

Land Use Planning and Approvals Act 1993

APPLICATION NO.

SA2023/010

LOCATION OF AFFECTED AREA

33 ELDERSLIE ROAD, BRIGHTON & C/T 9475/1

DESCRIPTION OF DEVELOPMENT PROPOSAL

SUBDIVISION (109 LOTS) PLUS ASSOCIATED INFRASTRUCTURE WORKS

A COPY OF THE DEVELOPMENT APPLICATION MAY BE VIEWED AT www.brighton.tas.gov.au AND AT THE COUNCIL OFFICES, 1 TIVOLI ROAD, OLD BEACH, BETWEEN 8:15 A.M. AND 4:45 P.M, MONDAY TO FRIDAY OR VIA THE QR CODE BELOW. ANY PERSON MAY MAKE WRITTEN REPRESENTATIONS IN ACCORDANCE WITH S.57(5) OF THE LAND USE PLANNING AND APPROVALS ACT 1993 CONCERNING THIS APPLICATION UNTIL 4:45 P.M. ON 12/04/2024. ADDRESSED TO THE GENERAL MANAGER AT 1 TIVOLI ROAD, OLD BEACH, 7017 OR BY EMAIL

AT

development@brighton.tas.gov.au.

REPRESENTATIONS SHOULD INCLUDE A DAYTIME TELEPHONE NUMBER TO ALLOW COUNCIL OFFICERS TO DISCUSS, IF NECESSARY, ANY MATTERS RAISED.

JAMES DRYBURGH General Manager





PRELIMINARY - NOT FOR CONSTRUCTION RISON STREE ROAD OVERALL PLAN SCALE 1:2000

DATE 05/03/2024 02/10/2023 02/10/2023

TITLE OVERALL PLAN, NOTES & INDEX GENERAL ARRANGEMENT LAYOUT

DRAWING LIST

DRAWING 1847-P01 1847-P02 1847-P03 1847-P04 1847-P20 1847-P21 1847-P30 1847-P40 1847-P42 1847-P41

33 ELDERSLIE ROAD, BRIGHTON

ADDRESS:

SUBDIVISION OF 109 LOTS

PR0JECT:

HOMES TASMANIA

CLIENT:

DEVELOPMENT APPLICATION

SSUED FOR:

02/10/2023

05/03/2024 05/03/2024 31/01/2024 31/01/2024 02/10/2023 02/10/2023 05/03/2024

FASWATER WATER CROSSING DETAILS - SHEET 1 ASWATER WATER CROSSING DETAILS - SHEET 2

CONCEPT SEWER SERVICING PLAN CONCEPT WATER SERVICING PLAN

BUSHFIRE HAZARD MANAGEMENT PLAN

LANDSCAPING INTENT PLAN

CONCEPT STORMWATER SERVICING PLAN **BUILDING ENVELOPS & LOT DIMENSIONS**

OVERALL STORMWATER PLAN

AERIAL IMAGE & CONTOUR PLAN

1847-P10

ROAD LAYOUT PLAN

GENERAL NOTES

- 1. THIS PLAN HAS BEEN PREPARED AS A PRELIMINARY DEVELOPMENT PROPOSAL PLAN TO COUNCIL AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.

 2. LOT SIZE AND LAYOUT SUBJECT TO FINAL LAYOUT AND FINAL PLAN OF SURNEY.

 3. THIS PLAN SHOULD NOT BE USED FOR ANY OTHER PURPOSE APART FROM OBTANINO A PLANINING PERMIT.

 4. ALL WORKS TO BE CARRED OUT IN ACCORDANCE WITH PWIRE STANDARD DRAWINGS AND SPECIFICATIONS. WASAN SEMERAGE CODE OF AUSTRALIA, A WATER SUPPLY CODE OF AUSTRALIA, AND TO THE SATISFACTION OF COUNCILS DEVELOPMENT ENGINEED.

 5. ON OTHER SOIL SHALL BE REMOVED FROM THE SITE WITHOUT THE CONSENT OF COUNCIL. TOP SOIL DISTURBED OR REMOVED AS A RESULT OF WORKS SHALL BE STOKCHILED ON SITE AND LATER USED FOR REDRESSING ANY DISTURBED SURFACES.

 6. EXCHARACIDE AND MONORTED MATERAL USED AS FILL TO BE APPROVED BY SIGNINEER PROR TO INSTALLATION.

 7. COMPRACTOR TO GETAIN CLEARANCES AND COORDINATE WORK WITH ALL RELEVANT AUTHORITES PRIOR TO COMMENDED.
- THESE DRAWINGS SHALL NOT BE USED FOR CONSTRUCTION UNLESS ENDORSED FOR CONSTRUCTION AND AUTHORISED FOR ISSUE ACCORDINGLY.
 - EARTHWORKS SHALL BE IN ACCORDANCE WITH AS3798 "GUIDELINES ON EARTHWORKS FOR COMMERCIAL AND RESIDENTIAL DEVELOPMENTS*
- 10. SITE SURVEY UNDERTAKEN BY WOOLCOTT SURVEYORS 11. INFRASTRUCTURE LAYOUT IS CONCEPT ONLY AND MAY BE ALTERED DURING DETAILED DESIGN UPON APPROVAL OF THE DEVELOPMENT PROPOSAL
- 12. FURTHER DETALS AND NOTES TO BE PROVIDED IN FUTURE DETAILED ENGINEERING PLANS
 13. TASWATER SEWERAGE LOADS ARE ANTICIPATED TO BE ACCOMMODATED IN THEIR EXISTING
 - INFRASTRUCTURE AND ARE AS FOLLOWS: 3.1. SEWER ET = 109

- SEWER O_{11 m} = 0.57 L/s SEWER O_{12 m} = 2.32 L/s SEWER O_{22 m} = 5.99 L/s SEWER O_{22 m} = 5.90 L/s SEWER O_{23 m} = 0.70 L/s SEWER O_{23 m} = 0.70 L/s

Date Charles	02/10/2023 NAM MM 20	31)01/2024 NM MM	05/03/2024 NM MM	
	PROVAL	DEVELOPMENT APPROVAL	DUCED OUTFLOW AND LANDSCAPING	

	Burb
80	
09	000
40	RES - 1:2
70	SCALE IN METRES - 1:2000
_	SCA

ABN 75 146 719 959
P.O. BOX 354
SOUTH HOBART, TAS 700
P: (03) 6223 8007
F: (03) 6223 1143
E: admin@burburyconsultin

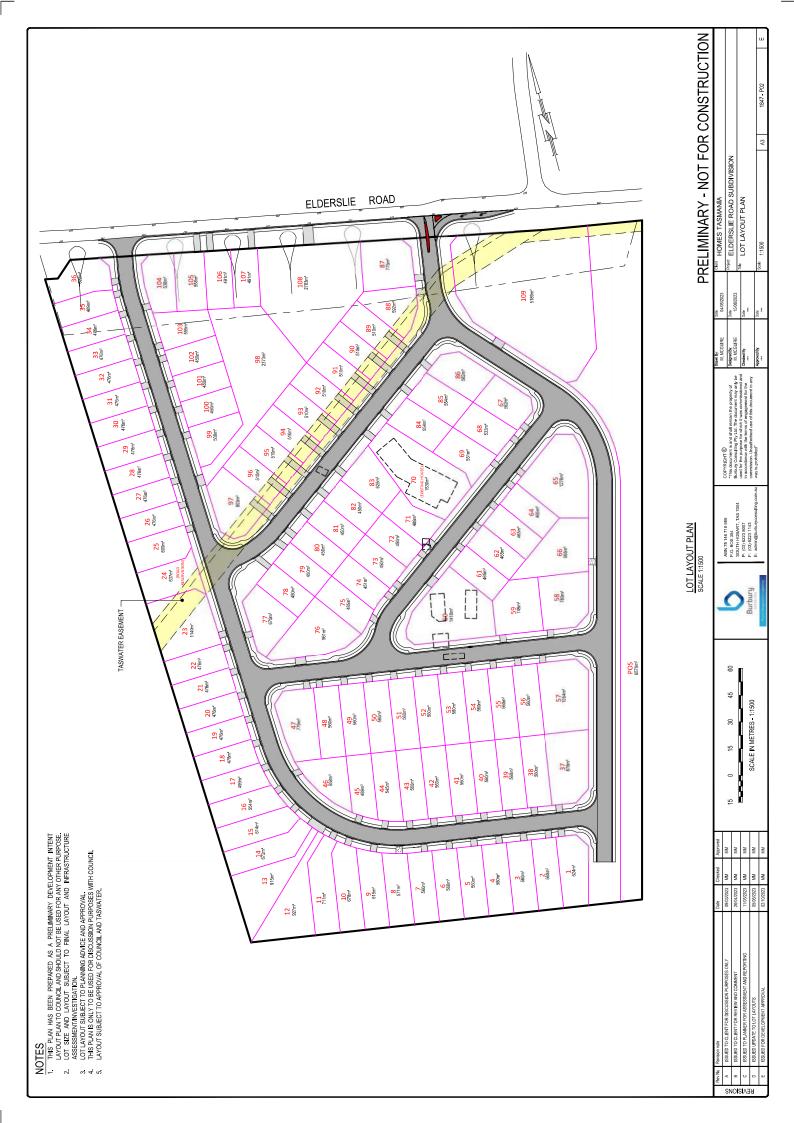
Š	The	Burb	ne di	comi	way
3N 75 146 719 959	D. BOX 354	DUTH HOBART, TAS 7004	(03) 6223 8007	(03) 6223 1143	admin@burburyconsulting.com.au

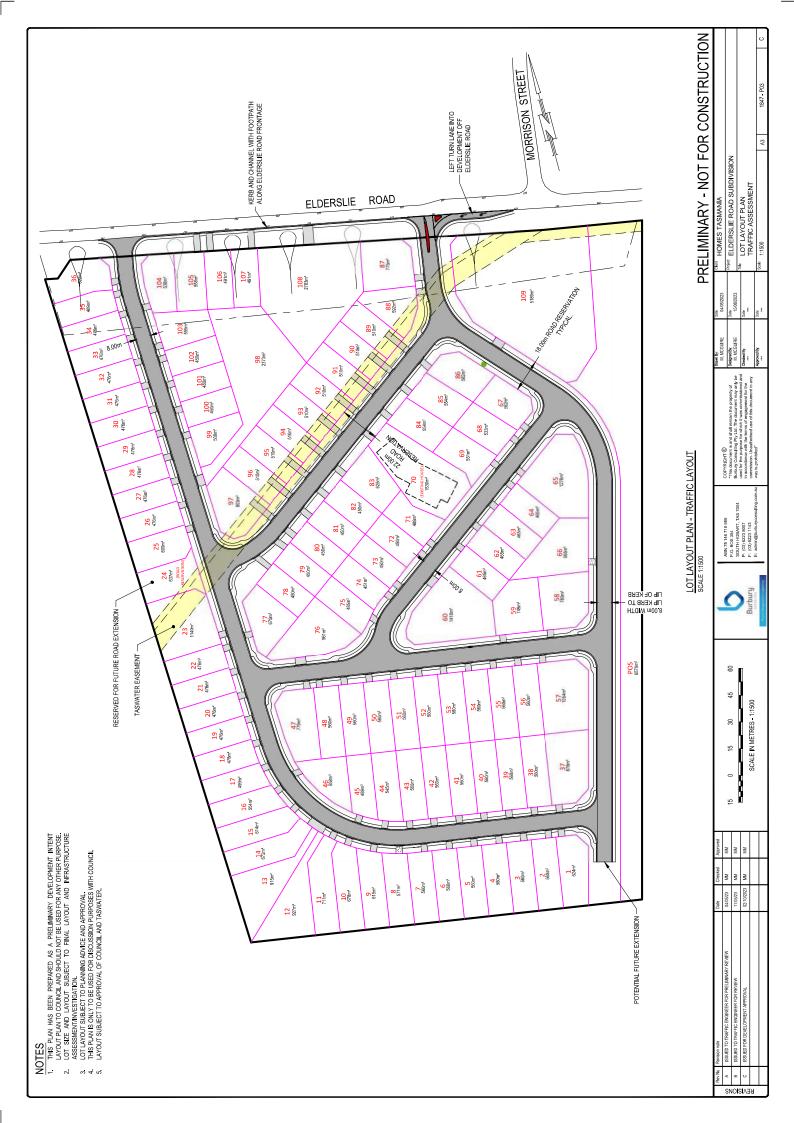
	COPYRIGHT ©
	"This document is and shall remain the p
	Burbury Consulting Pty Ltd. The docume
	used for the purpose for which it was con
	in accordance with the terms of engagenr
	commission. Unauthorised use of this do
ng.com.au	way is prohibited*

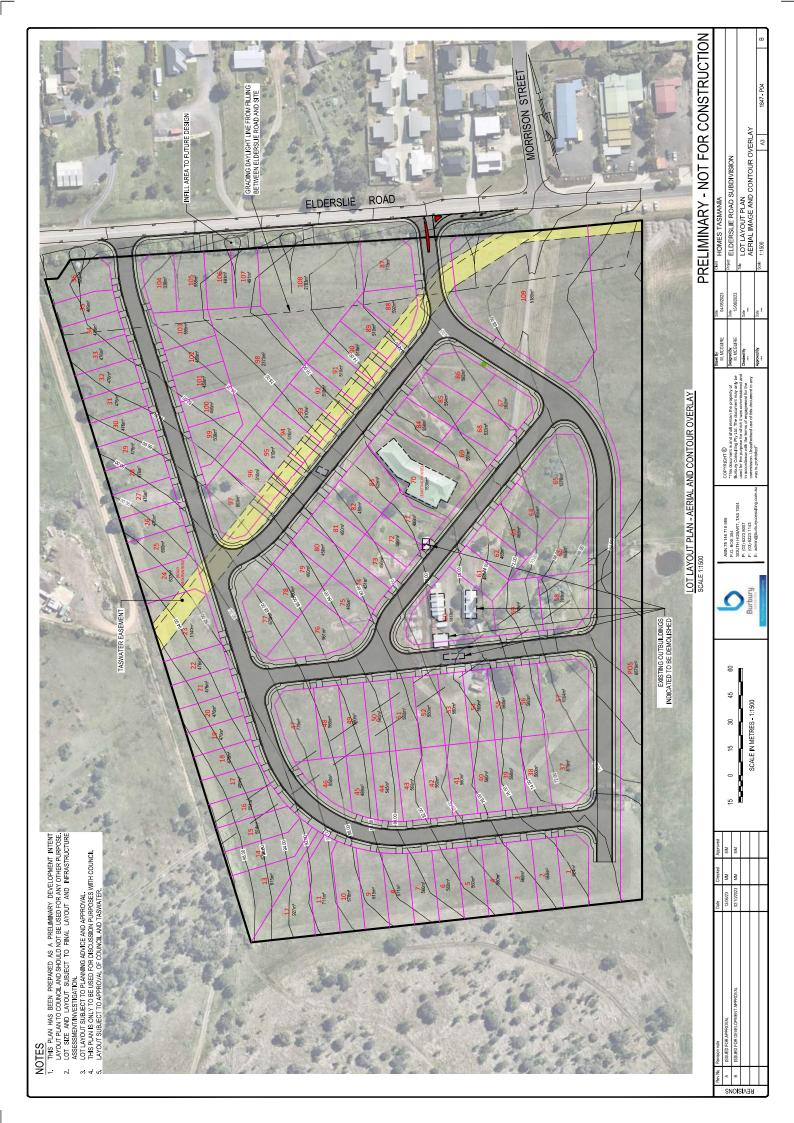
M. MCGUIRE	Designed By:	IN. MCGUINE	Checked by:		
@ <u>L</u>	ent is and shall remain the property of	squing hy use. The occument may only be purpose for which it was commissioned and	a with the terms of engagement for the	Unauthorised use of this document in any	Thor.

