PLANNING EXHIBITED DOCUMENTS

Ref. No: DA0760/2021 & SF7421

Date advertised: 11/06/2022

Planning Administration _____

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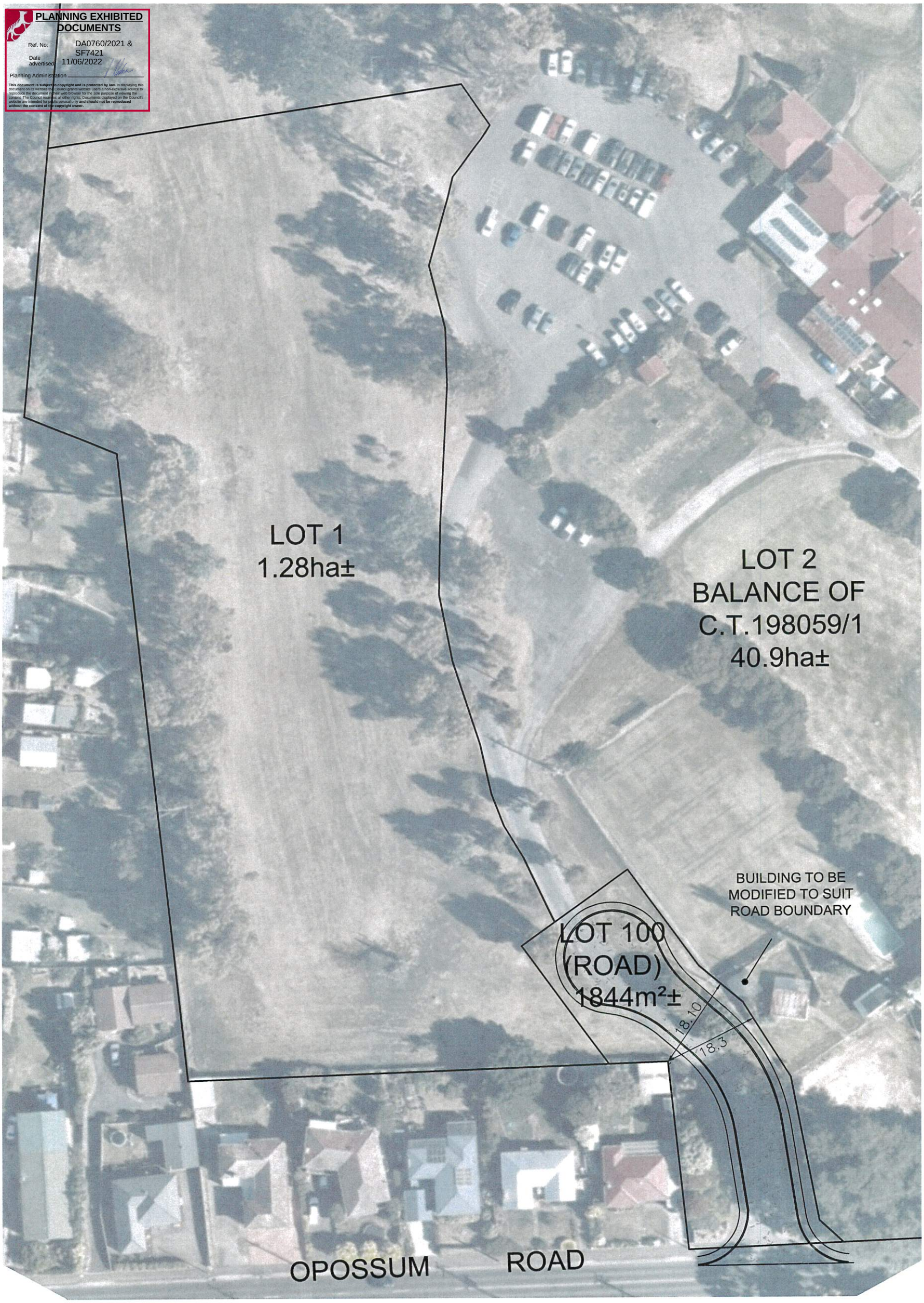


ALL MEASUREMENTS AND AREAS ARE SUBJECT TO SURVEY.

THIS PLAN WAS PREPARED AS A PRELIMINARY PROPOSAL PLAN FOR DISCUSSION AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.

LAUNCESTON GOLF CLUB
STAGE 1 - PROPOSED 3 LOT SUBDIVISION
27-99 OPOSSUM RD, KINGS MEADOWS
C.T. 198059/1

WOOLCOTT SURVEYS
10 Goodman Court Invermay TAS 7248
PO Box 593 Mowbray Heights TAS 7248
Phone (03) 6332 3760
Fax (03) 6332 3764
Email: office@woolcottsurveys.com.au

Job Number	Drawn	File name	Date	Scale	Edition	Sheet
L191207	GM	L191207-PROP LAYOUT280121	07/02/22	1:750@A3	V03	2/7


PLANNING EXHIBITED DOCUMENTS
Ref. No: DA0760/2021 & SF7421
Date advertised: 11/06/2022
Planning Administration
SMH A503760
DEPTH 3.12m
NEW DN150 INTERNAL DROP CONSTRUCTED WITHIN EXISTING DN525 TRUNK SEWER MANHOLE (UNKNOWN DIA.)
LIVE CUT IN WORK TO BE DONE BY TASWATER AT DEVELOPER EXPENSE.
NEW SUBDIVISION BOUNDARY
EDGE OF SEAL EXISTING GOLF CLUB ACCESS ROAD.
RELOCATE & CONNECT EXISTING GOLF CLUB PROPERTY WATER CONNECTION TO THE NEW DN100 LINE.
NEW 8.9M STUB ROAD AND 18.0M CUL DE SAC WITH KCS KERB & CHANNEL TO LGAT IPWEA STD DRG TSD-R06
PROVIDE NEW DN100 STUB TO LOT FOR PROVISION OF FUTURE INTERNAL MAINS (HYDRANT COVERAGE) AND METERING. DN20 POTABLE METER, REFER DETAIL BELOW
EXISTING SEALED ACCESS TO GOLF CLUB TO BE RETAINED. MATCH TO NEW DOUBLE WIDTH 5.50M CROSSOVER AS ENTRANCE OFF NEW CUL-DE-SAC.
SW MH 5/9
DEPTH 2.36m
DN600 CL. 2 RCP
DN100 PN16 PVC-O
SW MH 5/8
DEPTH 2.70m
NEW DN100 SV
NEW TEE CUT INTO EX. DN100 CICL BY TASWATER AT DEVELOPER'S COST.
TYPE 3 SEP 5/7
DEPTH 2.67m
EXISTING ASPHALT FOOTPATH TO BE CONTINUED AROUND CUL-DE-SAC. PRAM CROSSING AS PER TSD-R18 AS SHOWN.
DOUBLE WIDTH 5.5M DRIVEWAY CROSSOVER AS PER TSD-R09
SW MH 5/6A
DEPTH 2.22m
OPOSSUM ROAD
DN100 CICL
SMH A504381
DEPTH 3.9m
SW MH 5/4
DEPTH 2.18m
SW MH 5/3
DEPTH 1.77m
SW HW 5/1
DEPTH 0.69m
DN600 CL. 2 RCP
IL 54.81
IL 56.47
IL 57.54
SMH A1
DEPTH 2.17m
SW MH 5/2
DEPTH 1.54m
DN225 STORMWATER PROPERTY CONNECTION FOR FUTURE DEVELOPMENT
DN150 SN8 PVC
SMH 1/1
DEPTH 0.79m
IL 60.70
3M SEWER EASEMENT IN FAVOUR OF TASWATER
SW MH 5/5
DEPTH 2.20m
DN300 BLACKMAX
4M DRAINAGE EASEMENT IN FAVOUR OF LCC
SW MH 5/6
DEPTH 2.15m
NEW DN600 STORMWATER TO DISCHARGE INTO KINGS MEADOWS RIVULET VIA DROP PIT AS PER GHD DESIGN DRG 32-17427-C504 REV A. STREAM AND BANK PROTECTION TO BE PROVIDED.
DN150 PROPERTY SEWER CONNECTION AS DN1050 MANHOLE
PROVIDE NEW 450SQ GRATED PIT AT LOW POINT IN SITE, TO EX. DN225 CONC. PIPE. PIT IS ONLY TO COLLECT LOCAL SURFACE FLOW AT THE TRAPPED LOW POINT.
DN225 RCP

ROADWORKS AND STORMWATER DRAINAGE NOTES

1. NEW 8.9M WIDE SEALED ROAD STUB AND 9.0M RADIUS CUL-DE-SAC WITH KCS KERB & CHANNEL TO BE CONSTRUCTED OFF OPOSSUM ROAD AT LOCATION OF PRESENT GOLF COURSE DRIVEWAY.
2. PROVIDE "OCEAN GUARD" STORMWATER FILTER PIT INSERT FOR GROSS POLLUTANT REMOVAL.
3. PROVIDE 5.5m WIDE REINFORCED CONCRETE DRIVEWAYS TO THE NEW STRATA UNIT ENTRANCE AND THE EXISTING GOLF COURSE ACCESS. DRIVEWAYS TO BE CONSTRUCTED IN ACCORDANCE WITH TSD-R09.
4. PROVIDE NEW 1.8M ASPHALT FOOTPATH FOR THE CUL-DE-SAC TO JOIN TO AND MATCH THE EXISTING IN OPOSSUM ROAD, IN ACCORDANCE WITH TSD-R11.
5. ALL STORMWATER PIPE MATERIAL SHOWN U.N.O:
   - DN225 SN8 PVC SWJ FOR PROPERTY CONNECTION
   - BLACKMAX / RCP CLASS 4 RRJ FOR LCC ASSETS (PRIVATE PROPERTY/ROAD RESERVE) U.N.O.
5. TRUNK DN600 STORMWATER SHOWN AS PROPOSED FOR THE KINGS MEADOWS FLOOD ALLEVIATION PROJECT, GHD DRG. NO. 32-17427-C501, C502 AND C503 REV A. DRAINAGE LINE POSITION IS MODIFIED FOR PITS SW MH 5/4 TO MH 5/7 TO ACCOMMODATE THE FUTURE STRATA SERVICE ROAD.
6. THE COST OF WORKS FOR THE NEW DN600 STORMWATER OVER AND ABOVE THAT REQUIRED TO SERVE THE PROPOSED DEVELOPMENT WILL BE SUBJECT TO NEGOTIATION WITH COUNCIL. REFER TO DRG. 332.31-SK03 FOR DETAILS OF THE MINIMUM LOT SERVICING REQUIREMENTS.

GENERAL SEWER

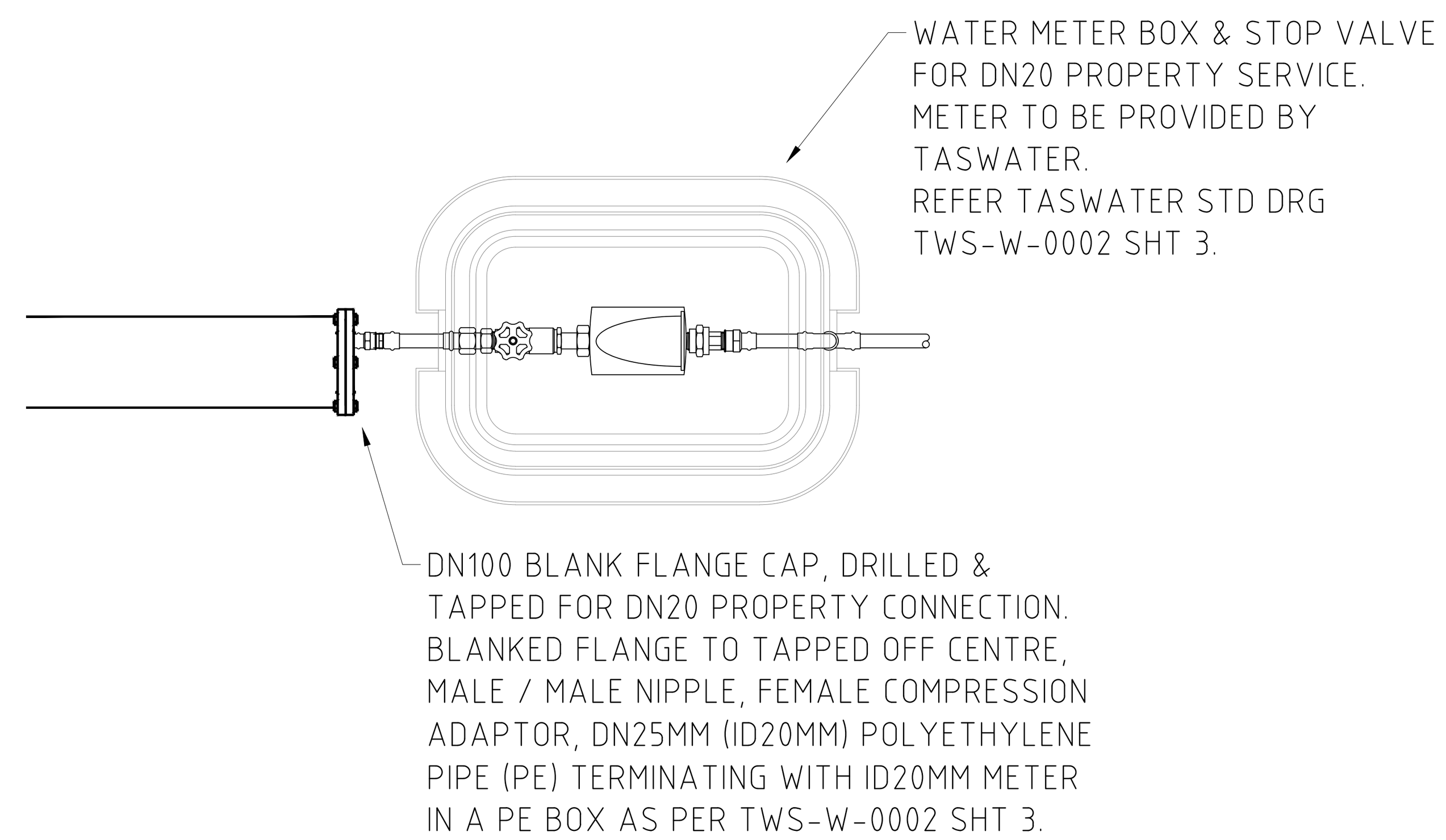
1. ALL WORKS ARE TO BE IN ACCORDANCE WITH THE SEWERAGE CODE OF AUSTRALIA WSA 02-2014-3.1 MRWA EDITION V1.0 AND THE TASWATER SUPPLEMENT TO THIS CODE.
2. CONNECTIONS TO THE EXISTING SEWER MAIN TO BE CARRIED OUT BY TASWATER AT THE CONTRACTOR'S EXPENSE.
3. NEW SEWER MIANS TO BE DN150 CLASS SN8 UPVC SCJ.
4. PIPE INSTALLATION IS TO BE CONSTRUCTED IN ACCORDANCE WITH WSA 02-2014-3.1 MRWA - TASWATER SUPPLEMENT.
5. UNLESS EXPOSED CONDITIONS WARRANT OTHERWISE, THE TRENCH EMBEDMENT SYSTEM SHALL BE "TYPE A GRADED" AS PER TABLE 202-A ON STD DRG MRWA-S-202.
6. FOR THE PROPOSED TRENCH EMBEDMENT SYSTEM "TYPE A", PIPE BEDDING SHALL BE AS PER TABLE 202-B ON STD DRG MRWA-S-202, ITEM B 5MM MINUS CRUSHED ROCK.
7. ALL PRODUCTS USED MUST BE AS PER THE APPROVED PRODUCTS CATALOGUE FOR CITY WEST WATER.
8. PROVIDE DN150 SEWER PROPERTY CONNECTION & MANHOLE TO THE NEW STRATA LOT AS INDICATED ON THE PLAN. PROPERTY CONNECTION TO BE CONSTRUCTED IN ACCORDANCE WITH WSAA STANDARD DRAWING MRWA-S-302.

