh
Max. Virtual Queue - Bus DPTI	1.2	0.45	veh
Max. Virtual Queue - Car AM	80.2	36.72	veh
Max. Virtual Queue - Truck & Semi AM	6	3.16	veh
Max. Virtual Queue - Car AM - copy	1.4	0.55	veh
Mean Queue - All	223.2	21.47	veh
Mean Queue - Bus DPTI	0.79	0.12	veh
Mean Queue - Car AM	211.31	19.97	veh
Mean Queue - Truck & Semi AM	9.02	1.51	veh
Mean Queue - Car AM - copy	2.09	0.27	veh
Mean Virtual Queue - All	14.44	10.03	veh
Mean Virtual Queue - Bus DPTI	0.03	0.02	veh
Mean Virtual Queue - Car AM	13.85	9.74	veh
Mean Virtual Queue - Truck & Semi AM	0.5	0.28	veh
Mean Virtual Queue - Car AM - copy	0.07	0.07	veh
Missed Turns - All	22.4	9.71	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	21.2	9.71	
Missed Turns - Truck & Semi AM	1	1.22	
Missed Turns - Car AM - copy	0.2	0.45	
Number of Lane Changes - All	921.76	29.49	#/km
Number of Lane Changes - Bus DPTI	2.28	0.27	#/km
Number of Lane Changes - Car AM	874.09	30.23	#/km
Number of Lane Changes - Truck & Semi AM	36.23	2.52	#/km
Number of Lane Changes - Car AM - copy	9.16	1.85	#/km
Number of Stops - All	0.09	0.01	#/veh/km
Number of Stops - Bus DPTI	0.11	0.01	#/veh/km
Number of Stops - Car AM	0.09	0.01	#/veh/km
Number of Stops - Truck & Semi AM	0.08	0.01	#/veh/km
Number of Stops - Car AM - copy	0.1	0	#/veh/km
Speed - All	27.29	1.28	km/h
Speed - Bus DPTI	23.75	1.65	km/h
Speed - Car AM	27.18	1.31	km/h
Speed - Truck & Semi AM	29.58	1.2	km/h
Speed - Car AM - copy	26.85	0.77	km/h
Stop Time - All	86.06	7.66	sec/km
Stop Time - Bus DPTI	65.32	11.7	sec/km
Stop Time - Car AM	87.42	7.84	sec/km
Stop Time - Truck & Semi AM	63.14	7.27	sec/km
Stop Time - Car AM - copy	89.68	4.38	sec/km
Total Number of Lane Changes - All	16668	533.18	
Total Number of Lane Changes - Bus DPTI	41.2	4.97	

2017 AM - General Statistics

Total Number of Lane Changes - Car AM	15806	546.64	
Total Number of Lane Changes - Truck & Semi AM	655.2	45.57	
Total Number of Lane Changes - Car AM - copy	165.6	33.53	
Total Number of Stops - All	14421.15	1174.64	
Total Number of Stops - Bus DPTI	64.99	7.11	
Total Number of Stops - Car AM	13506.08	1095.59	
Total Number of Stops - Truck & Semi AM	625.68	92.29	
Total Number of Stops - Car AM - copy	224.39	34.38	
Total Travel Time - All	639.69	38.57	h
Total Travel Time - Bus DPTI	2.82	0.31	h
Total Travel Time - Car AM	599.87	34.67	h
Total Travel Time - Truck & Semi AM	31.11	3.87	h
Total Travel Time - Car AM - copy	5.89	0.96	h
Total Travelled Distance - All	13715.35	109.1	km
Total Travelled Distance - Bus DPTI	58.8	1.74	km
Total Travelled Distance - Car AM	12774.15	133.84	km
Total Travelled Distance - Truck & Semi AM	777.28	42.85	km
Total Travelled Distance - Car AM - copy	105.13	16.49	km
Travel Time - All	169.02	9.62	sec/km
Travel Time - Bus DPTI	173.32	14.06	sec/km
Travel Time - Car AM	170.21	9.83	sec/km
Travel Time - Truck & Semi AM	144.98	9.04	sec/km
Travel Time - Car AM - copy	181.53	5.91	sec/km
Vehicles Inside - All	578.4	57.64	veh
Vehicles Inside - Bus DPTI	2.4	0.89	veh
Vehicles Inside - Car AM	551.8	54.43	veh
Vehicles Inside - Truck & Semi AM	24	6.78	veh
Vehicles Inside - Car AM - copy	0.2	0.45	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Inside - Car AM - copy	0	0	veh
Vehicles Lost Outside - All	1.4	2.07	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	1.4	2.07	veh
Vehicles Lost Outside - Truck & Semi AM	0	0	veh
Vehicles Lost Outside - Car AM - copy	0	0	veh
Vehicles Outside - All	8519.2	76.84	veh
Vehicles Outside - Bus DPTI	34	1	veh
Vehicles Outside - Car AM	7908.6	85.76	veh
Vehicles Outside - Truck & Semi AM	457.6	25.48	veh
Vehicles Outside - Car AM - copy	119	17.28	veh
Vehicles Waiting to Enter - All	56	27.99	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	54	26.77	veh
Vehicles Waiting to Enter - Truck & Semi AM	2	2.45	veh
Vehicles Waiting to Enter - Car AM - copy	0	0	veh
Waiting Time Virtual Queue - All	5.03	3.37	sec
Waiting Time Virtual Queue - Bus DPTI	3.72	2.79	sec
Waiting Time Virtual Queue - Car AM	5.14	3.49	sec
Waiting Time Virtual Queue - Truck & Semi AM	3.62	2.11	sec
Waiting Time Virtual Queue - Car AM - copy	3.09	2.7	sec

2017 AM - General Statistics

SC4C

Time Series	Value	Standard Deviation	Units
Delay Time - All	104.51	8.93	sec/km
Delay Time - Bus DPTI	74.2	13.31	sec/km
Delay Time - Car AM	106.08	9.12	sec/km
Delay Time - Truck & Semi AM	77.69	8.32	sec/km
Delay Time - Car AM - copy	111.74	6.53	sec/km
Density - All	24.9	1.47	veh/km
Density - Bus DPTI	0.11	0.01	veh/km
Density - Car AM	23.39	1.35	veh/km
Density - Truck & Semi AM	1.18	0.13	veh/km
Density - Car AM - copy	0.22	0.03	veh/km
Flow - All	5674.13	66.51	veh/h
Flow - Bus DPTI	22.8	0.99	veh/h
Flow - Car AM	5267.73	72.73	veh/h
Flow - Truck & Semi AM	304.13	15.95	veh/h
Flow - Car AM - copy	79.47	11.24	veh/h
Harmonic Speed - All	21.26	0	km/h
Harmonic Speed - Bus DPTI	20.75	0	km/h
Harmonic Speed - Car AM	21.11	0	km/h
Harmonic Speed - Truck & Semi AM	24.94	0	km/h
Harmonic Speed - Car AM - copy	19.48	0	km/h
Input Count - All	8842	N/A	veh
Input Count - Bus DPTI	35.4	N/A	veh
Input Count - Car AM	8222.4	N/A	veh
Input Count - Truck & Semi AM	465	N/A	veh
Input Count - Car AM - copy	119.2	N/A	veh
Input Flow - All	5894.67	16.94	veh/h
Input Flow - Bus DPTI	23.6	0.6	veh/h
Input Flow - Car AM	5481.6	21.69	veh/h
Input Flow - Truck & Semi AM	310	14.38	veh/h
Input Flow - Car AM - copy	79.47	11.24	veh/h
Max. Virtual Queue - All	82.4	33.59	veh
Max. Virtual Queue - Bus DPTI	1.2	0.45	veh
Max. Virtual Queue - Car AM	80	32.67	veh
Max. Virtual Queue - Truck & Semi AM	5.6	3.36	veh
Max. Virtual Queue - Car AM - copy	1.6	0.55	veh
Mean Queue - All	223.88	22.2	veh
Mean Queue - Bus DPTI	0.82	0.14	veh
Mean Queue - Car AM	212.08	20.61	veh
Mean Queue - Truck & Semi AM	8.94	1.53	veh
Mean Queue - Car AM - copy	2.04	0.31	veh
Mean Virtual Queue - All	12.84	6.15	veh
Mean Virtual Queue - Bus DPTI	0.02	0.01	veh
Mean Virtual Queue - Car AM	12.3	5.89	veh
Mean Virtual Queue - Truck & Semi AM	0.45	0.29	veh
Mean Virtual Queue - Car AM - copy	0.06	0.04	veh
Missed Turns - All	25.4	13.83	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	23	14.35	
Missed Turns - Truck & Semi AM	2.2	2.28	
Missed Turns - Car AM - copy	0.2	0.45	
Number of Lane Changes - All	923.17	24.56	#/km
Number of Lane Changes - Bus DPTI	2.49	0.2	#/km
Number of Lane Changes - Car AM	874.7	25.36	#/km
Number of Lane Changes - Truck & Semi AM	36.67	2.11	#/km
Number of Lane Changes - Car AM - copy	9.32	1.75	#/km
Number of Stops - All	0.09	0.01	#/veh/km
Number of Stops - Bus DPTI	0.11	0.01	#/veh/km
Number of Stops - Car AM	0.09	0.01	#/veh/km
Number of Stops - Truck & Semi AM	0.08	0.01	#/veh/km
Number of Stops - Car AM - copy	0.1	0.01	#/veh/km
Speed - All	27.37	1.15	km/h
Speed - Bus DPTI	23.63	1.27	km/h
Speed - Car AM	27.26	1.17	km/h
Speed - Truck & Semi AM	29.74	1.16	km/h
Speed - Car AM - copy	26.64	0.68	km/h
Stop Time - All	86.22	7.37	sec/km
Stop Time - Bus DPTI	65.58	11.32	sec/km
Stop Time - Car AM	87.59	7.51	sec/km
Stop Time - Truck & Semi AM	62.42	7.15	sec/km
Stop Time - Car AM - copy	92.89	5.5	sec/km
Total Number of Lane Changes - All	16685.6	443.94	
Total Number of Lane Changes - Bus DPTI	45	3.54	

2017 AM - General Statistics

Total Number of Lane Changes - Car AM	15809.4	458.42	
Total Number of Lane Changes - Truck & Semi AM	662.8	38.14	
Total Number of Lane Changes - Car AM - copy	168.4	31.63	
Total Number of Stops - All	14359.04	1030.69	
Total Number of Stops - Bus DPTI	68.37	9.87	
Total Number of Stops - Car AM	13446.8	945.89	
Total Number of Stops - Truck & Semi AM	618.99	84.99	
Total Number of Stops - Car AM - copy	224.88	37.24	
Total Travel Time - All	641.14	33.18	h
Total Travel Time - Bus DPTI	2.84	0.33	h
Total Travel Time - Car AM	601.35	29.68	h
Total Travel Time - Truck & Semi AM	30.92	3.5	h
Total Travel Time - Car AM - copy	6.03	0.87	h
Total Travelled Distance - All	13702.22	170.57	km
Total Travelled Distance - Bus DPTI	59.16	2.53	km
Total Travelled Distance - Car AM	12761.55	185.35	km
Total Travelled Distance - Truck & Semi AM	775.74	40.49	km
Total Travelled Distance - Car AM - copy	105.78	16.22	km
Travel Time - All	169.37	9	sec/km
Travel Time - Bus DPTI	173.46	14.02	sec/km
Travel Time - Car AM	170.56	9.16	sec/km
Travel Time - Truck & Semi AM	144.32	8.47	sec/km
Travel Time - Car AM - copy	184.81	7.07	sec/km
Vehicles Inside - All	589.6	80.17	veh
Vehicles Inside - Bus DPTI	2.4	1.14	veh
Vehicles Inside - Car AM	562.4	79.96	veh
Vehicles Inside - Truck & Semi AM	24.8	2.86	veh
Vehicles Inside - Car AM - copy	0	0	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Inside - Car AM - copy	0	0	veh
Vehicles Lost Outside - All	1	0.71	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	0.8	0.45	veh
Vehicles Lost Outside - Truck & Semi AM	0.2	0.45	veh
Vehicles Lost Outside - Car AM - copy	0	0	veh
Vehicles Outside - All	8511.2	99.76	veh
Vehicles Outside - Bus DPTI	34.2	1.48	veh
Vehicles Outside - Car AM	7901.6	109.1	veh
Vehicles Outside - Truck & Semi AM	456.2	23.93	veh
Vehicles Outside - Car AM - copy	119.2	16.86	veh
Vehicles Waiting to Enter - All	52	25.95	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	50	25.06	veh
Vehicles Waiting to Enter - Truck & Semi AM	2	1.87	veh
Vehicles Waiting to Enter - Car AM - copy	0	0	veh
Waiting Time Virtual Queue - All	4.09	1.91	sec
Waiting Time Virtual Queue - Bus DPTI	2.5	1.45	sec
Waiting Time Virtual Queue - Car AM	4.18	1.94	sec
Waiting Time Virtual Queue - Truck & Semi AM	3.1	1.79	sec
Waiting Time Virtual Queue - Car AM - copy	2.54	1.7	sec

2017 PM - General Statistics

Base

Time Series	Value	Standard Deviation	Units
Delay Time - All	74.22	11.55	sec/km
Delay Time - Bus DPTI	67.97	16.96	sec/km
Delay Time - Car PM	74.45	11.63	sec/km
Delay Time - Truck & Semi PM	65.59	12.05	sec/km
Density - All	22.34	2.33	veh/km
Density - Bus DPTI	0.14	0.01	veh/km
Density - Car PM	21.61	2.25	veh/km
Density - Truck & Semi PM	0.59	0.11	veh/km
Flow - All	6945.6	75.61	veh/h
Flow - Bus DPTI	27.73	0.76	veh/h
Flow - Car PM	6756.27	68.94	veh/h
Flow - Truck & Semi PM	161.6	12.62	veh/h
Harmonic Speed - All	25.87	0	km/h
Harmonic Speed - Bus DPTI	19.26	0	km/h
Harmonic Speed - Car PM	25.87	0	km/h
Harmonic Speed - Truck & Semi PM	27.42	0	km/h
Input Count - All	10331.2	N/A	veh
Input Count - Bus DPTI	40.8	N/A	veh
Input Count - Car PM	10049.2	N/A	veh
Input Count - Truck & Semi PM	241.2	N/A	veh
Input Flow - All	6887.47	88.87	veh/h
Input Flow - Bus DPTI	27.2	0.99	veh/h
Input Flow - Car PM	6699.47	81.24	veh/h
Input Flow - Truck & Semi PM	160.8	13.39	veh/h
Max. Virtual Queue - All	10.8	8.07	veh
Max. Virtual Queue - Bus DPTI	1.8	0.84	veh
Max. Virtual Queue - Car PM	10.2	7.26	veh
Max. Virtual Queue - Truck & Semi PM	1.8	0.45	veh
Mean Queue - All	160.96	31.39	veh
Mean Queue - Bus DPTI	1.08	0.17	veh
Mean Queue - Car PM	156.11	30.47	veh
Mean Queue - Truck & Semi PM	3.78	1.14	veh
Mean Virtual Queue - All	0.47	0.39	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car PM	0.46	0.38	veh
Mean Virtual Queue - Truck & Semi PM	0	0.01	veh
Missed Turns - All	2.2	0.84	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car PM	2.2	0.84	
Missed Turns - Truck & Semi PM	0	0	
Number of Lane Changes - All	1149.39	14.99	#/km
Number of Lane Changes - Bus DPTI	1.88	0.25	#/km
Number of Lane Changes - Car PM	1130.72	14.96	#/km
Number of Lane Changes - Truck & Semi PM	16.79	0.38	#/km
Number of Stops - All	0.08	0.01	#/veh/km
Number of Stops - Bus DPTI	0.15	0.01	#/veh/km
Number of Stops - Car PM	0.08	0.01	#/veh/km
Number of Stops - Truck & Semi PM	0.07	0.01	#/veh/km
Speed - All	29.5	1.76	km/h
Speed - Bus DPTI	20.78	1.21	km/h
Speed - Car PM	29.52	1.77	km/h
Speed - Truck & Semi PM	30.25	1.99	km/h
Stop Time - All	59.77	9.38	sec/km
Stop Time - Bus DPTI	58.6	14.47	sec/km
Stop Time - Car PM	59.97	9.45	sec/km
Stop Time - Truck & Semi PM	51.53	9.77	sec/km
Total Number of Lane Changes - All	20302.2	264.7	
Total Number of Lane Changes - Bus DPTI	33.2	4.44	
Total Number of Lane Changes - Car PM	19972.4	264.16	
Total Number of Lane Changes - Truck & Semi PM	296.6	6.66	
Total Number of Stops - All	15558.39	2021.83	
Total Number of Stops - Bus DPTI	106.65	11.17	
Total Number of Stops - Car PM	15150.45	1976.23	
Total Number of Stops - Truck & Semi PM	301.29	61.95	
Total Travel Time - All	595.18	60.51	h
Total Travel Time - Bus DPTI	3.73	0.31	h
Total Travel Time - Car PM	575.8	58.26	h
Total Travel Time - Truck & Semi PM	15.65	2.86	h
Total Travelled Distance - All	15527.66	165.18	km
Total Travelled Distance - Bus DPTI	72.22	1.9	km
Total Travelled Distance - Car PM	15025.34	144.23	km
Total Travelled Distance - Truck & Semi PM	430.1	34.61	km

2017 PM - General Statistics

Travel Time - All	139.16	11.52 sec/km
Travel Time - Bus DPTI	186.92	15.02 sec/km
Travel Time - Car PM	139.15	11.61 sec/km
Travel Time - Truck & Semi PM	131.27	12.1 sec/km
Vehicles Inside - All	271.4	39.61 veh
Vehicles Inside - Bus DPTI	0	0 veh
Vehicles Inside - Car PM	262.6	39.74 veh
Vehicles Inside - Truck & Semi PM	8.8	1.1 veh
Vehicles Lost Inside - All	0	0 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car PM	0	0 veh
Vehicles Lost Inside - Truck & Semi PM	0	0 veh
Vehicles Lost Outside - All	0.8	1.3 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car PM	0.8	1.3 veh
Vehicles Lost Outside - Truck & Semi PM	0	0 veh
Vehicles Outside - All	10418.4	113.42 veh
Vehicles Outside - Bus DPTI	41.6	1.14 veh
Vehicles Outside - Car PM	10134.4	103.41 veh
Vehicles Outside - Truck & Semi PM	242.4	18.93 veh
Vehicles Waiting to Enter - All	0.2	0.45 veh
Vehicles Waiting to Enter - Bus DPTI	0	0 veh
Vehicles Waiting to Enter - Car PM	0.2	0.45 veh
Vehicles Waiting to Enter - Truck & Semi PM	0	0 veh
Waiting Time Virtual Queue - All	0.27	0.18 sec
Waiting Time Virtual Queue - Bus DPTI	0.46	0.47 sec
Waiting Time Virtual Queue - Car PM	0.27	0.18 sec
Waiting Time Virtual Queue - Truck & Semi PM	0.24	0.07 sec

2017 PM - General Statistics

SC0A

Time Series	Value	Standard Deviation	Units
Delay Time - All	139.28	14.46	sec/km
Delay Time - Bus DPTI	144.41	8.14	sec/km
Delay Time - Car PM	139.22	14.44	sec/km
Delay Time - Truck & Semi PM	141.04	21.87	sec/km
Density - All	32.62	2.55	veh/km
Density - Bus DPTI	0.18	0.01	veh/km
Density - Car PM	31.53	2.4	veh/km
Density - Truck & Semi PM	0.91	0.17	veh/km
Flow - All	6724.67	83.21	veh/h
Flow - Bus DPTI	25.2	2.02	veh/h
Flow - Car PM	6542.27	88.22	veh/h
Flow - Truck & Semi PM	157.2	10.22	veh/h
Harmonic Speed - All	17.63	0	km/h
Harmonic Speed - Bus DPTI	14.37	0	km/h
Harmonic Speed - Car PM	17.65	0	km/h
Harmonic Speed - Truck & Semi PM	17.4	0	km/h
Input Count - All	10226.2	N/A	veh
Input Count - Bus DPTI	40.4	N/A	veh
Input Count - Car PM	9946	N/A	veh
Input Count - Truck & Semi PM	239.8	N/A	veh
Input Flow - All	6817.47	80.55	veh/h
Input Flow - Bus DPTI	26.93	1.12	veh/h
Input Flow - Car PM	6630.67	80.83	veh/h
Input Flow - Truck & Semi PM	159.87	12.71	veh/h
Max. Virtual Queue - All	210.6	119.36	veh
Max. Virtual Queue - Bus DPTI	6.8	2.95	veh
Max. Virtual Queue - Car PM	205.2	115.03	veh
Max. Virtual Queue - Truck & Semi PM	7.6	3.91	veh
Mean Queue - All	319.55	39.45	veh
Mean Queue - Bus DPTI	1.77	0.12	veh
Mean Queue - Car PM	309	37.51	veh
Mean Queue - Truck & Semi PM	8.78	2.15	veh
Mean Virtual Queue - All	86.52	60.42	veh
Mean Virtual Queue - Bus DPTI	0.63	0.44	veh
Mean Virtual Queue - Car PM	84.23	58.63	veh
Mean Virtual Queue - Truck & Semi PM	1.66	1.64	veh
Missed Turns - All	5.8	0.84	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car PM	5.6	0.55	
Missed Turns - Truck & Semi PM	0.2	0.45	
Number of Lane Changes - All	1025.69	30.02	#/km
Number of Lane Changes - Bus DPTI	1.61	0.47	#/km
Number of Lane Changes - Car PM	1008.19	30.23	#/km
Number of Lane Changes - Truck & Semi PM	15.89	0.89	#/km
Number of Stops - All	0.12	0.01	#/veh/km
Number of Stops - Bus DPTI	0.16	0.01	#/veh/km
Number of Stops - Car PM	0.12	0.01	#/veh/km
Number of Stops - Truck & Semi PM	0.12	0.01	#/veh/km
Speed - All	23.01	1.29	km/h
Speed - Bus DPTI	16.86	0.67	km/h
Speed - Car PM	23.07	1.28	km/h
Speed - Truck & Semi PM	21.44	2.55	km/h
Stop Time - All	113.42	12.71	sec/km
Stop Time - Bus DPTI	122.97	7.93	sec/km
Stop Time - Car PM	113.36	12.69	sec/km
Stop Time - Truck & Semi PM	114.76	18.62	sec/km
Total Number of Lane Changes - All	18425.4	539.31	
Total Number of Lane Changes - Bus DPTI	29	8.51	
Total Number of Lane Changes - Car PM	18111	543.13	
Total Number of Lane Changes - Truck & Semi PM	285.4	15.95	
Total Number of Stops - All	22336.36	1502.08	
Total Number of Stops - Bus DPTI	111.82	9.2	
Total Number of Stops - Car PM	21724.78	1431.63	
Total Number of Stops - Truck & Semi PM	499.76	92.93	
Total Travel Time - All	861.33	60.88	h
Total Travel Time - Bus DPTI	4.59	0.33	h
Total Travel Time - Car PM	832.65	57.31	h
Total Travel Time - Truck & Semi PM	24.09	4.24	h
Total Travelled Distance - All	15029.3	169.59	km
Total Travelled Distance - Bus DPTI	65.88	4.97	km
Total Travelled Distance - Car PM	14544.77	182.72	km
Total Travelled Distance - Truck & Semi PM	418.66	28.68	km

2017 PM - General Statistics

Travel Time - All	204.22	14.46	sec/km
Travel Time - Bus DPTI	250.59	7.92	sec/km
Travel Time - Car PM	203.97	14.43	sec/km
Travel Time - Truck & Semi PM	206.85	22.08	sec/km
Vehicles Inside - All	541.6	103.17	veh
Vehicles Inside - Bus DPTI	3.8	3.11	veh
Vehicles Inside - Car PM	522	98.53	veh
Vehicles Inside - Truck & Semi PM	15.8	3.11	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car PM	0	0	veh
Vehicles Lost Inside - Truck & Semi PM	0	0	veh
Vehicles Lost Outside - All	2.2	1.64	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car PM	2.2	1.64	veh
Vehicles Lost Outside - Truck & Semi PM	0	0	veh
Vehicles Outside - All	10087	124.81	veh
Vehicles Outside - Bus DPTI	37.8	3.03	veh
Vehicles Outside - Car PM	9813.4	132.33	veh
Vehicles Outside - Truck & Semi PM	235.8	15.34	veh
Vehicles Waiting to Enter - All	104.6	100.73	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car PM	103.4	99.69	veh
Vehicles Waiting to Enter - Truck & Semi PM	1.2	1.1	veh
Waiting Time Virtual Queue - All	35.59	20.65	sec
Waiting Time Virtual Queue - Bus DPTI	46.07	31.16	sec
Waiting Time Virtual Queue - Car PM	35.6	20.63	sec
Waiting Time Virtual Queue - Truck & Semi PM	33.46	25.66	sec

2017 PM - General Statistics

SC4B

Time Series	Value	Standard Deviation	Units
Delay Time - All	136.64	11.41	sec/km
Delay Time - Bus DPTI	143.61	20.47	sec/km
Delay Time - Car PM	135.71	11.44	sec/km
Delay Time - Truck & Semi PM	155.81	12.36	sec/km
Delay Time - Car PM - copy	147.49	16.02	sec/km
Density - All	32.88	2.16	veh/km
Density - Bus DPTI	0.18	0.02	veh/km
Density - Car PM	30.87	2.05	veh/km
Density - Truck & Semi PM	0.96	0.11	veh/km
Density - Car PM - copy	0.88	0.09	veh/km
Flow - All	6994.8	28.14	veh/h
Flow - Bus DPTI	26.4	1.38	veh/h
Flow - Car PM	6545.2	30.82	veh/h
Flow - Truck & Semi PM	153.47	12.34	veh/h
Flow - Car PM - copy	269.73	5.43	veh/h
Harmonic Speed - All	17.76	0	km/h
Harmonic Speed - Bus DPTI	14.73	0	km/h
Harmonic Speed - Car PM	17.88	0	km/h
Harmonic Speed - Truck & Semi PM	16.25	0	km/h
Harmonic Speed - Car PM - copy	16.26	0	km/h
Input Count - All	10586.2	N/A	veh
Input Count - Bus DPTI	40.6	N/A	veh
Input Count - Car PM	9901.6	N/A	veh
Input Count - Truck & Semi PM	236.2	N/A	veh
Input Count - Car PM - copy	407.8	N/A	veh
Input Flow - All	7057.47	68.07	veh/h
Input Flow - Bus DPTI	27.07	1.53	veh/h
Input Flow - Car PM	6601.07	60.43	veh/h
Input Flow - Truck & Semi PM	157.47	13.93	veh/h
Input Flow - Car PM - copy	271.87	6.21	veh/h
Max. Virtual Queue - All	180.4	20.56	veh
Max. Virtual Queue - Bus DPTI	5	1.87	veh
Max. Virtual Queue - Car PM	155.6	19.26	veh
Max. Virtual Queue - Truck & Semi PM	10.2	2.95	veh
Max. Virtual Queue - Car PM - copy	23.2	2.28	veh
Mean Queue - All	321.79	30.41	veh
Mean Queue - Bus DPTI	1.74	0.28	veh
Mean Queue - Car PM	301.29	28.84	veh
Mean Queue - Truck & Semi PM	9.52	1.18	veh
Mean Queue - Car PM - copy	9.24	1.19	veh
Mean Virtual Queue - All	74.03	27.2	veh
Mean Virtual Queue - Bus DPTI	0.34	0.18	veh
Mean Virtual Queue - Car PM	62.89	24.87	veh
Mean Virtual Queue - Truck & Semi PM	2.36	1.42	veh
Mean Virtual Queue - Car PM - copy	8.43	1.16	veh
Missed Turns - All	8.2	3.49	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car PM	7.6	3.21	
Missed Turns - Truck & Semi PM	0.2	0.45	
Missed Turns - Car PM - copy	0.4	0.55	
Number of Lane Changes - All	1041.45	26.27	#/km
Number of Lane Changes - Bus DPTI	2.3	0.17	#/km
Number of Lane Changes - Car PM	996.08	26.44	#/km
Number of Lane Changes - Truck & Semi PM	14.74	1.08	#/km
Number of Lane Changes - Car PM - copy	28.33	0.68	#/km
Number of Stops - All	0.13	0.01	#/veh/km
Number of Stops - Bus DPTI	0.18	0.02	#/veh/km
Number of Stops - Car PM	0.13	0.01	#/veh/km
Number of Stops - Truck & Semi PM	0.13	0.01	#/veh/km
Number of Stops - Car PM - copy	0.15	0.01	#/veh/km
Speed - All	21.71	1.25	km/h
Speed - Bus DPTI	16.39	1.54	km/h
Speed - Car PM	21.75	1.29	km/h
Speed - Truck & Semi PM	19.12	1.18	km/h
Speed - Car PM - copy	22.64	1.02	km/h
Stop Time - All	111.08	8.79	sec/km
Stop Time - Bus DPTI	123.07	16.39	sec/km
Stop Time - Car PM	110.22	8.76	sec/km
Stop Time - Truck & Semi PM	126.18	9.81	sec/km
Stop Time - Car PM - copy	122.18	13.87	sec/km
Total Number of Lane Changes - All	18832.2	475.12	
Total Number of Lane Changes - Bus DPTI	41.6	3.05	

2017 PM - General Statistics

Total Number of Lane Changes - Car PM	18011.8	478.18	
Total Number of Lane Changes - Truck & Semi PM	266.6	19.5	
Total Number of Lane Changes - Car PM - copy	512.2	12.3	
Total Number of Stops - All	24751.68	2452.35	
Total Number of Stops - Bus DPTI	125.49	19.03	
Total Number of Stops - Car PM	23008.63	2361.54	
Total Number of Stops - Truck & Semi PM	525.57	54.78	
Total Number of Stops - Car PM - copy	1091.99	87.04	
Total Travel Time - All	879.02	52.59	h
Total Travel Time - Bus DPTI	4.68	0.67	h
Total Travel Time - Car PM	825.76	50.05	h
Total Travel Time - Truck & Semi PM	25.21	2.78	h
Total Travel Time - Car PM - copy	23.37	2.53	h
Total Travelled Distance - All	15355.18	92.78	km
Total Travelled Distance - Bus DPTI	68.56	3.65	km
Total Travelled Distance - Car PM	14538.47	108.58	km
Total Travelled Distance - Truck & Semi PM	408.35	33.93	km
Total Travelled Distance - Car PM - copy	339.81	12.87	km
Travel Time - All	202.68	11.43	sec/km
Travel Time - Bus DPTI	244.38	21.78	sec/km
Travel Time - Car PM	201.3	11.44	sec/km
Travel Time - Truck & Semi PM	221.54	12.48	sec/km
Travel Time - Car PM - copy	221.34	15.77	sec/km
Vehicles Inside - All	501.2	91.82	veh
Vehicles Inside - Bus DPTI	2	1.41	veh
Vehicles Inside - Car PM	477.4	91.11	veh
Vehicles Inside - Truck & Semi PM	18.6	2.07	veh
Vehicles Inside - Car PM - copy	3.2	1.64	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car PM	0	0	veh
Vehicles Lost Inside - Truck & Semi PM	0	0	veh
Vehicles Lost Inside - Car PM - copy	0	0	veh
Vehicles Lost Outside - All	6.2	2.68	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car PM	5.6	2.41	veh
Vehicles Lost Outside - Truck & Semi PM	0.2	0.45	veh
Vehicles Lost Outside - Car PM - copy	0.4	0.55	veh
Vehicles Outside - All	10492.2	42.2	veh
Vehicles Outside - Bus DPTI	39.6	2.07	veh
Vehicles Outside - Car PM	9817.8	46.24	veh
Vehicles Outside - Truck & Semi PM	230.2	18.51	veh
Vehicles Outside - Car PM - copy	404.6	8.14	veh
Vehicles Waiting to Enter - All	126	45.19	veh
Vehicles Waiting to Enter - Bus DPTI	0.2	0.45	veh
Vehicles Waiting to Enter - Car PM	109.6	42.34	veh
Vehicles Waiting to Enter - Truck & Semi PM	4.8	4.02	veh
Vehicles Waiting to Enter - Car PM - copy	11.4	3.36	veh
Waiting Time Virtual Queue - All	25.28	13.57	sec
Waiting Time Virtual Queue - Bus DPTI	37.53	20.24	sec
Waiting Time Virtual Queue - Car PM	24.03	12.91	sec
Waiting Time Virtual Queue - Truck & Semi PM	42.95	26.44	sec
Waiting Time Virtual Queue - Car PM - copy	44.33	22.71	sec

2017 PM - General Statistics

SC4C

Time Series	Value	Standard Deviation	Units
Delay Time - All	133	11.23	sec/km
Delay Time - Bus DPTI	140.38	16.85	sec/km
Delay Time - Car PM	131.92	11.29	sec/km
Delay Time - Truck & Semi PM	153.61	13.42	sec/km
Delay Time - Car PM - copy	146.77	13.86	sec/km
Density - All	32.51	2.16	veh/km
Density - Bus DPTI	0.18	0.02	veh/km
Density - Car PM	30.49	2.07	veh/km
Density - Truck & Semi PM	0.95	0.11	veh/km
Density - Car PM - copy	0.89	0.07	veh/km
Flow - All	7015.33	26.44	veh/h
Flow - Bus DPTI	26.8	1.73	veh/h
Flow - Car PM	6564.4	30.65	veh/h
Flow - Truck & Semi PM	154.4	12.75	veh/h
Flow - Car PM - copy	269.73	7.37	veh/h
Harmonic Speed - All	18.1	0	km/h
Harmonic Speed - Bus DPTI	14.79	0	km/h
Harmonic Speed - Car PM	18.24	0	km/h
Harmonic Speed - Truck & Semi PM	16.41	0	km/h
Harmonic Speed - Car PM - copy	16.35	0	km/h
Input Count - All	10615.4	N/A	veh
Input Count - Bus DPTI	40.8	N/A	veh
Input Count - Car PM	9930.2	N/A	veh
Input Count - Truck & Semi PM	237.8	N/A	veh
Input Count - Car PM - copy	406.6	N/A	veh
Input Flow - All	7076.93	65.54	veh/h
Input Flow - Bus DPTI	27.2	1.66	veh/h
Input Flow - Car PM	6620.13	55.16	veh/h
Input Flow - Truck & Semi PM	158.53	14.19	veh/h
Input Flow - Car PM - copy	271.07	7.14	veh/h
Max. Virtual Queue - All	170	29.78	veh
Max. Virtual Queue - Bus DPTI	4	2.35	veh
Max. Virtual Queue - Car PM	145.6	26.54	veh
Max. Virtual Queue - Truck & Semi PM	10	2.24	veh
Max. Virtual Queue - Car PM - copy	22.6	7.44	veh
Mean Queue - All	315.07	31.83	veh
Mean Queue - Bus DPTI	1.71	0.19	veh
Mean Queue - Car PM	294.43	30.44	veh
Mean Queue - Truck & Semi PM	9.46	1.36	veh
Mean Queue - Car PM - copy	9.47	1.05	veh
Mean Virtual Queue - All	72.97	18.85	veh
Mean Virtual Queue - Bus DPTI	0.3	0.16	veh
Mean Virtual Queue - Car PM	61.93	15.83	veh
Mean Virtual Queue - Truck & Semi PM	2.38	0.96	veh
Mean Virtual Queue - Car PM - copy	8.37	4.6	veh
Missed Turns - All	5.6	4.39	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car PM	4.6	4.04	
Missed Turns - Truck & Semi PM	0.4	0.55	
Missed Turns - Car PM - copy	0.6	0.89	
Number of Lane Changes - All	1060.73	11.27	#/km
Number of Lane Changes - Bus DPTI	2.45	0.25	#/km
Number of Lane Changes - Car PM	1013.92	10.42	#/km
Number of Lane Changes - Truck & Semi PM	15.22	1.62	#/km
Number of Lane Changes - Car PM - copy	29.15	0.61	#/km
Number of Stops - All	0.13	0.01	#/veh/km
Number of Stops - Bus DPTI	0.17	0.02	#/veh/km
Number of Stops - Car PM	0.13	0.01	#/veh/km
Number of Stops - Truck & Semi PM	0.12	0.01	#/veh/km
Number of Stops - Car PM - copy	0.15	0.01	#/veh/km
Speed - All	22.1	1.38	km/h
Speed - Bus DPTI	16.4	1.48	km/h
Speed - Car PM	22.18	1.4	km/h
Speed - Truck & Semi PM	19.54	1.7	km/h
Speed - Car PM - copy	22.39	1.07	km/h
Stop Time - All	108.21	9.14	sec/km
Stop Time - Bus DPTI	121.71	13.73	sec/km
Stop Time - Car PM	107.23	9.17	sec/km
Stop Time - Truck & Semi PM	123.69	11.3	sec/km
Stop Time - Car PM - copy	121.71	12.4	sec/km
Total Number of Lane Changes - All	19171.8	203.68	
Total Number of Lane Changes - Bus DPTI	44.2	4.49	

2017 PM - General Statistics

Total Number of Lane Changes - Car PM	18325.8	188.37	
Total Number of Lane Changes - Truck & Semi PM	275	29.22	
Total Number of Lane Changes - Car PM - copy	526.8	10.96	
Total Number of Stops - All	23988.64	2330.65	
Total Number of Stops - Bus DPTI	123.77	18.76	
Total Number of Stops - Car PM	22247.85	2228.5	
Total Number of Stops - Truck & Semi PM	519.05	64.53	
Total Number of Stops - Car PM - copy	1097.97	77.82	
Total Travel Time - All	867.51	54.75	h
Total Travel Time - Bus DPTI	4.74	0.56	h
Total Travel Time - Car PM	814.31	52.88	h
Total Travel Time - Truck & Semi PM	25.13	2.84	h
Total Travel Time - Car PM - copy	23.33	1.8	h
Total Travelled Distance - All	15403.12	55.6	km
Total Travelled Distance - Bus DPTI	69.59	4.51	km
Total Travelled Distance - Car PM	14582.77	88.13	km
Total Travelled Distance - Truck & Semi PM	410.93	34.85	km
Total Travelled Distance - Car PM - copy	339.83	14.59	km
Travel Time - All	198.88	11.25	sec/km
Travel Time - Bus DPTI	243.39	18.63	sec/km
Travel Time - Car PM	197.34	11.29	sec/km
Travel Time - Truck & Semi PM	219.33	13.73	sec/km
Travel Time - Car PM - copy	220.16	13.77	sec/km
Vehicles Inside - All	500.8	80.42	veh
Vehicles Inside - Bus DPTI	1.6	1.52	veh
Vehicles Inside - Car PM	479.2	78.79	veh
Vehicles Inside - Truck & Semi PM	18	3.67	veh
Vehicles Inside - Car PM - copy	2	1	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car PM	0	0	veh
Vehicles Lost Inside - Truck & Semi PM	0	0	veh
Vehicles Lost Inside - Car PM - copy	0	0	veh
Vehicles Lost Outside - All	2	1.22	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car PM	1.8	1.1	veh
Vehicles Lost Outside - Truck & Semi PM	0.2	0.45	veh
Vehicles Lost Outside - Car PM - copy	0	0	veh
Vehicles Outside - All	10523	39.67	veh
Vehicles Outside - Bus DPTI	40.2	2.59	veh
Vehicles Outside - Car PM	9846.6	45.98	veh
Vehicles Outside - Truck & Semi PM	231.6	19.13	veh
Vehicles Outside - Car PM - copy	404.6	11.06	veh
Vehicles Waiting to Enter - All	97	45.66	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car PM	81	34.91	veh
Vehicles Waiting to Enter - Truck & Semi PM	3.4	2.07	veh
Vehicles Waiting to Enter - Car PM - copy	12.6	10.19	veh
Waiting Time Virtual Queue - All	25.18	8.71	sec
Waiting Time Virtual Queue - Bus DPTI	32.87	16.51	sec
Waiting Time Virtual Queue - Car PM	24.19	8.09	sec
Waiting Time Virtual Queue - Truck & Semi PM	49	16.17	sec
Waiting Time Virtual Queue - Car PM - copy	34.87	19.33	sec

2018 Saturday - General Statistics

Base Time Series	Value	Standard Deviation	Units
Delay Time - All	40.64	1.62	sec/km
Delay Time - Bus DPTI	33.78	2.61	sec/km
Delay Time - Car AM	40.76	1.62	sec/km
Delay Time - Truck & Semi AM	30.68	2.57	sec/km
Density - All	14.73	0.24	veh/km
Density - Bus DPTI	0.07	0.01	veh/km
Density - Car AM	14.49	0.23	veh/km
Density - Truck & Semi AM	0.17	0.02	veh/km
Flow - All	6101.47	62.94	veh/h
Flow - Bus DPTI	17.07	1.53	veh/h
Flow - Car AM	6022.4	60.06	veh/h
Flow - Truck & Semi AM	62	8.65	veh/h
Harmonic Speed - All	34.13	0	km/h
Harmonic Speed - Bus DPTI	24.55	0	km/h
Harmonic Speed - Car AM	34.14	0	km/h
Harmonic Speed - Truck & Semi AM	37.44	0	km/h
Input Count - All	9199.6	N/A	veh
Input Count - Bus DPTI	26.4	N/A	veh
Input Count - Car AM	9078.4	N/A	veh
Input Count - Truck & Semi AM	94.8	N/A	veh
Input Flow - All	6133.07	62.48	veh/h
Input Flow - Bus DPTI	17.6	0.89	veh/h
Input Flow - Car AM	6052.27	59.29	veh/h
Input Flow - Truck & Semi AM	63.2	8.22	veh/h
Max. Virtual Queue - All	4.4	0.55	veh
Max. Virtual Queue - Bus DPTI	1	0	veh
Max. Virtual Queue - Car AM	4.2	0.84	veh
Max. Virtual Queue - Truck & Semi AM	1.2	0.45	veh
Mean Queue - All	71.76	3.91	veh
Mean Queue - Bus DPTI	0.37	0.07	veh
Mean Queue - Car AM	70.75	3.8	veh
Mean Queue - Truck & Semi AM	0.65	0.15	veh
Mean Virtual Queue - All	0.18	0.04	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	0.18	0.04	veh
Mean Virtual Queue - Truck & Semi AM	0	0	veh
Missed Turns - All	3.4	1.67	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	3.4	1.67	
Missed Turns - Truck & Semi AM	0	0	
Number of Lane Changes - All	1073.13	16.48	#/km
Number of Lane Changes - Bus DPTI	1.42	0.25	#/km
Number of Lane Changes - Car AM	1063.89	15.07	#/km
Number of Lane Changes - Truck & Semi AM	7.82	1.34	#/km
Number of Stops - All	0.05	0	#/veh/km
Number of Stops - Bus DPTI	0.11	0	#/veh/km
Number of Stops - Car AM	0.05	0	#/veh/km
Number of Stops - Truck & Semi AM	0.03	0	#/veh/km
Speed - All	37.03	0.31	km/h
Speed - Bus DPTI	25.41	0.69	km/h
Speed - Car AM	37.04	0.3	km/h
Speed - Truck & Semi AM	39.33	0.98	km/h
Stop Time - All	32.13	1.5	sec/km
Stop Time - Bus DPTI	29.09	2.73	sec/km
Stop Time - Car AM	32.23	1.5	sec/km
Stop Time - Truck & Semi AM	23.07	2.21	sec/km
Total Number of Lane Changes - All	18955.2	291.06	
Total Number of Lane Changes - Bus DPTI	25	4.42	
Total Number of Lane Changes - Car AM	18792	266.25	
Total Number of Lane Changes - Truck & Semi AM	138.2	23.68	
Total Number of Stops - All	8689.66	229.99	
Total Number of Stops - Bus DPTI	49.56	5.33	
Total Number of Stops - Car AM	8582.75	229.57	
Total Number of Stops - Truck & Semi AM	57.35	7.09	
Total Travel Time - All	388.33	6.08	h
Total Travel Time - Bus DPTI	1.8	0.21	h
Total Travel Time - Car AM	382.18	5.77	h
Total Travel Time - Truck & Semi AM	4.35	0.64	h
Total Travelled Distance - All	13519.39	131.17	km
Total Travelled Distance - Bus DPTI	44.19	3.98	km
Total Travelled Distance - Car AM	13311.91	117.3	km
Total Travelled Distance - Truck & Semi AM	163.28	22.72	km
Travel Time - All	105.47	1.64	sec/km

2018 Saturday - General Statistics

Travel Time - Bus DPTI	146.65	5.57	sec/km
Travel Time - Car AM	105.45	1.63	sec/km
Travel Time - Truck & Semi AM	96.15	2.66	sec/km
Vehicles Inside - All	258.8	6.98	veh
Vehicles Inside - Bus DPTI	1.2	1.3	veh
Vehicles Inside - Car AM	253.2	6.02	veh
Vehicles Inside - Truck & Semi AM	4.4	2.51	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Outside - All	1	0.71	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	1	0.71	veh
Vehicles Lost Outside - Truck & Semi AM	0	0	veh
Vehicles Outside - All	9152.2	94.41	veh
Vehicles Outside - Bus DPTI	25.6	2.3	veh
Vehicles Outside - Car AM	9033.6	90.09	veh
Vehicles Outside - Truck & Semi AM	93	12.98	veh
Vehicles Waiting to Enter - All	0	0	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	0	0	veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0	veh
Waiting Time Virtual Queue - All	0.13	0.02	sec
Waiting Time Virtual Queue - Bus DPTI	0.13	0.04	sec
Waiting Time Virtual Queue - Car AM	0.13	0.02	sec
Waiting Time Virtual Queue - Truck & Semi AM	0.18	0.05	sec

2018 Saturday - General Statistics

SC0A

Time Series	Value	Standard Deviation	Units
Delay Time - All	46.56	3.13	sec/km
Delay Time - Bus DPTI	41.78	6.72	sec/km
Delay Time - Car AM	46.69	3.13	sec/km
Delay Time - Truck & Semi AM	35.83	3.05	sec/km
Density - All	15.35	0.6	veh/km
Density - Bus DPTI	0.07	0.01	veh/km
Density - Car AM	15.11	0.58	veh/km
Density - Truck & Semi AM	0.17	0.03	veh/km
Flow - All	6094.13	66.39	veh/h
Flow - Bus DPTI	17.6	1.21	veh/h
Flow - Car AM	6014.67	63.44	veh/h
Flow - Truck & Semi AM	61.87	8.44	veh/h
Harmonic Speed - All	32.32	0	km/h
Harmonic Speed - Bus DPTI	24.75	0	km/h
Harmonic Speed - Car AM	32.32	0	km/h
Harmonic Speed - Truck & Semi AM	35.54	0	km/h
Input Count - All	9199	N/A	veh
Input Count - Bus DPTI	25.8	N/A	veh
Input Count - Car AM	9078.4	N/A	veh
Input Count - Truck & Semi AM	94.8	N/A	veh
Input Flow - All	6132.67	62.99	veh/h
Input Flow - Bus DPTI	17.2	0.87	veh/h
Input Flow - Car AM	6052.27	59.29	veh/h
Input Flow - Truck & Semi AM	63.2	8.22	veh/h
Max. Virtual Queue - All	5.2	1.3	veh
Max. Virtual Queue - Bus DPTI	0.6	0.55	veh
Max. Virtual Queue - Car AM	5.2	1.3	veh
Max. Virtual Queue - Truck & Semi AM	1.2	0.45	veh
Mean Queue - All	84.33	8.09	veh
Mean Queue - Bus DPTI	0.36	0.07	veh
Mean Queue - Car AM	83.19	7.85	veh
Mean Queue - Truck & Semi AM	0.79	0.19	veh
Mean Virtual Queue - All	0.19	0.04	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	0.19	0.04	veh
Mean Virtual Queue - Truck & Semi AM	0	0	veh
Missed Turns - All	5	1.58	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	5	1.58	
Missed Turns - Truck & Semi AM	0	0	
Number of Lane Changes - All	1082.7	20.58	#/km
Number of Lane Changes - Bus DPTI	1.34	0.34	#/km
Number of Lane Changes - Car AM	1073.7	18.83	#/km
Number of Lane Changes - Truck & Semi AM	7.66	1.65	#/km
Number of Stops - All	0.06	0	#/veh/km
Number of Stops - Bus DPTI	0.09	0.01	#/veh/km
Number of Stops - Car AM	0.06	0	#/veh/km
Number of Stops - Truck & Semi AM	0.04	0	#/veh/km
Speed - All	35.38	0.6	km/h
Speed - Bus DPTI	26.01	1.03	km/h
Speed - Car AM	35.38	0.6	km/h
Speed - Truck & Semi AM	37.8	0.85	km/h
Stop Time - All	37.36	2.75	sec/km
Stop Time - Bus DPTI	37.15	5.97	sec/km
Stop Time - Car AM	37.46	2.75	sec/km
Stop Time - Truck & Semi AM	27.92	2.68	sec/km
Total Number of Lane Changes - All	19449.4	369.61	
Total Number of Lane Changes - Bus DPTI	24	6.12	
Total Number of Lane Changes - Car AM	19287.8	338.27	
Total Number of Lane Changes - Truck & Semi AM	137.6	29.59	
Total Number of Stops - All	9526.24	523.78	
Total Number of Stops - Bus DPTI	43.03	6.86	
Total Number of Stops - Car AM	9420.56	512.43	
Total Number of Stops - Truck & Semi AM	62.65	7.55	
Total Travel Time - All	411.06	16.18	h
Total Travel Time - Bus DPTI	1.84	0.19	h
Total Travel Time - Car AM	404.64	15.42	h
Total Travel Time - Truck & Semi AM	4.58	0.73	h
Total Travelled Distance - All	13508.53	135.4	km
Total Travelled Distance - Bus DPTI	45.66	3.11	km
Total Travelled Distance - Car AM	13299.93	122.23	km
Total Travelled Distance - Truck & Semi AM	162.93	22.12	km
Travel Time - All	111.39	3.09	sec/km

2018 Saturday - General Statistics

Travel Time - Bus DPTI	145.43	6.58	sec/km
Travel Time - Car AM	111.4	3.09	sec/km
Travel Time - Truck & Semi AM	101.3	2.82	sec/km
Vehicles Inside - All	279.6	13.65	veh
Vehicles Inside - Bus DPTI	0.6	0.89	veh
Vehicles Inside - Car AM	274.6	16.38	veh
Vehicles Inside - Truck & Semi AM	4.4	2.51	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Outside - All	2.2	1.1	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	2.2	1.1	veh
Vehicles Lost Outside - Truck & Semi AM	0	0	veh
Vehicles Outside - All	9141.2	99.58	veh
Vehicles Outside - Bus DPTI	26.4	1.82	veh
Vehicles Outside - Car AM	9022	95.16	veh
Vehicles Outside - Truck & Semi AM	92.8	12.66	veh
Vehicles Waiting to Enter - All	0	0	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	0	0	veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0	veh
Waiting Time Virtual Queue - All	0.14	0.02	sec
Waiting Time Virtual Queue - Bus DPTI	0.13	0.07	sec
Waiting Time Virtual Queue - Car AM	0.14	0.02	sec
Waiting Time Virtual Queue - Truck & Semi AM	0.19	0.05	sec

2018 Saturday - General Statistics

SC4B

Time Series	Value	Standard Deviation	Units
Delay Time - All	51.88	3.18	sec/km
Delay Time - Bus DPTI	43.29	5.29	sec/km
Delay Time - Car AM	51.02	3.21	sec/km
Delay Time - Truck & Semi AM	38.53	1.61	sec/km
Delay Time - Car AM - copy	69.03	3.9	sec/km
Density - All	16.48	0.57	veh/km
Density - Bus DPTI	0.07	0	veh/km
Density - Car AM	15.52	0.52	veh/km
Density - Truck & Semi AM	0.18	0.02	veh/km
Density - Car AM - copy	0.71	0.03	veh/km
Flow - All	6385.33	62.87	veh/h
Flow - Bus DPTI	17.07	0.89	veh/h
Flow - Car AM	5951.6	71.15	veh/h
Flow - Truck & Semi AM	61.73	8.04	veh/h
Flow - Car AM - copy	354.93	13.5	veh/h
Harmonic Speed - All	30.54	0	km/h
Harmonic Speed - Bus DPTI	24.72	0	km/h
Harmonic Speed - Car AM	30.9	0	km/h
Harmonic Speed - Truck & Semi AM	34.6	0	km/h
Harmonic Speed - Car AM - copy	25.41	0	km/h
Input Count - All	9637	N/A	veh
Input Count - Bus DPTI	25.2	N/A	veh
Input Count - Car AM	8984.6	N/A	veh
Input Count - Truck & Semi AM	94.8	N/A	veh
Input Count - Car AM - copy	532.4	N/A	veh
Input Flow - All	6424.67	37.61	veh/h
Input Flow - Bus DPTI	16.8	0.87	veh/h
Input Flow - Car AM	5989.73	47.2	veh/h
Input Flow - Truck & Semi AM	63.2	8.22	veh/h
Input Flow - Car AM - copy	354.93	13.5	veh/h
Max. Virtual Queue - All	4.8	1.48	veh
Max. Virtual Queue - Bus DPTI	0.6	0.55	veh
Max. Virtual Queue - Car AM	4.4	1.14	veh
Max. Virtual Queue - Truck & Semi AM	1.4	0.55	veh
Max. Virtual Queue - Car AM - copy	2	0.71	veh
Mean Queue - All	98.29	8.95	veh
Mean Queue - Bus DPTI	0.37	0.05	veh
Mean Queue - Car AM	91.76	8.39	veh
Mean Queue - Truck & Semi AM	0.85	0.17	veh
Mean Queue - Car AM - copy	5.31	0.48	veh
Mean Virtual Queue - All	0.21	0.08	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	0.19	0.06	veh
Mean Virtual Queue - Truck & Semi AM	0	0	veh
Mean Virtual Queue - Car AM - copy	0.02	0.02	veh
Missed Turns - All	11	4.06	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	9	3.39	
Missed Turns - Truck & Semi AM	0.2	0.45	
Missed Turns - Car AM - copy	1.8	1.3	
Number of Lane Changes - All	1128.57	21.52	#/km
Number of Lane Changes - Bus DPTI	1.55	0.21	#/km
Number of Lane Changes - Car AM	1077.16	18.39	#/km
Number of Lane Changes - Truck & Semi AM	7.33	1.04	#/km
Number of Lane Changes - Car AM - copy	42.53	2.25	#/km
Number of Stops - All	0.06	0	#/veh/km
Number of Stops - Bus DPTI	0.09	0	#/veh/km
Number of Stops - Car AM	0.06	0	#/veh/km
Number of Stops - Truck & Semi AM	0.04	0	#/veh/km
Number of Stops - Car AM - copy	0.09	0	#/veh/km
Speed - All	33.51	0.54	km/h
Speed - Bus DPTI	26.02	0.49	km/h
Speed - Car AM	33.79	0.56	km/h
Speed - Truck & Semi AM	36.99	0.64	km/h
Speed - Car AM - copy	28.46	0.41	km/h
Stop Time - All	42.21	2.81	sec/km
Stop Time - Bus DPTI	38.99	5.08	sec/km
Stop Time - Car AM	41.46	2.84	sec/km
Stop Time - Truck & Semi AM	30.11	1.38	sec/km
Stop Time - Car AM - copy	56.99	3.46	sec/km
Total Number of Lane Changes - All	20407.6	389.21	
Total Number of Lane Changes - Bus DPTI	28	3.81	
Total Number of Lane Changes - Car AM	19478	332.5	

Total Number of Lane Changes - Truck & Semi AM	132.6	18.8	
Total Number of Lane Changes - Car AM - copy	769	40.76	
Total Number of Stops - All	10976.08	513.52	
Total Number of Stops - Bus DPTI	39.69	3.32	
Total Number of Stops - Car AM	9961.57	465.06	
Total Number of Stops - Truck & Semi AM	66.22	8.27	
Total Number of Stops - Car AM - copy	908.59	45.8	
Total Travel Time - All	444.04	14.28	h
Total Travel Time - Bus DPTI	1.79	0.14	h
Total Travel Time - Car AM	418.17	12.95	h
Total Travel Time - Truck & Semi AM	4.7	0.61	h
Total Travel Time - Car AM - copy	19.38	0.91	h
Total Travelled Distance - All	13837.72	129.21	km
Total Travelled Distance - Bus DPTI	44.26	2.3	km
Total Travelled Distance - Car AM	13158.29	134.25	km
Total Travelled Distance - Truck & Semi AM	162.7	20.78	km
Total Travelled Distance - Car AM - copy	472.47	12.72	km
Travel Time - All	117.87	3.15	sec/km
Travel Time - Bus DPTI	145.65	4.26	sec/km
Travel Time - Car AM	116.51	3.17	sec/km
Travel Time - Truck & Semi AM	104.05	1.83	sec/km
Travel Time - Car AM - copy	141.67	3.73	sec/km
Vehicles Inside - All	294.4	36.54	veh
Vehicles Inside - Bus DPTI	0.6	0.55	veh
Vehicles Inside - Car AM	289	35.47	veh
Vehicles Inside - Truck & Semi AM	4.8	2.77	veh
Vehicles Inside - Car AM - copy	0	0	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Inside - Car AM - copy	0	0	veh
Vehicles Lost Outside - All	7.8	3.03	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	6	2	veh
Vehicles Lost Outside - Truck & Semi AM	0	0	veh
Vehicles Lost Outside - Car AM - copy	1.8	1.3	veh
Vehicles Outside - All	9578	94.31	veh
Vehicles Outside - Bus DPTI	25.6	1.34	veh
Vehicles Outside - Car AM	8927.4	106.72	veh
Vehicles Outside - Truck & Semi AM	92.6	12.05	veh
Vehicles Outside - Car AM - copy	532.4	20.26	veh
Vehicles Waiting to Enter - All	0	0	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	0	0	veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0	veh
Vehicles Waiting to Enter - Car AM - copy	0	0	veh
Waiting Time Virtual Queue - All	0.14	0.04	sec
Waiting Time Virtual Queue - Bus DPTI	0.15	0.06	sec
Waiting Time Virtual Queue - Car AM	0.14	0.03	sec
Waiting Time Virtual Queue - Truck & Semi AM	0.19	0.06	sec
Waiting Time Virtual Queue - Car AM - copy	0.26	0.15	sec