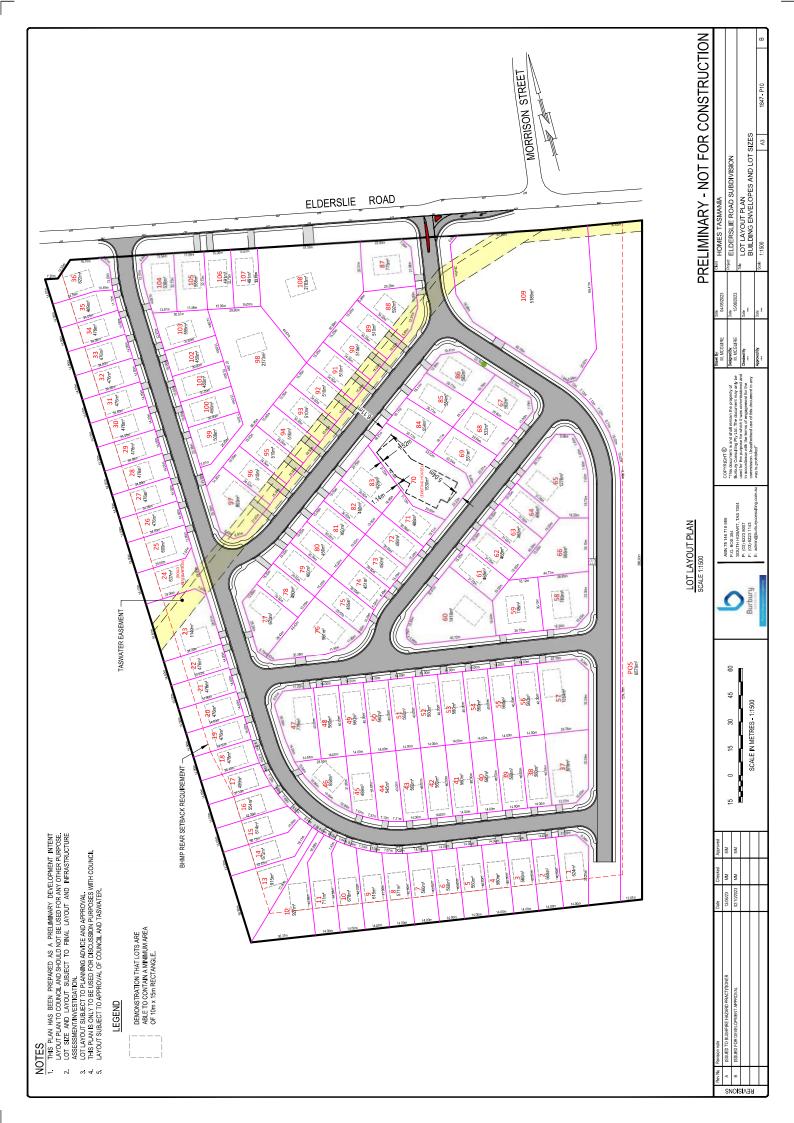
	M. MCGUIRE	08/03/2023		•
				l
	Designed By:	Date	HIGHER ET DEBOT III	<u>u</u>
4	M MCGUIRE	08/2023	רנטנו	
100			Tile	
-	Checked By:	Date	OVERALL P	<u>۔</u>
		:		
пy				

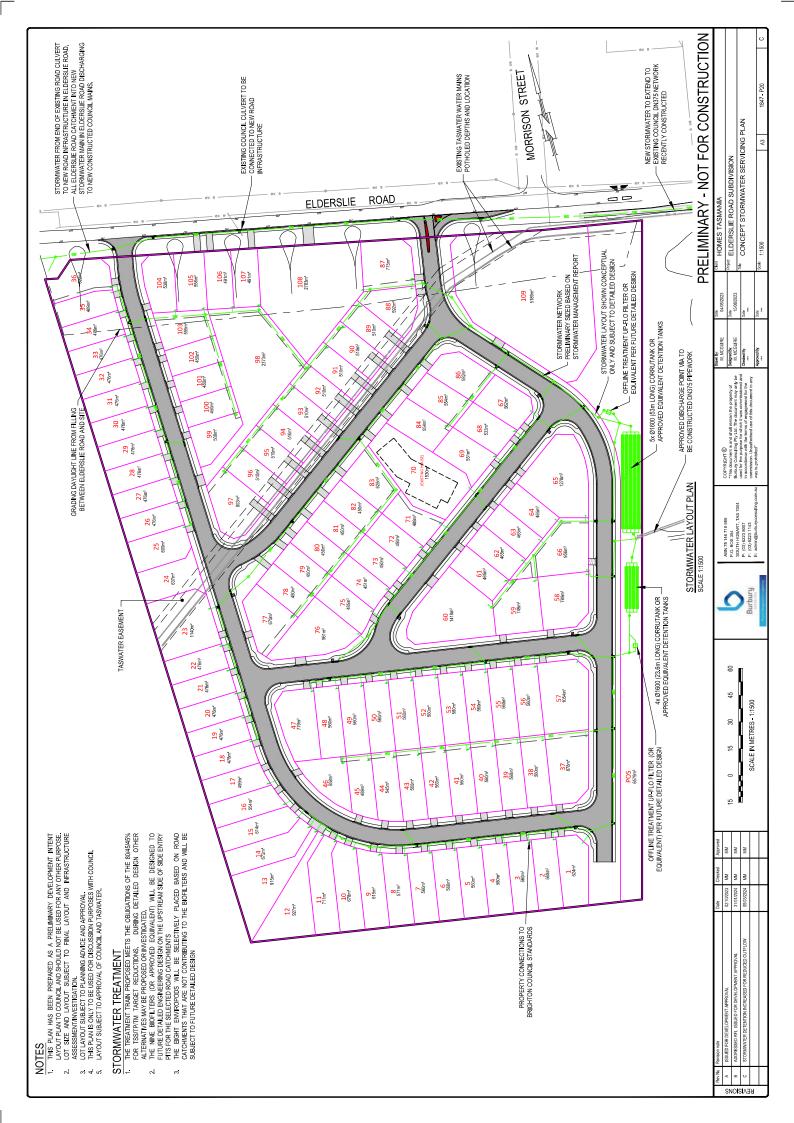
HOMES TASMANIA	Project ELDERSLIE ROAD SUBDIVISION	78 OVERALL PLAN, NOTES & INDEX			
08/03/2023	Date 15/08/2023		Date	:	
MCGUIRE	ad By: MCGUIRE		49 <i>)</i> :		

