

**PLAN 1**

**PLANNING APPLICATION P18-135**

**21-43 CLARENCE STREET, PERTH**

**ATTACHMENTS**

- A Application & plans, correspondence with applicant
- B Responses from referral agencies
- C Representations
- D IPD review of stormwater memo

# Nick Griggs & Co.

Land Surveyors, 295 Elizabeth Street, North Hobart 7000  
Phone: 6234 5022 Fax: 6231 2412

# AMENDED

# PLAN OF SUBDIVISION

OWNER: THE TRUSTEES OF THE DIOCESE OF TASMANIA

LOCATION: 21-43 CLARENCE STREET, PERTH

MUNICIPALITY: NORTHERN MIDLANDS COUNCIL

**Important Note:**

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MEASUREMENTS ARE IN METRES AND SUBJECT TO FINAL SURVEY

SCALE: 1:750

CONTOUR INT: 0.5m

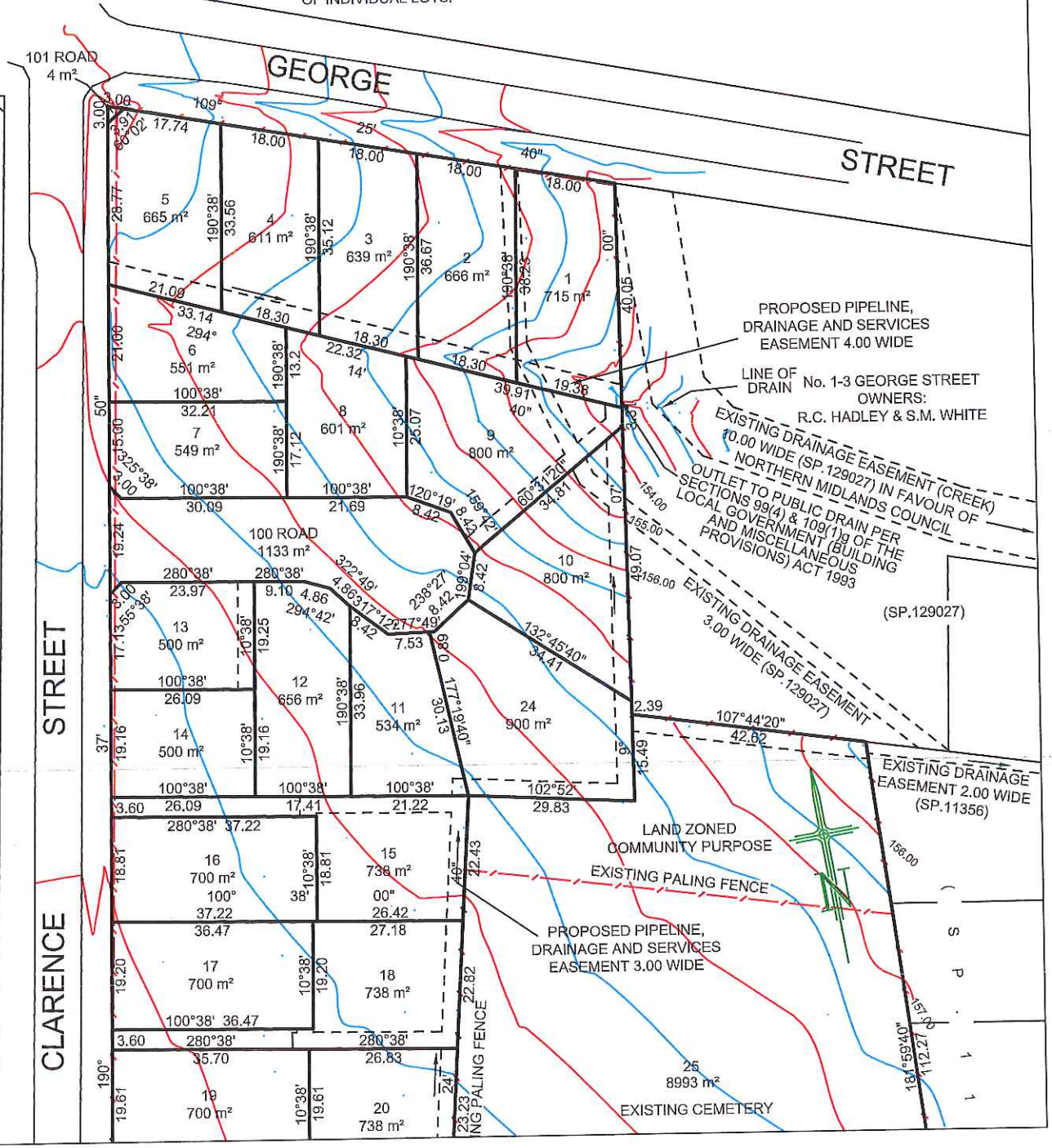
DATE: 04/07/2018

REF. No: C.T. 250977/1

File No: 429514

**NOTE**  
SEE SEPARATE SERVICES PLAN  
STAGE 1: CEMETERY AND BALANCE LAND  
STAGE 1A: LOTS 1-7  
STAGE 2: LOTS 8-14 & 24  
STAGE 3: ALL REMAINING LOTS  
STAGES MAY BE COMPLETED IN ANY ORDER.  
APPLICATIONS MAY BE MADE FOR SEALING OF INDIVIDUAL LOTS.

BLACK DASHED LINES ARE PROPOSED PIPELINE, DRAINAGE & SERVICES EASEMENTS 3.00 WIDE UNLESS OTHERWISE STATED.