GENERAL WATER

1. ALL WORKS ARE TO BE IN ACCORDANCE WITH THE WATER SUPPLY CODE OF AUSTRALIA WSA 03-2011-3.1 MRWA EDITION V2.0 AND THE TASWATER SUPPLEMENT TO THIS CODE.
2. CONNECTIONS TO PUBLIC WATER MAINS TO BE CARRIED OUT BY TASWATER AT CONTRACTOR'S EXPENSE.
3. CONTRACTOR TO PAY WATER METER FEE TO TASWATER PRIOR TO PLACING ON MAINTENANCE.
4. ALL ROAD CROSSINGS TO BE BACKFILLED WITH FCR TO FINISHED SURFACE LEVEL.
5. ALL PRODUCTS USED MUST BE AS PER THE APPROVED PRODUCTS CATALOGUE FOR CITY WEST WATER.
6. PROVIDE NEW 50MM MEDIUM HAZARD METER FOR THE NEW STRATA LOT AS PER TASWATER STD DRG TWS-W-0002 SHT 14.
7. RELOCATE THE EXISTING METER FOR THE GOLF CLUB AS SHOWN.
8. PROVIDE DN100 SN4 PVC CONDUIT SLEEVE FOR ALL NON METALLIC PROPERTY SERVICE PIPES IN TRAFFICABLE AREAS.

SURVEY NOTES

1. PROPOSED LOT BOUNDARY LINES, EXISTING AND PROPOSED DEVELOPMENT AS SHOWN ON WOOLCOTT SURVEY DRAWING L191207-PROP LAYOUT280121 V03 DATED 07.02.2022
2. SERVICE INVERT LEVELS AND SITE CONTOURS BY SITE SURVEY.


WATER METER BOX & STOP VALVE FOR DN20 PROPERTY SERVICE. METER TO BE PROVIDED BY TASWATER. REFER TASWATER STD DRG TWS-W-0002 SHT 3.
DN100 BLANK FLANGE CAP, DRILLED & TAPPED FOR DN20 PROPERTY CONNECTION. BLANKED FLANGE TO TAPPED OFF CENTRE, MALE / MALE NIPPLE, FEMALE COMPRESSION ADAPTOR, DN25MM (ID20MM) POLYETHYLENE PIPE (PE) TERMINATING WITH ID20MM METER IN A PE BOX AS PER TWS-W-0002 SHT 3.

NEW DN100 MAINS METER CONNECTION DETAIL

NTS

REV.	DESCRIPTION	DRN	CHK	APP.	DATE
D	ISSUED FOR DEVELOPMENT APPLICATION - CUL DE SAC REVISED, DN300 LOT DRAINAGE	GA	GA	CO	23.03.22
C	ISSUED FOR DEVELOPMENT APPLICATION - CUL DE SAC REVISED	GA	GA	CO	23.11.21
B	ISSUED FOR DEVELOPMENT APPLICATION	GA	GA	CO	16.08.21
A	ISSUED FOR COMMENT	GA	GA	CO	10.08.21

DRAWING CHECK

	SIGNATURE	DATE
DRAWN	GA	23.07.21
DESIGNED	GA	23.07.21
CHECKED	CO	27.07.21
CLIENT		

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44 PENQUITE ROAD, NEWSTEAD 7250 TAS
PHONE: 0413208450
EMAIL: CAMERON.OAKLEY@H-DNA.COM.AU

CLIENT
LAUNCESTON GOLF CLUB 1899
OPOSSUM ROAD KINGS MEADOWS
TASMANIA 7249

PROJECT
PROPOSED SUBDIVISION
27-99 OPOSSUM ROAD
KINGS MEADOWS, TAS 7249

TITLE
STAGE 2: OPOSSUM RD LOT
ACCESS ROAD &
CONCEPT SERVICES PLAN
FUTURE DN600 STORMWATER

10 0 10 20 30

A1

STATUS
PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

SCALE @ A1 1:500 DIMENSIONS IN METRES

DRAWING No. 332.31-SK02 REV. D


PLANNING EXHIBITED DOCUMENTS
Ref. No. DA0760/2021 & SF7421
Date advertised 11/06/2022
SMH A503760
DEPTH 3.12m
NEW DN150 INTERNAL DROP CONSTRUCTED WITHIN EXISTING DN525 TRUNK SEWER MANHOLE (UNKNOWN DIA.)
LIVE CUT IN WORK TO BE DONE BY TASWATER AT DEVELOPER EXPENSE.
NEW SUBDIVISION BOUNDARY
EDGE OF SEAL EXISTING GOLF CLUB ACCESS ROAD.
RELOCATE & CONNECT EXISTING GOLF CLUB PROPERTY WATER CONNECTION TO THE NEW DN100 LINE.
NEW 8.9M STUB ROAD AND 18.0M CUL DE SAC WITH KCS KERB & CHANNEL TO LGAT IPWEA STD DRG TSD-R06
PROVIDE NEW DN100 STUB TO LOT FOR PROVISION OF FUTURE INTERNAL MAINS (HYDRANT COVERAGE) AND METERING DN20 POTABLE METER, REFER DETAIL BELOW
EXISTING SEALED ACCESS TO GOLF CLUB TO BE RETAINED. MATCH TO NEW DOUBLE WIDTH 5.50M CROSSOVER AS ENTRANCE OFF NEW CUL-DE-SAC.
DN100 PN16 PVC-O
NEW DN100 SV
NEW TEE CUT INTO EX. DN100 CICL BY TASWATER AT DEVELOPER'S COST
TYPE 3 SEP 1/7
DEPTH 1.53m
EXISTING ASPHALT FOOTPATH TO BE CONTINUED AROUND CUL-DE-SAC. PRAM CROSSING AS PER TSD-R18 AS SHOWN.
DOUBLE WIDTH 5.5M DRIVEWAY CROSSOVER AS PER TSD-R09
SW MH 1/6
DEPTH 1.48m
OPOSSUM ROAD
DN100 CICL
SMH A504381
DEPTH 3.9m
1.175M DROP TO ACCOMMODATE FUTURE INTERNAL LAYOUT.
SW MH 1/3
DEPTH 2.27m
SW MH 1/4
DEPTH 1.21m
DN300 Blackmax @ 4.0%
DN300 Blackmax @ 2.5%
SW MH 1/5
DEPTH 1.21m
SW HW 1/1
DEPTH 0.85m
DN300 Blackmax @ 8.0%
DN300 Blackmax @ 5.0%
DN225 STORMWATER PROPERTY CONNECTION FOR FUTURE DEVELOPMENT.
3M DRAINAGE EASEMENT IN FAVOUR OF LCC
IL 54.81
IL 56.47
IL 57.54
SW MH 1/2
DEPTH 1.01m
SMH A1
DEPTH 2.17m
DN150 SN8 PVC
SMH 1/1
DEPTH 0.79m
3M SEWER EASEMENT IN FAVOUR OF TASWATER
NEW DN300 STORMWATER TO DISCHARGE INTO KINGS MEADOWS RIVULET VIA SCOUR PROTECTED ROCK LINED OUTFALL SIMILAR TO MELBOURNE WATER STD DRG 7251-08-103. DETAILED RIVULET SURVEY TO INFORM FINAL DESIGN.
DN150 PROPERTY SEWER CONNECTION AS DN1050 MANHOLE
PROVIDE NEW 450SQ GRATED PIT AT LOW POINT IN SITE, TO EX. DN225 CONC. PIPE. PIT IS ONLY TO COLLECT LOCAL SURFACE FLOW AT THE TRAPPED LOW POINT.
DN225 RCP

ROADWORKS AND STORMWATER DRAINAGE NOTES

1. NEW 8.9M WIDE SEALED ROAD STUB AND 9.0M RADIUS CUL-DE-SAC WITH KCS KERB & CHANNEL TO BE CONSTRUCTED OFF OPOSSUM ROAD AT LOCATION OF PRESENT GOLF COURSE DRIVEWAY.
2. PROVIDE "OCEAN GUARD" STORMWATER FILTER PIT INSERT FOR GROSS POLLUTANT REMOVAL.
3. PROVIDE 5.5m WIDE REINFORCED CONCRETE DRIVEWAYS TO THE NEW STRATA UNIT ENTRANCE AND THE EXISTING GOLF COURSE ACCESS. DRIVEWAYS TO BE CONSTRUCTED IN ACCORDANCE WITH TSD-R09.
4. PROVIDE NEW 1.8M ASPHALT FOOTPATH FOR THE CUL-DE-SAC TO JOIN TO AND MATCH THE EXISTING IN OPOSSUM ROAD, IN ACCORDANCE WITH TSD-R11.
5. ALL STORMWATER PIPE MATERIAL SHOWN U.N.O:
   - DN225 SN8 PVC SWJ FOR PROPERTY CONNECTION
   - BLACKMAX / RCP CLASS 4 RRJ FOR LCC ASSETS (PRIVATE PROPERTY/ROAD RESERVE) U.N.O.
5. THE DN300 STORMWATER SHOWN IS THE MINIMUM TO ACCOMMODATE THE PROPOSED STRATA & LGC SERVICE ROAD.
6. REFER TO DRG. 332.31-SK02 FOR DETAILS OF THE KINGS MEADOWS FLOOD ALLEVIATION PROJECT, DERIVED FROM GHD DRG. NO. 32-17427-C501, C502 AND C503 REV A.

GENERAL SEWER

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4. PIPE INSTALLATION IS TO BE CONSTRUCTED IN ACCORDANCE WITH WSA 02-2014-3.1 MRWA - TASWATER SUPPLEMENT.
5. UNLESS EXPOSED CONDITIONS WARRANT OTHERWISE, THE TRENCH EMBEDMENT SYSTEM SHALL BE "TYPE A GRADED" AS PER TABLE 202-A ON STD DRG MRWA-S-202.
6. FOR THE PROPOSED TRENCH EMBEDMENT SYSTEM "TYPE A", PIPE BEDDING SHALL BE AS PER TABLE 202-B ON STD DRG MRWA-S-202, ITEM B 5MM MINUS CRUSHED ROCK.
7. ALL PRODUCTS USED MUST BE AS PER THE APPROVED PRODUCTS CATALOGUE FOR CITY WEST WATER.
8. PROVIDE DN150 SEWER PROPERTY CONNECTION & MANHOLE TO THE NEW STRATA LOT AS INDICATED ON THE PLAN. PROPERTY CONNECTION TO BE CONSTRUCTED IN ACCORDANCE WITH WSAA STANDARD DRAWING MRWA-S-302.

GENERAL WATER

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3. CONTRACTOR TO PAY WATER METER FEE TO TASWATER PRIOR TO PLACING ON MAINTENANCE.
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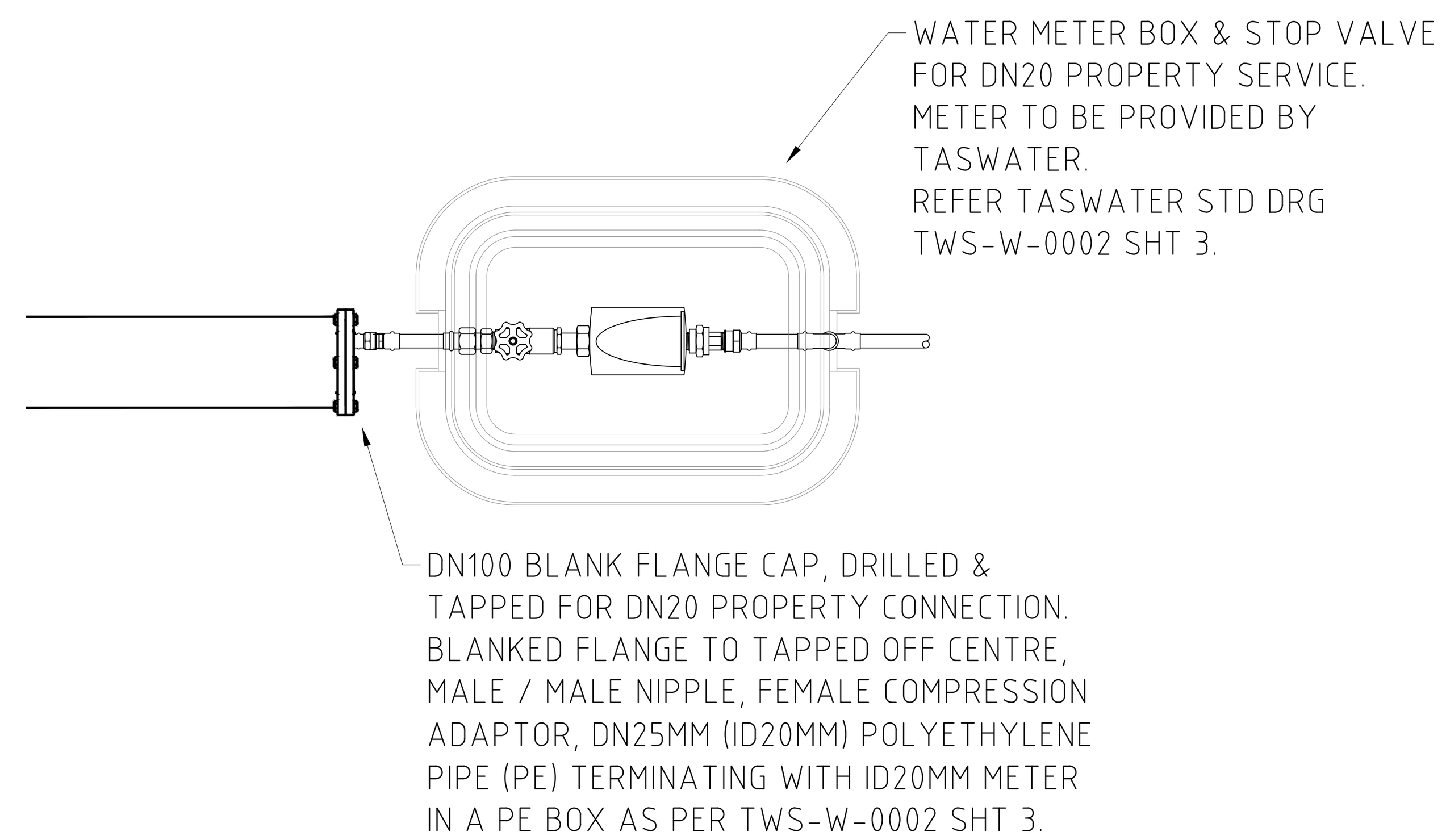
5. ALL PRODUCTS USED MUST BE AS PER THE APPROVED PRODUCTS CATALOGUE FOR CITY WEST WATER.
6. PROVIDE NEW 50MM MEDIUM HAZARD METER FOR THE NEW STRATA LOT AS PER TASWATER STD DRG TWS-W-0002 SHT 14.
7. RELOCATE THE EXISTING METER FOR THE GOLF CLUB AS SHOWN.
8. PROVIDE DN100 SN4 PVC CONDUIT SLEEVE FOR ALL NON METALLIC PROPERTY SERVICE PIPES IN TRAFFICABLE AREAS.

SURVEY NOTES

1. PROPOSED LOT BOUNDARY LINES, EXISTING AND PROPOSED DEVELOPMENT AS SHOWN ON WOOLCOTT SURVEY DRAWING L191207-PROP LAYOUT280121 V03 DATED 07.02.2022
2. SERVICE INVERT LEVELS AND SITE CONTOURS BY SITE SURVEY.


WATER METER BOX & STOP VALVE FOR DN20 PROPERTY SERVICE. METER TO BE PROVIDED BY TASWATER.
REFER TASWATER STD DRG TWS-W-0002 SHT 3.
DN100 BLANK FLANGE CAP, DRILLED & TAPPED FOR DN20 PROPERTY CONNECTION. BLANKED FLANGE TO TAPPED OFF CENTRE, MALE / MALE NIPPLE, FEMALE COMPRESSION ADAPTOR, DN25MM (ID20MM) POLYETHYLENE PIPE (PE) TERMINATING WITH ID20MM METER IN A PE BOX AS PER TWS-W-0002 SHT 3.