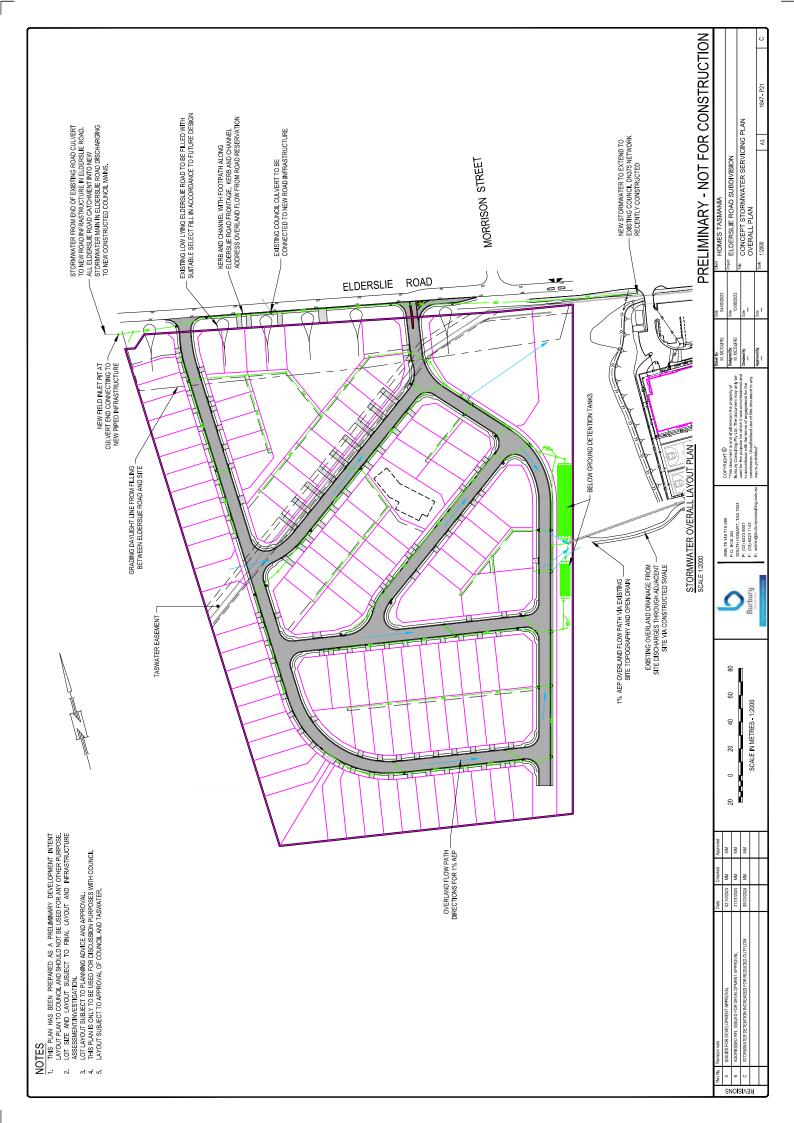


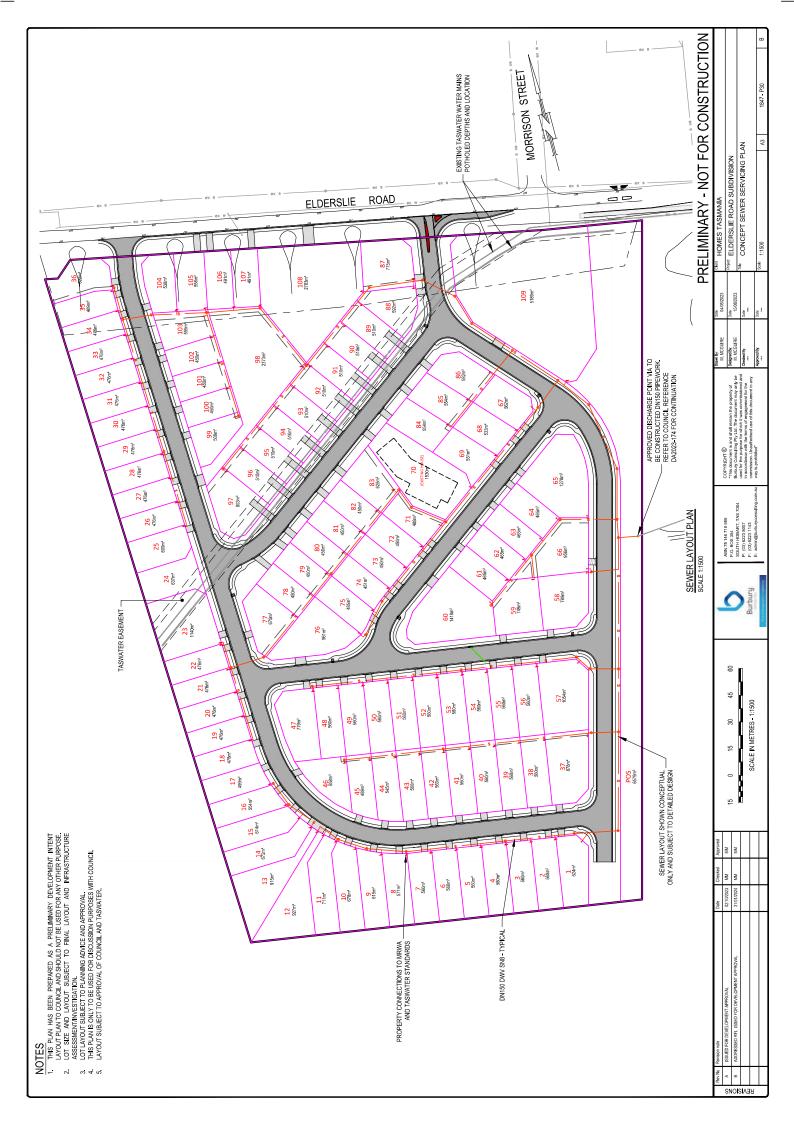


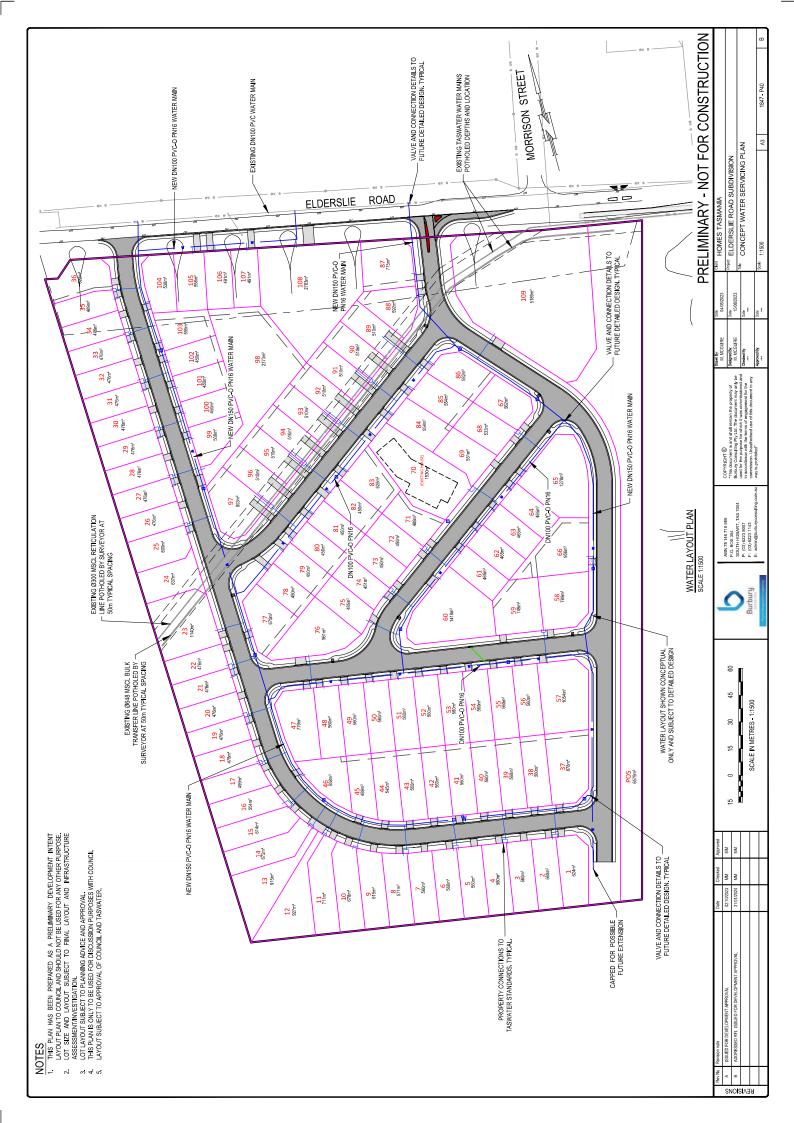


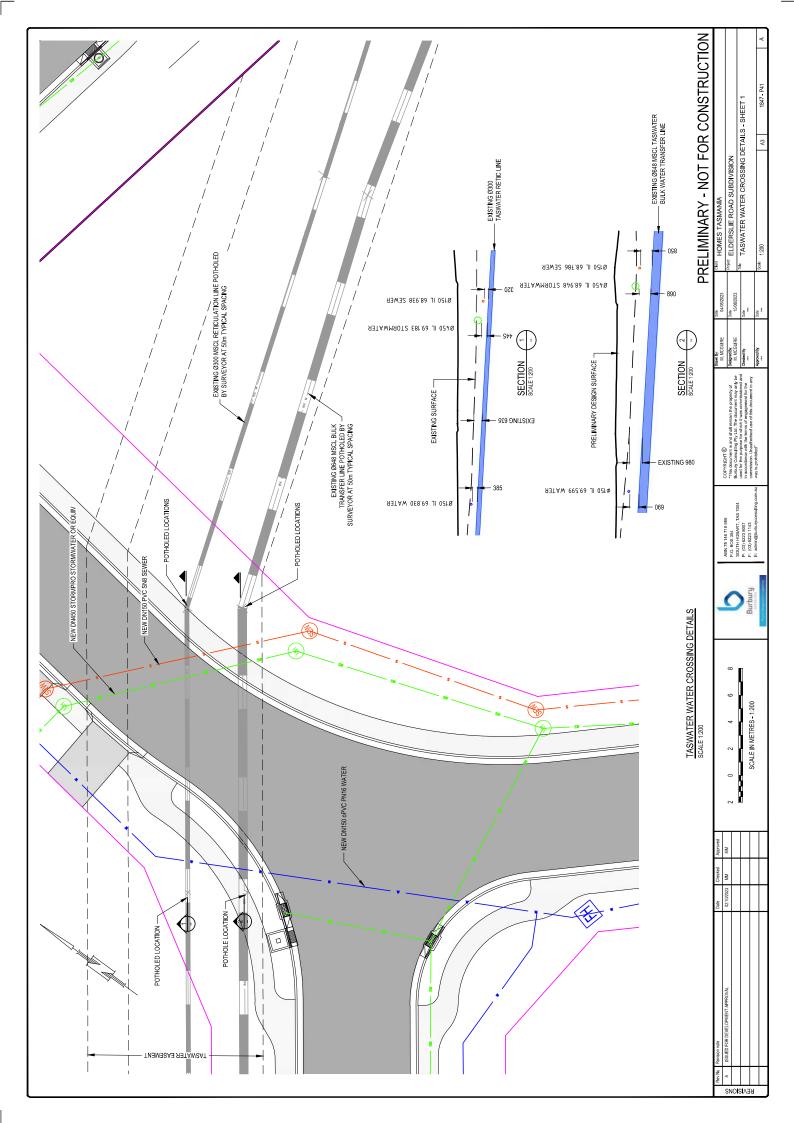


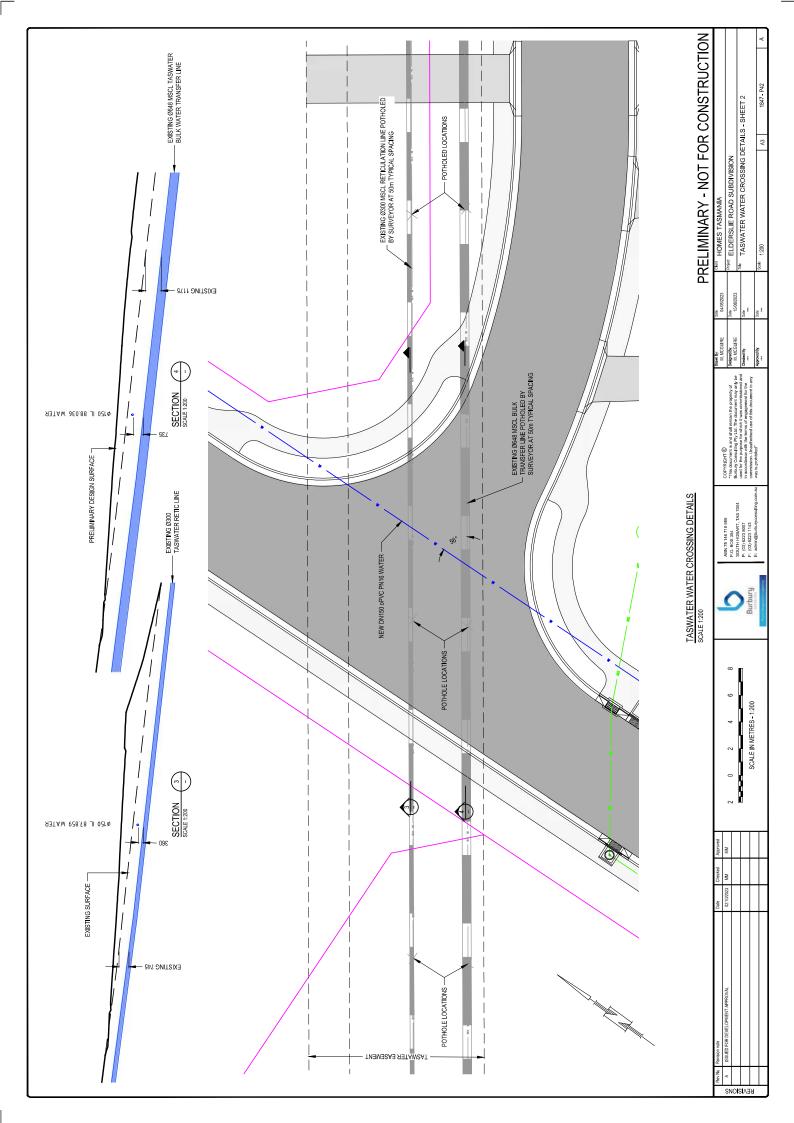


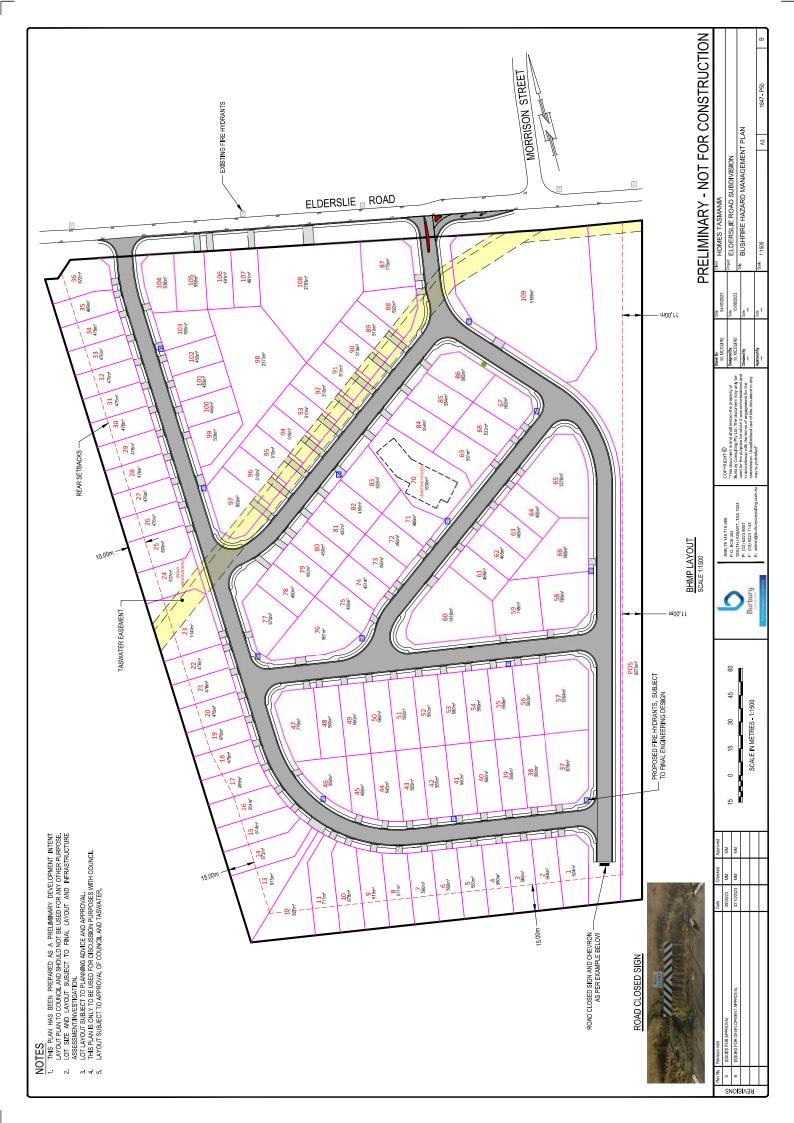


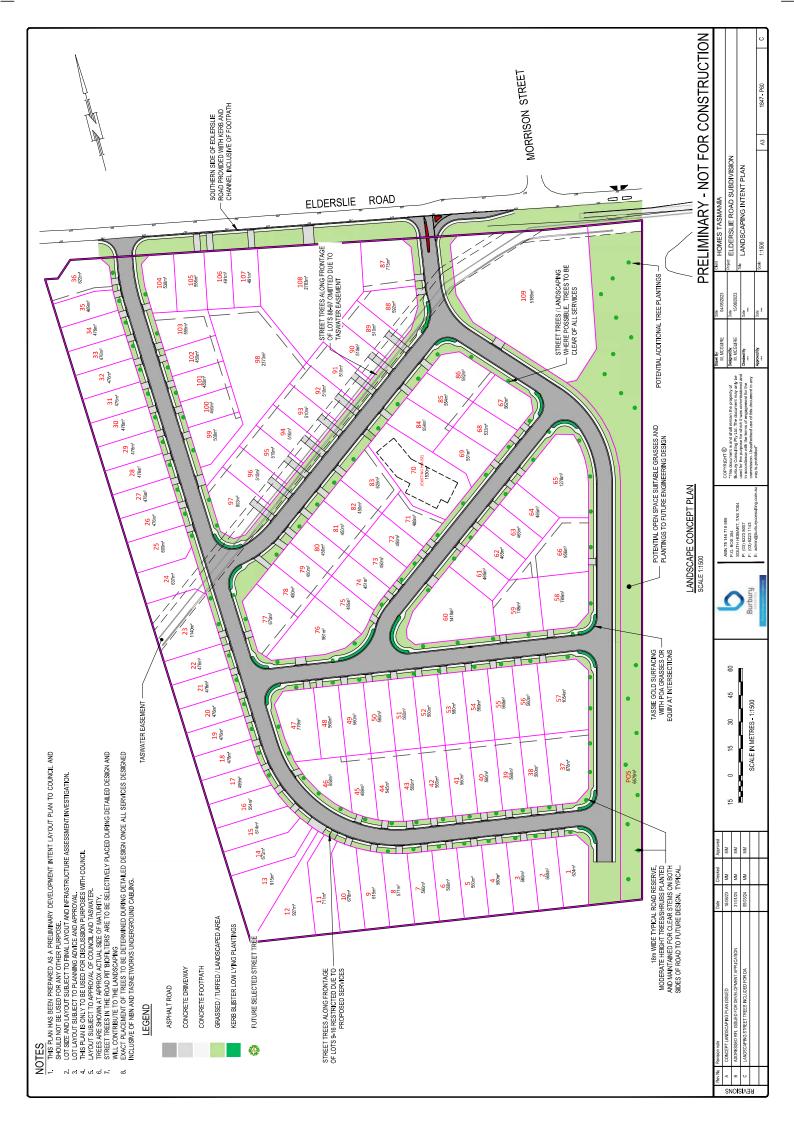


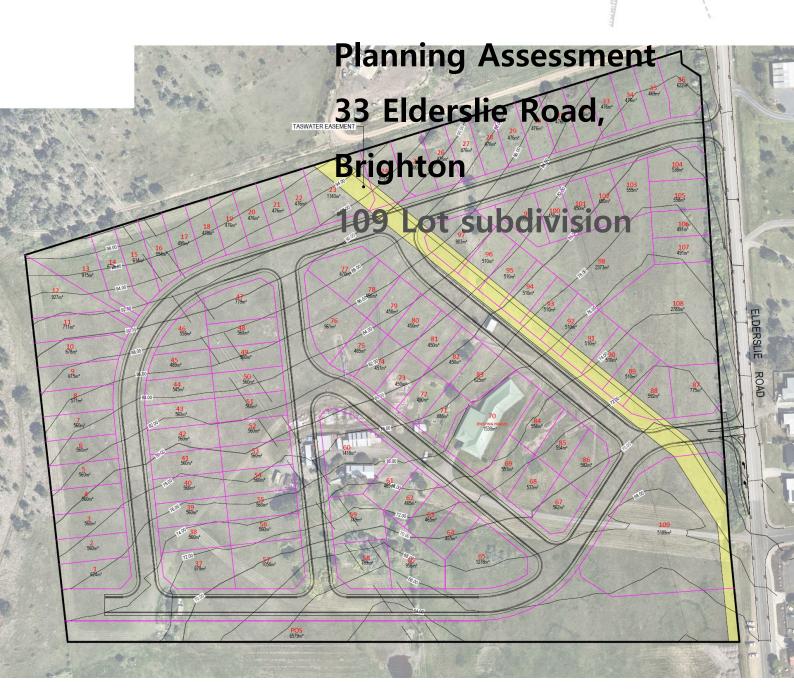












Date 14 June 2023

Version Control					
Version	Author	Date	Changes		
Draft	Frazer Read	23.05.2023			
0	Frazer Read	14.06.2023			

Table of contents

1.	Introduction	3
	Site & Surrounds	3
	Title Information	4
2.	Proposal	6
3.	South Brighton Development Precinct	6
4.	The Planning Scheme	8
	Zoning	9
	Use Table	9
	Development Standards for Dwellings	9
	Development Standards for Subdivision	13
5.	Planning Scheme Codes	18
	Parking and Sustainable Transport Code	18
	Road and Railway Assets Code	19
	Flood-Prone Areas Hazard Code	19
	Bushfire-Prone Areas Hazard Code	19
6.	Conclusion	20

1. Introduction

All Urban Planning Pty Ltd has been engaged by Burbury Consulting on behalf of Homes Tasmania to prepare the following Planning Assessment for a Subdivision at 33 Elderlie Road, Brighton under the provisions of the Brighton Local Provisions Schedule of the Tasmanian Planning Scheme (planning scheme).

Site & Surrounds

The proposal relates to 33 Elderslie Road, Brighton, CT 178982/1. The site has an area of 10.7ha.

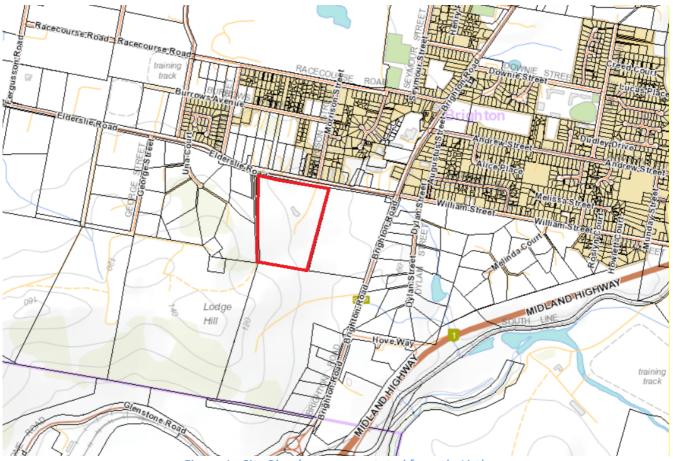


Figure 1— Site Plan (source annotated from theList)

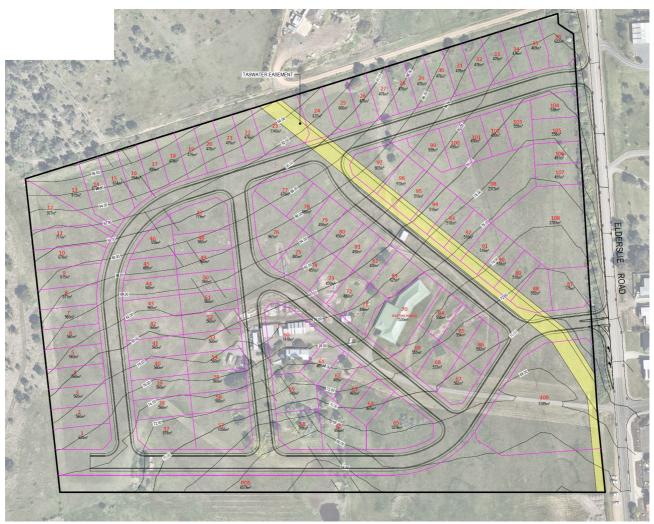


Figure 2 – proposed site plan (Source: Burbury Consulting)

Title Information

The proposal relates to the following land as shown on Figure 1 above.

Address	Title	Area	Owner
33 Elderslie Road,	178982/1	10.7ha	Director of Housing, Homes
Brighton			Tasmania

The proposal also involves works within the Elderslie Road reservation and sewer connection works including the adjacent Department of Education Land at 1 Elderslie Road, Brighton Road, and William Street road reservations, a sewage pump station at 4 Dylan Street.



Figure 3 - Proposed sewage connection works (Source: Burbury Consulting)

The associated titles for this other land are listed as follows.

Address	Certificate of Title	Proposed Work	Owner
1 Elderslie Road (Brighton High School site)	178981/1	DN150 sewer main	The Crown (Dept for Education Children and Young People)
Brighton Road reservation	No title	DN150 Sewer main and DN130 rising main	Brighton Council
Brighton Road (acquired road) road widening reservation	120174/3	Sewer connections to 2 Dylan Street sewer pump station	The Crown
4 Dylan Street	160067/1	sewer pump station	S & C Kibbey
William Street road reservation	No title	DN130 sewer rising main, DN150 sewer main	Brighton Council
Elderslie Road road reservation	No title	Road junction and access works	Brighton Council

Elderslie Road (acquired	9475/1	Road junction and	The Crown
road) road widening		access works	
reservation			

Owners consent from the Director of Housing, Council, the Department for Education Children and Young People and The Crown is to accompany the application.

2. Proposal

The proposal is for a 109 lot plus public open space subdivision including the formation of new roads, two junctions from Elderslie Road, public open space lot along the eastern boundary, and larger lot 109 of 5189m² adjacent to the Elderslie Road frontage.

An existing house will be retained within the proposed lot 70 of 1530m².

Existing outbuildings on the site in the vicinity of the prosed Lot 60 will be retained for use by civil contractors during the construction and then demolished.

The subdivision has been set out to respond to the South Brighton Development Precinct Plan as shown in Figure 4 below including a separate lot 109 reflecting Council's proposed Local Business Zoned area, public open space strip adjacent to the new High School site, provision for a future road connection to 69 Brighton Road, adjacent to the south and response to accommodate the TasWater main easement that runs diagonally through the site.

The proposal also includes provision for a future road connection to land to the west via Lot 24.

Bushfire hazard management areas for the lots on the western side of the subdivision (Lots 12-36) will be accommodated within the site.

The subdivision includes a range of lot sizes and shapes within the above constraints.

The proposed sewer connection works through the adjacent High School site, across Brighton Road to a new pump station at 4 Dylan Street and rising main on William Street have been prepared in consultation with Dept for Education Children and Young People, TasWater and Council.