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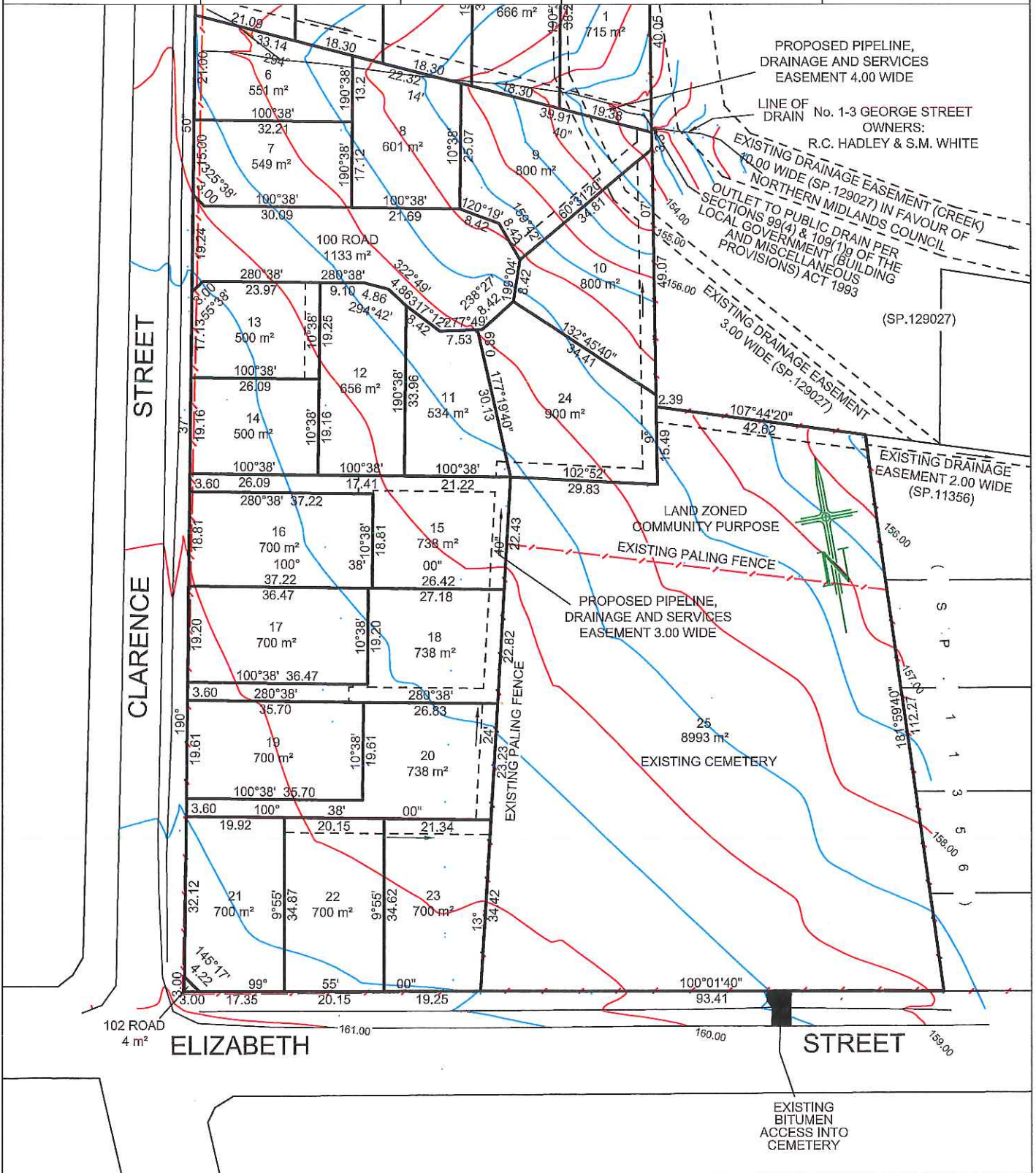
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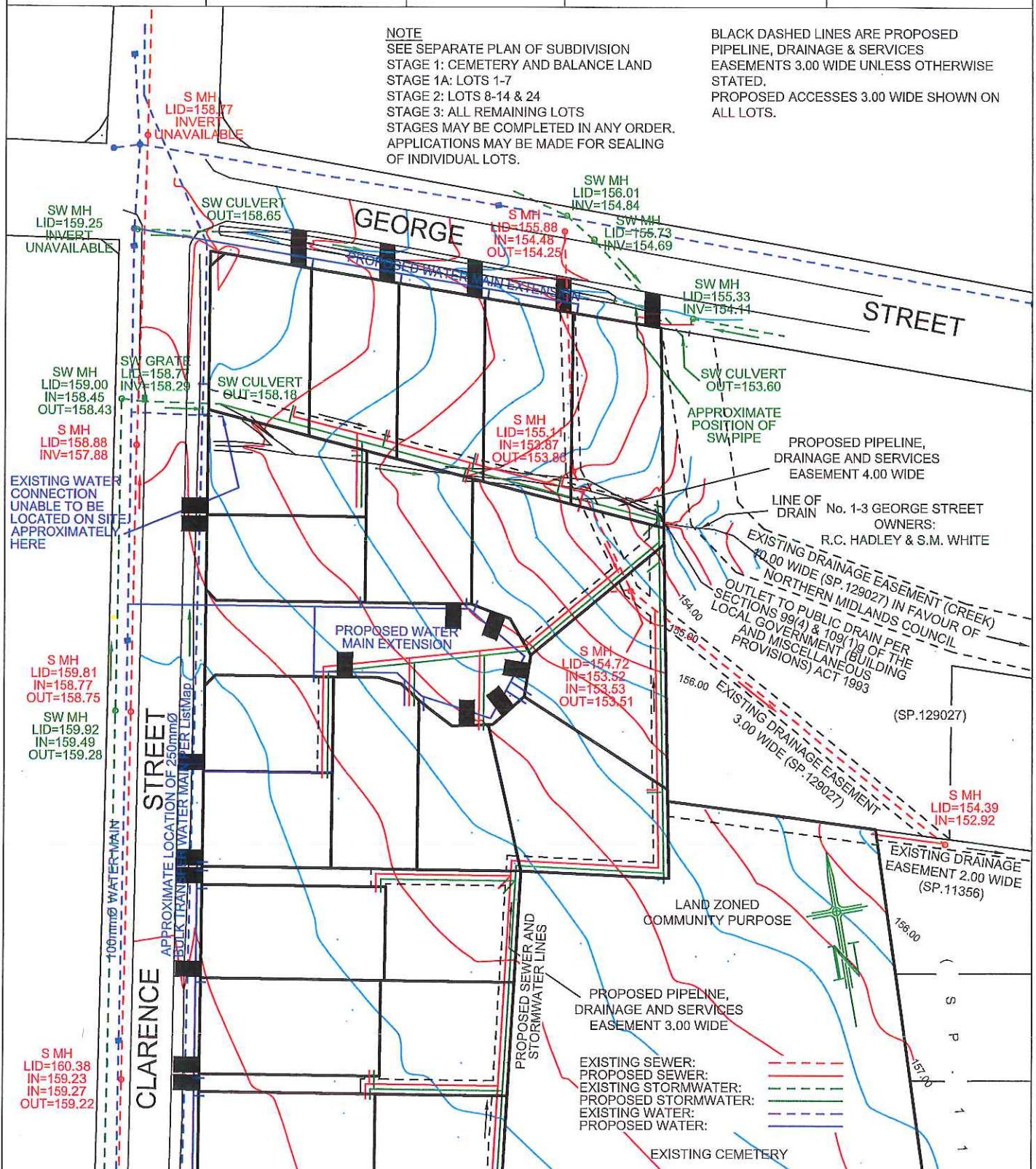
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PROPOSED ACCESSES 3.00 WIDE SHOWN ON ALL LOTS.