NEW DN100 MAINS METER CONNECTION DETAIL

NTS

REV.	DESCRIPTION	DRN	CHK	APP.	DATE
A	ISSUED FOR DEVELOPMENT APPLICATION	GA	GA	CO	23.03.22

DRAWING CHECK

	SIGNATURE	DATE
DRAWN	GA	23.07.21
DESIGNED	GA	23.07.21
CHECKED	CO	27.07.21
CLIENT		

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OPOSSUM ROAD KINGS MEADOWS
TASMANIA 7249

PROJECT
PROPOSED SUBDIVISION
27-99 OPOSSUM ROAD
KINGS MEADOWS, TAS 7249

TITLE
STAGE 2: OPOSSUM RD LOT ACCESS ROAD & CONCEPT SERVICES PLAN PROPOSED DN300 STORMWATER

A1
STATUS: PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION
SCALE @ A1: 1:500
DIMENSIONS IN: METRES
DRAWING No. 332.31-SK03
REV. A

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STORMWATER REPORT

Opossum Road, Kings Meadows
DA0760/2021

March 2022

HYDRODYNAMICA
44 PENQUITE ROAD LAUNCESTON TAS 7250
T 0431 208 450 E cameron.oakley@h-dna.com.au

HYDRODYNAMICA

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HYDRODYNAMICA

Project: LGC Opossum Rd Kings Meadows
Stormwater Report

Author: Glenn Allen
Civil Engineer, BEng (Hons)
MIEAust 1140590
Building Services Provider No. CC7077
Engineer, unrestricted (civil, building services)

DATE	NATURE OF REVISION	REVISION NUMBER	PREPARED BY	APPROVED BY
31/03/2022	FINAL	0	Glenn Allen	Cameron Oakley

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HYDRAULIC MODELLING & ENGINEERING
44 PENQUITE ROAD, NEWSTEAD 7250 TAS
PHONE: 04132 08450
EMAIL: CAMERON.OAKLEY@H-DNA.COM.AU

CONTENTS

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1. STORMWATER OBJECTIVES

1.1 Scope of Document

This Stormwater Report is provided for the subdivision development at 27-99 Opossum Rd, Kings Meadows comprising a new kerbed and sealed access road and stormwater connection to the Kings Meadows Rivulet. The report has been prepared with reference to the City of Launceston RFI dated 7 January 2022, specifically Clause 9.6.3 of the Launceston Interim Planning Scheme 2015 (the Scheme).

Accordingly, this report covers management of stormwater rate of run-off and stormwater quality considerations. The Scheme refers to the State Policy for Water Quality Management 1997 for performance criteria for stormwater runoff and quality. This report will use the recommendations within the State Stormwater Strategy (SSS), with stormwater to be managed and treated at the source using best management design practices.

The design will apply the best practical measures within a limited available site area.

The report will:

- Compare the proposed engineered treatment measures against the unmitigated developed site condition to assess the effectiveness of runoff flow rate and pollutant reduction.

This report demonstrates the likely degree to which the proposed treatment measures and development layout will meet target pollutant and peak discharge reductions. The assessment will be based on the engineered treatment measures provided on site against the unmitigated development condition.

1.2 Reference Documents

- WSUD Engineering procedures for stormwater management in Tasmania, 2012
- Melbourne Water MUSIC Modelling Guidelines, 2016 and Sydney Metropolitan Catchment Management Authority 2015
- Subdivision proposal prepared by Woolcott Surveys, issue L191207 Sheet 2 Rev 3 dated 07/02/2022, and NTCADS lot servicing plans 332.31-SK02 Rev C and SK03 Rev A dated 23/03/2022.
- Australian Rainfall & Runoff 2019

1.3 Catchment Description

The pre-developed site is primarily grass with the Kings Meadows Rivulet passing along the northern boundary of the golf course, approx. 130m from the boundary of the proposed subdivision. The rivulet is vegetated within the channel but not beyond the top of bank into the lot. The subdivision site is approx. 14,700 sq.m, within the

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total approx. 23,000sq.m catchment at the proposed point of discharge, as shown below in Figure 1.

Figure 1: Existing Site & Area of Development

The Kings Meadows Rivulet is highly modified in the vicinity of the proposed discharge point, effectively a formal grassed/unlined channel receiving runoff from the surrounding urban & commercial development. It is noted that a Landcare project has been established along the rivulet, with evidence of planting and bank stabilisation further along.

Figure 2 is a view looking downstream from the north west corner of the site, opposite the proposed discharge point.

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Figure 2: Site Photo – Rivulet Bank

The proposed subdivision development comprises:

- 1,240sq.m of sealed & kerbed road, footpath and piped stormwater to the rivulet to City of Launceston standards, within a separate public road title of 1,844sq.m;
- 12,830sq.m of balance undisturbed site within the total catchment of 23,000sq.m.

The development will increase the proportion of impervious area associated with discharge to the rivulet, as it will collect runoff from the kerbed and sealed cul-de-sac. Discharge from the new impervious area will be piped to a new stormwater connection to the rivulet. A stormwater connection for the new lot will be provided on the new main at the lowest point on the boundary, for use in any future internal development of the lot. The public road will be provided with a drop in grated pit insert with 200 micron filter (EcoSol / Spelsack or similar) for gross pollutant removal.

There is an existing DN225 stormwater pipe at an internal low point in the proposed subdivision lot. This is to be retained as a local drainage point for the trapped low point at the rear of existing houses. No further discharge from the subdivided lot is directed to this point.

Lot servicing requirements are detailed on NTCADS drawing 332.32-SK02 Rev C and SK03 Rev A.

332.32-SK02 shows the proposed future layout of a DN600 flood mitigation line that may be incorporated into the subdivision, subject to CoL requirements.

332.32-SK03 shows the minimum stormwater servicing requirements for the new access road, lot connection and rivulet discharge.

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2. STORMWATER DISCHARGE

2.1 Stormwater Discharge Point

Clause E9.6.1 defines the performance criteria which shall be met when considering development of the site and its impact on the watercourse.

E9.6.1 Development in the vicinity of a watercourses and wetlands

Objective:	
To protect watercourses and wetlands from the effects of development and minimise the potential for water quality degradation.	
Acceptable Solutions	**Performance Criteria**
A1 No acceptable solutions.	**P1** Development must not unreasonably impact the water quality of watercourses or wetlands, having regard to: (a) the topography of the site; (b) the potential for erosion; (c) the potential for siltation and sedimentation; (d) the risk of flood; (e) the impact of the removal of vegetation on hydrology; (f) the natural values of the vegetation and the land; (g) the scale of the development; (h) the method of works, including vegetation removal, and the machinery used; (i) any measures to mitigate impacts; (j) any remediation measures proposed; (k) any soil and water management plan; and (l) the requirements of the Department of Primary Industries, Parks, Water and Environment *Wetlands and Waterways Works Manual*.

The proposed development meets the criteria as follows:

a) Topography: no change to the generally flat site layout, gradients of 2.5-5.0% are unchanged.

b) Erosion: a new concentrated discharge point will be engineered to best practice standards (ref the Melbourne Water extract at Figure 3).

c) Siltation: no disturbed surface will result from the final development, site sediment & erosion control will be implemented for construction. A gross pollutant trap is proposed for the side entry pit on the access road / turning head cul-de-sac.

d) Flood risk: the new subdivision site level is some 8.5m above the rivulet. The catchment upstream and above Opossum Rd comprises approx. 6.45 hectares of the Carr Villa Cemetary. The proposed CoL flood mitigation project incorporating aDN600 stormwater main through the site is assumed to mitigate overland flows from this catchment. No adjustments to present overland flow paths are proposed with the subdivision.

e) Vegetation removal: no vegetation within the watercourse of the banks is required to be removed.

f) Natural values: the site is zoned Recreation as part of the existing golf course, and is within a fully developed urban setting. No disturbance to vegetation within the rivulet or the rivulet itself is required.

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g) Development scale: the proposed subdivision lot is approx. 3.4% of the total approx. 42.7 hectare title area, and is in keeping with the immediate adjacent use.

h) Method of works: no vegetation is to be removed from the area excepting stripping of grass & topsoil under the road footprint.

i) Impact mitigation: site sediment & erosion control measures will be applied during the construction.

j) Remediation: not applicable.

k) A site-specific soil and water management plan will be prepared for construction.

l) Considered in the above and the design of the civil works.

Supporting information regarding the planning elements associated with the subdivision should be read from the Woolcott Surveys specific submission, this information is provided to generally respond to Clause E9.6.1.

Figure 3 shows the typical headwall and apron structure proposed for discharge into the Kings Meadows Rivulet, reducing the scour potential at the bank. Additional placed rock rip rap may be warranted in maintaining the condition of the rivulet channel. Detailed design will be undertaken based on site survey.

The requirement under Clause E9.6.1 for the development minimise water quality degradation is therefore satisfied.

Clause E9.6.2 covers development within a watercourse or wetland, and for the reasons outlined in response to Clause E9.6.1 is not applicable to this development.

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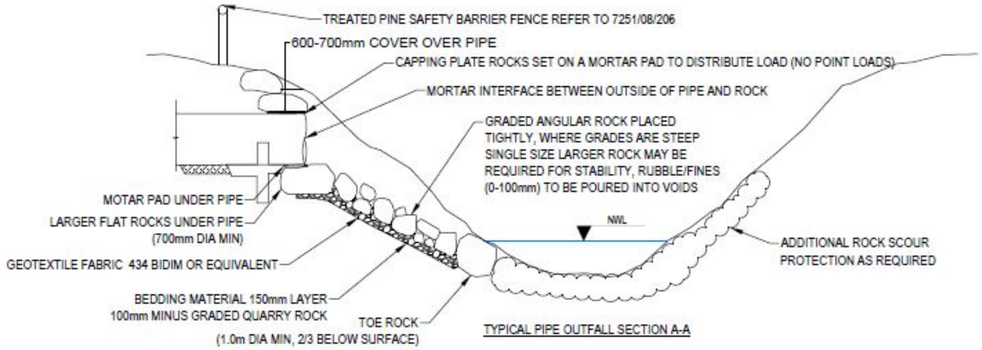
Figure 3: Proposed Rivulet Stormwater Connection (Typical)

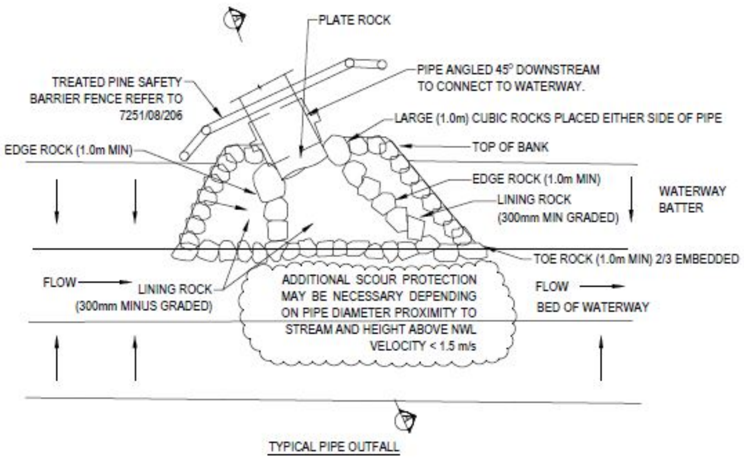
NOTE:

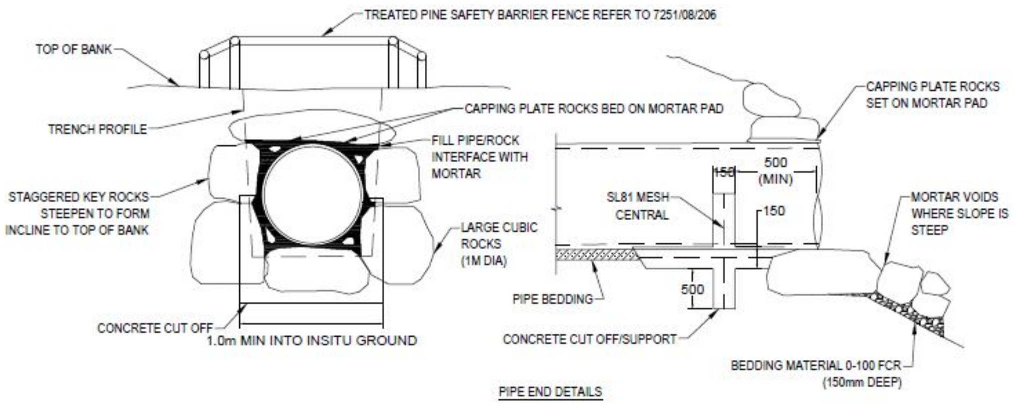
- PIPE OUTLET MUST NOT 'DAYLIGHT'. STOP PIPE AT MINIMUM COVER OF 600-700MM. OUTFALL MAY BE INSET AS SHOWN IN TOP DRAWING
- CUT OFF WALLS. BOTTOM MINIMUM 500MM INTO IN SITU. SIDE MINIMUM 1M INTO IN SITU
- FOR LARGER OUTFALL PIPES CONSTRUCT CONCRETE END WALLS (PARTICULARLY OUTFALLS LARGER THAN 1200MM DIA).
- EITHER GRADED ROCK WORK OR PLACED ROCK WORK DEPENDING ON THE GRADE AND WHETHER BELOW OR ABOVE NWL
- ENERGY DISSIPATION CAN BE ENHANCED WITH SHALLOW PLANTED INLET POOLS/SUMPS
- 1.5 M/SEC MAX. OUTLET VELOCITY ;
- OUTLET PIPE TO BE SET BACK INTO THE FINISHED BATTER SLOPE, POINTING A MAX. OF 45 DEGREES DOWNSTREAM;
- ROCKS ABUTTING THE PIPE TO HAVE A MORTAR PAD BETWEEN THE ROCK AND THE OUTSIDE EDGE OF THE PIPE (NO POINT LOADINGS);
- ROCKWORK PROTECTION REQUIRED FOR THE BED AND BANKS, FROM THE END OF PIPE TO THE LOW FLOW WATER LEVEL. ROCK PROTECTION REQUIRED FOR THE FULL EROSION PROJECTION OF THE OPPOSITE BANK AND BED AS REQUIRED FOR THE WATER FLOW PROFILE WHEN THE OUTLET IS FLOWING FULL ;
- ROCKS WITHIN THE BASE TO BE PLACED ON A FCR BEDDING TO ENSURE THE STORMWATER DISCHARGE IS FLOWING OVER AND AROUND THE ROCKS DOWN INTO THE CREEK, AND NOT UNDERNEATH. THE REMAINING EXPOSED DIMENSION OF THE ROCKWORK IS TO BE A MINIMUM OF 150mm;
- DISTURBED AREAS OF EXISTING BANK RESULTING FROM THESE WORKS ARE TO BE STABILISED WITH REVEGETATION.
- THE OUTLET MUST BE INTEGRATED INTO THE BANK AND SURROUNDING LANDSCAPE TO MAXIMISE AESTHETICS AND MINIMISE IMPACTS
- TOE AND EDGE ROCKS AE TO ADEQUATELY KEYED INTO THE BED OF THE CREEK.
- ALL VOIDS SHALL BE FILLED WITH A 0-100mm FCR MIX.
- APPROPRIATE SILT/DEBRIS CONTROL MEASURES MUST BE INSTALLED.

PROCEDURE

- EXCAVATE/BOX OUT TO ENABLE TOE AND MATERIAL.
- INFILL THE CHUTE WITH A 0-100mm FCR MIX. THE CONTRACTOR SHALL USE METHODS FOR HANDLING AND PLACEMENT OF ROCK THAT WILL AVOID SEGREGATION OF ROCK SIZE FRACTIONS.
- ROCK SHALL BE CAREFULLY PLACED INTO POSITION. ROCK SHALL NOT BE DUMPED DIRECTLY.
- IT IS IMPERATIVE THAT ROCK USED TO FORM THE ROCK CHUTE IS WELL GRADED WITH MINIMAL VOIDS TO PRODUCE A BLANKET OF INTERLOCKING ROCK.