2018 Saturday - General Statistics

SC4C

Time Series	Value	Standard Deviation	Units
Delay Time - All	53.39	2.83	sec/km
Delay Time - Bus DPTI	42.64	3.98	sec/km
Delay Time - Car AM	52.27	2.81	sec/km
Delay Time - Truck & Semi AM	39.37	3.36	sec/km
Delay Time - Car AM - copy	75.14	4.84	sec/km
Density - All	16.64	0.47	veh/km
Density - Bus DPTI	0.07	0	veh/km
Density - Car AM	15.65	0.43	veh/km
Density - Truck & Semi AM	0.18	0.02	veh/km
Density - Car AM - copy	0.74	0.04	veh/km
Flow - All	6381.2	62.52	veh/h
Flow - Bus DPTI	17.07	0.89	veh/h
Flow - Car AM	5947.73	69.21	veh/h
Flow - Truck & Semi AM	61.47	8.07	veh/h
Flow - Car AM - copy	354.93	13.5	veh/h
Harmonic Speed - All	30.19	0	km/h
Harmonic Speed - Bus DPTI	25.11	0	km/h
Harmonic Speed - Car AM	30.6	0	km/h
Harmonic Speed - Truck & Semi AM	34.33	0	km/h
Harmonic Speed - Car AM - copy	24.43	0	km/h
Input Count - All	9637	N/A	veh
Input Count - Bus DPTI	25.2	N/A	veh
Input Count - Car AM	8984.6	N/A	veh
Input Count - Truck & Semi AM	94.8	N/A	veh
Input Count - Car AM - copy	532.4	N/A	veh
Input Flow - All	6424.67	37.61	veh/h
Input Flow - Bus DPTI	16.8	0.87	veh/h
Input Flow - Car AM	5989.73	47.2	veh/h
Input Flow - Truck & Semi AM	63.2	8.22	veh/h
Input Flow - Car AM - copy	354.93	13.5	veh/h
Max. Virtual Queue - All	7.6	4.28	veh
Max. Virtual Queue - Bus DPTI	0.8	0.45	veh
Max. Virtual Queue - Car AM	6.6	3.44	veh
Max. Virtual Queue - Truck & Semi AM	1.4	0.55	veh
Max. Virtual Queue - Car AM - copy	2.6	0.89	veh
Mean Queue - All	100.17	7.89	veh
Mean Queue - Bus DPTI	0.36	0.03	veh
Mean Queue - Car AM	93.34	7.45	veh
Mean Queue - Truck & Semi AM	0.9	0.14	veh
Mean Queue - Car AM - copy	5.58	0.52	veh
Mean Virtual Queue - All	0.43	0.36	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	0.34	0.25	veh
Mean Virtual Queue - Truck & Semi AM	0	0	veh
Mean Virtual Queue - Car AM - copy	0.09	0.11	veh
Missed Turns - All	5	2.92	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	4.2	2.59	
Missed Turns - Truck & Semi AM	0.2	0.45	
Missed Turns - Car AM - copy	0.6	0.89	
Number of Lane Changes - All	1131.29	18.63	#/km
Number of Lane Changes - Bus DPTI	1.58	0.23	#/km
Number of Lane Changes - Car AM	1080.37	16.52	#/km
Number of Lane Changes - Truck & Semi AM	7.04	1.02	#/km
Number of Lane Changes - Car AM - copy	42.3	1.3	#/km
Number of Stops - All	0.06	0	#/veh/km
Number of Stops - Bus DPTI	0.09	0	#/veh/km
Number of Stops - Car AM	0.06	0	#/veh/km
Number of Stops - Truck & Semi AM	0.04	0	#/veh/km
Number of Stops - Car AM - copy	0.1	0	#/veh/km
Speed - All	33.3	0.61	km/h
Speed - Bus DPTI	26.46	0.78	km/h
Speed - Car AM	33.61	0.63	km/h
Speed - Truck & Semi AM	36.99	1.13	km/h
Speed - Car AM - copy	27.84	0.41	km/h
Stop Time - All	43.59	2.5	sec/km
Stop Time - Bus DPTI	38.29	3.64	sec/km
Stop Time - Car AM	42.6	2.47	sec/km
Stop Time - Truck & Semi AM	30.99	3	sec/km
Stop Time - Car AM - copy	62.69	4.75	sec/km
Total Number of Lane Changes - All	20447.2	336.69	
Total Number of Lane Changes - Bus DPTI	28.6	4.16	
Total Number of Lane Changes - Car AM	19526.8	298.56	

Total Number of Lane Changes - Truck & Semi AM	127.2	18.39	
Total Number of Lane Changes - Car AM - copy	764.6	23.44	
Total Number of Stops - All	11145.61	422.89	
Total Number of Stops - Bus DPTI	39.64	3.78	
Total Number of Stops - Car AM	10117.47	369.64	
Total Number of Stops - Truck & Semi AM	67.91	8.15	
Total Number of Stops - Car AM - copy	920.58	54.44	
Total Travel Time - All	447.67	10.52	h
Total Travel Time - Bus DPTI	1.76	0.13	h
Total Travel Time - Car AM	421.15	9.23	h
Total Travel Time - Truck & Semi AM	4.7	0.58	h
Total Travel Time - Car AM - copy	20.07	1.08	h
Total Travelled Distance - All	13827.29	128.64	km
Total Travelled Distance - Bus DPTI	44.26	2.3	km
Total Travelled Distance - Car AM	13149.71	131.29	km
Total Travelled Distance - Truck & Semi AM	161.8	21.13	km
Total Travelled Distance - Car AM - copy	471.51	13.18	km
Travel Time - All	119.25	2.79	sec/km
Travel Time - Bus DPTI	143.35	4.15	sec/km
Travel Time - Car AM	117.65	2.76	sec/km
Travel Time - Truck & Semi AM	104.86	3.55	sec/km
Travel Time - Car AM - copy	147.36	4.82	sec/km
Vehicles Inside - All	301.6	31.72	veh
Vehicles Inside - Bus DPTI	0.6	0.55	veh
Vehicles Inside - Car AM	295.8	30.05	veh
Vehicles Inside - Truck & Semi AM	5.2	2.77	veh
Vehicles Inside - Car AM - copy	0	0	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Inside - Car AM - copy	0	0	veh
Vehicles Lost Outside - All	0.6	0.55	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	0.4	0.55	veh
Vehicles Lost Outside - Truck & Semi AM	0.2	0.45	veh
Vehicles Lost Outside - Car AM - copy	0	0	veh
Vehicles Outside - All	9571.8	93.77	veh
Vehicles Outside - Bus DPTI	25.6	1.34	veh
Vehicles Outside - Car AM	8921.6	103.82	veh
Vehicles Outside - Truck & Semi AM	92.2	12.11	veh
Vehicles Outside - Car AM - copy	532.4	20.26	veh
Vehicles Waiting to Enter - All	0	0	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	0	0	veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0	veh
Vehicles Waiting to Enter - Car AM - copy	0	0	veh
Waiting Time Virtual Queue - All	0.27	0.18	sec
Waiting Time Virtual Queue - Bus DPTI	0.14	0.07	sec
Waiting Time Virtual Queue - Car AM	0.23	0.14	sec
Waiting Time Virtual Queue - Truck & Semi AM	0.2	0.04	sec
Waiting Time Virtual Queue - Car AM - copy	0.95	1	sec

2026 AM - General Statistics

Base Time Series	Value	Standard Deviation	Units
Delay Time - All	60.89	6.19	sec/km
Delay Time - Bus DPTI	45.5	4.93	sec/km
Delay Time - Car AM	61.6	6.39	sec/km
Delay Time - Truck & Semi AM	49.59	3.16	sec/km
Density - All	18.52	0.97	veh/km
Density - Bus DPTI	0.1	0	veh/km
Density - Car AM	17.46	0.93	veh/km
Density - Truck & Semi AM	0.96	0.05	veh/km
Flow - All	5807.07	42.61	veh/h
Flow - Bus DPTI	23.73	0.37	veh/h
Flow - Car AM	5471.07	40.16	veh/h
Flow - Truck & Semi AM	312.27	17.86	veh/h
Harmonic Speed - All	28.75	0	km/h
Harmonic Speed - Bus DPTI	23.29	0	km/h
Harmonic Speed - Car AM	28.66	0	km/h
Harmonic Speed - Truck & Semi AM	31.07	0	km/h
Input Count - All	8792.6	N/A	veh
Input Count - Bus DPTI	35	N/A	veh
Input Count - Car AM	8290.6	N/A	veh
Input Count - Truck & Semi AM	467	N/A	veh
Input Flow - All	5861.73	19.02	veh/h
Input Flow - Bus DPTI	23.33	0.67	veh/h
Input Flow - Car AM	5527.07	20.2	veh/h
Input Flow - Truck & Semi AM	311.33	15.51	veh/h
Max. Virtual Queue - All	4.6	0.55	veh
Max. Virtual Queue - Bus DPTI	1	0	veh
Max. Virtual Queue - Car AM	4.6	0.55	veh
Max. Virtual Queue - Truck & Semi AM	2	0	veh
Mean Queue - All	122.14	15.83	veh
Mean Queue - Bus DPTI	0.62	0.06	veh
Mean Queue - Car AM	116.3	15.37	veh
Mean Queue - Truck & Semi AM	5.22	0.5	veh
Mean Virtual Queue - All	0.22	0.01	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	0.2	0.01	veh
Mean Virtual Queue - Truck & Semi AM	0.02	0	veh
Missed Turns - All	2.4	2.3	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	2.2	2.49	
Missed Turns - Truck & Semi AM	0.2	0.45	
Number of Lane Changes - All	991.04	14.46	#/km
Number of Lane Changes - Bus DPTI	1.96	0.29	#/km
Number of Lane Changes - Car AM	950.12	13.02	#/km
Number of Lane Changes - Truck & Semi AM	38.96	2.63	#/km
Number of Stops - All	0.07	0	#/veh/km
Number of Stops - Bus DPTI	0.12	0	#/veh/km
Number of Stops - Car AM	0.07	0	#/veh/km
Number of Stops - Truck & Semi AM	0.06	0	#/veh/km
Speed - All	32.94	0.62	km/h
Speed - Bus DPTI	24.96	0.61	km/h
Speed - Car AM	32.89	0.63	km/h
Speed - Truck & Semi AM	34.4	0.59	km/h
Stop Time - All	49.25	5.3	sec/km
Stop Time - Bus DPTI	39.87	4.59	sec/km
Stop Time - Car AM	49.91	5.47	sec/km
Stop Time - Truck & Semi AM	38.4	2.84	sec/km
Total Number of Lane Changes - All	17505.2	255.37	
Total Number of Lane Changes - Bus DPTI	34.6	5.13	
Total Number of Lane Changes - Car AM	16782.4	229.92	
Total Number of Lane Changes - Truck & Semi AM	688.2	46.48	
Total Number of Stops - All	10098.86	483.82	
Total Number of Stops - Bus DPTI	72.79	2.81	
Total Number of Stops - Car AM	9562.31	475.89	
Total Number of Stops - Truck & Semi AM	463.76	26.03	
Total Travel Time - All	485.58	23.26	h
Total Travel Time - Bus DPTI	2.62	0.08	h
Total Travel Time - Car AM	457.61	22.6	h
Total Travel Time - Truck & Semi AM	25.35	1.53	h
Total Travelled Distance - All	14095.7	117.66	km
Total Travelled Distance - Bus DPTI	61.5	1.04	km
Total Travelled Distance - Car AM	13239.09	105.46	km
Total Travelled Distance - Truck & Semi AM	795.11	46.44	km

2026 AM - General Statistics

Travel Time - All	125.22	6.19 sec/km
Travel Time - Bus DPTI	154.58	5.85 sec/km
Travel Time - Car AM	125.63	6.39 sec/km
Travel Time - Truck & Semi AM	115.87	3.29 sec/km
Vehicles Inside - All	322.2	35.53 veh
Vehicles Inside - Bus DPTI	1	0.71 veh
Vehicles Inside - Car AM	306.4	32.44 veh
Vehicles Inside - Truck & Semi AM	14.8	3.9 veh
Vehicles Lost Inside - All	0	0 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car AM	0	0 veh
Vehicles Lost Inside - Truck & Semi AM	0	0 veh
Vehicles Lost Outside - All	0	0 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car AM	0	0 veh
Vehicles Lost Outside - Truck & Semi AM	0	0 veh
Vehicles Outside - All	8710.6	63.91 veh
Vehicles Outside - Bus DPTI	35.6	0.55 veh
Vehicles Outside - Car AM	8206.6	60.24 veh
Vehicles Outside - Truck & Semi AM	468.4	26.79 veh
Vehicles Waiting to Enter - All	0	0 veh
Vehicles Waiting to Enter - Bus DPTI	0	0 veh
Vehicles Waiting to Enter - Car AM	0	0 veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0 veh
Waiting Time Virtual Queue - All	0.16	0.01 sec
Waiting Time Virtual Queue - Bus DPTI	0.11	0.03 sec
Waiting Time Virtual Queue - Car AM	0.15	0.01 sec
Waiting Time Virtual Queue - Truck & Semi AM	0.24	0.02 sec

2026 AM - General Statistics

SC0A

Time Series	Value	Standard Deviation	Units
Delay Time - All	102.27	5.02	sec/km
Delay Time - Bus DPTI	83.67	11.23	sec/km
Delay Time - Car AM	103.71	4.7	sec/km
Delay Time - Truck & Semi AM	81.48	9.82	sec/km
Density - All	24.99	0.8	veh/km
Density - Bus DPTI	0.06	0	veh/km
Density - Car AM	23.47	0.72	veh/km
Density - Truck & Semi AM	1.46	0.08	veh/km
Flow - All	5833.07	68.08	veh/h
Flow - Bus DPTI	10.27	0.37	veh/h
Flow - Car AM	5456.27	65.31	veh/h
Flow - Truck & Semi AM	366.53	13.96	veh/h
Harmonic Speed - All	21.6	0	km/h
Harmonic Speed - Bus DPTI	18.09	0	km/h
Harmonic Speed - Car AM	21.45	0	km/h
Harmonic Speed - Truck & Semi AM	24.37	0	km/h
Input Count - All	9016.6	N/A	veh
Input Count - Bus DPTI	16.4	N/A	veh
Input Count - Car AM	8440.4	N/A	veh
Input Count - Truck & Semi AM	559.8	N/A	veh
Input Flow - All	6011.07	34.28	veh/h
Input Flow - Bus DPTI	10.93	0.37	veh/h
Input Flow - Car AM	5626.93	31.66	veh/h
Input Flow - Truck & Semi AM	373.2	12.99	veh/h
Max. Virtual Queue - All	202	52.88	veh
Max. Virtual Queue - Bus DPTI	1	0	veh
Max. Virtual Queue - Car AM	191.6	49.19	veh
Max. Virtual Queue - Truck & Semi AM	13.4	4.16	veh
Mean Queue - All	220.8	10.72	veh
Mean Queue - Bus DPTI	0.47	0.05	veh
Mean Queue - Car AM	209.1	9.3	veh
Mean Queue - Truck & Semi AM	11.23	1.4	veh
Mean Virtual Queue - All	44.08	22.17	veh
Mean Virtual Queue - Bus DPTI	0.07	0.03	veh
Mean Virtual Queue - Car AM	42.13	21.1	veh
Mean Virtual Queue - Truck & Semi AM	1.88	1.11	veh
Missed Turns - All	12.6	5.22	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	11	4.85	
Missed Turns - Truck & Semi AM	1.6	1.52	
Number of Lane Changes - All	931.35	33.84	#/km
Number of Lane Changes - Bus DPTI	1.19	0.12	#/km
Number of Lane Changes - Car AM	887.42	32.2	#/km
Number of Lane Changes - Truck & Semi AM	42.74	1.84	#/km
Number of Stops - All	0.09	0.01	#/veh/km
Number of Stops - Bus DPTI	0.16	0.01	#/veh/km
Number of Stops - Car AM	0.1	0.01	#/veh/km
Number of Stops - Truck & Semi AM	0.08	0.01	#/veh/km
Speed - All	28.11	0.96	km/h
Speed - Bus DPTI	20.81	1.08	km/h
Speed - Car AM	28.01	0.91	km/h
Speed - Truck & Semi AM	29.69	1.6	km/h
Stop Time - All	84.25	3.66	sec/km
Stop Time - Bus DPTI	73.32	9.46	sec/km
Stop Time - Car AM	85.49	3.38	sec/km
Stop Time - Truck & Semi AM	66.06	8.01	sec/km
Total Number of Lane Changes - All	16730.6	607.83	
Total Number of Lane Changes - Bus DPTI	21.4	2.19	
Total Number of Lane Changes - Car AM	15941.4	578.44	
Total Number of Lane Changes - Truck & Semi AM	767.8	32.97	
Total Number of Stops - All	14849.22	1066.01	
Total Number of Stops - Bus DPTI	44.04	4.78	
Total Number of Stops - Car AM	14034.49	964.23	
Total Number of Stops - Truck & Semi AM	770.68	99.28	
Total Travel Time - All	646.58	23.93	h
Total Travel Time - Bus DPTI	1.47	0.13	h
Total Travel Time - Car AM	606.99	21.61	h
Total Travel Time - Truck & Semi AM	38.11	2.37	h
Total Travelled Distance - All	14127.44	175.7	km
Total Travelled Distance - Bus DPTI	26.81	0.94	km
Total Travelled Distance - Car AM	13159.21	166	km
Total Travelled Distance - Truck & Semi AM	941.42	38.15	km

2026 AM - General Statistics

Travel Time - All	166.64	5.06 sec/km
Travel Time - Bus DPTI	199	11.49 sec/km
Travel Time - Car AM	167.85	4.73 sec/km
Travel Time - Truck & Semi AM	147.7	9.93 sec/km
Vehicles Inside - All	531.2	35.14 veh
Vehicles Inside - Bus DPTI	1.4	0.55 veh
Vehicles Inside - Car AM	502.8	30.29 veh
Vehicles Inside - Truck & Semi AM	27	6.48 veh
Vehicles Lost Inside - All	0.2	0.45 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car AM	0.2	0.45 veh
Vehicles Lost Inside - Truck & Semi AM	0	0 veh
Vehicles Lost Outside - All	0.8	0.45 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car AM	0.8	0.45 veh
Vehicles Lost Outside - Truck & Semi AM	0	0 veh
Vehicles Outside - All	8749.6	102.12 veh
Vehicles Outside - Bus DPTI	15.4	0.55 veh
Vehicles Outside - Car AM	8184.4	97.96 veh
Vehicles Outside - Truck & Semi AM	549.8	20.93 veh
Vehicles Waiting to Enter - All	183.4	43.15 veh
Vehicles Waiting to Enter - Bus DPTI	0.2	0.45 veh
Vehicles Waiting to Enter - Car AM	172.4	39.24 veh
Vehicles Waiting to Enter - Truck & Semi AM	10.8	4.76 veh
Waiting Time Virtual Queue - All	13.49	8.1 sec
Waiting Time Virtual Queue - Bus DPTI	5.96	10.77 sec
Waiting Time Virtual Queue - Car AM	13.85	8.38 sec
Waiting Time Virtual Queue - Truck & Semi AM	8.41	4.67 sec

2026 AM - General Statistics

SC0B

Time Series	Value	Standard Deviation	Units
Delay Time - All	86.34	5.85	sec/km
Delay Time - Bus DPTI	77.22	5.5	sec/km
Delay Time - Car AM	86.98	5.99	sec/km
Delay Time - Truck & Semi AM	76.96	6.09	sec/km
Density - All	22.39	0.94	veh/km
Density - Bus DPTI	0.05	0	veh/km
Density - Car AM	20.94	0.85	veh/km
Density - Truck & Semi AM	1.4	0.09	veh/km
Flow - All	5989.07	52.96	veh/h
Flow - Bus DPTI	10.93	0.37	veh/h
Flow - Car AM	5608.13	56.69	veh/h
Flow - Truck & Semi AM	370	10.52	veh/h
Harmonic Speed - All	23.89	0	km/h
Harmonic Speed - Bus DPTI	19.18	0	km/h
Harmonic Speed - Car AM	23.83	0	km/h
Harmonic Speed - Truck & Semi AM	25.14	0	km/h
Input Count - All	9117.8	N/A	veh
Input Count - Bus DPTI	17	N/A	veh
Input Count - Car AM	8536.6	N/A	veh
Input Count - Truck & Semi AM	564.2	N/A	veh
Input Flow - All	6078.53	17.75	veh/h
Input Flow - Bus DPTI	11.33	0	veh/h
Input Flow - Car AM	5691.07	23.14	veh/h
Input Flow - Truck & Semi AM	376.13	13.18	veh/h
Max. Virtual Queue - All	96	57.65	veh
Max. Virtual Queue - Bus DPTI	1	0.71	veh
Max. Virtual Queue - Car AM	90.2	55.67	veh
Max. Virtual Queue - Truck & Semi AM	10	5.79	veh
Mean Queue - All	180.72	14.56	veh
Mean Queue - Bus DPTI	0.41	0.05	veh
Mean Queue - Car AM	169.94	13.46	veh
Mean Queue - Truck & Semi AM	10.37	1.19	veh
Mean Virtual Queue - All	16	13.22	veh
Mean Virtual Queue - Bus DPTI	0.02	0.02	veh
Mean Virtual Queue - Car AM	14.83	12.26	veh
Mean Virtual Queue - Truck & Semi AM	1.15	0.93	veh
Missed Turns - All	19.8	2.59	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	18.2	2.28	
Missed Turns - Truck & Semi AM	1.6	1.14	
Number of Lane Changes - All	1063.51	23.42	#/km
Number of Lane Changes - Bus DPTI	2.06	0.16	#/km
Number of Lane Changes - Car AM	1017.13	22.18	#/km
Number of Lane Changes - Truck & Semi AM	44.32	2.4	#/km
Number of Stops - All	0.09	0	#/veh/km
Number of Stops - Bus DPTI	0.15	0.01	#/veh/km
Number of Stops - Car AM	0.09	0	#/veh/km
Number of Stops - Truck & Semi AM	0.08	0.01	#/veh/km
Speed - All	28.03	0.55	km/h
Speed - Bus DPTI	20.57	0.84	km/h
Speed - Car AM	27.98	0.52	km/h
Speed - Truck & Semi AM	29	1.04	km/h
Stop Time - All	70.43	4.58	sec/km
Stop Time - Bus DPTI	67.06	5.68	sec/km
Stop Time - Car AM	71	4.7	sec/km
Stop Time - Truck & Semi AM	61.99	4.9	sec/km
Total Number of Lane Changes - All	19325	425.64	
Total Number of Lane Changes - Bus DPTI	37.4	2.97	
Total Number of Lane Changes - Car AM	18482.2	403.02	
Total Number of Lane Changes - Truck & Semi AM	805.4	43.55	
Total Number of Stops - All	14470.42	717.66	
Total Number of Stops - Bus DPTI	45.45	2.63	
Total Number of Stops - Car AM	13641.46	654.33	
Total Number of Stops - Truck & Semi AM	783.51	67.18	
Total Travel Time - All	601.47	24.05	h
Total Travel Time - Bus DPTI	1.48	0.08	h
Total Travel Time - Car AM	562.52	21.88	h
Total Travel Time - Truck & Semi AM	37.47	2.24	h
Total Travelled Distance - All	14498.63	140.17	km
Total Travelled Distance - Bus DPTI	28.43	0.97	km
Total Travelled Distance - Car AM	13521.19	147.69	km
Total Travelled Distance - Truck & Semi AM	949.01	28.83	km

2026 AM - General Statistics

Travel Time - All	150.67	5.91 sec/km
Travel Time - Bus DPTI	187.68	9.55 sec/km
Travel Time - Car AM	151.09	6.03 sec/km
Travel Time - Truck & Semi AM	143.2	6.24 sec/km
Vehicles Inside - All	393	44.28 veh
Vehicles Inside - Bus DPTI	0.8	0.45 veh
Vehicles Inside - Car AM	366.2	37.13 veh
Vehicles Inside - Truck & Semi AM	26	7.14 veh
Vehicles Lost Inside - All	0	0 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car AM	0	0 veh
Vehicles Lost Inside - Truck & Semi AM	0	0 veh
Vehicles Lost Outside - All	1.8	0.45 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car AM	1.6	0.55 veh
Vehicles Lost Outside - Truck & Semi AM	0.2	0.45 veh
Vehicles Outside - All	8983.6	79.44 veh
Vehicles Outside - Bus DPTI	16.4	0.55 veh
Vehicles Outside - Car AM	8412.2	85.04 veh
Vehicles Outside - Truck & Semi AM	555	15.78 veh
Vehicles Waiting to Enter - All	82.6	45.88 veh
Vehicles Waiting to Enter - Bus DPTI	0	0 veh
Vehicles Waiting to Enter - Car AM	76.2	43.29 veh
Vehicles Waiting to Enter - Truck & Semi AM	6.4	2.7 veh
Waiting Time Virtual Queue - All	5.7	4.29 sec
Waiting Time Virtual Queue - Bus DPTI	7.47	6.16 sec
Waiting Time Virtual Queue - Car AM	5.69	4.3 sec
Waiting Time Virtual Queue - Truck & Semi AM	5.75	4.21 sec

2026 AM - General Statistics

SC0B - Alternate

Time Series	Value	Standard Deviation	Units
Delay Time - All	77.59	3.13	sec/km
Delay Time - Bus DPTI	71.74	4.6	sec/km
Delay Time - Car AM	77.83	3.01	sec/km
Delay Time - Truck & Semi AM	74.12	5.98	sec/km
Density - All	21.15	0.42	veh/km
Density - Bus DPTI	0.05	0	veh/km
Density - Car AM	19.72	0.38	veh/km
Density - Truck & Semi AM	1.38	0.06	veh/km
Flow - All	5971.73	49.55	veh/h
Flow - Bus DPTI	10.93	0.37	veh/h
Flow - Car AM	5591.47	45.15	veh/h
Flow - Truck & Semi AM	369.33	13.53	veh/h
Harmonic Speed - All	25.36	0	km/h
Harmonic Speed - Bus DPTI	19.65	0	km/h
Harmonic Speed - Car AM	25.36	0	km/h
Harmonic Speed - Truck & Semi AM	25.65	0	km/h
Input Count - All	9098.4	N/A	veh
Input Count - Bus DPTI	17	N/A	veh
Input Count - Car AM	8517.8	N/A	veh
Input Count - Truck & Semi AM	563.6	N/A	veh
Input Flow - All	6065.6	29.9	veh/h
Input Flow - Bus DPTI	11.33	0	veh/h
Input Flow - Car AM	5678.53	27.23	veh/h
Input Flow - Truck & Semi AM	375.73	13.39	veh/h
Max. Virtual Queue - All	112.4	48.95	veh
Max. Virtual Queue - Bus DPTI	1	0.71	veh
Max. Virtual Queue - Car AM	105.2	46.68	veh
Max. Virtual Queue - Truck & Semi AM	11	4.3	veh
Mean Queue - All	161.58	6.84	veh
Mean Queue - Bus DPTI	0.39	0.03	veh
Mean Queue - Car AM	151.14	6.36	veh
Mean Queue - Truck & Semi AM	10.05	0.79	veh
Mean Virtual Queue - All	18.33	13.57	veh
Mean Virtual Queue - Bus DPTI	0.02	0.03	veh
Mean Virtual Queue - Car AM	17.01	12.57	veh
Mean Virtual Queue - Truck & Semi AM	1.3	0.98	veh
Missed Turns - All	13.4	6.77	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	12.8	6.98	
Missed Turns - Truck & Semi AM	0.6	0.89	
Number of Lane Changes - All	1057.5	13.15	#/km
Number of Lane Changes - Bus DPTI	2.09	0.26	#/km
Number of Lane Changes - Car AM	1010.94	12.76	#/km
Number of Lane Changes - Truck & Semi AM	44.47	2.61	#/km
Number of Stops - All	0.08	0	#/veh/km
Number of Stops - Bus DPTI	0.14	0	#/veh/km
Number of Stops - Car AM	0.08	0	#/veh/km
Number of Stops - Truck & Semi AM	0.08	0.01	#/veh/km
Speed - All	28.88	0.56	km/h
Speed - Bus DPTI	20.96	0.87	km/h
Speed - Car AM	28.88	0.54	km/h
Speed - Truck & Semi AM	29.08	0.95	km/h
Stop Time - All	62.85	2.58	sec/km
Stop Time - Bus DPTI	61.94	5.62	sec/km
Stop Time - Car AM	63.09	2.52	sec/km
Stop Time - Truck & Semi AM	59.27	4.85	sec/km
Total Number of Lane Changes - All	19217.4	238.93	
Total Number of Lane Changes - Bus DPTI	38	4.74	
Total Number of Lane Changes - Car AM	18371.2	231.79	
Total Number of Lane Changes - Truck & Semi AM	808.2	47.36	
Total Number of Stops - All	13374.42	744.94	
Total Number of Stops - Bus DPTI	43.18	2.23	
Total Number of Stops - Car AM	12564.88	668.14	
Total Number of Stops - Truck & Semi AM	766.37	78.61	
Total Travel Time - All	566.84	14.71	h
Total Travel Time - Bus DPTI	1.45	0.08	h
Total Travel Time - Car AM	528.56	13.35	h
Total Travel Time - Truck & Semi AM	36.82	1.73	h
Total Travelled Distance - All	14450.2	132.14	km
Total Travelled Distance - Bus DPTI	28.43	0.97	km
Total Travelled Distance - Car AM	13475.28	119.74	km
Total Travelled Distance - Truck & Semi AM	946.49	35.62	km

2026 AM - General Statistics

Travel Time - All	141.93	3.18 sec/km
Travel Time - Bus DPTI	183.24	8.41 sec/km
Travel Time - Car AM	141.95	3.06 sec/km
Travel Time - Truck & Semi AM	140.36	6.07 sec/km
Vehicles Inside - All	398.8	37.86 veh
Vehicles Inside - Bus DPTI	0.8	0.45 veh
Vehicles Inside - Car AM	371.6	34.14 veh
Vehicles Inside - Truck & Semi AM	26.4	5.13 veh
Vehicles Lost Inside - All	0	0 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car AM	0	0 veh
Vehicles Lost Inside - Truck & Semi AM	0	0 veh
Vehicles Lost Outside - All	0	0 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car AM	0	0 veh
Vehicles Lost Outside - Truck & Semi AM	0	0 veh
Vehicles Outside - All	8957.6	74.32 veh
Vehicles Outside - Bus DPTI	16.4	0.55 veh
Vehicles Outside - Car AM	8387.2	67.72 veh
Vehicles Outside - Truck & Semi AM	554	20.3 veh
Vehicles Waiting to Enter - All	102	41.63 veh
Vehicles Waiting to Enter - Bus DPTI	0	0 veh
Vehicles Waiting to Enter - Car AM	95	41.02 veh
Vehicles Waiting to Enter - Truck & Semi AM	7	1.22 veh
Waiting Time Virtual Queue - All	6.19	4.95 sec
Waiting Time Virtual Queue - Bus DPTI	5.45	7.56 sec
Waiting Time Virtual Queue - Car AM	6.14	4.85 sec
Waiting Time Virtual Queue - Truck & Semi AM	6.86	6.55 sec

2026 AM - General Statistics

SC4B

Time Series	Value	Standard Deviation	Units
Delay Time - All	114.73	6.58	sec/km
Delay Time - Bus DPTI	115.26	12.5	sec/km
Delay Time - Car AM	115.82	6.47	sec/km
Delay Time - Truck & Semi AM	89.65	9.73	sec/km
Delay Time - Car AM - copy	135.54	16.96	sec/km
Density - All	26.87	0.89	veh/km
Density - Bus DPTI	0.07	0	veh/km
Density - Car AM	24.8	0.79	veh/km
Density - Truck & Semi AM	1.54	0.08	veh/km
Density - Car AM - copy	0.48	0.07	veh/km
Flow - All	5895.47	49.79	veh/h
Flow - Bus DPTI	10.53	0.56	veh/h
Flow - Car AM	5368.27	59.9	veh/h
Flow - Truck & Semi AM	361.73	12.31	veh/h
Flow - Car AM - copy	154.93	17.17	veh/h
Harmonic Speed - All	20.02	0	km/h
Harmonic Speed - Bus DPTI	15.77	0	km/h
Harmonic Speed - Car AM	19.94	0	km/h
Harmonic Speed - Truck & Semi AM	23.06	0	km/h
Harmonic Speed - Car AM - copy	17.22	0	km/h
Input Count - All	9178.8	N/A	veh
Input Count - Bus DPTI	16.2	N/A	veh
Input Count - Car AM	8372.2	N/A	veh
Input Count - Truck & Semi AM	557	N/A	veh
Input Count - Car AM - copy	233.4	N/A	veh
Input Flow - All	6119.2	34.01	veh/h
Input Flow - Bus DPTI	10.8	0.3	veh/h
Input Flow - Car AM	5581.47	49.58	veh/h
Input Flow - Truck & Semi AM	371.33	11.67	veh/h
Input Flow - Car AM - copy	155.6	17.23	veh/h
Max. Virtual Queue - All	234.8	78.2	veh
Max. Virtual Queue - Bus DPTI	1.2	0.45	veh
Max. Virtual Queue - Car AM	222.6	73.1	veh
Max. Virtual Queue - Truck & Semi AM	15.8	5.81	veh
Max. Virtual Queue - Car AM - copy	3.6	2.51	veh
Mean Queue - All	250.97	13.25	veh
Mean Queue - Bus DPTI	0.62	0.06	veh
Mean Queue - Car AM	232.98	11.62	veh
Mean Queue - Truck & Semi AM	12.58	1.32	veh
Mean Queue - Car AM - copy	4.79	0.88	veh
Mean Virtual Queue - All	53.33	29.24	veh
Mean Virtual Queue - Bus DPTI	0.08	0.04	veh
Mean Virtual Queue - Car AM	50.37	27.29	veh
Mean Virtual Queue - Truck & Semi AM	2.44	1.5	veh
Mean Virtual Queue - Car AM - copy	0.44	0.55	veh
Missed Turns - All	17.6	6.5	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	16.4	6.8	
Missed Turns - Truck & Semi AM	0.6	0.89	
Missed Turns - Car AM - copy	0.6	0.89	
Number of Lane Changes - All	934.43	15.48	#/km
Number of Lane Changes - Bus DPTI	1.15	0.23	#/km
Number of Lane Changes - Car AM	875.27	16.58	#/km
Number of Lane Changes - Truck & Semi AM	40.9	2.4	#/km
Number of Lane Changes - Car AM - copy	17.11	2.19	#/km
Number of Stops - All	0.1	0.01	#/veh/km
Number of Stops - Bus DPTI	0.17	0.01	#/veh/km
Number of Stops - Car AM	0.1	0.01	#/veh/km
Number of Stops - Truck & Semi AM	0.08	0.01	#/veh/km
Number of Stops - Car AM - copy	0.12	0.01	#/veh/km
Speed - All	25.98	0.99	km/h
Speed - Bus DPTI	18.78	0.57	km/h
Speed - Car AM	25.9	0.97	km/h
Speed - Truck & Semi AM	28	1.48	km/h
Speed - Car AM - copy	24.49	0.8	km/h
Stop Time - All	95.48	5.33	sec/km
Stop Time - Bus DPTI	102.4	10.64	sec/km
Stop Time - Car AM	96.38	5.21	sec/km
Stop Time - Truck & Semi AM	73.18	7.73	sec/km
Stop Time - Car AM - copy	115.72	16.66	sec/km
Total Number of Lane Changes - All	16897	280	
Total Number of Lane Changes - Bus DPTI	20.8	4.09	

2026 AM - General Statistics

Total Number of Lane Changes - Car AM	15827.2	299.75	
Total Number of Lane Changes - Truck & Semi AM	739.6	43.45	
Total Number of Lane Changes - Car AM - copy	309.4	39.65	
Total Number of Stops - All	16445.94	1023.6	
Total Number of Stops - Bus DPTI	49.01	3.7	
Total Number of Stops - Car AM	15044.74	889.47	
Total Number of Stops - Truck & Semi AM	829.07	89.46	
Total Number of Stops - Car AM - copy	523.11	74.07	
Total Travel Time - All	695.05	24.37	h
Total Travel Time - Bus DPTI	1.73	0.17	h
Total Travel Time - Car AM	640.6	21.63	h
Total Travel Time - Truck & Semi AM	39.95	2.08	h
Total Travel Time - Car AM - copy	12.78	1.94	h
Total Travelled Distance - All	14108.75	150.43	km
Total Travelled Distance - Bus DPTI	27.46	1.39	km
Total Travelled Distance - Car AM	12947.38	158.29	km
Total Travelled Distance - Truck & Semi AM	927.71	34.02	km
Total Travelled Distance - Car AM - copy	206.19	19.09	km
Travel Time - All	179.86	6.61	sec/km
Travel Time - Bus DPTI	228.31	10.45	sec/km
Travel Time - Car AM	180.53	6.47	sec/km
Travel Time - Truck & Semi AM	156.11	9.81	sec/km
Travel Time - Car AM - copy	209.01	16.67	sec/km
Vehicles Inside - All	594	60.91	veh
Vehicles Inside - Bus DPTI	1	0.71	veh
Vehicles Inside - Car AM	561.2	57.57	veh
Vehicles Inside - Truck & Semi AM	30.8	5.97	veh
Vehicles Inside - Car AM - copy	1	1.22	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Inside - Car AM - copy	0	0	veh
Vehicles Lost Outside - All	4	3.32	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	3.4	2.61	veh
Vehicles Lost Outside - Truck & Semi AM	0.2	0.45	veh
Vehicles Lost Outside - Car AM - copy	0.4	0.55	veh
Vehicles Outside - All	8843.2	74.69	veh
Vehicles Outside - Bus DPTI	15.8	0.84	veh
Vehicles Outside - Car AM	8052.4	89.85	veh
Vehicles Outside - Truck & Semi AM	542.6	18.46	veh
Vehicles Outside - Car AM - copy	232.4	25.75	veh
Vehicles Waiting to Enter - All	218.2	72.95	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	204.6	67.15	veh
Vehicles Waiting to Enter - Truck & Semi AM	13.6	6.5	veh
Vehicles Waiting to Enter - Car AM - copy	0	0	veh
Waiting Time Virtual Queue - All	16.58	9.74	sec
Waiting Time Virtual Queue - Bus DPTI	13.1	10.69	sec
Waiting Time Virtual Queue - Car AM	17.2	10.2	sec
Waiting Time Virtual Queue - Truck & Semi AM	11.03	5.81	sec
Waiting Time Virtual Queue - Car AM - copy	8.17	8.42	sec

2026 AM - General Statistics

SC5

Time Series	Value	Standard Deviation	Units
Delay Time - All	102.34	7.73	sec/km
Delay Time - Bus DPTI	113.75	11.23	sec/km
Delay Time - Car AM	102.68	7.77	sec/km
Delay Time - Truck & Semi AM	88.56	7.95	sec/km
Delay Time - Car AM - copy	122.13	16.48	sec/km
Density - All	24.63	1.01	veh/km
Density - Bus DPTI	0.06	0.01	veh/km
Density - Car AM	22.64	0.93	veh/km
Density - Truck & Semi AM	1.5	0.06	veh/km
Density - Car AM - copy	0.43	0.06	veh/km
Flow - All	6018	15.72	veh/h
Flow - Bus DPTI	10.67	0	veh/h
Flow - Car AM	5486	28.45	veh/h
Flow - Truck & Semi AM	365.73	13.54	veh/h
Flow - Car AM - copy	155.6	17.23	veh/h
Harmonic Speed - All	21.5	0	km/h
Harmonic Speed - Bus DPTI	16.32	0	km/h
Harmonic Speed - Car AM	21.51	0	km/h
Harmonic Speed - Truck & Semi AM	23.23	0	km/h
Harmonic Speed - Car AM - copy	18.43	0	km/h
Input Count - All	9238.6	N/A	veh
Input Count - Bus DPTI	17	N/A	veh
Input Count - Car AM	8428.8	N/A	veh
Input Count - Truck & Semi AM	559.4	N/A	veh
Input Count - Car AM - copy	233.4	N/A	veh
Input Flow - All	6159.07	44.63	veh/h
Input Flow - Bus DPTI	11.33	0	veh/h
Input Flow - Car AM	5619.2	46.5	veh/h
Input Flow - Truck & Semi AM	372.93	14.34	veh/h
Input Flow - Car AM - copy	155.6	17.23	veh/h
Max. Virtual Queue - All	168.6	61.49	veh
Max. Virtual Queue - Bus DPTI	0.8	0.45	veh
Max. Virtual Queue - Car AM	157.8	57.13	veh
Max. Virtual Queue - Truck & Semi AM	14	4.47	veh
Max. Virtual Queue - Car AM - copy	2.2	0.84	veh
Mean Queue - All	218.09	16.34	veh
Mean Queue - Bus DPTI	0.58	0.09	veh
Mean Queue - Car AM	201.2	15.08	veh
Mean Queue - Truck & Semi AM	12.15	1.01	veh
Mean Queue - Car AM - copy	4.16	0.75	veh
Mean Virtual Queue - All	32.5	22.39	veh
Mean Virtual Queue - Bus DPTI	0.03	0.03	veh
Mean Virtual Queue - Car AM	30.06	20.57	veh
Mean Virtual Queue - Truck & Semi AM	2.28	1.67	veh
Mean Virtual Queue - Car AM - copy	0.13	0.13	veh
Missed Turns - All	18.6	5.37	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	16.2	4.55	
Missed Turns - Truck & Semi AM	2	1.22	
Missed Turns - Car AM - copy	0.4	0.55	
Number of Lane Changes - All	1061.07	14.94	#/km
Number of Lane Changes - Bus DPTI	2.06	0.11	#/km
Number of Lane Changes - Car AM	995.7	17.7	#/km
Number of Lane Changes - Truck & Semi AM	43.81	2.87	#/km
Number of Lane Changes - Car AM - copy	19.51	2.76	#/km
Number of Stops - All	0.1	0	#/veh/km
Number of Stops - Bus DPTI	0.16	0.01	#/veh/km
Number of Stops - Car AM	0.1	0	#/veh/km
Number of Stops - Truck & Semi AM	0.09	0.01	#/veh/km
Number of Stops - Car AM - copy	0.12	0.01	#/veh/km
Speed - All	25.76	0.64	km/h
Speed - Bus DPTI	18.45	0.93	km/h
Speed - Car AM	25.72	0.64	km/h
Speed - Truck & Semi AM	27.19	1.07	km/h
Speed - Car AM - copy	24.32	0.48	km/h
Stop Time - All	84.99	6.87	sec/km
Stop Time - Bus DPTI	101.46	10.82	sec/km
Stop Time - Car AM	85.26	6.89	sec/km
Stop Time - Truck & Semi AM	72.19	6.97	sec/km
Stop Time - Car AM - copy	104.2	15.79	sec/km
Total Number of Lane Changes - All	19406.8	273.29	
Total Number of Lane Changes - Bus DPTI	37.6	2.07	

2026 AM - General Statistics

Total Number of Lane Changes - Car AM	18211.2	323.68	
Total Number of Lane Changes - Truck & Semi AM	801.2	52.49	
Total Number of Lane Changes - Car AM - copy	356.8	50.44	
Total Number of Stops - All	16167.93	793.22	
Total Number of Stops - Bus DPTI	48.18	2.29	
Total Number of Stops - Car AM	14768.12	694.13	
Total Number of Stops - Truck & Semi AM	853.12	62.28	
Total Number of Stops - Car AM - copy	498.51	72.66	
Total Travel Time - All	659.91	27	h
Total Travel Time - Bus DPTI	1.7	0.1	h
Total Travel Time - Car AM	606.22	24.69	h
Total Travel Time - Truck & Semi AM	40.19	1.67	h
Total Travel Time - Car AM - copy	11.81	1.73	h
Total Travelled Distance - All	14394.95	81.41	km
Total Travelled Distance - Bus DPTI	27.72	0.01	km
Total Travelled Distance - Car AM	13221.18	86.78	km
Total Travelled Distance - Truck & Semi AM	938.48	37.59	km
Total Travelled Distance - Car AM - copy	207.56	19.7	km
Travel Time - All	167.41	7.74	sec/km
Travel Time - Bus DPTI	220.65	12.25	sec/km
Travel Time - Car AM	167.34	7.76	sec/km
Travel Time - Truck & Semi AM	154.94	8.02	sec/km
Travel Time - Car AM - copy	195.32	16.5	sec/km
Vehicles Inside - All	477.6	48.8	veh
Vehicles Inside - Bus DPTI	1	0	veh
Vehicles Inside - Car AM	448.8	47.5	veh
Vehicles Inside - Truck & Semi AM	27.8	4.97	veh
Vehicles Inside - Car AM - copy	0	0	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Inside - Car AM - copy	0	0	veh
Vehicles Lost Outside - All	5.2	3.27	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	4.8	3.27	veh
Vehicles Lost Outside - Truck & Semi AM	0	0	veh
Vehicles Lost Outside - Car AM - copy	0.4	0.55	veh
Vehicles Outside - All	9027	23.58	veh
Vehicles Outside - Bus DPTI	16	0	veh
Vehicles Outside - Car AM	8229	42.68	veh
Vehicles Outside - Truck & Semi AM	548.6	20.32	veh
Vehicles Outside - Car AM - copy	233.4	25.85	veh
Vehicles Waiting to Enter - All	159.2	59.76	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	148	55.96	veh
Vehicles Waiting to Enter - Truck & Semi AM	11.2	3.9	veh
Vehicles Waiting to Enter - Car AM - copy	0	0	veh
Waiting Time Virtual Queue - All	10.61	7.66	sec
Waiting Time Virtual Queue - Bus DPTI	9.91	10.05	sec
Waiting Time Virtual Queue - Car AM	10.77	7.73	sec
Waiting Time Virtual Queue - Truck & Semi AM	11.4	9.48	sec
Waiting Time Virtual Queue - Car AM - copy	3.09	2.37	sec

2026 AM - General Statistics

SC5 - Alternate

Time Series	Value	Standard Deviation	Units
Delay Time - All	92.3	2.96	sec/km
Delay Time - Bus DPTI	105.03	8.25	sec/km
Delay Time - Car AM	92.28	2.93	sec/km
Delay Time - Truck & Semi AM	84.24	5.36	sec/km
Delay Time - Car AM - copy	111.17	17.3	sec/km
Density - All	23.3	0.38	veh/km
Density - Bus DPTI	0.06	0	veh/km
Density - Car AM	21.37	0.4	veh/km
Density - Truck & Semi AM	1.47	0.06	veh/km
Density - Car AM - copy	0.41	0.05	veh/km
Flow - All	6053.73	34.09	veh/h
Flow - Bus DPTI	10.8	0.3	veh/h
Flow - Car AM	5520	33.29	veh/h
Flow - Truck & Semi AM	367.47	12.22	veh/h
Flow - Car AM - copy	155.47	17.22	veh/h
Harmonic Speed - All	22.88	0	km/h
Harmonic Speed - Bus DPTI	17.02	0	km/h
Harmonic Speed - Car AM	22.94	0	km/h
Harmonic Speed - Truck & Semi AM	23.9	0	km/h
Harmonic Speed - Car AM - copy	19.53	0	km/h
Input Count - All	9266.4	N/A	veh
Input Count - Bus DPTI	17	N/A	veh
Input Count - Car AM	8454.8	N/A	veh
Input Count - Truck & Semi AM	561.2	N/A	veh
Input Count - Car AM - copy	233.4	N/A	veh
Input Flow - All	6177.6	33.64	veh/h
Input Flow - Bus DPTI	11.33	0	veh/h
Input Flow - Car AM	5636.53	39.81	veh/h
Input Flow - Truck & Semi AM	374.13	12.16	veh/h
Input Flow - Car AM - copy	155.6	17.23	veh/h
Max. Virtual Queue - All	145.2	52.03	veh
Max. Virtual Queue - Bus DPTI	0.8	0.45	veh
Max. Virtual Queue - Car AM	136.4	49.32	veh
Max. Virtual Queue - Truck & Semi AM	13.6	4.04	veh
Max. Virtual Queue - Car AM - copy	1.8	0.84	veh
Mean Queue - All	196.08	5.29	veh
Mean Queue - Bus DPTI	0.53	0.05	veh
Mean Queue - Car AM	180.22	5.32	veh
Mean Queue - Truck & Semi AM	11.53	0.75	veh
Mean Queue - Car AM - copy	3.81	0.67	veh
Mean Virtual Queue - All	26.44	16.46	veh
Mean Virtual Queue - Bus DPTI	0.02	0.03	veh
Mean Virtual Queue - Car AM	24.44	15.16	veh
Mean Virtual Queue - Truck & Semi AM	1.89	1.19	veh
Mean Virtual Queue - Car AM - copy	0.08	0.09	veh
Missed Turns - All	15.8	2.95	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	13.6	2.61	
Missed Turns - Truck & Semi AM	1.8	2.05	
Missed Turns - Car AM - copy	0.4	0.89	
Number of Lane Changes - All	1074.24	18.06	#/km
Number of Lane Changes - Bus DPTI	2.02	0.27	#/km
Number of Lane Changes - Car AM	1008.13	18.53	#/km
Number of Lane Changes - Truck & Semi AM	44.1	2.55	#/km
Number of Lane Changes - Car AM - copy	19.99	3.14	#/km
Number of Stops - All	0.09	0	#/veh/km
Number of Stops - Bus DPTI	0.16	0	#/veh/km
Number of Stops - Car AM	0.09	0	#/veh/km
Number of Stops - Truck & Semi AM	0.08	0.01	#/veh/km
Number of Stops - Car AM - copy	0.11	0.01	#/veh/km
Speed - All	26.63	0.44	km/h
Speed - Bus DPTI	18.88	0.92	km/h
Speed - Car AM	26.64	0.43	km/h
Speed - Truck & Semi AM	27.43	1.08	km/h
Speed - Car AM - copy	25	0.47	km/h
Stop Time - All	76.14	3.27	sec/km
Stop Time - Bus DPTI	93.25	8.28	sec/km
Stop Time - Car AM	76.13	3.22	sec/km
Stop Time - Truck & Semi AM	68.14	4.1	sec/km
Stop Time - Car AM - copy	94.41	17.49	sec/km
Total Number of Lane Changes - All	19649.2	330.34	
Total Number of Lane Changes - Bus DPTI	37	4.95	

2026 AM - General Statistics

Total Number of Lane Changes - Car AM	18440	338.85	
Total Number of Lane Changes - Truck & Semi AM	806.6	46.61	
Total Number of Lane Changes - Car AM - copy	365.6	57.36	
Total Number of Stops - All	15174.17	446.24	
Total Number of Stops - Bus DPTI	46.58	1.96	
Total Number of Stops - Car AM	13836.87	443.51	
Total Number of Stops - Truck & Semi AM	830.09	55.98	
Total Number of Stops - Car AM - copy	460.63	47.82	
Total Travel Time - All	625.63	9.01	h
Total Travel Time - Bus DPTI	1.65	0.12	h
Total Travel Time - Car AM	573.49	9.56	h
Total Travel Time - Truck & Semi AM	39.41	1.59	h
Total Travel Time - Car AM - copy	11.09	1.23	h
Total Travelled Distance - All	14482.56	95.97	km
Total Travelled Distance - Bus DPTI	28.07	0.78	km
Total Travelled Distance - Car AM	13304.3	102.77	km
Total Travelled Distance - Truck & Semi AM	942.99	33.9	km
Total Travelled Distance - Car AM - copy	207.2	19.62	km
Travel Time - All	157.36	2.88	sec/km
Travel Time - Bus DPTI	211.56	8.76	sec/km
Travel Time - Car AM	156.94	2.84	sec/km
Travel Time - Truck & Semi AM	150.63	5.48	sec/km
Travel Time - Car AM - copy	184.37	17.03	sec/km
Vehicles Inside - All	447.6	45.94	veh
Vehicles Inside - Bus DPTI	0.8	0.45	veh
Vehicles Inside - Car AM	420	46.54	veh
Vehicles Inside - Truck & Semi AM	26.6	3.78	veh
Vehicles Inside - Car AM - copy	0.2	0.45	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Inside - Car AM - copy	0	0	veh
Vehicles Lost Outside - All	4.4	4.51	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	4	3.67	veh
Vehicles Lost Outside - Truck & Semi AM	0	0	veh
Vehicles Lost Outside - Car AM - copy	0.4	0.89	veh
Vehicles Outside - All	9080.6	51.13	veh
Vehicles Outside - Bus DPTI	16.2	0.45	veh
Vehicles Outside - Car AM	8280	49.94	veh
Vehicles Outside - Truck & Semi AM	551.2	18.34	veh
Vehicles Outside - Car AM - copy	233.2	25.83	veh
Vehicles Waiting to Enter - All	131.4	44.05	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	122	42.16	veh
Vehicles Waiting to Enter - Truck & Semi AM	9.4	2.88	veh
Vehicles Waiting to Enter - Car AM - copy	0	0	veh
Waiting Time Virtual Queue - All	8.91	5.99	sec
Waiting Time Virtual Queue - Bus DPTI	7.8	9.26	sec
Waiting Time Virtual Queue - Car AM	9.04	6.07	sec
Waiting Time Virtual Queue - Truck & Semi AM	9.97	7.1	sec
Waiting Time Virtual Queue - Car AM - copy	1.92	1.63	sec

2026 PM - General Statistics

Base

Time Series	Value	Standard Deviation	Units
Delay Time - All	74.22	11.55	sec/km
Delay Time - Bus DPTI	67.97	16.96	sec/km
Delay Time - Car PM	74.45	11.63	sec/km
Delay Time - Truck & Semi PM	65.59	12.05	sec/km
Density - All	22.34	2.33	veh/km
Density - Bus DPTI	0.14	0.01	veh/km
Density - Car PM	21.61	2.25	veh/km
Density - Truck & Semi PM	0.59	0.11	veh/km
Flow - All	6945.6	75.61	veh/h
Flow - Bus DPTI	27.73	0.76	veh/h
Flow - Car PM	6756.27	68.94	veh/h
Flow - Truck & Semi PM	161.6	12.62	veh/h
Harmonic Speed - All	25.87	0	km/h
Harmonic Speed - Bus DPTI	19.26	0	km/h
Harmonic Speed - Car PM	25.87	0	km/h
Harmonic Speed - Truck & Semi PM	27.42	0	km/h
Input Count - All	10331.2	N/A	veh
Input Count - Bus DPTI	40.8	N/A	veh
Input Count - Car PM	10049.2	N/A	veh
Input Count - Truck & Semi PM	241.2	N/A	veh
Input Flow - All	6887.47	88.87	veh/h
Input Flow - Bus DPTI	27.2	0.99	veh/h
Input Flow - Car PM	6699.47	81.24	veh/h
Input Flow - Truck & Semi PM	160.8	13.39	veh/h
Max. Virtual Queue - All	10.8	8.07	veh
Max. Virtual Queue - Bus DPTI	1.8	0.84	veh
Max. Virtual Queue - Car PM	10.2	7.26	veh
Max. Virtual Queue - Truck & Semi PM	1.8	0.45	veh
Mean Queue - All	160.96	31.39	veh
Mean Queue - Bus DPTI	1.08	0.17	veh
Mean Queue - Car PM	156.11	30.47	veh
Mean Queue - Truck & Semi PM	3.78	1.14	veh
Mean Virtual Queue - All	0.47	0.39	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car PM	0.46	0.38	veh
Mean Virtual Queue - Truck & Semi PM	0	0.01	veh
Missed Turns - All	2.2	0.84	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car PM	2.2	0.84	
Missed Turns - Truck & Semi PM	0	0	
Number of Lane Changes - All	1149.39	14.99	#/km
Number of Lane Changes - Bus DPTI	1.88	0.25	#/km
Number of Lane Changes - Car PM	1130.72	14.96	#/km
Number of Lane Changes - Truck & Semi PM	16.79	0.38	#/km
Number of Stops - All	0.08	0.01	#/veh/km
Number of Stops - Bus DPTI	0.15	0.01	#/veh/km
Number of Stops - Car PM	0.08	0.01	#/veh/km
Number of Stops - Truck & Semi PM	0.07	0.01	#/veh/km
Speed - All	29.5	1.76	km/h
Speed - Bus DPTI	20.78	1.21	km/h
Speed - Car PM	29.52	1.77	km/h
Speed - Truck & Semi PM	30.25	1.99	km/h
Stop Time - All	59.77	9.38	sec/km
Stop Time - Bus DPTI	58.6	14.47	sec/km
Stop Time - Car PM	59.97	9.45	sec/km
Stop Time - Truck & Semi PM	51.53	9.77	sec/km
Total Number of Lane Changes - All	20302.2	264.7	
Total Number of Lane Changes - Bus DPTI	33.2	4.44	
Total Number of Lane Changes - Car PM	19972.4	264.16	
Total Number of Lane Changes - Truck & Semi PM	296.6	6.66	
Total Number of Stops - All	15558.39	2021.83	
Total Number of Stops - Bus DPTI	106.65	11.17	
Total Number of Stops - Car PM	15150.45	1976.23	
Total Number of Stops - Truck & Semi PM	301.29	61.95	
Total Travel Time - All	595.18	60.51	h
Total Travel Time - Bus DPTI	3.73	0.31	h
Total Travel Time - Car PM	575.8	58.26	h
Total Travel Time - Truck & Semi PM	15.65	2.86	h
Total Travelled Distance - All	15527.66	165.18	km
Total Travelled Distance - Bus DPTI	72.22	1.9	km
Total Travelled Distance - Car PM	15025.34	144.23	km
Total Travelled Distance - Truck & Semi PM	430.1	34.61	km
Travel Time - All	139.16	11.52	sec/km