**Nick Griggs & Co.**

Land Surveyors, 295 Elizabeth Street, North Hobart 7000  
 Phone: 6234 5022 Fax: 6231 2412

**AMENDED SERVICES PLAN**

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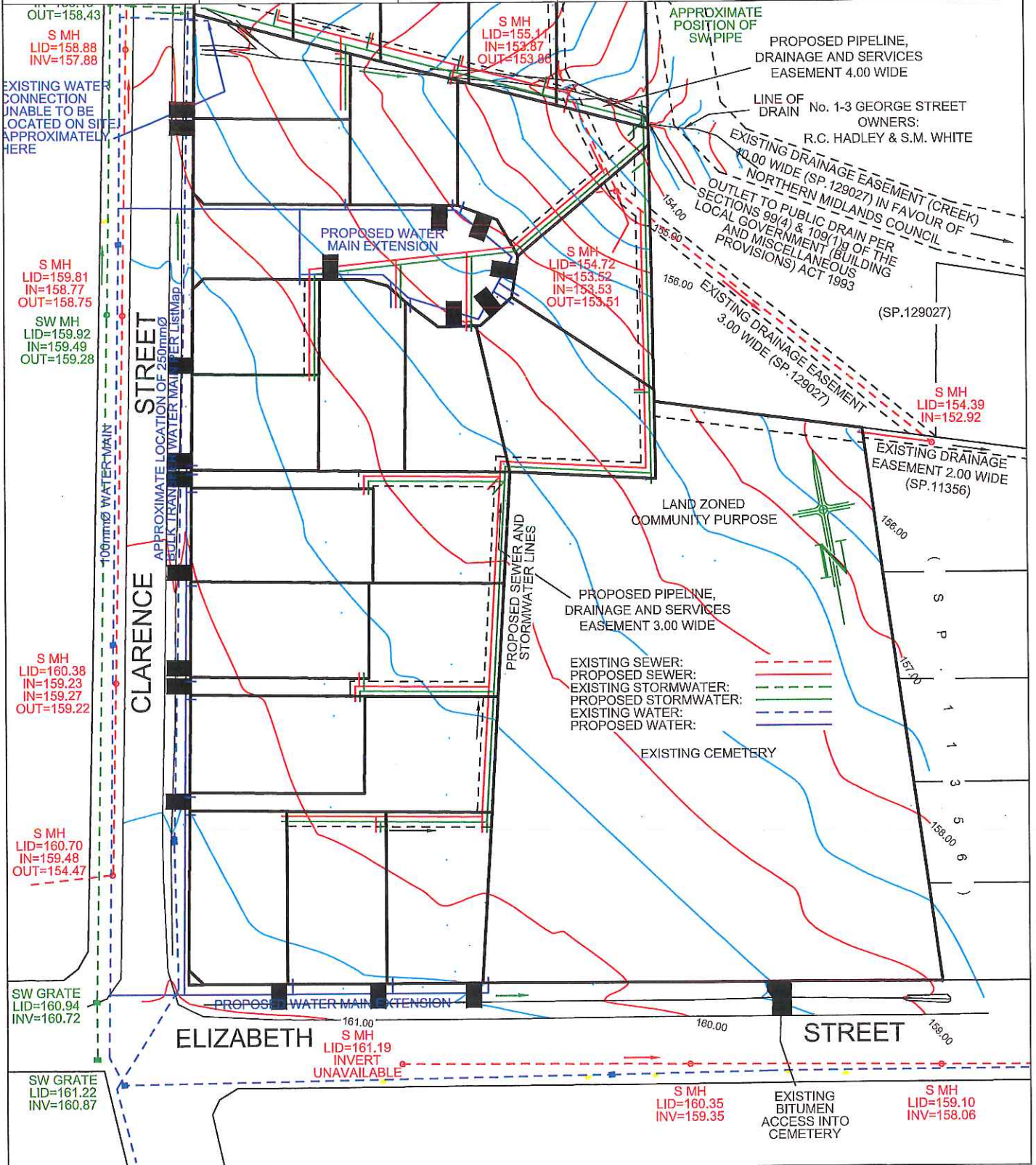
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DATE: 04/07/2018

REF. No: C.T. 2509771

File No: 429514



Our ref: P18-135  
Enquiries: Paul Godier



**NORTHERN  
MIDLANDS  
COUNCIL**

2 July 2018

C Dixon  
PO Box 1983  
HOBART 7000

By email: cdixon@bmil.com.au ✓ 2-7-18

Dear Mr Dixon

**P18-135 - 25 Lot Subdivision including new road and footpath at 21-43 Clarence Street, Perth**

I refer to the abovementioned application. As a result of reviewing the representations and further assessment of the application it is recommended that the layout be amended as follows:

Lots 1 - 4

- 18m frontage for each lot.
- Long boundaries parallel to Clarence Street.
- Show crossover on eastern side of each lot.