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2.2 Stormwater Quantity

The CoL Further Information Request dated 07/01/2022 notes that a response to E9.6.3 P1 is required.

Clause E9.6.3 defines the performance criteria which shall be met when considering stormwater discharge from the site and its impact on the watercourse.

E9.6.3 Discharges to watercourses and wetlands

Objective:	
To manage discharges to watercourses and wetlands so as not unreasonably impact the water quality.	
Acceptable Solutions	**Performance Criteria**
A1 All stormwater discharge must be: (a) connected to the public stormwater system; or (b) diverted to an on-site system that contains stormwater within the site.	**P1** Stormwater discharges must not unreasonably impact on the water quality of watercourses or wetlands, having regard to: (a) the characteristics, volume and flow rates of the discharge; (b) the characteristics of the receiving waters; (c) the potential for erosion; (d) the potential for siltation and sedimentation; (e) the impact on hydrology; (f) any measures to mitigate impacts; and (g) any soil and water management plan.

For Performance Criteria P1(a):

The subdivision increases the impervious fraction of the site as a result of the new public road cul-de-sac, hence the peak discharge will increase. The increase in impervious area is small in comparison with the catchment, but the piped discharge of the impervious area means all shorter duration events will see an increase.

Analysis of the subdivision site and total catchment to the point of discharge at the rivulet has been done using Australian Rainfall & Runoff 2019 methodologies. Pre-developed site runoff parameters are taken from the ARR data hub for the Tamar River Region (initial loss 18mm/hr, continuing loss 5mm/hr, reduced to 8mm/hr and 3.5mm/hr respectively for the urban pervious condition). Design rainfall values are obtained from the Bureau of Meteorology.

For the range of storm durations it can be seen that the short duration events for the developed AEP 5% and AEP 1% bursts have a numerical increase of approx 20 litres/sec, redcuing to an increse of of approx 5-10% for the critical duration peak events. These reults are plotted as burst ensemble charts and tabulated below.

The rivulet capacity to manage the increased run off is approximately equal to an increase in water level in the vicinity of the discharge connection of 10-20mm (50-100 litres/sec in the flat trapezoidal channel, see Figure 2).

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Figure 4: AEP 5% Pre-Developed Discharge

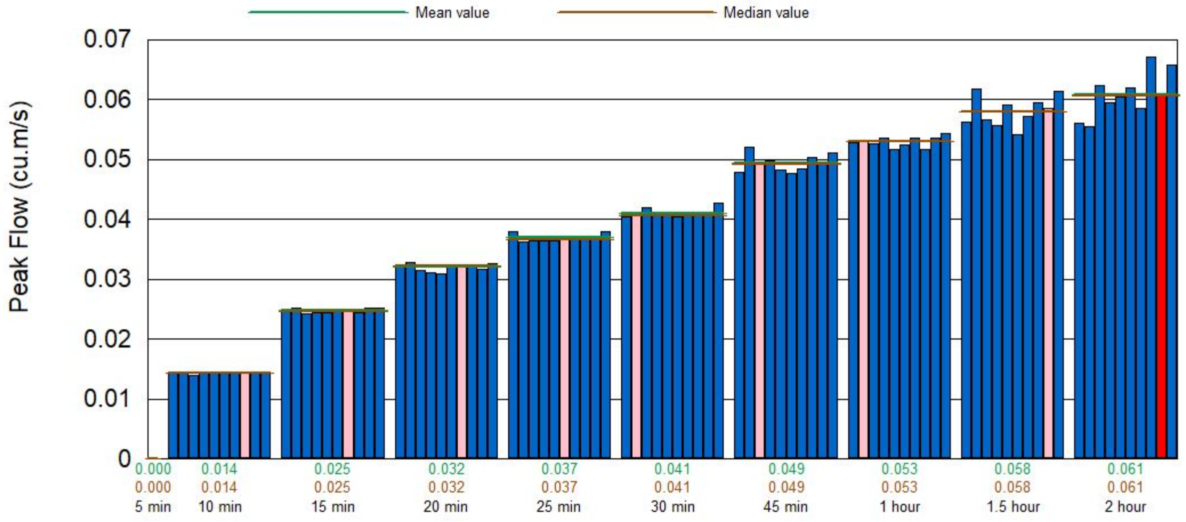

Figure 5: AEP 5% Post-Developed Discharge

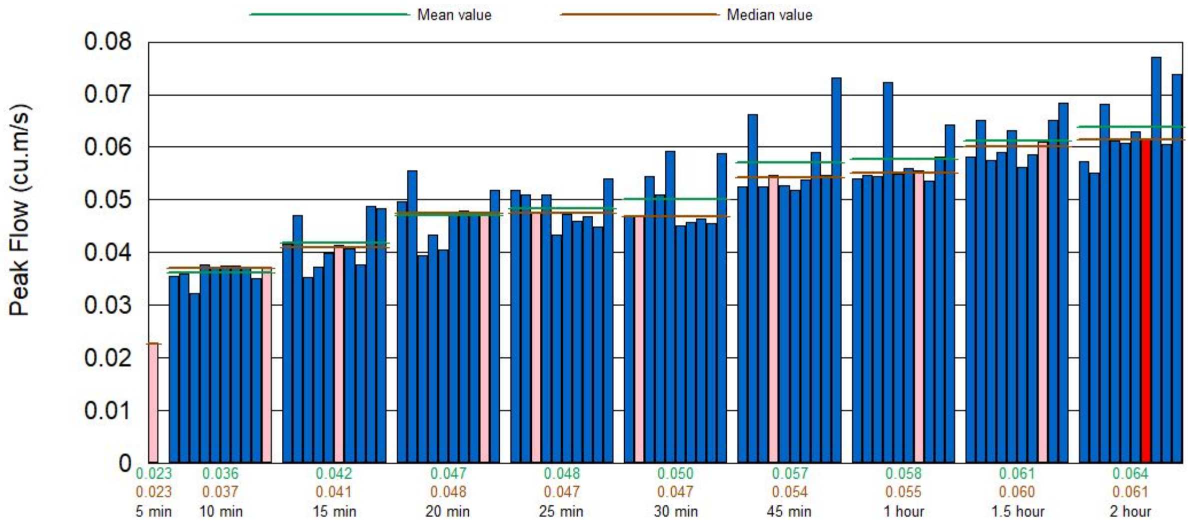

Figure 6: AEP 1% Pre-Developed Discharge

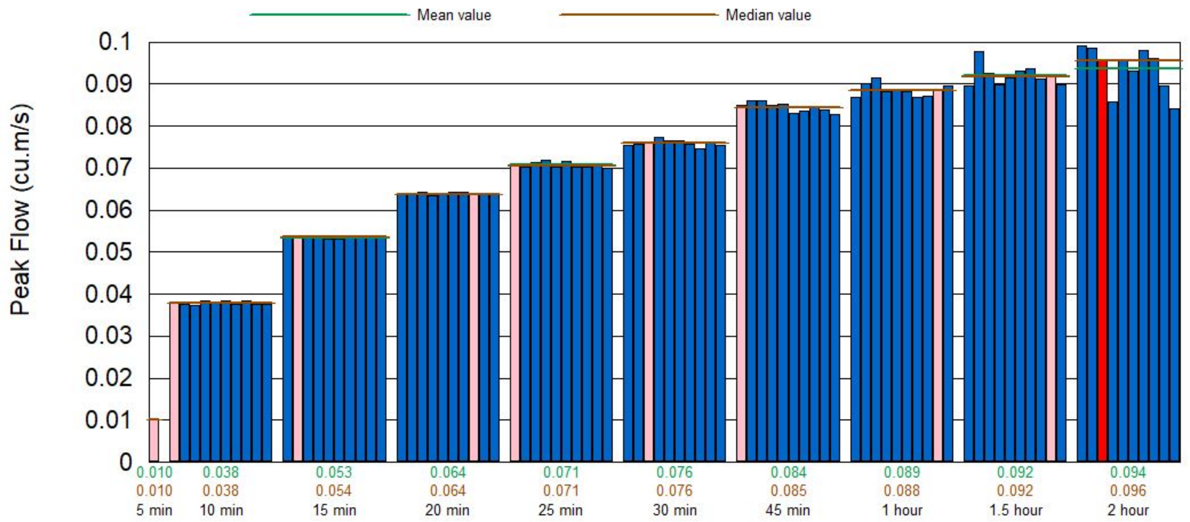

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Figure 7: AEP 1% Post-Developed Discharge

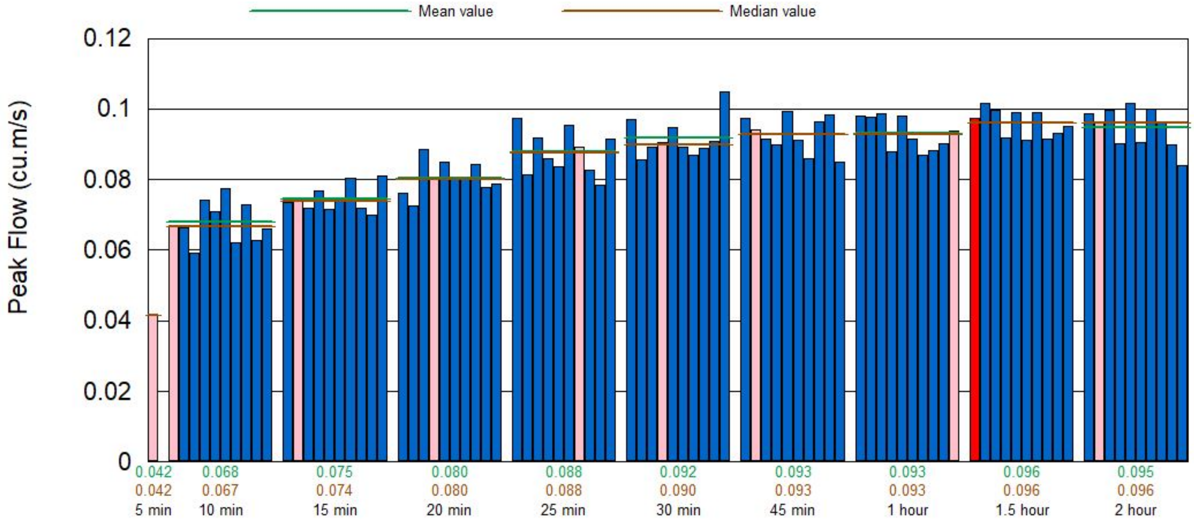

Table 1: Summary of Pre- and Post-Developed Discharges

	5% AEP Discharge			1% AEP Discharge		
T (min)	Pre-dev	Post-dev	% increase	Pre-dev	Post-dev	% increase
5	0	23		10	42	320%
10	14	36	157%	38	68	79%
15	25	42	68%	53	75	42%
20	32	47	47%	64	80	25%
25	37	48	30%	71	88	24%
30	41	50	22%	76	92	21%
45	49	57	16%	84	93	11%
60	53	58	9%	89	93	4%
90	58	61	5%	92	96	4%
120	61	64	5%	94	95	1%

No detenton is proposed for the discharge of runoff from the cu-de-sac, as the overall increases are a small proportion of catchment presently passing to the rivulet.

For Performance Criteria P1(b):

Reference is made the the adjacent developed catchments which discharge directly into the rivulet. The immediate impervious areas consist of large sealed carpark areas surrounding fully developed commercial premises associated with the Kings Meadows shopping precinct. The current rivulet may be characterised as highly modified and impacted, notwithstanding the Landcare project which is establishing stream vegetation to improve water quality.

The provision of a gross pollutant trap insert for the new cul-de-sac side entry pit will reduce the impact of this development on the rivulet.

Any future development of the subdivided site will be responsible for meeting the requirements of the planning scheme with regard to these clauses.

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Figure 8: Adjacent Catchment Rivulet Discharge

The remaining criteria noted in Clause E9.6.3 P1 are addressed previously in Section 2.1.

The requirement under Clause E9.6.3 for the development to not unreasonably impact water quality is therefore satisfied.

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2.3 Stormwater Quality

Target pollutant reductions are noted in the SSS, reproduced below:

Figure 9: Acceptable Stormwater Quality and Quantity Targets

Operational stage

New developments should be designed to minimise impacts on stormwater quality and, where necessary, downstream flooding or flow regimes. Stormwater should be managed and treated at source using best management design practices (eg Water Sensitive Urban Design) to achieve the following stormwater management targets:

- 80 per cent reduction in the annual average load of total suspended solids
- 45 per cent reduction in the annual average load of total phosphorus
- 45 per cent reduction in the annual average load of total nitrogen

Analysis using MUSIC version 6.3 will compare the treatment train effectiveness of the proposed development, considering the new sealed surface and the impact on discharge rate and quality.

2.4 Music Modelling

The MUSIC Model Version 6.3 was used to determine the pollutant load resulting from the development and the treatment effectiveness of the elements. The treatment train consists of:

- A grated pit gross pollutant trap with 200um liner (SPEL Stormsack, Ocean Guard or similar) to intercept runoff from the cul-de-sac.

2.5 Meteorological Data

The model was run using daily Bureau of Meteorology 6 minute pluviograph data and monthly areal PET values from the Ti Tree Bend Launceston 91237 station. The 20 year data period from 1990– 2010 was used for continuous modelling. The stations closer to the site did not have a suitable rainfall record.

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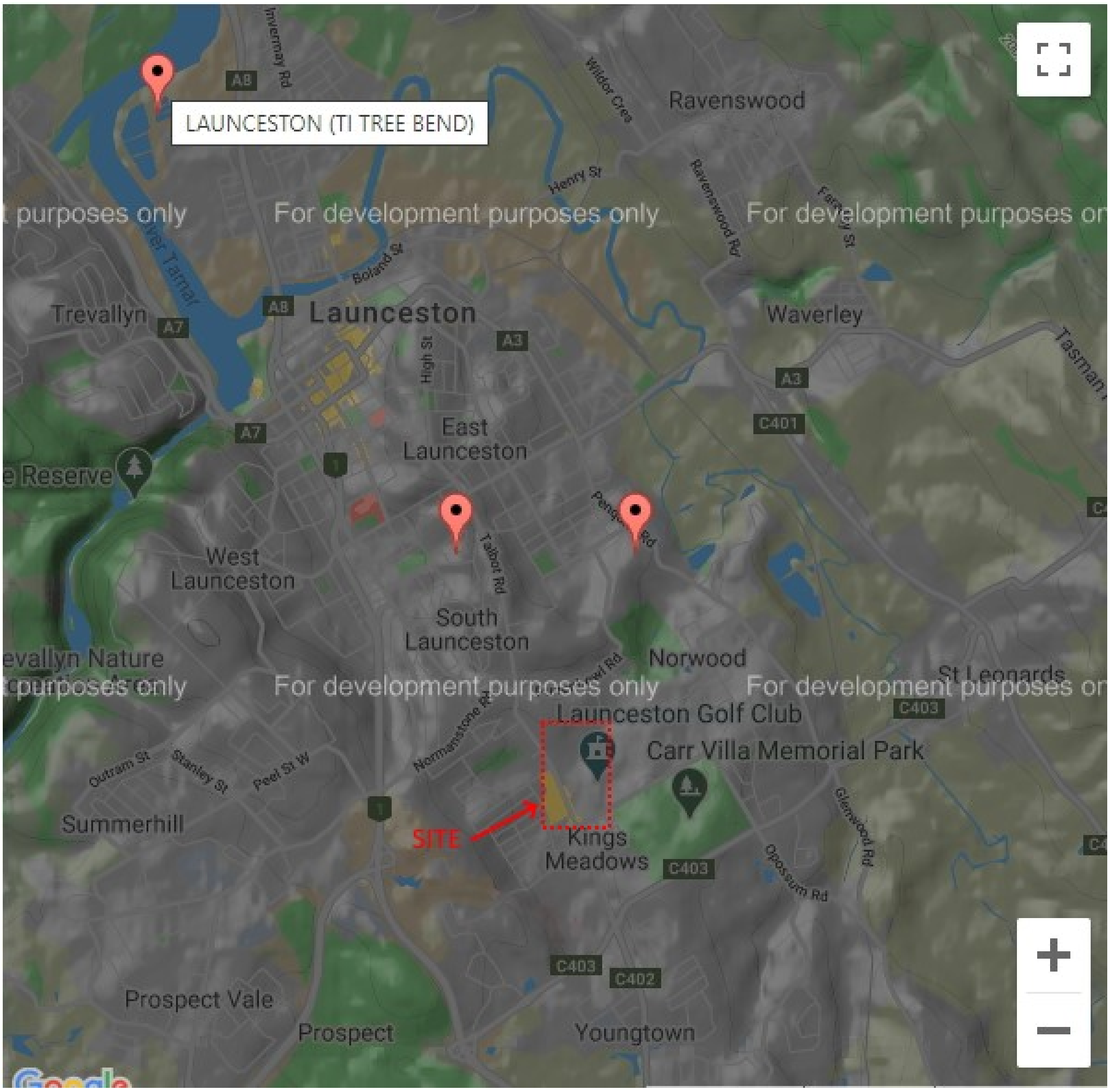
Figure 10: Meteorological Station



2.6 Pollutant Input Parameters

Pollution generation node parameters were modelled in accordance with the Melbourne Water Guidelines 2016. The stochastic generation option has been used.