2026 PM - General Statistics

Travel Time - Bus DPTI	186.92	15.02	sec/km
Travel Time - Car PM	139.15	11.61	sec/km
Travel Time - Truck & Semi PM	131.27	12.1	sec/km
Vehicles Inside - All	271.4	39.61	veh
Vehicles Inside - Bus DPTI	0	0	veh
Vehicles Inside - Car PM	262.6	39.74	veh
Vehicles Inside - Truck & Semi PM	8.8	1.1	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car PM	0	0	veh
Vehicles Lost Inside - Truck & Semi PM	0	0	veh
Vehicles Lost Outside - All	0.8	1.3	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car PM	0.8	1.3	veh
Vehicles Lost Outside - Truck & Semi PM	0	0	veh
Vehicles Outside - All	10418.4	113.42	veh
Vehicles Outside - Bus DPTI	41.6	1.14	veh
Vehicles Outside - Car PM	10134.4	103.41	veh
Vehicles Outside - Truck & Semi PM	242.4	18.93	veh
Vehicles Waiting to Enter - All	0.2	0.45	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car PM	0.2	0.45	veh
Vehicles Waiting to Enter - Truck & Semi PM	0	0	veh
Waiting Time Virtual Queue - All	0.27	0.18	sec
Waiting Time Virtual Queue - Bus DPTI	0.46	0.47	sec
Waiting Time Virtual Queue - Car PM	0.27	0.18	sec
Waiting Time Virtual Queue - Truck & Semi PM	0.24	0.07	sec

2026 PM - General Statistics

SC0A

Time Series	Value	Standard Deviation	Units
Delay Time - All	160.55	17	sec/km
Delay Time - Bus DPTI	152.33	17.78	sec/km
Delay Time - Car PM	160.59	17.37	sec/km
Delay Time - Truck & Semi PM	159.83	17.81	sec/km
Density - All	36.41	2.17	veh/km
Density - Bus DPTI	0.15	0.02	veh/km
Density - Car PM	35.07	2.1	veh/km
Density - Truck & Semi PM	1.2	0.13	veh/km
Flow - All	6840.53	123.22	veh/h
Flow - Bus DPTI	17.2	2.47	veh/h
Flow - Car PM	6637.2	126.6	veh/h
Flow - Truck & Semi PM	186.13	9.62	veh/h
Harmonic Speed - All	15.97	0	km/h
Harmonic Speed - Bus DPTI	13.24	0	km/h
Harmonic Speed - Car PM	15.97	0	km/h
Harmonic Speed - Truck & Semi PM	15.96	0	km/h
Input Count - All	10519.2	N/A	veh
Input Count - Bus DPTI	31	N/A	veh
Input Count - Car PM	10197.8	N/A	veh
Input Count - Truck & Semi PM	290.4	N/A	veh
Input Flow - All	7012.8	134.9	veh/h
Input Flow - Bus DPTI	20.67	2.05	veh/h
Input Flow - Car PM	6798.53	133.2	veh/h
Input Flow - Truck & Semi PM	193.6	9.4	veh/h
Max. Virtual Queue - All	485.6	210.81	veh
Max. Virtual Queue - Bus DPTI	8.2	3.63	veh
Max. Virtual Queue - Car PM	473.4	208.75	veh
Max. Virtual Queue - Truck & Semi PM	13.2	4.38	veh
Mean Queue - All	372.97	34.49	veh
Mean Queue - Bus DPTI	1.5	0.27	veh
Mean Queue - Car PM	359.5	33.7	veh
Mean Queue - Truck & Semi PM	11.97	1.72	veh
Mean Virtual Queue - All	206.21	70.96	veh
Mean Virtual Queue - Bus DPTI	1.05	0.43	veh
Mean Virtual Queue - Car PM	201.26	71.07	veh
Mean Virtual Queue - Truck & Semi PM	3.89	1.92	veh
Missed Turns - All	10	5.48	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car PM	9.2	5.81	
Missed Turns - Truck & Semi PM	0.8	1.3	
Number of Lane Changes - All	1029.84	11.97	#/km
Number of Lane Changes - Bus DPTI	1.43	0.33	#/km
Number of Lane Changes - Car PM	1010.21	13.39	#/km
Number of Lane Changes - Truck & Semi PM	18.2	1.76	#/km
Number of Stops - All	0.14	0.01	#/veh/km
Number of Stops - Bus DPTI	0.21	0.01	#/veh/km
Number of Stops - Car PM	0.14	0.01	#/veh/km
Number of Stops - Truck & Semi PM	0.13	0.01	#/veh/km
Speed - All	21.31	1.4	km/h
Speed - Bus DPTI	14.92	1.2	km/h
Speed - Car PM	21.38	1.4	km/h
Speed - Truck & Semi PM	19.33	2.16	km/h
Stop Time - All	132.04	16.16	sec/km
Stop Time - Bus DPTI	130.72	14.71	sec/km
Stop Time - Car PM	132.11	16.55	sec/km
Stop Time - Truck & Semi PM	129.71	14.29	sec/km
Total Number of Lane Changes - All	18499.8	215.07	
Total Number of Lane Changes - Bus DPTI	25.6	5.94	
Total Number of Lane Changes - Car PM	18147.2	240.58	
Total Number of Lane Changes - Truck & Semi PM	327	31.58	
Total Number of Stops - All	25097.69	1813.56	
Total Number of Stops - Bus DPTI	96.01	18.34	
Total Number of Stops - Car PM	24352.65	1766.5	
Total Number of Stops - Truck & Semi PM	649.03	80.75	
Total Travel Time - All	953.5	58.48	h
Total Travel Time - Bus DPTI	3.41	0.75	h
Total Travel Time - Car PM	919	56.69	h
Total Travel Time - Truck & Semi PM	31.09	3.58	h
Total Travelled Distance - All	15306.13	210	km
Total Travelled Distance - Bus DPTI	45.22	6.71	km
Total Travelled Distance - Car PM	14765.24	222.97	km
Total Travelled Distance - Truck & Semi PM	495.67	26.6	km
Travel Time - All	225.48	17.02	sec/km

2026 PM - General Statistics

Travel Time - Bus DPTI	271.92	19.45 sec/km
Travel Time - Car PM	225.36	17.38 sec/km
Travel Time - Truck & Semi PM	225.5	17.87 sec/km
Vehicles Inside - All	662.2	41.25 veh
Vehicles Inside - Bus DPTI	6.2	4.44 veh
Vehicles Inside - Car PM	632.6	41.94 veh
Vehicles Inside - Truck & Semi PM	23.4	2.7 veh
Vehicles Lost Inside - All	0	0 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car PM	0	0 veh
Vehicles Lost Inside - Truck & Semi PM	0	0 veh
Vehicles Lost Outside - All	4.4	4.22 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car PM	4	4.12 veh
Vehicles Lost Outside - Truck & Semi PM	0.4	0.55 veh
Vehicles Outside - All	10260.8	184.84 veh
Vehicles Outside - Bus DPTI	25.8	3.7 veh
Vehicles Outside - Car PM	9955.8	189.89 veh
Vehicles Outside - Truck & Semi PM	279.2	14.43 veh
Vehicles Waiting to Enter - All	451.6	171.21 veh
Vehicles Waiting to Enter - Bus DPTI	0.8	1.79 veh
Vehicles Waiting to Enter - Car PM	441.2	168.21 veh
Vehicles Waiting to Enter - Truck & Semi PM	9.6	4.16 veh
Waiting Time Virtual Queue - All	67.64	14.69 sec
Waiting Time Virtual Queue - Bus DPTI	78.82	28.28 sec
Waiting Time Virtual Queue - Car PM	68.15	15.06 sec
Waiting Time Virtual Queue - Truck & Semi PM	48.55	23.24 sec

2026 PM - General Statistics

SC0B

Time Series	Value	Standard Deviation	Units
Delay Time - All	177.39	9.79	sec/km
Delay Time - Bus DPTI	161.42	9.24	sec/km
Delay Time - Car PM	177.57	9.67	sec/km
Delay Time - Truck & Semi PM	172.19	20.5	sec/km
Density - All	38.81	1.5	veh/km
Density - Bus DPTI	0.16	0.01	veh/km
Density - Car PM	37.41	1.44	veh/km
Density - Truck & Semi PM	1.24	0.15	veh/km
Flow - All	6814.27	80.21	veh/h
Flow - Bus DPTI	17.07	1.53	veh/h
Flow - Car PM	6612.13	86.9	veh/h
Flow - Truck & Semi PM	185.07	9.62	veh/h
Harmonic Speed - All	14.86	0	km/h
Harmonic Speed - Bus DPTI	12.76	0	km/h
Harmonic Speed - Car PM	14.85	0	km/h
Harmonic Speed - Truck & Semi PM	15.13	0	km/h
Input Count - All	10542.6	N/A	veh
Input Count - Bus DPTI	31.6	N/A	veh
Input Count - Car PM	10222.2	N/A	veh
Input Count - Truck & Semi PM	288.8	N/A	veh
Input Flow - All	7028.4	82.95	veh/h
Input Flow - Bus DPTI	21.07	2.14	veh/h
Input Flow - Car PM	6814.8	90.3	veh/h
Input Flow - Truck & Semi PM	192.53	9.63	veh/h
Max. Virtual Queue - All	469.4	130.34	veh
Max. Virtual Queue - Bus DPTI	8.2	3.9	veh
Max. Virtual Queue - Car PM	458.4	131.76	veh
Max. Virtual Queue - Truck & Semi PM	14.8	4.21	veh
Mean Queue - All	420.28	23.23	veh
Mean Queue - Bus DPTI	1.71	0.15	veh
Mean Queue - Car PM	405.61	22.13	veh
Mean Queue - Truck & Semi PM	12.97	2.01	veh
Mean Virtual Queue - All	196.06	54.62	veh
Mean Virtual Queue - Bus DPTI	1.04	0.43	veh
Mean Virtual Queue - Car PM	190.56	53.41	veh
Mean Virtual Queue - Truck & Semi PM	4.46	2.16	veh
Missed Turns - All	15.4	5.13	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car PM	14.8	5.63	
Missed Turns - Truck & Semi PM	0.6	0.89	
Number of Lane Changes - All	1116	14.06	#/km
Number of Lane Changes - Bus DPTI	1.97	0.41	#/km
Number of Lane Changes - Car PM	1094.65	14.12	#/km
Number of Lane Changes - Truck & Semi PM	19.38	2.27	#/km
Number of Stops - All	0.15	0.01	#/veh/km
Number of Stops - Bus DPTI	0.2	0.01	#/veh/km
Number of Stops - Car PM	0.15	0.01	#/veh/km
Number of Stops - Truck & Semi PM	0.14	0.01	#/veh/km
Speed - All	19.2	1.31	km/h
Speed - Bus DPTI	13.94	0.63	km/h
Speed - Car PM	19.25	1.3	km/h
Speed - Truck & Semi PM	18.02	2.26	km/h
Stop Time - All	147.67	8.98	sec/km
Stop Time - Bus DPTI	139.54	7.86	sec/km
Stop Time - Car PM	147.87	8.89	sec/km
Stop Time - Truck & Semi PM	141.26	17.54	sec/km
Total Number of Lane Changes - All	20278.8	255.48	
Total Number of Lane Changes - Bus DPTI	35.8	7.5	
Total Number of Lane Changes - Car PM	19890.8	256.52	
Total Number of Lane Changes - Truck & Semi PM	352.2	41.28	
Total Number of Stops - All	27273.69	1680.17	
Total Number of Stops - Bus DPTI	94.95	7.69	
Total Number of Stops - Car PM	26490.59	1630.51	
Total Number of Stops - Truck & Semi PM	688.15	82.5	
Total Travel Time - All	1021.52	40.8	h
Total Travel Time - Bus DPTI	3.51	0.35	h
Total Travel Time - Car PM	985.47	39.23	h
Total Travel Time - Truck & Semi PM	32.54	3.79	h
Total Travelled Distance - All	15222.31	181.77	km
Total Travelled Distance - Bus DPTI	44.91	4.17	km
Total Travelled Distance - Car PM	14684.65	198.26	km
Total Travelled Distance - Truck & Semi PM	492.75	26.53	km
Travel Time - All	242.33	9.84	sec/km

2026 PM - General Statistics

Travel Time - Bus DPTI	282.13	9.85 sec/km
Travel Time - Car PM	242.36	9.71 sec/km
Travel Time - Truck & Semi PM	237.87	20.61 sec/km
Vehicles Inside - All	740.4	50.98 veh
Vehicles Inside - Bus DPTI	7.4	3.91 veh
Vehicles Inside - Car PM	709.6	45.83 veh
Vehicles Inside - Truck & Semi PM	23.4	3.85 veh
Vehicles Lost Inside - All	0	0 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car PM	0	0 veh
Vehicles Lost Inside - Truck & Semi PM	0	0 veh
Vehicles Lost Outside - All	5.6	4.34 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car PM	5.6	4.34 veh
Vehicles Lost Outside - Truck & Semi PM	0	0 veh
Vehicles Outside - All	10221.4	120.32 veh
Vehicles Outside - Bus DPTI	25.6	2.3 veh
Vehicles Outside - Car PM	9918.2	130.35 veh
Vehicles Outside - Truck & Semi PM	277.6	14.43 veh
Vehicles Waiting to Enter - All	428.8	107.99 veh
Vehicles Waiting to Enter - Bus DPTI	0.6	1.34 veh
Vehicles Waiting to Enter - Car PM	416.8	107.99 veh
Vehicles Waiting to Enter - Truck & Semi PM	11.4	3.21 veh
Waiting Time Virtual Queue - All	68.7	15.82 sec
Waiting Time Virtual Queue - Bus DPTI	82.85	50.66 sec
Waiting Time Virtual Queue - Car PM	68.91	15.67 sec
Waiting Time Virtual Queue - Truck & Semi PM	59.71	30 sec

2026 PM - General Statistics

SC0B - Alternate

Time Series	Value	Standard Deviation	Units
Delay Time - All	177.24	19.6	sec/km
Delay Time - Bus DPTI	160.17	17.02	sec/km
Delay Time - Car PM	177.41	19.77	sec/km
Delay Time - Truck & Semi PM	172.7	22.92	sec/km
Density - All	38.68	2.77	veh/km
Density - Bus DPTI	0.16	0.01	veh/km
Density - Car PM	37.29	2.73	veh/km
Density - Truck & Semi PM	1.24	0.14	veh/km
Flow - All	6782	92.75	veh/h
Flow - Bus DPTI	16.27	1.12	veh/h
Flow - Car PM	6581.2	92.97	veh/h
Flow - Truck & Semi PM	184.53	10.25	veh/h
Harmonic Speed - All	14.86	0	km/h
Harmonic Speed - Bus DPTI	12.73	0	km/h
Harmonic Speed - Car PM	14.86	0	km/h
Harmonic Speed - Truck & Semi PM	15.1	0	km/h
Input Count - All	10515.6	N/A	veh
Input Count - Bus DPTI	31.6	N/A	veh
Input Count - Car PM	10195.2	N/A	veh
Input Count - Truck & Semi PM	288.8	N/A	veh
Input Flow - All	7010.4	102.67	veh/h
Input Flow - Bus DPTI	21.07	2.14	veh/h
Input Flow - Car PM	6796.8	103.47	veh/h
Input Flow - Truck & Semi PM	192.53	9.84	veh/h
Max. Virtual Queue - All	522.6	216.48	veh
Max. Virtual Queue - Bus DPTI	9.2	2.68	veh
Max. Virtual Queue - Car PM	506.8	216.77	veh
Max. Virtual Queue - Truck & Semi PM	14.6	2.61	veh
Mean Queue - All	418.93	44.72	veh
Mean Queue - Bus DPTI	1.68	0.17	veh
Mean Queue - Car PM	404.23	43.95	veh
Mean Queue - Truck & Semi PM	13.03	1.89	veh
Mean Virtual Queue - All	218.02	77.12	veh
Mean Virtual Queue - Bus DPTI	1.19	0.39	veh
Mean Virtual Queue - Car PM	211.72	76.04	veh
Mean Virtual Queue - Truck & Semi PM	5.11	1.64	veh
Missed Turns - All	23.6	9.96	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car PM	22.8	8.7	
Missed Turns - Truck & Semi PM	0.8	1.79	
Number of Lane Changes - All	1091.73	17.64	#/km
Number of Lane Changes - Bus DPTI	1.89	0.4	#/km
Number of Lane Changes - Car PM	1071.67	17.65	#/km
Number of Lane Changes - Truck & Semi PM	18.17	1.97	#/km
Number of Stops - All	0.14	0.01	#/veh/km
Number of Stops - Bus DPTI	0.21	0.01	#/veh/km
Number of Stops - Car PM	0.14	0.01	#/veh/km
Number of Stops - Truck & Semi PM	0.13	0.02	#/veh/km
Speed - All	19.52	1.83	km/h
Speed - Bus DPTI	14.12	1.22	km/h
Speed - Car PM	19.57	1.83	km/h
Speed - Truck & Semi PM	18.2	2.33	km/h
Stop Time - All	147.55	17.92	sec/km
Stop Time - Bus DPTI	137.27	13.95	sec/km
Stop Time - Car PM	147.75	18.11	sec/km
Stop Time - Truck & Semi PM	141.42	19.48	sec/km
Total Number of Lane Changes - All	19839.4	320.58	
Total Number of Lane Changes - Bus DPTI	34.4	7.3	
Total Number of Lane Changes - Car PM	19474.8	320.72	
Total Number of Lane Changes - Truck & Semi PM	330.2	35.72	
Total Number of Stops - All	26713.1	2217.14	
Total Number of Stops - Bus DPTI	92.05	10	
Total Number of Stops - Car PM	25944.55	2164.4	
Total Number of Stops - Truck & Semi PM	676.5	89.67	
Total Travel Time - All	1015.55	70.46	h
Total Travel Time - Bus DPTI	3.35	0.3	h
Total Travel Time - Car PM	979.66	69.06	h
Total Travel Time - Truck & Semi PM	32.53	3.63	h
Total Travelled Distance - All	15151.02	189.69	km
Total Travelled Distance - Bus DPTI	42.81	3	km
Total Travelled Distance - Car PM	14616.88	188.48	km
Total Travelled Distance - Truck & Semi PM	491.33	27.3	km
Travel Time - All	242.2	19.63	sec/km

2026 PM - General Statistics

Travel Time - Bus DPTI	282.73	14.54	sec/km
Travel Time - Car PM	242.2	19.8	sec/km
Travel Time - Truck & Semi PM	238.4	23.05	sec/km
Vehicles Inside - All	762.6	55.52	veh
Vehicles Inside - Bus DPTI	8.6	3.05	veh
Vehicles Inside - Car PM	729.4	56.38	veh
Vehicles Inside - Truck & Semi PM	24.6	4.34	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car PM	0	0	veh
Vehicles Lost Inside - Truck & Semi PM	0	0	veh
Vehicles Lost Outside - All	5	4	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car PM	5	4	veh
Vehicles Lost Outside - Truck & Semi PM	0	0	veh
Vehicles Outside - All	10173	139.13	veh
Vehicles Outside - Bus DPTI	24.4	1.67	veh
Vehicles Outside - Car PM	9871.8	139.45	veh
Vehicles Outside - Truck & Semi PM	276.8	15.37	veh
Vehicles Waiting to Enter - All	455.8	135.04	veh
Vehicles Waiting to Enter - Bus DPTI	0.6	1.34	veh
Vehicles Waiting to Enter - Car PM	443.8	133.87	veh
Vehicles Waiting to Enter - Truck & Semi PM	11.4	1.67	veh
Waiting Time Virtual Queue - All	76.13	20.07	sec
Waiting Time Virtual Queue - Bus DPTI	106.35	42.11	sec
Waiting Time Virtual Queue - Car PM	76.21	20.2	sec
Waiting Time Virtual Queue - Truck & Semi PM	70.47	21.5	sec

2026 PM - General Statistics

SC4B

Time Series	Value	Standard Deviation	Units
Delay Time - All	179.89	9.21	sec/km
Delay Time - Bus DPTI	187.67	12.44	sec/km
Delay Time - Car PM	177.56	9.06	sec/km
Delay Time - Truck & Semi PM	197.83	3.09	sec/km
Delay Time - Car PM - copy	204.14	15.79	sec/km
Density - All	40.77	1.51	veh/km
Density - Bus DPTI	0.17	0.02	veh/km
Density - Car PM	37.32	1.36	veh/km
Density - Truck & Semi PM	1.33	0.1	veh/km
Density - Car PM - copy	1.95	0.22	veh/km
Flow - All	7160.8	68.07	veh/h
Flow - Bus DPTI	17.73	2.89	veh/h
Flow - Car PM	6479.07	84.62	veh/h
Flow - Truck & Semi PM	176.8	14.52	veh/h
Flow - Car PM - copy	487.2	34.19	veh/h
Harmonic Speed - All	14.62	0	km/h
Harmonic Speed - Bus DPTI	12.2	0	km/h
Harmonic Speed - Car PM	14.8	0	km/h
Harmonic Speed - Truck & Semi PM	13.66	0	km/h
Harmonic Speed - Car PM - copy	12.94	0	km/h
Input Count - All	11085	N/A	veh
Input Count - Bus DPTI	32.2	N/A	veh
Input Count - Car PM	10039	N/A	veh
Input Count - Truck & Semi PM	278	N/A	veh
Input Count - Car PM - copy	735.8	N/A	veh
Input Flow - All	7390	62.95	veh/h
Input Flow - Bus DPTI	21.47	2.38	veh/h
Input Flow - Car PM	6692.67	77.85	veh/h
Input Flow - Truck & Semi PM	185.33	14.78	veh/h
Input Flow - Car PM - copy	490.53	33.56	veh/h
Max. Virtual Queue - All	576	111.79	veh
Max. Virtual Queue - Bus DPTI	10.4	1.67	veh
Max. Virtual Queue - Car PM	511.2	99.08	veh
Max. Virtual Queue - Truck & Semi PM	25.8	7.4	veh
Max. Virtual Queue - Car PM - copy	58.8	13.16	veh
Mean Queue - All	430.88	25.67	veh
Mean Queue - Bus DPTI	1.8	0.18	veh
Mean Queue - Car PM	392.89	23.47	veh
Mean Queue - Truck & Semi PM	14.09	0.98	veh
Mean Queue - Car PM - copy	22.1	2.79	veh
Mean Virtual Queue - All	253.64	55.83	veh
Mean Virtual Queue - Bus DPTI	1.13	0.34	veh
Mean Virtual Queue - Car PM	219.17	49.89	veh
Mean Virtual Queue - Truck & Semi PM	8.52	1.96	veh
Mean Virtual Queue - Car PM - copy	24.82	7.35	veh
Missed Turns - All	11.8	4.21	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car PM	11.2	3.96	
Missed Turns - Truck & Semi PM	0.2	0.45	
Missed Turns - Car PM - copy	0.4	0.55	
Number of Lane Changes - All	1026.08	27.77	#/km
Number of Lane Changes - Bus DPTI	1.77	0.33	#/km
Number of Lane Changes - Car PM	958.36	24.54	#/km
Number of Lane Changes - Truck & Semi PM	16.35	2.07	#/km
Number of Lane Changes - Car PM - copy	49.61	4.27	#/km
Number of Stops - All	0.16	0.01	#/veh/km
Number of Stops - Bus DPTI	0.22	0.02	#/veh/km
Number of Stops - Car PM	0.16	0.01	#/veh/km
Number of Stops - Truck & Semi PM	0.17	0	#/veh/km
Number of Stops - Car PM - copy	0.2	0.01	#/veh/km
Speed - All	17.82	0.68	km/h
Speed - Bus DPTI	13.06	0.45	km/h
Speed - Car PM	17.88	0.71	km/h
Speed - Truck & Semi PM	15.14	0.22	km/h
Speed - Car PM - copy	18.24	0.9	km/h
Stop Time - All	145.72	8.28	sec/km
Stop Time - Bus DPTI	159.45	10.85	sec/km
Stop Time - Car PM	143.56	8.1	sec/km
Stop Time - Truck & Semi PM	158.15	2.24	sec/km
Stop Time - Car PM - copy	169.33	14.09	sec/km
Total Number of Lane Changes - All	18554.4	502.23	
Total Number of Lane Changes - Bus DPTI	32	6.04	
Total Number of Lane Changes - Car PM	17329.8	443.78	

2026 PM - General Statistics

Total Number of Lane Changes - Truck & Semi PM	295.6	37.43	
Total Number of Lane Changes - Car PM - copy	897	77.15	
Total Number of Stops - All	31973.55	1263.15	
Total Number of Stops - Bus DPTI	105.19	20.92	
Total Number of Stops - Car PM	28375.25	1008.02	
Total Number of Stops - Truck & Semi PM	795.61	67.03	
Total Number of Stops - Car PM - copy	2697.5	381.57	
Total Travel Time - All	1069.52	35.96	h
Total Travel Time - Bus DPTI	3.8	0.65	h
Total Travel Time - Car PM	978.73	32.4	h
Total Travel Time - Truck & Semi PM	34.49	2.91	h
Total Travel Time - Car PM - copy	52.5	6.14	h
Total Travelled Distance - All	15477.53	159.72	km
Total Travelled Distance - Bus DPTI	46.28	7.72	km
Total Travelled Distance - Car PM	14350.48	161.64	km
Total Travelled Distance - Truck & Semi PM	469.88	39.46	km
Total Travelled Distance - Car PM - copy	610.89	41	km
Travel Time - All	246.29	9.27	sec/km
Travel Time - Bus DPTI	294.99	10.49	sec/km
Travel Time - Car PM	243.28	9.09	sec/km
Travel Time - Truck & Semi PM	263.56	3.09	sec/km
Travel Time - Car PM - copy	278.22	15.93	sec/km
Vehicles Inside - All	757.6	30.66	veh
Vehicles Inside - Bus DPTI	6.4	3.51	veh
Vehicles Inside - Car PM	721.2	28.59	veh
Vehicles Inside - Truck & Semi PM	25	3.32	veh
Vehicles Inside - Car PM - copy	5	2	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car PM	0	0	veh
Vehicles Lost Inside - Truck & Semi PM	0	0	veh
Vehicles Lost Inside - Car PM - copy	0	0	veh
Vehicles Lost Outside - All	6	3.67	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car PM	5.6	3.78	veh
Vehicles Lost Outside - Truck & Semi PM	0	0	veh
Vehicles Lost Outside - Car PM - copy	0.4	0.55	veh
Vehicles Outside - All	10741.2	102.1	veh
Vehicles Outside - Bus DPTI	26.6	4.34	veh
Vehicles Outside - Car PM	9718.6	126.92	veh
Vehicles Outside - Truck & Semi PM	265.2	21.78	veh
Vehicles Outside - Car PM - copy	730.8	51.28	veh
Vehicles Waiting to Enter - All	528.6	120.89	veh
Vehicles Waiting to Enter - Bus DPTI	0.8	1.3	veh
Vehicles Waiting to Enter - Car PM	469.4	115.22	veh
Vehicles Waiting to Enter - Truck & Semi PM	22	7.65	veh
Vehicles Waiting to Enter - Car PM - copy	36.4	10.76	veh
Waiting Time Virtual Queue - All	79.67	17.07	sec
Waiting Time Virtual Queue - Bus DPTI	119.8	23.95	sec
Waiting Time Virtual Queue - Car PM	77.92	17.3	sec
Waiting Time Virtual Queue - Truck & Semi PM	116.02	21.09	sec
Waiting Time Virtual Queue - Car PM - copy	88.33	19.96	sec

2026 PM - General Statistics

SC5

Time Series	Value	Standard Deviation	Units
Delay Time - All	197.4	11.14	sec/km
Delay Time - Bus DPTI	180.19	13.08	sec/km
Delay Time - Car PM	196.09	10.53	sec/km
Delay Time - Truck & Semi PM	195.87	8.06	sec/km
Delay Time - Car PM - copy	215.28	22.84	sec/km
Density - All	43.75	1.39	veh/km
Density - Bus DPTI	0.16	0.01	veh/km
Density - Car PM	40.17	1.25	veh/km
Density - Truck & Semi PM	1.31	0.11	veh/km
Density - Car PM - copy	2.12	0.24	veh/km
Flow - All	7194.4	96.79	veh/h
Flow - Bus DPTI	17.47	0.99	veh/h
Flow - Car PM	6490.27	91.11	veh/h
Flow - Truck & Semi PM	179.33	12.34	veh/h
Flow - Car PM - copy	507.33	27.94	veh/h
Harmonic Speed - All	13.65	0	km/h
Harmonic Speed - Bus DPTI	12.7	0	km/h
Harmonic Speed - Car PM	13.75	0	km/h
Harmonic Speed - Truck & Semi PM	13.76	0	km/h
Harmonic Speed - Car PM - copy	12.46	0	km/h
Input Count - All	11216.8	N/A	veh
Input Count - Bus DPTI	32.4	N/A	veh
Input Count - Car PM	10135	N/A	veh
Input Count - Truck & Semi PM	282.6	N/A	veh
Input Count - Car PM - copy	766.8	N/A	veh
Input Flow - All	7477.87	105.56	veh/h
Input Flow - Bus DPTI	21.6	0.76	veh/h
Input Flow - Car PM	6756.67	112.47	veh/h
Input Flow - Truck & Semi PM	188.4	13.27	veh/h
Input Flow - Car PM - copy	511.2	29.35	veh/h
Max. Virtual Queue - All	460.6	164.02	veh
Max. Virtual Queue - Bus DPTI	10	3	veh
Max. Virtual Queue - Car PM	425.4	139.62	veh
Max. Virtual Queue - Truck & Semi PM	24	5.15	veh
Max. Virtual Queue - Car PM - copy	35	22.25	veh
Mean Queue - All	496.87	27.32	veh
Mean Queue - Bus DPTI	1.74	0.14	veh
Mean Queue - Car PM	455.84	24.44	veh
Mean Queue - Truck & Semi PM	14.1	1.3	veh
Mean Queue - Car PM - copy	25.19	3.62	veh
Mean Virtual Queue - All	204.54	59.96	veh
Mean Virtual Queue - Bus DPTI	0.98	0.25	veh
Mean Virtual Queue - Car PM	183.57	51.66	veh
Mean Virtual Queue - Truck & Semi PM	8	0.94	veh
Mean Virtual Queue - Car PM - copy	11.99	9.02	veh
Missed Turns - All	16.8	4.09	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car PM	14.2	4.66	
Missed Turns - Truck & Semi PM	0.2	0.45	
Missed Turns - Car PM - copy	2.4	1.52	
Number of Lane Changes - All	1052.86	25	#/km
Number of Lane Changes - Bus DPTI	2.24	0.3	#/km
Number of Lane Changes - Car PM	978.66	23.52	#/km
Number of Lane Changes - Truck & Semi PM	15.82	1.89	#/km
Number of Lane Changes - Car PM - copy	56.13	3.52	#/km
Number of Stops - All	0.17	0.01	#/veh/km
Number of Stops - Bus DPTI	0.21	0.01	#/veh/km
Number of Stops - Car PM	0.16	0	#/veh/km
Number of Stops - Truck & Semi PM	0.15	0.01	#/veh/km
Number of Stops - Car PM - copy	0.2	0.02	#/veh/km
Speed - All	16.86	0.57	km/h
Speed - Bus DPTI	13.42	0.62	km/h
Speed - Car PM	16.84	0.57	km/h
Speed - Truck & Semi PM	15.31	0.7	km/h
Speed - Car PM - copy	17.77	0.92	km/h
Stop Time - All	164.23	10.86	sec/km
Stop Time - Bus DPTI	151.82	9.01	sec/km
Stop Time - Car PM	163.03	10.3	sec/km
Stop Time - Truck & Semi PM	157.83	7.25	sec/km
Stop Time - Car PM - copy	182.18	21.57	sec/km
Total Number of Lane Changes - All	19256.6	457.33	
Total Number of Lane Changes - Bus DPTI	41	5.43	
Total Number of Lane Changes - Car PM	17899.6	430.14	

2026 PM - General Statistics

Total Number of Lane Changes - Truck & Semi PM	289.4	34.59	
Total Number of Lane Changes - Car PM - copy	1026.6	64.32	
Total Number of Stops - All	32780.77	812.86	
Total Number of Stops - Bus DPTI	99.45	9.93	
Total Number of Stops - Car PM	29081.89	573.87	
Total Number of Stops - Truck & Semi PM	752.03	74.99	
Total Number of Stops - Car PM - copy	2847.4	360.02	
Total Travel Time - All	1151.45	36.47	h
Total Travel Time - Bus DPTI	3.6	0.28	h
Total Travel Time - Car PM	1056.15	32.94	h
Total Travel Time - Truck & Semi PM	34.54	3.02	h
Total Travel Time - Car PM - copy	57.16	6.01	h
Total Travelled Distance - All	15511.9	203.57	km
Total Travelled Distance - Bus DPTI	45.75	2.5	km
Total Travelled Distance - Car PM	14345.41	187.27	km
Total Travelled Distance - Truck & Semi PM	476.8	33.51	km
Total Travelled Distance - Car PM - copy	643.93	32.88	km
Travel Time - All	263.78	11.19	sec/km
Travel Time - Bus DPTI	283.56	11.38	sec/km
Travel Time - Car PM	261.82	10.56	sec/km
Travel Time - Truck & Semi PM	261.61	8.09	sec/km
Travel Time - Car PM - copy	288.92	23.1	sec/km
Vehicles Inside - All	847.6	84.78	veh
Vehicles Inside - Bus DPTI	7.4	1.95	veh
Vehicles Inside - Car PM	808.8	83.5	veh
Vehicles Inside - Truck & Semi PM	25.6	4.16	veh
Vehicles Inside - Car PM - copy	5.8	3.42	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car PM	0	0	veh
Vehicles Lost Inside - Truck & Semi PM	0	0	veh
Vehicles Lost Inside - Car PM - copy	0	0	veh
Vehicles Lost Outside - All	7.2	3.27	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car PM	5.4	2.07	veh
Vehicles Lost Outside - Truck & Semi PM	0.2	0.45	veh
Vehicles Lost Outside - Car PM - copy	1.6	1.34	veh
Vehicles Outside - All	10791.6	145.18	veh
Vehicles Outside - Bus DPTI	26.2	1.48	veh
Vehicles Outside - Car PM	9735.4	136.66	veh
Vehicles Outside - Truck & Semi PM	269	18.51	veh
Vehicles Outside - Car PM - copy	761	41.9	veh
Vehicles Waiting to Enter - All	395.8	158.34	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car PM	372.8	145.81	veh
Vehicles Waiting to Enter - Truck & Semi PM	17.6	5.98	veh
Vehicles Waiting to Enter - Car PM - copy	5.4	11.52	veh
Waiting Time Virtual Queue - All	72.41	13.28	sec
Waiting Time Virtual Queue - Bus DPTI	101.36	25.09	sec
Waiting Time Virtual Queue - Car PM	71.8	13.37	sec
Waiting Time Virtual Queue - Truck & Semi PM	115.52	6.33	sec
Waiting Time Virtual Queue - Car PM - copy	63.85	24.24	sec

2026 PM - General Statistics

SC5 - Alternate

Time Series	Value	Standard Deviation	Units
Delay Time - All	195.07	14.44	sec/km
Delay Time - Bus DPTI	173.51	11.8	sec/km
Delay Time - Car PM	193.04	13.78	sec/km
Delay Time - Truck & Semi PM	189.09	10.35	sec/km
Delay Time - Car PM - copy	224.28	28.81	sec/km
Density - All	43.48	1.96	veh/km
Density - Bus DPTI	0.16	0.01	veh/km
Density - Car PM	39.89	1.75	veh/km
Density - Truck & Semi PM	1.29	0.12	veh/km
Density - Car PM - copy	2.15	0.29	veh/km
Flow - All	7208.8	80.01	veh/h
Flow - Bus DPTI	18.13	0.87	veh/h
Flow - Car PM	6507.6	82.38	veh/h
Flow - Truck & Semi PM	180.27	12.09	veh/h
Flow - Car PM - copy	502.8	27.56	veh/h
Harmonic Speed - All	13.77	0	km/h
Harmonic Speed - Bus DPTI	13.01	0	km/h
Harmonic Speed - Car PM	13.91	0	km/h
Harmonic Speed - Truck & Semi PM	14.13	0	km/h
Harmonic Speed - Car PM - copy	12.08	0	km/h
Input Count - All	11258.4	N/A	veh
Input Count - Bus DPTI	32.4	N/A	veh
Input Count - Car PM	10179.4	N/A	veh
Input Count - Truck & Semi PM	284	N/A	veh
Input Count - Car PM - copy	762.6	N/A	veh
Input Flow - All	7505.6	125.07	veh/h
Input Flow - Bus DPTI	21.6	0.76	veh/h
Input Flow - Car PM	6786.27	133.77	veh/h
Input Flow - Truck & Semi PM	189.33	13.67	veh/h
Input Flow - Car PM - copy	508.4	29.15	veh/h
Max. Virtual Queue - All	436.8	169.5	veh
Max. Virtual Queue - Bus DPTI	8.6	2.7	veh
Max. Virtual Queue - Car PM	394.6	146.39	veh
Max. Virtual Queue - Truck & Semi PM	21.2	6.34	veh
Max. Virtual Queue - Car PM - copy	45.4	25.59	veh
Mean Queue - All	491.67	39.5	veh
Mean Queue - Bus DPTI	1.73	0.11	veh
Mean Queue - Car PM	450.28	35.41	veh
Mean Queue - Truck & Semi PM	13.71	1.27	veh
Mean Queue - Car PM - copy	25.95	4.53	veh
Mean Virtual Queue - All	192.89	66.56	veh
Mean Virtual Queue - Bus DPTI	0.84	0.28	veh
Mean Virtual Queue - Car PM	169.37	57.42	veh
Mean Virtual Queue - Truck & Semi PM	6.6	1.49	veh
Mean Virtual Queue - Car PM - copy	16.09	9.32	veh
Missed Turns - All	35	8.75	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car PM	30.8	7.05	
Missed Turns - Truck & Semi PM	0.8	1.1	
Missed Turns - Car PM - copy	3.4	2.19	
Number of Lane Changes - All	1058.43	24.75	#/km
Number of Lane Changes - Bus DPTI	2.22	0.35	#/km
Number of Lane Changes - Car PM	984.48	26.18	#/km
Number of Lane Changes - Truck & Semi PM	16.18	1.43	#/km
Number of Lane Changes - Car PM - copy	55.55	3.33	#/km
Number of Stops - All	0.17	0.01	#/veh/km
Number of Stops - Bus DPTI	0.21	0.01	#/veh/km
Number of Stops - Car PM	0.16	0	#/veh/km
Number of Stops - Truck & Semi PM	0.15	0.01	#/veh/km
Number of Stops - Car PM - copy	0.21	0.02	#/veh/km
Speed - All	17.03	0.76	km/h
Speed - Bus DPTI	13.78	0.74	km/h
Speed - Car PM	17.05	0.75	km/h
Speed - Truck & Semi PM	15.83	0.98	km/h
Speed - Car PM - copy	17.35	1.17	km/h
Stop Time - All	162.44	14.58	sec/km
Stop Time - Bus DPTI	145.9	8.14	sec/km
Stop Time - Car PM	160.53	13.97	sec/km
Stop Time - Truck & Semi PM	152.02	9.48	sec/km
Stop Time - Car PM - copy	191.54	27.83	sec/km
Total Number of Lane Changes - All	19360	452.69	
Total Number of Lane Changes - Bus DPTI	40.6	6.35	
Total Number of Lane Changes - Car PM	18007.4	478.89	

2026 PM - General Statistics

Total Number of Lane Changes - Truck & Semi PM	296	26.07	
Total Number of Lane Changes - Car PM - copy	1016	60.91	
Total Number of Stops - All	32900.89	1036.49	
Total Number of Stops - Bus DPTI	102.28	12.84	
Total Number of Stops - Car PM	29124.68	772.2	
Total Number of Stops - Truck & Semi PM	743.08	92.87	
Total Number of Stops - Car PM - copy	2930.85	369.92	
Total Travel Time - All	1140.09	53.1	h
Total Travel Time - Bus DPTI	3.66	0.32	h
Total Travel Time - Car PM	1044.72	48.01	h
Total Travel Time - Truck & Semi PM	33.89	3.05	h
Total Travel Time - Car PM - copy	57.83	7.17	h
Total Travelled Distance - All	15566.85	167.98	km
Total Travelled Distance - Bus DPTI	47.56	2.32	km
Total Travelled Distance - Car PM	14402.67	160.86	km
Total Travelled Distance - Truck & Semi PM	479.76	33.4	km
Total Travelled Distance - Car PM - copy	636.86	34.36	km
Travel Time - All	261.45	14.51	sec/km
Travel Time - Bus DPTI	276.7	12.1	sec/km
Travel Time - Car PM	258.77	13.81	sec/km
Travel Time - Truck & Semi PM	254.82	10.39	sec/km
Travel Time - Car PM - copy	297.99	28.99	sec/km
Vehicles Inside - All	862.2	84	veh
Vehicles Inside - Bus DPTI	6.4	2.19	veh
Vehicles Inside - Car PM	822	85.03	veh
Vehicles Inside - Truck & Semi PM	25.4	3.78	veh
Vehicles Inside - Car PM - copy	8.4	3.36	veh
Vehicles Lost Inside - All	0.2	0.45	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car PM	0.2	0.45	veh
Vehicles Lost Inside - Truck & Semi PM	0	0	veh
Vehicles Lost Inside - Car PM - copy	0	0	veh
Vehicles Lost Outside - All	7	3	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car PM	5	2.45	veh
Vehicles Lost Outside - Truck & Semi PM	0	0	veh
Vehicles Lost Outside - Car PM - copy	2	1	veh
Vehicles Outside - All	10813.2	120.02	veh
Vehicles Outside - Bus DPTI	27.2	1.3	veh
Vehicles Outside - Car PM	9761.4	123.57	veh
Vehicles Outside - Truck & Semi PM	270.4	18.13	veh
Vehicles Outside - Car PM - copy	754.2	41.34	veh
Vehicles Waiting to Enter - All	354.2	183.86	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car PM	328.4	172.32	veh
Vehicles Waiting to Enter - Truck & Semi PM	16.2	7.69	veh
Vehicles Waiting to Enter - Car PM - copy	9.6	12.93	veh
Waiting Time Virtual Queue - All	66.43	15.41	sec
Waiting Time Virtual Queue - Bus DPTI	88.45	29.83	sec
Waiting Time Virtual Queue - Car PM	64.88	15.48	sec
Waiting Time Virtual Queue - Truck & Semi PM	91.67	11.52	sec
Waiting Time Virtual Queue - Car PM - copy	76.65	24.73	sec

2026 Saturday - General Statistics

Base Time Series	Value	Standard Deviation	Units
Delay Time - All	40.64	1.62	sec/km
Delay Time - Bus DPTI	33.78	2.61	sec/km
Delay Time - Car AM	40.76	1.62	sec/km
Delay Time - Truck & Semi AM	30.68	2.57	sec/km
Density - All	14.73	0.24	veh/km
Density - Bus DPTI	0.07	0.01	veh/km
Density - Car AM	14.49	0.23	veh/km
Density - Truck & Semi AM	0.17	0.02	veh/km
Flow - All	6101.47	62.94	veh/h
Flow - Bus DPTI	17.07	1.53	veh/h
Flow - Car AM	6022.4	60.06	veh/h
Flow - Truck & Semi AM	62	8.65	veh/h
Harmonic Speed - All	34.13	0	km/h
Harmonic Speed - Bus DPTI	24.55	0	km/h
Harmonic Speed - Car AM	34.14	0	km/h
Harmonic Speed - Truck & Semi AM	37.44	0	km/h
Input Count - All	9199.6	N/A	veh
Input Count - Bus DPTI	26.4	N/A	veh
Input Count - Car AM	9078.4	N/A	veh
Input Count - Truck & Semi AM	94.8	N/A	veh
Input Flow - All	6133.07	62.48	veh/h
Input Flow - Bus DPTI	17.6	0.89	veh/h
Input Flow - Car AM	6052.27	59.29	veh/h
Input Flow - Truck & Semi AM	63.2	8.22	veh/h
Max. Virtual Queue - All	4.4	0.55	veh
Max. Virtual Queue - Bus DPTI	1	0	veh
Max. Virtual Queue - Car AM	4.2	0.84	veh
Max. Virtual Queue - Truck & Semi AM	1.2	0.45	veh
Mean Queue - All	71.76	3.91	veh
Mean Queue - Bus DPTI	0.37	0.07	veh
Mean Queue - Car AM	70.75	3.8	veh
Mean Queue - Truck & Semi AM	0.65	0.15	veh
Mean Virtual Queue - All	0.18	0.04	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	0.18	0.04	veh
Mean Virtual Queue - Truck & Semi AM	0	0	veh
Missed Turns - All	3.4	1.67	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	3.4	1.67	
Missed Turns - Truck & Semi AM	0	0	
Number of Lane Changes - All	1073.13	16.48	#/km
Number of Lane Changes - Bus DPTI	1.42	0.25	#/km
Number of Lane Changes - Car AM	1063.89	15.07	#/km
Number of Lane Changes - Truck & Semi AM	7.82	1.34	#/km
Number of Stops - All	0.05	0	#/veh/km
Number of Stops - Bus DPTI	0.11	0	#/veh/km
Number of Stops - Car AM	0.05	0	#/veh/km
Number of Stops - Truck & Semi AM	0.03	0	#/veh/km
Speed - All	37.03	0.31	km/h
Speed - Bus DPTI	25.41	0.69	km/h
Speed - Car AM	37.04	0.3	km/h
Speed - Truck & Semi AM	39.33	0.98	km/h
Stop Time - All	32.13	1.5	sec/km
Stop Time - Bus DPTI	29.09	2.73	sec/km
Stop Time - Car AM	32.23	1.5	sec/km
Stop Time - Truck & Semi AM	23.07	2.21	sec/km
Total Number of Lane Changes - All	18955.2	291.06	
Total Number of Lane Changes - Bus DPTI	25	4.42	
Total Number of Lane Changes - Car AM	18792	266.25	
Total Number of Lane Changes - Truck & Semi AM	138.2	23.68	
Total Number of Stops - All	8689.66	229.99	
Total Number of Stops - Bus DPTI	49.56	5.33	
Total Number of Stops - Car AM	8582.75	229.57	
Total Number of Stops - Truck & Semi AM	57.35	7.09	
Total Travel Time - All	388.33	6.08	h
Total Travel Time - Bus DPTI	1.8	0.21	h
Total Travel Time - Car AM	382.18	5.77	h
Total Travel Time - Truck & Semi AM	4.35	0.64	h
Total Travelled Distance - All	13519.39	131.17	km
Total Travelled Distance - Bus DPTI	44.19	3.98	km
Total Travelled Distance - Car AM	13311.91	117.3	km
Total Travelled Distance - Truck & Semi AM	163.28	22.72	km

2026 Saturday - General Statistics

Travel Time - All	105.47	1.64 sec/km
Travel Time - Bus DPTI	146.65	5.57 sec/km
Travel Time - Car AM	105.45	1.63 sec/km
Travel Time - Truck & Semi AM	96.15	2.66 sec/km
Vehicles Inside - All	258.8	6.98 veh
Vehicles Inside - Bus DPTI	1.2	1.3 veh
Vehicles Inside - Car AM	253.2	6.02 veh
Vehicles Inside - Truck & Semi AM	4.4	2.51 veh
Vehicles Lost Inside - All	0	0 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car AM	0	0 veh
Vehicles Lost Inside - Truck & Semi AM	0	0 veh
Vehicles Lost Outside - All	1	0.71 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car AM	1	0.71 veh
Vehicles Lost Outside - Truck & Semi AM	0	0 veh
Vehicles Outside - All	9152.2	94.41 veh
Vehicles Outside - Bus DPTI	25.6	2.3 veh
Vehicles Outside - Car AM	9033.6	90.09 veh
Vehicles Outside - Truck & Semi AM	93	12.98 veh
Vehicles Waiting to Enter - All	0	0 veh
Vehicles Waiting to Enter - Bus DPTI	0	0 veh
Vehicles Waiting to Enter - Car AM	0	0 veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0 veh
Waiting Time Virtual Queue - All	0.13	0.02 sec
Waiting Time Virtual Queue - Bus DPTI	0.13	0.04 sec
Waiting Time Virtual Queue - Car AM	0.13	0.02 sec
Waiting Time Virtual Queue - Truck & Semi AM	0.18	0.05 sec

2026 Saturday - General Statistics

SC0A

Time Series	Value	Standard Deviation	Units
Delay Time - All	52.42	5.66	sec/km
Delay Time - Bus DPTI	35.86	6.41	sec/km
Delay Time - Car AM	52.62	5.69	sec/km
Delay Time - Truck & Semi AM	38.79	4.42	sec/km
Density - All	16.5	0.78	veh/km
Density - Bus DPTI	0.05	0	veh/km
Density - Car AM	16.22	0.76	veh/km
Density - Truck & Semi AM	0.22	0.03	veh/km
Flow - All	6261.07	69.24	veh/h
Flow - Bus DPTI	12.93	0.6	veh/h
Flow - Car AM	6170.8	65.72	veh/h
Flow - Truck & Semi AM	77.33	8.86	veh/h
Harmonic Speed - All	30.7	0	km/h
Harmonic Speed - Bus DPTI	23.91	0	km/h
Harmonic Speed - Car AM	30.67	0	km/h
Harmonic Speed - Truck & Semi AM	34.5	0	km/h
Input Count - All	9471.2	N/A	veh
Input Count - Bus DPTI	19.2	N/A	veh
Input Count - Car AM	9333	N/A	veh
Input Count - Truck & Semi AM	119	N/A	veh
Input Flow - All	6314.13	62.3	veh/h
Input Flow - Bus DPTI	12.8	0.56	veh/h
Input Flow - Car AM	6222	58.45	veh/h
Input Flow - Truck & Semi AM	79.33	8.49	veh/h
Max. Virtual Queue - All	12.8	12.66	veh
Max. Virtual Queue - Bus DPTI	0.6	0.55	veh
Max. Virtual Queue - Car AM	12.8	12.66	veh
Max. Virtual Queue - Truck & Semi AM	1.2	0.45	veh
Mean Queue - All	98.01	12.77	veh
Mean Queue - Bus DPTI	0.3	0.04	veh
Mean Queue - Car AM	96.69	12.56	veh
Mean Queue - Truck & Semi AM	1.03	0.19	veh
Mean Virtual Queue - All	1.13	1.64	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	1.13	1.64	veh
Mean Virtual Queue - Truck & Semi AM	0	0	veh
Missed Turns - All	6.6	2.41	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	6.6	2.41	
Missed Turns - Truck & Semi AM	0	0	
Number of Lane Changes - All	1126.39	10.52	#/km
Number of Lane Changes - Bus DPTI	1.2	0.15	#/km
Number of Lane Changes - Car AM	1115.31	10.31	#/km
Number of Lane Changes - Truck & Semi AM	9.88	1.76	#/km
Number of Stops - All	0.06	0	#/veh/km
Number of Stops - Bus DPTI	0.11	0.01	#/veh/km
Number of Stops - Car AM	0.06	0	#/veh/km
Number of Stops - Truck & Semi AM	0.04	0	#/veh/km
Speed - All	34.35	0.66	km/h
Speed - Bus DPTI	25.07	0.9	km/h
Speed - Car AM	34.34	0.66	km/h
Speed - Truck & Semi AM	37.04	0.87	km/h
Stop Time - All	42.56	4.99	sec/km
Stop Time - Bus DPTI	30.94	6.24	sec/km
Stop Time - Car AM	42.74	5	sec/km
Stop Time - Truck & Semi AM	30	4.18	sec/km
Total Number of Lane Changes - All	20234.2	188.94	
Total Number of Lane Changes - Bus DPTI	21.6	2.7	
Total Number of Lane Changes - Car AM	20035.2	185.21	
Total Number of Lane Changes - Truck & Semi AM	177.4	31.61	
Total Number of Stops - All	10583.01	596.3	
Total Number of Stops - Bus DPTI	36.63	3.12	
Total Number of Stops - Car AM	10462.02	586.69	
Total Number of Stops - Truck & Semi AM	84.36	9.08	
Total Travel Time - All	441.42	20.15	h
Total Travel Time - Bus DPTI	1.43	0.08	h
Total Travel Time - Car AM	434.09	19.67	h
Total Travel Time - Truck & Semi AM	5.9	0.68	h
Total Travelled Distance - All	13863.62	162.16	km
Total Travelled Distance - Bus DPTI	34.31	1.59	km
Total Travelled Distance - Car AM	13625.36	152.04	km
Total Travelled Distance - Truck & Semi AM	203.96	22.93	km

2026 Saturday - General Statistics

Travel Time - All	117.27	5.65 sec/km
Travel Time - Bus DPTI	150.58	6.64 sec/km
Travel Time - Car AM	117.36	5.67 sec/km
Travel Time - Truck & Semi AM	104.34	4.53 sec/km
Vehicles Inside - All	300.2	12.15 veh
Vehicles Inside - Bus DPTI	0.8	0.84 veh
Vehicles Inside - Car AM	293.8	10.03 veh
Vehicles Inside - Truck & Semi AM	5.6	2.3 veh
Vehicles Lost Inside - All	0	0 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car AM	0	0 veh
Vehicles Lost Inside - Truck & Semi AM	0	0 veh
Vehicles Lost Outside - All	1.8	1.3 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car AM	1.8	1.3 veh
Vehicles Lost Outside - Truck & Semi AM	0	0 veh
Vehicles Outside - All	9391.6	103.87 veh
Vehicles Outside - Bus DPTI	19.4	0.89 veh
Vehicles Outside - Car AM	9256.2	98.59 veh
Vehicles Outside - Truck & Semi AM	116	13.29 veh
Vehicles Waiting to Enter - All	0.4	0.55 veh
Vehicles Waiting to Enter - Bus DPTI	0	0 veh
Vehicles Waiting to Enter - Car AM	0.4	0.55 veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0 veh
Waiting Time Virtual Queue - All	0.67	0.85 sec
Waiting Time Virtual Queue - Bus DPTI	0.11	0.05 sec
Waiting Time Virtual Queue - Car AM	0.68	0.86 sec
Waiting Time Virtual Queue - Truck & Semi AM	0.17	0.04 sec

2026 Saturday - General Statistics

SC0B

Time Series	Value	Standard Deviation	Units
Delay Time - All	99.19	6.13	sec/km
Delay Time - Bus DPTI	36.84	3.5	sec/km
Delay Time - Car AM	100.15	6.2	sec/km
Delay Time - Truck & Semi AM	35.77	2.19	sec/km
Density - All	23.08	0.81	veh/km
Density - Bus DPTI	0.05	0	veh/km
Density - Car AM	22.82	0.81	veh/km
Density - Truck & Semi AM	0.21	0.03	veh/km
Flow - All	6037.33	82.08	veh/h
Flow - Bus DPTI	12.53	0.3	veh/h
Flow - Car AM	5947.33	79.08	veh/h
Flow - Truck & Semi AM	77.47	8.74	veh/h
Harmonic Speed - All	21.94	0	km/h
Harmonic Speed - Bus DPTI	24.61	0	km/h
Harmonic Speed - Car AM	21.83	0	km/h
Harmonic Speed - Truck & Semi AM	35.53	0	km/h
Input Count - All	9263.6	N/A	veh
Input Count - Bus DPTI	18.6	N/A	veh
Input Count - Car AM	9126	N/A	veh
Input Count - Truck & Semi AM	119	N/A	veh
Input Flow - All	6175.73	75.2	veh/h
Input Flow - Bus DPTI	12.4	0.6	veh/h
Input Flow - Car AM	6084	71.42	veh/h
Input Flow - Truck & Semi AM	79.33	8.49	veh/h
Max. Virtual Queue - All	209.4	36.77	veh
Max. Virtual Queue - Bus DPTI	0.8	0.45	veh
Max. Virtual Queue - Car AM	209.2	36.81	veh
Max. Virtual Queue - Truck & Semi AM	1.2	0.45	veh
Mean Queue - All	224.5	15.51	veh
Mean Queue - Bus DPTI	0.3	0.03	veh
Mean Queue - Car AM	223.28	15.53	veh
Mean Queue - Truck & Semi AM	0.93	0.13	veh
Mean Virtual Queue - All	56.65	20.12	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	56.65	20.12	veh
Mean Virtual Queue - Truck & Semi AM	0	0	veh
Missed Turns - All	15	5.29	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	14.8	4.97	
Missed Turns - Truck & Semi AM	0.2	0.45	
Number of Lane Changes - All	1113.76	16.09	#/km
Number of Lane Changes - Bus DPTI	1.41	0.11	#/km
Number of Lane Changes - Car AM	1102.06	15.54	#/km
Number of Lane Changes - Truck & Semi AM	10.29	1.55	#/km
Number of Stops - All	0.08	0	#/veh/km
Number of Stops - Bus DPTI	0.1	0.01	#/veh/km
Number of Stops - Car AM	0.08	0	#/veh/km
Number of Stops - Truck & Semi AM	0.04	0	#/veh/km
Speed - All	31.43	0.39	km/h
Speed - Bus DPTI	25.72	0.54	km/h
Speed - Car AM	31.36	0.4	km/h
Speed - Truck & Semi AM	37.95	0.39	km/h
Stop Time - All	88.09	5.84	sec/km
Stop Time - Bus DPTI	32.04	3.48	sec/km
Stop Time - Car AM	89	5.91	sec/km
Stop Time - Truck & Semi AM	27.57	2.09	sec/km
Total Number of Lane Changes - All	20238.2	292.42	
Total Number of Lane Changes - Bus DPTI	25.6	1.95	
Total Number of Lane Changes - Car AM	20025.6	282.31	
Total Number of Lane Changes - Truck & Semi AM	187	28.13	
Total Number of Stops - All	13149.61	233.52	
Total Number of Stops - Bus DPTI	34.13	2.52	
Total Number of Stops - Car AM	13035.51	234.88	
Total Number of Stops - Truck & Semi AM	79.98	8.07	
Total Travel Time - All	603.24	19.38	h
Total Travel Time - Bus DPTI	1.35	0.05	h
Total Travel Time - Car AM	596.15	19.52	h
Total Travel Time - Truck & Semi AM	5.74	0.72	h
Total Travelled Distance - All	13344.59	168.8	km
Total Travelled Distance - Bus DPTI	33.27	0.81	km
Total Travelled Distance - Car AM	13106.88	159.88	km
Total Travelled Distance - Truck & Semi AM	204.44	22.79	km