Lot 5

- 20m width.
- Long boundary parallel to Clarence Street.
- Show crossover on eastern side of the lot.

Lot 6

- 18m wide.
- Short boundaries parallel to Clarence Street.
- Long boundaries perpendicular to Clarence Street.

Lot 7

- 18m wide.
- Short boundaries parallel to Clarence Street.
- Long boundaries perpendicular to Clarence Street.
- Crossover on northern side of lot.

Lots 8 - 12 and 24

- Show crossovers off cul-de-sac.

Cul-de-sac

- Perpendicular to Clarence Street.
- Show 15m wide road reservation, 25m diameter wide road reservation at cul-de-sac bowl.

Lots 11 and 12

- Long boundaries parallel to Clarence Street.
- Rear boundaries perpendicular to Clarence Street.



Lots 13 and 14

- Short boundaries parallel to Clarence Street.
- Long boundaries perpendicular to Clarence Street.

Lot 15

- Short boundary parallel to Clarence Street.
- Long boundary perpendicular to Clarence Street.

Lot 16

- Move access to north, show crossover.
- Long boundaries perpendicular to Clarence Street.

Lot 17

- Move access to south, show crossover.
- Long boundaries perpendicular to Clarence Street.

Lot 18

- Short boundary parallel to Clarence Street.
- Long boundary perpendicular to Clarence Street.
- Show crossover on southern side.

Lot 19

- Short boundary parallel to Clarence Street.
- Long boundary perpendicular to Clarence Street.

Lot 20

- Long boundaries perpendicular to Clarence Street.
- Show crossover.

Lots 21 – 23

- Boundaries between lots 21 and 22, and 22 and 23 perpendicular to Elizabeth Street.
- Show crossovers on eastern side of the lots.

Please let me know if you have any questions.

Yours sincerely



Paul Godier  
**Senior Planner**



23-5-18

Our ref: P18-135  
Enquiries: Paul Godier

23 May 2018

C Dixon  
PO Box 1983  
HOBART 7000

By email: cdixon@bnil.com.au

Dear Mr Dixon



**NORTHERN  
MIDLANDS  
COUNCIL**

**Additional Information Required for Planning Application P18-135**  
**25 Lot Subdivision including new road and footpath at 21-43 Clarence Street, Perth**

I refer to the abovementioned application. The application fees of \$745 is required.

The following information is requested under section 54 (1) of the *Land Use Planning and Approvals Act 1993*:

- Plans detailing land to be filled, particularly in the area of the existing drain.
- Cross section of land to be filled detailing how it will interface with the adjoining property 1-3 George Street. It is preferred that there be a retaining wall on the boundary, rather than a batter to the boundary.
- Plans showing how the stormwater discharge point to 1-3 George Street will be treated to prevent scouring of the water course.
- Plans showing an overland flow path from the low point of the cul-de-sac.
- Stormwater calculations from a hydrologist detailing the additional stormwater from this subdivision and its likely residential development to 1-3 George Street based on 1:5, 1:10, 1:20, 1:50 and 1:100 ARI storm events.
- Advice from suitably qualified persons addressing clauses E9.6.2 P1 and P2.1, and E9.6.5 P1 of the planning scheme.
- Updated Traffic Impact Assessment referring to 25 lots rather than 28. ✓29/5.

In accordance with Section 54 (2) of the *Land Use Planning and Approvals Act 1993*, the statutory period for processing the application will not recommence until the requested information has been supplied to the satisfaction of the Planning Authority. If you have any queries, please contact Council's Planning Section on 6397 7301, or e-mail [Planning@nmc.tas.gov.au](mailto:Planning@nmc.tas.gov.au).

Yours sincerely

*Paul Godier*

Paul Godier  
**Senior Planner**

Copy: Trustees of the Diocese of Tasmania - [james.oakley@anglicantas.org.au](mailto:james.oakley@anglicantas.org.au)

Encl. clauses E9.6.2 and E9.6.5



## E9.6.2 Water Quality Management

Objective	
To maintain water quality at a level which will not affect aquatic habitats, recreational assets, or sources of supply for domestic, industrial and agricultural uses.	
Acceptable Solutions	Performance Criteria
<p>A1 All stormwater must be:</p> <p>a) connected to a reticulated stormwater system; or</p> <p>b) where ground surface runoff is collected, diverted through a sediment and grease trap or artificial wetlands prior to being discharged into a natural wetland or watercourse; or</p> <p>c) meet emission limit guidelines from the Board of the Environment Protection Authority in accordance with the <i>State Policy for Water Quality Management 1997</i>.</p>	<p>P1 Stormwater discharges to watercourses and wetlands must minimise loss of hydrological and biological values, having regard to:</p> <p>(i) natural flow regimes, water quality and biological diversity of any waterway or wetland;</p> <p>(ii) design and operation of any buildings, works or structures, on or near the wetland or waterway;</p> <p>(iii) sources and types of potential contamination of the wetland or waterway;</p> <p>(iv) devices or works to intercept and treat waterborne contaminants;</p> <p>(v) opportunities to establish or retain native riparian vegetation or continuity of aquatic habitat.</p>
<p>A2.1 No new point source discharge directly into a wetland or watercourse.</p> <p>A2.2 For existing point source discharges into a wetland or watercourse there is to be no more than 10% increase over the discharge which existed at the effective date.</p>	<p>P2.1 New and existing point source discharges to wetlands or watercourses must implement appropriate methods of treatment or management to ensure point sources of discharge:</p> <p>a) do not give rise to pollution as defined under the <i>Environmental Management and Pollution Control Act 1994</i>; and</p> <p>b) are reduced to the maximum extent that is reasonable and practical having regard</p>