3. South Brighton Development Precinct

Brighton Council have initiated and certified a planning scheme amendment (reference RZ 2022-05) including to rezone and apply a new South Brighton Specific Area Plan over the site and surrounding land.

The draft amendment seeks to rezone part of 33 Elderslie Road to Local Business as shown in Figure 5 below.

The proposed extent of the South Brighton Specific Area Plan is shown in Figure 6 below. The purpose of the Specific Area Plan is to implement the South Brighton Development Precinct Plan shown in Figure 4 below.

The draft amendment was on public exhibition between 20 January and 21 February 2023. A total of ten representations were received. The Tasmanian Planning Commission (TPC) has requested information from Council in relation to the amendment in a direction 25 May 2023. Following receipt of that information and any response submission from the representors it is expected that the TPC will set a timetable for a hearing before the draft amendment is determined.

The draft amendment does not have effect at this stage. However the proposed subdivision has generally been prepared to provide for the implementation of and complement the Development Precinct Plan.



Figure 4 - South Brighton Master Plan



Figure 5 - Certified Draft amendment including rezoning part of the subject site at 33 Elderslie Road to Local Business (Source: Brighton Council)

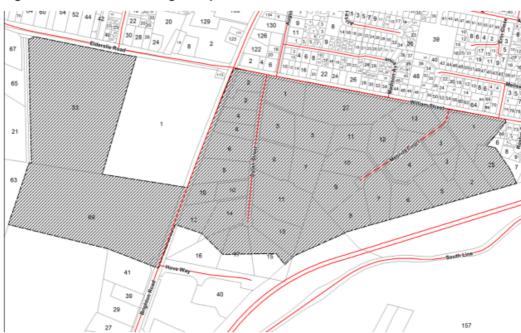


Figure BRI-S11.1 The South Brighton Specific Area Plan Area

Figure 6 - Draft planning scheme amendment - Figure BRI-S11.1 The South Brighton Specific Area Plan Area (Source: Brighton Council).

4. The Planning Scheme

Under Clause 6.10.1 of the planning scheme the planning authority must, in addition to the matters required by ss51(2) of the Act, take into consideration:

- (a) all applicable standards and requirements in this planning scheme; and
- (b) any representations received pursuant to and in conformity with ss57(5) of the Act, but in the case of the exercise of discretion, only insofar as each such matter is relevant to the particular discretion being exercised.

A standard is applicable if the site is within the relevant zone, specific area plan or an area where a site-specific qualification applies and the standard deals with a matter that could affect or be affected by the proposed development; cl.5.6.2.

A standard is defined to mean the objective for a particular planning issue and the means for satisfying that objective through either an acceptable solution or corresponding performance criterion.

Compliance with a standard is achieved by complying with either the acceptable solution or corresponding performance criterion; cl.5.6.3.

The objective of the standard may be considered to help determine whether the proposed use or development complies with the performance criterion of that standard; cl.5.6.4. The acceptable solution is not relevant to the assessment of the corresponding performance criteria.

Zoning

The land is zoned General Residential.

The Zone Purpose Statements under Clause 8.1 are as follows:

- 8.1.1 To provide for residential use or development that accommodates a range of dwelling types where full infrastructure services are available or can be provided.
- 8.1.2 To provide for the efficient utilisation of available social, transport and other service infrastructure.
- 8.1.3 To provide for non-residential use that:
 - (a) primarily services the local community; and
 - (b) does not cause unreasonable loss of amenity through scale, intensity, noise, activity outside of business hours, traffic generation and movement, or other off site impacts.
- 8.1.4 To provide for Visitor Accommodation that is compatible with residential character.

Use Table

Under Clause 6.2.6 a proposal for subdivision does not need to be categorised into a use class.

Development Standards for Dwellings

These development standards apply to the extent that they relate to the new boundaries around the existing house as a result of the creation of Lot 70.

8.4.2 Setbacks and building envelope for all dwellings

Objective:

The siting and scale of dwellings:

- (a) provides reasonably consistent separation between dwellings and their frontage within a street;
- (b) provides consistency in the apparent scale, bulk, massing and proportion of dwellings;
- (c) provides separation between dwellings on adjoining properties to allow reasonable opportunity for daylight and sunlight to enter habitable rooms and private open space; and
- (d) provides reasonable access to sunlight for existing solar energy installations.

Acceptable Solutions	Performance Criteria
A1	P1
Unless within a building area on a sealed plan, a dwelling, excluding garages, carports and protrusions that extend not more than 0.9m into the frontage setback, must have a setback from a frontage that is:	A dwelling must have a setback from a frontage that is compatible with the streetscape, having regard to any topographical constraints.
(a) if the frontage is a primary frontage, not less than 4.5m, or, if the setback from the primary frontage is less than 4.5m, not less than the setback, from the primary frontage, of any existing dwelling on the site;	
(b) if the frontage is not a primary frontage, not less than 3m, or, if the setback from the frontage is less than 3m, not less than the setback, from a frontage that is not a primary frontage, of any existing dwelling on the site;	
(c) if for a vacant site and there are existing dwellings on adjoining properties on the same street, not more than the greater, or less than the lesser, setback for the equivalent frontage of the dwellings on the adjoining sites on the same street; or	
(d) if located above a non-residential use at ground floor level, not less than the setback from the frontage of the ground floor level.	
Assessment:	

The proposed lot 70 will be capable of accommodating a 4.5m setback on the northern, primary frontage to the newly formed road and 3m to the southern secondary frontage to the new road and could comply with A1.

A2	P2
A garage or carport for a dwelling must have a setback from a primary frontage of not less than: (a) 5.5m, or alternatively 1m behind the building line;	A garage or carport for a dwelling must have a setback from a primary frontage that is compatible with the setbacks of existing garages or carports in the street, having regard to any topographical constraints.

- (b) the same as the building line, if a portion of the dwelling gross floor area is located above the garage or carport; or
- (c) 1m, if the existing ground level slopes up or down at a gradient steeper than 1 in 5 for a distance of 10m from the frontage.

Assessment:

The existing garage of the house on the proposed Lot 70 does not relate to the northern primary frontage and complies with A2.

A3

A dwelling, excluding outbuildings with a building height of not more than 2.4m and protrusions that extend not more than 0.9m horizontally beyond the building envelope, must:

- (a) be contained within a building envelope (refer to Figures 8.1, 8.2 and 8.3) determined by:
 - (i) a distance equal to the frontage setback or, for an internal lot, a distance of 4.5m from the rear boundary of a property with an adjoining frontage; and
 - (ii) projecting a line at an angle of 45 degrees from the horizontal at a height of 3m above existing ground level at the side and rear boundaries to a building height of not more than 8.5m above existing ground level; and
- (b) only have a setback of less than 1.5m from a side or rear boundary if the dwelling:
 - (i) does not extend beyond an existing building built on or within 0.2m of the boundary of the adjoining property; or
 - (ii) does not exceed a total length of 9m or one third the length of the side boundary (whichever is the lesser).

Р3

The siting and scale of a dwelling must:

- (a) not cause an unreasonable loss of amenity to adjoining properties, having regard to:
 - (i) reduction in sunlight to a habitable room (other than a bedroom) of a dwelling on an adjoining property;
 - (ii) overshadowing the private open space of a dwelling on an adjoining property;
 - (iii) overshadowing of an adjoining vacant property;

or

- (iv) visual impacts caused by the apparent scale, bulk or proportions of the dwelling when viewed from an adjoining property;
- (b) provide separation between dwellings on adjoining properties that is consistent with that existing on established properties in the area; and
- (c) not cause an unreasonable reduction in sunlight to an existing solar energy installation on:
 - (i) an adjoining property; or
 - (ii) another dwelling on the same site.

Assessment:

The final lot boundary of Lot 70 will be aligned to retain a minimum side boundary setback to the existing house of at least 1.5m and will comply with A3.

8.4.3 Site coverage and private open space for all dwellings

Objective:

That dwellings are compatible with the amenity and character of the area and provide:

- (a) for outdoor recreation and the operational needs of the residents;
- (b) opportunities for the planting of gardens and landscaping; and

(c) private open space that is conveniently located and has access to sunlight.		
Acceptable Solutions	Performance Criteria	
A1	P1	
Dwellings must have:	Dwellings must have:	
(a) a site coverage of not more than 50% (excluding eaves up to 0.6m wide); and	(a) site coverage consistent with that existing on established properties in the area;	
(b) for multiple dwellings, a total area of private open space of not less than 60m² associated with each dwelling, unless the dwelling has a finished floor level that is entirely more than 1.8m above the finished ground level (excluding a garage, carport or entry foyer).	 (b) private open space that is of a size and with dimensions that are appropriate for the size of the dwelling and is able to accommodate: (i) outdoor recreational space consistent with the projected requirements of the occupants and, for multiple dwellings, take into account any common open space provided for this purpose within the development; and (ii) operational needs, such as clothes drying and storage; and (c) reasonable space for the planting of gardens and landscaping. 	
Assessment:		
The final boundaries of Lot 70 (1530m²) will achieve a site cover less than 50% and will comply with A1.		
A2	P2	
A dwelling must have private open space that:	A dwelling must have private open space that includes	

The final boundaries of Lot 70 (1530m²) will achieve a site cover less than 50% and will comply with A1.		
A2	P2	
A dwelling must have private open space that: (a) is in one location and is not less than: (i) 24m² or	A dwelling must have private open space that includes an area capable of serving as an extension of the dwelling for outdoor relaxation, dining, entertaining and children's play and is:	
(ii) 12m², if the dwelling is a multiple dwelling with a finished floor level that is entirely more than 1.8m above the finished ground level (excluding a garage, carport or entry foyer);	(a) conveniently located in relation to a living area of the dwelling; and(b) orientated to take advantage of sunlight.	
(b) has a minimum horizontal dimension of not less than:		

(i) 4m; or

(ii) 2m, if the dwelling is a multiple dwelling with a finished floor level that is entirely more than 1.8m above the finished ground level (excluding a garage, carport or entry foyer);

(c) is located between the dwelling and the frontage only if the frontage is orientated between 30 degrees west of true north and 30 degrees east of true north; and

(d) has a gradient not steeper than 1 in 10.

Assessment:

The existing house on Lot 70 will retain private open space to comply with A1.

Development Standards for Subdivision

8.6.1 Lot design

Objective:

That each lot:

- (a) has an area and dimensions appropriate for use and development in the zone;
- (b) is provided with appropriate access to a road;
- (c) contains areas which are suitable for development appropriate to the zone purpose, located to avoid natural hazards; and
- (d) is orientated to provide solar access for future dwellings.

Acceptable Solutions	Performance Criteria
A1	P1
Each lot, or a lot proposed in a plan of subdivision, must: (a) have an area of not less than 450m² and:	Each lot, or a lot proposed in a plan of subdivision, must have sufficient useable area and dimensions suitable for its intended use, having regard to:
(i) be able to contain a minimum area of 10m x 15m with a gradient not steeper than 1 in 5, clear	(a) the relevant requirements for development of buildings on the lots;
of:	(b) the intended location of buildings on the lots;
a. all setbacks required by clause 8.4.2 A1, A2 and A3, and 8.5.1 A1 and A2; and	(c) the topography of the site;
	(d) the presence of any natural hazards;
	(e) adequate provision of private open space; and

b. easements or other title restrictions that limit or restrict development; and

(ii) existing buildings are consistent with the setback required by clause 8.4.2 A1, A2 and A3, and 8.5.1 A1 and A2;

- (b) be required for public use by the Crown, a council or a State authority;
- (c) be required for the provision of Utilities; or
- (d) be for the consolidation of a lot with another lot provided each lot is within the same zone.

(f) the pattern of development existing on established properties in the area.

Assessment:

The proposed lots will all be at least 450m2. As discussed in relation to the exiting house on the proposed Lot 70, the proposal is also capable of satisfying the relevant siting standards under Clause 8.4.2 A1, A2 and A3 and Clause 8.5.1 A1 and A2. The proposal therefore complies with Acceptable Solution 1 of this Standard.

A2

Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have a frontage not less than 12m.

P2

Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must be provided with a frontage or legal connection to a road by a right of carriageway, that is sufficient for the intended use, having regard to:

- (a) the width of frontage proposed, if any;
- (b) the number of other lots which have the land subject to the right of carriageway as their sole or principal means of access;
- (c) the topography of the site;
- (d) the functionality and useability of the frontage;
- (e) the ability to manoeuvre vehicles on the site; and
- (f) the pattern of development existing on established properties in the area,

and is not less than 3.6m wide.

Assessment:

The proposed lots other than Lots 11, 12, 13, 14, 35 and 98 provide a minimum frontage of at least 12m and comply with A2. The proposed frontages of the above lots below the permitted 12m frontage are considered acceptable for the intended residential use of the land and therefore to satisfy P2.

A3 P3

Each lot, or a lot proposed in a plan of subdivision, must be provided with a vehicular access from the boundary of the lot to a road in accordance with the requirements of the road authority.

Each lot, or a lot proposed in a plan of subdivision, must be provided with reasonable vehicular access to a boundary of a lot or building area on the lot, if any, having regard to:

- (a) the topography of the site;
- (b) the distance between the lot or building area and the carriageway;
- (c) the nature of the road and the traffic;
- (d) the anticipated nature of vehicles likely to access the site; and
- (e) the ability for emergency services to access the site.

Assessment:

All lots will provide for a vehicle access and will comply with A3.

A4

Any lot in a subdivision with a new road, must have the long axis of the lot between 30 degrees west of true north and 30 degrees east of true north.

P4

Subdivision must provide for solar orientation of lots adequate to provide solar access for future dwellings, having regard to:

- (a) the size, shape and orientation of the lots;
- (b) the topography of the site;
- (c) the extent of overshadowing from adjoining properties;
- (d) any development on the site;
- (e) the location of roads and access to lots; and
- (f) the existing pattern of subdivision in the area.

Assessment:

The proposed road and lot layout are influenced by the proposed Development Precinct Plan and the diagonal TasWater easement that runs through the site. These constraints mean that it is difficult to lay the subdivision out efficiently while also accommodating the building envelopes with the long axis facing 30 degrees east or west of north. The proposal however in this gently sloping site with a north east aspect is considered to provide good solar access for future dwellings and to satisfy P4.

8.6.2 Roads

Objective:

That the arrangement of new roads within a subdivision provides for:

(a) safe, convenient and efficient connections to assist accessibility and mobility of the community;

- (b) the adequate accommodation of vehicular, pedestrian, cycling and public transport traffic; and
- (c) the efficient ultimate subdivision of the entirety of the land and of surrounding land.

Acceptable Solutions	Performance Criteria
A1	P1
The subdivision includes no new roads.	The arrangement and construction of roads within a subdivision must provide an appropriate level of access, connectivity, safety and convenience for vehicles, pedestrians and cyclists, having regard to:
	(a) any road network plan adopted by the council;
	(b) the existing and proposed road hierarchy;
	(c) the need for connecting roads and pedestrian and cycling paths, to common boundaries with adjoining land, to facilitate future subdivision potential;
	(d) maximising connectivity with the surrounding road, pedestrian, cycling and public transport networks;
	(e) minimising the travel distance between key destinations such as shops and services and public transport routes;
	(f) access to public transport;
	(g) the efficient and safe movement of pedestrians, cyclists and public transport;
	(h) the need to provide bicycle infrastructure on new arterial and collector roads in accordance with the Guide to Road Design Part 6A: Paths for Walking and Cycling 2016;
	(i) the topography of the site; and
	(j) the future subdivision potential of any balance lots on adjoining or adjacent land.

Assessment:

The proposed road layout is considered appropriate and to satisfy P1 in that it is complementary to Council's intended road network under the draft South Brighton Specific Area Plan (see Figure 4 above). IN particular it is noted that the proposal will provide for the intended connectivity between the subject site and surrounding land.

8.6.3 Services

Objective:

That the subdivision of land provides services for the future use and development of the land.

Acceptable Solutions	Performance Criteria
A1	P1
Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have a connection to a full water supply service.	A lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have a connection to a limited water supply service, having regard to:
	(a) flow rates;
	(b) the quality of potable water;
	(c) any existing or proposed infrastructure to provide the water service and its location;
	(d) the topography of the site; and
	(e) any advice from a regulated entity.
	, , , , , , , , , , , , , , , , , , , ,

Assessment:

The proposal has been prepared to include separate reticulated water connections to each lot and will comply with A1.

A2	P2
Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have a connection to a reticulated sewerage system.	No Performance Criterion.

Assessment:

The proposal including the proposed sewer extension and pump station will allow a separate sewer connection to be provided to each site and therefore to comply with A2.

A3	Р3
Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must be capable of connecting to a public stormwater system.	Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must be capable of accommodating an on-site stormwater management system adequate for the future use and development of the land, having regard to: (a) the size of the lot;

(b) topography of the site;
(c) soil conditions;
(d) any existing buildings on the site;
(e) any area of the site covered by impervious surfaces; and
(f) any watercourse on the land.