2026 Saturday - General Statistics

Travel Time - All	164.08	6.14 sec/km
Travel Time - Bus DPTI	146.3	3.49 sec/km
Travel Time - Car AM	164.93	6.21 sec/km
Travel Time - Truck & Semi AM	101.32	2.46 sec/km
Vehicles Inside - All	453	8.28 veh
Vehicles Inside - Bus DPTI	0.8	0.84 veh
Vehicles Inside - Car AM	447	6.82 veh
Vehicles Inside - Truck & Semi AM	5.2	2.17 veh
Vehicles Lost Inside - All	0	0 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car AM	0	0 veh
Vehicles Lost Inside - Truck & Semi AM	0	0 veh
Vehicles Lost Outside - All	2	0.71 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car AM	2	0.71 veh
Vehicles Lost Outside - Truck & Semi AM	0	0 veh
Vehicles Outside - All	9056	123.13 veh
Vehicles Outside - Bus DPTI	18.8	0.45 veh
Vehicles Outside - Car AM	8921	118.63 veh
Vehicles Outside - Truck & Semi AM	116.2	13.1 veh
Vehicles Waiting to Enter - All	207.4	36.32 veh
Vehicles Waiting to Enter - Bus DPTI	0	0 veh
Vehicles Waiting to Enter - Car AM	207.4	36.32 veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0 veh
Waiting Time Virtual Queue - All	14.47	6.91 sec
Waiting Time Virtual Queue - Bus DPTI	0.16	0.06 sec
Waiting Time Virtual Queue - Car AM	14.69	7.01 sec
Waiting Time Virtual Queue - Truck & Semi AM	0.18	0.02 sec

2026 Saturday - General Statistics

SC0B - Alternate

Time Series	Value	Standard Deviation	Units
Delay Time - All	105.42	6.5	sec/km
Delay Time - Bus DPTI	38.32	1.83	sec/km
Delay Time - Car AM	106.47	6.58	sec/km
Delay Time - Truck & Semi AM	35.65	2.69	sec/km
Density - All	24.11	0.87	veh/km
Density - Bus DPTI	0.05	0	veh/km
Density - Car AM	23.85	0.87	veh/km
Density - Truck & Semi AM	0.21	0.03	veh/km
Flow - All	6069.07	73.67	veh/h
Flow - Bus DPTI	12.53	0.3	veh/h
Flow - Car AM	5978.93	70.28	veh/h
Flow - Truck & Semi AM	77.6	8.53	veh/h
Harmonic Speed - All	21.14	0	km/h
Harmonic Speed - Bus DPTI	24.14	0	km/h
Harmonic Speed - Car AM	21.02	0	km/h
Harmonic Speed - Truck & Semi AM	35.57	0	km/h
Input Count - All	9329.6	N/A	veh
Input Count - Bus DPTI	18.6	N/A	veh
Input Count - Car AM	9192	N/A	veh
Input Count - Truck & Semi AM	119	N/A	veh
Input Flow - All	6219.73	64.33	veh/h
Input Flow - Bus DPTI	12.4	0.6	veh/h
Input Flow - Car AM	6128	60.21	veh/h
Input Flow - Truck & Semi AM	79.33	8.49	veh/h
Max. Virtual Queue - All	145	47.31	veh
Max. Virtual Queue - Bus DPTI	0.8	0.45	veh
Max. Virtual Queue - Car AM	145	47.31	veh
Max. Virtual Queue - Truck & Semi AM	1.2	0.45	veh
Mean Queue - All	240.37	15.07	veh
Mean Queue - Bus DPTI	0.31	0.02	veh
Mean Queue - Car AM	239.11	15.03	veh
Mean Queue - Truck & Semi AM	0.95	0.16	veh
Mean Virtual Queue - All	34.99	15.41	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	34.99	15.41	veh
Mean Virtual Queue - Truck & Semi AM	0	0	veh
Missed Turns - All	54.6	8.56	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	54.4	8.14	
Missed Turns - Truck & Semi AM	0.2	0.45	
Number of Lane Changes - All	1112.71	19.95	#/km
Number of Lane Changes - Bus DPTI	1.41	0.07	#/km
Number of Lane Changes - Car AM	1100.86	19.82	#/km
Number of Lane Changes - Truck & Semi AM	10.44	1.26	#/km
Number of Stops - All	0.08	0	#/veh/km
Number of Stops - Bus DPTI	0.1	0	#/veh/km
Number of Stops - Car AM	0.08	0	#/veh/km
Number of Stops - Truck & Semi AM	0.04	0	#/veh/km
Speed - All	30.78	0.63	km/h
Speed - Bus DPTI	25.21	0.35	km/h
Speed - Car AM	30.7	0.63	km/h
Speed - Truck & Semi AM	37.95	0.55	km/h
Stop Time - All	93.96	6.05	sec/km
Stop Time - Bus DPTI	33.23	2.24	sec/km
Stop Time - Car AM	94.95	6.13	sec/km
Stop Time - Truck & Semi AM	27.37	2.62	sec/km
Total Number of Lane Changes - All	20220.6	362.47	
Total Number of Lane Changes - Bus DPTI	25.6	1.34	
Total Number of Lane Changes - Car AM	20005.2	360.09	
Total Number of Lane Changes - Truck & Semi AM	189.8	22.85	
Total Number of Stops - All	13760.68	472.28	
Total Number of Stops - Bus DPTI	34.79	1.74	
Total Number of Stops - Car AM	13645.57	467.97	
Total Number of Stops - Truck & Semi AM	80.31	9.85	
Total Travel Time - All	628.9	23.5	h
Total Travel Time - Bus DPTI	1.37	0.06	h
Total Travel Time - Car AM	621.79	23.38	h
Total Travel Time - Truck & Semi AM	5.74	0.71	h
Total Travelled Distance - All	13430.23	155.54	km
Total Travelled Distance - Bus DPTI	33.27	0.81	km
Total Travelled Distance - Car AM	13192.17	145.69	km
Total Travelled Distance - Truck & Semi AM	204.78	22.27	km

2026 Saturday - General Statistics

Travel Time - All	170.32	6.5 sec/km
Travel Time - Bus DPTI	149.15	3.48 sec/km
Travel Time - Car AM	171.26	6.58 sec/km
Travel Time - Truck & Semi AM	101.21	2.88 sec/km
Vehicles Inside - All	472.2	15.74 veh
Vehicles Inside - Bus DPTI	0.8	0.84 veh
Vehicles Inside - Car AM	466.4	13.74 veh
Vehicles Inside - Truck & Semi AM	5	2.55 veh
Vehicles Lost Inside - All	0	0 veh
Vehicles Lost Inside - Bus DPTI	0	0 veh
Vehicles Lost Inside - Car AM	0	0 veh
Vehicles Lost Inside - Truck & Semi AM	0	0 veh
Vehicles Lost Outside - All	1.4	1.14 veh
Vehicles Lost Outside - Bus DPTI	0	0 veh
Vehicles Lost Outside - Car AM	1.4	1.14 veh
Vehicles Lost Outside - Truck & Semi AM	0	0 veh
Vehicles Outside - All	9103.6	110.5 veh
Vehicles Outside - Bus DPTI	18.8	0.45 veh
Vehicles Outside - Car AM	8968.4	105.41 veh
Vehicles Outside - Truck & Semi AM	116.4	12.8 veh
Vehicles Waiting to Enter - All	141.4	48.07 veh
Vehicles Waiting to Enter - Bus DPTI	0	0 veh
Vehicles Waiting to Enter - Car AM	141.4	48.07 veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0 veh
Waiting Time Virtual Queue - All	9.25	4.86 sec
Waiting Time Virtual Queue - Bus DPTI	0.16	0.06 sec
Waiting Time Virtual Queue - Car AM	9.39	4.93 sec
Waiting Time Virtual Queue - Truck & Semi AM	0.18	0.02 sec
Waiting Time Virtual Queue - Truck & Semi AM	6.86	6.55 sec

2026 Saturday - General Statistics

SC4B

Time Series	Value	Standard Deviation	Units
Delay Time - All	58.87	2.76	sec/km
Delay Time - Bus DPTI	46.15	7.25	sec/km
Delay Time - Car AM	56.61	2.85	sec/km
Delay Time - Truck & Semi AM	39.14	1.96	sec/km
Delay Time - Car AM - copy	84.18	6.34	sec/km
Density - All	18.05	0.64	veh/km
Density - Bus DPTI	0.05	0	veh/km
Density - Car AM	16.42	0.6	veh/km
Density - Truck & Semi AM	0.22	0.02	veh/km
Density - Car AM - copy	1.35	0.05	veh/km
Flow - All	6733.73	39.17	veh/h
Flow - Bus DPTI	12.67	0.47	veh/h
Flow - Car AM	6037.6	38.71	veh/h
Flow - Truck & Semi AM	77.6	8.71	veh/h
Flow - Car AM - copy	605.87	10.47	veh/h
Harmonic Speed - All	28.77	0	km/h
Harmonic Speed - Bus DPTI	23.67	0	km/h
Harmonic Speed - Car AM	29.47	0	km/h
Harmonic Speed - Truck & Semi AM	34.37	0	km/h
Harmonic Speed - Car AM - copy	22.97	0	km/h
Input Count - All	10182.8	N/A	veh
Input Count - Bus DPTI	19	N/A	veh
Input Count - Car AM	9136	N/A	veh
Input Count - Truck & Semi AM	119	N/A	veh
Input Count - Car AM - copy	908.8	N/A	veh
Input Flow - All	6788.53	41.37	veh/h
Input Flow - Bus DPTI	12.67	0.82	veh/h
Input Flow - Car AM	6090.67	38.54	veh/h
Input Flow - Truck & Semi AM	79.33	8.49	veh/h
Input Flow - Car AM - copy	605.87	10.47	veh/h
Max. Virtual Queue - All	9.6	4.34	veh
Max. Virtual Queue - Bus DPTI	0.8	0.45	veh
Max. Virtual Queue - Car AM	7.2	3.27	veh
Max. Virtual Queue - Truck & Semi AM	1.4	0.55	veh
Max. Virtual Queue - Car AM - copy	4.4	2.7	veh
Mean Queue - All	115.52	8.46	veh
Mean Queue - Bus DPTI	0.33	0.05	veh
Mean Queue - Car AM	103.11	8.14	veh
Mean Queue - Truck & Semi AM	1.07	0.12	veh
Mean Queue - Car AM - copy	11.03	0.81	veh
Mean Virtual Queue - All	0.54	0.35	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	0.38	0.18	veh
Mean Virtual Queue - Truck & Semi AM	0	0	veh
Mean Virtual Queue - Car AM - copy	0.16	0.17	veh
Missed Turns - All	12	5.34	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	9.2	3.27	
Missed Turns - Truck & Semi AM	0	0	
Missed Turns - Car AM - copy	2.8	2.95	
Number of Lane Changes - All	1187.4	14.11	#/km
Number of Lane Changes - Bus DPTI	1.17	0.14	#/km
Number of Lane Changes - Car AM	1102.68	14.3	#/km
Number of Lane Changes - Truck & Semi AM	10.11	1.31	#/km
Number of Lane Changes - Car AM - copy	73.44	0.9	#/km
Number of Stops - All	0.07	0	#/veh/km
Number of Stops - Bus DPTI	0.1	0.01	#/veh/km
Number of Stops - Car AM	0.07	0	#/veh/km
Number of Stops - Truck & Semi AM	0.04	0	#/veh/km
Number of Stops - Car AM - copy	0.11	0.01	#/veh/km
Speed - All	32	0.44	km/h
Speed - Bus DPTI	25.02	0.92	km/h
Speed - Car AM	32.54	0.49	km/h
Speed - Truck & Semi AM	36.59	0.55	km/h
Speed - Car AM - copy	26.22	0.79	km/h
Stop Time - All	48.15	2.36	sec/km
Stop Time - Bus DPTI	41.19	6.97	sec/km
Stop Time - Car AM	46.15	2.43	sec/km
Stop Time - Truck & Semi AM	30.61	1.73	sec/km
Stop Time - Car AM - copy	70.44	6.19	sec/km
Total Number of Lane Changes - All	21471.4	255.21	
Total Number of Lane Changes - Bus DPTI	21.2	2.59	

2026 Saturday - General Statistics

Total Number of Lane Changes - Car AM	19939.4	258.6	
Total Number of Lane Changes - Truck & Semi AM	182.8	23.71	
Total Number of Lane Changes - Car AM - copy	1328	16.19	
Total Number of Stops - All	13140.14	573.84	
Total Number of Stops - Bus DPTI	35.71	3.12	
Total Number of Stops - Car AM	11165.06	523.36	
Total Number of Stops - Truck & Semi AM	85.76	10.15	
Total Number of Stops - Car AM - copy	1853.61	129.82	
Total Travel Time - All	486.19	16.05	h
Total Travel Time - Bus DPTI	1.42	0.1	h
Total Travel Time - Car AM	442.19	14.94	h
Total Travel Time - Truck & Semi AM	5.94	0.67	h
Total Travel Time - Car AM - copy	36.64	1.41	h
Total Travelled Distance - All	14389.51	97.04	km
Total Travelled Distance - Bus DPTI	33.61	1.25	km
Total Travelled Distance - Car AM	13336.29	101.93	km
Total Travelled Distance - Truck & Semi AM	204.68	22.6	km
Total Travelled Distance - Car AM - copy	814.92	9.32	km
Travel Time - All	125.12	2.75	sec/km
Travel Time - Bus DPTI	152.06	6.04	sec/km
Travel Time - Car AM	122.15	2.83	sec/km
Travel Time - Truck & Semi AM	104.73	2.12	sec/km
Travel Time - Car AM - copy	156.72	6.45	sec/km
Vehicles Inside - All	319.2	24.61	veh
Vehicles Inside - Bus DPTI	0.6	0.55	veh
Vehicles Inside - Car AM	313.2	23.86	veh
Vehicles Inside - Truck & Semi AM	5.4	2.19	veh
Vehicles Inside - Car AM - copy	0	0	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Inside - Car AM - copy	0	0	veh
Vehicles Lost Outside - All	9.6	4.77	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	7	2.55	veh
Vehicles Lost Outside - Truck & Semi AM	0	0	veh
Vehicles Lost Outside - Car AM - copy	2.6	2.7	veh
Vehicles Outside - All	10100.6	58.76	veh
Vehicles Outside - Bus DPTI	19	0.71	veh
Vehicles Outside - Car AM	9056.4	58.06	veh
Vehicles Outside - Truck & Semi AM	116.4	13.07	veh
Vehicles Outside - Car AM - copy	908.8	15.71	veh
Vehicles Waiting to Enter - All	0.2	0.45	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	0.2	0.45	veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0	veh
Vehicles Waiting to Enter - Car AM - copy	0	0	veh
Waiting Time Virtual Queue - All	0.31	0.17	sec
Waiting Time Virtual Queue - Bus DPTI	0.15	0.06	sec
Waiting Time Virtual Queue - Car AM	0.25	0.1	sec
Waiting Time Virtual Queue - Truck & Semi AM	0.2	0.04	sec
Waiting Time Virtual Queue - Car AM - copy	0.98	0.9	sec

2026 Saturday - General Statistics

SC5

Time Series	Value	Standard Deviation	Units
Delay Time - All	106.69	5.67	sec/km
Delay Time - Bus DPTI	42.18	7.87	sec/km
Delay Time - Car AM	104.24	6.2	sec/km
Delay Time - Truck & Semi AM	41.38	4.3	sec/km
Delay Time - Car AM - copy	140.27	7.04	sec/km
Density - All	24.69	0.93	veh/km
Density - Bus DPTI	0.05	0	veh/km
Density - Car AM	22.49	0.94	veh/km
Density - Truck & Semi AM	0.23	0.03	veh/km
Density - Car AM - copy	1.93	0.06	veh/km
Flow - All	6425.07	19.94	veh/h
Flow - Bus DPTI	12.4	0.37	veh/h
Flow - Car AM	5742.53	21.62	veh/h
Flow - Truck & Semi AM	77.2	8.71	veh/h
Flow - Car AM - copy	592.93	9.1	veh/h
Harmonic Speed - All	20.81	0	km/h
Harmonic Speed - Bus DPTI	24.5	0	km/h
Harmonic Speed - Car AM	21.2	0	km/h
Harmonic Speed - Truck & Semi AM	33.65	0	km/h
Harmonic Speed - Car AM - copy	16.92	0	km/h
Input Count - All	9868.4	N/A	veh
Input Count - Bus DPTI	18.8	N/A	veh
Input Count - Car AM	8824.2	N/A	veh
Input Count - Truck & Semi AM	119	N/A	veh
Input Count - Car AM - copy	906.4	N/A	veh
Input Flow - All	6578.93	42.21	veh/h
Input Flow - Bus DPTI	12.53	0.56	veh/h
Input Flow - Car AM	5882.8	37.45	veh/h
Input Flow - Truck & Semi AM	79.33	8.49	veh/h
Input Flow - Car AM - copy	604.27	9.48	veh/h
Max. Virtual Queue - All	318.4	42.78	veh
Max. Virtual Queue - Bus DPTI	0.8	0.45	veh
Max. Virtual Queue - Car AM	315	43.04	veh
Max. Virtual Queue - Truck & Semi AM	1.4	0.55	veh
Max. Virtual Queue - Car AM - copy	22.8	2.59	veh
Mean Queue - All	249.03	14.87	veh
Mean Queue - Bus DPTI	0.28	0.06	veh
Mean Queue - Car AM	225.56	15.14	veh
Mean Queue - Truck & Semi AM	1.13	0.27	veh
Mean Queue - Car AM - copy	22.06	1.07	veh
Mean Virtual Queue - All	105.42	29.39	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	98.49	28.29	veh
Mean Virtual Queue - Truck & Semi AM	0	0	veh
Mean Virtual Queue - Car AM - copy	6.93	1.22	veh
Missed Turns - All	30.2	6.57	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	23.6	4.72	
Missed Turns - Truck & Semi AM	0.4	0.55	
Missed Turns - Car AM - copy	6.2	3.27	
Number of Lane Changes - All	1149.63	15.55	#/km
Number of Lane Changes - Bus DPTI	1.53	0.13	#/km
Number of Lane Changes - Car AM	1063.71	14.91	#/km
Number of Lane Changes - Truck & Semi AM	10.15	1.15	#/km
Number of Lane Changes - Car AM - copy	74.24	1.9	#/km
Number of Stops - All	0.09	0	#/veh/km
Number of Stops - Bus DPTI	0.09	0	#/veh/km
Number of Stops - Car AM	0.08	0	#/veh/km
Number of Stops - Truck & Semi AM	0.04	0	#/veh/km
Number of Stops - Car AM - copy	0.13	0.01	#/veh/km
Speed - All	29.38	0.62	km/h
Speed - Bus DPTI	25.7	0.77	km/h
Speed - Car AM	29.83	0.67	km/h
Speed - Truck & Semi AM	35.83	1.12	km/h
Speed - Car AM - copy	24.25	1.08	km/h
Stop Time - All	95.67	5.18	sec/km
Stop Time - Bus DPTI	37.67	7.55	sec/km
Stop Time - Car AM	93.49	5.72	sec/km
Stop Time - Truck & Semi AM	32.32	3.64	sec/km
Stop Time - Car AM - copy	126.26	6.46	sec/km
Total Number of Lane Changes - All	21026.6	284.37	
Total Number of Lane Changes - Bus DPTI	28	2.35	

2026 Saturday - General Statistics

Total Number of Lane Changes - Car AM	19455.2	272.61	
Total Number of Lane Changes - Truck & Semi AM	185.6	21.02	
Total Number of Lane Changes - Car AM - copy	1357.8	34.75	
Total Number of Stops - All	15279.31	735.78	
Total Number of Stops - Bus DPTI	30.15	1.73	
Total Number of Stops - Car AM	13035.02	630.46	
Total Number of Stops - Truck & Semi AM	92.09	14.99	
Total Number of Stops - Car AM - copy	2122.05	179.3	
Total Travel Time - All	647.7	25.99	h
Total Travel Time - Bus DPTI	1.34	0.1	h
Total Travel Time - Car AM	589.65	25.95	h
Total Travel Time - Truck & Semi AM	6.04	0.88	h
Total Travel Time - Car AM - copy	50.66	1.49	h
Total Travelled Distance - All	13688.52	35.95	km
Total Travelled Distance - Bus DPTI	32.91	0.99	km
Total Travelled Distance - Car AM	12657.97	35.28	km
Total Travelled Distance - Truck & Semi AM	203.73	22.6	km
Total Travelled Distance - Car AM - copy	793.91	8.36	km
Travel Time - All	172.97	5.69	sec/km
Travel Time - Bus DPTI	146.96	6.43	sec/km
Travel Time - Car AM	169.8	6.2	sec/km
Travel Time - Truck & Semi AM	106.99	4.34	sec/km
Travel Time - Car AM - copy	212.75	7	sec/km
Vehicles Inside - All	480.6	39.07	veh
Vehicles Inside - Bus DPTI	0.6	0.55	veh
Vehicles Inside - Car AM	457.4	37.75	veh
Vehicles Inside - Truck & Semi AM	5.6	1.82	veh
Vehicles Inside - Car AM - copy	17	4	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Inside - Car AM - copy	0	0	veh
Vehicles Lost Outside - All	14.2	4.27	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	9.4	2.7	veh
Vehicles Lost Outside - Truck & Semi AM	0	0	veh
Vehicles Lost Outside - Car AM - copy	4.8	3.7	veh
Vehicles Outside - All	9637.6	29.9	veh
Vehicles Outside - Bus DPTI	18.6	0.55	veh
Vehicles Outside - Car AM	8613.8	32.43	veh
Vehicles Outside - Truck & Semi AM	115.8	13.07	veh
Vehicles Outside - Car AM - copy	889.4	13.65	veh
Vehicles Waiting to Enter - All	314.4	46.16	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	312	44.89	veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0	veh
Vehicles Waiting to Enter - Car AM - copy	2.4	1.82	veh
Waiting Time Virtual Queue - All	25.56	9.77	sec
Waiting Time Virtual Queue - Bus DPTI	0.16	0.07	sec
Waiting Time Virtual Queue - Car AM	26.11	10.2	sec
Waiting Time Virtual Queue - Truck & Semi AM	0.21	0.04	sec
Waiting Time Virtual Queue - Car AM - copy	24.05	6.88	sec

2026 Saturday - General Statistics

SC5 - Alternate

Time Series	Value	Standard Deviation	Units
Delay Time - All	112.43	7.23	sec/km
Delay Time - Bus DPTI	45.94	9.77	sec/km
Delay Time - Car AM	109.82	7.78	sec/km
Delay Time - Truck & Semi AM	43.12	7.64	sec/km
Delay Time - Car AM - copy	148.18	7.01	sec/km
Density - All	25.77	1.22	veh/km
Density - Bus DPTI	0.05	0	veh/km
Density - Car AM	23.46	1.2	veh/km
Density - Truck & Semi AM	0.23	0.04	veh/km
Density - Car AM - copy	2.03	0.05	veh/km
Flow - All	6459.87	33.43	veh/h
Flow - Bus DPTI	12.53	0.3	veh/h
Flow - Car AM	5775.47	38.54	veh/h
Flow - Truck & Semi AM	77.07	8.64	veh/h
Flow - Car AM - copy	594.8	9.04	veh/h
Harmonic Speed - All	20.14	0	km/h
Harmonic Speed - Bus DPTI	23.77	0	km/h
Harmonic Speed - Car AM	20.52	0	km/h
Harmonic Speed - Truck & Semi AM	33.1	0	km/h
Harmonic Speed - Car AM - copy	16.31	0	km/h
Input Count - All	9926.2	N/A	veh
Input Count - Bus DPTI	18.8	N/A	veh
Input Count - Car AM	8879.8	N/A	veh
Input Count - Truck & Semi AM	119	N/A	veh
Input Count - Car AM - copy	908.6	N/A	veh
Input Flow - All	6617.47	21.5	veh/h
Input Flow - Bus DPTI	12.53	0.56	veh/h
Input Flow - Car AM	5919.87	23.86	veh/h
Input Flow - Truck & Semi AM	79.33	8.49	veh/h
Input Flow - Car AM - copy	605.73	10.53	veh/h
Max. Virtual Queue - All	259.4	46.36	veh
Max. Virtual Queue - Bus DPTI	0.8	0.45	veh
Max. Virtual Queue - Car AM	259.2	46.01	veh
Max. Virtual Queue - Truck & Semi AM	1.4	0.55	veh
Max. Virtual Queue - Car AM - copy	18	2.55	veh
Mean Queue - All	264.67	18.68	veh
Mean Queue - Bus DPTI	0.31	0.07	veh
Mean Queue - Car AM	239.63	18.49	veh
Mean Queue - Truck & Semi AM	1.18	0.39	veh
Mean Queue - Car AM - copy	23.56	1.05	veh
Mean Virtual Queue - All	80.89	27.92	veh
Mean Virtual Queue - Bus DPTI	0	0	veh
Mean Virtual Queue - Car AM	75.93	26.59	veh
Mean Virtual Queue - Truck & Semi AM	0	0	veh
Mean Virtual Queue - Car AM - copy	4.96	1.53	veh
Missed Turns - All	63.8	9.96	
Missed Turns - Bus DPTI	0	0	
Missed Turns - Car AM	56.2	11.23	
Missed Turns - Truck & Semi AM	0.4	0.55	
Missed Turns - Car AM - copy	7.2	2.17	
Number of Lane Changes - All	1145.66	11.43	#/km
Number of Lane Changes - Bus DPTI	1.54	0.15	#/km
Number of Lane Changes - Car AM	1059.37	11.05	#/km
Number of Lane Changes - Truck & Semi AM	10.33	1.53	#/km
Number of Lane Changes - Car AM - copy	74.42	1.53	#/km
Number of Stops - All	0.09	0	#/veh/km
Number of Stops - Bus DPTI	0.09	0.01	#/veh/km
Number of Stops - Car AM	0.09	0	#/veh/km
Number of Stops - Truck & Semi AM	0.04	0	#/veh/km
Number of Stops - Car AM - copy	0.14	0.01	#/veh/km
Speed - All	28.64	0.88	km/h
Speed - Bus DPTI	24.97	1.02	km/h
Speed - Car AM	29.07	0.97	km/h
Speed - Truck & Semi AM	35.35	1.97	km/h
Speed - Car AM - copy	23.64	0.72	km/h
Stop Time - All	100.84	6.61	sec/km
Stop Time - Bus DPTI	40.92	8.79	sec/km
Stop Time - Car AM	98.5	7.13	sec/km
Stop Time - Truck & Semi AM	34.11	6.58	sec/km
Stop Time - Car AM - copy	133.44	6.82	sec/km
Total Number of Lane Changes - All	20955.6	209	
Total Number of Lane Changes - Bus DPTI	28.2	2.77	

2026 Saturday - General Statistics

Total Number of Lane Changes - Car AM	19377.2	202.11	
Total Number of Lane Changes - Truck & Semi AM	189	27.92	
Total Number of Lane Changes - Car AM - copy	1361.2	28.05	
Total Number of Stops - All	16071.14	904.61	
Total Number of Stops - Bus DPTI	32.52	3.86	
Total Number of Stops - Car AM	13731.3	816.77	
Total Number of Stops - Truck & Semi AM	92.98	18.8	
Total Number of Stops - Car AM - copy	2214.34	135.79	
Total Travel Time - All	675.09	35.71	h
Total Travel Time - Bus DPTI	1.4	0.09	h
Total Travel Time - Car AM	614.38	34.44	h
Total Travel Time - Truck & Semi AM	6.14	1.11	h
Total Travel Time - Car AM - copy	53.17	1.72	h
Total Travelled Distance - All	13781.09	66.68	km
Total Travelled Distance - Bus DPTI	33.27	0.81	km
Total Travelled Distance - Car AM	12745.21	76.42	km
Total Travelled Distance - Truck & Semi AM	203.52	22.45	km
Total Travelled Distance - Car AM - copy	799.09	10.21	km
Travel Time - All	178.73	7.23	sec/km
Travel Time - Bus DPTI	151.48	8.63	sec/km
Travel Time - Car AM	175.41	7.78	sec/km
Travel Time - Truck & Semi AM	108.75	7.44	sec/km
Travel Time - Car AM - copy	220.66	6.77	sec/km
Vehicles Inside - All	496.2	34.16	veh
Vehicles Inside - Bus DPTI	0.6	0.55	veh
Vehicles Inside - Car AM	473.4	32.26	veh
Vehicles Inside - Truck & Semi AM	5.8	1.79	veh
Vehicles Inside - Car AM - copy	16.4	5.08	veh
Vehicles Lost Inside - All	0	0	veh
Vehicles Lost Inside - Bus DPTI	0	0	veh
Vehicles Lost Inside - Car AM	0	0	veh
Vehicles Lost Inside - Truck & Semi AM	0	0	veh
Vehicles Lost Inside - Car AM - copy	0	0	veh
Vehicles Lost Outside - All	11.6	3.13	veh
Vehicles Lost Outside - Bus DPTI	0	0	veh
Vehicles Lost Outside - Car AM	8.2	2.49	veh
Vehicles Lost Outside - Truck & Semi AM	0	0	veh
Vehicles Lost Outside - Car AM - copy	3.4	2.7	veh
Vehicles Outside - All	9689.8	50.14	veh
Vehicles Outside - Bus DPTI	18.8	0.45	veh
Vehicles Outside - Car AM	8663.2	57.8	veh
Vehicles Outside - Truck & Semi AM	115.6	12.95	veh
Vehicles Outside - Car AM - copy	892.2	13.55	veh
Vehicles Waiting to Enter - All	256.6	46.47	veh
Vehicles Waiting to Enter - Bus DPTI	0	0	veh
Vehicles Waiting to Enter - Car AM	256.4	46.11	veh
Vehicles Waiting to Enter - Truck & Semi AM	0	0	veh
Vehicles Waiting to Enter - Car AM - copy	0.2	0.45	veh
Waiting Time Virtual Queue - All	19.57	10.36	sec
Waiting Time Virtual Queue - Bus DPTI	0.15	0.07	sec
Waiting Time Virtual Queue - Car AM	20.05	10.81	sec
Waiting Time Virtual Queue - Truck & Semi AM	0.21	0.04	sec
Waiting Time Virtual Queue - Car AM - copy	17.89	7.59	sec

Appendix B. Burnside Village Development Masterplan Scheme

Please refer pages following for the Burnside Village Stage 6 and 7 Development Masterplan Scheme considered for this assessment, as supplied by The Buchan Group.

Appendix C. Supplementary Traffic Assessment

Please refer pages following for the Supplementary Traffic Assessment memorandum, which documents one further piece of analysis subsequent to the TIA:

(a) A further test of traffic performance of the ultimate (2026) package of roadworks identified for Stage 7 of the Burnside Village Redevelopment, (Scenario 5) assuming the three-lane westbound section of Greenhill Road terminated at the Sydney Street intersection, with two through and one left-turning lane.

Note that the refined AIMSUN scenario models considered for this subsequent analysis have not been incorporated into the AIMSUN model submission.

Memorandum

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Subject	**Supplementary Traffic Assessment**	**Project Name**	Burnside Village Redevelopment - Stages 5, 6 and 7
Attention	Richard Hamilton (Titanium Property Investments)	**Project No.**	IW197400
From	Melisse Heintze		
Date	14 January 2019		
Copies to	Scott Elaurant (Jacobs) Tom Hateley (AECOM)		

Background

Jacobs has undertaken an assessment of the traffic impacts of the proposed Burnside Village Redevelopment Stages 5, 6 and 7. The traffic impact assessment (TIA) has been undertaken using a calibrated Aimsun micro-simulation model of the road network adjoining the shopping centre, as agreed with the Department of Planning, Transport and Infrastructure (DPTI). The TIA is documented in the Jacobs report IW197400-TP-RP-0002 (Burnside Village Redevelopment Stages 5, 6 and 7 – AIMSUN Scenario Model Analysis Report) dated 14 January, 2019.

This memorandum documents one further piece of analysis subsequent to the TIA:

(a) A further test of traffic performance of the ultimate (2026) package of roadworks identified for Stage 7 of the Burnside Village Redevelopment, (Scenario 5) assuming the three lane westbound section of Greenhill Road terminated at the Sydney Street intersection, with two through and one left-turning lane.

Supplemental Traffic Findings

The traffic model has been run for all time periods (Thursday AM, PM and Saturday Midday) for a modified Scenario 5 Alternate (Scenario 5 Alternate Test A) that featured the three lane westbound section of Greenhill Road terminating at the Sydney Street intersection, with two through and one left-turning lane. This was compared to the previously reported Scenario 5 Alternate.

Note that it was concluded that, with this lane arrangement and 2026 development traffic volume, it would be preferable for the Portrush Road / Greenhill Road signals to operate with the eastern approach as two through and one left turn lane during the PM Peak, and Saturday Midday Peak for a modified Scenario 5 Alternate (Scenario 5 Alternate Test B). This could be achieved via implementation of a Lane Use Management System, as previously recommended for the Greenhill Road westbound approach to Portrush Road.

The results are reported in the Tables on the following pages. Assuming the above change is made to lane allocation at the Portrush Road / Greenhill Road intersection in the PM and Saturday Midday Peaks only, the development scenario with Greenhill Road three lanes westbound to Sydney Street only (Scenario 5 Alternate Test A) operates with similar or less delay than the Scenario 5 Alternate roadworks previously reported. Average delay at the Portrush Road / Greenhill Road intersection is altered by +11 seconds (AM Peak), -4 seconds (PM Peak) and -6 seconds (Saturday Midday Peak)

by removing the third lane west of Sydney Street. That is, the elimination of the third lane taper west of Sydney Street does not appear to have a significant negative effect on performance.

The additional impact of providing only two through lanes and a designated left turn lane on the westbound approach to Portrush Road / Greenhill Road intersection (Scenario 5 Alternate Test B) is such that the average delays at the intersection is -65 seconds (PM Peak) and -98 seconds (Saturday Midday Peak) less delay than in the Scenario 5 Alternate roadworks previously reported. The AM Peak sees an increase in delay of 40 seconds.

With the amendments in Scenario 5 Alternate Tests, average delay at the Portrush Road / Greenhill Road intersection in 2026 with Stage 7 development traffic is lower than for the 2026 base case (Scenario 0A) in weekday time periods. Scenario 5 Alternate Tests is -23 seconds faster in the AM Peak (Test A), -9 seconds faster in the PM Peak (Test B) and +17 seconds slower in the Saturday Midday Peak (Test B).

Given that the third lane west of Sydney Street also triggers additional property impacts, it does not appear warranted on capacity grounds until such time as DPTI upgrade Greenhill Road to three lanes westbound. Therefore Scenario 5 Alternate Test A (with three lanes westbound in Greenhill Road from Portrush Road to Sydney Street only) is the preferred long term traffic scenario, with a LUMS system to operate as per Scenario 5 Alternate Test B in the PM Peak and Saturday Midday Peak periods.

Thursday AM Peak

AM PEAK	Scenario	0A 2026 Volume - Modified Existing Network (Modified Base)	0B 2026 Volume - Modified Existing Network (Modified Based) WITH third lane on Greenhill Rd which extended west of Sydney Street	0B - Test A 2026 Volume - Modified Existing Nework (Modified Based) WITH third lane on Greenhill Rd which becomes a left turn only into Sydney Street	0B - Test B 2026 Volume - Modified Existing Nework (Modified Based) WITH third lane on Greenhill Rd which becomes a left turn only into Sydney Street (also left turn only through Portrush Rd intersection)	5 - Alternate 2026 Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cato & Sydney LT Lanes, and Greenhill RT lane, and Greenhil Bus Stop Relocation) WITH thir lane on Greenhill which extend west of Sydney Street and reconfiguration of Greenhill Ea approach to Portrush	5 - Alternate Test A 2026 Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT lane, and Greenhill Bus Stop Relocation) WITH third lane on Greenhill which becomes a left turn only into Sydney Street and reconfiguration of Greenhill East approach to Portrush	5 - Alternate Test B 2026 Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT lane, and Greenhill Bus Stop Relocation) WITH third lane on Greenhill (left turn only during this time)which becomes a left turn only into Sydney Street and reconfiguration of Greenhill East approach to Portrush
Intersection	Type	Average Intersection Delay	Average Intersection Delay	Average Intersection Delay	Average Intersection Delay	Average Intersection Delay	Average Intersection Delay	Average Intersection Delay
Greenhill Rd/Portrush Road	Signalized	138	109	112	133	10	116	145
Cator Street/Portrush Road	Signalized	40	48	52	41	5	62	52
Greenhill Road/Sydney Street	Unsignalized	2	4	2	2			
	Signalized					2	21	21
Cator Street/Sydney Street	Roundabout	3	2	2	2		5	5
Burnside Village Shopping Centre Access-Sydney Street A1 (SS-X1)	Unsignalized	3	3	3	3		3	3
Burnside Village Shopping Centre Access-Sydney Street A2 (SS-X2)	Unsignalized	4	4	4	4		3	3
Burnside Village Shopping Centre Access-Cator Street A1 (CS-X1)	Unsignalized	14	12	13	13		6	5
Burnside Village Shopping Centre Access-Cator Street A2 (CS-X2)	Unsignalized	0	0	0	0			
Burnside Village Shopping Centre Access-Cator Street A2 (CS-2)	Unsignalized					6	10	11
Burnside Village Shopping Centre Access-Portrush Road A1 (PR-X1)	Unsignalized	27	26	27	27	2	27	29
Burnside Village Shopping Centre Access-Portrush Road A2 (PR-X2)	Unsignalized	85	100	68	81	9	93	90

Thursday PM Peak

PM PEAK	Scenario	0A 2026 Volume - Modified Existing Network (Modified Base)	0B 2026 Volume - Modified Existing Network (Modified Based) WITH third lane on Greenhill Rd which extended west of Sydney Street	0B - Test A 2026 Volume - Modified Existing Nework (Modified Based) WITH third lane on Greenhill Rd which becomes a left turn only into Sydney Street	0B - Test B 2026 Volume - Modified Existing Nework (Modified Based) WITH third lane on Greenhill Rd which becomes a left turn only into Sydney Street (also left turn only through Portrush Rd intersection)	5 - Alternate 2026 Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT lane, and Greenhill Bus Stop Relocation) WITH third lane on Greenhill which extends west of Sydney Street and reconfiguration of Greenhill East approach to Portrush	5 - Alternate Test A 2026 Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT lane, and Greenhill Bus Stop Relocation) WITH third lane on Greenhill which becomes a left turn only into Sydney Street and reconfiguration of Greenhill Eas approach to Portrush	5 - Alternate Test B 2026 Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT lane, and Greenhill Bus Stop Relocation) WITH third lane on Greenhill (left turn only during this time)which becomes a left turn only into Sydney Street and reconfiguration of Greenhill East approach to Portrush
Intersection	Type	Average Intersection Delay	Average Intersection Delay		Average Intersection Delay	Average Intersection Delay	Average Intersection Delay	Average Intersection Delay
Greenhill Rd/Portrush Road	Signalized	183	214	208	184	239	23	174
Cator Street/Portrush Road	Signalized	57	61	60	60	92	9	96
Greenhill Road/Sydney Street	Unsignalized	151	147	147	151			
	Signalized					113	11	114
Cator Street/Sydney Street	Roundabout	23	31	28	22	22	2	18
Burnside Village Shopping Centre Access-Sydney Street A1 (SS-X1)	Unsignalized	10	13	12	10	11	1	9
Burnside Village Shopping Centre Access-Sydney Street A2 (SS-X2)	Unsignalized	13	16	17	12	12	1	9
Burnside Village Shopping Centre Access-Cator Street A1 (CS-X1)	Unsignalized	54	63	57	56	14	1	14
Burnside Village Shopping Centre Access-Cator Street A2 (CS-X2)	Unsignalized	63	55	60	45			
Burnside Village Shopping Centre Access-Cator Street A2 (CS-2)	Unsignalized					29	3	25
Burnside Village Shopping Centre Access-Portrush Road A1 (PR-X1)	Unsignalized	75	81	74	77	58	5	56
Burnside Village Shopping Centre Access-Portrush Road A2 (PR-X2)	Unsignalized	112	89	141	127	190	20	212

Saturday Midday Peak

SATURDAY	Scenario	0A 2026 Volume - Modified Existing Network (Modified Base)	0B 2026 Volume - Modified Existing Network (Modified Based) WITH third lane on Greenhill Rd which extended west of Sydney Street	0B -Test A 2026 Volume - Modified Existing Network (Modified Base) WITh third lane on Greenhill Rd which becomes a left turn only into Sydney Street	0B - Test B 2026 Volume - Modified Existing Network (Modified Base) WITH third lane on Greenhill Rd which becomes a left turn only into Sydney Street (also left turn only through Portrush Rd intersection)	5 - Alternate 2026 Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT lane, and Greenhill Bus Stop Relocation) WITH third lane on Greenhill which extends west of Sydney Street and reconfiguration of Greenhill East approach to Portrush	5 - Alternate Test A 2026 Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT Lanes, and Greenhill RT lane, and Greenhill Bus Stop Relocation) WITH third lane on Greenhill which becomes a left turn only into Sydney Street and reconfiguration of Greenhill East approach to Portrush	5 - Alternate Test B 2026 Volume - Signalised Sydney/Greenhill (with RT) & Geom Changes (Extended Cator & Sydney LT lanes, and Greenhill RT lane, and Greenhill Bus Stop Relocation) WITH third lane on Greenhill (left turn only during this time) which becomes a left turn only into Sydney Street and reconfiguration of Greenhill East approach to Portrush
Intersection	Type	Average Intersection Delay	Average Intersection Delay	Average Intersection Delay	Average Intersection Delay	Average Intersection Delay	Average Intersection Delay	Average Intersection Delay
Greenhill Rd/Portrush Road	Signalized	57	157	162	56	171	16	73
Cator Street/Portrush Road	Signalized	13	12	13	13	18	1	20
Greenhill Road/Sydney Street	Unsignalized	20	18	19	14			
	Signalized					18	1	17
Cator Street/Sydney Street	Roundabout	1	1	2	1	5		4
Burnside Village Shopping Centre Access-Sydney Street A1 (SS-X1)	Unsignalized	5	5	5	5	6		6
Burnside Village Shopping Centre Access-Sydney Street A2 (SS-X2)	Unsignalized	8	8	8	8	9		9
Burnside Village Shopping Centre Access-Cator Street A1 (CS-X1)	Unsignalized	24	18	18	18	15	1	15
Burnside Village Shopping Centre Access-Cator Street A2 (CS-X2)	Unsignalized	48	43	46	51			
Burnside Village Shopping Centre Access-Cator Street A2 (CS-2)	Unsignalized					10		9
Burnside Village Shopping Centre Access-Portrush Road A1 (PR-X1)	Unsignalized	25	26	24	24	45	4	57
Burnside Village Shopping Centre Access-Portrush Road A2 (PR-X2)	Unsignalized	15	17	15	15	37	3	50

Appendix E

Economic Impact Assessment

BURNSIDE VILLAGE

ECONOMIC IMPACT ASSESSMENT

URBIS

DECEMBER 2018
PREPARED FOR THE COHEN GROUP

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

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You must read the important disclaimer appearing within the body of this report.

TABLE OF CONTENTS

Introduction i
1. Property Description and Location 3
1.1. Site and Location 3
1.2. Existing and Proposed Centre 7
2. Trade Area Market 13
2.1. Trade Area Definition 13
2.2. Trade Area Resident Population 15
2.3. Trade Area Resident Demographics 17
2.4. Trade Area Resident Retail Spending 18
2.5. Summary 19
3. Retail Supply and Hierarchy 20
3.1 Activity Centres Hierarchy 20
3.2 Retail Supply 20
4. Current Centre Performance 26
4.1. Turnover Performance 28
4.2. Market Shares 28
5. No Development (Status Quo) Potential 30
6. Economic Need, Demand and Impact 31
6.1. Proposed Development 31
6.2. Market Need and Demand 31
6.3. Turnover Potential of Burnside Village Development 31
6.4. Turnover Impact 35
6.5. Economic Benefits 40
7. Conclusions 46
Disclaimer 48

INTRODUCTION

Urbis has been engaged by The Cohen Group to prepare an independent assessment of the economic need, demand and impact of the proposed expansion of Burnside Village shopping centre.

This report includes the following sections:

Section 1 – Property Description and Location

Section 2 – Trade Area Market

Section 3 – Retail Supply and Hierarchy

Section 4 – Current Centre Performance

Section 5 – No Development (Status Quo) Potential

Section 6 – Economic Need, Demand and Impacts

Section 7 – Conclusions

GOODS AND SERVICES TAX (GST)

The spending market and turnover estimates presented in this report are inclusive of GST.

MARKETINFO

Retail spending estimates provided in this report are based on the MarketInfo micro simulation model developed by MDS Market Data Systems. MarketInfo is based on the Household Expenditure Survey and Australian National Accounts. Given that the estimates are based on survey data they will be subject to sampling variability.

ANALYSIS YEARS

Analysis throughout this report relates to calendar years (ending December 30) unless otherwise stated.

DEFINITIONS

The following definitions have been adopted for the purposes of this report:

- **Retail** refers to the Australian Bureau of Statistics (ABS) definition adopted for the use in estimating Retail Trade in Australia. This definition is also being used for the purposes of detailing the retail expenditure by residents of Australia using MarketInfo, and also for categorising shopping centre turnover and tenancy details.
- **Non-Retail** therefore refers to various store types, services and expenditure categories, not included in the appropriate Australian & New Zealand Standard Industrial Classification (ANZSIC) included within the scope of the latest Retail and Services Census. The non-retail component includes the following tenancy types:
  - Amusements
  - Appliance Rental
  - Auto Accessories
  - Banks and Building Societies
  - Cinemas
  - Equipment Hire
  - Financial & Property Services
  - Garden Supplies
  - Lottery & Gaming
  - Marine Equipment
  - Medical and Dental Services
  - Offices
  - Post Office
  - Travel Agency

- In this report Urbis classifies the retail market into seven main product group as follows:
  - **Food Retail.** Example product categories include bakery, deli & dairy, fish, frozen food, fruit & vegetables, meat, groceries, pharmaceutical groceries, toiletries, tobacco, take home liquor
  - **Food Catering**. Example product categories include take-away food, cafes & restaurants
  - **Apparel**. Example product categories include women's clothing, children's clothing, men's clothing, other clothing, footwear, jewellery, fashion accessories.
  - **Homewares**. Example product categories include glassware, tableware, home decoration, home entertainment equipment, computer hardware & software, communications, small appliances, Manchester.
  - **Bulky Goods**. Example product categories include furniture, floor coverings, whitegoods, hardware, garden.
  - **Leisure/General**. Example product categories include books, newspapers & magazines, stationery, music, video & games, pharmaceuticals, cosmetics & accessories, recreational equipment, toys & games.
  - **Services**. Example product categories include hair & beauty, laundry & cleaning, video & games hire, optical goods & fees, photographic film, repairs & maintenance
- The composition and performance benchmarking of Burnside Village is based on data from the **2018 Urbis Shopping Centre Benchmarks**.

1. PROPERTY DESCRIPTION AND LOCATION

1.1. SITE AND LOCATION

1.1.1. Regional Context and Transport Infrastructure

Burnside Village is located in the affluent eastern suburbs of Adelaide and in the City of Burnside, approximately 5 km to the south-east of the Adelaide CBD *[refer Map 1.1]*. Burnside is an established but densifying region of Adelaide mainly consisting of older stock detached housing and features some of the highest income/wealthiest households in the metropolitan area.

The Burnside Village shopping centre benefits from a high profile and accessible location with frontage to Portrush Road and landholdings extending to Greenhill Road in the north. Portrush Road serves as a key north-south road arterial linking the eastern suburbs from Payneham in the north and Urrbrae in the south. Portrush Road also links with the M1 South Eastern Freeway which is the main highway between Adelaide and Melbourne and road providing access to and from the Adelaide Hills. Greenhill Road functions as one of the main east-west links between the eastern suburbs/Adelaide Hills and central Adelaide.

The SA *Integrated Transport and Land Use Plan* (July 2015) notes an opportunity for future road improvements to occur on Greenhill Road, including next to the Burnside Village property, which would further enhance east-west access to the Burnside Village centre.

Public transport to Burnside Village is provided by bus services, with stops on Portrush Road, essentially opposite the entry to the 'Fashion Mall' of the centre, and Greenhill Road.

Activity Centres Hierarchy

Map 1.1 illustrates the designated hierarchy of Activity Centres throughout the inner and middle suburbs based on the State Government Development Plans, including for the City of Burnside. The Adelaide 'Capital City' serves as the highest order centre followed by three regional centres at Marion, Modbury and Port Adelaide.

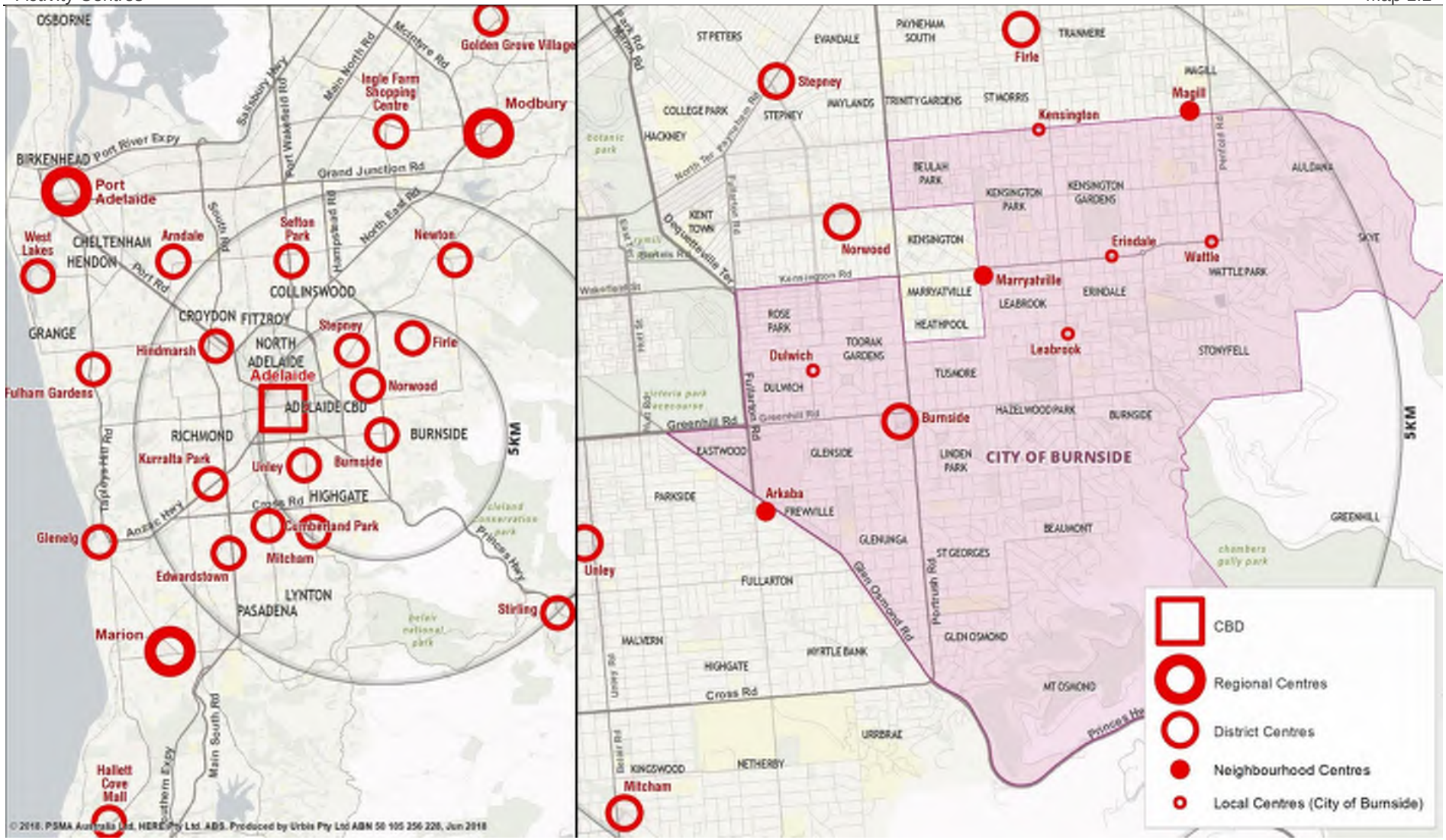
The Burnside (Glenside) activity centre is classified as a District Centre which are intended to include *"shopping facilities that provide 'convenience' goods and a range of 'comparison' goods to serve the major weekly household shopping needs of the district community, as well as a range of other business and community facilities and services".* The type of retail and services provided at Burnside Village Shopping Centre fulfils this intended role through the inclusion of a full-line Coles supermarket and a range of other food retail, general retail (e.g. pharmacy) and retail services stores (i.e. major weekly household needs), as well as a broad range of fashion and other non-food retail brands (i.e. 'comparison' goods).

Due to its focus on both convenience/everyday and discretionary shopping Burnside Village is not directly competitive with any one type of centre but a broad spectrum of centres within centres hierarchy. These centres range from smaller supermarket-based centres; to major suburban regional centres and the Adelaide CBD which provide an extensive range of fashion and other discretionary retail brands. In this respect, Burnside Village is a rather unique shopping centre with few direct peers in Australia.

In an ever evolving and dynamic retail marketplace, including significant shifts in consumer behaviour due to the growth in online retailing and use of new technology, existing shopping centres need to continually make improvements to the offer and experience they are providing to remain relevant to their market. This is particularly the case for centres serving discretionary retailing, including Burnside Village.

Activity Centres

Map 1.1



1.1.2. Local Context

The Burnside District Centre includes the range of retail, commercial and community facilities located to the north and south of the Greenhill Road and Portrush Road intersection. *[refer Map 1.2]*

The Burnside Village property forms part of a broader landholding owned by The Cohen Group which includes:

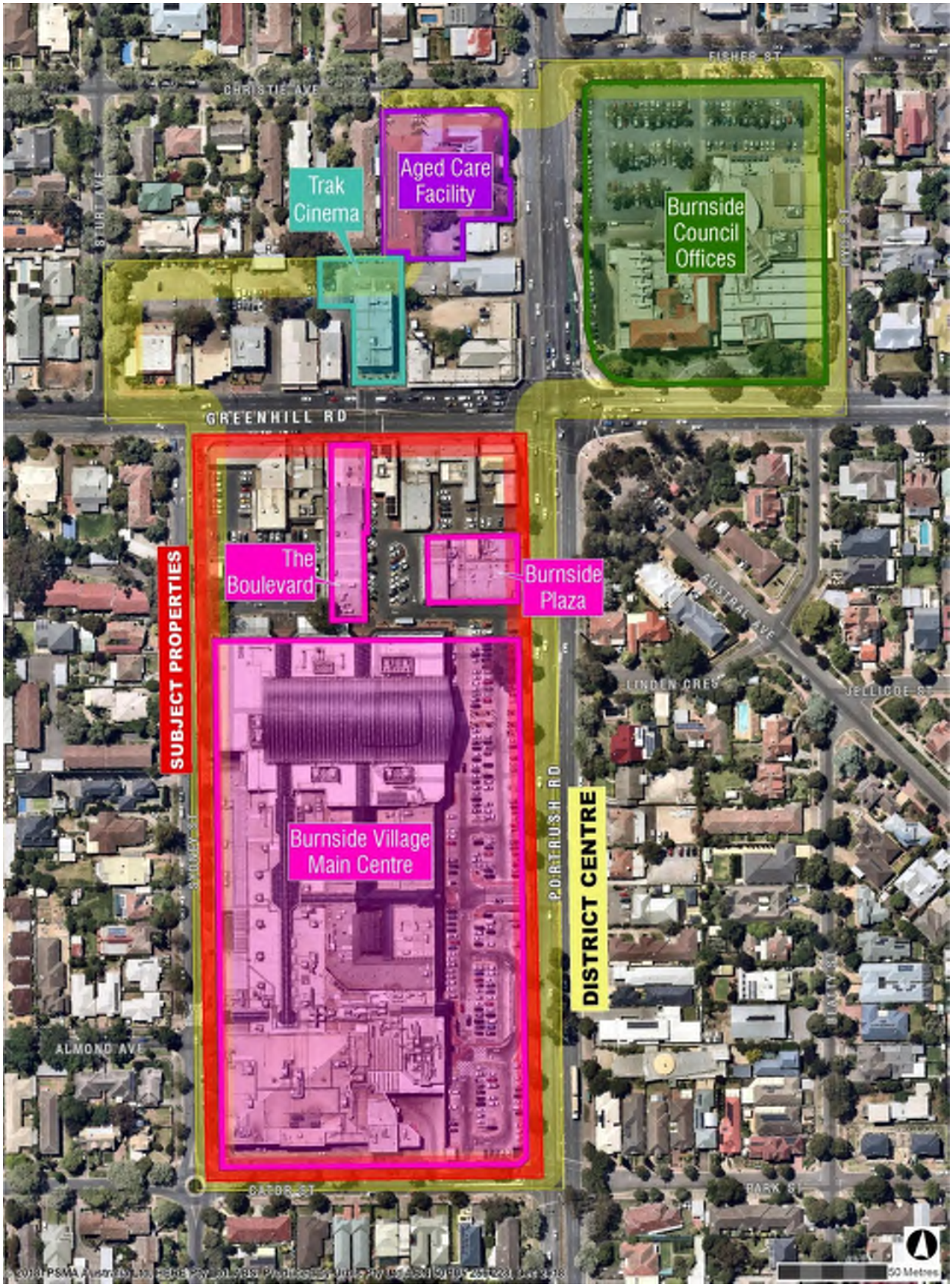
- Burnside Village Shopping Centre, which refers to the main shopping complex in the District Centre.
- Burnside Plaza, which has nine tenants including OPSM, a lingerie shop, Westpac and an Imagine If toy store.
- The Boulevard Burnside, which has 13 tenancies including the Bistro France café, several independent women's boutique shops, Black Pepper, My Size and a hairdresser. Both homewares tenants, Villeroy & Boch and House & Garden are located next to the Boulevard, to the east and west respectively.
- Several other tenancies fronting Greenhill Road.

For the purposes of this report, the collective landholding of The Cohen Group is referred to as "Burnside Village".