	<p>to:</p> <ul style="list-style-type: none"> <li>i) best practice environmental management; and</li> <li>ii) accepted modern technology; and</li> </ul> <p>c) meet emission limit guidelines from the Board of Environmental Management and Pollution Control in accordance with the <i>State Policy for Water Quality Management 1997</i>.</p> <p>P2.2 Where it is proposed to discharge pollutants into a wetland or watercourse, the application must demonstrate that it is not practicable to recycle or reuse the material.</p>
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**E9.6.5 Sediment and Erosion Control**

<p><b>Objective</b></p> <p>To minimise the environmental effects of erosion and sedimentation associated with the subdivision of land.</p>	
<b>Acceptable Solutions</b>	<b>Performance Criteria</b>
<p>A1 The subdivision does not involve any works.</p>	<p>P1 For subdivision involving works, a soil and water management plan must demonstrate the:</p> <ul style="list-style-type: none"> <li>a) minimisation of dust generation from susceptible areas on site; and</li> <li>b) management of areas of exposed earth to reduce erosion and sediment loss from the site.</li> </ul>



# PLANNING APPLICATION Proposal

Description of proposal: .....

25 LOT SUBDIVISION

(attach additional sheets if necessary)

If applying for a subdivision which creates a new road, please supply three proposed names for the road, in order of preference:

1. KERYN COURT 2. .... 3. ....

Site address: 21-43 CLARENCE ST PERTH

CT no: 250977/1

Estimated cost of project \$390K (include cost of landscaping, car parks etc for commercial/Industrial uses)

Are there any existing buildings on this property? ~~yes~~ / No  
If yes - main building is used as .....

If variation to Planning Scheme provisions requested, justification to be provided:

NO

(attach additional sheets if necessary)

Is any signage required? NO (if yes, provide details)

EXHIBITED

05 D 435

VOL.

FOL.

ANNEXURE TO CERTIFICATE OF TITLE

3715

33

*S. J. Hutchings*  
Recorder of Titles

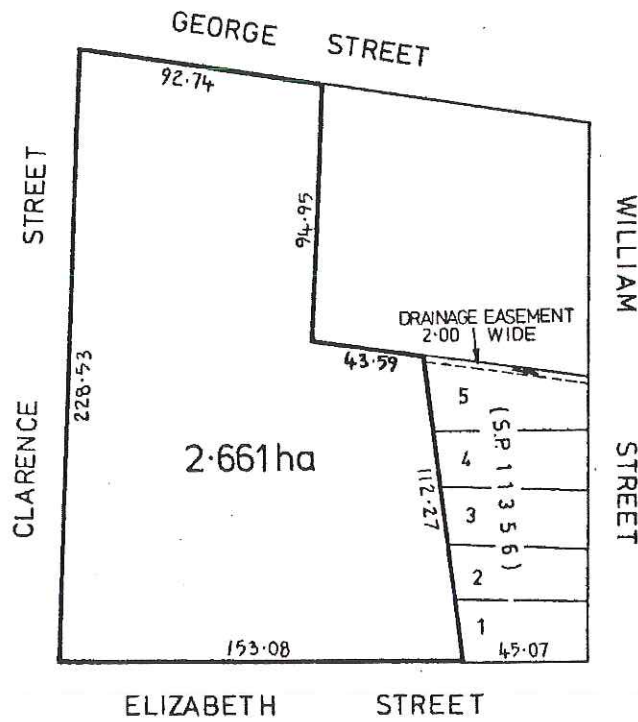
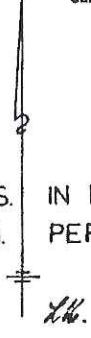


REGISTERED NUMBER

250977

Lot 1 of this plan consists of all the land comprised in the above-mentioned cancelled folio of the Register

MEAS. IN METRES  
TWN. PERTH



EXHIBITED



<b>TO:</b>		<b>PAGE:</b>	1 of 8
<b>ATTENTION:</b>		<b>DATE:</b>	29 May 2018
<b>PROJECT:</b>	21-23 Clarence St Subdivision	<b>PROJECT #:</b>	333
<b>FROM:</b>	Glenn Allen	<b>REFERENCE:</b>	333-M01
<b>FAX OR EMAIL #:</b>			
<b>TRANSMITTED BY:</b>	Mail <input type="checkbox"/> , Hand <input type="checkbox"/> , Fax <input type="checkbox"/> , Email <input checked="" type="checkbox"/>		
<b>SUBJECT:</b>	NMC P18-095 - RFI Response: Stormwater		

This memo addresses items 5 and 6 in the NMC request for additional information.

The hydrological analysis has been undertaken utilising the program Watershed Bounded Network Model (WBNM2017) and the rainfall ensemble and initial / continuing losses from the current Australian Rainfall & Runoff (ARR 2016).

A detailed catchment analysis has not been undertaken given the lack of specific site information (such as calibrated stream or stormwater discharge against recorded rainfall events). The analysis is derived from recent aerial photography to determine the approximate impervious fraction, and contours from The List to develop sub catchment areas. A comparison of peak discharge is then made between the present undeveloped site at 21-23 Clarence St, and the proposed subdivision as a fully built catchment.

Although no calibration against actual parameters is undertaken, by using the same analysis routing and loss defaults for both cases, the impact on peak discharge due to the development can be assessed.

Figure 1 below indicates the total catchment discharging to the waterway at the outfall of the proposed development. The waterway through the adjoining property at 1-3 George St receives stormwater from the following catchments:

- The proposed development and residential lots along Clarence St;
- The Perth Recreation Ground and adjacent residential properties;
- The remaining residential and rural catchment up to Gibbet Hill.

Figure 2 indicates the piped stormwater infrastructure in the vicinity of the Perth Recreation Ground, showing the effective bypassing of the sub catchment containing the proposed development.