The urban pollutant generation parameters below for Roof, Road & Paved and Urban Areas (Mixed) have been used.

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Table 2: Source Nodes: Base and Storm Flow

Pollutant	Surface Type	Storm Flow		Base Flow	
		Mean (log mg/L)	SD (log mg/L)	Mean (log mg/L)	SD (log mg/L)
SS	Roof	1.301	0.333	n/a*	n/a
	Road and paved areas	2.431	0.333	n/a	n/a
	Urban area not covered by roof, road or paved areas	1.900	0.333	0.96	0.401
TP	Roof	-0.886	0.242	n/a	n/a
	Road and paved areas	-0.301	0.242	n/a	n/a
	Urban area not covered by roof, road or paved areas	-0.700	0.242	-0.731	0.360
TN	Roof	0.301	0.205	n/a	n/a
	Road and paved areas	0.342	0.205	n/a	n/a
	Urban area not covered by roof, road or paved areas	0.243	0.182	0.455	0.363

Table 2 - Pollutant concentration data for source nodes. * n/a indicates that base flow does not occur from these surfaces. (Source: Fletcher, 2007. Background Study for the revision of Melbourne Water's MUSIC Input Parameter Guidelines. Not published)

2.7 Pervious Areas

Pre- and post-developed pervious surface parameters have been taken as the clay loam equivalent (Table 5.5 of the NSW Music Modelling Guidelines 2015 for soil storage and field capacity), based on a conservative approach for typically poorly draining soils in Tasmania, with a root zone of 0.5m.

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Table 5-5 Pervious Area Rainfall-Runoff Parameters* (Macleod, 2008)

Soil Texture	SSC (mm)	FC (mm)	Inf "a" (mm/d)	Inf "b"	DRR (%)	DBR (%)	DDSR (%)
Sand	175	74	360	0.5	100%	50%	0%
Loamy sand	139	69	360	0.5	100%	50%	0%
Clayey sand	107	75	250	1.3	60%	45%	0%
Sandy loam	98	70	250	1.3	60%	45%	0%
Loam	97	79	250	1.3	60%	45%	0%
Silty clay loam	100	87	250	1.3	60%	45%	0%
Sandy clay loam	108	73	250	1.3	60%	45%	0%
Clay loam	119	99	180	3.0	25%	25%	0%
Clay loam	133	89	180	3.0	25%	25%	0%
Silty clay loam	88	70	180	3.0	25%	25%	0%
Sandy clay	142	94	180	3.0	25%	25%	0%
Silty clay	54	51	180	3.0	25%	25%	0%
Light clay	98	73	135	4.0	10%	10%	0%
Light-medium	90	67	135	4.0	10%	10%	0%
Medium clay	94	70	135	4.0	10%	10%	0%
Medium-heavy	94	70	135	4.0	10%	10%	0%
Heavy clays	90	58	135	4.0	10%	10%	0%

2.8 Source and Treatment Node Modelling

Mean annual pollutant loads for the proposed development have been determined by running the model over the nominated timestep and rainfall interval period. The pollutant removal parameters adopted for the side entry pit are values provided by SPEL, and reflect accepted values as used by many Councils on the mainland. Minimal nutrient removal is applied, and is associated with recognised reductions in >200 micron particles.

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Figure 11: MUSIC Model Setup – Post-development

The analysis results in the following mean average annual pollutant reduction for the proposed treatment train:

Figure 12: Post-development Treatment Train Effectiveness

	Sources	Residual Load	% Reduction
Flow (ML/yr)	2.65	2.65	0
Total Suspended Solids (kg/yr)	330	138	58.3
Total Phosphorus (kg/yr)	0.88	0.768	12.8
Total Nitrogen (kg/yr)	8.12	7.79	4.1
Gross Pollutants (kg/yr)	23.8	0.008	100

The reduction in nutrients is short of the recommended targets as expected through the pit GPT. Application of tertiary treatment (biofilter or proprietary filters) is not considered appropriate for a single roadside discharge point, as it is more efficiently and effectively applied as an end of line installation associated with the rivulet itself. Any future development within the subdivided lot must provide its own treatment for discharge.

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Traffic Impact Assessment (TIA)

Launceston Golf Club
27-99 Opossum Road, Kings Meadows

Proposed 3-lot Subdivision Development

Dec 2021

Revision B

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Status Rev	Date	Author	Revision Details
A	3/122021	AH	TIA Draft for Comment
B	12/122021	AH	TIA Draft – Revised layout & deails

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1. Introduction

This report is provided as a Traffic Impact Assessment (TIA) relating to a proposed 3 lot subdivision development on land owned by and adjacent to the main entry of the Launceston Golf Club on Opossum Road, Kings Meadows.

The proposal is to utilize the existing golf club access point location on Opossum Road, which will be upgraded to create a new council road including cul-de-sac turning area and providing access to the Golf Clubrooms site via existing driveway entry and separately to the new lot. The new lot has future residential subdivision potential, and traffic generation and review has been completed on potential capacity for such development.

The general site location is as per Fig 1.1, and the proposed new arrangement is shown in APPENDIX A – PROPOSED SITE LAYOUT PLAN

1.1 Background & Project Scope

The creation of a new road and cul-de-sac may generate additional traffic, particularly if future residential development occurs on the subject site (new lot),which suggests that a TIA would be required to be undertaken to assess possible traffic impacts and identify any issues arising, and provide comment with reference to local Planning Scheme requirements.

This report addresses traffic related aspects where applicable and attempts to identify and comment on any potential impacts affecting, or arising from, the development and from possible future residential development. The author has been briefed of various future development opportunities and been provided with concept plans for possible future residential development for the purpose of preparing this assessment, however, it is noted that future residential development is not a part of this application which is for a 3 lot subdivision only at this time.

This report is prepared by Andrew Howell, a senior engineer with 20 years experience in development and municipal engineering, traffic and transport systems, and civil design. Andrew holds a Bachelor of Engineering (Honours) degree and a Master of Engineering Science with specializations in transport systems and management.

1.2 Objectives

The key objectives of this report are:

- Review of the existing road physical characteristics and arrangements in the vicinity of the site.
- Review of existing traffic conditions.
- Describe the development with regards to arrangements for access, including any implications for traffic efficiency, safety, and service.

1.3 Subject Site Location

The subject site of the new lot considered in this TIA is located at the western end of the Launceston Golf course, a site noted as 27-99 OPOSSUM ROAD, which is a link road between Kings Meadows and the Punchbowl/Norwood area.

Opossum Road carries around 3200 VPD on City of Launceston (CoL) council estimation, which is mostly through traffic to the EAST of the current access, with the Golf Club to the North and the Carr Villa Cemetery to the South meaning there are few turning traffic movements in this zone of golf club frontage. Residential development and several side streets off Opossum Road are found to the WEST of the current access to the golf club (Bavaria, Kanara and McHugh Streets), back to the main local collector HOBART ROAD.

The subject site itself is part of the current Launceston Golf Course, which abuts on external sides residential development in several areas, including the adjacent boundaries to the proposed new lot to the West and South. This area is similar in nature to much of the Norwood and Kings Meadows residential areas nearby in terms of lot size and density. Future residential development is likely to be similar.

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Existing access to the majority of the subject site is off the current Opossum Road main entry to the golf course proper. An upgraded access to any residential development for the subject site would be required, and the proposal to upgrade the golf course entry to a Council urban road standard with suitable turning facilities appears a logical and appropriate site access arrangement for such future development.

Fig 1.1 – Locality Plan

Fig 1.2 – Site Layout, Subdivision plan (extracted)

1.4 Information Sources & References

The author has been provided with relevant information from the proponent, including preliminary plans being prepared for development application. These details provide an outline of the proposed

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works and indicate that generally the development proposes limited change to the existing Opossum Road itself other than consideration of an upgraded junction arrangement at the current golf club access point.

The author has reviewed publicly available information including www.THELIST.tas.gov.au and other online mapping tools to ascertain any obvious issues relating to the development and has undertaken several inspections (at different periods of the day) to review site specifics and existing traffic arrangements.

Traffic data from the City of Launceston (CoL) has provided indicative vehicle movements, with notes provided in Section 5.

The report has utilized the DIER (now Department of State Growth / DSG) document "Traffic Impact Assessment (TIA) Guidelines" in the preparation of this report.

Further referenced documents include:

- DSG Tasmanian State Road Hierarchy
- LGAT Local Government Road Hierarchy 2015
- RTA Guide to Traffic Generating Developments
- Launceston Interim Planning Scheme 2015
- Specifically, E4 Road and Rail Assets Code & E6 Parking Code
- AUSTROADS Publications (various)

1.5 Planning Scheme Aspects (CoL)

The Planning scheme applicable is the Launceston Interim Planning Scheme 2015.
The current zoning for the land and surrounding area is advised as **18.0 Recreation**.
It is understood a rezoning is being requested for the subject site, to change the possible residential area of land (new lot proposed) to **10.0 General Residential**, similar to other adjoining land abutting the golf course site to the West and South, including the subject area
The Road and Rail Assets Code (E4) from the planning scheme applies.

2. Existing Conditions

2.1 Transport Network

Opossum Road is a City of Launceston (CoL) street, and likely carries mainly residential traffic, being part of links between higher-priority Hobart Road and Norwood Avenue as the nearby main collector roads for the Norwood area and with link back to King Meadows precinct. The nearby and parallel Quarantine Road to the South is a noted heavy vehicle route providing similar directional service, and on this basis Opossum Road probably carries relatively few heavy vehicles by comparison.

Based on current function the road is likely considered a 2.0 COLLECTOR or 3.0 LINK Road under the Local Government Road Hierarchy 2015. No changes in function or capacity would be expected by future residential development accessing the road at this point.

Council estimates 3200 VPD are using this road.

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The speed limit for Opossum Road is signposted as 60km/hr, and it could reasonably be anticipated that 85th percentile vehicle speeds are probably similar based on observation.

2.2 Road Conditions & Road Safety Performance

Opossum Road appears to operate satisfactorily from inspection, with three local side streets to the West of current LGC access providing some ability to review how road junctions in this link operate, along with the existing golf course entry providing insight into current operations for the golf club traffic.

It is suggested on review of current arrangements on Opossum Road that an upgrade of the access road to make the golf course entry a new Council junction and cul-de-sac could likely operate satisfactorily, based on the similar arrangement for streets like McHugh Street, which has approx. 22 residences and the busy DHHS public health facility operating from this street.

On this basis and following site inspections, a new cul-de-sac to service a possible new residential development appears generally reasonable, considering these similar cul-de-sacs in the nearby zone and the character of surrounding residential area generally. Suitable road layout and appropriate sight distances for a new junction appear able to be maintained based on the current proposed layout (with some geometry and minimum width suggestions noted below to consider).

A new junction for the access to the golf club, upgraded at the existing location, may require consideration of specific turn treatment based on the 3200 VPD and turning vehicles likely anticipated. Further discussion follows.

A new council road carriageway and cul-de-sac, would need to be constructed to the LGAT-IPWEA standards for residential streets, which is believed can achieve the requirements from *TSD-R06-v3 TABLE 1,* which notes a cul-de-sac serving greater than 15 lots and up to 150m approx. length should have minimum road width of 8.9m, minimum reservation width of 18m, and footpath one side. *REFER APPENDIX C – LGAT IPWEA MSD KEY INFORMATION.*

Based on the relatively modest traffic numbers likely generated by a possible new residential development (approx. 161 VPD, at 7 VPD per dwelling based on some typical lot sizes available for the subject site) this volume of traffic would have likely little impact on nearby road network and is thus not considered material in the context of wider network volumes. This assessment is based on author's experience with vehicle movements in the area, and consideration of likely peak hour volumes expected from a new possible residential development at densities which might be proposed, combined with existing golf club traffic, noting golf club traffic does not typically match to normal peak hour traffic times.

Existing site photos:

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Fig 2.2a – Existing Golf Club Access from Opossum Road – Looking SOUTH from inside subject site. Gates to be removed, and access widened, likely to the EAST

Fig 2.2b – Existing sight distance from Access on Opossum Road – Looking WEST

Fig 2.2b – Existing sight distance from Access on Opossum Road – Looking EAST

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As the proposed new access junction for the site is already in general operation (as the golf club entry) there appears limited issue with sight distance existing – noting that based on final location/alignment of the junction lanes with respect to vertical grades to the WEST the new junction SISD will need to be confirmed by design verification, to ensure SISD is maintained.

There is limited horizontal curvature for the existing Opossum Road alignment, and safe intersection sight distance is not considered a major issue for concern, being currently in excess of 170m in each direction for traffic at the golf club entrance looking to East or West

It is noted that due to the vertical curvature there is potential for some obscuring of main road traffic approaching from either direction to see oncoming vehicles, mainly for a right turning vehicle to be seen or see an oncoming vehicle travelling from the West to East, and vice-versa. This is due to the crest at the LGC entry, and the dip in the road to the West combining. However, a site-specific assessment notes that a minimum of 105m of sight distance exists at all stages through the travel zones in each direction, and thus SISD exists in accordance with requirements. Further discussion around turn treatments, and suggestion of BAR for West-bound vehicles turning into the LGC with an upgrade to this junction, would further enhance safety at this location also, but it not strictly required.

The new (and existing) junction can thus likely achieve satisfactory sight distance with respect to requirements from Planning Scheme Code E4 for SISD, exceeding the minimum 105m SISD requirements of the code for vehicle speeds of 60 km/hr in speed zones up to and including 60km/hr (Table E4.6.4).

Based on the relatively modest additional traffic numbers likely generated by a possible new residential development, capacity of the junction is not considered a significant issue. Turn treatment options are considered further below to provide additional safety and efficiency options.

3. Proposed Development

3.1 Site Development

The development proposes a 3-lot subdivision. Of this, one lot will be suitable for future residential development, one lot for the road (cul-de-sac to service to two lots), and the balance lot will be the existing golf course.

The new road lot (cul-de-sac) from Opossum Road into the site to service access for the existing Golf Club facility, and the new residential lot, is proposed, with a cul-de-sac turning head and would require a new upgraded junction with Opossum Road.

3.2 Traffic Generation & Distribution

It is noted that the development as proposed (3-lot subdivision) is likely to see a small overall increase in vehicle movements to the area, however the capacity for future development for residential dwellings could see approximately 161 VPD likely generated from a future dwelling development based on assumed lot yields likely suggested from planning requirements (such future development not part of this application). The *RTA Guide to Traffic Generating Developments* notes *weekday peak hour vehicle trips = 0.85 per dwelling,* or 20 VPD for such new dwellings. This may be conservative.