In addition to the Burnside Village landholding other uses in the District Centre includes the two-screen Trak Cinema, Burnside Council offices, an aged care facility, the Grimaldi's and Empress Restaurants, and a number of retail service and non-retail tenancies. Across the whole of the Burnside District Centre there are over 180 retail, entertainment and services tenants. The total leasable floorspace dedicated to retail uses amounts to an estimated 18,700 sq.m.

Burnside Village benefits from good site ingress-egress which is currently provided at six locations as follows:

- Two from Sydney Street, namely access directly to the basement carpark and to the small at-grade carpark at the northern end of the centre.
- Two from Cator Street, namely access down to the basement carpark and to the upper level of the decked carpark at the Portrush Road corner.
- Two from Portrush Road, namely access to the at-grade and decked carparks flanking the eastern side of the Burnside Village centre.


Trak Cinema
Aged Care Facility
Burnside Council Offices
The Boulevard
Burnside Plaza
SUBJECT PROPERTIES
Burnside Village Main Centre
DISTRICT CENTRE
GREENHILL RD
FISHER ST
CHRISTIE AVE
STURT AVE
PORTRUSH RD
AUSTRAL AVE
LINDEN CRES
JELLICOE ST
ALMOND AVE
GATOR ST
PARK ST
50 Metres

1.2. EXISTING AND PROPOSED CENTRE

1.2.1. Existing Centre

The Burnside Village properties currently provide an estimated 24,196 sq.m of gross leasable area (GLA), which includes non-retail uses such as banks etc. This floorspace includes 18,711 sq.m for retail defined tenants as of December 2018, including 16,661 sq.m in the main Burnside Village centre.

The main Burnside Village centre is a unique shopping centre in the Australian retail landscape which, as a smaller scale centre, has established as a place for both convenience and discretionary shopping needs. The centre's overall presentation, tenant offer, amenities and 'village' environment are well aligned to the demographics of its local affluent market but also supportive of its role as a fashion destination in Adelaide.

The centre's 'village' character and premium positioning are central to its market position and trading performance and is created through:

- The premium quality of the centre's design and decor, external facades, shopfronts/fit-outs and tenants.
- The diversity of environments, with external areas blended with fully enclosed malls in an essentially seamless manner, e.g. the Vine Covered Walkway providing a more intimate experience incorporating smaller shops and sculptures within the mall and the Fashion Mall with its spacious glass roofed ceiling area and double height shopfronts.
- Excellent delivery of amenities and services, including clean and modern toilets and baby change rooms, provision of amenities such as WiFi and power outlets for phones/laptops, provision of a range of services including a concierge, phone and seating area for calling a taxi, a carpark assist system, a charging station for electric cars, etc.

These features drive the customer experience and provide a point-of-difference offer for the centre in Adelaide.

The Burnside Village centre incorporates a 'racetrack' mall configuration connecting four main precincts as follows:

- Coles/Fresh Food Mall, which comprises the mall extending from Coles through to the upper level of the decked carpark fronting Portrush Road.
- The Village Square and Vine Covered Walkway which includes the majority of the children's wear shops, services, a cafe and several women's fashion tenants. This precinct incorporates an open air mall with weather protection.
- The Atrium Mall has the most traditional mall format in the centre with a focus on mid-market fashion, intermixed with several higher end tenants. This mall includes travelator access to/from the basement carpark.
- The Fashion Mall, which is the most recent extension of the centre. This mall is anchored by Zara and the Village Pharmacy and includes a good mix of premium fashion retailers. The large void area, which accommodated the former gum tree, includes a Cibo Espresso café with a large amount of tables/seating. Two further access points to the basement carpark are provided from this precinct.

There is also a group of tenants with shopfronts facing the Portrush Road carpark. These tenants include Adairs, Bed Bath and Table, The Athlete's Foot, Laubman & Pank, Endota Spa, Flight Centre, Clip Joint, Raymond Poulton and Geox and Noni B on the ground level.

As shown in Table 1.1, the main centre of Burnside Village provides approximately 17,862 sq.m of gross leasable floorspace, including 16,661 sq.m of retail defined uses.

The balance of the Burnside Village property, which includes the range of shops and services located to the north of the main centre, provides a further 6,334 sq.m of gross leasable area, including 2,050 sq.m of retail floorspace.

In total, Burnside Village currently provides 24,196 sq.m of gross leasable area, including 18,771 sq.m of retail floorspace.

Existing Floorspace

Burnside Village : Main Centre and Other Property — Table 1.1

	Retail Tenants* (sq.m)	Other Tenants (sq.m)	Total Tenants (sq.m)
Main Centre	16,661	1,201	17,862
Other Property	2,050	4,284	6,334
Total Property	**18,711**	**5,485**	**24,196**

** Urbis defined*
Source : The Cohen Group ; Urbis

1.2.2. Proposed Development

The development scheme for Burnside Village proposes an expansion of the centre in two stages *[refer Table 1.2].*

The 'Stage 6' development will provide a net additional 12,963 sq.m of GLA, bringing total GLA to 37,159 sq.m. The assumed increase in GLA for retail uses is approximately 11,010 sq.m, to a total of around 29,721 sq.m, with an estimated completion date of December 2021 (i.e. the first full year of operation is calendar year 2022).

The 'Stage 7' development would deliver an additional 14,944 sq.m of GLA, resulting in total GLA of 52,103 sq.m on completion. This stage is assumed to include an additional 9,676 sq.m of retail GLA (post the 'Stage 6' expansion and has an estimated completion date of December 2028 (i.e. the first full year of operation is calendar year 2029).

Existing and Proposed GLA

Burnside Village — Table 1.2

	Existing Centre (sq.m)	Stage 6 Change (sq.m)	Stage 6 Proposed (sq.m)	Stage 7 Change (sq.m)	Stage 7 Proposed (sq.m)	Total Change (sq.m)
Major / Mini Major	7,127	*+3,681*	10,808	*+3,592*	14,400	***+7,273***
Specialty Shops / Other	15,126	*+8,826*	23,952	*+6,262*	30,214	***+15,088***
Total Shopping Centre	**22,253**	***+12,507***	**34,760**	***+9,854***	**44,614**	***+22,361***
Commercial Levels	1,943	*+456*	2,399	*+5,090*	7,489	***+5,546***
Total Property	**24,196**	***+12,963***	**37,159**	***+14,944***	**52,103**	***+27,907***
Total Retail *- existing and proposed / assumed*	**18,711**	***+11,010***	**29,721**	***+9,676***	**39,397**	***+20,686***

Source : The Cohen Group ; Urbis

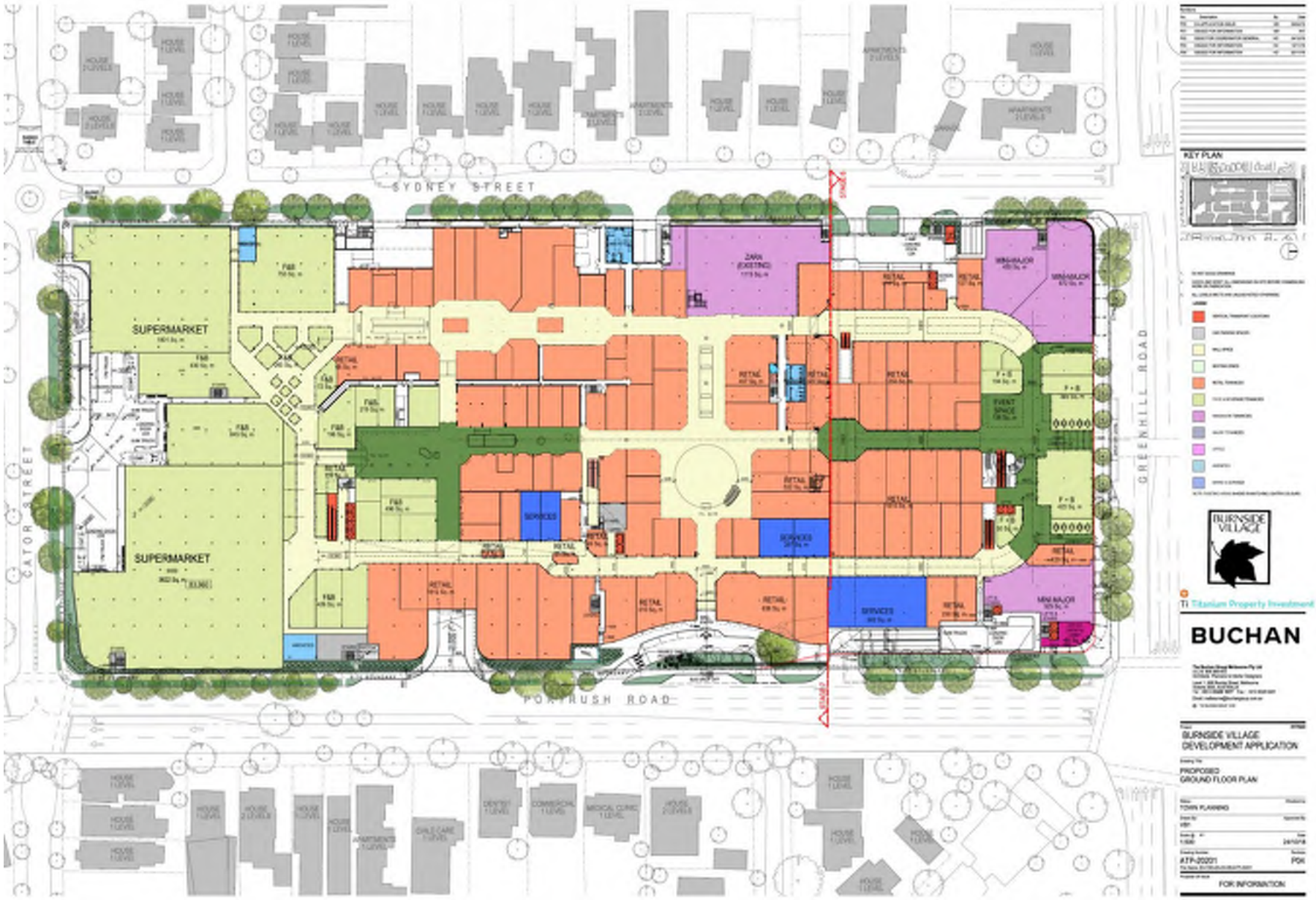
The proposed layout of the shopping centre levels are shown in Figures 1.1-1.3. The key elements of these plans include:

- Stage 6
  - A northern expansion of the main Burnside Village centre to Greenhill Road, replacing the existing tenancies in this area.
  - New mini majors (as defined by Urbis) of approximately 3,881 sq.m, including tenancies which could accommodate new international / flagship brands.
  - A net addition of approximately 6,200 sq.m in specialty shop floorspace.
  - A new 6-screen cinema complex on level 2.
  - New F&B precincts at the northern end of the centre, including on the ground level, level 1 and level 2 (i.e. rooftop bar tenants adjacent to the cinemas).
  - Additional commercial floorspace amounting to around 800 sq.m.
  - Two levels of new basement level carparking below the new section of the shopping centre, adding 492 carparking spaces.
- Stage 7
  - A new eastern positioned mall, to be known as the 'Village Walk, which will replace the existing at-grade carpark next to Portrush Road.
  - A redeveloped southern end of the centre including:
    - a relocated Coles supermarket (3,600 sq.m)
    - a new / second supermarket anchor (1,800 sq.m)
    - a new 'Village Market' precinct which is assumed to include an expanded fresh food offer and complementary food and beverage and convenience uses (e.g. services) co-located with the supermarkets.
  - A net additional 2,046 sq.m in mini major floorspace (as defined by Urbis).
  - A net additional 6,600 sq.m in specialty shop floorspace.
  - New floors of commercial / office floorspace above the mall in the northeast corner of the layout.
  - Additional carparking above the new eastern and southern malls, providing an additional 344 spaces (2,060 spaces in total).

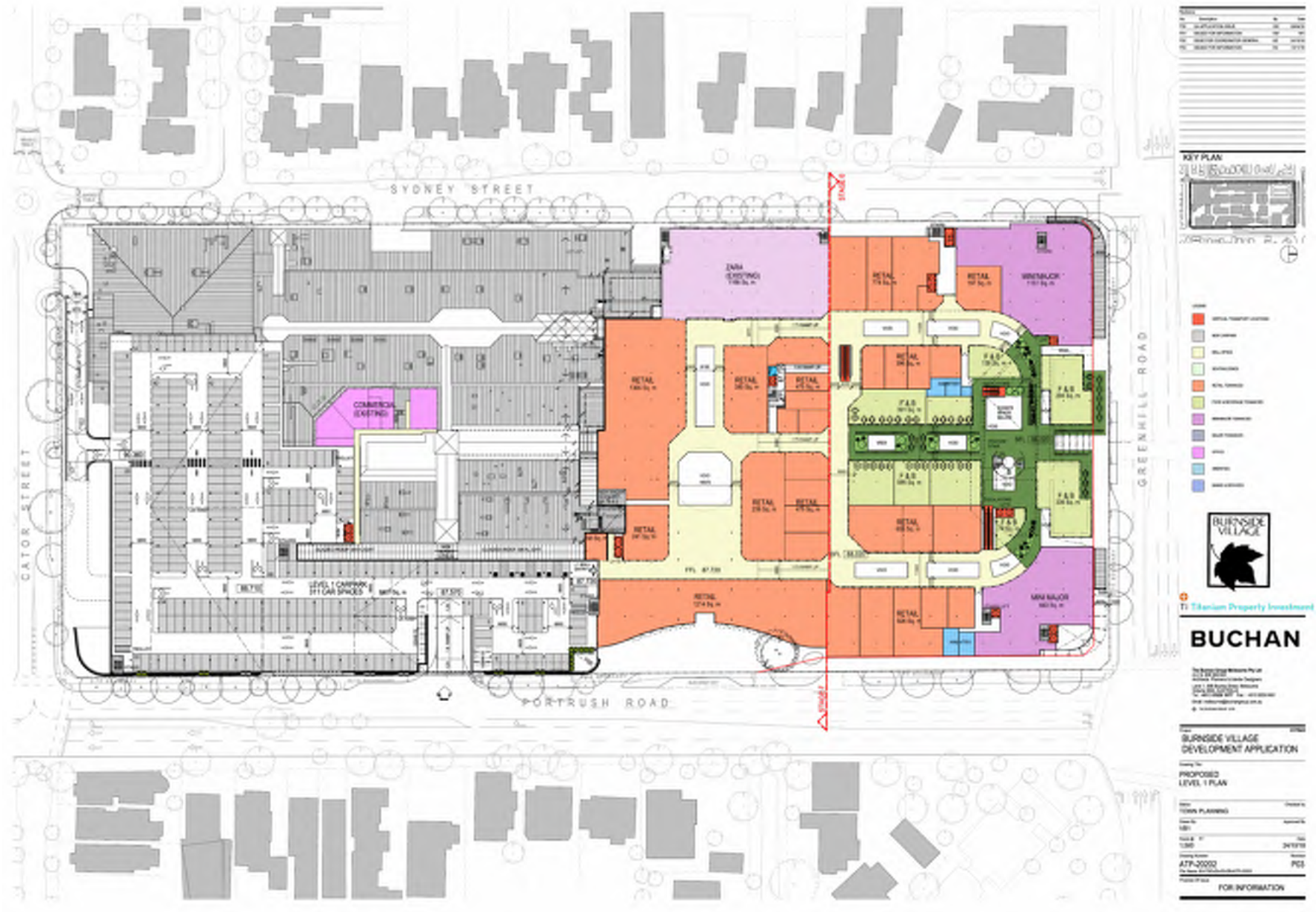
The proposed development will provide an integrated centre combining retail shops, services, food/dining, entertainment and commercial office space, which will deliver a greater level of convenience for shoppers, other visitors and workers and better support the trading performance of retail shops. The type of uses added to the centre will enhance the role of the centre and its ability to meet the needs and preferences of the market. It will also address a number of key gaps in the centre's offer, including the addition of cinemas and dedicated dining precincts which are key features of modern shopping centre offerings and a notable omission from Burnside Village currently. The new commercial and ancillary uses will contribute to a more diverse range of uses offered in the Burnside activity centre and further establish its role as a key community hub in the area.

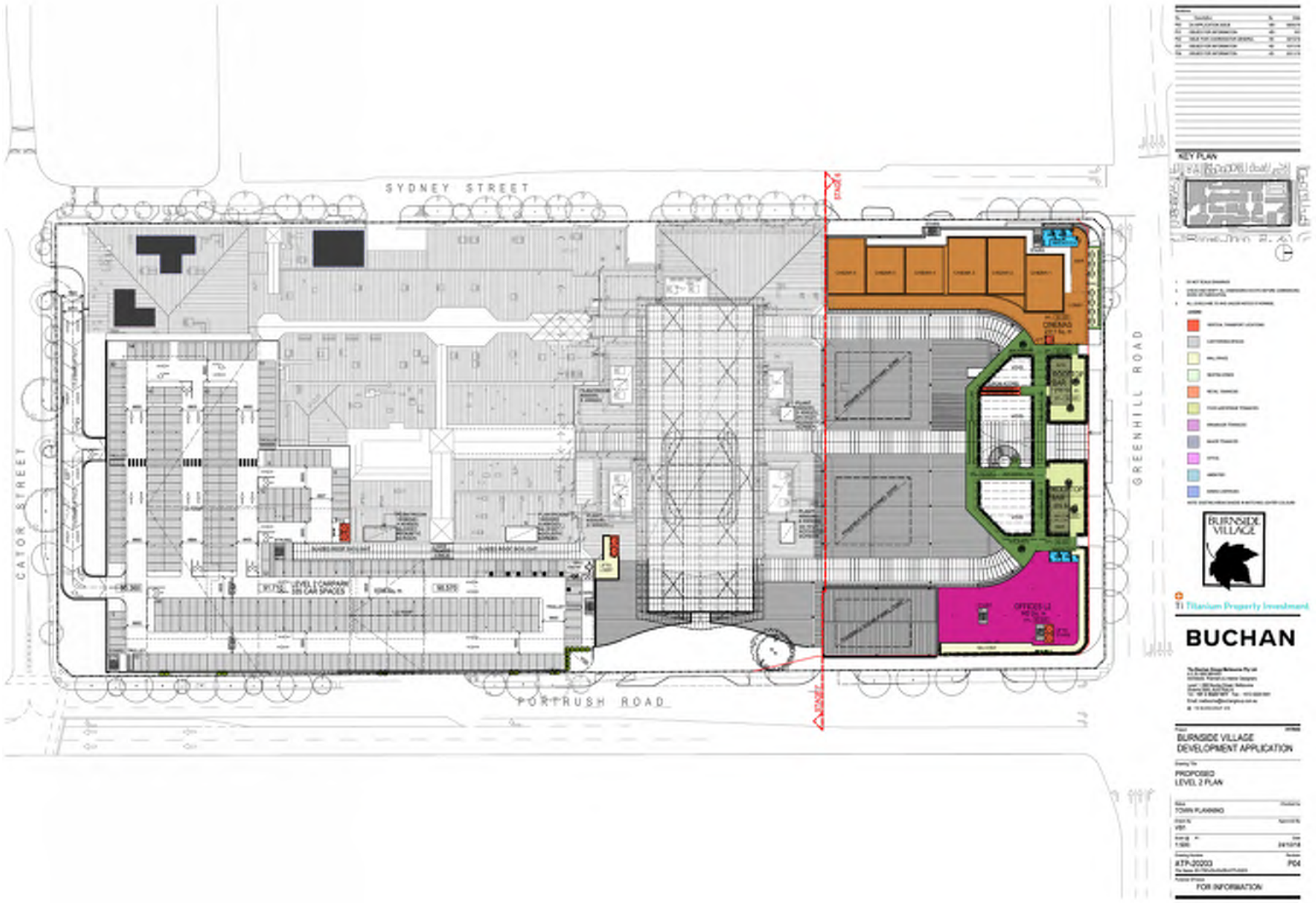
The development will also include elements, including a centre entry and food & beverage uses, which will better activate the Greenhill Road precinct

Proposed Development Scheme (Stage 6 & 7) – Ground Level Figure 1.1



Proposed Development Scheme (Stage 6 & 7) – Level 1 Figure 1.2




SYDNEY STREET
CATOR STREET
GREENHILL ROAD
PORTRUSH ROAD
KEY PLAN
BURNSIDE VILLAGE
BUCHAN
BURNSIDE VILLAGE
DEVELOPMENT APPLICATION
PROPOSED
LEVEL 2 PLAN
FOR INFORMATION

2. TRADE AREA MARKET

This section details the trade area served by Burnside Village, including current and future population and spending levels and socio-economic profile of residents.

2.1. TRADE AREA DEFINITION

The trade area of Burnside Village has been defined taking into account the understood customer draw of the centre as well as typical considerations including the location and quality of competing centres, the surrounding road and public transport network and its effect on the accessibility of the centre and any physical and geographic features which influence the draw of the centre.

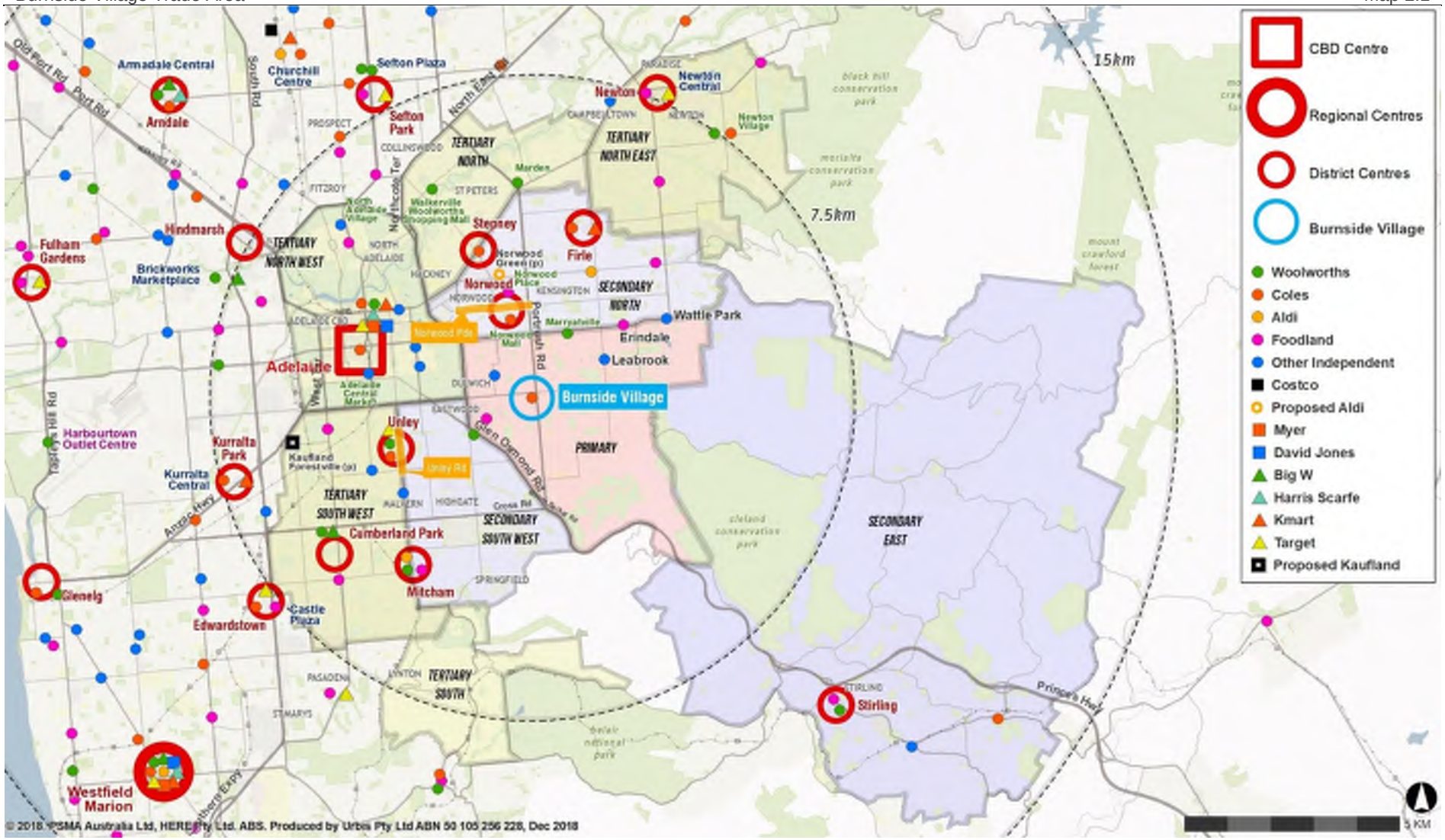
Burnside Village captures trade from a broad geographic area with customers visiting the centre from throughout Adelaide but mainly from the inner and middle distance suburbs. Key factors influencing the draw of the centre are as follows:

- The simple grid road network in the eastern suburbs facilitates good local access to Burnside Village and supports usage of the centre by residents in immediately surrounding suburbs.
- The Adelaide Hills influence the draw and catchment of the centre to the east and south. The main communities in this region, such as Stirling, Bridgewater and Hahndorf, serve as secondary markets for Burnside Village, aided by a lack of local non-food shopping options and reasonably direct access to the centre via the Princes Highway/Portrush Road or Greenhill Road.
- Westfield Marion and Westfield Tea Tree Plaza influence the centre's draw in the north, west and south-west. These locations mainly impact the overall extent of the trade area in these directions.
- The proximity of the Adelaide CBD limits the extent of the centre's main trade area in a westerly direction. The main trade area (including primary and secondary sectors) extends around 4 km west/south-west of the centre, including 2 km directly west of the centre.
- The supermarkets at The Parade in Norwood (Coles and Foodland), Marryatville (Woolworths) and Frewville (Foodland and Woolworths) limit the extent of the primary trade area in the north and south-west.
- The shopping strips in Norwood and Unley provide competition in the both the grocery, dining and fashion shopping categories, and influence the extent of secondary markets to the north and south-west. Portrush Road facilitates access to Burnside Village from the north which supports a broader secondary sector in this direction.

On balance of the above influences, Burnside Village's trade area extends approximately 8 km in the south-west, 6 km in the west and north and 12 km in the east. The main trade area extends mostly within 5 km of the centre in the north, west and south and extending in the east to include the main communities of Adelaide Hills.

In addition to the trade area market, Burnside Village is estimated to source approximately 28% of its turnover from customers living outside its trade area, reflecting its broader role as a premium destination for fashion shopping needs in Adelaide.

Overall the trade area defined for Burnside Village is likely to be larger than most other District Centres throughout Adelaide. This reflects the unique tenant composition and market positioning of the centre which is not provided anywhere else in Adelaide and attracts shoppers from across a broad region.


CBD Centre
Regional Centres
District Centres
Burnside Village
Woolworths
Coles
Aldi
Foodland
Other Independent
Costco
Proposed Aldi
Myer
David Jones
Big W
Harris Scarfe
Kmart
Target
Proposed Kaufland
15km
7.5km
Burnside Village
Adelaide
Norwood
Stepney
Firle
Wattle Park
Erindale
Leabrook
Unley
Kurralta Park
Kurralta Central
Harbourtown Outlet Centre
Cumberland Park
Mitcham
Glenelg
Edwardstown
Castle Plaza
Westfield Marion
Hindmarsh
Fulham Gardens
Brickworks Marketplace
Armadale Central
Armadale
Churchill Centre
Selton Plaza
Selton Park
Newton
Newton Central
Newton Village
Stirling
PRIMARY
SECONDARY EAST
SECONDARY SOUTH WEST
SECONDARY NORTH
TERTIARY NORTH
TERTIARY NORTH EAST
TERTIARY NORTH WEST
TERTIARY SOUTH WEST
TERTIARY SOUTH
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5 KM

2.2. TRADE AREA RESIDENT POPULATION

The Burnside Village trade area covers an established and relatively densely populated area of Adelaide. The area is achieving population growth on the back of evolving life cycles of households (i.e. more families moving in), and also urban renewal projects and new high density development, particularly in and near the Adelaide CBD.

In the past five years, the resident population of the trade area is estimated to have grown by an average of 0.5% or 1,270 people per annum. As of June 2018, the trade area had an estimated resident population of over 247,000 people, including over 116,000 in the main trade area and around 34,500 people in the primary trade area.

The forecasts for future population growth in the trade area are based on a range of available data sources, including:

- The latest Estimated Resident Population (ERP) published by the Australian Bureau of Statistics (ABS).
- New dwelling approval (NDA) data published by the ABS.
- The latest SA Government population projections for Local Government Areas (LGAs), including the City of Burnside.
- Information on proposed major residential developments and urban renewal projects, including from Cordell Connect and Renewal SA.

The primary trade area has achieved good rates of population growth in the last five years (0.8% per annum). This rate of growth is forecast to strengthen over the next decade, aided by the Glenside urban renewal project just over 1 km west of Burnside Village. The project involves the redevelopment of 16.5 hectares of surplus government land which is expected to add around 1,000 new dwellings to the primary trade area over the next 10-15 years.

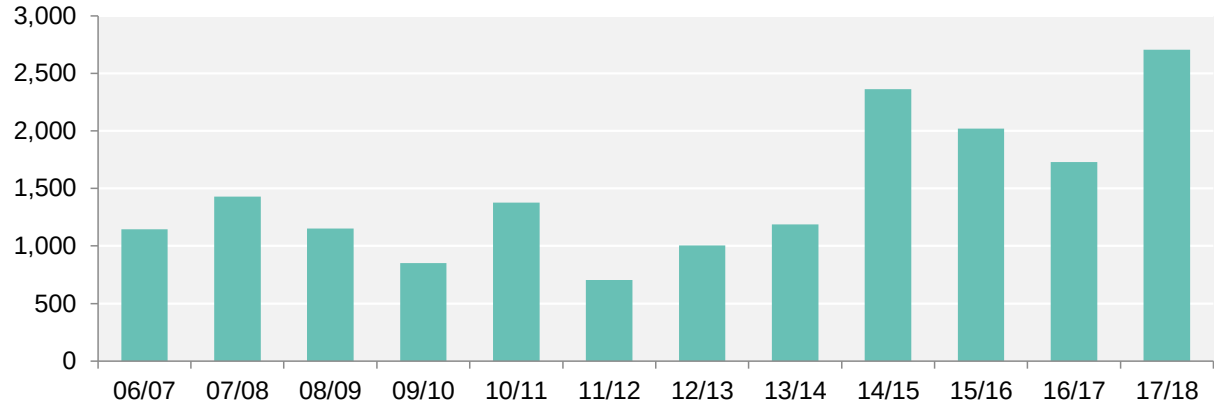
Across the total trade area, the population is forecast to increase at 0.7% or almost 1,800 persons per annum. By 2033, the total trade area population is expected to reach over 274,000.

It is noted that Urbis' overall rate of growth forecast for the trade area (0.7% per annum) is slightly lower than the projections prepared by the State Government for relevant Council areas (0.8% per annum). This reflects a degree of conservatism in the Urbis forecasts which takes into account the recent lower growth achieved in the trade area in last five years. New infill developments and general regeneration of households and gentrification of suburbs is expected to underpin stronger growth going forward. These factors are already evident with a significant upswing in new dwelling approvals in the trade area, as shown in Chart 2.1.

The population estimates demonstrate that Burnside Village has access to a large number of existing trade area residents and is also forecast to benefit from a steady stream of new residents which is expected to underpin future development opportunities at the centre.

New Dwelling Approvals

Burnside Village Trade Area — Chart 2.1



Source: ABS; Urbis

Resident Population[1]

Burnside Village Trade Area, 2013 – 2033 Table 2.1

	Historical		Forecast			
	2013	2018	2023	2028	2033	*2018-2033*
Primary Trade Area	**33,230**	**34,510**	**36,100**	**37,900**	**39,340**	***+4,830***
Secondary:						
North	37,680	38,500	39,670	40,900	42,040	*+3,540*
East	16,290	16,200	16,270	16,350	16,420	*+220*
South West	26,670	27,180	27,870	28,530	29,140	*+1,960*
Total Secondary	**80,650**	**81,880**	**83,810**	**85,770**	**87,590**	***+5,710***
Main Trade Area	**113,870**	**116,380**	**119,910**	**123,670**	**126,930**	***+10,550***
Tertiary:						
North	21,400	21,760	22,240	22,670	23,060	*+1,300*
North East	35,290	36,090	37,160	38,220	39,210	*+3,120*
South	8,360	8,310	8,390	8,470	8,540	*+230*
South West	40,150	40,520	41,110	41,690	42,230	*+1,710*
North West	22,080	24,440	27,630	30,910	34,190	*+9,750*
Total Tertiary	**127,280**	**131,120**	**136,540**	**141,960**	**147,220**	***+16,100***
Total Trade Area	**241,150**	**247,500**	**256,450**	**265,630**	**274,150**	***+26,650***
	Avg. Growth p.a. (%)					
	2013-18	2018-23	2023-28	2028-33	*2018-2033*	
Primary Trade Area	**0.8%**	**0.9%**	**1.0%**	**0.7%**	***0.9%***	
Secondary:						
North	0.4%	0.6%	0.6%	0.6%	*0.6%*	
East	-0.1%	0.1%	0.1%	0.1%	*0.1%*	
South West	0.4%	0.5%	0.5%	0.4%	*0.5%*	
Total Secondary	**0.3%**	**0.5%**	**0.5%**	**0.4%**	***0.5%***	
Main Trade Area	**0.4%**	**0.6%**	**0.6%**	**0.5%**	***0.6%***	
Tertiary:						
North	0.3%	0.4%	0.4%	0.3%	*0.4%*	
North East	0.4%	0.6%	0.6%	0.5%	*0.6%*	
South	-0.1%	0.2%	0.2%	0.2%	*0.2%*	
South West	0.2%	0.3%	0.3%	0.3%	*0.3%*	
North West	2.1%	2.5%	2.3%	2.0%	*2.3%*	
Total Tertiary	**0.6%**	**0.8%**	**0.8%**	**0.7%**	***0.8%***	
Total Trade Area	**0.5%**	**0.7%**	**0.7%**	**0.6%**	***0.7%***	
Adelaide	*0.9%*	*0.9%*	*0.9%*	*1.3%*	*0.9%*	

1. As at June

Source: ABS; Urbis

2.3. TRADE AREA RESIDENT DEMOGRAPHICS

The socio-economic profile of trade area residents is based on data from the ABS' Census of Population and Housing undertaken in 2016.

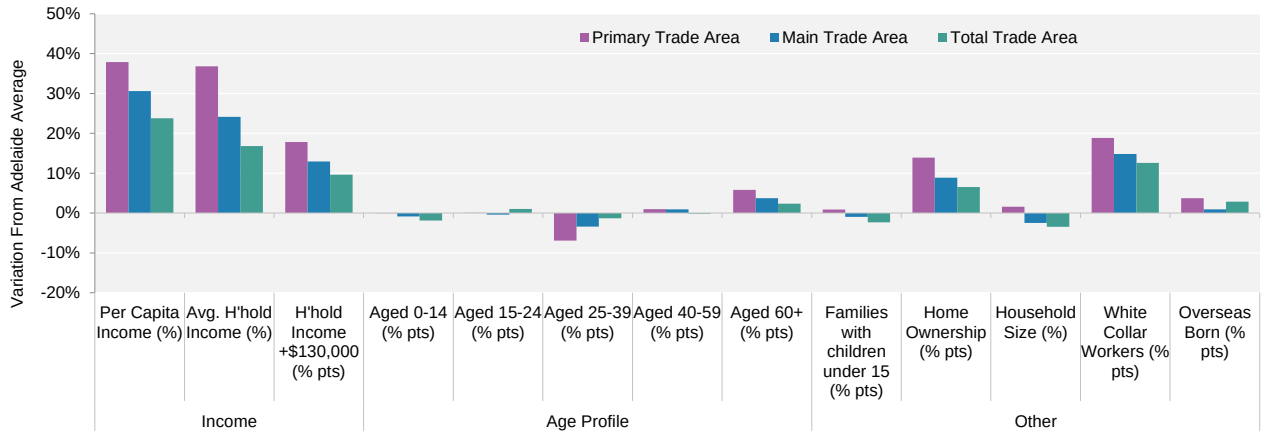
Chart 2.1 provides a summary of key socio-economic indicators for the trade area, including the total primary, main trade area and total trade area, and how they compare with the averages for Adelaide as a whole. Detailed demographic information for each trade area sector is included in Appendix A.

The trade area has a significantly above average weighting in high income residents, white collar workers and those with owned homes. Key features to note regarding the main trade area are as follows:

- **A high income affluent market –** Burnside Village serves the most affluent area of Adelaide, with income per capita across the whole of the trade area 31% above the Adelaide average. The income profile is strongly influenced by high to very high income households. Around 31% of all households have a combined annual income greater than $130,000 which is 13 percentage points higher than the Adelaide average.
- **Owned homes without mortgages –** Burnside Village's main trade area also consists of asset rich households, with a higher than average proportion of households with their mortgages paid off (i.e. 40% which compares with the Adelaide average of 32%).
- **An established market with an older age profile –** The average age of residents in the main trade area is higher than the Adelaide average, i.e. 41 years versus 39 years.
- **Singles and couples and empty nesters but growing family market –** Reflecting the age profile of trade area residents, there is a slightly above average proportion of lone households and singles and couples without dependent children in the main trade area. These two groups account for 56% of the total trade area population, which compares with 54% for Adelaide as a whole. Families (households with dependent children) account for 38% of the population across the whole of the trade area and a higher 43% and 39% in the primary and secondary trade areas.

Key Demographic Characteristics

Burnside Village Trade Area, variation from Adelaide average (2016 Census) Chart 2.2



Source : ABS Census of Population and Housing (2016); Urbis

In summary, Burnside Village serves a relatively homogenous market consisting largely of well-established and affluent households.

Burnside Village's trade area market is relatively stable and there is no indication that there will be significant changes to the demographic profile of residents over the next 5-10 years. The main demographic change of relevance is the increasing representation of families within the existing stock of housing. New higher density residential development will bring more singles and couples (including mostly professionals with good incomes) into the area. These segments will provide important growth opportunities and are indicative of the need and demand for a greater range of retail and entertainment facilities that service the needs and preferences of this market.

2.4. TRADE AREA RESIDENT RETAIL SPENDING

Per Capita Spend Levels

The retail spending market has been estimated using *MarketInfo*, a micro-simulation model developed by MDS Market Data Systems Pty Ltd. This model is based on information from the ABS' Household Expenditure Survey (HES), the Census of Population and Housing and other information sources that provide up-to-date information on changes in spending behaviour and/or income levels (e.g. Australian National Accounts, Australian Taxation Statistics, etc.). *MarketInfo* is used widely by stakeholders in the retail industry.

The model uses micro-simulation techniques to combine propensity to spend on particular commodities with the socio-economic characteristics of individuals to derive spending per capita estimates on a small area basis (i.e. the Statistical Area 1 level).

The retail expenditure estimates throughout the report include the component of turnover attributable to goods and services tax, and that all values are expressed in calendar years in constant 2018 dollar terms (i.e. retail price inflation is not included).

The retail spending estimates outlined in this report represent the categories of retail goods and services which are served by retail shops as detailed in the Definitions section of this report.

Table 2.3 outline retail spending per capita levels across the Burnside trade area for 2018 relative to the Adelaide average. Key points to note from this analysis:

- On average, trade area residents spend an estimated $15,413 per capita annually on retail goods and services, which is 13% above the Adelaide average. The average retail spend of main trade area residents is higher again at 17% above average.
- In all trade area sectors, per capita spending is higher than the Adelaide average with the exception of the tertiary north east sector. The spending levels vary across the trade area and are up to 19% above the Adelaide average in the secondary south west, tertiary south and tertiary north west sectors.
-

Retail Spend Per Capita by Trade Area Sector

Burnside Village Trade Area, 2018 vs Adelaide Average (year end December, incl. GST) Table 2.2

		Spending Variation from Average	Retail Spend Per Capita ($)			Retail Spending Market ($M)		
	Population	Spending	Food	Non-Food	Total	Food	Non-Food	Total
Total Primary	**34,500**	**+11%**	**9,062**	**7,541**	**15,150**	**313**	**260**	**573**
Secondary:								
North	38,500	+10%	8,559	6,465	15,024	330	249	578
East	16,200	+18%	8,828	7,289	16,116	143	118	261
South West	27,180	+19%	8,883	7,318	16,201	241	199	440
Main Trade Area	**116,380**	**+17%**	**8,821**	**7,098**	**15,919**	**1,027**	**826**	**1,853**
Tertiary:								
North	21,760	+11%	8,587	6,614	15,201	187	144	331
North East	36,090	-5%	7,732	5,259	12,991	279	190	469
South	8,310	+19%	8,961	7,335	16,295	75	61	135
South West	40,520	+14%	8,707	6,865	15,571	353	278	631
North West	24,440	+19%	9,341	6,869	16,209	228	168	396
Total Tertiary	**131,120**	**+10%**	**8,553**	**6,412**	**14,965**	**1,121**	**841**	**1,962**
Total Trade Area	**247,500**	**+13%**	**8,679**	**6,734**	**15,413**	**2,148**	**1,667**	**3,815**

Source: ABS; Marketinfo ; Urbis

Retail Spending Market

Table 2.4 outlines Urbis estimates of the amount of retail expenditure generated by trade area residents in 2018 through to 2033.

The trade area retail market is estimated at approximately $3.8 billion in the year to December 2018, including $573 million in the primary trade area and $1.85 billion in the main trade area.

Forecast growth in retail spending is estimated by combining forecast population growth with anticipated growth in real retail spend per capita. The assumptions relating to these contributions to spending growth to 2033 are as follows:

- Population growth averaging 0.7% p.a.
- Real retail spending per capita growth averaging 1.1% per annum.

Over the next 15 years, retail spending generated by residents of Burnside Village's trade area is forecast to increase by over $1.1 billion or 30%. The trade area retail market is forecast to reach almost $5 billion by 2033, reflecting average annual growth of around $77 million over the 15 year period.

This quantum of retail expenditure growth will support ongoing expansion of retail floorspace across the trade area, including at Burnside Village.

Total Retail Spending Market

Burnside Village Trade Area ($2018, incl. GST), 2018 - 2028 Table 2.3

		Food	Non-Food	**Total Retail**
Primary Trade Area	2018	313	260	**573**
	2022	336	283	**619**
	2029	383	330	**713**
	2033	409	357	**767**
	Avg. Ann. Growth (%)	1.8%	2.1%	**2.0%**
Main Trade Area	2018	1,027	826	**1,853**
	2022	1,090	889	**1,979**
	2029	1,213	1,012	**2,225**
	2033	1,285	1,086	**2,371**
	Avg. Ann. Growth (%)	1.5%	1.8%	**1.7%**
Total Trade Area	2018	2,148	1,667	**3,815**
	2022	2,293	1,802	**4,094**
	2029	2,570	2,065	**4,635**
	2033	2,736	2,227	**4,963**
	Avg. Ann. Growth (%)	1.6%	1.9%	**1.8%**

Source : ABS; MarketInfo; Urbis

2.5. SUMMARY

The key points to note from this analysis of the trade area population and spending include:

- Population levels within the trade area are forecast to grow at a steady rate of 0.7% per annum over the next 10 years. From 2018 to 2033, the trade area resident population is forecast to increase by 26.650 people or 11%.
- This region of Adelaide is characterised generally by affluent demographics. This is reflected in per capita retail spending levels which are well above the Adelaide average.
- With continued real growth in retail spending, combined with forecast population growth, the total retail spending market available to retail facilities serving the region will grow significantly over coming years. The degree to which this growth supports further provision of retail floorspace, including the expansion of Burnside Village, is assessed later in this report.

3. RETAIL SUPPLY AND HIERARCHY

This section details the existing and future supply of retail centres in the region of relevance to Burnside Village.

3.1. ACTIVITY CENTRES HIERARCHY

The Development Plan for Burnside (City) designates Burnside as a District Centre and specifies the following objectives relating to the centre:

> *"**Objective 71** : District centres served by public transport and including shopping facilities that provide 'convenience' goods and a range of 'comparison' goods to serve the major weekly household shopping needs of the district community, as well as a range of other business and community facilities and services.*
>
> ***Objective 72 :** Retention and reinforcement of the Glenside district centre shown on Map Bur/1 (Overlay 1) as the principal focus of retail facilities, offices and business and community facilities in the City of Burnside.*
>
> *The size of a district centre and the range of facilities within it, may vary throughout the area of metropolitan Adelaide but should be related to the size and characteristics of the population it serves..*[1]

The existing Burnside Village centre is consistent with the intended composition of District Centres, providing both 'convenience' and 'comparison' goods.

The proposed development assessed in this report is consistent with retaining the Burnside (Glenside) District Centre as the principal centre for retail, office / business and community facilities in the municipality.

The Development Plan also notes:

> ***Objective 76 :** Retailing development not consistent with facilities envisaged in a centre located and operated so as not to adversely affect any designated centre, commercial, business or residential zones, or areas, or traffic movements on nearby roads.*
>
> *"The diversification of locations for retailing providing goods and services not compatible with the grouping of facilities envisaged for regional, district and neighbourhood centres (including corridor zones) may be considered so long as the integrity of the centre hierarchy is not compromised and the development is compatible with land uses in the locality.*

The "Principles of Development Control" further state that:

> *"Development in a centre zone should:*
>
> > *(a) accord with the intended role of the centre within the centres hierarchy, and provide for any future expansion needs commensurate with that role;…"* [2]

With regard to these principles, it is noted that the size of the Burnside District Centre is larger than most District Centres throughout Adelaide. This catchment reflects the unqiue tenant composition and market positioning of the centre which attracts shoppers from across a broad region of Adelaide. The proposed development scheme for the centre is consistent with this unique positioning and will enhance the intended role of the centre within its market.

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[1] *Burnside (City) Development Plan, page 56*
[2] *Burnside (City) Development Plan, page 59*

3.2. RETAIL SUPPLY

Map 3.1 presents the key retail centres throughout the inner and middle suburbs of Adelaide as per the centre hierarchy outlined in Adelaide's '30 Year Plan'. The supply and quality of centres catering to fashion shopping needs is a key consideration for the Burnside Village proposal given the centre's prominent role for apparel needs.

The key centres serving the relevant region for Burnside Village are outlined in this sub-section. The estimates of retail floorspace supply (GLA) in each centre has been derived from various sources including:

- The PCA Shopping Centres Online directory;
- SA Government Retail Database
- Urbis site inspections and surveys

The centre distances specified in this section relate to the closest route to each centre from Burnside Village by road.

Adelaide Capital City

The Adelaide CBD is approximately 5.5 km west of Burnside Village by road. The core retail area is centred around Rundle Mall which includes several major shopping centres and retail brands, including:

- Myer Centre, which includes a Myer department store and approximately 43,000 sq.m of retail GLA;
- Adelaide Central Plaza, which includes David Jones and around 26,000 sq.m of retail GLA;
- Rundle Place which is anchored by Harris Scarfe and Coles (full-line) and includes Apple, Country Road, Best & Less, and approximately 20,000 sq.m of retail GLA.
- Kmart and Target DDSs, and a Woolworths supermarket.

Outside of the key centres, the CBD retail offer includes a broad range of flagship fashion and homewares stores and an extensive range of specialty shops ranging from high-end to budget brands. Rundle Mall Plaza recently completed a major redevelopment which added H&M (3,000 sq.m) and a new dining terrace, amongst other changes. Elsewhere in the Adelaide CBD Hindley Street East includes a mix of cafes/restaurants and fashion retailers while Central Market Arcade (including Coles and fresh food market) is a popular destination for tourists and locals.

In total the CBD is estimated to provide around 265,000 sq.m of retail GLA in the core retail areas generally focussed in the northern part of the CBD grid. Due to the scale and range of retail offered, the Adelaide CBD competes with most retail centres throughout metropolitan Adelaide for non-food shopping. However ultimately the major suburban centres play a complementary rather than directly competing roles with CBD retail. The Adelaide CBD will continue to play a leading retail role in metropolitan Adelaide recognising the scale and diversity of its offer and access to the largest resident catchment, the large workforce in the CBD and tourists.

Regional Centres

Westfield Marion is situated in the Marion Regional activity centre and is the largest shopping centre in the southern suburbs of Adelaide with around 100,000 sq.m of retail GLA. The centre is approximately 16 km southwest of Burnside Village and is anchored by a range of major tenants including three department stores (David Jones, Myer and a smaller Harris Scarfe), three discount department stores (Big W, Kmart and Target) and three supermarkets. The centre also has a large Event cinemas with 26 screens based around one of the first ELPs in a regional centre in Australia (which is currently being improved). A recent expansion of the centre added Aldi and a new fresh food market precinct.

Due to its scale Westfield Marion benefits from a leading position for discretionary shopping needs in southern Adelaide.

Westfield Tea Tree Plaza is located in the Modbury Regional Activity Centre, approximately 15 km north of Burnside Village. The centre includes Myer and Harris Scarfe department stores, three discount department stores (Big W, Kmart and Target) and three supermarkets. A new dining and entertainment precinct recently opened which introduced a refurbished Hoyts cinema (12 screens), new casual dining operators and indoor and outdoor entertainment. Although Westfield Tea Tree would attract some usage from residents in

northern parts of the Burnside Village trade area, the centre serves a largely separate market covering most of the middle northern Adelaide suburbs.

District Centres

The Parade in Norwood serves as a key location for shopping needs in the inner eastern suburbs. The strip is approximately 2.5 km north of Burnside Village and comprises a range of shops catering to grocery and convenience-based needs, fashion / discretionary needs, dining and entertainment. The strip includes almost 30 fashion brands including a selection of mid to higher end retailers such as Country Road, Trenery and Nine West.

Major retailers include Foodland and Coles supermarkets, with the Coles store anchoring Norwood Mall in an older format tenancy which would be providing a modest level competition to the Coles at Burnside Village. The Foodland store in Norwood Place benefits from a stronger trading position with superior carparking and a higher quality range of supporting specialty shops. The Parade also includes a Hoyts cinemas complex with 7 screens.

As with The Parade, the **Unley Road** shopping strip incorporates a range of fashion shops, albeit at a more niche scale, which are mostly focussed in the Metro Centre (Country Road, Laura Ashley, Gazman, Trenery, and Witchery). Further north, the strip includes Unley Shopping Centre (Coles, Woolworths) and a small Target store which would draw trade from Burnside Village's trade area

Firle is situated in the secondary north sector, around 6.5 km north of Burnside Village. The main retail concentration is provided in Firle Plaza which is anchored by Kmart and a modern format Coles supermarket. The centre benefits from a convenient layout with good carparking, but includes minimal discretionary retaling outside of Kmart. Accordingly the competitive relevance of Firle to Burnside Village is mostly limited to supermarket and other daily / weekly retail needs.

The retail offering in **Stepney** is mostly focussed in The Avenues shopping centre which is anchored by Coles (2,650 sq.m). The location also comprises strip retailing including the St Peters village shops (takeaway food, pharmacy, retail services), resulting in estimated GLA of 5,600 sq.m.

Newton includes the Newton Central shopping centre and is located in the tertiary north east sector includes an older format Target store and Foodland supermarket, together with around 25 supporting specialty shops. The retail mix is characterised by a range of food retail, takeaway and retail service operators.

Mitcham is situated around 7 km south of Burnside Village and includes the Mitcham Square shopping centre, anchored by Woolworths (3,200 sq.m) and Foodland (2,300 sq.m). While the centre mostly caters to local daily / weekly retail needs, it includes a small range of mostly independent fashion brands (approximately 10 stores). Outside of Mitcham Square the location also includes a small number of surrounding shops including a freestanding Aldi supermarket, resulting in total retail GLA of 17,600 sq.m.

Neighbourhood Centres

The **Arkaba** (Frewville) neighbourhood centre includes :

- A high quality Foodland supermarket (3,300 sq.m) which provides a relatively unique and curated product range including a café, juice bar, and an extensive fresh food offering.
- Arkaba Village which is positioned opposite the Foodland store on Glen Osmond Road. The centre is anchored by a Woolworths supermarket and includes a small supporting specialty shop offer.

The retail offering in **Marryatville** is based around a Woolworths supermarket anchor (3,300 sq.m). The supermarket is supported by co-located specialties including Bakers Delight, a butcher and pharmacy, amongst other stores. Additional retailing extends along Kensington Road and features a number of hairdressers / beauty salons, takeaway food, a drycleaner, post office and dentist.

Magill includes a small neighbourhood centre anchored by Romeos Foodland (1,100 sq.m) and strip retail extending to the intersection of Magill and Penfold Roads. The location includes estimated GLA of 3,000 sq.m for retail uses.

Local Centres

The key local centres contributing to the retail supply in the trade area are outlined as follows:

- **Dulwich –** Small format IGA store and an estimated 1,200 sq.m of retail floorspace.
- **Leabrook –** Small format IGA store and a total of 600 sq.m retail GLA.
- **Erindale –** Small format Foodland and an estimated 20 retail specialty stores, with total retail GLA of 1,900 sq.m.
- **Wattle Park –** Comprises the Wattle Park Shopping Centre anchored by a small IGA store and with an estimated 1,100 sq.m of retail GLA.
- **Kensington Park –** Aldi and a small provision of strip shops, with total retail GLA of 1,600 sq.m

Future Retail Developments

The impact analysis in this report accounts for the following new developments either proposed, recently completed, or under construction:

- **Westfield Marion** – Development approval has been granted for a staged expansion. Stage 1 comprises a new fresh food precinct (completed), dining precinct, a new duplicate mall at the eastern end of the ground level and additional parking. Stage 2 will include a new upper level mall. For the purpose of this assessment it is assumed that the development results in an increase of 15,000 sq.m retail GLA. The development is expected to broaden and depth and breadth of discretionary retailing at the centre, including potentially international fast fashion retailers.
- **Westfield Tea Tree Plaza –** A new dining and leisure-based expansion opened in October 2018, adding 9 new restaurants and a fully refurbished 12-screen Hoyts cinema.
- **Rundle Mall Plaza –** A redevelopment was completed in October 2018 which included a new H&M store (3,000 sq.m) and dining terrace.
- **Mitcham Square –** This centre has development approval for a small expansion which would include a larger Woolworths supermarket (+600 sq.m).

The impact analysis in this report does not account for proposed developments which are unconfirmed or yet to receive development approval. These proposals include:

- **Kaufland Forrestville –** New large-format supermarket on the former Le Cornu site (assumed to be 6,000 sq.m), which could be the first Kaufland store in Adelaide.
- **Norwood Green** – A new mixed use development including residential towers and a retail component including an Aldi supermarket and 1,300 sq.m of ground floor shops.