Figure 3 indicates the sub catchments for analysis, with the percent impervious determined from aerial photo.



Figure 1: Plan of Catchment (Aerial & Topographic)

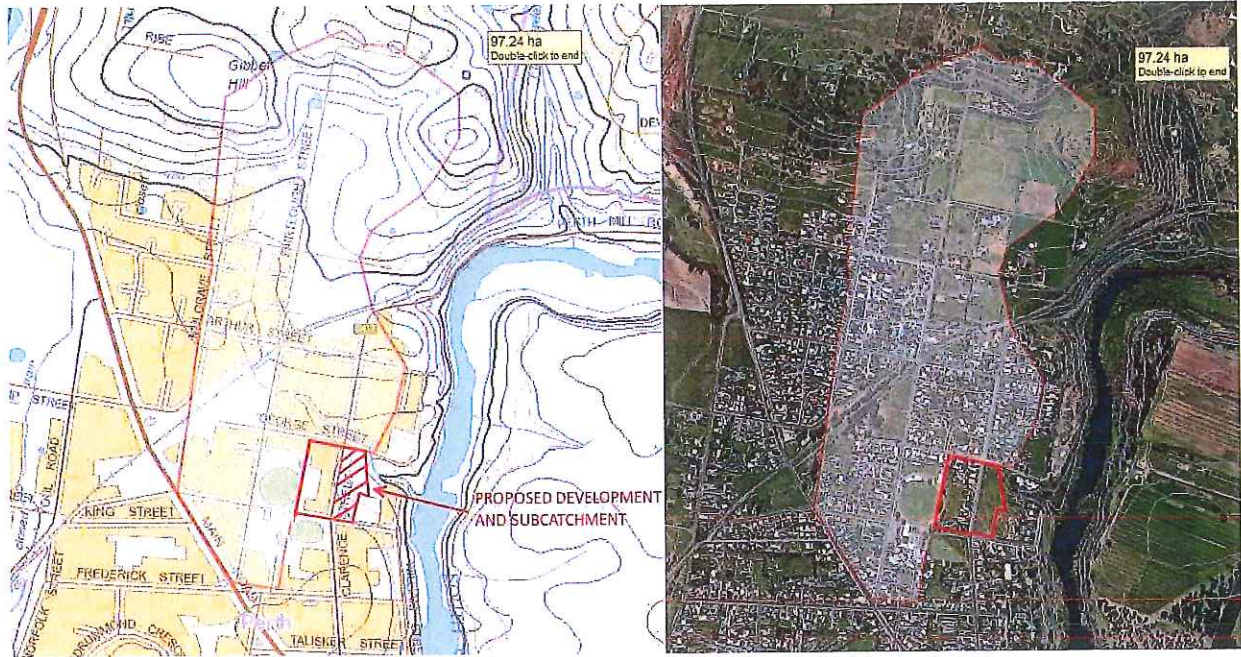


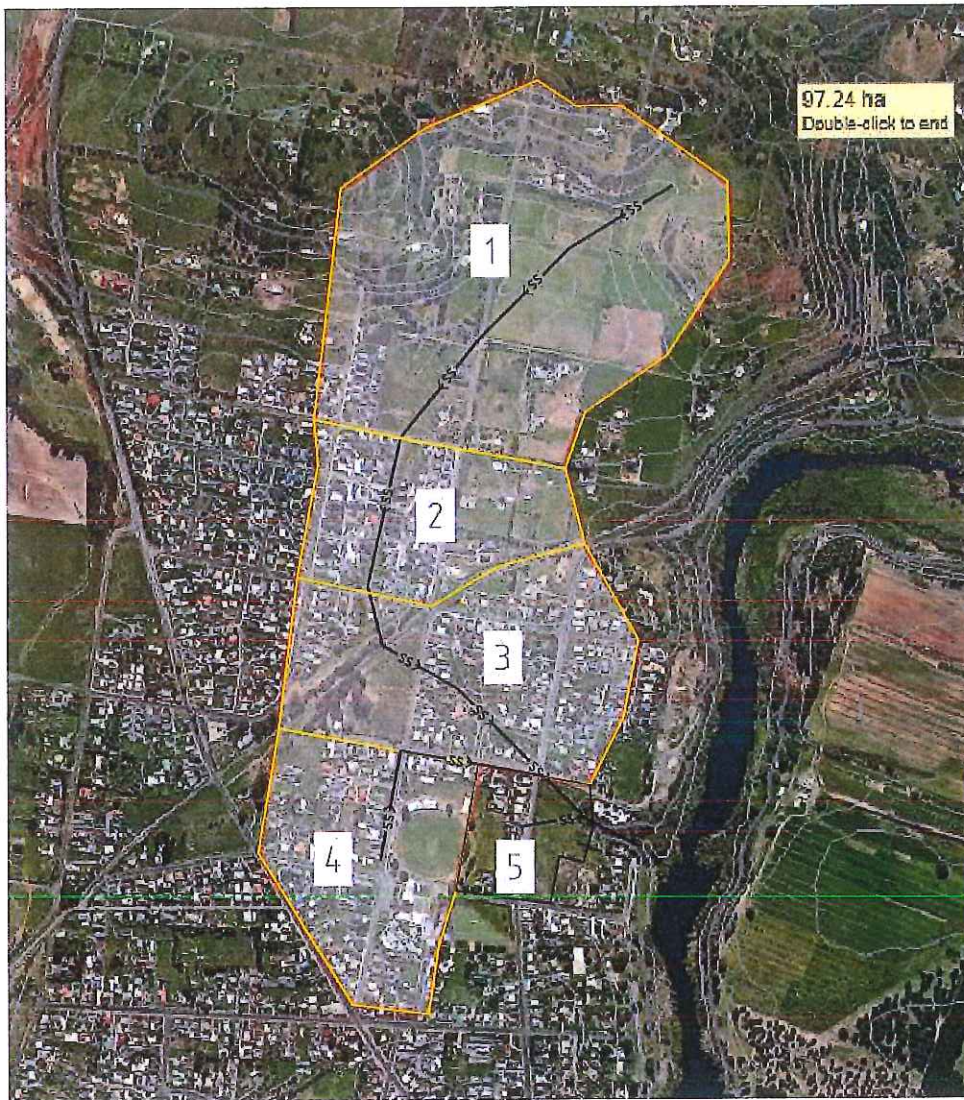
Figure 2: Perth Recreation Ground Stormwater