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Current arrangements and traffic volumes at the existing golf club entry appear to operate satisfactorily with no specific issues identified through crash history or anecdotal information provided by the golf club operators. Currently there appears spaces for up to around 90 vehicles at the golf club itself in formal parking, however based on the nature of play, group functions and club services, the spread of arrivals over longer periods, and the duration of a typical golf club stay means that actual peak hour rates for the existing site itself are probably quite modest – assumed around 20-25 vehicles per hour typically at peak, and 160 VPD. *Note peak hour for the club may not typically coincide with broader network peak hour being a recreational facility.*

Distribution for the site generally is likely to see vehicle movements entering and exiting the site either from the Norwood Avenue end to the EAST, or from the Kings Meadows end from the WEST. Based on a suggested split of vehicles considering the nearby centre of Kings Meadows being locally convenient with various services, it may be that the split could be considered to be 55% from the WEST and 45% coming from Norwood Avenue. Exiting traffic could be considered similarly perhaps, although exiting traffic may prefer left turn option, and flows may be more balanced in this regard.

The Golf club site has historically noted peak hour flows to site that do not often correlate to general peak hour traffic on council roads, due to the nature and timing of visitation, as a recreational destination.

As noted, the relatively modest number of additional vehicles using the site, especially on peak hour basis, means that off-site impacts are not considered further by this report.

4. Traffic Impacts

4.1 Access & Road Asset Construction

Based on site inspection, it is likely that the new road and junction construction for the proposal can be managed through the Council engineering design process to meet the requirements of the IPWEA/LGAT and AUSTROADS standards. Existing site conditions including levels, drainage, minor earthworks, appropriate sight distances, etc. all appear to be generally feasible for such design to occur. Engineering design approval by CoL will be required for road and access designs as developed.

It is noted that potential for turn treatment at the site should be considered, based on possible future peak hour traffic volumes from the site and on Opossum Road (Main Road flow of 3200 VPD at current figures, assumed peak @10% = 320 VPH. 10 Year growth @1.5% might suggest 365 VPH and 3660 VPD)

Turning traffic for peak hour flows for the subdivision development at around 20 VPD at future development levels, plus some contribution from the existing golf club (not necessarily at recreational facility peak hour), say 15 VPH = 35 VPH, thus with Q_R = 16 VPH and Q_L = 19 VPH for QM of 365 VPH (10 yr projection), this provides some consideration of turn treatment requirement for the upgraded junction.

On this basis, with reference to Fig 4.9 below, it is suggested that turn treatment could be considered to cater for future development potential, with a suggested option for this specific site being provision for BAR road widening to accommodate right turn vehicles approaching from the EAST. The assessment notes some conservatism and that long term traffic projections for increase may or may

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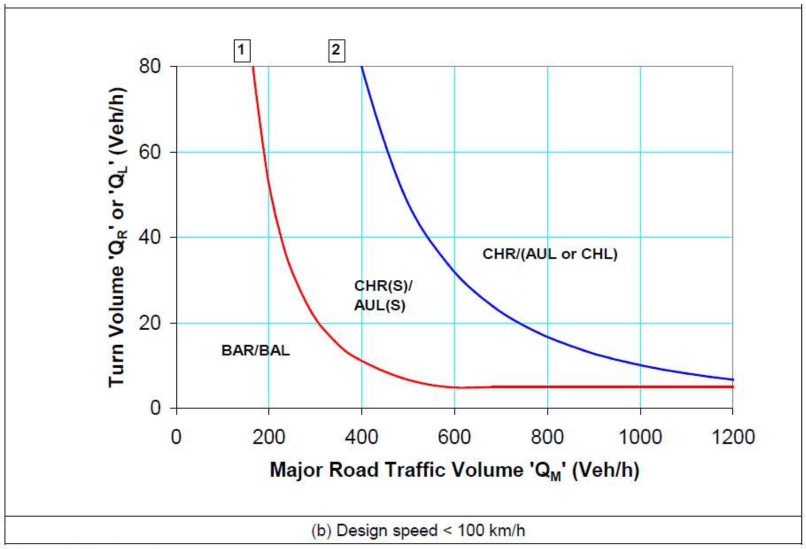
not be realized but this treatment enhances safety for right turning vehicles including under current conditions.



Source: Arndt and Troutbeck (2006).

Figure 4.9: Warrants for turn treatments on the major road at unsignalised intersections

The provision allowing road widening for an upgraded junction to provide BAL or BAR options does not preclude future options for example CHR(s) solution etc. but based on current traffic numbers and existing successful road junctions for local streets similarly arranged with no turn treatments in place, CHR treatments would seem unwarranted at this time

The turning vehicle numbers for this site in a low-speed environment (60km/hr) could warrant protection for propping right turning vehicles entering the site (hence BAR) despite relatively low turning vehicle numbers, to allow safe crossing manoeuvres due to the higher main flow figures.

However, there is consideration of ample sight distance for main flow vehicles from the WEST following a left turning vehicle entering the site, to safely identify such left turning vehicles in adequate time to brake with limited impact on efficiency, and on this basis a BAL is not necessarily considered warranted at this time on the low turning vehicle numbers predicted at peak times.

New Council Cul-de-Sac:

The proposal to construct a short cul-de-sac to enter the site appears logical and appropriate to cater for potential future development opportunities. The layout as proposed, subject to final council engineering design approval, appears able to accommodate a suitable turning facility at the termination to allow turning traffic and provide separation to both the Golf Club access driveway, and the new subdivision development entry. Some widening to the access junction is likely required, which would likely need to occur towards the EAST, and this appears able to be achieved with some tree/fence removal.

Two items are noted for consideration/inclusion on this proposal to meet relevant standards:

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(1) The turning head, upgraded junction and general road construction must be to LGAT-IPWEA construction standards – refer *APPENDIX C.* Minimum turning radius of 18m appears possible for the location shown.

(2) The existing layout arrangement as detailed shows a narrowing of the proposed access road reserve near to the rear corner of 25 Opossum Road. Whilst a minimum 15m road reserve width could possibly be practically workable (considering service locations carefully, TBC), the IPWEA-LGAT standards (APPENDIX C) require minimum road reservation width of 18m for a cul-de-sac with more than 15 equivalent tenements served (possible future dwelling/tenements of 20-25 based on minimum lot size appears possible on the subject site). Informal discussions with Council suggest this would be the minimum width required for a road reserve on this location.

4.2 Surrounding Road Network Impacts

Whilst assessment of additional road network parameters beyond the new access arrangements are outside the formal remit of this report, it is believed that the relatively modest additional traffic volumes attributable to the new development in the scheme of the surrounding network capacity, would mean off-site impacts arising from this development should not materially affect the wider road network.

CODE E6 REQUIREMENT E6.5.1 COMPLIES WITH A1

Significant parking exists at the golf club site for the club facilities, with no changes proposed or considered required for the existing club arrangements.

4.3 Sight Distances

Clause E4.7.4 of the Planning Scheme notes that sight distance for Acceptable Solution A1 must comply with Safe Intersection Sight Distance (SISD) from table E4.6.4. One new junction (upgraded) is being created with Opossum Road, with a speed limit of 60km/hr (60km/hr or less from E4.7.4) and an assumed vehicle speed of 60km/hr this SISD is 105 metres.

This distance is able to be achieved based on the likely arrangement as proposed, with in excess of 170m of sight distance currently existing at the access looking to the West and also the East, and for through traffic sight distance for turning and following traffic, a minimum 105m sight distance exists throughout. On this basis, ACCEPTABLE SOLUTION A1 is met.

Based on above analysis, E4.6.4 is met by A1.

4.5 Road Safety & Traffic Service

Due to the sight distances with regard to Planning Scheme Acceptable Solution A1 being met, and new accesses meeting IPWEA/LGAT and AUSTROADS Standards through design and construction, road safety appears to not be compromised by the development works proposed. A final check should be made on sight distance as part of design works for the new junctions, to ensure that no level changes are made to impact on sight distance through design or construction phase.

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Traffic service for the proposed development appears adequately provided with the existing infrastructure (capacity, turning gaps, etc.), based on the proposed and current traffic volumes suggested for the site and on observation of existing conditions, for both existing and new development traffic (refer Sect 2.2). The creation (formalization) of a BAR turning treatment for westbound turning traffic into the site will further assist to manage turning movements efficiently and improve safety.

4.6 Pedestrian and Cyclist impacts

Currently there is a dedicated pedestrian footpath on the Northern side of Opossum Road. A footpath should be maintained with pram ramp crossings of new kerb proposed at the new junction with the site, as per LGAT-IPWEA standards, as part of the new development works.

No additional footpath or cycling infrastructure changes to existing arrangements are proposed as part of this development; however, provision is noted for potential future pedestrian linkages to the golf club land adjacent to the site, and into the sites from Opossum Road, adding to the opportunity for pedestrian traffic. This upgrade to site access appears appropriate.

Existing cyclist access appears to be informal only in the area (no dedicated infrastructure). No specific impacts or changes are identified.

4.7 Public Transport Provision

Taxis can service the site, and services for buses appear to service the general area. No change to any existing arrangements is proposed or considered warranted.

4.8 Summary of Assessment against Planning Scheme E4 – Road and Railway Assets Code Item Comment/Criteria Met

Item	Comment/Criteria Met or Not Met
E4.5.1 – Existing Road accesses and junctions	A1 – Not Applicable (not >60km/hr) A2– Not Applicable (not >60km/hr) A3 – REQUIREMENTS NOT MET (>40 VPD or 20% increase) **P3 – *Requirements deemed met due to:*** *a. limited increase in traffic in context of Opossum Road and wider network, noting also typical off peak nature of current golf course traffic* *b. generally light vehicle traffic in nature, typical of types/uses expected from neighbouring uses in the area* *c. Proposed and nearby local junctions efficiency/safety/nature appear not impacted by the use* *d. local road categories and nature built to accommodate this type of use and volumes not material in context of local network* *e. low speed local road (60km/hr), with use profile complementing nature of existing traffic use*

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	f. no alternative access exists – the existing access is already in successful use with not noted issues *g. The upgrade to a modern and more efficient junction to replace the current access appears as improvement for site access.* *h. Refer this TIA report* *i. This TIA submitted for consideration by local road authority (CoL)*
E4.5.2 – Existing Level Crossings	A1 – Not Applicable
E4.6.1 – Development on and adjacent to Existing & Future Arterial Roads and Railways	**A1.1 – REQUIREMENTS ARE MET** - *no rail or Cat 1 or 2 roads* **A1.2 – REQUIREMENTS ARE MET** - *no building works*
E4.6.2 – Road Accesses and Junctions	A1 – Not applicable (Not >60 km/hr) A2 – **REQUIREMENTS ARE MET** *(existing access junction is already in use as access to Golf Club – this however is proposed as an upgrade of this access to an improved modern junction layout and so P2 is also addressed)* **ALSO ADDRESSING P2:** For roads in an area subject to a speed limit of 60km/h or less, accesses and junctions must be safe and not unreasonably impact on the efficiency of the road, having regard to: (a) the nature and frequency of the traffic generated by the use; *successful existing use by golf club traffic already in place, similarly light vehicles use, and likely peak hour traffic will not combine with golf club off peak visitation. Not material in context of network volumes* (b) the nature of the road; - *residential, mostly LV, local collector, existing use, limited material changes to volumes and traffic type* (c) the speed limit and traffic flow of the road*; low speed (60 km/hr), typical traffic appropriate to zone. Proposed arrangement can operate efficiently with existing flows/speeds* (d) any alternative access to a road; *No practical alternative access is available, existing access proposed upgraded is most suitable option/location* (e) the need for the access or junction; *no location changes proposed, access exists, refer (d) above; similar access location envisaged with upgrade to modern geometry and standards to permit use* (f) any traffic impact assessment; *refer this report* and (g) any written advice received from the road authority. *This TIA prepared for CoL consideration and review* On the above basis, with current access in operation, most appropriate and practical option for access to the site, and upgrade to modern standards and geometry, the location for upgraded access appears appropriate **– REQUIREMENTS DEEMED MET P2**
E4.6.3 – New Level Crossings	NOT APPLICABLE
E4.6.4 – Sight Distances at Accesses, Junctions and Level Crossings	A1 - **REQUIREMENTS ARE MET** (Deemed acceptable - refer comments Section 4.4)

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Conclusion: Requirements for E4 are met

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5. Regulatory Authority Feedback on Traffic Impacts

5.1 City of Launceston (Council) Comment/Feedback

CoL provided traffic data estimates for this site near to the main LGC main entry off Opossum Road (and a related eastern site).

Council's traffic officer Mr Nigel Coates noted as follows:

> *Hi Andrew,*
>
> *Unfortunately, we don't have any recent traffic data for either location.*
> - *Estimated flows in Negara Street are 104 aadt*
> - *Opossum Road at the golf course entrance is 3200 aadt*
>
> *I would agree that the only real issue would probably be the golf course junction.*
>
> *Both sites were impacted by some proposals a few years ago aimed at relieving congestion in Kings Meadows. This included anew road linking Opossum Road with Innocent Street and a link between Negara Street and Morshead Street. It is very unlikely that either will proceed and they are not in any adopted plans.*
> *….*
> *Regards*

Further informal comment from Engineering Development staff around road and parking aspects noted consideration of adequate parking on the site, review of turn treatments for any new junction based on traffic volumes and need, and likely requirement for minimum 18m road reserve width. These items have been commented upon further in this report.

5.2 DSG comment

No specific comment around road access etc. was sought from DSG officers, with no interaction with DSG assets required for the works believed required.

CRASH STATISTICS from DSG data were sourced with records for the previous 5 years provided for the local area. No specific issues are raised by the crash history with no evidence of particular issues around the Main LGC site access. Two nearby crashes were unrelated, and do not appear to represent a specific problem with the road assets or network locally.

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6. TIA Conclusions

This TIA has investigated the potential impacts from the development of the site including an upgrade to the main entry to the Launceston Golf Club, to create a new junction with Opossum Road, a short Council cul-de sac street to service the existing golf club and proposed new residential lot.

Key findings are as follows:

- That the proposed road junction for Opossum Road and to create a new local street with general arrangements as per the proposed site plan, are likely to meet the requirements to service the development and possible future residential development potential of the site (subject final engineering design detail approval by CoL), and that such a new road link appears to be able to be designed/constructed to cater for the development and traffic likely generated.
- The new road reserve for the new council street requires minimum 18m width to meet LGAT-IPWEA standards, and should otherwise be constructed to meet LGAT-IPWEA and Council standards
- That traffic service is likely adequately provided for by the new road arrangements, to service the proposed development, including anticipated levels of traffic from a possible future residential development based on estimated traffic generation, and existing network capacity.
- Turning traffic and main road volumes suggest turning treatments be considered for any upgraded junction with Opossum Road, with recommendation for suitable BAR road widening to be provided for Westbound main road traffic, subject to engineering design approval by Council
- Sight distances for the new junction with Opossum Road can likely comply with the planning scheme E4.6.4 Acceptable Solution A1 for the new road proposed to service the development
- Other Planning Scheme Requirements under Code E4 & E6 where applicable are deemed met as noted.

Based on the above assessment of available information, traffic aspects associated with the development are likely to meet the requirements for Traffic Safety and Service in accordance with the Launceston Planning Scheme requirements.

Limitations

- *This TIA is based on information provided by the client and available in the public domain, additional information beyond this has not been considered. Any changes or variation to the development proposal should be reviewed further by the author and relevant road authorities.*
- *Based on the nature of the development, this TIA has considered the access and operational aspects for this development only, and has not considered in detail the wider impacts beyond the site (upstream network impacts), this being outside the scope of this report.*
- *Comments on parking and geometric design aspects are of a general nature only, based on design to be undertaken by others as part of formal engineering design approval for road authority*

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Appendix A

Proposed Development Plans

(Attached)

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Appendix B

DSG Crash Statistics Record

(Attached)

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Appendix C

LGAT-IPWEA key road design drawing details (TSDR06-08)

(Attached)

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WOOLCOTT SURVEYS

BUSHFIRE HAZARD EXEMPTION REPORT

Three Lot Subdivision (1 New Lot, 1 Road Lot, 1 Balance Lot)

Owners:
The Launceston Golf Club Limited.

Property address:
27-99 Opossum Road
Kings Meadows
CT168065/1

Launceston City Council
General Residential & Recreation Zone

Author
James Stewart
Woolcott Surveys
(03) 6332 3760

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Executive Summary

The proposed three (3) lot (1 new, 1 road, 1 balance) subdivision is subject to a bushfire threat, with parts of the balance title subject to the bushfire prone areas overlay under the *Launceston Interim Planning Scheme 2015*.