Activity Centres / Retail Centres Hierarchy

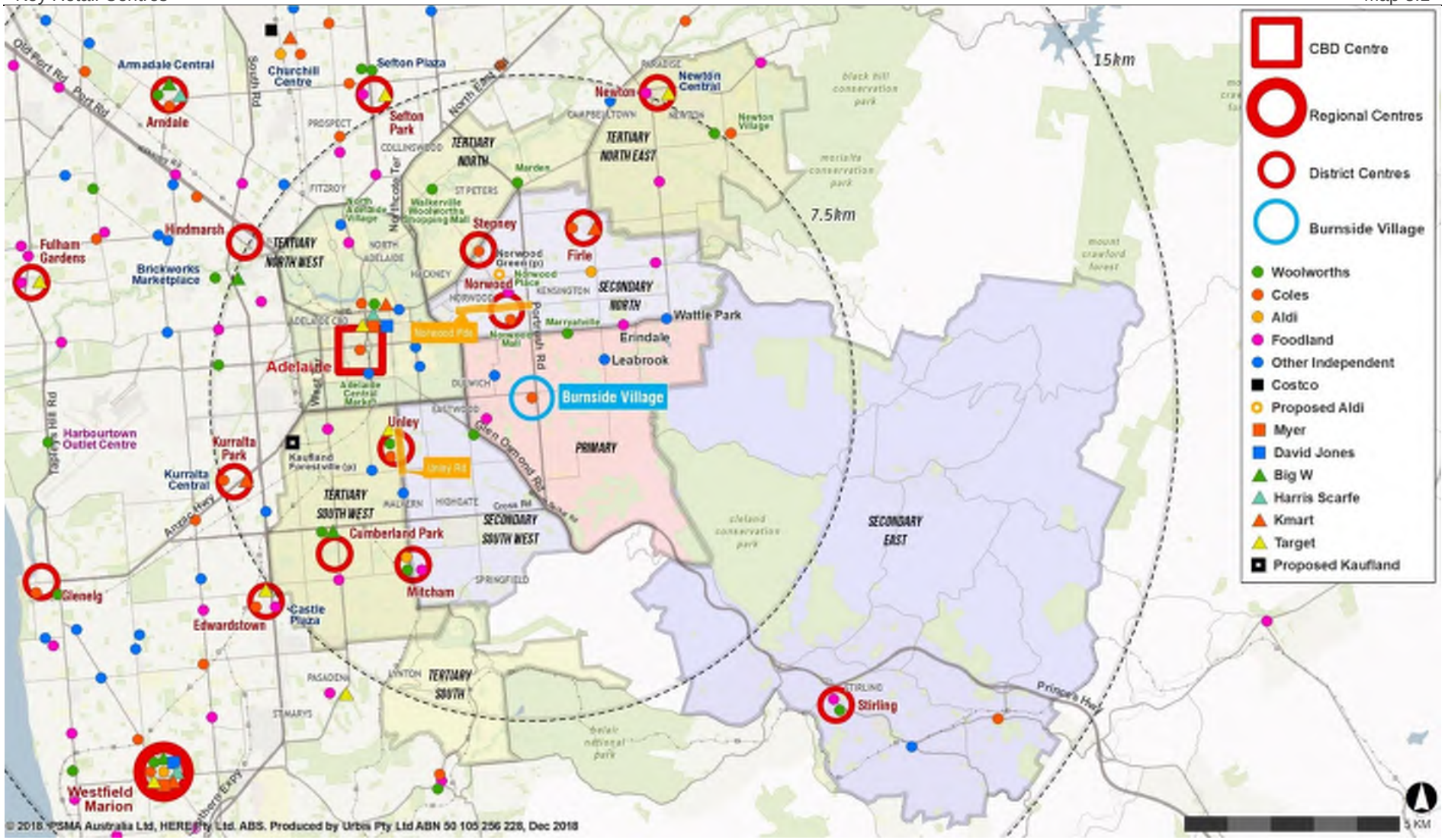
Burnside Village Trade Area — Table 3.1

Centres:	Retail GLA	Distance from Burnside Village (by road)	Urbis Shopping Centre Classification	Major Tenants
	(sq.m)	(km)		
Adelaide CBD	265,400	5.5	CBD	Myer, David Jones, Harris Scarfe, Apple, Kmart, Target, Coles, Woolworths
Regional Centres:				
Modbury (Westfield Tea Tree)	76,000	15.0	Regional	Myer, Harris Scarfe, Big W, Kmart, Target, Woolworths, Coles, Aldi, Hoyts, Event
Marion (Westfield Marion)	100,000	16.0	Regional	Myer, David Jones, Harris Scarfe, Big W, Kmart, Target, Coles, Woolworths, Aldi
District Centres:				
Norwood	40,400	2.5		
- Norwood Mall	3,800		Supermarket	Coles
- Norwood Place	7,300		Supermarket	Foodland
- Norwood (Balance)	29,300		n.a	n.a
Unley	26,500	4.5		
- Unley Shopping Centre	9,500		Supermarket	Coles, Woolworths
- Unley (Balance)	17,000		n.a	Target
Stepney	5,700	4.5		
- The Avenues	4,000		Supermarket	Coles
- Stepney (Balance)	1,700		n.a	n.a
Firlie	13,600	6.5		
- Firlie Plaza	11,900		Sub-Regional	Kmart, Coles
- Firlie (Balance)	1,700		n.a	n.a
Mitcham	17,600	7.0		
- Mitcham Square	12,600		Supermarket	Woolworths, Foodland
- Mitcham (Balance)	5,000		n.a	Aldi
Cumberland Park	11,800	8.0	n.a.	Big W, Woolworths
Kurralta	10,700	8.0	Sub-Regional	Kmart, Coles
Edwardstown (Castle Plaza)	20,000	10.0	Sub-Regional	Target, Coles, Foodland
Sefton Park / Prospect	20,500	10.0		
- Sefton Plaza	12,500		Supermarket	Woolworths, Foodland
- Sefton Park / Prospect (Balance)	8,000		n.a	Coles, Woolworths (x2)
Newton	15,200	10.0		
- Newton Central	13,600		Sub-Regional	Target, Foodland
- Newton (Balance)	1,600			
Stirling	8,100	13.0	Supermarket	Woolworths, Foodland
Neighbourhood Centres:				
Arkaba / Frewville	8,100	2.0		
- Arkaba Shopping Centre	4,000		Supermarket	Woolworths
- Arkaba / Frewville (Balance)	4,100		n.a	Foodland
Marryatville	4,400	2.5	Supermarket	Woolworths
Magill	2,900	6.0	Supermarket	Foodland
Local Centres:				
Dulwich	1,200	1.5	Supermarket	IGA
Leabrook	600	2.5	Supermarket	IGA
Erindale	1,900	3.5	Supermarket	Foodland
Kensington Park	1,600	4.5		
- Kensington Park Aldi	1,600		Supermarket	Aldi
- Kensington Park (Balance)	0		n.a	
Wattle Park	1,100	5.0	Supermarket	IGA

Source: PCA Shopping Centre Directory; Urbis

Key Retail Centres

Map 3.1



Cinemas

The existing and proposed future cinema offer in the region is outlined as follows:

- There are two small format cinemas managed by the same independent operator in close proximity to Burnside Village, including:
  - The Trak Cinemas, which has two screens and is located on the northern side of Greenhill Road opposite Burnside Village. These cinemas show art-house movies.
  - The Regal Theatre has one screen and is located on Kensington Road in Kensington. This theatre shows mainstream movies and similar to Trak Cinemas would serve a localised catchment.
- The Hoyts-operated cinemas at Norwood are located within a property centrally positioned on the northern side of the Norwood Parade shopping strip. This facility provides 7 screens and is co-located with a number of cafes/restaurants within the same property. An upgrade to include new recliner seating is scheduled to be completed by the end of 2018.
- To the south-west of Burnside Village the Mitcham cinemas operated by Wallis (an Adelaide based independent operator) is located on an upper level of the Mitcham Plaza shopping centre. The complex focusses on mainstream movies.
- The Adelaide CBD includes the GU Film House (6 screens), Palace Nova Eastend (10 screens) and Mercury Cinemas (2 screens). These venues would serve a range of visitor segments which use the CBD (e.g. tourists, workers, students), in addition to trade area residents.
- In North Adelaide there is small three screen complex (Piccadilly Cinemas) at the northern end of O'Connell Street, which is operated by Wallis Cinemas. This cinema shows mainly mainstream movies.
- The regional centres of Westfield Tea Tree Plaza and Westfield Marion include large cinema complexes with 12 screens and 26 screens respectively. Westfield Tea Tree Plaza was recently upgraded and now includes a 'LUX' offering.

While the trade area market is serviced by cinema complexes offering both mainstream and independent cinema experiences, there is a market gap for a more modern boutique offer at Burnside Village that is co-located with a cafe and restaurant offering and provides a niche cinema and dining experience.

Cinema Venues

Burnside Village Trade Area and Beyond — Table 3.2

Venue	Operator	Dist. From Burnside Village (km)*	Total Screens	Premium Screens
Trak Cinemas	Ind. Trak / Regal	<0.1	2	0
Regal Theatre	Ind. Trak / Regal	2.5	1	0
Norwood Parade	Hoyts	2.8	6	0
Mitcham Square	Wallis	7.0	7	0
GU Film House	GU / Event	6.5	6	0
Palace Nova East End	Palace Nova	5.0	10	0
Capri Theatre	Ind.	6.0	1	0
Piccadilly Cinemas	Wallis	8.0	3	0
Westfield Tea Tree	Hoyts	15.0	12	1
Westfield Marion	Event	16.0	26	3

** By road*

Source : Urbis

Summary

The hierarchy of retail centres in the region of relevance to Burnside Village comprises a broad range of locations, ranging from large Regional Centres to shopping strips and smaller Local Centres focussing on everyday shopping and service needs. The Adelaide CBD also has a significant influence on discretionary shopping patterns given its proximity and accessibility to the eastern suburbs.

With major improvements proposed at key centres (Westfield Marion and Westfield Tea Tree), as well as ongoing improvements to retailing in the Adelaide CBD, there will be a greater need for Burnside Village to continue evolving with this hierarchy through future development and investment. The proposed development scheme will assist in consolidating the existing successful and differentiated positioning of the centre and further enhance the range of retail goods and services and entertainment facilities offered to its market.

4. CURRENT CENTRE PERFORMANCE

This section provides an overview of the current composition and performance of Burnside Village.

4.1. TURNOVER PERFORMANCE

Burnside Village generated annualised turnover of $208 million, including $198 million by retail defined tenants, for the year ended September 2018 (incl. GST). This turnover volume includes both the main Burnside Village Shopping Centre and turnover generated by shops on adjoining external properties controlled by The Cohen Group (e.g. The Boulevard, Burnside Plaza).

The current performance data indicates that Burnside Village trades well with a high overall turnover productivity rate of $10,567 per sq.m. This performance reflects the popularity of the centre and its broad draw and appeal to both residents in the trade area and shoppers throughout the Adelaide market.

Centre Turnover Performance

Burnside Village, year end September 2018 (incl. GST) Table 4.1

	Floorsapce	Turnover*	Average Trading Rate
	(sq.m)	($M)	($ per sq.m)
Retail Tenants	18,711	197.7	10,567

** Annualised turnover.*

Source: The Cohen Group; Urbis

4.2. MARKET SHARES

The current market shares achieved by Burnside Village are derived taking into account:

- The estimated geographic distribution of trade of the shopping centre, which is informed by the understood customer draw of the centre.
- The estimated size of the trade area retail spending market, as per the analysis detailed in Section 2.
- The moving annual turnover of Burnside Village, as outlined in Section 4.1.

Table 4.2 shows that Burnside Village is capturing a 3.7% share of annual retail expenditure by trade area residents, including a 6.4% market share from the main trade area and 13.1% market share in the primary trade area. Some 28% of total centre retail turnover ($55.3 million of $197.7 million) is sourced from shoppers living beyond the trade area which is influenced by the premium positioning of the centre and its appeal to affluent households from throughout Adelaide.

The main trade area market share of 6.4% is well below the typical level achieved by centres catering to discretionary shopping needs. The lower shares achieved by Burnside Village reflect its broad customer draw, but also its relative scale (amount of retail floorspace).

Whilst some expenditure leakage is inevitable given the range and diversity of retail centres available to trade area residents, there is an opportunity for Burnside Village to grow its retention of trade area spending with the proposed redeveloped / expanded retail offering. This opportunity is confirmed by the current market shares which show ample capacity to elevate the centre's overall share of trade area expenditure.

Current Market Shares

Burnside Village, year end September 2018 (incl. GST) Table 4.2

	Market ($M)			Market Shares (%)			Turnover* ($M)		
	Food	Non-Food	Total	Food	Non-Food	Total	Food	Non-Food	Total
Primary Trade Area	313	260	573	12.0%	14.3%	13.1%	37.5	37.3	74.8
Secondary Trade Area	714	566	1,280	2.1%	5.2%	3.5%	14.9	29.6	44.5
Main Trade Area	**1,027**	**826**	**1,853**	**5.1%**	**8.1%**	**6.4%**	**52.4**	**66.9**	**119.3**
Tertiary Trade Area	1,121	841	1,962	0.7%	1.9%	1.2%	7.4	15.8	23.2
Total Trade Area	**2,148**	**1,667**	**3,815**	**2.8%**	**5.0%**	**3.7%**	**59.8**	**82.6**	**142.5**
Beyond Trade Area				*18.4%*	*33.6%*	*27.9%*	*13.5*	*41.8*	*55.3*
Total Retail							**73.3**	**124.4**	**197.7**

Source: The Cohen Group ; Urbis

5. NO DEVELOPMENT (STATUS QUO) POTENTIAL

Prior to assessing the market need, demand and impact of the proposed development of Burnside Village, the trading outlook for the centre is assessed assuming the centre remains in its current format. This provides the base upon which the future trading potential of Burnside Village is assessed.

The key assumptions and factors which are considered in assessing the future turnover potential of Burnside Village under a No Development (status quo) scenario are as follows:

- The centre is assumed to continue operating in the coming years with no ostensible economic shocks or significant changes in operation methods, tenant mix or material capital / operational expenses. The centre continues to be leased and managed to a high standard and there are no shocks to the SA economy or broader national economy that would materially influence retail trading conditions or that could be reasonably expected to influence the performance of the centre.
- Both population and spending growth are in-line with the forecasts outlined in Section 2, whilst the current and future competitive environment is as outlined in Section 3 and no unforeseen competitive developments eventuate.
- The future turnover potential of Burnside Village also takes into account the impact of ongoing growth in online retailing.

Tables 5.1 and 5.2 outline the turnover potential considered achievable and likely at Burnside Village in the absence of any redevelopment. In this regard, Burnside Village has the potential to achieve retail turnover of approximately $206 million in 2022 and up to $226 million in 2029 ($2018, incl. GST). These higher turnover volumes are expected to be supported by ongoing population and spending growth in the trade area and broader Adelaide markets.

Market Share and Retail Turnover Potential, No Expansion (Status Quo)

Burnside Village, 2022 ($2018, incl. GST) Table 5.1

	Resident Spending ($M)			Market Share Potential			Turnover Potential ($M)		
	Food	NF	Total	Food	NF	Total	Food	NF	Total
Total Primary	336	283	619	11.9%	14.0%	12.9%	40.0	39.6	79.6
Total Secondary	754	606	1,360	2.1%	4.8%	3.3%	15.5	29.3	44.8
Main Trade Area	**1,090**	**889**	**1,979**	**5.1%**	**7.8%**	**6.3%**	**55.5**	**68.9**	**124.4**
Total Tertiary	1,203	913	2,116	0.7%	1.7%	1.1%	7.9	15.5	23.3
Total Trade Area	**2,293**	**1,802**	**4,094**	**2.8%**	**4.7%**	**3.6%**	**63.4**	**84.4**	**147.8**
Beyond Trade Area				*18.2%*	*34.3%*	*28.2%*	*14.1*	*44.0*	*58.1*
Centre Retail Turnover ($M)							**77.5**	**128.4**	**205.9**

Note: NF = Non-Food

Source: Urbis

Market Share and Retail Turnover Potential, No Expansion (Status Quo)

Burnside Village, 2029 ($2018, incl. GST) Table 5.2

	Resident Spending ($M)			Market Share Potential			Turnover Potential ($M)		
	Food	NF	Total	Food	NF	Total	Food	NF	Total
Total Primary	383	330	713	12.7%	15.4%	13.9%	42.5	43.7	86.2
Total Secondary	830	682	1,512	2.2%	5.5%	3.7%	16.4	33.5	49.9
Main Trade Area	**1,213**	**1,012**	**2,225**	**5.4%**	**8.7%**	**6.9%**	**58.9**	**77.2**	**136.0**
Total Tertiary	1,357	1,053	2,410	0.7%	2.0%	1.3%	8.4	18.4	26.8
Total Trade Area	**2,570**	**2,065**	**4,635**	**2.9%**	**5.3%**	**4.0%**	**67.3**	**95.5**	**162.9**
Beyond Trade Area				*18.5%*	*33.6%*	*28.1%*	*15.3*	*48.3*	*63.6*
Centre Retail Turnover ($M)							**82.6**	**143.8**	**226.4**

Note: NF = Non-Food

Source: Urbis

6. ECONOMIC NEED, DEMAND AND IMPACTS

This section outlines the market need, demand and economic impact of the proposed expansion of Burnside Village.

6.1. PROPOSED DEVELOPMENT

Table 6.1 outlines the proposed increase in GLA for the Stage 6 and Stage 7 developments at Burnside Village. A full description of the proposed scheme is included in Section 1.2.2.

The 'Stage 6' development will provide a net additional 12,963 sq.m of GLA, bringing total GLA to 37,159 sq.m. The assumed increase in GLA for retail uses is approximately 11,010 sq.m, to a total of around 29,721 sq.m, with an estimated completion date of December 2021 (i.e. the first full year of operation is calendar year 2022).

The 'Stage 7' development would deliver an additional 14,944 sq.m of GLA, resulting in total GLA of 52,103 sq.m on completion. This stage is assumed to include an additional 9,676 sq.m of retail GLA and has an estimated completion date of December 2028 (i.e. the first full year of operation is calendar year 2029).

Existing and Proposed GLA

Burnside Village — Table 6.1

	Existing Centre (sq.m)	Stage 6 Change (sq.m)	Stage 6 Proposed (sq.m)	Stage 7 Change (sq.m)	Stage 7 Proposed (sq.m)	Total Change (sq.m)
Major / Mini Major	7,127	*+3,681*	10,808	*+3,592*	14,400	***+7,273***
Specialty Shops / Other	15,126	*+8,826*	23,952	*+6,262*	30,214	***+15,088***
Total Shopping Centre	**22,253**	***+12,507***	**34,760**	***+9,854***	**44,614**	***+22,361***
Commercial Levels	1,943	*+456*	2,399	*+5,090*	7,489	***+5,546***
Total Property	**24,196**	***+12,963***	**37,159**	***+14,944***	**52,103**	***+27,907***
Total Retail *- existing and proposed / assumed*	**18,711**	***+11,010***	**29,721**	***+9,676***	**39,397**	***+20,686***

Source : The Cohen Group ; Urbis

6.2. MARKET NEED AND DEMAND

The market need and demand for the proposed Stage 6 and Stage 7 developments at Burnside Village is underpinned by the following:

- **Cater to future market growth.** Retail expenditure by trade area residents is forecast to increase by $280 million between 2018 and 2022 (i.e. the expected opening year of the Stage 6 development). This increase is expected to be driven by continuing population growth, changing household formation and ongoing additions to housing supply through urban renewal and higher density developments. The proposed Stage 6 development is forecast to capture around 22% of total forecast spending growth in the total trade area between 2018 and to 2022. As a result, 78% of market growth will still be available for other centres.

  After 2022, trade area expenditure is forecast to increase by a further $540 million to 2029 (the expected opening year of the Stage 7 development). The forecast growth in trade area expenditure reflects a 21% increase in the trade area retail market between 2018-2029. The combined Stage 6 and Stage 7 developments are forecast to attract an even lower 18% of the forecast trade area spending growth between 2018 and 2029. Accordingly around 82% of market growth will be available for other centres which will support the improved performance and /or expansion of existing centres and the development of new retail centres over the forecast period.

- **Reduce leakage of resident expenditure out of the trade area and better satisfy needs locally**. Burnside Village currently captures a relatively low share of spending within its trade area, i.e. 4%. This is influenced by the current modest scale (e.g. ~18,711 sq.m of retail floorspace) and range of retail shops and services provided within the main centre and adjoining properties. The proposed expansion of Burnside Village will address gaps in the current offer and introduce new uses that will better meet the needs of the market. Consequently, the share of retail expenditure undertaken by trade area residents outside of the area will be reduced and increasing shopping activity levels locally will have flow-on benefits for the balance of the Burnside town centre.

- **Better support the role of Burnside District Centre.** Burnside Village is the key asset in the Burnside District Centre and strategically important in servicing the retail needs of shoppers in the trade area. The proposed development and investment by the centre owners is necessary to ensure that the centre can continue to fulfil its function as a key destination for everyday and discretionary shopping and remain competitive in the ever-changing marketplace. The development will also strengthen Burnside as a community and social hub through expanding and diversifying the range of facilities and activities that can be undertaken in the activity centre. In particular, the introduction of an integrated cinemas and dining precinct is expected underpin a stronger night economy and activation.

- **Cater to changing consumer needs and preferences.** Retail is a dynamic industry that requires retailers and shopping centres to constantly respond and evolve to the changing patterns of consumer behaviour and the needs and preferences of their market. The role of the centre as a place for discretionary and more leisurely based shopping trips also requires a good level of critical mass of retailing to support 'comparison' shopping and provision of other uses which complement the social aspect of the visit such as cafes and restaurants. The subject proposal builds on the strengths and popularity of Burnside Village and will enable the centre to better serve its market and help to mitigate the impact of the growth of online retailing.

- **Support of the Centre Hierarchy.** The scale of the retail development proposed for Burnside Village can be supported by the market and would leave sufficient retail demand in support of expansion and/or improvement in the performance of other activity centres. This recognises the proposed Stage 6 and Stage 7 developments would account for just 18% of the growth in trade area retail expenditure to 2029 (the planned opening year of Stage 7) and capture only an additional 2.5% market share of trade area retail expenditure. These levels of market capture would not impact the continued intended function of centres within the hierarchy.

- **Cinemas and Dining Precinct.** Cinemas are continuing to benefit from evolving consumer lifestyles, and in particular strong growth in the dining out culture. These lifestyle shifts have supported the delivery of highly appealing and better quality dining destinations within shopping centre developments. Cafes and restaurants and cinemas work in tandem to deliver appealing and vibrant dining and entertainment destinations and social hubs for communities.

  While the trade area market is serviced by cinema complexes offering both mainstream and independent cinema experiences, the local cinemas are trading from ageing complexes and without a quality integrated dining precinct. The proposed cinema complex and new dining area proposed at Burnside Village will provide the community with a state-of-the-art cinema facility that will improve the accessibility of cinemas and the opportunity to undertake more of their dining out locally. This fully integrated precinct with a good provision of conveniently positioned carparking will provide a superior experience relative to the current offer in the region. It will also provide a new community asset that will enhance the role of Burnside Village as a social hub and assist in establishing evening activity which will expand the role of the town centre overall.

With regard to the proposed community, leisure and office uses in the development scheme, the following points are noted:

- **Good Fundamental Location Attributes**. Burnside Village incorporates the necessary attributes to support office space, including favourable road and public transport infrastructure, a good provision of amenities through the shops and services provided in the town centre and employment profile of the area.

- **Large and Growing White Collar Workforce**. The catchment is continuing to accommodate population growth, supported by the development of new housing and the good amenity and attractiveness of the inner Adelaide suburbs generally. Currently 83% of workers have white collar occupations and the growing resident base will further increase the size of the office related workers in the catchment. The inclusion of new office space therefore will address the growing need for more office space.

- **Provide More Employment Opportunities Locally and Increase Containment of White Collar Jobs**. The proposed 7,489 sq.m of commercial / office space is expected to create employment for approximately 575 workers (based on a workspace ratio of 13 sq.m per worker). Currently an estimated 80% of white collar jobs are not provided for in the Burnside catchment, largely owing to the proximity of the Adelaide CBD and frame areas which include the majority of office related accommodation in Adelaide. Nevertheless, there is market opportunity and need to provide more jobs locally. The opportunity arises from the alignment with the role of Burnside Village as a District Centre and worker profile of the area but also benefits of co-location of office space with retail/amenities. Need reflects the benefits associated with greater levels of employment self-sufficiency, which has flow-on economic, social and environmental benefits.

- **Spin-Off Benefits to Retail Shops and Services**. The office workers would also have positive flow-on benefits for daytime weekday activity and provide an added market for businesses and services in the Burnside Village centre and the local area, including cafes, restaurants and take-away food outlets, banks, hairdressers, drycleaners as well as community facilities, gyms, etc.

- **Create a more diversified multi-functional activity centre**. The range of uses will progress the Burnside District Centre into a genuine activity centre, integrating retail, food, commercial, civic, entertainment and leisure activities.

6.3. TURNOVER POTENTIAL OF BURNSIDE VILLAGE DEVELOPMENT

In assessing the turnover potential for the proposed Stage 6 and Stage 7 developments, the following has been taken into account:

- The typical major, mini major and specialty shop composition of centres which have a strong fashion orientation and are of a similar scale to the proposed development.

- The typical composition of specialty shop floorspace across six retail product groups (i.e. *food retail*, *food catering*, *apparel*, *homewares*, *leisure / general* and *retail services)* of comparable centres, although with allowance for Burnside Village's unique role as a fashion destination.

- Achievable and sustainable market share and turnover levels having regard to the capacity of the trade area market, role and market position of Burnside Village and competitive supply as well as industry benchmarks and the typical outcome where the turnover productivity levels of a centre reduce following a major expansion.

6.3.1. Turnover Potential – Stage 6 (2022)

As outlined earlier in Section 6.1, the proposed Stage 6 scheme for Burnside Village is proposed to provide an increase of around 11,010 sq.m of retail GLA.

When taking these factors into account, Burnside Village with approximately 29,721 sq.m of retail floorspace has the potential to achieve an annual retail turnover of $295 million at an average trading level of approximately $9,918 per sq.m in 2022 (calendar year).

This turnover volume is based on the centre capturing a 5.1% share of total trade area retail expenditure, including 8.8% from the main trade area and 16.9% in the primary trade area (refer to Table 6.2).

The forecasts overall reflect:

- In the case where Burnside Village is not expanded and remains in its existing scale, retail turnover is forecast to increase to approximately $206 million in 2022.

- With the proposed expansion retail turnover at Burnside Village could potentially increase by $89 million, including $62 million from trade area residents' retail expenditure, in 2022 ($2018 including GST). Refer to Table 6.3.

- Of the additional $89 million, $36 million is in the food category and $53 million is in the non-food category. This turnover allocation reflects the proposal to add a range of new food & beverage tenants, including a new dining precinct that would be co-located/integrated with the proposed cinemas, and to extend the fashion and other discretionary retailing offer in the centre. Accordingly, the highest impacts are expected to be on those activity centres with the greatest emphasis on F&B and fashion/discretionary retailing.

- The additional $62 million of retail turnover from trade area residents represents an increase of just 1.5% in market share for Burnside Village overall in 2022.
- Relative to the current turnover level of $198 million, the proposed expansion would capture approximately a 22% share of the forecast growth in retail expenditure by trade area residents (i.e. from 2018 to 2022).

The level of market share that would be captured by the redeveloped Burnside Village centre is appropriate in the context of the overall available market and the centre's contribution to addressing future growth in the market.

Market Shares and Retail Turnover, Post Expansion – Stage 6 Development

Burnside Village, 2022 ($2018, incl. GST) Table 6.2

	Resident Spending ($M)			Market Share Potential			Turnover Potential ($M)		
	Food	NF	Total	Food	NF	Total	Food	NF	Total
Total Primary	336	283	619	14.3%	20.1%	16.9%	48.0	56.9	104.9
Total Secondary	754	606	1,360	3.4%	7.0%	5.0%	25.8	42.5	68.3
Main Trade Area	**1,090**	**889**	**1,979**	**6.8%**	**11.2%**	**8.8%**	**73.8**	**99.4**	**173.2**
Total Tertiary	1,203	913	2,116	1.1%	2.6%	1.7%	12.7	24.1	36.7
Total Trade Area	**2,293**	**1,802**	**4,094**	**3.8%**	**6.9%**	**5.1%**	**86.5**	**123.5**	**209.9**
Beyond Trade Area				*23.9%*	*31.8%*	*28.8%*	*27.2*	*57.6*	*84.8*
Centre Retail Turnover ($M)							**113.6**	**181.1**	**294.8**

Note: NF = Non-Food

Source: Urbis

Net Additional Market Shares and Retail Turnover – Stage 6 Development

Burnside Village, 2022 ($2018, including GST) Table 6.3

	Resident Spending ($M)			Market Share Potential			Turnover Potential ($M)		
	Food	NF	Total	Food	NF	Total	Food	NF	Total
Total Primary	336	283	619	2.4%	6.1%	4.1%	8.0	17.3	25.3
Total Secondary	754	606	1,360	1.4%	2.2%	1.7%	10.3	13.3	23.5
Main Trade Area	**1,090**	**889**	**1,979**	**1.7%**	**3.4%**	**2.5%**	**18.3**	**30.5**	**48.8**
Total Tertiary	1,203	913	2,116	0.4%	0.9%	0.6%	4.8	8.6	13.4
Total Trade Area	**2,293**	**1,802**	**4,094**	**1.0%**	**2.2%**	**1.5%**	**23.0**	**39.1**	**62.2**
Beyond Trade Area							*13.1*	*13.7*	*26.7*
Centre Retail Turnover ($M)							**36.1**	**52.8**	**88.9**

Note: NF = Non-Food

Source: Urbis

6.3.2. Turnover Potential – Stages 6 & 7 (2022)

While the proposed expansion of Burnside Village is intended to occur in two stages (i.e. 2022 and 2029) the impact analysis has also considered a scenario where the Burnside Village scheme is fully developed by 2022. The forecast turnover potential of the combined Stage 6 and Stage 7 developments is used to derive an 'upper' estimate of the potential trading impacts on other activity centres, which is assessed later in Section 6.4.3. In summary:

- With the addition of all proposed floorspace in Stage 6 and Stage 7 in 2022, the retail turnover at Burnside Village could potentially increase by $142 million, including $105 million from trade area residents' retail expenditure, in 2022. Refer to Table 6.5.

- Of the additional $142 million, $64 million is in the food category and $78 million is in the non-food category. This turnover allocation reflects the proposal to add a range of new food & beverage tenants, a second supermarket and broader range of supporting food retail specialty shops as well as a larger range of fashion and other discretionary retailers in the centre. Accordingly, the impacts from the combination of the Stage 6 and Stage 7 expansions are expected to be dispersed over a wider range of centres, including those focussed on convenience and discretionary retailing.

- The additional $105 million of retail turnover from trade area residents represents an increase of around 2.6% in market share for Burnside Village overall in 2022.

- Relative to the current turnover level of $198 million, the proposed expansion would capture a higher 39% share of the forecast growth in retail expenditure by trade area residents (i.e. from 2018 to 2022).

Post development, the forecast turnover reflects to a main trade area market share of around 11%, which reflects that 89% of spending would continue to be directed to other retail centres and formats.

Market Shares and Retail Turnover, Post Expansion – Stage 6 & 7 Development

Burnside Village, 2022 ($2018, incl. GST) Table 6.4

	Resident Spending ($M)			Market Share Potential			Turnover Potential ($M)		
	Food	NF	Total	Food	NF	Total	Food	NF	Total
Total Primary	336	283	619	18.5%	23.7%	20.9%	62.0	67.1	129.1
Total Secondary	754	606	1,360	4.3%	7.9%	5.9%	32.5	47.9	80.4
Main Trade Area	**1,090**	**889**	**1,979**	**8.7%**	**12.9%**	**10.6%**	**94.5**	**115.0**	**209.5**
Total Tertiary	1,203	913	2,116	1.3%	3.0%	2.0%	15.6	27.4	43.0
Total Trade Area	**2,293**	**1,802**	**4,094**	**4.8%**	**7.9%**	**6.2%**	**110.2**	**142.3**	**252.5**
Beyond Trade Area				*22.1%*	*31.0%*	*27.4%*	*31.2*	*64.0*	*95.2*
Centre Retail Turnover ($M)							**141.3**	**206.3**	**347.6**

Note: NF = Non-Food

Source: Urbis

Net Additional Market Shares and Retail Turnover – Stage 6 & 7 Development

Burnside Village, 2022 ($2018, including GST) Table 6.5

	Resident Spending ($M)			Market Share Potential			Turnover Potential ($M)		
	Food	NF	Total	Food	NF	Total	Food	NF	Total
Total Primary	336	283	619	6.5%	9.7%	8.0%	22.0	27.5	49.5
Total Secondary	754	606	1,360	2.3%	3.1%	2.6%	17.0	18.6	35.6
Main Trade Area	**1,090**	**889**	**1,979**	**3.6%**	**5.2%**	**4.3%**	**39.0**	**46.1**	**85.1**
Total Tertiary	1,203	913	2,116	0.6%	1.3%	0.9%	7.7	11.9	19.6
Total Trade Area	**2,293**	**1,802**	**4,094**	**2.0%**	**3.2%**	**2.6%**	**46.7**	**58.0**	**104.7**
Beyond Trade Area							*17.1*	*20.0*	*37.1*
Centre Retail Turnover ($M)							**63.8**	**77.9**	**141.8**

Note: NF = Non-Food

Source: Urbis

6.3.3. Turnover Potential – Stage 7 (2029)

It is considered more likely that the proposed development scheme will be staged, with the proposed Stage 7 scheme expected to be completed by the end of 2028.

In this case, the assessed turnover potential of Burnside Village is approximately $396 million ($2018, incl. GST), as shown in Table 6.6. This turnover is above the corresponding estimate for 2022 and reflects the larger forecast market available to the centre in 2029.

Relative to the assessed turnover potential of the Stage 6 scheme in 2029, the Stage 7 scheme is expected to generate an additional $68 million in turnover. The impact of this turnover increase and the introduction of Stage 7 in 2029 on other centres is assessed in Section 6.4.4.

Market Shares and Retail Turnover, Post Expansion – Stage 7 Development

Burnside Village, 2029 ($2018, incl. GST) Table 6.6

	Resident Spending ($M)			Market Share Potential			Turnover Potential ($M)		
	Food	NF	Total	Food	NF	Total	Food	NF	Total
Total Primary	383	330	713	16.6%	24.7%	20.3%	63.5	81.5	144.9
Total Secondary	830	682	1,512	3.9%	8.6%	6.0%	32.5	58.5	91.0
Main Trade Area	**1,213**	**1,012**	**2,225**	**7.9%**	**13.8%**	**10.6%**	**96.0**	**139.9**	**236.0**
Total Tertiary	1,357	1,053	2,410	1.2%	3.2%	2.1%	16.0	34.1	50.1
Total Trade Area	**2,570**	**2,065**	**4,635**	**4.4%**	**8.4%**	**6.2%**	**112.0**	**174.1**	**286.1**
Beyond Trade Area				*22.7%*	*30.8%*	*27.8%*	*32.8*	*77.4*	*110.2*
Centre Retail Turnover ($M)							**144.8**	**251.5**	**396.3**

Note: NF = Non-Food

Source: Urbis

Net Additional Market Shares and Retail Turnover – Stage 7 Development (vs. Stage 6)

Burnside Village, 2029 ($2018, including GST) Table 6.7

	Resident Spending ($M)			Market Share Potential			Turnover Potential ($M)		
	Food	NF	Total	Food	NF	Total	Food	NF	Total
Total Primary	383	330	713	2.7%	5.2%	3.8%	10.3	17.1	27.4
Total Secondary	830	682	1,512	0.5%	1.7%	1.1%	4.4	11.7	16.2
Main Trade Area	**1,213**	**1,012**	**2,225**	**1.2%**	**2.8%**	**2.0%**	**14.7**	**28.8**	**43.5**
Total Tertiary	1,357	1,053	2,410	0.1%	0.7%	0.4%	1.8	7.2	9.0
Total Trade Area	**2,570**	**2,065**	**4,635**	**0.6%**	**1.7%**	**1.1%**	**16.5**	**36.0**	**52.5**
Beyond Trade Area							*2.4*	*13.0*	*15.4*
Centre Retail Turnover ($M)							**19.0**	**48.9**	**67.9**

Note: NF = Non-Food

Source: Urbis

6.4. TURNOVER IMPACT

This sub-section outlines an assessment of the potential trading impacts on other centres in the region of relevance as a result of the proposed redevelopment of Burnside Village.

6.4.1. Impact Approach and Methodology

An impact assessment is expected to provide an indication of the trading environment and average trading conditions within which retailers operate, and implications for likely turnover declines or gains on average for the retailers involved. Because an impact assessment forecasts how groups of people are likely to alter their shopping behaviour in response to a given change in the competitive environment, it is not possible to estimate individual retailer impacts or each group of retailers in each location.

Therefore in any impact assessment of this type it is not possible to estimate impacts on any specific individual retailer. The impact on any one individual retailer or any small group of retailers in a given location would depend on many factors (e.g. retailer profitability), some of which are within their control. The actions which each of these retailers take will determine the eventual impact on each, and furthermore the actions which they each take will also determine the eventual impact on the other retailers involved.

All of these factors need to be kept in mind when considering the likely impact of any relocation and expansion of a retailer within the existing retail network. Existing retailers are not passive participants but rather will play a major role in the eventual impact which they will experience.

Shopper behaviour is influenced by a range of factors. Decisions made regarding where to shop are based on a number of judgements, including relative accessibility, availability of particular retailers, convenience, variety, carparking and others. As a result, residents like to spread their purchases across a wide variety of shopping centres and areas, and use the full range of facilities available to satisfy their needs.

The method of analysis used to assess the impacts on individual centres from a retail development is based on a 'competitive usage' model. This model is based on the principle that if shoppers choose to direct some of their retail expenditure to the subject development proposal, then they will reduce their expenditure at other centres in a similar proportion to their usage of each centre or location (reflected by each centre's market share from the various trade area sectors). In assessing the potential impacts on other centres in the hierarchy we have adopted a 'turnover allocation approach'.

The assessment of impacts on specific retail centres relies upon an understanding of the existing turnover and level of usage of centres in the trade area and beyond. The model estimates the degree to which various shopping locations within and beyond the trade area are used for retail shopping, by allocating a proportion of turnover to each trade area sector (i.e. source of sales). These estimates result in market share calculations for each competitive centre, and thereby form the basis of which the impact of the proposed retail development is distributed to all other centres used by residents of the trade area for retail shopping. This is commonly referred to as the 'one-off' impact.

It is also relevant to consider the dollar impacts in relation to the turnover that would potentially be generated by these and other shopping centres over the intervening period. The impact analysis therefore details the turnover change, or net impact, which is expected for each centre/location, expressed as a reduction in turnover and as a percentage of the turnover level for each centre between 2018 and 2022 for the proposed Stage 6 development, for example.

In order to review the impact of the proposed expansion and overall masterplan for Burnside Village, the trading impacts have been assessed as follows:

- The Stage 6 expansion is assessed for the year to December 2022, the expected first full year of trading of Burnside Village with this expansion to the centre. The one-off impacts are estimated for 2022 and the change in turnover for other activity centres are estimated for the period 2018 to 2022.
- The Stage 7 expansion is assessed for two points in time as follows:
  - The impact of adding Stage 7 along with Stage 6 in 2022. This is undertaken to test the upper extent of potential impacts of providing the full amount of additional retail floorspace proposed in the masterplan.
  - The impact of adding Stage 7 in 2029 relative to Burnside Village with the Stage 6 expansion. This scenario is undertaken to test the impact of an elongated staged approach to proposed masterplan based expansion of Burnside Village. Given the timeframe between the Stage 6 and Stage 7 expansions (i.e. 7 years or 2022 and 2029), this scenario essentially examines the lower extent of the potential impacts of providing the full masterplan development including Stage 7.

6.4.2. Turnover Impact – Stage 6 (2022)

The centre specific impacts, relating to the proposed Stage 6 development of the Burnside Village centre are presented in Table 6.8. The analysis focusses on the key activity centres detailed earlier in Section 3, with key findings as follows.

- In volume terms, the highest one-off impacts are mostly expected to occur on centres serving fashion and other discretionary shopping needs. The impacts are as follows:
  - Adelaide CBD -$24.8 million
  - Marion -$12.3 million
  - Norwood -$9.6 million
  - Modbury -$3.9 million
- In percentage terms, the highest one-off impacts are generally expected on the closest centres to Burnside Village, as follows:
  - Norwood -2.9%
  - Unley -1.6%
  - Firlie -1.3%
  - Marion -1.4%
- Given the widely dispersed shopping patterns of trade area residents and the broad draw of Burnside Village, impacts are also expected to be distributed across a wide range of other centres. The impacts on other centres are in the order of 1% or less.
- Importantly, despite the expected turnover impacts, all centres are expected to achieve an average turnover productivity (i.e. $ per square metre) above their current level. This reflects the positive effects of forecast growth in trade area spending between 2018 and 2022, which are expected to outweigh any turnover impacts associated with the Stage 6 development. It is also noted that the pre-impact turnover level of centres include allowance for the effect of ongoing growth in online retailing and other competitive impacts.

The abovementioned impacts relate to the proposed Stage 6 development. The potential turnover impacts from the combined Stage 6 & 7 developments are assessed in the following sub-section.

Turnover Impacts – Stage 6 Development

Burnside Village Expansion, 2022 ($2018, incl. GST) Table 6.8

	Est. Retail Turnover ($M)			Turnover Inc./Dec. ($M)		Change / Impact		Est. Retail Turnover ($psm)		
	Current 2018 (1)	Pre-Dev 2022 (2)	Post-Dev. 2022 (3)	Current 2018 (4)=(3)-(1)	Pre-Exp 2022 (5)=(3)-(2)	2018 (6)=(4)/(1)	2022 (7)=(5)/(2)	Current 2018	Pre-Dev 2022	Post-Dev. 2022
Burnside Village	***197.7***	***205.9***	***294.8***	***+97.0***	***+88.9***	***n.a.***	***n.a.***	***10,567***	***11,003***	***9,918***
Turnover Impacts										
Adelaide CBD	2,130.0	2,301.7	2,274.1	+144.1	-24.8	+6.8%	-1.1%	8,040	8,580	8,480
Regional Centres:										
Marion*	710.0	872.6	856.2	+146.2	-12.3	+20.5%	-1.4%	7,140	7,590	7,480
Modbury*	440.0	496.8	493.8	+53.8	-3.9	+12.2%	-0.8%	5,850	6,410	6,360
District Centres:										
Norwood	320.0	334.5	326.7	+6.7	-9.6	+2.1%	-2.9%	7,870	8,270	8,040
Unley	182.0	189.2	186.1	+4.1	-3.0	+2.2%	-1.6%	6,860	7,130	7,020
Stepney	45.0	47.4	47.1	+2.1	-0.1	+4.6%	-0.2%	8,010	8,400	8,380
Firlie	109.0	114.8	112.9	+3.9	-1.5	+3.6%	-1.3%	8,080	8,480	8,370
Mitcham	145.0	155.3	154.2	+9.2	-0.8	+6.3%	-0.5%	8,240	8,510	8,470
Cumberland Park	91.0	93.5	92.9	+1.9	-0.6	+2.1%	-0.6%	7,710	7,920	7,900
Kurralta	87.0	90.1	89.6	+2.6	-0.5	+3.0%	-0.5%	8,140	8,420	8,380
Edwardstown (Castle Plaza)	137.0	141.5	140.8	+3.8	-0.8	+2.7%	-0.6%	6,850	7,080	7,030
Sefton Park / Prospect	146.0	154.6	154.2	+8.2	-0.5	+5.6%	-0.3%	7,100	7,530	7,500
Newton	108.0	113.4	112.5	+4.5	-0.6	+4.2%	-0.5%	7,140	7,480	7,440
Stirling	56.0	57.8	57.5	+1.5	-0.1	+2.8%	-0.2%	6,900	7,110	7,090
Neighbourhood Centres:										
Arkaba / Frewville	113.0	118.7	117.1	+4.1	-1.1	+3.6%	-0.9%	13,970	14,610	14,470
Marryatville	43.0	45.0	44.8	+1.8	-0.3	+4.2%	-0.8%	9,670	10,150	10,080
Magill	23.0	23.8	23.9	+0.9	-0.1	+4.1%	-0.6%	7,910	8,280	8,230
Local Centres:										
Dulwich	8.0	8.8	8.7	+0.7	-0.0	+8.3%	-0.0%	6,800	7,370	7,360
Leabrook	5.0	5.4	5.2	+0.2	-0.0	+4.4%	-0.6%	9,110	9,560	9,510
Erindale	18.0	19.3	18.8	+0.8	-0.1	+4.4%	-0.7%	9,610	10,110	10,040
Kensington Park	21.0	21.6	21.9	+0.9	-0.1	+4.3%	-0.4%	12,900	13,510	13,450
Wattle Park	11.0	11.8	11.5	+0.5	-0.1	+4.3%	-0.8%	9,810	10,300	10,230

** Future turnover includes allowance for proposed expansion.*

Source: Urbis

6.4.3. Turnover Impact – Stages 6 & 7 (2022)

While the proposed Stage 7 development is not planned to open until around 2029, this report has also considered the potential trading impacts on centres if the Stage 6 and Stage 7 developments were both implemented by 2022 *[refer Table 6.9]*. The forecast reflects an 'upper' impact case for the proposal and the key findings from this analysis as follows:

- In volume terms, the highest one-off impacts are forecast for:
  - Adelaide CBD -$33.0 million
  - Norwood -$16.4 million
  - Marion -$16.1 million
  - Arkaba / Frewville -$5.6 million
  - Modbury -$5.4 million
- In percentage terms, the highest one-off impacts are generally expected on the closest centres to Burnside Village and those with an emphasis on food and grocery retailing, including:
  - Norwood -4.9%
  - Arkaba / Frewville -4.7%
  - Leabrook -3.1%
- The impacts on the higher order centres in the hierarchy are expected to fall within the range of mostly 1%-3%, including 1.8% on Marion, 1.1% on Modbury and 1.4% on the Adelaide CBD.
- The forecast one-off impact on any centre in the region is well within acceptable levels and substantially less than 10%, which is the notional benchmark for when impacts may be deemed an issue.
- Post development, nearly all centres are expected to achieve a turnover productivity (i.e. $ per square metre) above their current level (in 2018), which is the result of forecast growth in the market more than offsetting the impacts of the proposed expansion to Burnside Village.

The impact analysis also shows that even if the full masterplan was developed by 2022, the market could absorb this scale of expansion within the next four years without having an adverse effect on other activity centres. This indicates that a flexible approach to the timing of Stage 7 could be pursued by the Cohen Group and the Stage 7 expansion could be developed at any point from 2022.

Turnover Impacts – Stage 6 & 7 Development

Burnside Village Expansion, 2022 ($2018, incl. GST) Table 6.9

	Est. Retail Turnover ($M)			Turnover Inc./Dec. ($M)		Impact		Est. Retail Turnover ($psm)		
	Current 2018	No Devt. 2022	Stg. 6&7 2022	Current 2018	No Devt. 2022	Current 2018	No Devt. 2022	Current 2018	No Devt. 2022	Stg. 6&7 2022
	(1)	(2)	(3)	(4)=(3)-(1)	(5)=(3)-(2)	(6)=(4)/(1)	(7)=(5)/(2)			
Burnside Village	***197.7***	***205.9***	***347.6***	***+149.9***	***+141.8***	***n.a.***	***n.a.***	***10,567***	***11,003***	***8,824***
Turnover Impacts										
Adelaide CBD	2,130.0	2,301.7	2,265.8	+135.8	-33.0	+6.4%	-1.4%	8,040	8,580	8,450
Regional Centres:										
Marion*	710.0	872.6	852.4	+142.4	-16.1	+19.9%	-1.8%	7,140	7,590	7,450
Modbury*	440.0	496.8	492.2	+52.2	-5.4	+11.9%	-1.1%	5,850	6,410	6,340
District Centres:										
Norwood	320.0	334.5	319.9	-0.1	-16.4	-0.0%	-4.9%	7,870	8,270	7,870
Unley	182.0	189.2	184.0	+2.0	-5.0	+1.1%	-2.7%	6,860	7,130	6,940
Stepney	45.0	47.4	46.8	+1.8	-0.4	+4.0%	-0.8%	8,010	8,400	8,330
Firlie	109.0	114.8	111.5	+2.5	-2.9	+2.3%	-2.6%	8,080	8,480	8,260
Mitcham*	145.0	155.3	153.0	+8.0	-1.9	+5.5%	-1.2%	8,240	8,510	8,400
Cumberland Park	91.0	93.5	92.5	+1.5	-1.0	+1.7%	-1.0%	7,710	7,920	7,860
Kurralta	87.0	90.1	89.4	+2.4	-0.7	+2.7%	-0.7%	8,140	8,420	8,360
Edwardstown (Castle Plaza)	137.0	141.5	140.4	+3.4	-1.2	+2.5%	-0.8%	6,850	7,080	7,020
Sefton Park / Prospect	146.0	154.6	153.9	+7.9	-0.8	+5.4%	-0.5%	7,100	7,530	7,490
Newton	108.0	113.4	112.1	+4.1	-1.0	+3.8%	-0.9%	7,140	7,480	7,410
Stirling	56.0	57.8	57.2	+1.2	-0.5	+2.1%	-0.8%	6,900	7,110	7,050
Neighbourhood Centres:										
Arkaba / Frewville	113.0	118.7	112.6	-0.4	-5.6	-0.4%	-4.7%	13,970	14,610	13,920
Marryatville	43.0	45.0	43.8	+0.8	-1.3	+1.8%	-3.0%	9,670	10,150	9,850
Magill	23.0	23.8	23.6	+0.6	-0.4	+2.8%	-1.8%	7,910	8,280	8,130
Local Centres:										
Dulwich	8.0	8.8	8.7	+0.7	-0.0	+8.2%	-0.1%	6,800	7,370	7,360
Leabrook	5.0	5.4	5.1	+0.1	-0.2	+1.7%	-3.1%	9,110	9,560	9,260
Erindale	18.0	19.3	18.5	+0.5	-0.5	+2.5%	-2.6%	9,610	10,110	9,850
Kensington Park	21.0	21.6	21.5	+0.5	-0.5	+2.4%	-2.2%	12,900	13,510	13,210
Wattle Park	11.0	11.8	11.2	+0.2	-0.3	+2.1%	-2.8%	9,810	10,300	10,010

** Future turnover includes allowance for proposed expansion.*

Source: Urbis

6.4.4. Turnover Impact – Stage 7 (2029)

In a scenario where the Stage 7 development does not open until 2029, the impacts would be lower and further offset by the forecast growth in the trade area spending market between 2022 and 2029 *[refer Table 6.10]*. In summary:

- In volume terms, the highest one-off impacts are assessed for the following centres:
  - Adelaide CBD -$13.7 million (-0.5%)
  - Norwood -$8.4 million (-2.3%)
  - Marion -$5.9 million (-0.6%)
  - Arkaba / Frewville -$3.6 million (-2.8%)
  - Modbury -$2.5 million (-0.4%)
- In percentage terms, the highest one-off impacts are generally expected on the closest centres to Burnside Village, as follows:
  - Arkaba / Frewville -2.8%
  - Norwood -2.3%
  - Leabrook -1.9%
- As with the assessed Stage 6 impacts, all centres are expected to achieve a turnover productivity above their current level when the Stage 7 development is completed. Market growth would more than offset the one-off impacts and most activity centres would have the potential to achieve a gain in retail turnover between 5% and 15% from 2022 to 2029. Accordingly, the trading rates would also be above the estimated trading productivity in 2022 post the Stage 6 development, as detailed in Table 6.10.
- The neighbourhood and local centres, including an emphasis on food and grocery retailing, accrue higher levels of one-off impacts with the Stage 7 expansion (relative to the Stage 6 expansion) given the greater emphasis and quantum of food and convenience based floorspace in the Stage 7 scheme. Nevertheless, the level of impacts for this group of centres are well within the manageable range (i.e. less than 4% and in most cases between 1% and 3%).

Turnover Impacts – Stage 7 Development

Burnside Village Expansion, 2029 ($2018, incl. GST) Table 6.10

	Est. Retail Turnover ($M)			Turnover Inc./Dec. ($M)		Change / Impact		Est. Retail Turnover ($psm)		
	Stg. 6 2022	Pre-Stg. 7 2029	Post-Stg. 7 2029	Stg. 6 2022	Pre-Stg. 7 2029	Stg. 6 2022	Pre-Stg. 7 2029	Stg. 6 2022	Pre-Stg. 7 2029	Post-Stg. 7 2029
	(1)	(2)	(3)	(4)=(3)-(1)	(5)=(3)-(2)	(6)=(4)/(1)	(7)=(5)/(2)			
Burnside Village	***294.8***	***328.4***	***396.3***	***+101.5***	***+67.9***	***n.a.***	***n.a.***	***9,918***	***11,049***	***10,059***
Turnover Impacts										
Adelaide CBD	2,280.0	2,558.1	2,547.5	+267.5	-13.7	+11.7%	-0.5%	8,480	9,530	9,480
Regional Centres:										
Marion*	860.0	944.9	938.8	+78.8	-5.9	+9.2%	-0.6%	8,600	9,450	9,390
Modbury*	490.0	549.7	544.3	+54.3	-2.5	+11.0%	-0.4%	6,570	7,320	7,290
District Centres:										
Norwood	320.0	358.4	345.1	+25.1	-8.4	+7.7%	-2.3%	8,040	8,860	8,660
Unley	186.0	203.9	201.1	+15.1	-2.6	+8.1%	-1.3%	7,020	7,680	7,590
Stepney	47.0	51.5	51.0	+4.0	-0.2	+8.4%	-0.4%	8,380	9,120	9,080
Firlie	113.0	124.0	122.0	+9.0	-1.8	+7.9%	-1.4%	8,370	9,160	9,030
Mitcham*	154.0	166.2	164.7	+10.7	-1.0	+6.9%	-0.6%	8,470	9,110	9,050
Cumberland Park	93.0	100.1	99.7	+6.7	-0.5	+7.2%	-0.5%	7,880	8,480	8,460
Kurralta	90.0	97.3	97.4	+7.4	-0.3	+8.2%	-0.3%	8,380	9,100	9,070
Edwardstown (Castle Plaza)	141.0	152.0	151.7	+10.7	-0.6	+7.6%	-0.4%	7,030	7,600	7,570
Sefton Park / Prospect	154.0	170.8	170.3	+16.3	-0.4	+10.6%	-0.2%	7,500	8,320	8,300
Newton	113.0	122.9	122.5	+9.5	-0.6	+8.4%	-0.5%	7,440	8,110	8,070
Stirling	58.0	60.9	61.0	+3.0	-0.3	+5.2%	-0.5%	7,090	7,490	7,460
Neighbourhood Centres:										
Arkaba / Frewville	118.0	128.6	125.5	+7.5	-3.6	+6.4%	-2.8%	14,470	15,830	15,390
Marryatville	45.0	48.9	48.3	+3.3	-0.9	+7.4%	-1.8%	10,080	11,020	10,820
Magill	24.0	25.9	26.0	+2.0	-0.2	+8.3%	-0.9%	8,230	9,000	8,910
Local Centres:										
Dulwich	9.0	10.1	10.3	+1.3	-0.0	+14.8%	-0.1%	7,360	8,450	8,450
Leabrook	5.0	5.8	5.4	+0.4	-0.1	+7.2%	-1.9%	9,510	10,400	10,190
Erindale	19.0	21.1	20.6	+1.6	-0.3	+8.1%	-1.6%	10,040	11,030	10,860
Kensington Park	22.0	23.4	23.6	+1.6	-0.3	+7.3%	-1.3%	13,450	14,630	14,430
Wattle Park	12.0	12.8	12.9	+0.9	-0.2	+7.6%	-1.8%	10,230	11,200	11,000

** Future turnover includes allowance for proposed expansion.*

Source: Urbis

6.4.5. Impact Summary

The assessed impacts indicate that the proposed expansion of Burnside Village for Stage 6 and the full masterplan including also Stage 7 can be supported by the market and the level of trade diversion from any one activity centre is well within acceptable levels. This is demonstrated by the following:

- In the 'upper' impact case, the additional share of the retail market captured by the proposed Stage 6 and 7 expansions of Burnside Village would be less than 3%. Furthermore, the proposed full masterplan would capture 39% of market growth to 2022, thus leaving substantial market demand to support other centres to improve their trading performance and/or undertake improvements or expansions.
- The forecast one-off impact on any centre in the region would not exceed 5% which is significantly less than 10%, which is the notional benchmark for when impacts may be deemed an issue.
- Nevertheless, forecast market growth will more than offset the assessed impacts and result in all affected centres still achieving a retail turnover higher than their current level.

If the expansion of Burnside Village is staged as proposed, i.e. Stage 6 in 2022 and Stage 7 in 2029, the one-off percentage impacts would be lower due to the smaller scale of additional floorspace at any one point in time and the benefit of market growth in offsetting the impacts.

It is further noted that, given the broad geographic draw of Burnside Village and its focus on both convenience and discretionary retailing, the impacts will be distributed across a wide variety of activity centres. The high quality development and its expectation to drive a stronger customer experience and address a broader range of retail needs is also expected to have supply induced benefits in terms of clawing back expenditure that is currently undertaken online. More shopping visits undertaken at physical stores at Burnside Village will also have flow-on benefits for other uses, including services, leisure and entertainment facilities, etc.

In summary, the sustainability of the retail hierarchy is expected to be preserved and the market will benefit from enhanced access to a greater range of retail shops and services, dining, leisure and entertainment facilities.

The cinemas and dining precinct are key elements of the masterplan for Burnside Village that will drive evening activation of the activity centre and enhance Burnside as a social and community hub. Whilst the proposed cinema complex would be expected to result in some trading impacts on existing complexes, overall, the new cinemas would increase and improve the cinema offer in the area to the benefit of community at large.

6.5. ECONOMIC BENEFITS

A development of the scale proposed at Burnside Village will generate a number of tangible economic and community benefits, as follows.

Choice / Convenience

Providing choice and convenience to consumers is a key consideration in the requirement for new retail space. Demand for retail space is not simply a function of relative floorspace provision. Community benefit is created through increased convenience and choice in the type of retail stores offered, and the range of goods able to be provided through the provision of multiple retail options.

The proposed development would enhance residents' choice through providing greater breadth and depth of shopping and entertainment, especially in terms of quality discretionary retail brands. Burnside Village plays a vital role in the provision of this type of retail offer in the Adelaide market.

Competition

An outcome of the additional retail floorspace, is increased competition amongst retailers within the area, thus possibly leading to enhanced service levels and better quality offerings that provide an improved experience for consumers. This strengthens the overall retail offer across all centres / precincts and acts as a catalyst for ongoing investment and improvement of centres generally.

Employment Generation and Gross Value Added Impact

The additional floorspace provided in Burnside Village will generate a greater requirement for ongoing retail employment within the centre. In addition, the project will also generate a sizeable short term employment boost during the construction process.

Through the creation of new construction and ongoing jobs, further employment benefits will be realised through economic multiplier effects.

Construction Phase

The proposed construction of the centre has the potential to generate employment benefits as follows:

- 263 direct jobs, equivalent for one year of employment
- 658 indirect multiplier jobs, equivalent for one year of employment

The construction employment estimates assume a 3 year construction timeframe.

Operation Phase

The proposed operation of the centre has the potential to generate employment benefits as follows:

- 1,530 direct jobs, equivalent for one year of employment
- 1,252 indirect multiplier jobs, equivalent for one year of employment

Employment Generation

Burnside Village Masterplan (Stage 6 and Stage 7 Developments) Table 6.11

	Floorspace (sq.m)	Employment Benefit (No.)		
		Direct Benefits	Indirect Benefits	Total Benefits
Construction Phase[1]		**263**	**658**	**921**
Operation Phase[2]:				
Retail	18,107	906	456	**1,362**
Cinemas	2,311	25	12	**37**
Office	7,489	599	784	**1,384**
Net Addition	**27,907**	**1,530**	**1,252**	**2,782**

1. FTE jobs annually during the construction period

2. Per annum employment over an ongoing period

Source: REMPLAN; Urbis

The investment in the expansion of Burnside Village will have direct and indirect benefits for the South Australian economy. The Gross Value Added (GVA) by the Stage 6 and Stage 7 expansions is summarised in Table 6.12. *Industry Gross Value Added (GVA) measures the value of industry production and is used to measure the contribution of individual industries to the gross product of a state or territory.*

The planned investment of $308 million in development costs have the potential to generate the following increase in economic activity (direct and indirect benefits combined):

- The construction phase of the Stage 6 and Stage 7 expansions have the potential to generate $334 million ($2018) in new economic activity for the South Australian economy over the three year construction period. Annual increase in GVA would be around $111 million.
- The operational phase of the net additional floorspace at Burnside Village will have ongoing annual benefits to the South Australian economy of $297 million ($2018).

The GVA estimates include direct, industrial and consumption effects.

Gross Value Added

Burnside Village Masterplan (Stage 6 and Stage 7 Expansions) Table 6.12

	Direct Benefits	Indirect Benefits	Total Benefits
Gross Value Added ($M):			
Construction Phase	94	239	**334**
Operation Phase	124	173	**297**

1. Gross value added for the three year construction period measured in constant $2018 including GST.

2. Per annum gross value added measured in constant $M 2018 including GST.

Source: REMPLAN; Urbis

7. CONCLUSIONS

The analysis of market need, demand and economic impacts indicates the following conclusions in relation to the proposed Burnside Village development:

- There is a market need and demand for the scale and type of development proposed at Burnside Village. The centre serves an important role for convenience and discretionary shopping needs in the eastern suburbs and wider Adelaide market, most notably as a destination for fashion and other discretionary retail brands. The proposed masterplan and future stages of expansion of the centre will improve the range of shops and services provided to the community, and also introduce new elements including cinemas and a dining precinct, offices and leisure/community facilities. These enhancements will enable the centre to better service the wider needs of the growing and evolving market.