EXHIBITED



Figure 3: Sub Catchment Data



sub 1:	Area:	40.71 ha
	Cimp:	13.0%
	Centroid:	X: 514,692 Y: 5,398,828
	Outlet:	X: 514,476 Y: 5,398,523
sub 2:	Area:	12.89 ha
	Cimp:	49.3%
	Centroid:	X: 514,523 Y: 5,398,376
	Outlet:	X: 514,417 Y: 5,398,231
sub 3:	Area:	21.64 ha
	Cimp:	55.5%
	Centroid:	X: 514,601 Y: 5,398,087
	Outlet:	X: 514,749 Y: 5,397,879
sub 4:	Area:	15.62 ha
	Cimp:	59.2%
	Centroid:	X: 514,408 Y: 5,397,731
	Outlet:	X: 514,620 Y: 5,397,908
sub 5 (pre):	Area:	4.96 ha
	Cimp:	33.1%
	Centroid:	X: 514,703 Y: 5,397,777
	Outlet:	X: 514,837 Y: 5,397,808
sub 5 (post):	Area:	4.96 ha
	Cimp:	57.3%
	Centroid:	X: 514,703 Y: 5,397,777
	Outlet:	X: 514,837 Y: 5,397,808

Catchment analysis has been undertaken for the ensemble of AEP 5% rainfall events, with durations selected in order to determine the likely range of storm durations of interest resulting in peak discharges. Figure 4 below presents the box plot for the ensemble of 10 storms derived from the Southern Slopes (Tasmania) BOM data set, for durations up to 3 hours. The catchment time of concentration is estimated at between 45 - 75 minutes, however a check for longer durations is included, as well as partial effects due to short storms.

Figure 4 indicates that the storm durations of interest are likely to be within the 60 minute range. This is to be expected given the majority area of residential development is within 1km of the discharge point of interest.

EXHIBITED



Figure 4: AEP 5% Storm Ensembles – Box & Whisker Plot

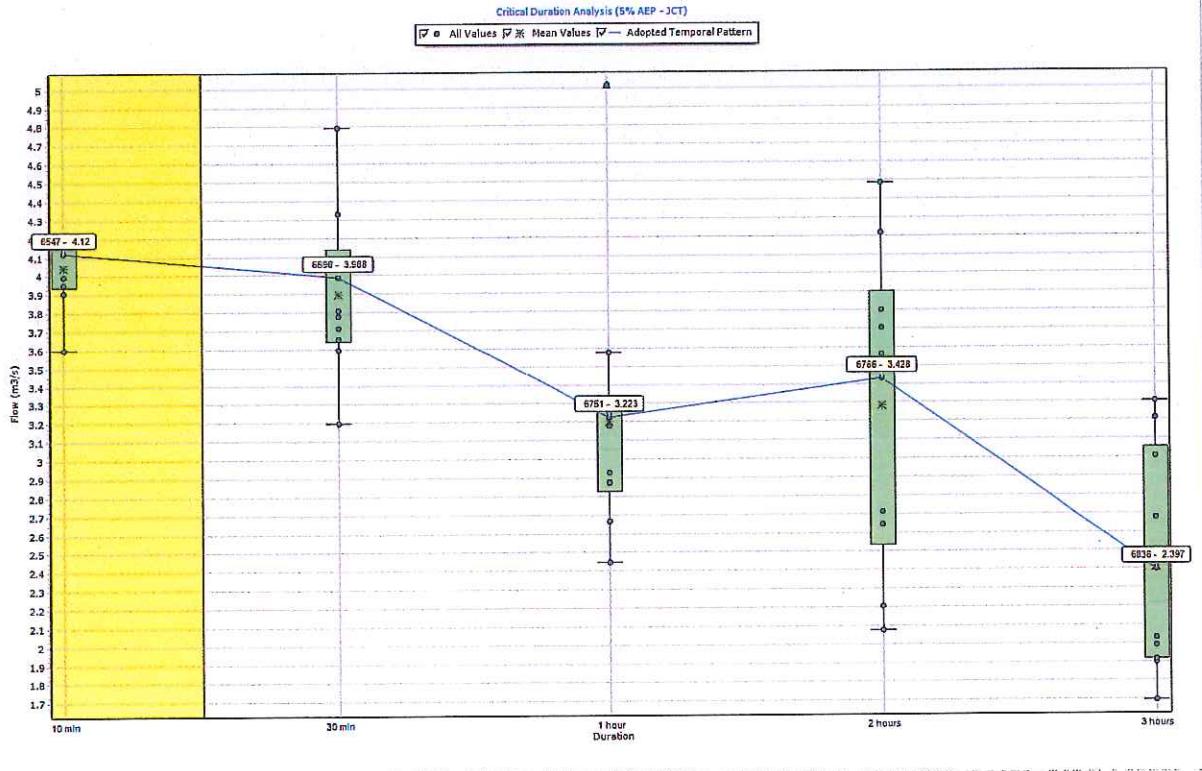
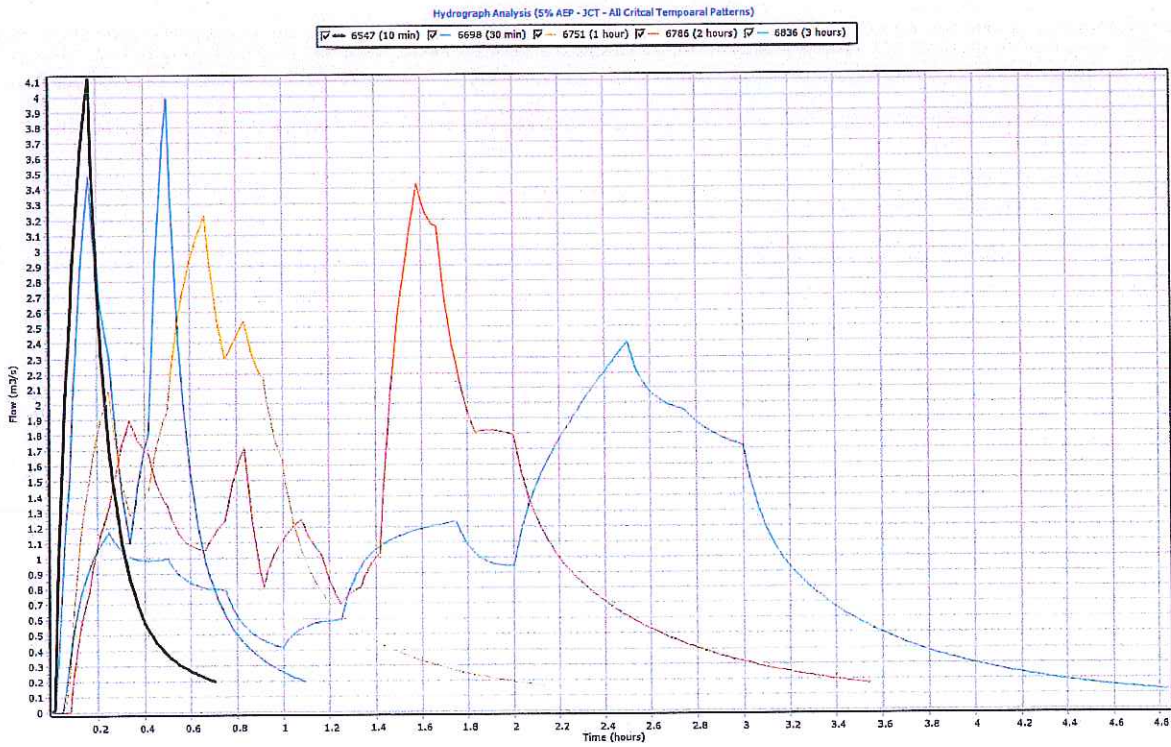