It is assessed that there is insufficient increase in risk to warrant a bushfire hazard management plan for this application. This assessment is based on:

- The area being developed for residential purposes is not mapped as bushfire prone on the Bushfire Overlay maps of the *Launceston Interim Planning Scheme 2015*. Future development of this land will not be assessed as being within a bushfire prone area.
- There is no proposed change to the use or development on the balance title which results in an increased risk to existing lots.
- All of the land has suitable access to a Council maintained road.
- The new lot being created is not within 100m of any bushfire prone vegetation.

Client: Launceston Golf Club

Council: Launceston City Council

Zoning: General Residential Zone (rezone) and Recreation Zone.

Property details: 27-99 Opossum Road, Kings Meadows

Proposal: Three lot subdivision (1 new, 1 road, 1 balance)

Conclusions and Recommendations: The proposed Three Lot Subdivision is considered exempt under clause E1.4A of the *Planning Directive No 5.1 Bushfire Prone Areas Code.*

Author	Version number	Date
James Stewart	1.0	02/12/2021

DISCLAIMER

This report deals with the potential bushfire risk only, all other statutory assessments sit outside of this report. This report is not to be used for future or further development on the site, other then what has been specifically provided for in the certified plans attached. Woolcott Surveys accepts no responsibility to any purchaser, prospective purchaser or mortgagee of the property who in any way rely on this report. This report does not guarantee that buildings will survive in the event of a bushfire event. If characteristics of the property change or are altered from those which have been identified, the exempt classification may be different to that which has been identified in this report. In this event the report is considered to be void.

Signed:

Author: James Stewart
Position: Town Planner and Accredited Bushfire Practitioner BFP 157

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1. Proposal

Application is made for a three lot subdivision. The subdivision includes one new lot, one road lot, and a balance lot. The area being subdivided for residential purposes is within the General Residential Zone with this area being proposed as a rezone under section 33 of the *Land Use Planning and Approvals Act 1993*. The balance lot will remain entirely within the recreation zone, with no change to the use or development on that land.

The details of the three-lot subdivision are shown below.

Lot Number	Proposed Lot Size
Lot 1	1.28ha
Lot 100 (Road)	1753m^2
Lot 3 (Balance)	40.9ha

Figure 1 - view over residential part of the site being subdivided.

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The proposed location and layout for the subdivision is shown below:

Figure 2 – Lot boundaries, showing area being subdivided.

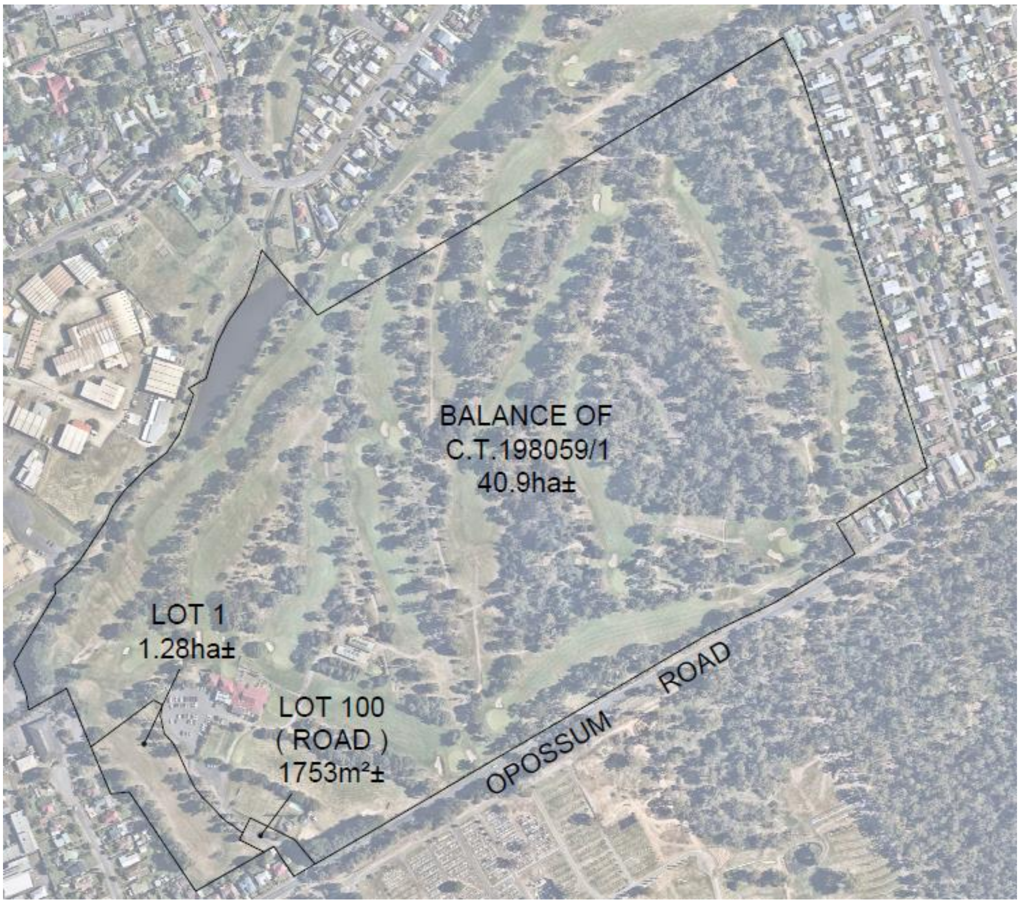

Figure 3 - Proposed layout for three lot subdivision.

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2. Site Details

The portion of the land being developed with the new lot is located in the western portion of the title. This part of the land is currently used as a practice fairway by the golf club. The site adjoins established single dwellings on the western and southern sides. Golf club land is located to the north and east. This part of the site is within a residential area of Kings Meadows, being in close proximity to the primary shopping district located on Hobart Road.

Figure 4 - Aerial view to show the residential land being subdivided.

The balance of the site stretches to the north east, and contains the 18 hole golf course.

Figure 5 - Aerial view showing who site and balance lot.

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According to TasVeg 3.0 the site is classified as an Urban Area (FUR), with a portion of the balance lot mapped as eucalypt forest and woodland (DAZ). The new lot being subdivided is classified as being within an urban environment according to TasVeg. The mapping accurately reflects the conditions onsite. There is no identified bushfire prone vegetation within 100m of the proposed new lot.

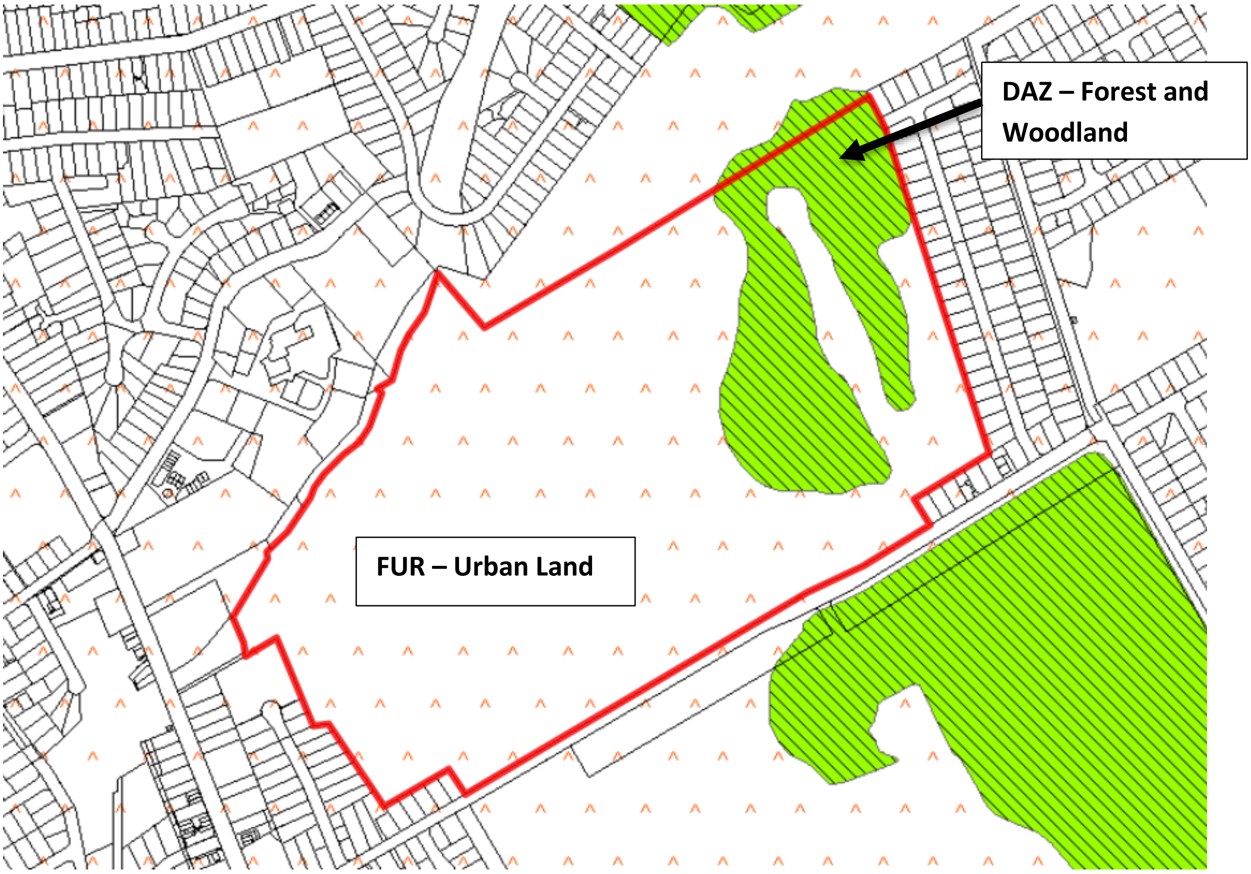

Figure 6 - TasVeg 4 mapping for the portion of land being subdivided.

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3. Land Use Planning

The site is currently within the Recreation Zone, as it is associated with and owned by the Launceston Golf Club. The application before Council seeks to rezone a 1.28ha portion of land in the west of the site as General Residential.

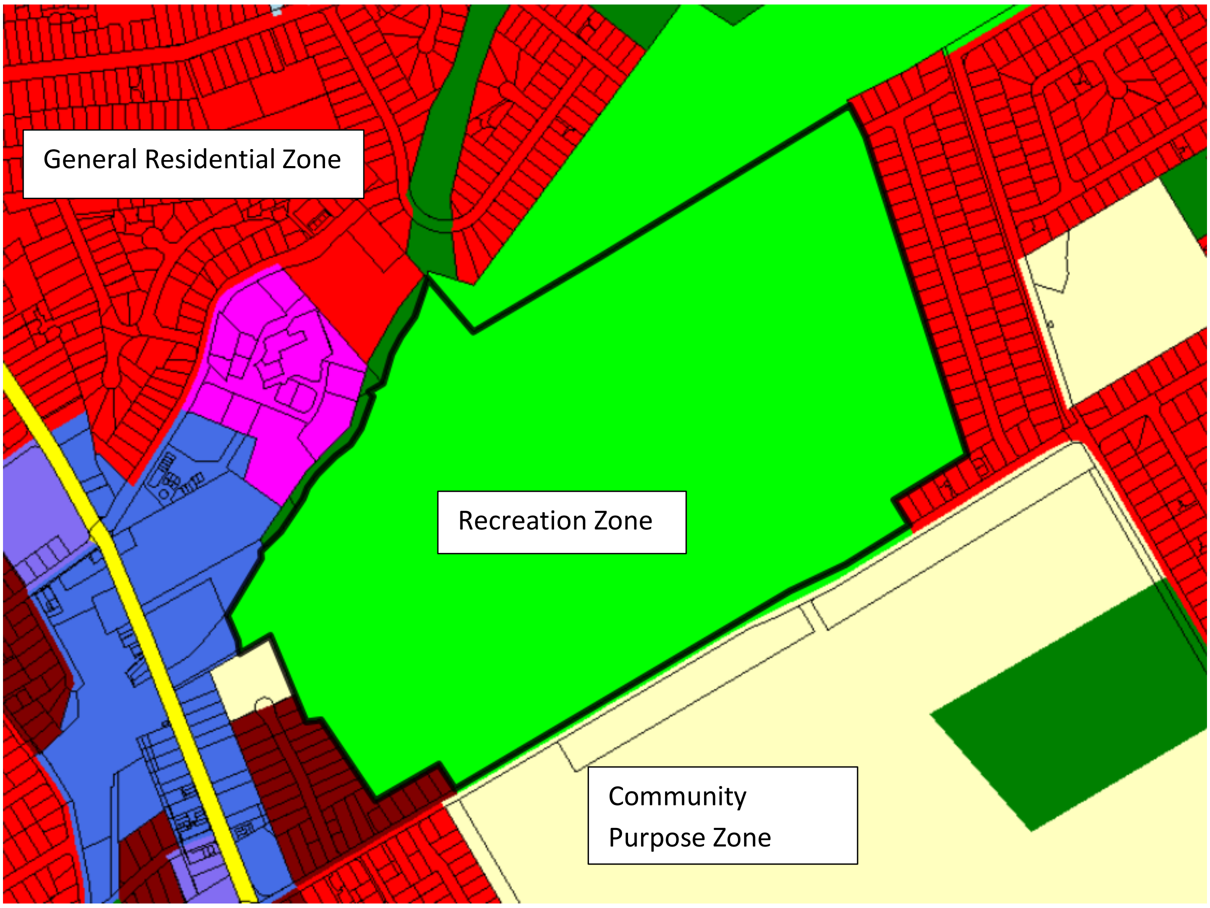

Figure 6 - Zoning of the site and surrounds.

The land is partially subject to the bushfire prone areas overlay. This overlay covers the balance lot to the east of the area being subdivided. The new lot being created is not subject to the bushfire prone areas overlay.

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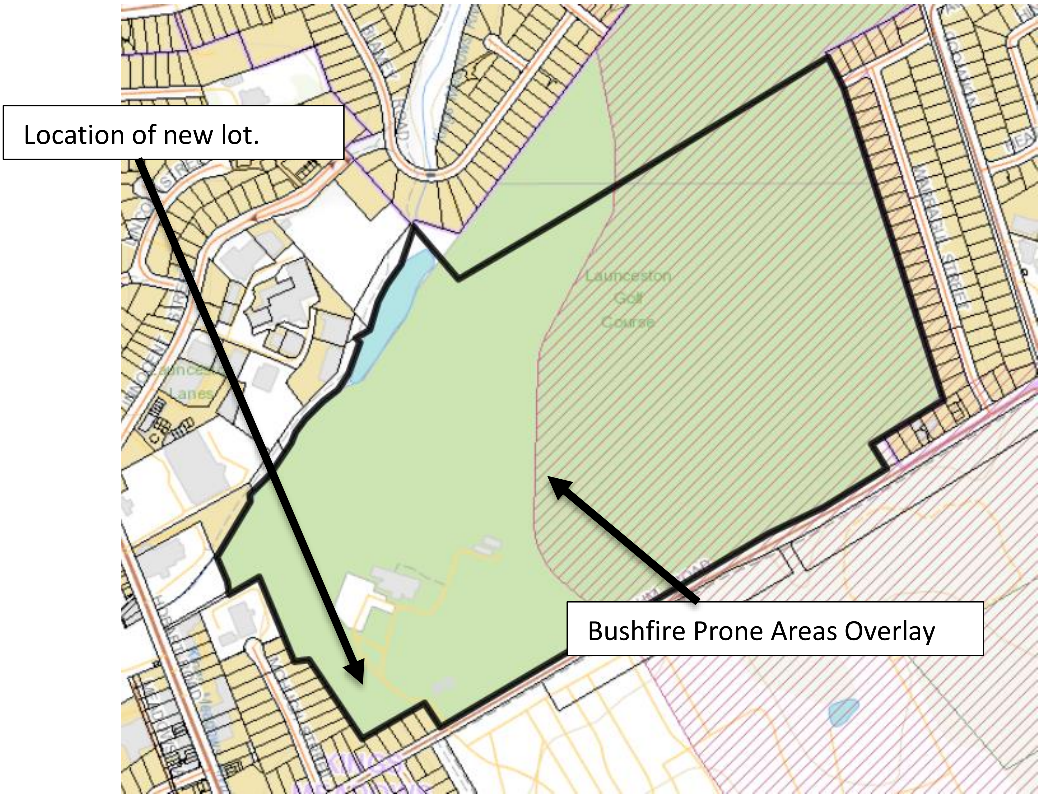

Figure 7 - Subject site showing extent of bushfire prone area overlay mapping.