Assessment:

The proposal will connect to the public stormwater system and will comply with A3.

5. Planning Scheme Codes

The site is within the following mapped code overlays:

- Bushfire Prone Area Code
- Low Landslip Hazard Band under the Landslip Hazard Code (over a small area of land in the south western corner of the site).

The proposal is considered in relation to these and other relevant codes below.

Parking and Sustainable Transport Code

This Code applies to all use and development.

2.5 Use Standards

C2.5.1 Car parking numbers

Objective:

That an appropriate level of car parking spaces are provided to meet the needs of the use.

Acceptable Solutions	Performance Criteria
A1	P1
The number of on-site car parking spaces must be no less than the number specified in Table C2.1, excluding if:	The number of on-site car parking spaces for uses, excluding dwellings, must meet the reasonable needs of the use, having regard to:
(a) the site is subject to a parking plan for the area adopted by council, in which case parking provision (spaces or cash-in-lieu) must be in accordance with that plan;	(a) the availability of off-street public car parking spaces within reasonable walking distance of the site;(b) the ability of multiple users to share spaces because of:
(b) the site is contained within a parking precinct plan and subject to Clause C2.7;	(i) variations in car parking demand over time; or

- (c) the site is subject to Clause C2.5.5; or
- (d) it relates to an intensification of an existing use or development or a change of use where:
 - (i) the number of on-site car parking spaces for the existing use or development specified in Table C2.1 is greater than the number of car parking spaces specified in Table C2.1 for the proposed use or development, in which case no additional on-site car parking is required; or
 - (ii) the number of on-site car parking spaces for the existing use or development specified in Table C2.1 is less than the number of car parking spaces specified in Table C2.1 for the proposed use or development, in which case on-site car parking must be calculated as follows:

$$N = A + (C-B)$$

N = Number of on-site car parking spaces required

A = Number of existing on site car parking spaces

B = Number of on-site car parking spaces required for the existing use or development specified in Table C2.1

C= Number of on-site car parking spaces required for the proposed use or development specified in Table C2.1.

- (ii) efficiencies gained by consolidation of car parking spaces;
- (c) the availability and frequency of public transport within reasonable walking distance of the site;
- (d) the availability and frequency of other transport alternatives;
- (e) any site constraints such as existing buildings, slope, drainage, vegetation and landscaping;
- (f) the availability, accessibility and safety of on-street parking, having regard to the nature of the roads, traffic management and other uses in the vicinity;
- (g) the effect on streetscape; and
- (h) any assessment by a suitably qualified person of the actual car parking demand determined having regard to the scale and nature of the use and development.

P1.2

The number of car parking spaces for dwellings must meet the reasonable needs of the use, having regard to:

- (a) the nature and intensity of the use and car parking required;
- (b) the size of the dwelling and the number of bedrooms; and
- (c) the pattern of parking in the surrounding area.

Assessment:

The existing house on Lot 70 will accommodate two car spaces and comply with A1.

Road and Railway Assets Code

The proposal will be accompanied by a Traffic Impact Assessment to address the requirements of this Code.

Flood-Prone Areas Hazard Code

The proposal is not impacted by a mapped Flood Prone Area Overlay under this Code.

Bushfire-Prone Areas Hazard Code

The site is within a bushfire prone area and this Code therefore applies to the proposed subdivision. A bushfire hazard management plan addressing the requirements of this Code will accompany the application.

6. Conclusion

The proposed subdivision has been prepared to ensure the efficient use of the land and to satisfy the provision of the zone and code provisions of the existing planning scheme such that in my assessment a planning permit should be granted following public exhibition as a discretionary application pursuant to Section 57 of the Act.

The proposal has also been prepared to implement the South Brighton Development Framework that is still the subject of a draft amendment to the planning scheme.

Frazer Read

Principal



Subject:	Landscaping	Job No.	1847
From:	Morgan McGuire	Date:	05/03/2024
Project:	Elderslie Road subdivision		
То:	Leigh Wighton – Brighton Council		

Referring to the RFI received from Council dated 15th February 2024 in relation to the requirements set out in the Landscaping policy.

5. Provide an amended landscaping plan demonstrating compliance with Council Policy 6.5 LANDSCAPING

Council's policy for subdivisions requires a minimum of 1 (one) street tree per 15m of frontage, except for lots that are internal lots, having regard to:

- a) The width of the frontages;
- b) Location of infrastructure;
- c) The topography of the site;
- d) The safety of pedestrian use and movement;
- The safety and efficiency of the road network;
- The nature of the road; and f)
- g) Existing vegetation that can be retained.

Clause 1.3 of the stated policy states "Council has discretion to vary this Policy where it can be demonstrated that there are site constraints and requirements of this Policy cannot be met".

Furthermore, clause 3.4 goes on to state "A permit condition of approval for any subdivision application requiring landscaping under this Policy will require the landscaping to be shown on engineering design drawings to demonstrate that landscaping has been appropriately designed to be clear of services".

TasNetworks standard drawing UG-622 (attached) outlines an exclusion zone for trees in relation to their services, noting that NBN cables will be alongside in a similar trench and likely have similar restrictions.

Whilst street trees have been shown along the frontages where it appears possible currently, the design of the future TasNetworks and NBN cables that is undertaken after a Permit is issued may restrict some trees being included in the detailed design. In addition to this it is shown on the updated landscape drawing that some frontages can not have the street trees included due to proposed sewer and stormwater services and also existing TasWater water easements.

In addition to the landscaping street tree update, we have provided kerb blisters and flaring out of footpaths at the intersections to allow low lying plantings with mulch/pebble aggregate at the junctions.

It is suggested that we largely meet the requirements of the policy where possible at this stage, and as per clause 1.3 there are site constraints that restrict the provision of some street trees. Where these can't be provided, we will aim to scatter these around the Public Open Space area where possible.

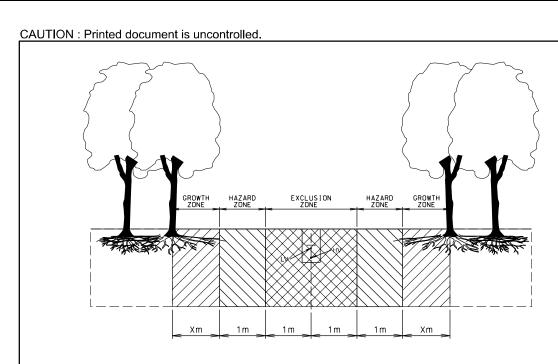
If you have any queries in relation to this please contact the undersigned.

Yours faithfully,

Morgan McGuire

Team Leader - Civil Design





EXCLUSION ZONE



HAZARD ZONE



GROWTH ZONE

NOTES

- 1. PRINCIPLE:- NO TREE ROOT SHOULD ENTER WITHIN THE 1m EXCLUSION ZONE IN THE FULLY GROWN CONDITION OF THE TREE.
- 2. EXCLUSION ZONE-: NO MACHINE EXCAVATION TO BE UNDER TAKEN IN THIS ZONE, USE VACUUM TRUCK OR HAND DIG. NO TREE PLANTATION IS ALLOWED.
- 3. HAZARD ZONE-: "OBSERVED" MACHINE EXCAVATION IN THIS ZONE. SMALL TREES WITH A MAXIMUM HEIGHT OF 2m ALLOWED.
- 4. GROWTH ZONE-: Xm TREES PERMISSIBLE BASED ON SIZE WHEN FULLY GROWN. X = CANOPY OF TREE = ROOT SPREAD LENGTHS IN FULLY GROWN CONDITION.
- 5. REFER TO DRAWING UG-322 FOR STANDARD EASEMENT ARRANGEMENTS.

	TasN		TasNetworks PTY. LTD. ABN: 24 167 357 299	© COPYRIGHT - TASNETWORKS PTY. LTD. NO PART OF THIS DRAWING MAY BE REPRODUCED A RETRIEVAL SYSTEM IN ANY FORM, OR TRANSMI MEANS WITHOUT PRIOR PERMISSION OF TASNETA	TTED BY ANY	
		CCCCOINS	TITLE		SCALES	
TERATIONS		ARE IN MILLIMETRES. ERWISE STATED.	UNDEF	RGROUND CABLE	NTS	
ALTER⊅	DRAWN	C5 PRO-SOLUTIONS		INSTALLATION DATA TREE PLANTING RESTRICTIONS		
	CHECKED	J.HUGHES		NIING NESTNICTIONS	size A4	
	APPROVED DATE	ANGUS KETLEY 10/02/2016	l	JG-622	REVISION A	

REFERENCES TYPICAL CABLE <u>ROUTE LAYOUT, POSITIONING & CLEARANCES ON EASEMENT - UG-322</u>



RESIDENTIAL SUBDIVISION,

33 ELDERSLIE ROAD,

BRIGHTON

TRAFFIC IMPACT ASSESSMENT

Hubble Traffic
October 2023

Disclaimer: This report has been prepared based on and in reliance upon the information provided to Hubble Traffic Consulting by the client and gathered by Hubble Traffic Consulting during the preparation of the report. Whilst all reasonable skill, care and diligence has been used in preparation of the report, Hubble Traffic Consulting take no responsibility for errors or omissions arising from misstatements by third parties.

This report has been prepared specifically for the exclusive use of the client named in the report and to the extent necessary, Hubble Traffic Consulting disclaim responsibility for any loss or damage occasioned by use of or reliance upon this report, or the date produced herein, by any third party.

Version	Date	Reason for Issue
Draft	June 2023	Draft issued for client feedback
Final	October 2023	Final issued

Table of Contents

Intro	duction	1
Site [Description	2
Deve	lopment proposal	3
Trip g	generation by this development	4
Existi	ng surrounding road network	5
5.1	Elderslie Road characteristics adjacent to the development site	5
5.2	Intersection of Brighton and Elderslie Roads	6
5.3	Traffic activity on the surrounding road network	7
5.4	Elderslie and Brighton Road Intersection - Peak hour turning movements	8
5.5	Traffic safety along Elderslie Road near the development site	9
Othe	r major traffic generating developments	10
6.1	Predicted peak hour traffic movements with the new school operating	10
6.2	Master Plan for the Brighton area	11
Impa	ct from traffic generated by this development	13
7.1	Assignment of trips using the new internal development roads	13
7.2	Traffic efficiency at the two new junctions with Elderslie Road	15
7.3	Incremental traffic growth along Elderslie Road	16
7.4	Traffic lane capacity on Elderslie Road	16
7.5	Traffic lane capacity on Brighton Road	18
7.6	Traffic efficiency at the new roundabout at Elderslie and Brighton Roads	18
Sight	distance requirements	19
8.1	Sight distance at the two new junctions onto Elderslie Road	19
8.2	Sight distance for four lots with direct access onto Elderslie Road	21
8.3	Need for turning treatments on Elderslie Road	22
Subd	ivision layout and internal road arrangements	23
9.1	Subdivisional road standard	23
9.2	Turning facilities	24
9.3	Turning radius at the new junctions	24
9.4	On-site parking provisions	24
9.5	Junctions' layout with Elderslie Road	24
	Othe 6.1 6.2 Impa 7.1 7.2 7.3 7.4 7.5 7.6 Sight 8.1 8.2 8.3 Subd 9.1 9.2 9.3 9.4	Other major traffic generating developments 6.1 Predicted peak hour traffic movements with the new school operating 6.2 Master Plan for the Brighton area

	9.7	Connection to future residential developments	. 25
10.	Planni	ng scheme	. 26
	10.1	C3.5.1 Traffic generation at a vehicle crossing, level crossing or new junction	. 26
	10.2	C2 Parking and Sustainable Transport Code	. 28
11.	Conclu	ision	. 29
12.	Appen	dix A – Photographs of available sight distance for direct accesses to Elderslie Road	. 30
13.	Appen	dix B – Modelling of the new Elderslie Road Junctions	. 33
14.	Appen	dix C – Modelling of Brighton Road roundabout	. 37

1. Introduction

Burbury Consulting Engineers have engaged Hubble Traffic on behalf of the developers, to prepare an independent Traffic Impact Assessment, to consider the traffic impacts from the provision of a 109 lot residential subdivision (development site) at 33 Elderslie Road, Brighton.

This assessment has considered the amount of traffic this subdivision is likely to generate, how the additional traffic movements will enter and leave the development site using two new junctions with Elderslie Road, and the impact to the surrounding road network.

A small portion of the development site is zoned for future local business, as this area will not be developed as part of this residential subdivision, it will not be assessed under this assessment.

This report has been prepared to satisfy the requirements of Austroads, Guide to Traffic Management Part 12: Traffic Impacts of Developments, 2019, and referred to the following information and resources:

- Tasmanian Planning Scheme (Brighton Council)
- Road Traffic Authority NSW (RTA) Guide to Traffic Generating Developments
- Australian Standards AS2890 parts 1, 2 and 6
- Austroads series of Traffic Management and Road Design
 - o Part 4: Intersection and crossings, General
 - Part 4a: Unsignalised and Signalised Intersections
 - o Part 12: Traffic Impacts of Development
- Department of State Growth crash database
- Land Information Database (LIST)



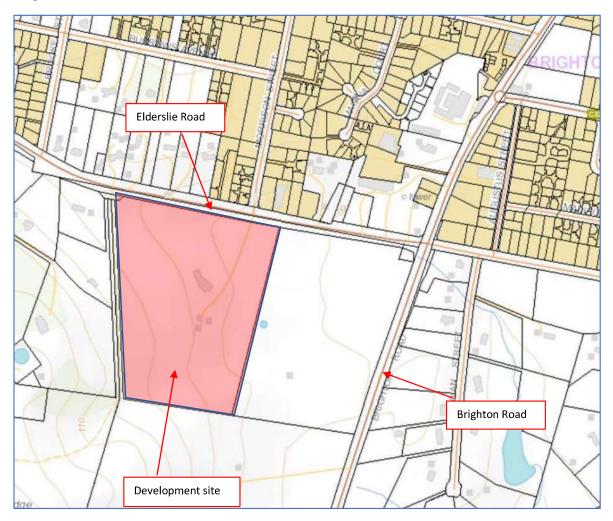
2. Site Description

The development site is a large parcel of land located at 33 Elderslie Road, Brighton, which is occupied by a single residential dwelling with an existing vehicular access onto Elderslie Road.

The site is located on the southern fringe of the established general residential development of Brighton and according to LIST is zoned as general residential.

On the northern side of Elderslie Road opposite the development site are urban residential properties, with rural residential properties along the southern side west of the development site. Adjacent to the development site on the eastern side, a new Brighton High School (new school) is under construction. The nearest arterial road is Brighton Road, with the majority of traffic generated by this development expected to use this road.

Diagram 2.0 - Extract from LIST Land Information Database



3. Development proposal

The developer has advised that the parcel of land will be subdivided into 109 lots, with 107 lots suitable for residential development, one lot to contain the existing dwelling, and one lot allocated as future local business zone.

The future local business lot is 5,189m², and the residential lots vary in size from 450 m² to 2,792m². Residential lots less than 750m² in size will be suitable for a single residential dwelling, while the larger lots will be suitable for multiple units, with each unit requiring at least 375m². Based on the square metreage, 92 lots are suitable for a single residential dwelling, 15 lots are suitable for unit development, with the larger lots having the potential to accommodate 45 units.

The existing vehicle access will be replaced with two new junctions, with one junction located at either end of the property. In between the two junctions are four lots that will require direct vehicular access onto Elderslie Road.



Diagram 3.0 – Development site layout



4. Trip generation by this development

A trip in this report is defined as a one-way vehicular movement from one point to another, excluding the return journey. Therefore, a return trip to and from a land use is counted as two trips.

To determine the number of trips likely to be generated by this development, reference has been taken from the RTA Guide to Traffic Generating Developments (RTA Guide), section 3.3 residential housing. For low density residential dwellings in regional areas:

- Daily vehicle trips of 7.4 per dwelling, and
- Weekday peak trips of 0.78 per dwelling

For the multiple units, a worst case scenario will be assumed, with each unit comprising three or more bedrooms, and the RTA Guide recommends each unit is likely to generate:

- Daily vehicle trips of 6.5 per unit
- Weekday peak trips of 0.65 per unit

When fully developed, the development is expected to be occupied by 92 single residential dwellings and 45 units. These residential properties are expected to generate additional 974 daily trips, with 101 of these trips likely to occur during the morning and evening peak periods. The existing residential dwelling will continue to generate seven daily trips, with one trip occurring in the peak periods.