- The expansion of Burnside Village aligns with the objectives of the Burnside District Plan, underpinning the location's position and place in the hierarchy as a District Centre, as well as providing new employment opportunities for residents in the City of Burnside and other surrounding municipalities.

- The scale and composition of expansion is supportable by the market and is not expected to have an adverse impact on existing and planned centres in the region of relevance to Burnside Village. Rather the development would enhance access to retail shops and services while supporting the intended retail hierarchy.

- The proposed expansion would have a range of economic benefits, including a sizeable amount of new employment generation, greater choice and convenience for shoppers and the capacity to induce improvements in the overall retail offer in the region through the effects of greater competition.

Ultimately, the proposed expansion of Burnside Village will result in a net community benefit. The range of choice available to local residents will be enhanced, with existing and planned centres still continuing to serve their role in the retail hierarchy.

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APPENDIX A SUPPLIMENTARY TABLES AND CHARTS

Socio-Economic Indicators (1)

Burnside Village Trade Area, 2016 Census

Table B.1

	Total Primary	Secondary North	Secondary East	Secondary South West	**Total Secondary**	**Main Trade Area**	Tertiary North	Tertiary North East	Tertiary South	Tertiary South West	Tertiary North West	**Total Tertiary**	**Total Trade Area**	Adelaide	Total Australia
Household Income:															
$Nil	**2%**	2%	1%	1%	**2%**	**2%**	2%	2%	1%	1%	9%	**3%**	**2%**	1%	2%
$1-$20,800	**5%**	7%	4%	5%	**6%**	**6%**	8%	6%	3%	5%	10%	**7%**	**6%**	7%	6%
$20,800-$52,000	**22%**	28%	21%	24%	**26%**	**25%**	28%	33%	22%	24%	23%	**27%**	**26%**	31%	27%
$52,000-$78,000	**15%**	16%	15%	15%	**16%**	**15%**	16%	18%	15%	15%	15%	**16%**	**16%**	18%	17%
$78,000 - $130,000	**21%**	21%	24%	22%	**22%**	**22%**	21%	24%	26%	23%	23%	**23%**	**22%**	24%	24%
$130,000-$208,000	**18%**	15%	22%	18%	**17%**	**18%**	15%	13%	21%	19%	13%	**16%**	**17%**	13%	16%
$208,000 plus	**18%**	9%	13%	15%	**12%**	**13%**	11%	4%	12%	13%	7%	**9%**	**11%**	5%	8%
Average Household Income	**$114,900**	$90,808	$111,052	$108,221	**$100,029**	**$104,246**	$93,239	$79,592	$111,555	$105,930	$83,139	**$92,633**	**$98,085**	$83,984	$95,162
Var'n from Adelaide Avg.	***+37%***	*+8%*	*+32%*	*+29%*	***+19%***	***+24%***	*+11%*	*-5%*	*+33%*	*+26%*	*-1%*	***+10%***	***+17%***	*0%*	*+13%*
Average Household Size	**2.5**	2.2	2.6	2.4	**2.4**	**2.4**	2.3	2.5	2.6	2.4	1.9	**2.3**	**2.4**	2.5	2.6
Per Capita Income:															
Per Capita Income	**$48,117**	$42,306	$44,264	$47,818	**$44,511**	**$45,579**	$42,739	$33,944	$44,164	$44,805	$42,753	**$41,054**	**$43,201**	$34,905	$37,309
Var'n from Adelaide Avg.	***+38%***	*+21%*	*+27%*	*+37%*	***+28%***	***+31%***	*+22%*	*-3%*	*+27%*	*+28%*	*+22%*	***+18%***	***+24%***	*0%*	*+7%*
Age Distribution:															
Aged 0-14	**17%**	15%	20%	16%	**16%**	**17%**	15%	16%	17%	18%	6%	**15%**	**16%**	17%	19%
Aged 15-19	**8%**	6%	6%	6%	**6%**	**7%**	5%	6%	6%	6%	7%	**6%**	**6%**	6%	6%
Aged 20-34	**14%**	23%	11%	17%	**19%**	**17%**	20%	19%	14%	20%	45%	**24%**	**21%**	21%	21%
Aged 35-49	**19%**	20%	21%	19%	**20%**	**20%**	18%	20%	21%	21%	15%	**19%**	**19%**	20%	20%
Aged 50-64	**20%**	18%	23%	20%	**20%**	**20%**	19%	17%	20%	19%	14%	**18%**	**19%**	19%	18%
Aged 65-79	**15%**	13%	15%	14%	**14%**	**14%**	14%	15%	16%	11%	10%	**13%**	**13%**	12%	12%
Aged 80+	**7%**	6%	3%	8%	**6%**	**6%**	8%	7%	6%	5%	3%	**6%**	**6%**	5%	4%
Average Age	**41.9**	40.2	41.0	41.9	**40.9**	**41.2**	42.4	41.1	41.6	39.2	36.3	**39.9**	**40.5**	39.0	37.8

Source : ABS Census (2016); Urbis

Socio-Economic Indicators (2)

Burnside Village Trade Area, 2016 Census

Table B.2

	Total Primary	Secondary North	Secondary East	Secondary South West	**Total Secondary**	**Main Trade Area**	Tertiary North	Tertiary North East	Tertiary South	Tertiary South West	Tertiary North West	**Total Tertiary**	**Total Trade Area**	Adelaide	Total Australia
Household Composition (%)															
Couples with no children	**27%**	25%	32%	26%	**27%**	**27%**	27%	26%	32%	25%	26%	**26%**	**27%**	26%	27%
Family with children <15	**26%**	21%	29%	24%	**24%**	**24%**	20%	24%	28%	26%	9%	**22%**	**23%**	25%	27%
Family with children >15	**17%**	14%	18%	16%	**15%**	**16%**	15%	19%	18%	16%	6%	**15%**	**15%**	16%	16%
Total Family (with children)	***43%***	*35%*	*47%*	*40%*	***39%***	***40%***	*35%*	*43%*	*46%*	*42%*	*14%*	***36%***	***38%***	*41%*	*43%*
Group Household	**2%**	5%	1%	3%	**4%**	**3%**	5%	2%	1%	4%	16%	**6%**	**5%**	4%	4%
Lone Person	**28%**	33%	19%	30%	**30%**	**29%**	32%	27%	21%	27%	41%	**30%**	**30%**	28%	25%
Other	**1%**	1%	0%	1%	**1%**	**1%**	1%	1%	1%	1%	2%	**1%**	**1%**	1%	1%
Housing Tenure[1]															
Owner	**45%**	35%	44%	40%	**38%**	**40%**	39%	40%	41%	36%	22%	**36%**	**38%**	31%	32%
Purchaser (with Mortgage)	**33%**	30%	47%	33%	**34%**	**34%**	27%	33%	47%	37%	18%	**32%**	**33%**	37%	35%
Renter/Other	**22%**	36%	9%	27%	**28%**	**26%**	33%	27%	12%	27%	60%	**33%**	**30%**	31%	33%
Labour Force															
% Managers and Professionals	**59%**	50%	53%	56%	**53%**	**54%**	51%	37%	53%	51%	54%	**48%**	**51%**	34%	36%
% Other White Collar	**30%**	33%	29%	31%	**31%**	**31%**	33%	37%	30%	32%	32%	**34%**	**32%**	37%	34%
% Blue Collar Occupations	**12%**	17%	18%	13%	**16%**	**15%**	16%	25%	17%	16%	14%	**18%**	**17%**	29%	30%
Birthplace:															
Australian Born	**68%**	67%	81%	75%	**72%**	**71%**	69%	63%	78%	78%	51%	**68%**	**69%**	72%	72%
Overseas Born	**32%**	33%	19%	25%	**28%**	**29%**	31%	37%	22%	22%	49%	**32%**	**31%**	28%	28%
• Asia	**14%**	13%	1%	8%	**9%**	**3%**	12%	14%	2%	7%	29%	**13%**	**12%**	8%	9%
• Europe	**8%**	10%	11%	8%	**10%**	**6%**	10%	14%	12%	8%	7%	**10%**	**10%**	4%	3%
• Other	**9%**	10%	7%	9%	**9%**	**20%**	9%	9%	9%	8%	14%	**10%**	**9%**	16%	16%

1. 'Other' Tenure Types have not been included.

Source : ABS Census (2016); Urbis

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Appendix F

Stormwater Management Strategy

WALLBRIDGE GILBERT AZTEC

Burnside Village Pty Ltd

Burnside Village Stage 6 & 7 Master Plan

STORMWATER MANAGEMENT STRATEGY

Doc No. WGA150460-RP-CV-0001

Rev D
09 January 2019

Revision History

Rev	Date	Issue	Originator	Checker	Approver
A	13/12/2018	Stage 6	XT	DB	DB
B	19/12/2018	Stage 6 & 7	XT	GL	DB
C	20/12/2018	Stage 6 & 7	XT	GL	DB
D	09/01/2019	Stage 6 & 7	XT	GL	DB

CONTENTS

1 INTRODUCTION 1
1.1 Report Purpose 1
1.2 Project Scope 1
2 CATCHMENT OVERVIEW 2
2.1 Existing Council Stormwater Network 2
2.2 Existing Site Stormwater Systems 2
2.3 Proposed Development 5
3 STORMWATER MANAGEMENT APPROACH 7
3.1 Major Overland Flow Paths 7
3.2 Hydraulic Modelling 7
3.3 Management of Stormwater 8
3.4 Stormwater Treatment 9
4 SUMMARY 11
4.1 Key Points 11

Appendices

Appendix A EXISTING SITE STORMWATER LAYOUT

Appendix B STORMWATER MANAGEMENT STRATEGY

Appendix C DRAINS MODELLING AND CALCULATIONS

1 INTRODUCTION

1.1 REPORT PURPOSE

Wallbridge Gilbert Aztec (WGA) was engaged by Burnside Village Pty Ltd to prepare a stormwater management strategy for the proposed Stages 6 and 7 development of Burnside Village.

This report presents the general stormwater strategy for Stages 6 and 7 to upgrade the previous stormwater management plan for the flood protection and stormwater connection from Portrush Road traveling west towards Sydney Street.

1.2 PROJECT SCOPE

The development lies within the existing boundaries of Burnside Village within boundaries of Portrush Road, Greenhill Road, Sydney Street and Cator street.

The proposed Stage 6 & 7 development of Burnside Village consists of:

Stage 6:

- New retail floor space with new multi-level car parking below.
- Decommissioning of existing 100 year ARI gap flow flood chamber and removal of minor storm 1500RCP stormwater pipe to be replaced with new underground flood conveyance chamber with 100 year ARI capacity through to Sydney Street.
- New loading dock adjacent to Sydney Street.

Stage 7:

- Demolition of the existing under cover car park at the south-eastern part of the site
- Extension of the basement car park area to the south-eastern part of the site
- New retail floor space extensions along the full length of the Portrush Road frontage
- Multi-level car parking above the extended retail floor space extension and multi-level commercial office tower block
- New access ramp to the new upper level car park deck.
- New eastern access ramp from Portrush Road.
- New south western access ramp from Cator Street.

2 CATCHMENT OVERVIEW

2.1 EXISTING COUNCIL STORMWATER NETWORK

The site lies at the confluence of several stormwater systems in Portrush Road. These direct the major flow path that extends from Linden Crescent and Portrush Road to the low point at the eastern frontage of the site. It is understood that Council is in the process of considering upgrades to their stormwater network upstream of the site in Linden Crescent and therefore this may reduce the frequency and extent of overland flow towards the site at the low point in Portrush Road.

Stormwater drains consisting of one 600mm RCP and two 900mm RCP converge within Portrush Road initially to a 1350mm RCP and 750mm RCP then into a single 1950mm RCP with a change in direction. Beyond that, the drain extends through the original flow path via a 1450mm RCP and crosses Sydney Street at the western end of the site. The system heads west through private property beyond Sydney Street.

Modelling of the existing stormwater network undertaken by Tonkin Consulting, estimates the following flows arriving at Portrush Road.

5 year ARI

Pipe Flow – 5.0m3/s
Surface Overflow from Low Point – 1.5m3/s

TOTAL 6.5m3/s

100 year ARI

Pipe Flow – 5.3m3/s
Surface Overflow from Low Point – 7.1m3/s

TOTAL 12.4m3/s

It should be noted that there were a number of limitations stated by Tonkin Consulting in their report regarding the accuracy of the modelling, in particular the 100 year ARI event.

Refer to Appendix A for the existing system size and layout to remain or to be removed and upgraded.

2.2 EXISTING SITE STORMWATER SYSTEMS

Stage 6 area:

The existing carpark on the western side Catchment 4 drains to Sydney Street, while the remainder of the existing site Catchment 5 drains to Greenhill Road.

Stage 7 area:

The retail complex area of Stage 7 comprises of three main stormwater systems, which generally operate in the same manner. These are described here.

Stormwater in the site is intercepted within the car park via a series of pits to prevent stormwater flooding at the car park and shopping centre. Stormwater runoff from the three main areas is controlled via surface drainage and inlet pits. These are then conveyed via pipes down the basement support columns to the basement level car park where they are then treated via a gross pollutant traps (GPT). Stormwater is then conveyed to a pump chamber where it is pumped via separate rising mains to:

- existing flood chamber – GPT and pump to discharge point
- flood inlet grate – Pump to discharge point (no GPT)
- Council's 900 diameter drain in Portrush Road – GPT and pump to discharge point

Part of the main building drains into rainwater storage tanks, where it is re-used on site for non-potable uses. Overflow from the tanks are discharged to Sydney Street.

These systems are presented schematically in Figure 2.1.

See Appendix A for existing council main flood drainage system layout.

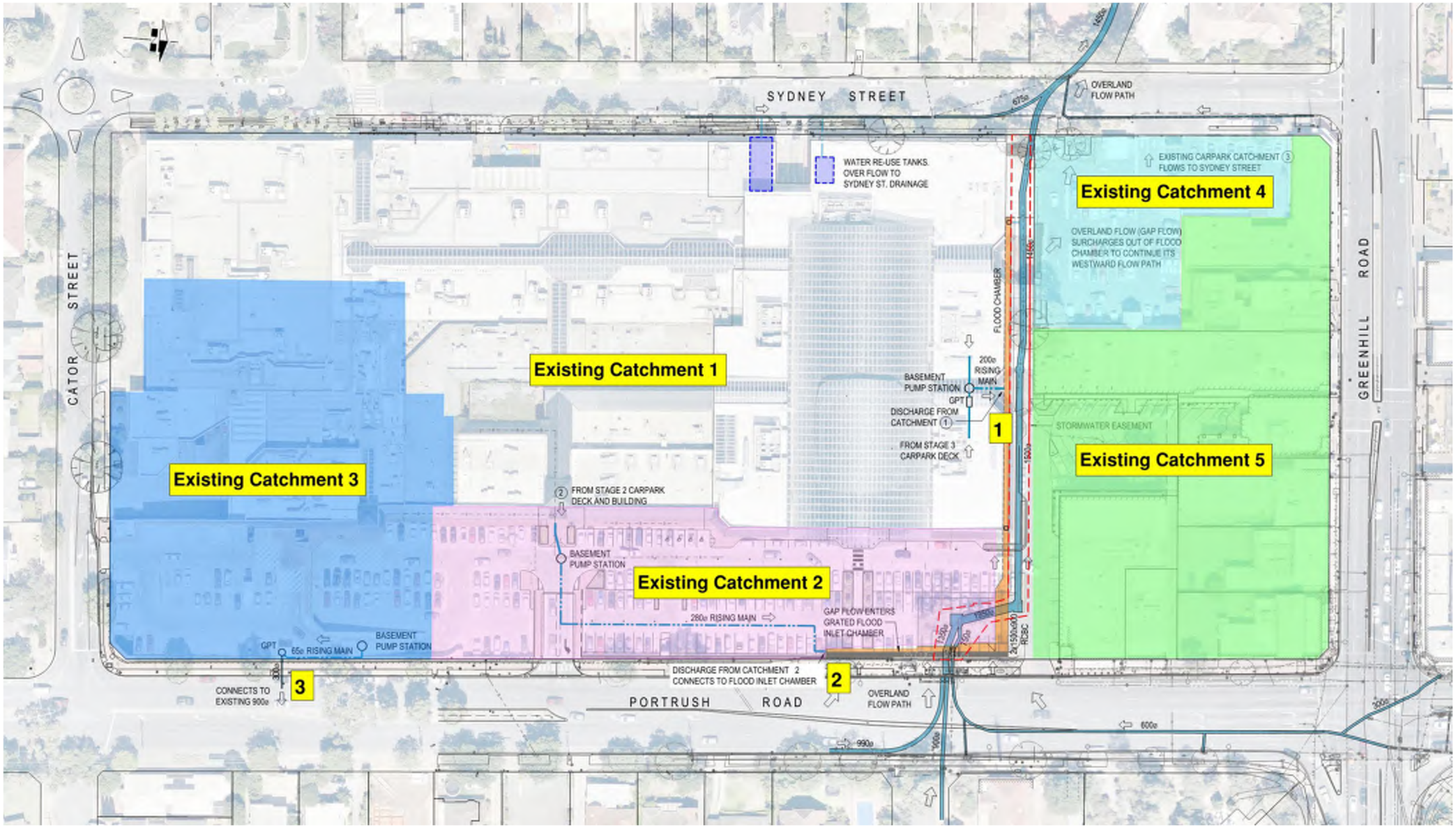

Figure 2.1 *Existing catchment and discharge locations.*

2.3 PROPOSED DEVELOPMENT

The brief outline of the proposed development is described in Section 1.2. This section will describe the stormwater management approach to be adopted. Appendix B depicts the proposed stormwater management approach. Figure 2.2 below shows the referenced areas described in this Strategy. The stormwater strategy is configured to suit the site's usage and space limitations.

Overall the development is proposed to incorporate the following features:

- Removal of existing Minor System 1450mm RCP, 750mm RCP, and 1950mm RCP from existing stormwater system to be replaced with upgraded underground flood conveyance chamber and surcharge chamber.
- Decommissioning of the existing 100 year ARI gap flow flood chamber and connecting the existing flood protection grate chamber at the Portrush Road boundary and other internal drainage systems to the proposed underground flood conveyance chamber which will be provided with 100 year ARI capacity. Construction of a wall bund around the grate to increase the inlet capacity of the flood protection grate as part of Stage 6.
- Stage 6 roof runoff generated from retail roof areas and office roof area to be directed and connected to the new underground flood conveyance chamber.
- Modification of existing internal stormwater systems to suit changes in level within the basement car park.
- Intercept and treatment of stormwater from the new car park deck via an oil, sediment and gross pollutant trap before connection into existing stormwater systems.
- Provide a new grated trench grate and GPT at the base of the new ramps off Cator Street, Sydney Street and Portrush Road and connect to Council's stormwater network.
- Stage 7 roof runoff generated from commercial tower block and retail roof areas to be directed and connected to the Council's underground stormwater network.

These changes are described in further detail in the Section 3.

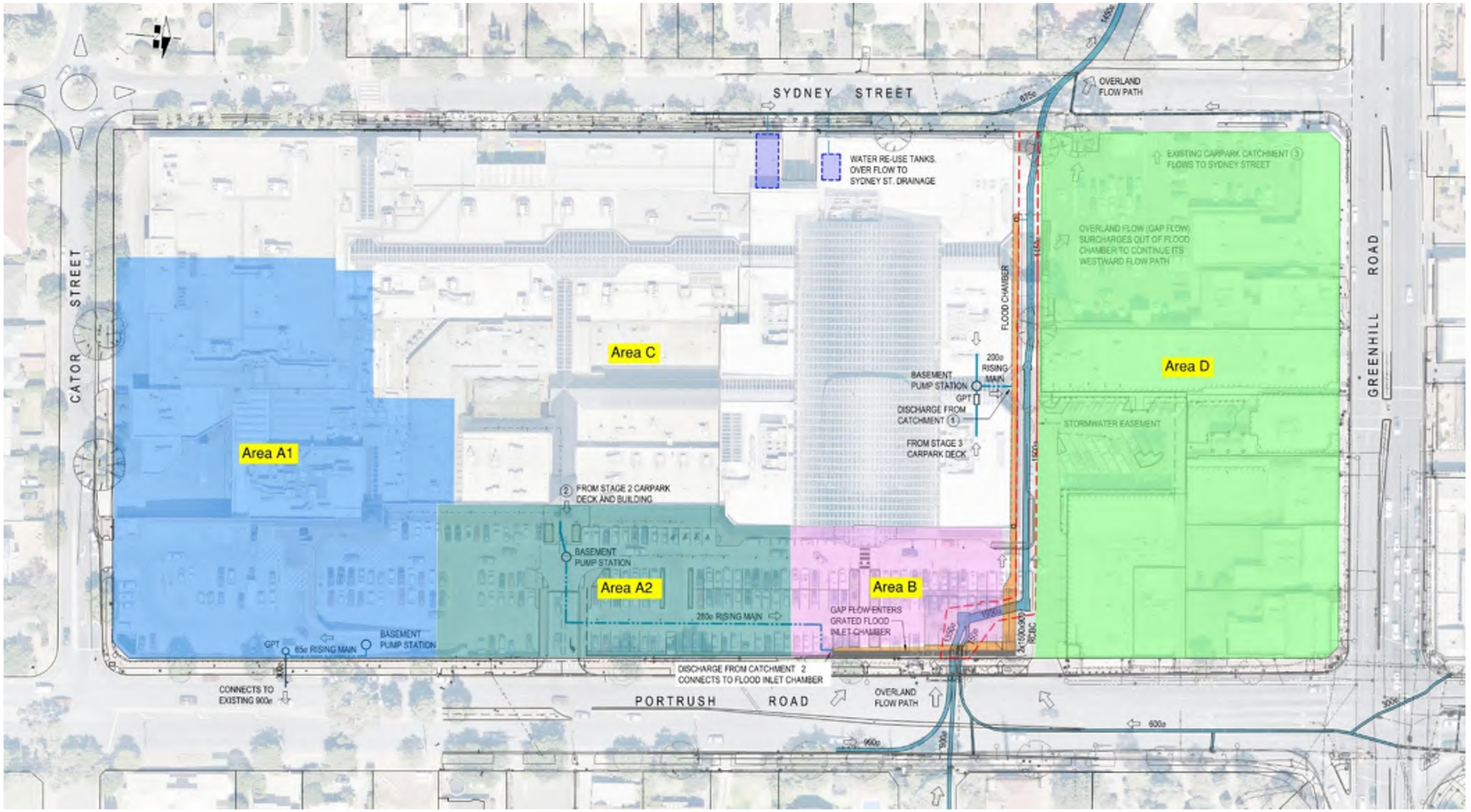

Figure 2.2: *Referenced Areas described the Stormwater Strategy*

3 STORMWATER MANAGEMENT APPROACH

3.1 MAJOR OVERLAND FLOW PATHS

It is well understood that the site lies within an overland flow path which is catered for by the major underground drainage system and overflow flood chamber. The low point in Portrush Road is well known for past flooding events as it receives overland flow from Portrush Road and Linden Street to the east. Stormwater analysis undertaken by Tonkin Consulting on behalf of the City of Burnside has demonstrated that the existing minor system has less than a 5 year ARI capacity.

The current flow path allows the major overland flows that overtop the kerb at Portrush Road to be intercepted by a grated trench / flood inlet chamber across the frontage of the site. Overland flow is then conveyed via a flood culvert chamber towards the west of the site where it drains by gravity into the 1500 RCP major stormwater line when hydraulic conditions permit it. Otherwise this major stormwater flow can surcharge the flood chamber in a controlled manner to follow the overland flow path to continue its westward flow direction.

The development of Stage 6 proposes the stormwater pipes from Portrush Road and Linden street and the flood inlet chamber be connected to a single combined underground and overland stormwater chamber with a surcharge pit at the boundary of Sydney Street to allow any overflow to flow back into Sydney Street. Additionally, following flood events during 2016 whereby the trench grate inlet was partially blocked by debris, it is proposed that enhancements will be made to improve the inlet capacity by increasing the available hydraulic head above the inlet grate. For Stage 6 only a solid wall will be incorporated as part of the landscape / urban design. The wall will be provided at the downstream perimeter of the grated inlet chamber and will extend vertically to a minimum height of approximately 500mm. This height corresponds to the adjacent high point level (RL 84.50) at the access driveway located immediately north and adjacent to the low point in Portrush Road.

Refer to Appendix A and Appendix B for the existing and proposed stormwater layout plans.

3.2 HYDRAULIC MODELLING

DRAINS was used to model the proposed stormwater system, see Appendix C, Figure C for the model layout.

It was considered that the 100 year ARI overland flow to be captured by the flood inlet grate to be $6m^3/s$ and the flow from the stormwater pipes that converge at the low point in Portrush Road will total capture up to $8m^3/s$. A total of $14m^3/s$ has been modelled in the design of the major flood chamber which is higher than the flow calculated by Tonkin Consulting. We are allowing for 10% above the Tonkin flows due to the potential inaccuracy in the modelling, and the consequences of undersizing the capacity of the flood conveyance chamber. The pit loss coefficient for the converging pit in Portrush Road was considered to be 2.0, the junction pit where the overland flow and stormwater

merge has a 2.5 pit loss coefficient and the surcharge pit was considered to have a 2.0 pit loss coefficient. The pit loss coefficients are considered to be on the conservative side, but given the complexity and risk, we believe this approach is appropriate.

The DRAINS model results can be seen in Appendix C, Figure D. All modelled pipes/culverts were sufficient with no overflow other than the expected overflow from the surcharge pit at the Sydney Street boundary. It can be seen that a maximum flow of 7.4m^3/s will surcharge from that pit to enter Sydney Street. Appendix C also shows a calculation for the maximum height of water flowing out of the surcharge chamber to be approximately 400mm deep.

3.3 MANAGEMENT OF STORMWATER

The management of stormwater within the site is quite complex and varies depending on the particular area within it. For this purpose, the site has been divided up into reference areas as depicted in Section 2.3. These areas are described in Table 3.1. This strategy is presented in the stormwater strategy layout in Appendix B.

Table 3.1: *Summary of stormwater management approach for referenced areas*

Site reference area	Stormwater management approach
Area A1 and A2 Basement reconstructed and Multi Level Car park	Area A1 • Basement car park is to be reconstructed and with a small extension south and includes a new loading dock. The existing stormwater drainage system is to be re-laid and extended to take in the basement and its associated upper car park deck. The existing pump and GPT to be removed and reconstructed. Connect into outlet at Node 3 to Council's 900 RCP in Portrush Rd. • Roof drainage will be connected directly to Council's stormwater at Node 3 (900 RCP in Portrush Rd.) • The new drainage system servicing the southern portion of the car park deck at level 3 to be connected to the existing drainage system, connected to a new pump system in the basement – Catchment (3), and • The southern portion of the new upper car park deck will be treated a new Ecosol RSF 4300 GPT– Catchment (3) Area A2 • The northern portion of the new upper car park deck will be connected to the existing system – Catchment (2) and will require a new GPT Ecosol RSF 4300 GPT to provide treatment prior to discharge at the existing discharge pint at Node 2. • New ramp off Portrush Road requires new trench grate to intercept runoff. Connect runoff to new GPT.
Area B - Building roof (Shopping complex)	• New stormwater drain from roof system to be directed and connected into the flood chamber at Node 2A • The roof catchment will be isolated to connect via a separate system to alleviate a new connection to the pump system • Roof drainage can bypass stormwater gross pollutant trap (does not require treatment)

Area C – Existing building	• The existing site stormwater system including GPT, pump, and rainwater re-use is maintained with no changes proposed. • New ramp off Cator Street requires new trench grate to intercept runoff from new ramp. Direct runoff into new gross pollutant trap, connect to SEP in Cator Street.
Area D – (Stage 6) Shopping complex and multi-level car park	• Connecting all the stormwater pipes within Portrush Road to a large junction pit and diverting it through a 2.5m x 1.5m chamber towards another junction pit which connects it to the proposed 5.0m x1.0m combined flood conveyance chamber. Note for the best hydraulic outcome with the lowest risk the system is proposed in a straight line which requires the removal of two significant trees adjacent to Sydney Street. • New connection to existing Council stormwater network in Sydney Street. • The existing flood protection grate/inlet chamber will remain and will be connected to the new junction pit connected to the 5.0m x 1.0m combined flood conveyance chamber • When both systems are combined the existing 1450mm RCP within Sydney Street can't cater for all the additional overland flow therefore a surcharge pit 17.1m x 1.4m is proposed at the Sydney Street boundary to allow excess flow to return to Sydney Street and back into the overland flow path. • Addition of a solid wall incorporated as part of the landscape / urban design will be provided at the downstream perimeter of the grated inlet chamber and will extend vertically to a minimum height of approximately 500mm. note this wall will only be for Stage 6. • New loading dock off Sydney Street requires new trench grate to intercept runoff. Direct runoff into new gross pollutant trap, connect to flood conveyance chamber. • New loading dock off Portrush Road to have a high point to prevent runoff from Portrush Road entering he loading dock area.

Refer to Appendix B for the proposed stormwater layout plan.

3.4 STORMWATER TREATMENT

Stormwater treatment within the site is based largely on utilising existing systems to be maintained to suit the Stage 6 & 7 development. Except for:

- The new entry ramps off Cator Street and Portrush Road will require a GPT from the new trench drainage system.
- New loading docks on Sydney Street and Cator Street will require a GPT from the new trench drainage system.

Key stormwater pollutants to be intercepted include:

- Oils and grease
- Fine sediment
- Organic matter / debris
- Litter and other gross pollutants.

The site specific stormwater treatment systems within the relevant areas of the site are described below.

Area A1 and A2 – basement and multi-level car park

Area A1 - The stormwater treatment system consists of a Ecosol RSF 4300 located within the basement. Refer to Appendix A for the location.

The RSF 4300 is a gross pollutant trap capable of trapping sediments, oils and rubbish / debris. The existing system specification is capable of treating the additional car parking areas created by the proposed multi-level car park catchment (1). This is on the basis that the proposed development surface area of car parking to be treated is the same as the existing surface area of car parks.

The upgraded basement areas encompassing the southern portion of the upper level car park will connect via the existing Ecosol GPT to be installed to service this catchment that drains via Catchment (3).

Area A2 – does not currently have a GPT. The upgraded basement area encompassing the northern portion of the upper level car park will connect via a new Ecosol GPT to be installed to service this catchment that drains via Catchment (2).

Area D – Stage 6 - Shopping complex and multi-level car park

There is no stormwater treatment required for Stage 6 development site, as it is fully covered by roof for the new retail complex. Additionally, all stormwater roof runoff will be drained and discharged into the flood conveyance chamber.

4 SUMMARY

4.1 KEY POINTS

This report is intended to outline the proposed stormwater management strategy as it relates to Stage 6 & 7 of the development of the Burnside Village Shopping Centre. This report provides an outline of the stormwater management approach only. Detailed design, calculations and modelling will be based on the principles outlined in this report to be provided later.

Key points of the stormwater strategy for each area within the site is based on the following:

Area A1– Basement upgrade, Multi-Level Car Park

- Basement car park is to be reconstructed and with a small extension within the southern portion including a upgraded loading dock. The existing stormwater drainage system is to be re-laid and extended to take in the basement and upper floor extensions.
- The new drainage system from the open car park deck at level 3 to be connected to the existing drainage system, connected to the existing Ecosol RSF 4300 GPT and pump system to discharge at the existing discharge at (3).
- The new drainage system from the roof of the commercial tenancy to be connected directly to the discharge location at Node 3.

Area A2 – Multi Level Car Park

- The new northern portion of the upper car park deck is to be connected to its existing stormwater system. A new GPT Ecosol RSF 4300 and pump system to discharge to its existing discharge point at (2).

Area B - Building roof (Shopping complex)

- New stormwater drain from roof system to be directed and connected into the flood chamber at Node 2A
- No treatment is proposed for the roof catchment.

Area C – Existing building

- The existing building system including GPT, pump system, rainwear re-use is maintained with no changes proposed.
- A new ramp off Cator Street will require a trench drain connected via a new GPT to provide stormwater treatment. Connect to Council's stormwater drain in Cator Street.

Area D – Stage 6 - Shopping complex and multi-level basement car park

- The proposed construction of new retail floor space and new multi-level basement car parking will be fully covered so there will be no stormwater treatment for Stage 6 development. Additionally, all roof drainage will be connected and discharged to the 5.0m x 1.0m flood conveyance chamber.

- The removal of the 135mm RCP, 750mm RCP, 1950mm RCP to be replaced with a junction pit within Portrush Road to collect all the converging underground stormwater and a new 2.5m x 1.5m chamber to divert the stormwater slightly north.
- The removal of the existing 1450mm RCP and existing flood chamber that runs from the eastern boundary to the western boundary to be replaced with a junction pit and a 5.0m x 1.0m flood conveyance chamber to collect and combine both underground stormwater and overland flow. Note for the best hydraulic outcome with the lowest risk the system is proposed in a straight line which requires the removal of two significant trees adjacent to Sydney Street.
- The addition of a 17.1m X 1.4m surcharge pit to allow overflow onto Sydney Street as the existing 1450mm RCP is insufficient to cater for the underground stormwater and overland flow combined.
- The performance of the existing flood capture inlet trench grate at the Portrush Road frontage of the site will be improved through the addition of a landscaping wall that will limit bypass, improve inlet capture by increasing the hydraulic head. The minimum top level of the wall is to be set at RL 84.50 (approximately 500mm above the grate level)

Refer to Appendix B for the overall stormwater strategy plan.

APPENDIX A

EXISTING SITE STORMWATER LAYOUT

GREENHILL ROAD

SYDNEY STREET

PORTRUSH ROAD

EXISTING BUILDINGS DISCHARGE VIA KERB OUTLETS TO GREENHILL ROAD

EXISTING CARPARK CATCHMENT FLOWS TO SYDNEY STREET

1450Ø RCP

6750 RCP

OVERLAND FLOW (GAP FLOW) SURCHARGES OUT OF FLOOD CHAMBER TO CONTINUE ITS WESTWARD FLOW PATH

1450Ø RCP

1500Ø RCP

EXISTING FLOOD CHAMBER

2x1500x900 RCBC's

1950Ø RCP

FLOOD PROTECTION CHAMBER

750Ø RCP

1450Ø RCP

600Ø RCP

900Ø RCP

990Ø RCP

3750 RCP

EXISTING OVERFLOW SYSTEM SURCHARGE LOCATION

EXISTING OVERFLOW COLLECTION GRATE

PLAN

5 2.5 0 5 10

SCALE BAR (m)

LEGEND

EXISTING STORMWATER

EXISTING FLOOD PROTECTION (OVERLAND FLOW)

When sheet printed full size, the scale bar is 100mm.

0 50 100mm

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BURNSIDE VILLAGE - STAGE 6

EXISTING STORMWATER CONDITIONS

A1

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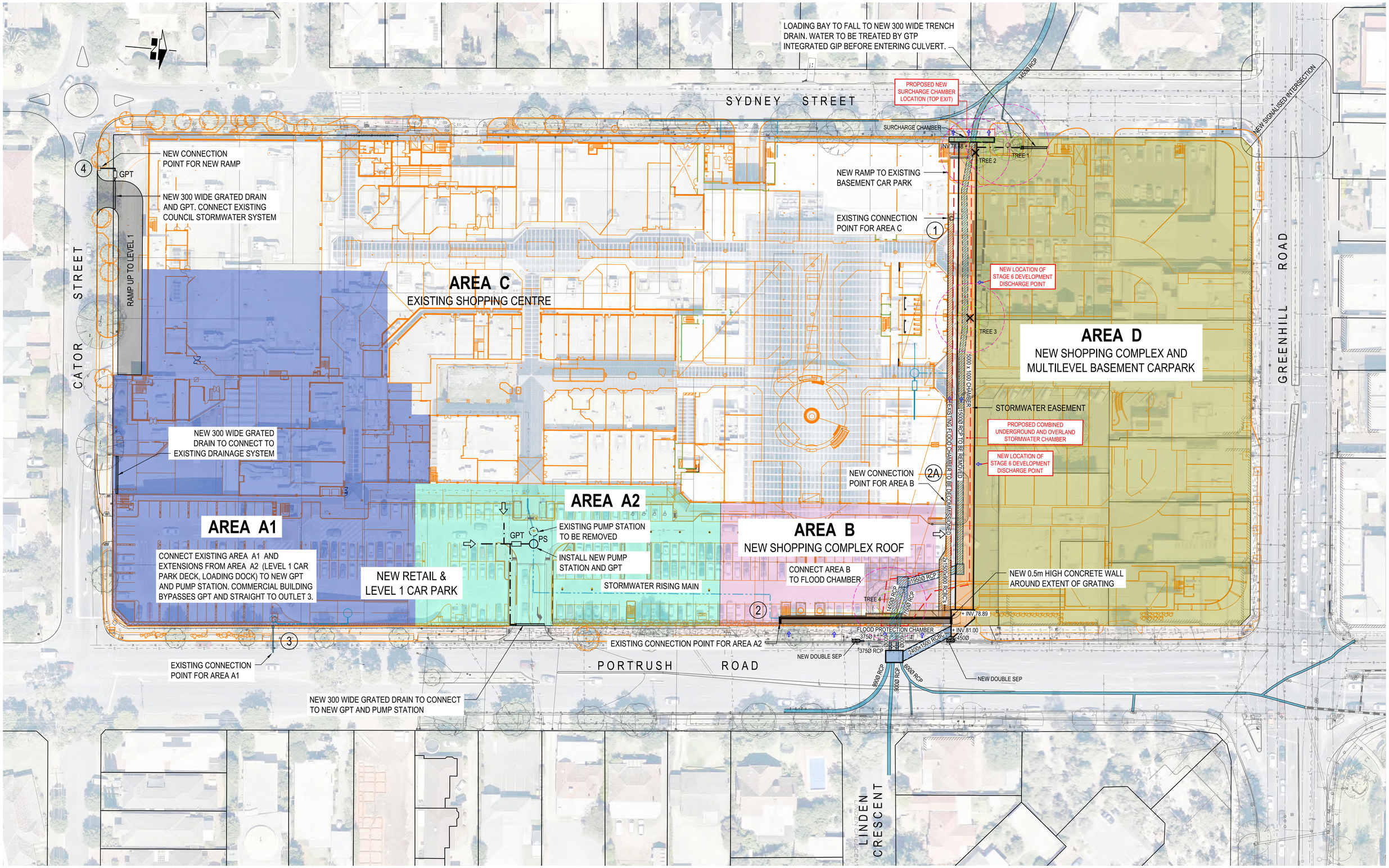
APPENDIX B

STORMWATER MANAGEMENT STRATEGY



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NOTE: THIS LAYOUT IS INDICATIVE. STORMWATER ELEMENTS ARE SHOWN INDICATIVE TO ILLUSTRATE THE STORMWATER STRATEGY.

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BURNSIDE VILLAGE STAGE 6 & 7
STORMWATER MANAGEMENT STRATEGY

PROPOSED STORMWATER WORKS

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GREENHILL ROAD

SYDNEY STREET

PORTRUSH ROAD

PROPOSED B2 BASEMENT

1450Ø RCP

TREE 1

TREE 2

TREE 3

TREE 4

SURCHARGE CHAMBER

PROPOSED NEW SURCHARGE CHAMBER LOCATION (TOP EXIT)

+ INV.78.48

NEW LOCATION OF STAGE 6 DEVELOPMENT DISCHARGE POINT

PROPOSED COMBINED UNDERGROUND AND OVERLAND STORMWATER CHAMBER

NEW LOCATION OF STAGE 6 DEVELOPMENT DISCHARGE POINT

5000 x 1000 CHAMBER

1500Ø RCP TO BE REMOVED

EXISTING FLOOD CHAMBER TO BE DECOMMISSIONED

EXISTING BASEMENT

INV.78.89 +

INV.81.00 +

2x1500x900 RCBC's

1950Ø RCP

7500Ø RCP

1450Ø RCP

FLOOD PROTECTION CHAMBER

4500

NEW DOUBLE SEP

2400x1500 RCBC

600Ø RCP

900Ø RCP

9900 RCP

6000

6000

3750 RCP

3750

NEW DOUBLE SEP

0.5m HIGH CONCRETE WALL AROUND EXTENT OF GRATING

LEGEND

- EXISTING STORMWATER
- EXISTING STORMWATER TO BE REMOVED
- EXISTING FLOOD PROTECTION (OVERLAND FLOW)
- EXISTING FLOOD PROTECTION TO BE DECOMMISSIONED
- PROPOSED STORMWATER
- PROPOSED FLOOD SURCHARGE (OVERLAND FLOW)
- PROPOSED COMBINED UNDERGROUND AND OVERLAND FLOW STORMWATER CHAMBER

PLAN

5 2.5 0 5 10

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BURNSIDE VILLAGE STAGE 6 & 7

PROPOSED STORMWATER WORKS ©

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APPENDIX C

DRAINS MODELLING AND CALCULATIONS

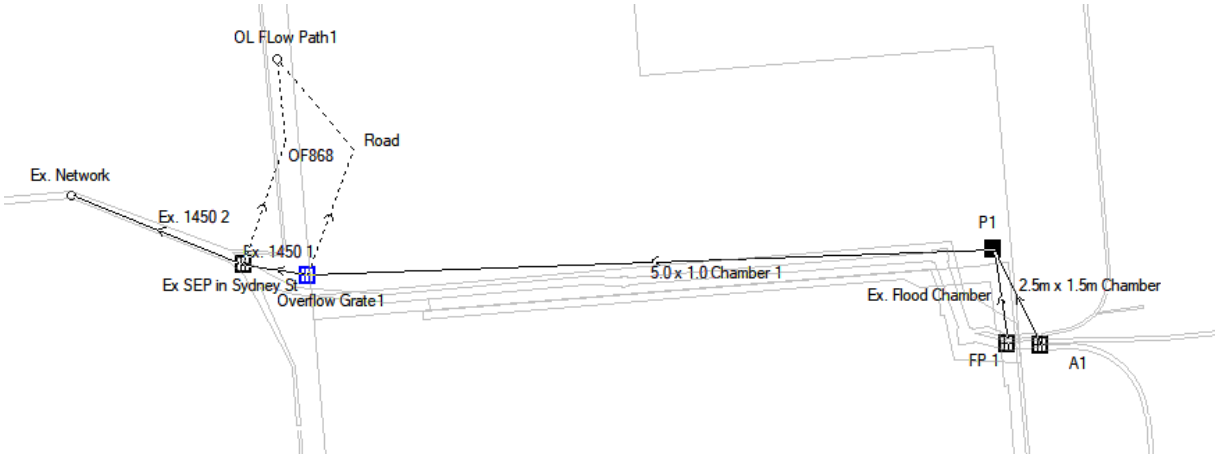

Figure C: *Drains Model*

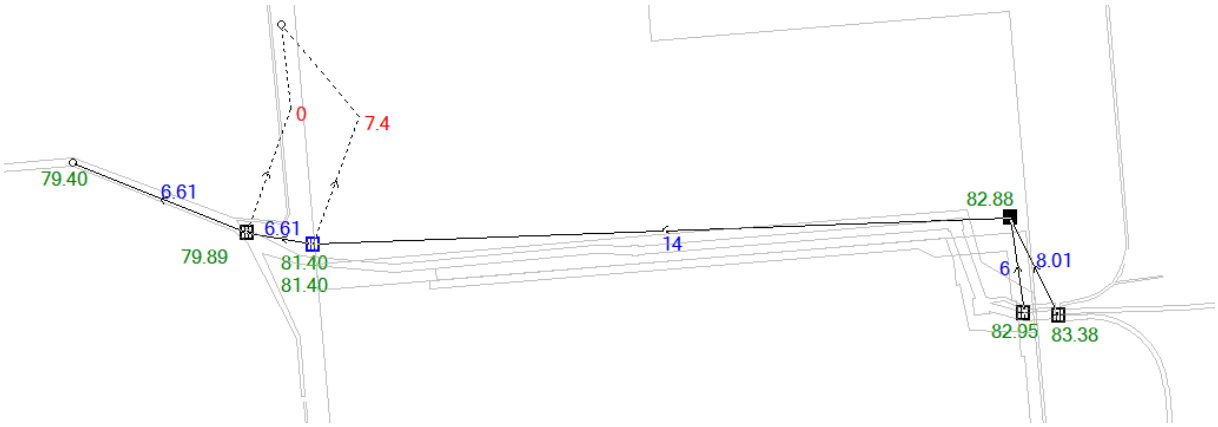

Figure D: *Drains Results*

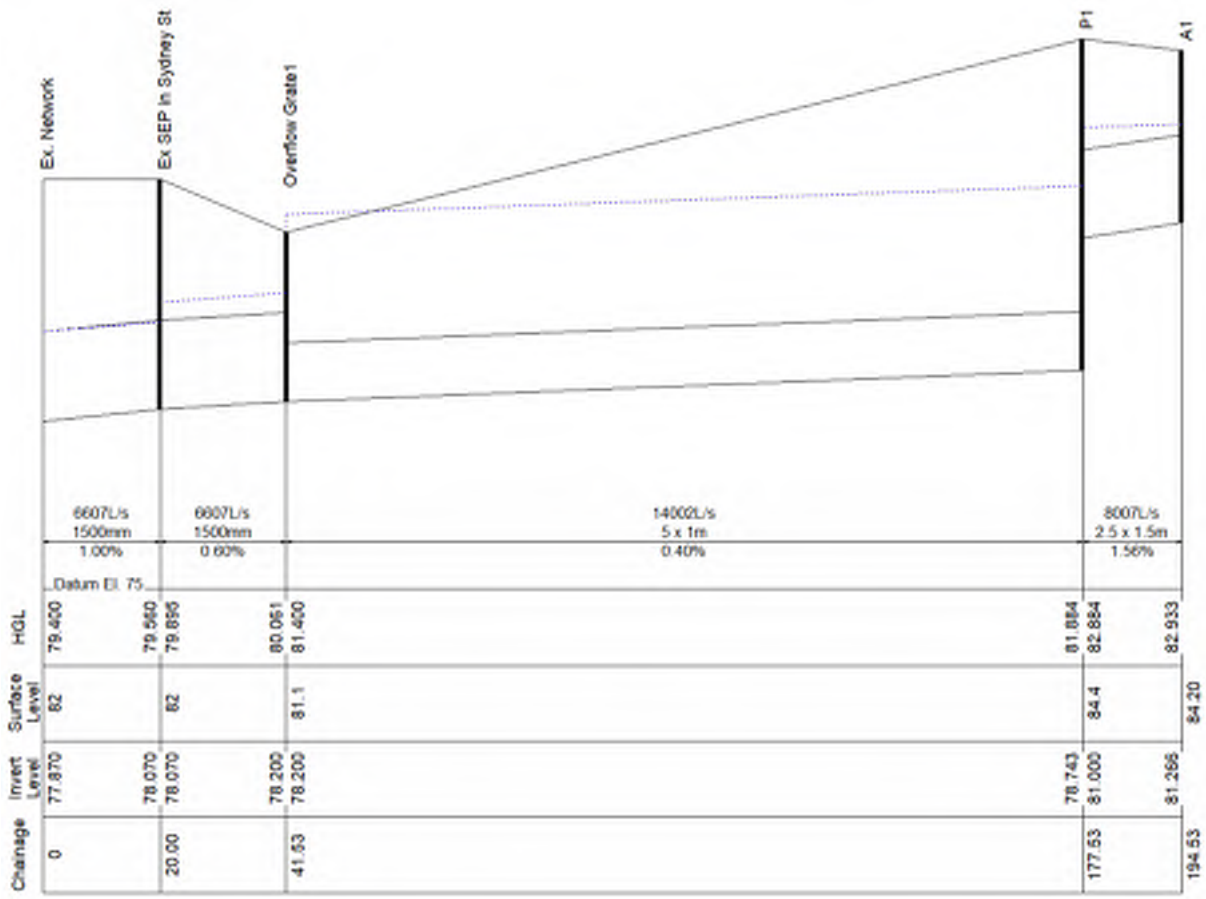

Figure E: *Drains Long Section*

CALCUALTION:

Maximum 7.4 m^3/s overflow to Sydney Street via the 17.1m x 1.4m surcharge pit.

$Q = CLH^{3/2}$

$H = (Q/CL)^{2/3}$

$= (7.4 / 1.69 \times 17.1)^{2/3}$

= 0.40m max overflow over the weir.

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SYDNEY STREET

CATOR STREET

GREENHILL ROAD

PORTRUSH ROAD

STAGE 6 WORKS
REFER WAD150460-SK24

STAGE 7 WORKS
EXISTING BASEMENT CARPARK
FLOOR SLAB AND FOOTINGS
TO BE REMOVED AND REBUILT

EXISTING RETAINING WALL TO BE REMOVED

ZONE OF NEW BASEMENT EXTENSION

EXISTING RETAINING WALL

MATCH EXISTING LEVELS

NEW RETAINING WALL. UNDERPIN ADJACENT STRUCTURES

EXISTING RETAINING WALL

EXISTING RETAINING WALL

EXISTING RETAINING WALL

MATCH EXISTING LEVELS

MATCH EXISTING LEVELS

RAMP DOWN

RAMP DOWN

STORMWATER EASEMENT

+ 81.10 81.10 +

+ 80.83

+ 80.91

80.91 +

80.97 +

+ 80.73

80.49 +

+ 79.67

79.73 +

80.07 +

+ 81.65

80.00 +

+ 83.30

+ 80.83

+ 80.83

80.83 +

80.50 +

+ 80.10

80.10 +

EXISTING BORED PIER CONTIGUOUS PILED RETENTION WALL. PROVIDE TEMPORARY RESTRAINT DURING STRUCTURAL DEMOLITION WORKS VIA SOIL ANCHORS. SOIL ANCHORS TO BE SEVERED AND DECOMMISSIONED AFTER NEW STRUCTURE INSTALLED AND TIED TO WALLS.

DENOTES EXISTING NOMINAL DESIGN FINISHED PAVEMENT LEVELS. NEW WORKS TO GENERALLY MATCH EXISTING (±300mm)

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BURNSIDE VILLAGE STAGE 6 & 7

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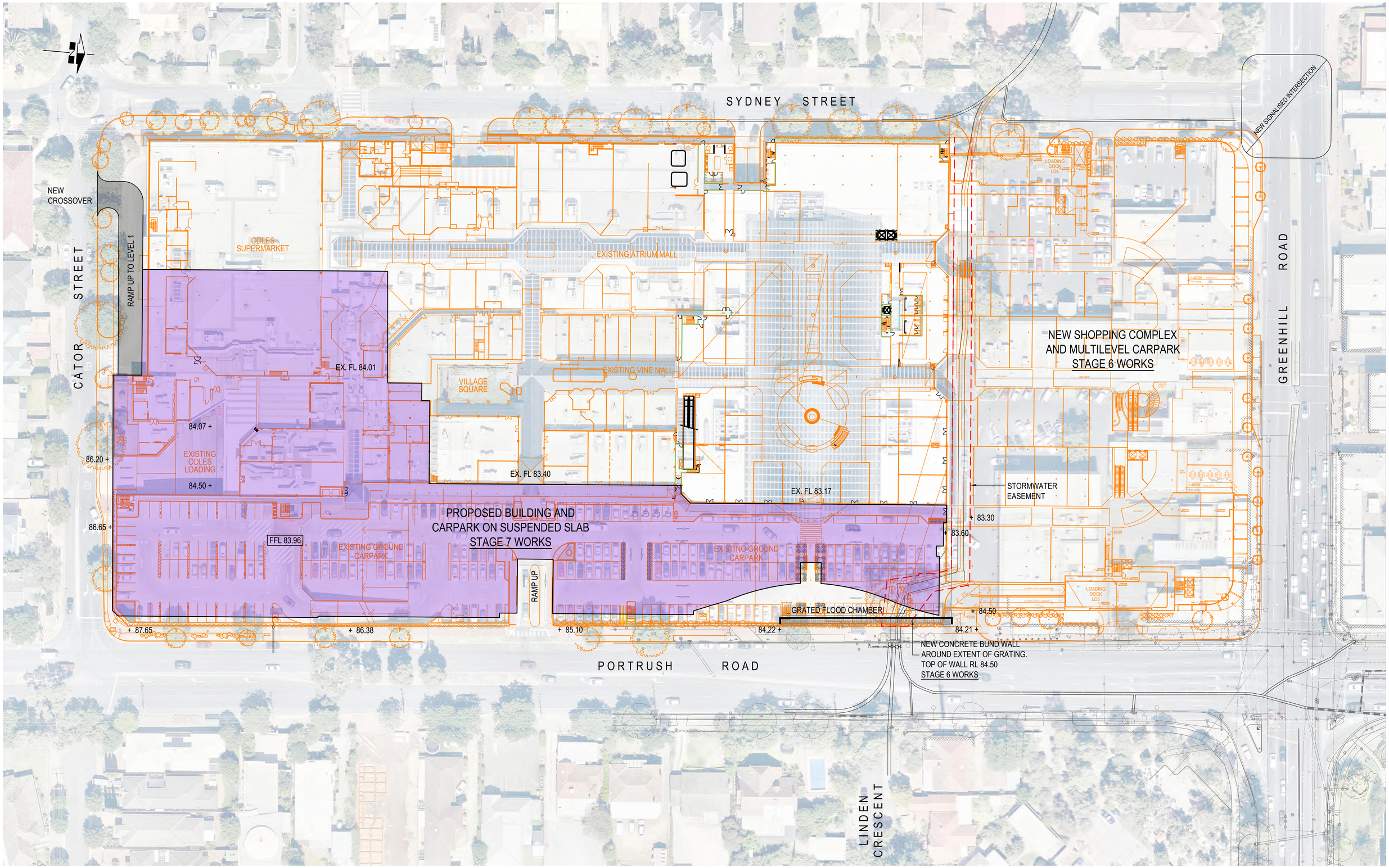

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BURNSIDE VILLAGE STAGE 6 & 7

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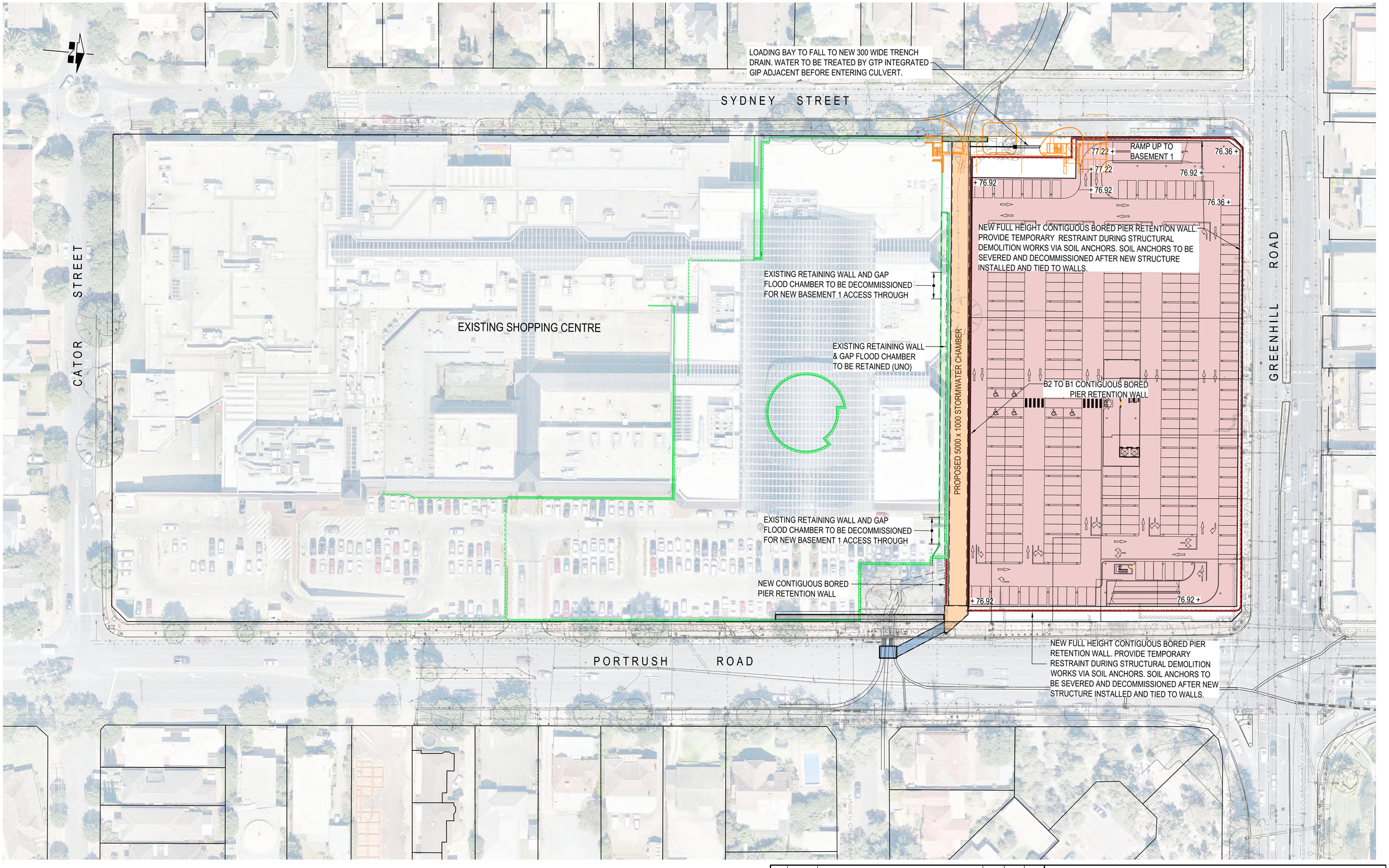

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BURNSIDE VILLAGE STAGE 6

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Appendix G

Acoustic Services Planning Report

AECOM Imagine it. Delivered.