4. Access

The subdivision will result in new cul-de-sac road off Opossum Road. The new residential lot will be serviced via this Council maintained road. As the cul-de-sac is not within a bushfire prone area, it will be constructed as per the LGAT standard guidelines.

Both the remaining sections of the balance lot have vehicular access the new cul-de-sac, and Negara street in the east.

5. Water

Fire Hydrants are currently located out the front of the site on Opossum Road. The lots will be connected to reticulated water. New hydrants will be installed along the proposed road as per TasWater construction requirements.

6. Slope

The new lot has a gentle fall down to the rivulet in the north of the site.

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7. Bushfire Prone Area Overlay Mapping

The Bushfire Prone Area Overlay mapping determines which areas of the municipality are at possible risk to bushfire, and which areas present a low risk and therefore do not require bushfire consideration.

The overlay indicates that the part of the site being developed for residential purposes is **NOT** within a bushfire prone area. This means that a future dwelling on the residential lot would not require a bushfire assessment under the Directors Determination version 1.3.

Part of the balance lot to the east is mapped as being within a bushfire prone area overlay. Any future development of this land may require consideration of bushfire risk.

8. Conclusions and Justification

E1.0 Bushfire Prone areas code applies, as the subdivision is occurring on land which is mapped as bushfire prone on a planning scheme overlay. There is however an insufficient increase in risk from the development to warrant the provision of bushfire hazard management measures for the development.

The risk is considered low given the new residential lot is located within the General Residential Zone, within a residential area, and on a portion of land which is **NOT** shown on a bushfire prone area overlay map. No vegetation has been identified within 100m of the subject site.

While the balance lots are within a bushfire prone area as shown on the overlay, there is no use or development proposed for these areas outside of the fact that they are part of the parent title.

The access and water arrangements for the site will be maintained, with all lots having access to a Council Road.

Based on the existing mapping, and given that future development of the new residential lot will not be subject to bushfire consideration, it is therefore concluded that there is an insufficient increase in the bushfire risk as a result of the proposed three lot subdivision.

9. Recommendations

The proposed subdivision is considered exempt under clause E1.4A of the *Planning Directive no 5.1 of the bushfire prone areas code.*

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Annexure 1 – Proposal Plan

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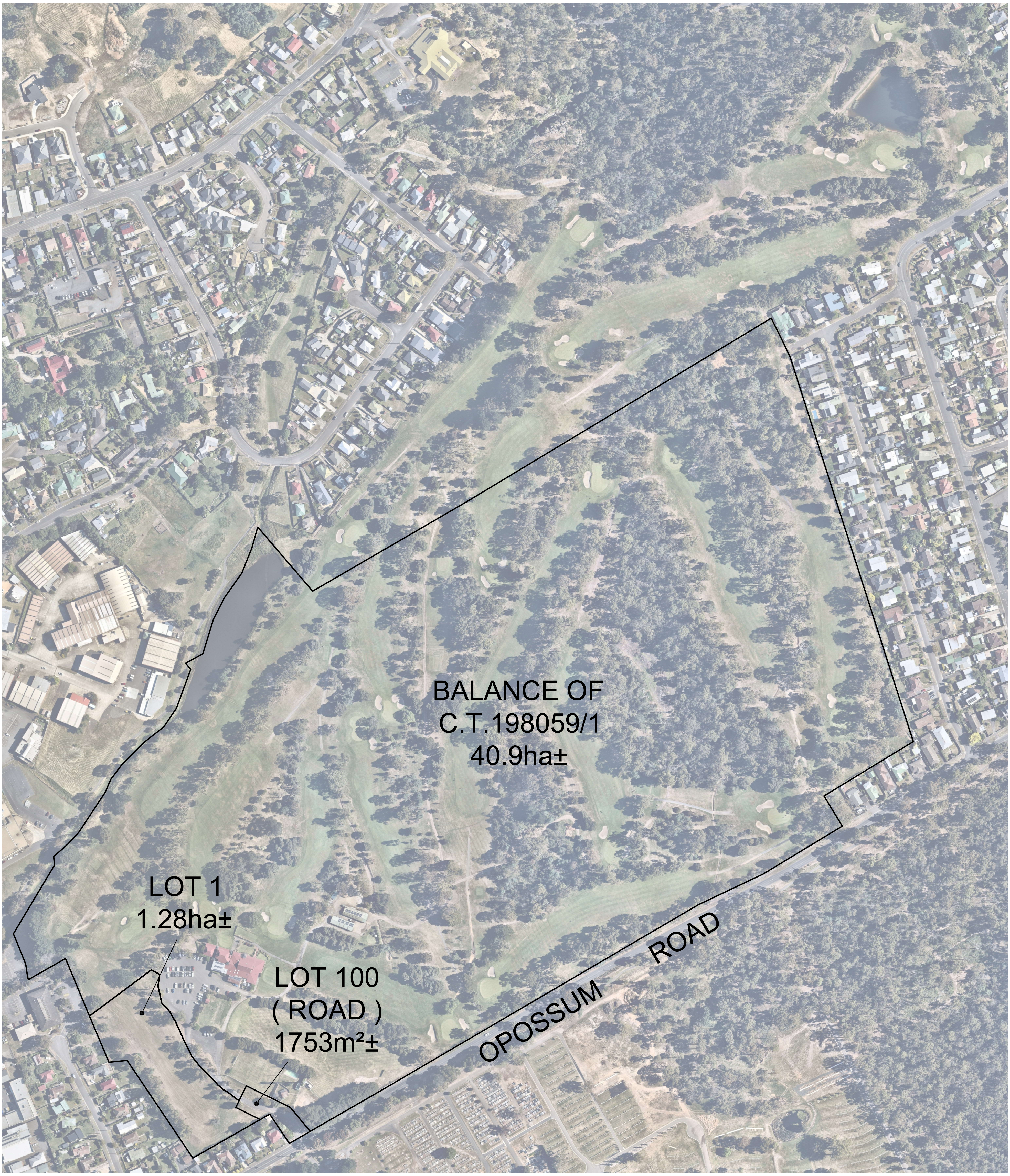

THIS PLAN WAS PREPARED AS A PRELIMINARY
PROPOSAL PLAN FOR DISCUSSION AND SHOULD
NOT BE USED FOR ANY OTHER PURPOSE
ALL MEASUREMENTS AND AREAS ARE SUBJECT TO SURVEY .

LAUNCESTON GOLF CLUB
STAGE 1 - PROPOSED 3 LOT SUBDIVISION
27-99 OPOSSUM RD, KINGS MEADOWS
C.T. 198059/1

N

WOOLCOTT SURVEYS
10 Goodman Court Invermay TAS 7248
PO Box 593 Mowbray Heights TAS 7248
Phone (03) 6332 3760
Fax (03) 6332 3764
Email: office@woolcottsurveys.com.au

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Annexure 2 – Bushfire Prone Areas Certificate

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BUSHFIRE-PRONE AREAS CODE

CERTIFICATE[1] UNDER S51(2)(d) *LAND USE PLANNING AND APPROVALS ACT 1993*

1. Land to which certificate applies

The subject site includes property that is proposed for use and development and includes all properties upon which works are proposed for bushfire protection purposes.

Street address:	27-99 Opossum Road, Youngtown
Certificate of Title / PID:	**PID6883203, CT198059/1**

2. Proposed Use or Development

Description of proposed Use and Development:	Three Lot Subdivision
Applicable Planning Scheme:	Launceston Interim Planning Scheme 2015

3. Documents relied upon

This certificate relates to the following documents:

Title	**Author**	**Date**	**Version**
Bushfire Hazard Exemption Report	Woolcott Surveys	02/12/2021	1
Proposed Three Lot Subdivision	Woolcott Surveys	28/10/2021	2

[1] This document is the approved form of certification for this purpose and must not be altered from its original form.

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4. Nature of Certificate

The following requirements are applicable to the proposed use and development:

☒	**E1.4 / C13.4 – Use or development exempt from this Code**	
	Compliance test	**Compliance Requirement**
☒	E1.4(a) / C13.4.1(a)	Insufficient increase in risk

☐	**E1.5.1 / C13.5.1 – Vulnerable Uses**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.5.1 P1 / C13.5.1 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.5.1 A2 / C13.5.1 A2	Emergency management strategy
☐	E1.5.1 A3 / C13.5.1 A2	Bushfire hazard management plan

☐	**E1.5.2 / C13.5.2 – Hazardous Uses**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.5.2 P1 / C13.5.2 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.5.2 A2 / C13.5.2 A2	Emergency management strategy
☐	E1.5.2 A3 / C13.5.2 A3	Bushfire hazard management plan

☐	**E1.6.1 / C13.6.1 Subdivision: Provision of hazard management areas**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.1 P1 / C13.6.1 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.6.1 A1 (a) / C13.6.1 A1(a)	Insufficient increase in risk
☐	E1.6.1 A1 (b) / C13.6.1 A1(b)	Provides BAL-19 for all lots (including any lot designated as ‘balance’)
☐	E1.6.1 A1(c) / C13.6.1 A1(c)	Consent for Part 5 Agreement

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☐	E1.6.2 / C13.6.2 Subdivision: Public and fire fighting access	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.2 P1 / C13.6.2 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.6.2 A1 (a) / C13.6.2 A1 (a)	Insufficient increase in risk
☐	E1.6.2 A1 (b) / C13.6.2 A1 (b)	Access complies with relevant Tables

☐	E1.6.3 / C13.1.6.3 Subdivision: Provision of water supply for fire fighting purposes	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.3 A1 (a) / C13.6.3 A1 (a)	Insufficient increase in risk
☐	E1.6.3 A1 (b) / C13.6.3 A1 (b)	Reticulated water supply complies with relevant Table
☐	E1.6.3 A1 (c) / C13.6.3 A1 (c)	Water supply consistent with the objective
☐	E1.6.3 A2 (a) / C13.6.3 A2 (a)	Insufficient increase in risk
☐	E1.6.3 A2 (b) / C13.6.3 A2 (b)	Static water supply complies with relevant Table
☐	E1.6.3 A2 (c) / C13.6.3 A2 (c)	Static water supply consistent with the objective

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5. Bushfire Hazard Practitioner

Name:	James Stewart	**Phone No:**	0467 676 721
Postal Address:	PO BOX 593, Mowbray, Tas, 7248	**Email Address:**	james@woolcottsurveys.com.au
Accreditation No:	BFP – 157	**Scope:**	1, 2, 3B, 3C

6. Certification

I certify that in accordance with the authority given under Part 4A of the *Fire Service Act 1979* that the proposed use and development:

☒ Is exempt from the requirement Bushfire-Prone Areas Code because, having regard to the objective of all applicable standards in the Code, there is considered to be an insufficient increase in risk to the use or development from bushfire to warrant any specific bushfire protection measures, or

☐ The Bushfire Hazard Management Plan/s identified in Section 3 of this certificate is/are in accordance with the Chief Officer's requirements and compliant with the relevant **Acceptable Solutions** identified in Section 4 of this Certificate.

Signed:
certifier

Name: James Stewart **Date:** 03/12/2021

Certificate Number: WS-40

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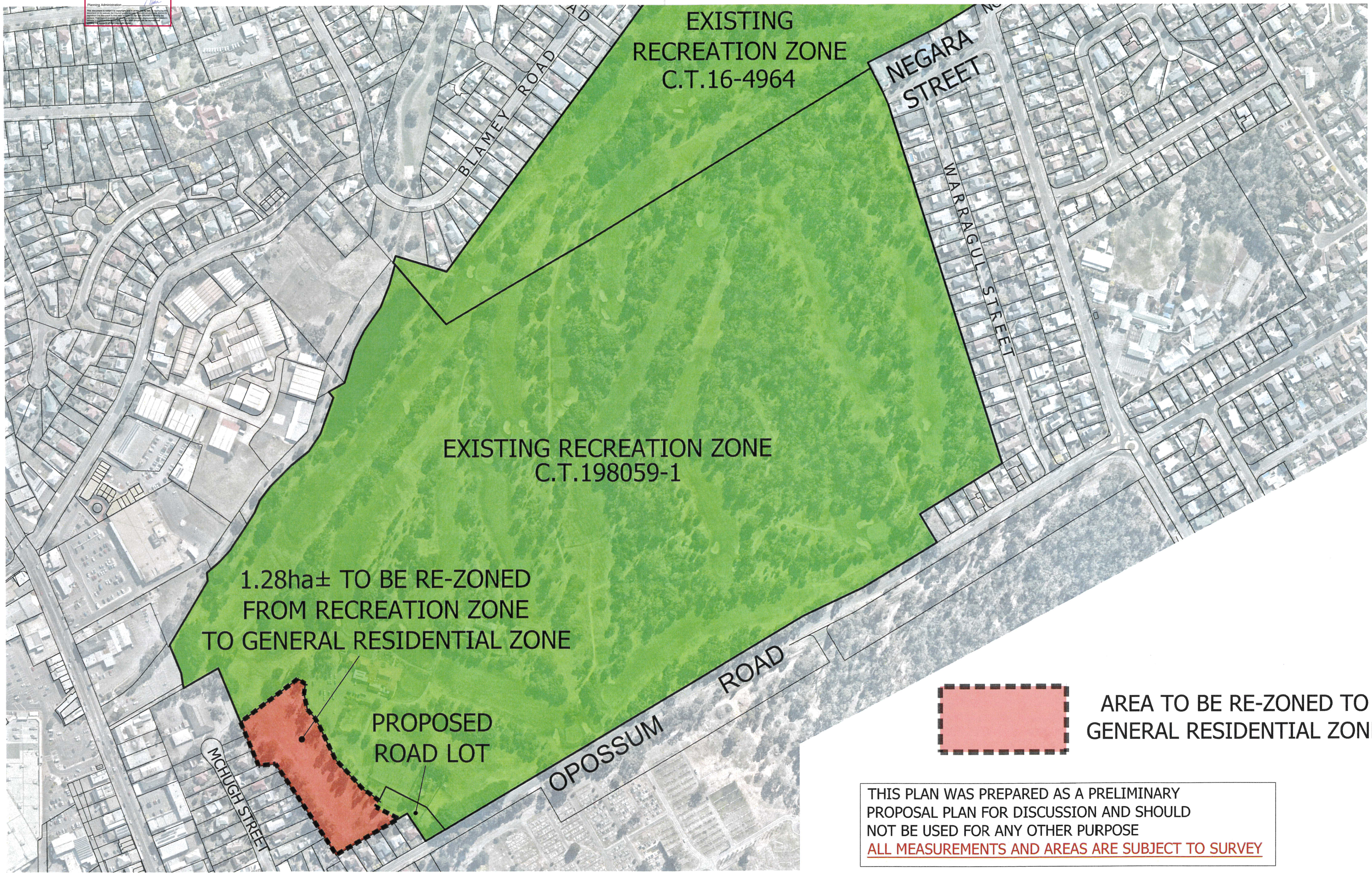

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LAUNCESTON GOLF CLUB
PROPOSED RE-ZONE
27-99 OPOSSUM RD, KINGS MEADOWS
C.T. 198059/1, C.T. 16/4964

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WOOLCOTT SURVEYS

10 Goodman Court Invermay TAS 7248
PO Box 593 Mowbray Heights TAS 7248
Phone (03) 6332 3760
Fax (03) 6332 3764
Email: office@woolcottsurveys.com.au

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