Table 4.0 – Predicted number of trips to be generated from this residential subdivision

Dwelling Type	RTA Generation rate	Number of dwellings	Daily trips	Peak trips
	7.4 per day			
Single dwelling	0.78 per peak	92	681	72
Three-bedroom	6.5 per day			
units	0.65 per peak	45	293	29
		Total new trips	974	101
Existing	7.4 per day			
dwelling	0.78 per peak	1	7	1

5. Existing surrounding road network

Within the surrounding road network, Elderslie Road is a local collector road extending in a westerly direction from Brighton Road. Brighton Road is the nearest arterial road, which runs in a south to north orientation, connecting to the Brighton Bypass (State Road network). Elderslie Road and Brighton Road intersect east of the development site, forming a cross intersection with William Street, which extends east from Brighton Road.

5.1 Elderslie Road characteristics adjacent to the development site

Elderslie Road runs in an east to west orientation, extending west from the Brighton Road and William Street intersection. Pass the development site, the road has a straight alignment and continuous steady incline. This vertical incline commences approximately 200 metres from the intersection, with the vertical grade measuring 6.5 percent adjacent to the development site. The road standard along Elderslie Road varies, with sections of the road upgraded or currently being upgraded to an urban standard, and other sections remaining a rural road standard.

On the northern side from the development site a section of the road has been constructed to an urban standard, with a sealed carriageway, concrete kerb and channel, concrete footpath, and indented parking bays. The other section of the road remains a rural road standard, with bitumen edge of seal.

On the southern side, the road frontage along the development site is of a rural standard. Adjacent to the development site the new school is currently under construction, and the road at the school frontage is being upgraded to an urban standard, with concrete kerb and channel, indented parking bays, and concrete footpath.

Adjacent to the development site, the road consists of a 3.3 metre wide sealed traffic lane in each direction, with marked centreline and guideposts. Elderslie Road has a posted speed limit of 60 km/h.

Photograph 5.1A – Typical urban Elderslie Road standard east of the development site





Photograph 5.1B – Typical rural Elderslie Road standard west of Morrison Street



5.2 Intersection of Brighton and Elderslie Roads

The majority of the traffic generated by the development is expected to turn at the intersection of Brighton and Elderslie Roads. As part of the new school development the current give way control is being replaced with a roundabout, which is expected to be completed within the next few months. This assessment assumes that the roundabout will be operating when this development commences.

Photograph 5.2 – Brighton Road and Elderslie Road intersection



5.3 Traffic activity on the surrounding road network

To evaluate the traffic impact from the development, it is important to understand the current traffic flow on Elderslie and Brighton Roads. A manual survey was undertaken at the intersection of Elderslie Road, Brighton Road, and William Street, during the two peak periods, including the period when the proposed school is expected to finish.

The morning and evening peak hour data has been extracted from the survey data and will be used to evaluate the traffic impact of the development. The peak hour data has been highlighted yellow in the table below.

Table 5.3 – Existing traffic flows

Brighton Road (south			Brighte	Brighton Road (north)			Elderslie Road			William Street			
Time	Left into	Straight	Right into William	Left into William	Straight	Right into Elderslie	Left into Brighton Rd	Striaght to William	Right to Brighton St (Hobart)	Left onto Brighton (Hobart)	Straight	Right onto Brighton	Tota
7.30 - 7.45	6	47	4	0	131	13	8	1	55	20	3	0	288
7.45 to 8.00	18	59	3	1	143	7	6	0	40	11	0	3	291
8.00 to 8.15	16	44	10	3	88	13	8	0	24	14	1	1	222
8.15 to 8.30	14	64	1	1	107	7	7	0	32	18	1	0	252
8.30 to 8.45	9	78	6	5	100	5	18	1	27	4	0	0	253
8.45 to 9.00	14	65	8	7	94	15	17	1	17	7	1	1	247
Total peak hour	54	214	18	5	469	40	29	1	151	63	5	4	105
2.30 to 2.45	23	99	4	0	79	9	9	1	18	4	1	4	251
2.45 to 3.00	26	99	7	0	87	16	10	1	14	4	2	1	26
3.00 to 3.15	31	116	7	7	106	10	11	1	20	5	1	2	31
3.15 to 3.30	34	100	11	6	98	14	7	0	13	9	1	4	29
Peak hour	114	414	29	13	370	49	37	3	65	22	5	11	113
4.30 to 4.45	37	150	10	1	67	17	14	1	27	5	0	0	32
4.45 to 5.00	35	133	14	2	79	12	12	0	16	8	2	3	31
5.00 to 5.15	47	120	18	4	85	11	9	0	20	12	3	2	33:
5.15 to 5.30	33	125	17	2	60	13	13	1	15	7	1	4	29:
5.30 to 5.45	25	105	12	4	76	15	5	0	14	9	2	1	268
5.45 to 6.00	25	123	14	2	67	9	9	0	15	11	1	3	27
Total peak hour	152	528	59	9	291	53	48	2	78	32	6	9	126

5.4 Elderslie and Brighton Road Intersection - Peak hour turning movements

Diagram 5.4A – Morning peak hour traffic movements

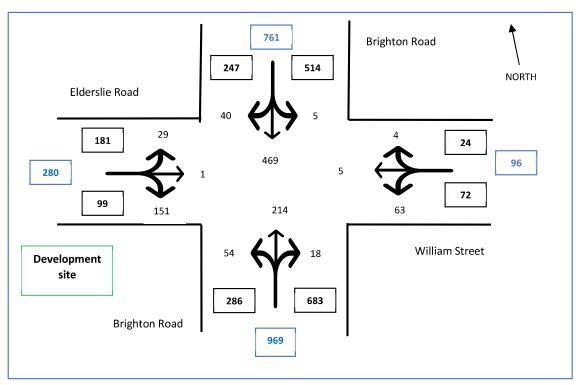
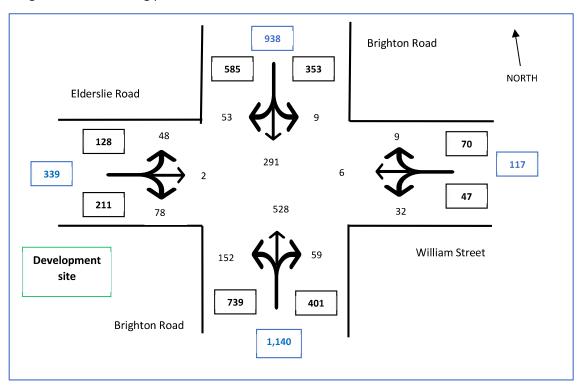


Diagram 5.4B – Evening peak hour traffic movements





T: 0416 064 755

E: Hubbletraffic@outlook.com

W: Hubbletraffic.com.au

5.5 Traffic safety along Elderslie Road near the development site

The Department of State Growth maintains a database of reported road crashes, a check of this database found that no crashes were reported on Elderslie Road within 200 metres of the development site in the last five years. At the intersection of Elderslie and Brighton Roads two crashes were reported, as the intersection is changing to a roundabout, the traffic conditions will change, with these crashes no longer relevant to the assessment.

6. Other major traffic generating developments

The new school will be a significant traffic generator and must be considered within this traffic assessment, as the school will generate additional traffic movements onto Elderslie Road and at the Brighton Roundabout.

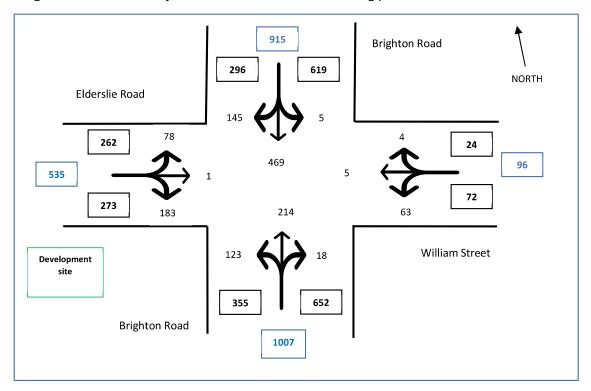
With Hubble Traffic Consulting preparing the Traffic Impact Assessment for this new school, the expected volume of vehicle movements generated is known. The previous peak hour traffic data using the intersection of Elderslie and Brighton Roads, has been adjusted to include additional traffic movements expected to be generated by this new school.

6.1 Predicted peak hour traffic movements with the new school operating

The new school will have one vehicular access only onto Elderslie Road, and during the morning peak hour period the school is predicted to generate 276 vehicle trips, with 187 of these trips arriving and 89 leaving. Of these trips, the majority 255 are expected to turn at the Brighton Road roundabout.

The existing traffic flows at this intersection have been adjusted to include the additional vehicle trips generated by this new school and will be used as the base flows in considering the traffic impact from this residential subdivision.

Diagram 6.1A – School adjusted traffic flows for the morning peak hour.





The new school is expected to generate the majority of the traffic trips in the afternoon between 2:30pm and 4:00pm, which is outside of the typical evening peak hour period, and similar to the traffic flows during the afternoon and evening peak hour period. To consider a worst case scenario, the additional school trips have been added to the evening peak hour.

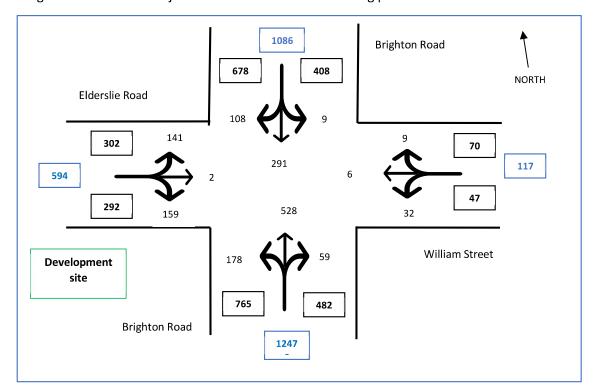


Diagram 6.1B – School adjusted traffic flows for the evening peak hour.

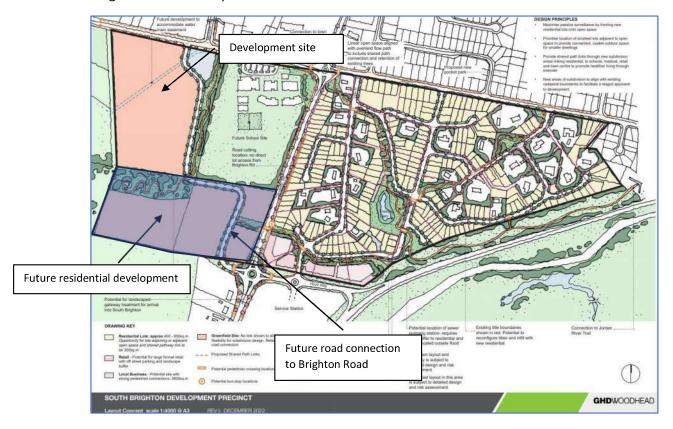
Master Plan for the Brighton area

Brighton Council has released a Master Plan for future land-use developments, including the parcel of land under consideration for this residential subdivision. Of importance to this development, the Master Plan includes future residential development, situated immediately south of the development site, which includes a road that connects back to Brighton Road at a new roundabout.

As a consequence of this Master Plan, this traffic assessment assumes that future residential development south of the development site, will not generate additional vehicle movements through the development site, as traffic is expected to use the future road connection back to Brighton Road.



Diagram 6.2 – Master plan



7. Impact from traffic generated by this development

As determined by section 4 of this report, the development site is estimated to generate up to 969 additional traffic movements per weekday, with 101 of these trips likely to occur during the morning and evening peak periods. The existing dwelling is already generating seven daily trips, with one of these trips occurring during the morning and evening peak periods.

It is common with residential properties, that 90 percent of the trips leave the site during the morning peak, with the opposite occurring in the evening. With Brighton Road the most direct route towards Hobart, it is expected that the majority of the trips generated by the development is likely to use the new Brighton Road roundabout.

7.1 Assignment of trips using the new internal development roads

Each residential property will generate vehicle trips, with these trips assigned to the new internal road based on the property location and proximity of the two new Elderslie Road junctions, assuming motorists choose the shortest and most direct route.

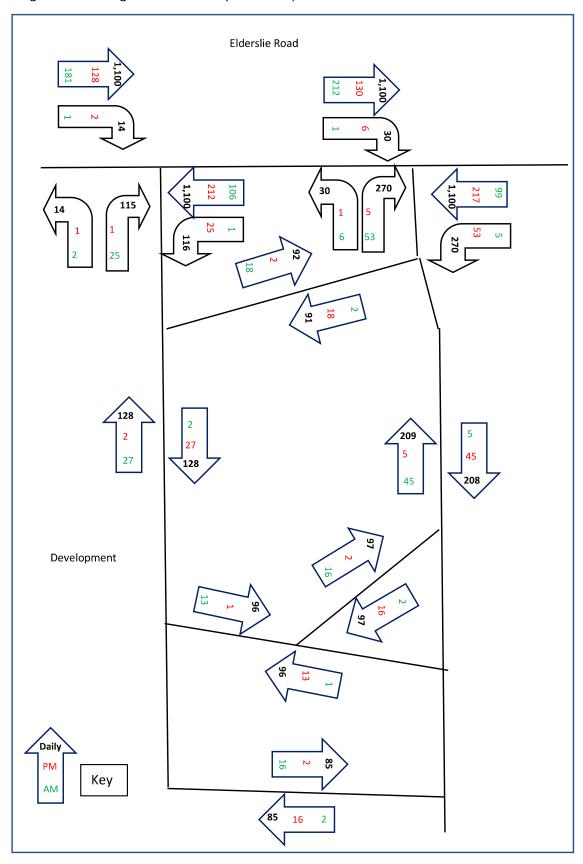
This trip assignment predicts the number of daily and peak hour trips for each of the internal roads, and the number of vehicles expected to use each of the Elderslie Road junctions. The internal roads will be lightly trafficked, with most roads carrying less than 200 two-way traffic movements daily, and less than 60 vehicles in the peak hour periods.

This assessment estimates that 70 percent of the traffic generated will use the eastern junction, due to its proximity to Brighton Road.

The assignment of trips on the new internal roads are shown in diagram 7.1.



Diagram 7.1 – Assignment of developmental trips on the new internal roads





7.2 Traffic efficiency at the two new junctions with Elderslie Road

The simplest method to determine the traffic performance at a junction is to use SIDRA Intersection traffic modelling software, which uses gap acceptance theory to determine the average delay, queue lengths and degree of saturation, which are all measures of traffic congestion and level of service.

Level of Service (LOS) is a quantifiable assessment of the factors that contribute to the traffic performance, which includes traffic density, gaps in traffic streams, expected delays, and queues. For junctions, there are five levels from A to E, with A providing the highest level for controlled junctions, meaning motorists are not incurring delays, with ample gaps in the traffic stream for vehicles to turn freely and safely without disrupting other users. The following table provides a reference to the level of service for the various traffic controls.

Diagram 7.2 – RTA Level of service for intersections and junctions

Level of service criteria for intersections											
Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs								
А	< 14	Good operation	Good operation								
В	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays 8 spare capacity								
С	29 to 42	Satisfactory	Satisfactory, but accident study required								
D	43 to 56	Operating near capacity	Near capacity & accident study required								
Е	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode								

Traffic models have been developed within the SIDRA software, replicating the proposed eastern and western junctions with Elderslie Road, using current traffic flows, including additional traffic generated from the new school.

The predicted trips generated from the development have been assigned to each of the junctions, with traffic modelling predicting the two junctions will provide users with the highest level of traffic efficiency for a give way control, level of service LOS A. Motorists will experience minimal traffic queues or delays, with spare traffic capacity at each junction. A summary of the traffic modelling of the two proposed junctions is shown in the table 7.2A.



15

Table 7.2A – Traffic modelling of the junctions with Elderslie Road

Junction	Period	Total vehicles	DOS	Worst average delay	LOS	Max queue
	Morning	376	0.110	7.4 sec	Α	1.8m
Eastern	Evening	412	0.111	7.7 sec	Α	0.4m
	Morning	316	0.093	6.5 sec	Α	0.6m
Western	Evening	369	0.122	6.7 sec	Α	0.1m

7.3 Incremental traffic growth along Elderslie Road

Having consideration to incremental traffic growth on Elderslie Road, the two traffic models of the proposed junctions has been adjusted, with a two percent increase each year for ten years. Traffic modelling predicts both junctions will continue to perform at the highest level of service LOS A, for both peak periods, with virtually no queues or delays, as shown in the table below.

Table 7.3A – Traffic modelling prediction of future incremental growth

Junction	Period	Total	DOS	Worst	LOS	Max queue
		vehicles		average delay		
	Morning	444	0.133	7.9 sec	Α	2.0m
Eastern	Evening	488	0.136	8.3 sec	Α	0.4m
	Morning	379	0.114	6.8 sec	Α	0.6m
Western	Evening	443	0.146	7.0 sec	Α	0.1m

A printout of the modelling results for the two new junctions is available in appendix A.

7.4 Traffic lane capacity on Elderslie Road

In evaluating the impact of additional vehicle movements on Elderslie Road motorists, it is important to understand the Level of Service (LOS) motorists are currently receiving. The RTA Guide provides a level of service for urban roads based on peak hour directional traffic flows, as shown in the RTA extract below.