Burnside Village Redevelopment
Cohen Group Property Services Pty Ltd
11-Jan-2019
Doc No. A19A01RP

Noise Assessment Report

Noise Assessment Report

Client: Cohen Group Property Services Pty Ltd

ABN: 56 104 813 121

Prepared by

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11-Jan-2019

Job No.: 60557901

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Document	Noise Assessment Report
Ref	60557901
Date	11-Jan-2019
Prepared by	Alex Dundon
Reviewed by	Lee Evans

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
0	11-Jan-2019	For issue	Alex Dundon Principal Acoustics Engineer	

Table of Contents

1.0 Introduction 1
2.0 Noise Criteria 2
3.0 Existing noise environment 3
4.0 Assessment 5
4.1 Rooftop bar noise 5
4.2 Carpark noise 5
4.3 Loading dock noise 7
4.3.1 Scenario 1 – Northern Village Loading Dock 8
4.3.2 Scenario 2 – Existing Sydney Street Loading Dock 8
4.3.3 Scenario 3 – Portrush Road Loading Dock 8
4.3.4 Scenario 4 – Cator Street Loading Dock – Non-supermarket deliveries 9
4.3.5 Scenario 5 – Cator Street Loading Dock – Supermarket deliveries 9
4.4 Mechanical services noise 9
5.0 Conclusion 10

Appendix A
Acoustic Terminology A

Appendix B
Site and Sensitive Receivers B

1.0 Introduction

AECOM has been engaged by Cohen Group Property Services Pty Ltd to prepare an Acoustic Report to accompany a development application for redevelopment of the Burnside Village.

This facility is located at the intersection of Greenhill Road and Portrush Road in Glenside, South Australia.

This report details the environmental noise impact assessment undertaken for this development application and provides details of noise mitigation treatments if necessary to comply with the relevant environmental noise policy.

A summary of acoustic terminology used in this report is included in Appendix A.

Our assessment is based on the drawings prepared by Buchan for this development application, dated 21 December 2018.

2.0 Noise Criteria

The Environmental Protection Authority (EPA) provides noise goals for noise sources in order to achieve the general environmental duty of the *South Australian Environmental Protection Act 1993*. The noise goals are set by the *Environment Protection (Noise) Policy 2007* (Noise EPP) and are determined on the land uses principally promoted by the relevant Development Plan.

Burnside Village is located within a District Centre Zone, and the nearest residential receivers are located within a Residential Zone as defined under the Burnside (City) Development Plan. For reference, the proposed site location and nearby residential receivers are shown on the aerial image provided in Appendix B.

Noise from the future development shall be considered both separately and then together with the existing Burnside Village site.

The future development is the subject of the development approval application and therefore must satisfy additional requirements set out in Part 5 of the Noise EPP. Part 5 states that the predicted source noise level shall not exceed the relevant indicative noise levels less 5 dB(A). Part 5 also provides additional noise criteria for receivers located in a quiet locality. The quiet locality criteria are applicable to receivers nearest to the development.

When the future and existing development are considered together, the additional requirements for development approval applications will not apply. Consequentially, the combined Burnside Village site shall comply with the relevant indicative noise levels and no 5 dB(A) penalty or quiet locality criteria are applied.

The noise criteria for the future development and the combined Burnside Village site are presented in Table 1.

Table 1 Noise EPP noise criteria

Noise Source	Noise criteria at the residential receiver [dB(A)]		
	Day(1)	Night(1)	
Future Burnside Village Redevelopment Sources	52 L_{Aeq}	45 L_{Aeq}	60 L_{max}
Combined Redeveloped and Existing Sources	57 L_{Aeq}	50 L_{Aeq}	

Note:

1. The Noise EPP classifies Day time as between 7.00 am and 10.00 pm on the same day and Night time as between 10.00 pm on one day and 7.00 am on the following day.

The Noise EPP also states that the measured source noise level must be adjusted by the following amounts if the noise source contains modulation, tonal, impulsive or low-frequency characteristics:

- 1 characteristic: +5 dB(A)
- 2 characteristics: +8 dB(A)
- 3 or 4 characteristics: +10 dB(A).

3.0 Existing noise environment

Attended and unattended noise measurements were taken at Burnside Village by AECOM during May 2018. The intent of these measurements was to both capture background noise levels, and to understand noise levels from typical operations at Burnside Village, including noise from delivery vehicles and other activities at loading docks.

Equipment used to conduct the measurements is listed in Table 2. Calibration certificates can be provided upon request.

Table 2 Equipment details

Name	Serial Number	Description	Calibration Due Date
Brüel and Kjær Type 2250	3012173	Hand held sound level meter, Class 1	18/10/2019
Rion NL-21	00676782	Hand held sound level meter	26/08/2018
Rion Sound Level Calibrator NC-73	10196889	Sound level calibrator	06/10/2018

The immediate vicinity around Burnside Village is controlled by traffic on Portrush and Greenhill Roads.

Attended measurements were undertaken between 2am and 4am. The Acoustic Engineer observed that the noise environment was controlled by traffic on Portrush Road. Average L_{Aeq} noise levels were typically around 55 to 60 dB(A), with L_{eq} levels measured during lulls being as low as 38 dB(A). Heavy vehicle passbys on Portrush Road were the loudest noise source and consequently controlled $L_{Amax,15min}$ while we were on site.

Unattended measurements were taken at a location near the Cator Street Loading Dock between 2 May 2018 and 25 May 2018. Use of the loading dock was infrequent, with noise levels at this location generally controlled by Portrush Road. Night time deliveries only occurred on 2 nights per week at this location, so measurements are considered representative of background levels in this area. Based on site observations, the noise environment on Sydney Street is controlled by Greenhill Road at similar setbacks.

A representative 24 hour period when there was no scheduled night time deliveries is shown in Figure 1. L_{Aeq} levels are fairly steady between 6am and 6pm, between 65 and 70 dB(A). Noise levels during the night time period remain above 50 dB(A), indicating that the existing environment contains a significant amount of noise from road traffic on Portrush and Greenhill Roads.

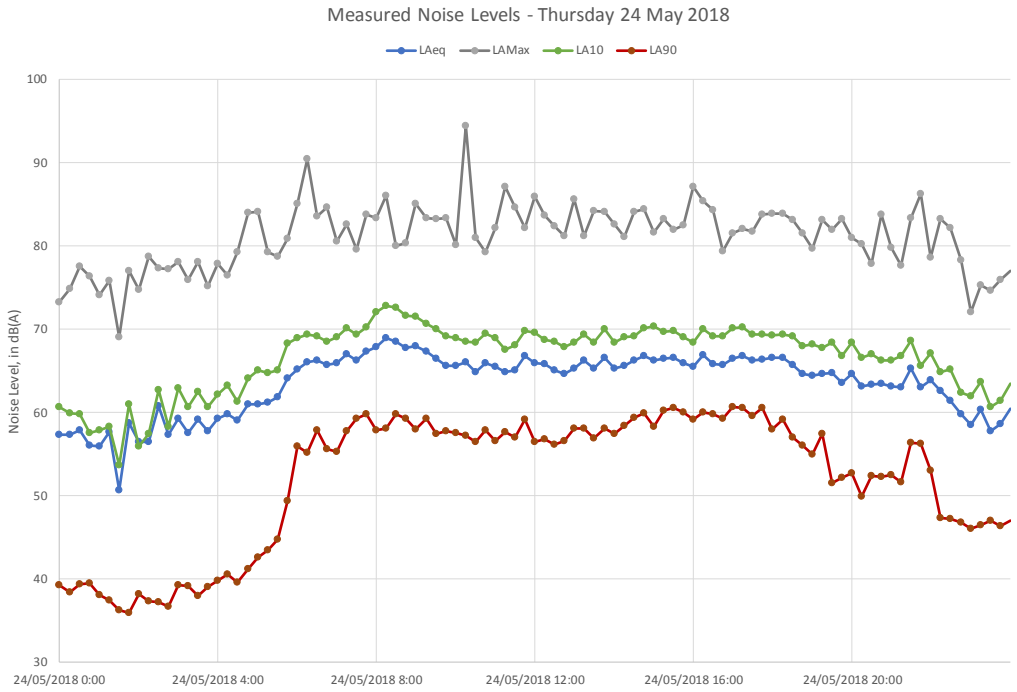

Figure 1 15-minute unattended measurement data on Thursday 24 May 2018

4.0 Assessment

Noise levels were predicted using SoundPLAN 7.4 environmental noise modelling software and the implementation of the Concawe Method. The Concawe[1] Method allows for the prediction of overall noise levels under specified meteorological conditions. As required by the Noise EPP, night time levels were predicted using Concawe Weather Category 6 and day time levels were predicted using Concawe Weather Category 5. Category 6 and 5 are the worst case meteorological conditions for noise propagation during the night time and day time respectively.

Noise from the rooftop bar, car parks, loading docks and mechanical services have been assessed.

Noise from rubbish collections was not assessed. Noise from rubbish collection is covered by Division 3 of the Noise EPP, which has separate requirements to other noise sources. Noise from rubbish collection after redevelopment is generally planned for between 9am and 7pm on Sunday or public holidays, and between 7am and 7pm on any other day.

Cumulative impacts were considered as part of this assessment, but noise from different activities do not generally occur simultaneously, so noise levels have been broken down into different components.

4.1 Rooftop bar noise

Only patron noise has been modelled from the rooftop bar as it is understood that music within the bar area will be at low levels as background noise. At this stage, there is no information on the number of patrons to be licensed within the space. Therefore it was assumed that up to 500 patrons could be present within the two rooftop bar areas (250 in each area). This is a conservative assumption, and it is assumed that a lower number of patrons would be expected. Patron noise has been modelled as 250 raised voices within each area, a sound power of 96 dB(A).

The highest predicted noise levels from patron noise in the rooftop bar are at the sensitive receivers on Portrush Road, with levels of up to 40 dB(A). It is understood that the rooftop bar may be open until 1am, although high numbers of patrons before closing time are unlikely.

Predicted noise levels for the most sensitive receivers are presented in Table 3.

Table 3 Predicted patron noise levels at nearby noise sensitive receivers

Receiver	Predicted Patron Noise Level, L_{Aeq}, dB(A)
Portrush 5	40
Portrush 4	39
Portrush 3	39
Portrush 2	38
Portrush 1	35
Sydney 15	34

The Noise EPP does not cover patron noise from bars, as noise of this type is covered under the *Liquor Licensing Act 1997*. However, the predicted patron noise levels are below the noise limit for a quiet locality under the Noise EPP, and well below typical background noise levels on Portrush Road for this time of night. Therefore, noise impacts from patron noise and music noise on the rooftop bar are considered negligible.

4.2 Carpark noise

Three scenarios have been modelled for carpark noise:

[1] CONCAWE Report No. 4/81, "The Propagation of Noise from Petroleum and Petrol Chemical Complexes to Neighbouring Communities", Published 1981.

- **Scenario 1:** Peak night time car park use, corresponding to 15 vehicles exiting the car park distributed over the exits during a 15-minute period after the last cinema session
- **Scenario 2:** Increase in daytime car park use, corresponding to an additional 185 vehicles in a 15-minute period entering or exiting the carpark through the various carpark entrances and exits corresponding to either the Thursday afternoon or Saturday peak time.
- **Scenario 3:** Total daytime car park noise, corresponding to approximately 500 vehicles in a 15-minute period entering or exiting the carpark through the various carpark entrances and exits during the Thursday afternoon or Saturday peak time

Carpark noise has been based on cars moving at a speed of 10 km/h, and includes movements within the Burnside village property boundary. Noise from vehicle movements on public roads are not assessed by the Noise EPP.

Predicted noise levels for each scenario have been compared to the relevant noise criteria, and the results are presented below in Table 4.

Table 4 Predicted noise levels for the three car park scenarios

Receiver	Scenario 1		Scenario 2		Scenario 3	
	Predicted level	Criteria	Predicted level	Criteria	Predicted level	Criteria
Cator 1	42	45	**53**	52	57	57
Cator 2	42	45	50	52	54	57
Cator 3	41	45	50	52	54	57
Cator 4	40	45	49	52	53	57
Cator 5	38	45	46	52	51	57
Cator 6	36	45	44	52	48	57
Cator 7	33	45	42	52	47	57
Portrush 1	24	45	37	52	41	57
Portrush 2	27	45	39	52	43	57
Portrush 3	28	45	40	52	45	57
Portrush 4	30	45	42	52	47	57
Portrush 5	32	45	45	52	49	57
Portrush 6	31	45	44	52	48	57
Portrush 7	34	45	47	52	51	57
Portrush 8	32	45	44	52	49	57
Portrush 9	30	45	42	52	47	57
Portrush 10	28	45	40	52	44	57
Portrush 11	24	45	36	52	41	57
Portrush 12	25	45	37	52	41	57
Sydney 1	21	45	37	52	41	57
Sydney 2	26	45	41	52	46	57
Sydney 3	28	45	43	52	48	57
Sydney 4	30	45	46	52	50	57
Sydney 5	34	45	49	52	54	57

Receiver	Scenario 1		Scenario 2		Scenario 3	
	Predicted level	Criteria	Predicted level	Criteria	Predicted level	Criteria
Sydney 6	36	45	52	52	56	57
Sydney 7	36	45	51	52	56	57
Sydney 8	31	45	46	52	51	57
Sydney 9	28	45	43	52	48	57
Sydney 10	26	45	41	52	45	57
Sydney 11	24	45	39	52	44	57
Sydney 12	23	45	38	52	42	57
Sydney 13	22	45	37	52	41	57
Sydney 14	20	45	35	52	39	57
Sydney 15	25	45	38	52	43	57

While it is recognised that noise from cars entering and exiting the carpark will be modulating, an adjustment to account for amplitude has not been applied. This is because the background noise environment at all receptors during the periods assessed contains high amounts of amplitude modulation, due to traffic on Greenhill and Portrush Roads.

For Scenario 1, all predicted night time noise levels are in compliance with the night time L_{Aeq} noise criteria for a development authorisation. L_{Amax} levels are predicted to be below the existing background environment.

For Scenario 2, the increased carpark usage exceeds the daytime planning limit by 1 dB(A) at the nearest receiver to the Cator Street exit. This exceedance only occurs during the Saturday afternoon peak and Thursday evening peak. Measurements on Cator Street indicated that the lowest existing daytime noise levels were 63 dB(A), i.e. 10 dB above the highest predicted noise level on Cator Street.

As predicted noise levels from the carpark are well below the existing background level it is not considered reasonable to provide additional noise mitigation. A 2 metre high barrier on the side of the ramps up to the carpark at Cator Street has been included within the assessment however given the elevation of the carparks, it is not feasible or practicable to further increase the height of this barrier. Furthermore, the modelling shows that there would not be an acoustic benefit at the Cator Street residence if this barrier was modified.

Based on the existing extraneous noise environment, the exceedances of the planning limit are not considered significant, and we believe are negligible based on the existing noise environment at times when these exceedances would occur due to traffic noise from Greenhill and Portrush Roads.

All receivers are predicted to comply with the daytime noise limit criteria.

4.3 Loading dock noise

We have assessed noise from the existing, redeveloped and new loading docks. Several scenarios have been assessed, including:

- Scenario 1: Medium size heavy vehicles arriving and unloading at the new Northern Village Loading Dock on Sydney Street
- Scenario 2: Small to medium heavy vehicles arriving and unloading at the existing Sydney Street Loading Dock
- Scenario 3: Medium heavy vehicle arriving at the redeveloped Cator Street Loading Dock
- Scenario 4: Large heavy vehicles arriving at the redeveloped Cator Street Loading Dock

- Scenario 5: Small to medium heavy vehicles arriving and unloading at the new Portrush Road Loading Dock

Adjustments for annoying characteristics have been considered as part of this assessment. While we note that reversing beepers will be briefly used while trucks are entering the loading dock, the duration of use of the beepers and contribution to the overall level means that the tonality present during this time is not considered fundamental the noise level. Other considered adjustments included impact noise during unloading activities, and amplitude modulation during truck arrivals, manoeuvring and departure.

A summary of predicted and adjusted noise levels at each loading dock is provided below in the following tables.

4.3.1 Scenario 1 – Northern Village Loading Dock

Table 5 Predicted noise levels near Northern Village Loading Dock on Sydney Street

Receiver	Predicted Noise Level		Daytime Criteria	Night time criteria	
	L_{Aeq}	L_{Amax}	L_{Aeq}	L_{Aeq}	L_{Amax}
Sydney 1	49(1)	60	52	45	60
Sydney 2	52(1)	61	52	45	60
Sydney 3	50(1)	63	52	45	60

Note: (1) An adjustment of 5 dB has been included due to the presence of impulsive activities during unloading.

Predicted noise levels at the Northern Village Loading Dock comply with the daytime noise limits. It is expected that this loading dock will only be used within daytime hours (7am to 10pm).

4.3.2 Scenario 2 – Existing Sydney Street Loading Dock

Table 6 Predicted noise levels near existing south eastern loading dock on Sydney Street

Receiver	Predicted Noise Level		Daytime Criteria	Night time criteria	
	L_{Aeq}	L_{Amax}	L_{Aeq}	L_{Aeq}	L_{Amax}
Sydney 11	50(1)	58	57	50	N/A
Sydney 12	54(1)	62	57	50	N/A
Sydney 13	51(1)	59	57	50	N/A

Note: (1) An adjustment of 8 dB has been included due to the presence of impulsive activities during unloading, and amplitude modulation during truck arrival and departure

Predicted noise levels at the south eastern loading dock comply with the daytime noise limits based on up to 2 trucks arriving, unloading and departing in a 15 minute period. It is understood that this loading dock is currently only used within daytime hours (7am to 10pm), and no change is proposed at this location.

4.3.3 Scenario 3 – Portrush Road Loading Dock

Table 7 Predicted noise levels near new loading dock on Portrush Road

Receiver	Predicted Noise Level		Daytime Criteria	Night time criteria	
	L_{Aeq}	L_{Amax}	L_{Aeq}	L_{Aeq}	L_{Amax}
Portrush 11	46(1)	57	52	45	60
Portrush 12	46(1)	57	52	45	60

Note: (1) An adjustment of 5 dB has been included due to the presence of impulsive activities during unloading.

Predicted noise levels from the loading dock near Portrush Road comply with daytime criteria, and are 1 dB(A) above night time noise criteria. The predicted L_{Amax} levels are below criteria, and well below ambient levels, indicating that unloading activities are unlikely to cause an impact on nearby receivers.

Given the significant background noise from Portrush Road, it is felt that this exceedance is negligible, and that use of this loading dock during the night time period would not be an undue noise impact on nearby residences.

4.3.4 Scenario 4 – Cator Street Loading Dock – Non-supermarket deliveries

Table 8 Predicted noise levels near redeveloped loading dock on Cator Street – small to medium commercial vehicles

Receiver	Predicted Noise Level		Daytime Criteria	Night time criteria	
	L_{Aeq}	L_{Amax}	L_{Aeq}	L_{Aeq}	L_{Amax}
Cator 4	47(1)	59	57	50	N/A
Cator 5	47(1)	58	57	50	N/A

Note: (1) An adjustment of 5 dB has been included due to the presence of impulsive activities during unloading.

This loading dock is currently serviced by small to medium commercial vehicles, and so the criteria for an existing noise source has been applied for this location. The redevelopment of the loading dock is expected to reduce noise from delivery vehicles, and achieve compliance with night time noise criteria, based on up to 2 trucks arriving, unloading and departing in a 15 minute period.

4.3.5 Scenario 5 – Cator Street Loading Dock – Supermarket deliveries

Table 9 Predicted noise levels near redeveloped loading dock on Cator Street – large heavy vehicles (trucks associated with supermarkets)

Receiver	Predicted Noise Level		Daytime Criteria	Night time criteria	
	L_{Aeq}	L_{Amax}	L_{Aeq}	L_{Aeq}	L_{Amax}
Cator 3	43(1)	55	52	45	60
Cator 4	45(1)	65	52	45	60
Cator 5	42(1)	64	52	45	60

Note: (1) An adjustment of 5 dB has been included due to the presence of impulsive activities during unloading.

Average noise levels from large heavy vehicles are lower than for small to medium heavy vehicles as the supermarket loading docks have a higher level of shielding than the smaller vehicle loading dock.

Predicted L_{Aeq} noise levels are in compliance with daytime and night time L_{Aeq} noise criteria based on two large heavy vehicles arriving within and unloading within a 15 minute period.

While L_{Amax} limits are exceeded at two locations due to noise from trucks as they enter the site, attended and unattended measurements during the night time period near the Cator Street loading dock from Portrush Road were between 70 to 80 dB(A). We understand that supermarket trucks will rarely use this loading dock during the night time period. Given the low occurrence of supermarket trucks using this loading dock during the night time period, and the low level of impact compared to the existing noise environment, it is considered that supermarket trucks using the Cator Street loading dock at night will not cause undue noise impacts on nearby residents.

Ideally, we would recommend the use of broadband reversing beepers on all trucks visiting the site; however, as these vehicles are not owned or operated by Burnside Village, we recognise that this would be impractical to achieve.

4.4 Mechanical services noise

At this stage, mechanical services have not been selected or designed. However, during measurements at the site, existing mechanical services were determined to be negligible or below background noise levels. Mechanical services noise impacts on nearby residences will be reviewed as the design progresses to ensure compliance with environmental noise criteria under the Noise EPP.

5.0 Conclusion

An assessment of the proposed Burnside Village Redevelopment has been carried out in accordance with relevant environmental noise regulations, including the *Environment Protection (Noise) Policy 2007*.

Acoustic modelling has demonstrated that some partial exceedances of planning criteria are expected due to carpark noise and noise from activities at loading docks. However, given the significantly elevated noise environment due to high levels of traffic noise from both Portrush Roads and Greenhill Roads, we believe that these exceedances represent negligible impacts upon the existing noise environment.

Provision of additional mitigation measures beyond those already proposed is not considered reasonable and practicable to achieve the planning limits under the Noise EPP for a development authorisation application.

Appendix A

Acoustic Terminology

Appendix A Acoustic Terminology

A weighted	The “A” weighting scale is designed to adjust the absolute sound pressure levels to correspond to the subjective response of the human ear.
dB(A)	A-weighted overall sound pressure level measured in decibels.
$L_{Aeq, T}$	Equivalent (energy averaged) A-weighted noise level over the measurement period ‘T’. This measure is commonly used in comparing noise levels to environmental noise regulations.
L_{Amax}	The maximum A-weighted noise level recorded during the measurement period.

Appendix B

Site and Sensitive Receivers

Appendix B Site and Sensitive Receivers

Appendix H

Waste Management Advice

Thursday, 10 January 2019

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Dear Nick,

Re: Updated *Waste Management Advice regarding planning assessment*
Burnside Village Development Application

Further to previous advice (provided on 8 May and 14 June 2018 and based on earlier design plans) for this proposed Development, this letter updates my report in response to revised plans (received on 10 January 2019), addressing the following specific requirements for information on waste management (per email from AECOM, 21 March 2018) for the proposed re-development of Burnside Village.

- *Location of bin storage and waste collection areas.*
- *Details of existing/proposed waste management practices and systems.*
- *Estimated volume and storage area requirements.*
- *Collection requirements and vehicle movements.*

1 Details of existing waste management system

The existing waste management system comprises the following waste storage areas and collection arrangements. The locations of these areas and collection points are identified on a site plan in Attachment 1, and Attachment 2 includes a photo gallery of these areas (from my site inspection on 29 March 2018). A table in Attachment 3 gives details on bin types and numbers at each location, service contractor (where known), assumed or known collection frequencies, type of collection truck, and estimated waste and recycling volumes (in Litres / week).

1. **Coles Waste Management Area** – This area is located back-of-house at Coles in the South Loading Dock– see Figure A2-1 in Attachment 2.
    - *It includes the following types of waste and recycling storage.*
        - *Front-lift (3m^3) bin for general waste, collected daily*
        - *30m^3 cardboard compactor bin, collected weekly*
        - *Recycling skip bins (1,100L), understood to be collected daily*
        - *Food waste skip bins (660L), understood to be collected daily*
        - *Bagged plastics (clear and mixed) (ca. 230L/bag) collected weekly*
    - *It is accessed by collection trucks via the South Loading Dock area from Cator St.*
        - *Collections generally occur early morning hours, after 7AM.*
2. **Village Shared Waste Management Areas** – These comprise three locations across the site.
    a) Village South Loading Dock Waste Area – see Figure A2-2 in Attachment 2.
        - *This area includes the following types of waste and recycling storage in the South Loading Dock area.*

- *General waste skip bins (1,100L), collected daily*
- *30m^3 cardboard compactor bin, collected weekly*
- *Recycling skip bins (1,100L), collected bi-weekly*
- *Food waste skip bins (660L), collected weekly*
- *Deposit container mobile garbage bins (240L), collected weekly*

▪ *It is accessed by collection trucks via the South Loading Dock area from Cator St.*

- *Most collections are scheduled between 7am and Midday.*

b) Village Sydney St Waste Area – see Figure A2-4 in Attachment 2.

▪ *This area includes the following types of waste and recycling storage contained within a separate room.*

- *General waste skip bins (1,100L), collected 3 times per week*
- *Cardboard skip bins (1,100L), collected daily*
- *Recycling skip bins (1,100L), collected 3 times per week*
- *Deposit container mobile garbage bins (240L), collected weekly*

▪ *Collection trucks park kerbside on Sydney St in designated parking zones, with bins presented on the adjacent landing nearby or the waste contractor accesses the waste room to pull-in pull-out the bins.*

- *Most collections occur week days (except for cardboard which also happens weekends) and are scheduled between 7am and Midday.*

c) Village North Waste Area – see Figure A2-4 in Attachment 2.

▪ *It includes the following types of waste and recycling storage located in a screened compound in northern car park area.*

- *General waste front-lift (3m^3) bin, collected bi-weekly*
- *Cardboard front-lift (3m^3) bin, collected bi-weekly*

▪ *The collection trucks for these bins enter the car park, the waste contractor pulls the bins out (to place them in correct orientation in front of truck), empties them, then returns the bins to the compound.*

- *Collections occur during week days and are scheduled before 7:30 am (on collection days).*

The existing disposal practices by tenants and cleaners is summarised as follows.

- **Coles Waste System** – *Coles staff aggregate waste from within the store and back-of-house operations and dispose of it into bins provided for general waste and food organics, to the compactor bin for cardboard, and into bags using a bag frame for soft plastics.*
- **Village (Shared) Waste System** –
  - ***Tenants*** *– Can access via existing halls and corridors any of the waste areas as needed to dispose of their waste and recycling into bins provided or the cardboard compactor at the South Loading Dock Waste Area (but usually access the area closest to their tenancy).*
  - ***Cleaners*** *– Cleaning staff at the Centre will usually bring their waste to the Sydney St Waste Area to dispose into the waste and recycling bins provided.*

The table in Attachment 3 includes estimates for the volumes of waste and recycling generated across the site, and these estimates are summarised in the Table overleaf (Table 1) for each waste system.

{Cont. overleaf below Table 1}

Table 1 – Summary of waste and recycling volume estimate for each waster system, including tenancy area for each

Waste Management System	Tenancy Area (Square Metres)	Service	Potential Volume (up to) (L/week)
1. Coles	**3,854**	*General waste*	18,900
		Cardboard	21,000 (Compacted) 80,000-120,000 (Uncompacted)[1]
		Plastics	6,900
		Recycling (Other)	12,320
		Food waste	7,392
2. Village (Shared)	**20,342**	*General waste*	81,630
		Cardboard	66,180 (Compacted and Uncompacted) 100,000-150,000 (Uncompacted)[1]
		Dry Recycling	13,860
		Deposit Containers	864
		Food waste	3,432

Based on Table 1, the site can produce substantial waste and recycling volumes, e.g.

- **Coles Waste System** – Could generate up to 110,000 – 140,000 L/week in waste and uncompacted recycling[1]
- **Village (Shared) Waste System** – Could generate up to 180,000 – 230,0000 L/week of waste and uncompacted recycling[1]

According to the Centre Operations Manager, Jake Godfrey (per communications during site visit on 29 March 2018 and subsequent emails), existing waste management at the Centre functions effectively to the satisfaction of existing tenants and there are generally no issues or complaints from tenants, staff, customers or nearby residents. Centre staff routinely liaise and have a positive relationship with Burnside Council on a variety of matters including waste collection arrangements including perceived impacts that waste management at the Centre may (infrequently) have on surrounding residents, enabling them to be quickly addressed and/or resolved.

2 Potential Impact of Proposed Re-development

The proposed re-development would increase the tenancy area of the Centre. This increase would occur from re-development of existing areas at Burnside Village owned by the Developer plus new northern areas facing Greenhill Rd recently acquired by the Developer. Table 2 overleaf, reproduced from the information, gives the expected changes to Gross Leasable Areas (GLA).

In summary:

- By the end of Stage 7, the re-development would
  - *Increase total GLA from 24,196m^2 to 52,103m^2 – a 115% nett increase.*
  - *If Coles, proposed second supermarket, and Commercial Offices at Stage 7 are excluded from tenancy area estimates, the change the GLA across all other tenants would be from 20,342m^2 to 39,214m^2 – a 93% nett increase.*

{Cont. overleaf below Table 2}

[1] Much of the cardboard waste collected across the site is compacted before collection. The estimated uncompacted value of cardboard has been included to 'normalise' the volume estimates and aid interpretation.

Table 2– Proposed (nett) changes to Gross Leasable Area (GLA) at Development and potential impact on waste generation and management. *GLA for land use activities are aggregated to reflect the different waste systems expected to operate at site: Coles, second supermarket, Village shared system (for retail and F&B tenancies), and Commercial Offices (proposed at Stage 7).* *Source: Based on plans received on 10 January 2019 and other information supplied from project team.*

Land Use Activity	GLA (M2)	Stage 6 with Cinema		Stage 7		Potential impact on Waste Generation &/or Management
		GLA Change(M2)	***Final GLA (M2)***	*GLA Change(M2)*	***Final GLA (M2)***	
Coles	**3,854**	-	**3,854**	-254	**3,600**	*Reduce existing waste generation in line with area change*
New second supermarket	**-**	-	**-**	1,800	**1,800**	*New waste source with waste storage in S/M Loading Dock*
Cinemas **Mini Major** **Int Flagships** **Specialty** **Food Catering** **Gym** **Office** **Existing Surrounds**	**20,342**	12,047	**32,389**	7,310	**39,699**	*Assume these tenancies continue as users of shared Village waste management system. Village waste generation would increase substantially (in line with area change). Existing waste management areas (Sydney St Waste Room and South Dock) can still be utilised (for Stage 6 & Stage 7), but additional waste management area for general at new North Western and Eastern Loading Docks (for Stage 6) are recommended.*
Commercial	**-**	916	**916**	6,088	**7,004**	*New waste source, recommend establish separate waste management area at new North Eastern Loading Dock area when built during Stage 6 (and expand this area for Stage 7)*
Total	**24,196**	12,903	**37,159**	14,944	**52,103**	

- The (existing and new) re-development areas are expected to include the following types changes to the tenancy activity at the site.
  - ***Stage 6*** *– Much of this re-development activity will be in new northern areas of the site and would include:*
    - *New Cinema (GLA of 2,311m^2)*
    - *New international flagship and specialty retail shops (additional GLA of 11,835m^2)*
    - *New food catering tenancies (additional GLA of 3,228m^2)*
    - *Some new commercial area (additional GLA of 916 m^2)*
  - ***Stage 7*** *– Re-development during this stage will occur in the Southern corner and along Eastern side of the existing site including new commercial levels over Stage 6 buildings in the north eastern corner of the site:*
    - *Coles site relocation (small reduction in GLA of 254m^2)*
    - *New second supermarket (GLA of 1,800m^2)*
    - *More specialty retail and food catering tenancies (additional GLA of 8,308m^2)*
    - *Expanded commercial / office tenancies (added GLA of 6,088m^2)*

{Cont. overleaf}

3 Proposed Waste Management after re-development

3.1 Location of bin storage and waste collection areas

Table 2 includes recommendations on how waste management could or should operate after the re-development (in both Stages 6 and 7) is complete, including locations of bin storage and waste collection areas. These recommendations are summarised below.

1. ***Coles*** *– would retain its own independent waste management area at its loading dock, with this area relocated (to new loading dock) when the supermarket moves from its current location to new south eastern corner position during Stage 7.*
2. **New second supermarket** *– should have its own waste management area at its loading dock as part of Stage 7.*
3. ***Village Shared Waste Management system*** *–*
    - *This shared system would continue to operate out of existing waste management areas plus incorporate new waste management areas to support new northern tenancies:*
        a) ***Existing South Dock*** *– this area would remain as is during Stage 6 with some extra bins and collections but be relocated and reconfigured during Stage 7 (as part of the Coles relocation and new supermarket addition.*
        b) ***Existing Sydney St*** *– this room and its presentation areas should remain and continue to operate as is but with extra bins and increased collection frequency for some services as required over Stages 6 and 7.*
        c) ***New North Western Loading Dock*** *– a waste management area at this location would be built during Stage 6 and replace the existing Village North area (which would be demolished) and this area would provide expanded collection services to support retail and food catering tenancies in newly re-developed northern areas of the site.*
        d) ***New North Eastern Loading Dock*** *– a waste management area at this location would be built during Stage 6 and provide extra capacity to support retail and food catering tenancies in newly developed northern areas of the site, as well as the future commercial office development above building (during Stage 7)at this location.*

The above recommendations are illustrated in Figure 1 overleaf, which shows where existing and new waste management areas would be located and accessed. Table 3 and Table 4 on pages overleaf summarise proposed changes to services, bin storage and collection frequencies across existing and new waste areas at Stages 6 and 7, respectively.

The observation / recommendation above that existing Village South Dock and Sydney St waste management areas can continue to be used reflects our assessment that the current shared system at the Centre for Village tenants has spare capacity to accommodate future increases in waste demands from much of the re-developed tenancy areas, which can be unlocked by additional bins and/or increasing the collection frequency for some services, e.g.

- Both South Loading Dock and Sydney St waste areas have space to accommodate additional bins for general waste, cardboards, recycling and/or food waste.
- The collection frequency for some services can be increased from bi-weekly or three times/week to five times a week or daily if needed.
- The cardboard compactor at the South Loading Dock appears under-utilised and may only be 40-60% full for many collection events, so there is spare capacity to support increased volumes, and its collection frequency could also be increased from weekly to bi-weekly too.

{Cont. three pages over}

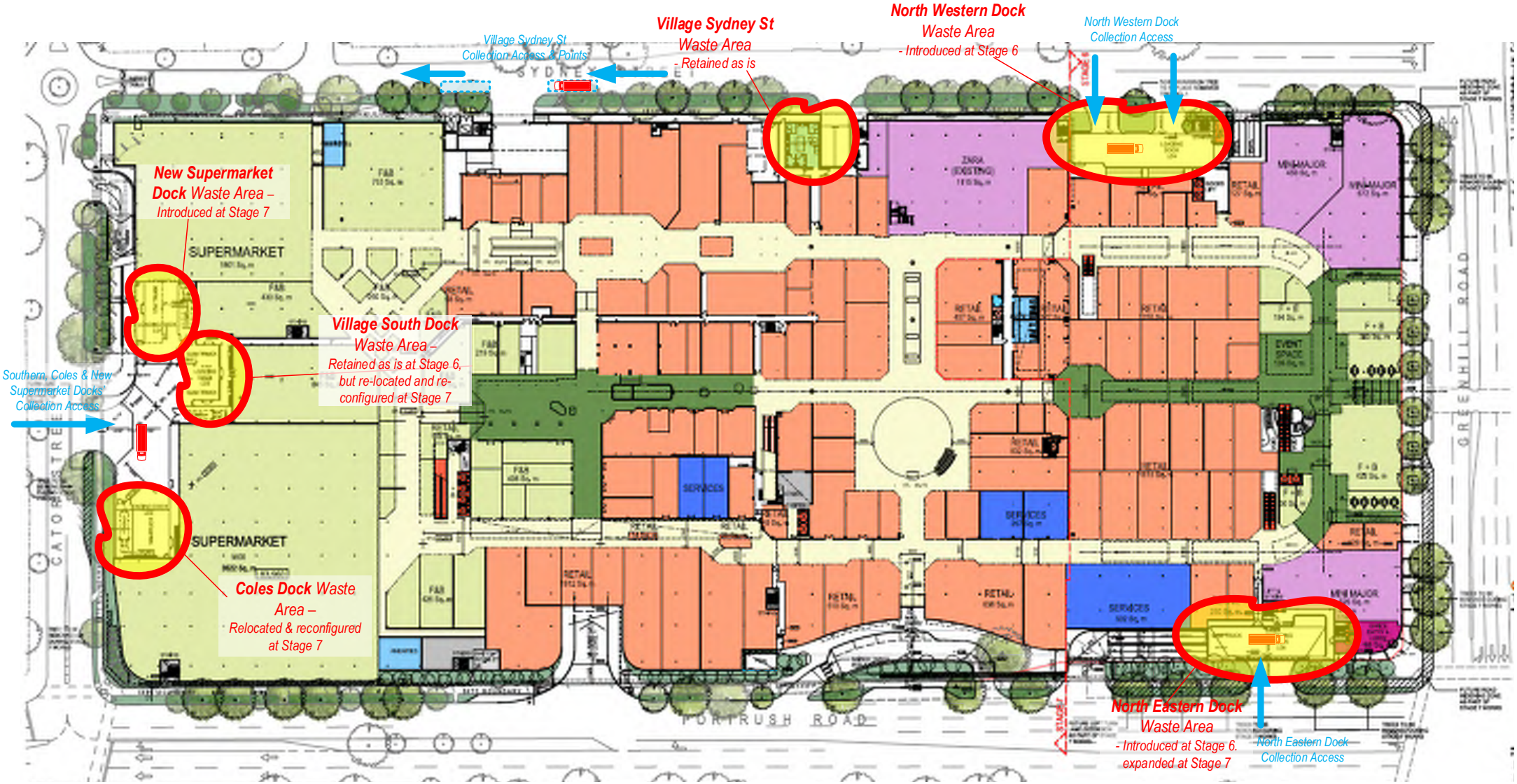


Figure 1 – Ground-level site plan illustrating the expected locations of existing and new waste management areas following completion of the re-development

Table 3 – Summary of waste management after Stage 6 of re-development including potential volume (L/week) and locations of waste management areas and recommended changes to or new bins and collection services (in these areas)

Waste Management System	GLA (Square Metres)	Service	Potential Volume (up to) (L/week)						
1. Coles				Existing Coles Loading Dock Area					
	3,854	*General waste*	18,900	No change required					
		Cardboard	21,000						
		Plastics	6,900						
		Recycling (Other)	12,320						
		Food waste	7,392						
2. Village				Existing South & Sydney St Loading Docks		New Northern Western Waste Management Area		New Northern Eastern Waste Management Area	
				Change in or new bins	Change in or recommended collection frequency	Bins	Recommended collection frequency	Bins	Recommended collection frequency
	32,389	*General waste*	130,000	2 extra 1,100L skips at South Loading Dock, 1 extra 1,100L skip at Sydney St	Increase to 4 times/week at Sydney St, stay same at South Dock	2×Front-lift (3m3) bins	3 times/week	3×Rear-lift (1100L) bins	3 times/week
		Cardboard	105,400	1 extra 1,100L skips at Sydney St	Move to tri-weekly collection at Sydney St	1×Front-lift (3m3) bins	3 times/week	3×Rear-lift (1100L) bins	3 times/week
		Dry Recycling	22,100	2 extra 1,100L skips across South Loading Dock &/or Sydney St	Move to 3 collections/week at each location	2x1100L recycling bin	Twice weekly	1x1100L recycling bin	Twice weekly
		Soft plastics	Not separately estimated but could be relevant if Major Mini & other tenancies start recycling separately	Install 1xbag frame and set-down area for soft plastic bags at both Sydney St &/or South Dock	Management to transfer to Southern loading dock to be co-collected with Coles weekly collection of soft plastics	Install 1xbag frame in waste management area for northern tenancies recycling this material	Collect from this location weekly or transfer to Southern loading dock to be co-collected with Coles weekly collection of soft plastics	No bins for these services recommended for this area	
		Deposit Containers	1,980	2 extra 240L MGB across both areas	No change	4×240L MGBs	1-2 times per week		
		Food waste	10,500	Add another 660L skip in South Dock, perhaps install 660L bin in Sydney St for transfer to South dock for collection	Increase to 3 times/week at South Loading Dock	3×660L skips	3 times/week		
2d) Commercial offices (added to North Eastern Waste Management area)				Commercial Waste Presentation Area at North Eastern Waste Management Area					
				No. bins	Recommended collection frequency				
	916	*General waste*	1,240	1×Rear-lift (1100L) bins	Twice-weekly				
		Paper &/or Cardboard	940	1×Rear-lift (1100L) bins	Weekly				
		Confidential Paper	210	Assume up to 2x140L MGBs	Weekly				
		Dry Recycling	300	1x1100L bin	Weekly				
		Food waste	210	1×240L MGBs	Twice Weekly				

Table 4 – Summary of waste management after Stage 7 of re-development including potential volume (L/week) and locations of waste management areas and recommended changes to or new bins and collection services (in these areas)

Waste Management System	GLA (Square Metres)	Service	Potential Volume (up to) (L/week)						
1. Coles				**Existing Coles Loading Dock Area**					
	3,600	*General waste*	17,700	No change proposed, but relocated and reconfigured at new Eastern location					
		Cardboard	19,600						
		Plastics	6,400						
		Recycling (Other)	11,500						
		Food waste	6,900						
2. Village				**Existing South & Sydney St Loading Docks**		**New Northern Western Waste Management Area**		**New Northern Eastern Waste Management Area**	
				Change in or new bins	**Change in or recommended collection frequency**	**Bins**	**Recommended collection frequency**	**Bins**	**Recommended collection frequency**
	39,699	*General waste*	159,300	1 extra 1,100L skips at South Loading Dock, 1 extra 1,100L skip at Sydney St	No change	No change	No change	Increase to 5×Rear-lift (1100L) bins	No change
		Cardboard	129,200	Another extra 1,100L skips at Sydney St	Stay tri-weekly skip bin collection at Sydney St, potentially up to bi-weekly collection of South Dock compactor	No change	No change	Increase to 5×Rear-lift (1100L) bins	No change
		Dry Recycling	27,000	No extra bins or changes	No change	No change	Increase to 3 times/week	Increase to 2x1100L recycling bin	Increase to 3 times/week
		Soft plastics	Not separately estimated but could be relevant if Major Mini & other tenancies start recycling separately	Some additional set-down /storage area needed at Sydney St &/or South Dock for extra bags	Maybe increase to twice weekly if needed	Some additional set-down /storage area needed	No change	No bins for these services recommended for this area	
		Deposit Containers	1,700	Another extra 240L MGB in both areas	No change	Add 240L MGBs if needed	No change		
		Food waste	6,700	No extra bins or changes	No change	Maybe add another 660L skip bin if needed	No change		
2d) Commercial offices (added to North Eastern Waste Management area)				**Commercial Waste Presentation Area at North Eastern Waste Management Area**					
				No. bins	**Recommended collection frequency**				
	7,004	*General waste*	9,460	3×Rear-lift (1100L) bins	Tri-weekly				
		Paper &/or Cardboard	7,190	2×Rear-lift (1100L) bins	Tri-weekly				
		Confidential Paper	1,580	Assume up to 10x140L MGBs	Weekly				
		Dry Recycling	2,270	1x1100L bin	Tri-weekly				
		Food waste	1,580	Up to 3×240L MGBs	Tri-weekly				
3. New (Second) Supermarket				**New Supermarket Loading Dock Area**					
				No. bins	**Recommended collection frequency**				
	1,800	*General waste*	8,800	3m3 front-lift	Daily collection				
		Cardboard	9,800	Compactor bin provided, up to 20m3	Weekly compactor bin collection				
		Plastics	3,200	Bag frame & presented in Loading Dock like Coles	Weekly				
		Recycling (Other)	5,800	3×1,100L skip bins	Tri-weekly				
		Food waste	3,500	Up to 2×660L skip bins	Daily collection				

Moreover, the space set aside on plans for these and other areas, in our opinion, should be adequate to house the recommended waste storage, i.e.

1. **Coles waste management area** –
    - *This waste management existing area is already large enough to support Stage 6 of the re-development.*
    - *It can be seen (from the Ground level site plan) that the proposed Stage 7 relocation includes space provision for compactor and the loading dock proposed is similar in size and configuration to that which already exists, so it should be able to accommodate required bin storage.*
2. **Village shared waste management area –**
    - ***a) South Dock shared waste area –***
        - *The existing waste area would be retained during Stage 6 and Table 3 demonstrates that this existing area should be enough to accommodate some additional bins needed at this stage.*
        - *The plans for this area after relocation during Stage 7 already show space provision for the existing compactor and the loading dock area would appear to be of similar sizing so it should be able to accommodate required bin storage.*
    - ***b) Sydney St waste area –***
        - *This waste management existing area is already large enough to support Stage 6 of the re-development with some additional bins and collections (with new waste areas built at North Western and Eastern docks able to absorb the additional demands from new northern tenancies).*
        - *At Stage 7, it should continue to be adequate for waste management demands (operating in conjunction with new North Western and Eastern dock waste areas and the South Dock waste area reconfiguration to support additional waste management demands at the site).*
    - ***c) North Western Dock waste area –***
        - *This new area would be designed and built at Stage 6 to meet to main demands of the new northern tenancies including more specialised service requirements (e.g. food, soft plastics, recycled deposit containers, etc.) of retail and food and catering tenancies*
    - ***d) North Eastern Dock waste area –***
        - *This new area would be designed and built at Stage 6 to meet to provide alternative general waste and cardboard disposal for nearby new northern tenancies plus be expanded to act as a waste area for new commercial offices being built at this location during Stage 7.*
3. **New second supermarket waste management area** –
    - *This area would be built at Stage 7.*
    - *The proposed space provision (from the Ground level site plan) already allows for a compactor (per our recommendation) and the loading dock seems reasonably sized, so it should be able to accommodate recommended bin storage (per Table 4).*

3.2 Waste management practices

The waste management practices at the site after Stage 6 and 7 re-developments would continue current practices as demonstrated by existing tenants and supported and administered by Centre Management, except that these would additionally occur across new and/or re-configured waste management areas (with existing and new tenants at these locations).

As already mentioned, these current practices work effectively to the satisfaction of existing tenants and there are generally no reported issues or complaints with Burnside Council or from tenants, staff, customers or nearby residents.

It will be incumbent on Centre Management to review and tailor existing practices to suit new tenants and new waste management areas at the site when the site becomes operational. This may include updates to existing site management plans and instructions to tenants (and waste contractors).

3.3 Estimated volume and storage area requirements

Estimated waste volume and storage area requirements for Stage 6 and Stage 7 were outlined in Tables 3 and 4, respectively.

The final details of how bins, waste storage and/or other equipment should be stored and arranged in existing, reconfigured and/or newly built waste areas should be decided during detailed design stage. This final design detailing should include input from Centre management, tenants regarding local disposal access arrangements, waste contractors and traffic engineer for collection truck access spatial and movement requirements, and consideration of other service demands at each location (as these may influence where bins should be located to support convenient and safe local disposal by tenants and collection access by waste contractors).

It is our opinion that current space provision on the plans at these waste management area locations should enable the recommended bins and/or waste storage in Tables 3 and 4 to be accommodated and serviced.

3.4 Collection requirements and vehicle movements.

The collection access for the Stage 6 and Stage 7 waste areas in the re-development would be like that which already occurs at the site, i.e. trucks would access waste areas in the same way, at same times, mostly with similar or slightly increased collection frequencies, e.g.

- ***Sydney St waste area –***
  - *Bins will still be presented for on-street collection from Sydney St (per current practice).*
  - *There would/could (depending on demand) be some addition collections per week for general, cardboard, recycling waste skip bins plus a bi-weekly food waste collection may be introduced.*
- ***South Dock waste area –***
  - *This dock would stay the same until reconfigured during Stage 7.*
  - *Collection access would continue to be from Cator St, with on-site collection in the Southern loading dock access area.*
  - *There would be (depending on demand) some extra collections for general waste, recycling and food waste skip bins, and compactor collection for cardboard may go to twice weekly during certain times of the year as tenant demands increase.*
- ***Coles Loading dock waste area –***
  - *There would be no additional requirements for bins or collections, the existing arrangement would stay the same except when area is relocated during Stage 7.*
  - *Collection access would continue to be from Cator St, with on-site collection in the Southern loading dock access area.*
- ***New second supermarket Loading Dock waste area –***
  - *This new waste area would be built during Stage 7*
  - *It would be accessed from Cator St with on-site collections occurring in the new Stage 7 loading dock access area.*
  - *This new waste area could add to collection at the site, but if same waste contractor as used by Coles and/or Village management was engaged, it would not add to collection frequency except for an additional cardboard compactor collection event per week.*
- ***New North Western waste area –***
  - *This waste area would be built during Stage 6 and replace the existing Northern waste area.*

- *Per Table 3 and 4, it would have similar collections for general waste and cardboard (as currently occurs) but with some additional collections per week plus extra collection services (e.g., recycling, food waste, container deposit, etc.) to support food and catering tenancies in new northern areas.*
- *Any additional collections from this new area would be performed by the same waste contractor already engaged by Village management to service other waste areas.*
- *The collections would be on-site using the loading dock area accessible from Sydney St.*

- ***New North Eastern waste area –***
  - *This new area would generate additional collection events at the site.*
  - *These additional collections for Stage 6 and 7 would be as indicated in Table 3 and 4.*
  - *The collections from this new area would be performed by the same waste contractor already engaged by Village management to service other waste areas.*
  - *The collections would be on-site using the loading dock area accessible from Portrush Rd.*

Inspection of the plans suggest that the loading docks being proposed for on-site collection access at the site all appear adequate to enable commercially available waste collection trucks (or expected types) to enter the site in forward direction, manoeuvre on-site, and exit in forward direction. These access arrangements for waste trucks should be confirmed at detailed design stage (by swept path modelling if not already performed for delivery access requirements by similar sized trucks).

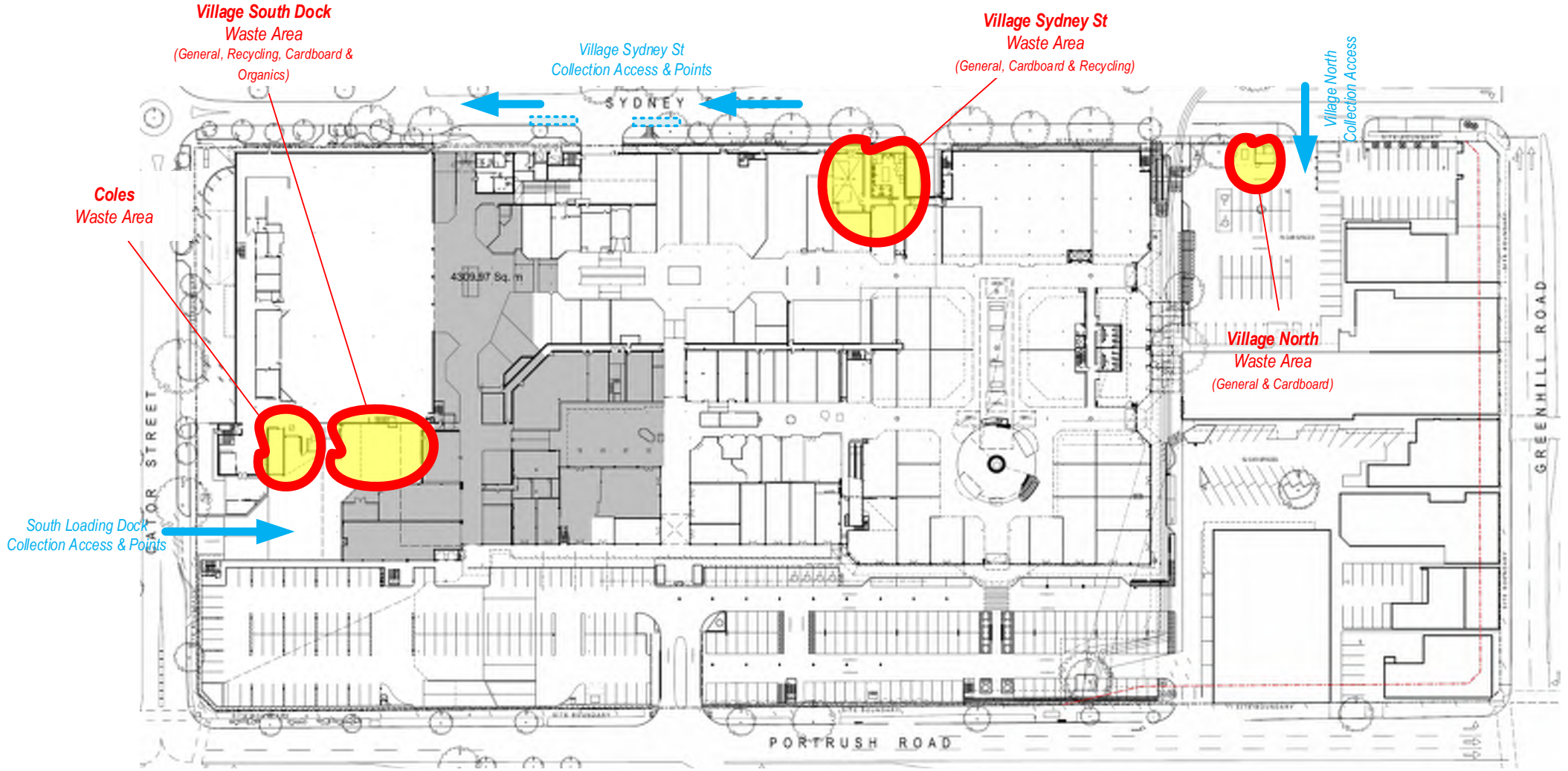
I trust that this letter supports your requirements for clarification about how waste management for the proposed re-development and expansion at Burnside Village can be satisfactorily resolved. Please let me know of any queries or where further information is required. If needed, I would be available to meet or speak with relevant planning authority and/or other stakeholders regarding any further questions they may have.

Yours Sincerely,

Chris Colby

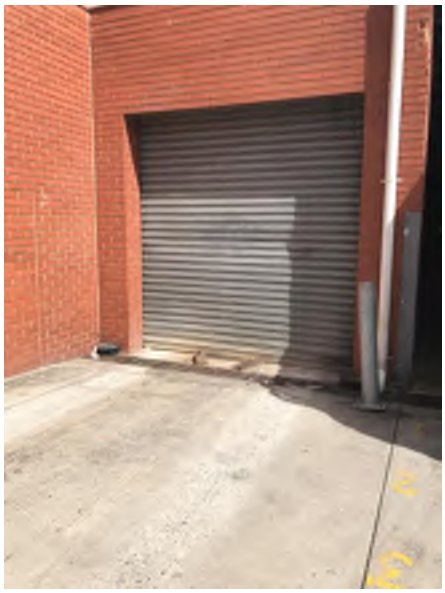
Principal Consultant & Managing Director – **Colby Industries**

Attachment 1 – Location of existing waste areas and collection access points



Attachment 2 – Photo Gallery of Existing Waste Systems

(a)



(b)

(c)

Figure A2-1 – Coles waste storage area at South Loading Dock: (a) Front lift general waste bin; (b) Access door to cardboard compactor; (c) Clear & mixed plastics bagged and presented for collection**.** *Note: The recycling and food waste bins are located back-of-house within building and could not be observed at time of inspection*

(a)

(b)

(c)

(d)

Figure A2-2 – Village (shared) waste storage area at South Loading Dock: (a) General waste skip bins; (b) Recycling skip bins; (c) Food waste bins; (d) Cardboard compactor bin (compactor is at rear; Presentation for coloured and clear plastics

(a)

(b)

(c)

(d)

Figure A2-3 – Village (shared) Sydney St Refuse Room: (a) View of West end of room showing skip bin storage; (b) View of East end of room with disposal area skip bins; (c) Collection point (currently multipurposed with temporary Taxi pick-up zone); (d) Alternate Collection point (currently multipurposed with temporary Bus pick-up zone)

Figure A2-4 – Northern (shared) Waste Bins: General waste and recycling front-lift bins for northern tenants

Attachment 3 – Technical Details & Volume Estimates for Existing System

Table A3-1 – Existing waste systems: bin type and numbers at each location, service contractor (where known), assumed or known collection frequency, and estimated waste & recycling volumes. *Data sources: Centre Operations Manager, Site Inspection 29 March 2018*

Waste Management System	Service	Location	No bins known / assumed / estimated	Size (Litres)	Type	Collection frequency known / assumed	Service Type	Contractor	Potential Volume* (up to) (L/week)
1. Coles	*General waste*	*South Loading Dock*	1	3,000	Front-lift (3m3)	Daily	Front-lift	Cleanaway	18,900
	Cardboard		1	30,000	RORO Bin (30m3)	Weekly	RORO		21,000 ^
	Plastics		30	230	Loosely Bagged	Weekly	Unknown		6,900
	Recycling (Other)		2	1,100	Skip bin	Daily	Rear-lift		12,320
	Food waste		2	660	Skip bin	Daily			7,392
2. Village (Shared)	*General waste*	*South Dock*	8	1,100	Skip bin	Daily		Veolia	81,630
		Sydney St	7	1,100	Skip bin	3 times/week			
		North	1	3,000	Front-lift (3m3)	Bi-weekly	Front-lift		
	Cardboard	*South Dock*	1	30,000	RORO Bin (30m3)	Weekly	RORO		66,180 ^
		Sydney St	6	1,100	Skip bin	Daily	Rear-lift		
		North	1	3,000	Front-lift (3m3)	Bi-weekly	Front-lift		
	Dry Recycling	*South Dock*	4	1,100	Skip bin	Bi-weekly	Rear-lift		13,860
		Sydney St	2	1,100	Skip bin	3 times/week			
	Deposit Containers	*South Dock*	2	240	MGB	Weekly	Unknown		864
		Sydney St	2	240	MGB	Weekly			
	Food waste	*South Dock*	4	660	Skip bin	Bi-weekly	Rear-lift		3,432

^ *Includes compacted cardboard waste which would greater in volume if not compacted*

* *Based on bin sizes and collection frequencies. For Village waste system, estimates were validated against waste and recycling tonnages reported by waste contractors to Centre management*