Diagram 7.4 - RTA Guide for level of service for urban roads

Urban road peak hour flows per direction								
Level of Service	One Lane (veh/hr)	Two Lanes (veh/hr)						
А	200	900						
В	380	1400						
С	600	1800						
D	900	2200						
Е	1400	2800						



This assessment considers the traffic increase on two sections of Elderslie Road, the first section being west of the development site, and the second section being between the development site and the Brighton Road, and assumes the additional traffic generated from the new school is operating on the road.

Once the new school is operating at full capacity, Elderslie Road west of the school is expected to provide motorists with a good level of traffic efficiency, with the traffic lanes operating between LOS A and B, with peak hour flows less than 250 vehicles per hour. While between the school and Brighton Road, motorists are expected to receive a similar level of service LOS B, with less than 300 vehicles per peak hour, as shown in the table below.

Level of service operating between LOS A and B, means the traffic flow is stable, motorists have freedom to select their own operating speed, and there should be sufficient gaps in the traffic stream to enable vehicles to enter and leave, without causing adverse impacts.

Table 7.4A – Existing level of service for motorists using Elderslie Road

	Wes	t of the de	evelopment	t site	Development and Brighton Road					
Existing traffic flow	Morning		Afternoon		Morning		Afternoon			
	West	East	West	East	West	East	West	East		
	Bound	Bound	Bound	Bound	Bound	Bound	Bound	Bound		
Manual survey data	99	181	211	128	99	181	211	128		
Additional school traffic	8	14	13	8	191	81	81	174		
New flows with school	107	195	224	136	290	262	292	302		
Level of Service	Α	Α	В	Α	В	В	В	В		

Additional traffic generated from this residential subdivision has been assigned to Elderslie Road as shown in the table below, showing peak hour lane flows and level of service when the residential development is fully operational. This table demonstrates that the additional traffic flows is not expected to cause any deterioration in level of service for Elderslie Road, as motorists will continue to receive a good level of traffic efficiency, between LOS A and B.

Table 7.4B – Predicted directional flows and level of service when development is operational

	West	of the de	velopment	site	Development and Brighton Road					
Existing traffic flow	Morning		Afternoon		Morning		Afternoon			
	West	East	West	East	West	East	West	East		
	Bound	Bound	Bound	Bound	Bound	Bound	Bound	Bound		
Predicted traffic	107	195	224	136	290	262	292	302		
Development traffic	8	2	2	8	6	78	78	6		
New flows with	115	197	226	144	296	340	370	308		
development										
Level of Service	Α	Α	В	Α	В	В	В	В		

7.5 Traffic lane capacity on Brighton Road

The above lane capacity methodology used to quantify the traffic impact to Elderslie Road has been applied to Brighton Road, using the lane flows once the new school is operating, and then assigning the additional traffic generated by this residential development. The table below demonstrates the residential development is not expected to cause a deterioration in the traffic performance to Brighton Road, as the level of service will remain the same.

Table 7.5 - Predicted directional flows and level of service

	No	orth of Eld	erslie Roa	d	Sc	outh of Eld	derslie Roa	ad
Existing traffic flow	Mori	ning	After	noon	Mor	ning	After	noon
	North	South	North	South	North	South	North	South
	Bound	Bound	Bound	Bound	Bound	Bound	Bound	Bound
Predicted traffic when								
school is operating	296	619	679	408	355	652	765	482
Level of service	В	D	D	С	В	D	D	D
Development traffic	14	2	3	22	4	72	62	3
New directional flows								
with development	310	621	682	430	359	724	827	485
operating								
Level of Service	В	D	D	С	В	D	D	D

7.6 Traffic efficiency at the new roundabout at Elderslie and Brighton Roads

As discussed earlier, as part of the construction of the new school, the give way control at the intersection of Elderslie and Brighton Roads is being replaced with a single lane roundabout. This section will assess the traffic flow at the roundabout, with the additional vehicle trips generated from this residential development, based on the new school being fully operational.

Traffic modelling indicates the additional traffic generated from the residential development is not expected to cause any adverse traffic impact, the roundabout will provide all motorists with an appropriate level of performance. The modelling results in the table below demonstrates the additional residential development is not expected to cause any deterioration in level of performance, with all motorists predicted to receive level of service LOS B.

Table 7.6 – Summary of traffic modelling when the residential development is operating

Period	Scenario	Total	Degree of	Worst	Level of	Max queue
		vehicles	Saturation	delay	service	length
Morning	Base flows with school	1308	0.570	13.9 secs	В	36.3 metres
peak	With development	1392	0.618	14.8 secs	В	43.8 metres
Evening	Base flow with school	1522	0.627	12.8 secs	В	47 metres
peak	With development	1613	0.697	13.1 secs	В	57.6 metres

18

8. Sight distance requirements

It is important that drivers leaving the development site from the two new junctions have suitable sight distance to undertake turning manoeuvres in a safe manner, without impacting motorists travelling along Elderslie Road.

Safe Intersection Sight Distance (SISD) is the optimum sight distance to enable a vehicle leaving the development site to see approaching vehicles and then have sufficient time to enter Elderslie Road without impacting the approaching vehicles, meaning that vehicles do not need to slow. SISD is based on the operating speed of approaching vehicles and the gradient of the approaching road. At the development site the road has a posted 60 km/h speed limit, with a road gradient of 6.5 percent.

Based on these parameters, the Austroads Guide to Road Design part 4a: Unsignalised and signalised intersections, table 3.2 specifies the recommended SISD is 114 metres, based on a driver having a reaction time of 1.5 seconds and observation time of three seconds.

8.1 Sight distance at the two new junctions onto Elderslie Road

Measurements were undertaken on site, based on a driver being 1.05 metres above the road surface and an approaching vehicle being 1.2 metres high, with the available sight distances shown in the table below. The available sight distance for the two new junctions exceeds the required SISD, and vehicles will be able to enter and leave the development site in a safe and efficient manner without adversely impacting other users.

Table 8.1 – Available sight distance for the two new junctions

	Available sight distance			
Junction	Viewing left	Viewing right		
Eastern	220 metres	>250 metres		
Western	190 metres	>250 metres		

Photograph 8.1A – Available sight distance at the eastern junction to the left

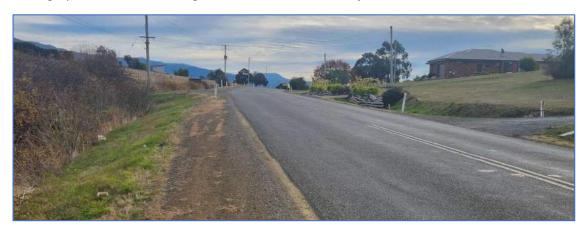




Photograph 8.1B – Available sight distance at the eastern junction to the right



Photograph 8.1C – Available sight distance at the western junction to the left



Photograph 8.1D - Available sight distance at the western junction to the right



8.2 Sight distance for four lots with direct access onto Elderslie Road

In optimising the number of residential lots, in addition to the two new junctions, lots 105 through to 108 will require direct access onto Elderslie Road.

The direct property accesses will be consistent with the development along the opposite side of Elderslie Road, where existing residential properties have direct road access. The additional accesses will also assist in developing the road as an urban environment.

There is a range of sight distance parameters that can be applied to various situations, with SISD being the highest parameter, suitable for junctions where traffic flows are higher, and users may be unfamiliar with the junction configuration.

The sight distance requirement is lower for a single domestic property, or residential property (multiple units), as traffic generation is significantly lower, and users are familiar with the access configuration. Austroads Guide section 3.4 specifies sight distance at property accesses can be assessed using minimum gap sight distance, which is specified in the Australian Standards 2890.1:2004, figure 3.2. For a domestic property within a 60 km/h speed environment, the minimum sight distance is 55 metres, while for a residential property the minimum sight distance is 83 metres.

Sight distances were measured on site for each of the lots with direct access onto Elderslie Road, with the available sight distances shown in table 7.3 below.

Table 8.2 – Available sight distance for lots 105 to 108

Lot	Sight distance to the left	Sight distance to the right
105	120 metres	In excess of 250 metres
106	140 metres	In excess of 250 metres
107	160 metres	In excess of 250 metres
108	200 metres	In excess of 250 metres

All direct property accesses are expected to have sufficient sight distance to exceed the Australian Standard desirable sight distance of 83 metres, ensuring vehicles can enter and leave the properties in a safe and efficient manner. Each of the property accesses will also have sufficient sight distance to comply with the SISD higher sight distance parameter.

Photographs of the driver's view for each of the direct property accesses, is available in appendix A.



8.3 Need for turning treatments on Elderslie Road

Vehicles entering and leaving the development site will generate turning manoeuvres on Elderslie Road. As discussed earlier, based on the nearest arterial road being east of the development site, the majority of the vehicles will turn right when leaving, and turn left when arriving. The number of vehicles expected to turn right into the development site is expected to be low, and dedicated right turn lanes are not considered warranted.

Most of the vehicles entering are expected to turn left at the eastern junction to the development site, and it is desirable for a short left turn lane to be installed on this junction approach.



9. Subdivision layout and internal road arrangements

The subdivision will extend to the south off Elderslie Road using two new junctions. The internal road network will primarily consist of a loop road connecting between the two junctions, with three other internal roads. Internal roads will intersect forming T-Junctions, minimising the number of vehicular conflict points. The majority of lots will have direct access to the new internal road, except lots 105 to 108, which will have direct access with Elderslie Road.

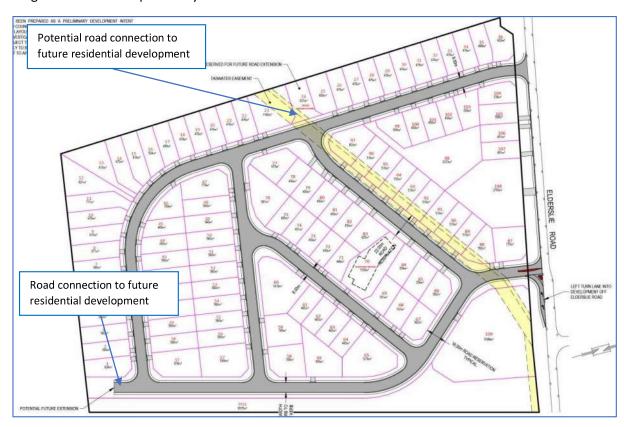


Diagram 9.0 – Development layout

Subdivisional road standard

Based on the trip assignment in section 7.1, the internal roads are predicted to have less than 350 two-way daily trips, which would make each road a local road. Based on the Local Government Association of Tasmania (LGAT) standard drawing for urban roads TSD-R06-V1, each of the subdivisional roads will be a through road and suitable to operate with a road width of 8.9 metres, within an 18-metre-wide road reservation.

Each of the roads will be constructed to comply with the LGAT standard for an urban road, with a bitumen road surface, concrete kerb and channel, 1.2-metre-wide footpath along both sides, and street lighting.

9.2 Turning facilities

The new internal road layout eliminates the need for dedicated turning facilities, as all roads

allow vehicles to enter, circulate, and leave the development site in a forward-driving direction.

All internal roads will be of sufficient width to accommodate a standard waste collection vehicle

to enter, circulate, and leave in a forward-driving direction.

9.3 Turning radius at the new junctions

> The new junctions will be designed to accommodate the swept path of a medium rigid vehicle, measuring 8.8 metres in length, to turn left into and left out of the development, without

crossing the centre of Elderslie Road.

9.4 On-site parking provisions

> All internal lots will have direct access to an internal road, with a suitable area to accommodate on-site parking spaces. The internal roads will have sufficient width to accommodate visitor

parking.

Along the eastern side of the development side, the road will be upgraded to an urban standard,

with concrete kerb and channel, concrete footpath, and indented parking bays for visitor

parking.

9.5 Junctions' layout with Elderslie Road

> The two new junctions will intersect Elderslie Road at ninety degrees and form a T-Junction, and under the Australian Road Rules vehicles must give-way when travelling on the terminating leg

> of the junction. However, it would be appropriate given the significance of Elderslie Road that a Give Way sign, supplemented by a holding line, be provided to reinforce traffic priority for

Elderslie Road motorists.

The junctions will be designed to comply with both LGAT standard drawings and Austroads

Guide to Road Design, to ensure that light and heavy vehicles can enter and leave in a safe and efficient manner. The layout and design of the junctions will be undertaken during the detail

design stage.

New accesses with direct vehicular access to Elderslie Road 9.6

Lots 105 to 108 will require direct vehicular access to Elderslie Road, as they have no direct access to the internal road network. As discussed earlier, direct vehicular access from residential properties will be compatible with other residential properties and developments along Elderslie Road. The concrete driveway crossovers will be provided in accordance with LGAT standard drawing TSD-R09-V1.

9.7 Connection to future residential developments

The Brighton Master Plan for the area, includes a future residential development directly south and west of this development site and it is worthwhile to allow for these residential areas to be connected for pedestrian and vehicular movement. The internal road layout within this subdivision includes a road connection to future residential development, with a connection to the south located adjacent to lot 1, while lot 24 will be reserved for a potential future road extension to the west, as shown in diagram 9.0.

This future road connection to the south is not expected to adversely impact this subdivision, as the Master Plan includes a new road connection directly to Brighton Road, with traffic generated from these new residential developments expected to use the Brighton Road junction and a new junction with Elderslie Road.

The future road connection to the west through lot 24, could allow for the future residential development to be serviced by the new Elderslie Road junctions being constructed under this development. As traffic modelling predicts these new junctions will operate at less than 15 percent of their capacity, indicating there is ample spare traffic capacity to accommodate future traffic growth.

10. Planning scheme

10.1 C3.5.1 Traffic generation at a vehicle crossing, level crossing or new junction

The development site is currently occupied by a residential dwelling that will be retained, while the dwellings existing access will be replaced with two new junctions, plus lots 105 to 108 will require direct vehicular access onto Elderslie Road. Therefore, this development will need to be assessed against the performance criteria P1, demonstrating that the junctions and accesses can operate safely and efficiently.

Perfo	ormance criteria	Assessment
To en	nsure that the safety a	and efficiency of roads is not reduced by the creation of a new
acces	ss and junctions.	
tr	any increase in the raffic caused by the ise;	The new residential development is estimated to generate a total of 974 daily trips during the weekday, with 101 of these trips likely to occur during the morning and evening peak periods. The existing dwelling is already generating seven daily trips, with one of these trips occurring within the peak periods, and these trips will continue.
fr	the nature and requency of the raffic generated by he use;	The majority of the vehicle movements generated by the residential development will be light vehicles, less than 5.5 metres in length. These types of vehicles are associated with urban residential living, and compatible with the existing vehicles using the surrounding local road network.
'	ne nature of the pad;	Within the surrounding road network, Elderslie Road would function as a local collector road, which has been constructed to an urban standard east of the development site, and a rural standard past the development site. The road has 3.3 metre wide traffic lanes in each direction and is capable of carrying significant traffic volumes. This development will extend the residential development further west, with the road standard adjacent to the development site improved to an urban standard. The majority of traffic generated will connect onto Brighton Road which is the nearest arterial road. Currently the intersection of Elderslie and Brighton Roads is being upgraded to an urban roundabout, to facilitate improved traffic flow. Available sight distance at the two junctions and four direct property accesses will exceed the recommended sight distance, ensuring vehicles will be able to enter and leave in a safe and efficient manner without causing adverse impact to other users.



(d)	The speed limit and traffic flow of the road;	Elderslie Road has a posted speed limit of 60 km/h. Manual traffic surveys found Elderslie Road is currently moderately trafficked. The Brighton High School is under construction on the land east of the development site, with this school only having a vehicular access to Elderslie Road, it will generate significant traffic movements of up to an additional 276 two-way vehicle movements on Elderslie Road during the peak periods. For the purpose of this traffic assessment, it is assumed that the school is operating at full capacity, with the two-way traffic flows along Elderslie Road between the school and Brighton Road expected to be operating at maximum of 600 two-way vehicle movements in the weekday peak hour periods. While traffic from this residential subdivision will increase the two-way traffic flow on this section of Elderslie Road by an additional 90 two-way vehicle movements, traffic analysis and modelling has determined there is sufficient spare traffic capacity to absorb the traffic increase without adversely impacting the traffic performance, with the level of service not predicted to deteriorate. Traffic modelling has determined the new Brighton roundabout at Elderslie Road, has sufficient spare traffic capacity to absorb the additional traffic without causing a reduction in traffic performance. All motorists using the roundabout are predicted to be receiving level of service LOS B. Also, there will be spare traffic capacity at the roundabout to accommodate future traffic growth in the area. Overall, the surrounding road network can accommodate the increase in traffic movements generated by the
e)	Any alternative access;	development, without adversely impacting the traffic flow. No alternative road access.
f)	The need for the access or junction;	Urban infill within established urban areas is an excellent method to increase the supply of housing, while optimising the current infrastructure and community facilities.
g)	Any traffic impact assessment; and	An independent traffic assessment found there was no reason for this development not to proceed.
h)	Any written advice received from the road authority.	Aware of none.

10.2 C2 Parking and Sustainable Transport Code

C2.5.1 Car parking numbers.	Each residential lot will be of sufficient size to accommodate on-site parking facilities to meet the reasonable demand generated. The internal roads will have sufficient road width to accommodate on-street parking for visitors. Indented parking bays will be provided along Elderslie Road along the development road frontage and will provide for visitor parking for lots 105 to 108.
C2.5.2 Bicycle parking numbers.	Not applicable for a residential subdivision.
C2.5.3 Motorcycle parking numbers.	Not applicable for a residential subdivision.
C2.5.4 Loading bays.	While loading bays are not applicable for a residential subdivision, the subdivisional roads will have sufficient width to accommodate commercial vehicles, including waste collection and fire emergency vehicles to circulate.
C2.5.5 Number of car parking spaces within the General Residential Zone and Inner Residential Zone.	Not applicable for a residential subdivision.

11. Conclusion

The provision of a new subdivision off Elderslie Road will provide a supply of urban residential building lots, compatible with the surrounding land-use, and the traffic generated from these new lots is expected to be residential in nature.

From a traffic engineering and road safety perspective, additional traffic generated from this development site is not expected to create any adverse safety, amenity, or traffic efficiency problems, as:

- the amount of traffic generated is considered to be moderate, there is sufficient spare capacity within the current road network to absorb the extra traffic movements, without causing adverse impact to the traffic flow,
- the new junctions with Elderslie Road will have Safe Intersection Sight Distance that will comply with Austroads requirements, and this will ensure vehicles can enter and leave in a safe and efficient manner,
- the four lots 105 to 108 having direct vehicular access with Elderslie Road, will have sufficient sight distance that complies with the Australian Standard for a domestic and residential property driveway,
- traffic analysis and modelling predict that the new junctions with Elderslie Road will perform at the highest level of service for a give way control, and no deterioration in the level of traffic efficiency is expected,
- this assessment has considered the traffic impact when the new Brighton High School is operating at full capacity, with traffic analysis and modelling determining the road network and the new Brighton Road roundabout will provide motorists with an acceptable level of traffic performance, with spare traffic capacity to accommodate future growth.

This Traffic Impact Assessment found no reason for this development not to proceed.



12. Appendix A – Photographs of available sight distance for direct accesses to Elderslie Road

Photograph 12.1 – Available sight distance to the left for lot 103



Photograph 12.2 - Available sight distance to the right for lot 103



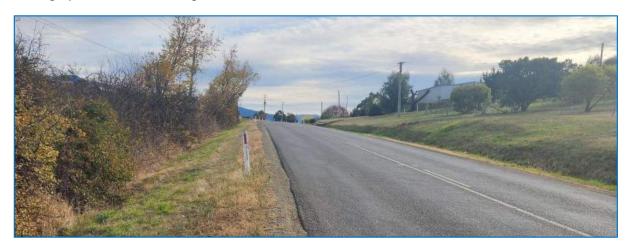
Photograph 12.3 - Available sight distance to the left for lot 104



Photograph 12.4 - Available sight distance to the right for lot 104



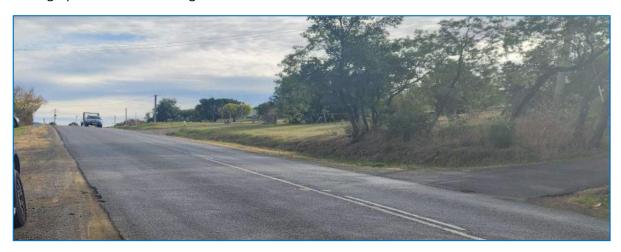
Photograph 12.5 - Available sight distance to the left for lot 105



Photograph 12.6 - Available sight distance to the right for lot 105



Photograph 12.7 - Available sight distance to the left for lot 106

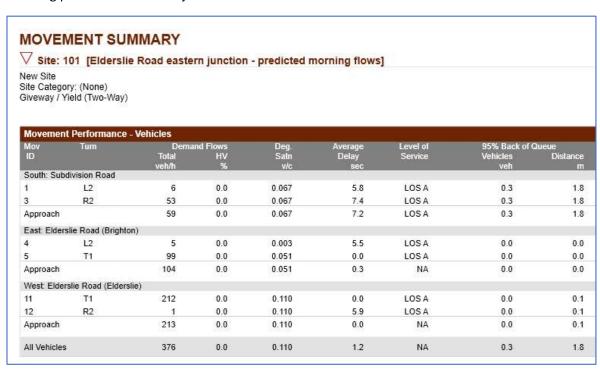


Photograph 12.8 - Available sight distance to the right for lot 106

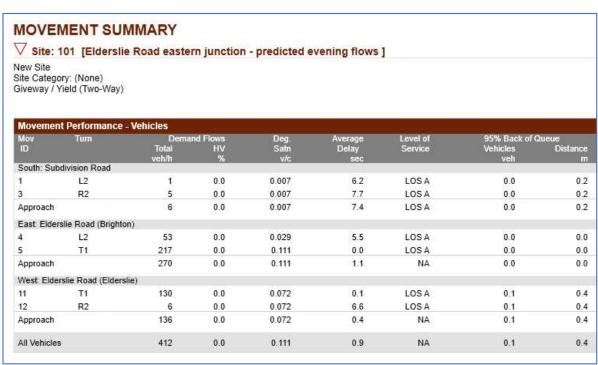


13. Appendix B - Modelling of the new Elderslie Road Junctions

Morning peak hour - Eastern junction



Evening peak hour – Eastern junction

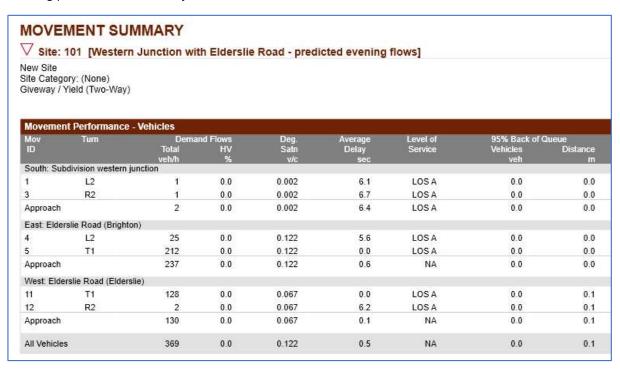




Morning peak hour - Western junction

MOVEMENT SUMMARY V Site: 101 [Western Junction with Elderslie Road - predicted morning flows] New Site Site Category: (None) Giveway / Yield (Two-Way) **Movement Performance - Vehicles** 95% Back of Queue Vehicles Distance Mov ID Level of Service South: Subdivision western junction 1 L2 2 0.0 0.026 5.8 LOSA 0.1 0.6 3 R2 25 0.0 0.026 6.5 LOSA 0.1 0.6 Approach 27 0.0 0.026 6.4 LOSA 0.1 0.6 East: Elderslie Road (Brighton) 4 L2 0.0 0.055 5.5 LOSA 0.0 0.0 LOSA 106 0.055 0.0 0.0 0.0 5 T1 0.0 Approach 107 0.0 0.055 0.1 NA 0.0 0.0 West: Elderslie Road (Elderslie) 181 0.0 0.093 0.0 LOSA 0.0 0.0 T1 R2 12 0.0 0.093 5.8 LOSA 0.0 0.0 182 0.0 0.093 0.0 0.0 0.0 Approach NA 0.0 0.093 0.6 NA All Vehicles 316 0.1 0.6

Evening peak hour - Western junction

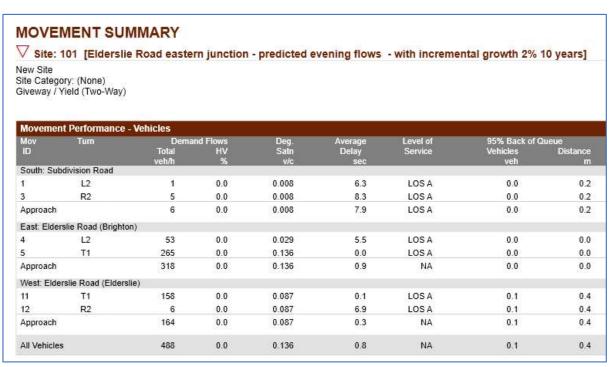




Morning peak hour with incremental growth on Elderslie Road of 2% for 10 years – Eastern junction

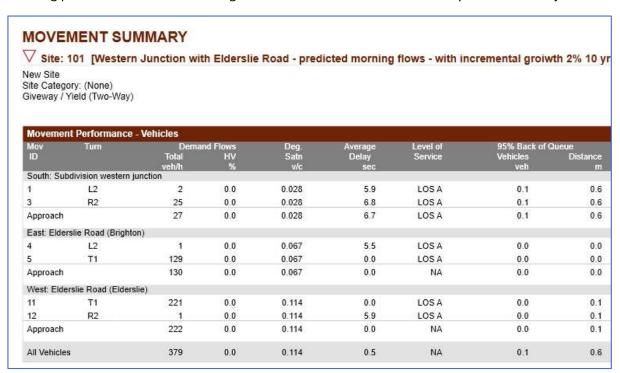
MOVEMENT SUMMARY abla Site: 101 [Elderslie Road eastern junction - predicted morning flows with incremental growth 2% 10 years] Site Category: (None) Giveway / Yield (Two-Way) **Movement Performance - Vehicles** 95% Back of Queue Vehicles Distance Level of Service South: Subdivision Road 6 0.0 0.073 5.9 LOSA 0.3 2.0 3 R2 53 0.0 0.073 7.9 LOSA 0.3 20 59 0.0 0.073 7.7 LOSA 0.3 2.0 Approach East: Elderslie Road (Brighton) L2 5 0.0 0.003 5.5 LOSA 0.0 0.0 5 T1 121 0.0 0.062 0.0 LOSA 0.0 0.0 126 0.0 0.062 0.2 NA 0.0 0.0 Approach West: Elderslie Road (Elderslie) 258 0.0 0.133 0.0 LOSA 0.0 0.1 11 T1 0.133 6.0 LOSA 0.0 12 0.0 0.1 0.0 Approach 259 0.0 0.133 NA 0.0 0.1 All Vehicles 444 0.0 0.133 1.1 NA 0.3 2.0

Evening peak hour with incremental growth on Elderslie Road of 2% for 10 years – Eastern junction

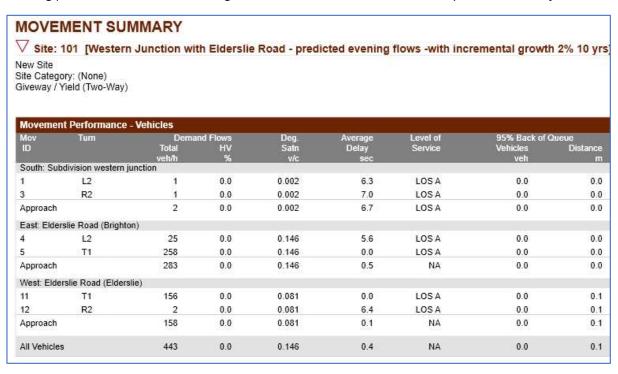




Morning peak hour with incremental growth on Elderslie Road of 2% for 10 years - Western junction



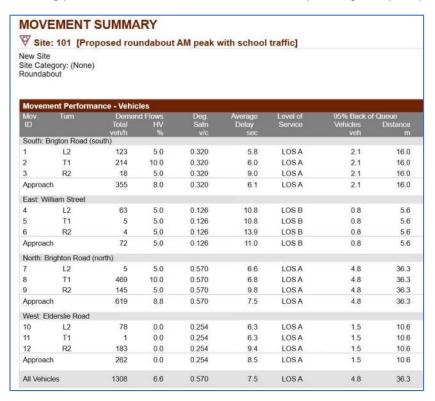
Evening peak hour with incremental growth on Elderslie Road of 2% for 10 years - Western junction



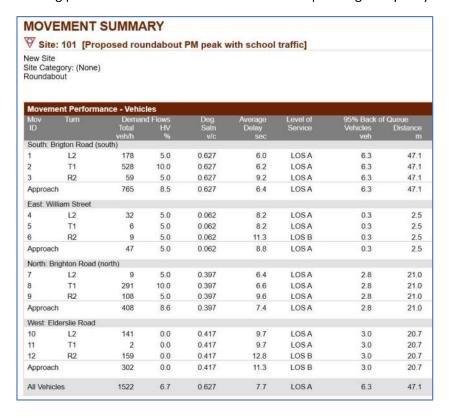


14. Appendix C - Modelling of Brighton Road roundabout

Morning peak hour - based on flows with school operating at capacity

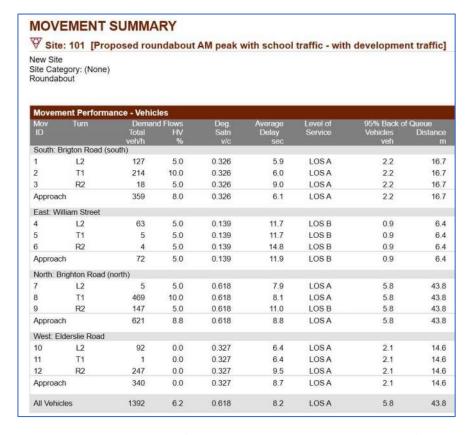


Evening peak hour – based on flows with school operating at capacity





Morning peak hour – school fully operational with development traffic



Evening peak hour – school fully operational with development traffic

Mov T ID South: Brigto 1 2 3 Approach East: William 4 5	Perform furn on Road (s L2 T1 R2	Total veh/h	5.0 10.0 5.0 8.2	Deg Satn v/c 0.697 0.697 0.697	Average Delay sec 6.5 6.6 9.6 6.8	Level of Service LOS A LOS A LOS A	95% Back of Vehicles veh 7.7 7.7 7.7 7.7 7.7	Distance m 57.6 57.6 57.6
Mov T ID South: Brigto 1 2 3 Approach East: William 4 5	on Road (s L2 T1 R2	Deman Total veh/h south) 240 528 59	5.0 10.0 5.0	0.697 0.697 0.697	Delay sec 6.5 6.6 9.6	LOS A LOS A LOS A	Vehicles veh 7.7 7.7 7.7	Distance m 57.6 57.6 57.6
Mov T ID South: Brigto 1 2 3 Approach East: William 4 5	on Road (s L2 T1 R2	Deman Total veh/h south) 240 528 59	5.0 10.0 5.0	0.697 0.697 0.697	Delay sec 6.5 6.6 9.6	LOS A LOS A LOS A	Vehicles veh 7.7 7.7 7.7	Distance m 57.6 57.6 57.6
1 2 3 3 I Approach East: William 4 5	L2 T1 R2	528 59	5.0 10.0 5.0	0.697 0.697 0.697	6.5 6.6 9.6	LOS A	7.7 7.7 7.7	57.6 57.6 57.6
2 3 I Approach East William 4 5	T1 R2 n Street	528 59	10.0 5.0	0.697 0.697	6.6 9.6	LOS A	7.7 7.7	57.6 57.6
3 I Approach East William 4 5	R2 n Street	59	5.0	0.697	9.6	LOSA	7.7	57.6
Approach East William 4 5	n Street			1000000		100000000000000000000000000000000000000		
East: William 4 5		827	8.2	0.697	6.8	LOSA	7.7	
4 5 6 I						0.0000000000000000000000000000000000000	1.1	57.6
5 6 I	L2							
6 1		32	5.0	0.066	8.4	LOSA	0.4	2.6
	T1	7	5.0	0.066	8.4	LOSA	0.4	2.6
Annungh	R2	9	5.0	0.066	11.5	LOSB	0.4	2.6
Approach		48	5.0	0.066	9.0	LOSA	0.4	2.6
North: Bright	ton Road ((north)						
7	L2	9	5.0	0.419	6.5	LOSA	3.0	22.7
8	T1	291	10.0	0.419	6.6	LOSA	3.0	22.7
9 1	R2	130	5.0	0.419	9.6	LOSA	3.0	22.7
Approach		430	8.4	0.419	7.5	LOSA	3.0	22.7
West: Elders	slie Road							
10	L2	144	0.0	0.437	9.9	LOSA	3.2	22.7
11	T1	2	0.0	0.437	10.0	LOSA	3.2	22.7
12	R2	162	0.0	0.437	13.1	LOS B	3.2	22.7
Approach		308	0.0	0.437	11.6	LOS B	3.2	22.7



T: 0416 064 755

 $E: \ Hubble traffic@outlook.com$

W: Hubbletraffic.com.au