Figure 5 presents the critical storm for each duration as a hydrograph, with the diminishing peak as storm duration increases..

Figure 5: 5% AEP Hydrographs (Critical Temporal Pattern)

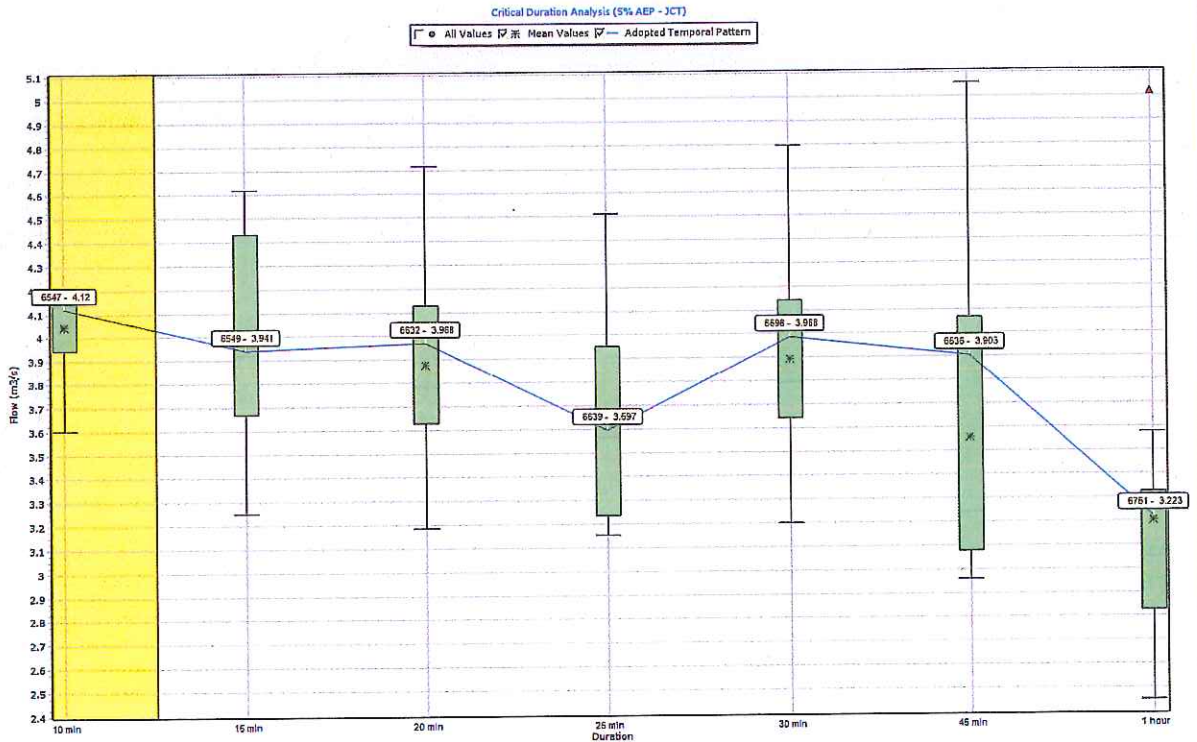


EXHIBITED



Analysis of the range of storms up to the 60 minute event has been undertaken in order to determine the peak discharge for pre- and post-development conditions, for the range of AEP events. Figure 6 indicates that for the events up to the 45 minute duration there is little variation in peak discharge, with the critical maximums within 10% across the range of durations. This is not unexpected given the nature of the rainfall hyetographs in this range of durations, and the proportion of sub catchments that are impervious.

Figure 6: 5% AEP Box & Whisker (Short Duration Temporal Pattern)



The proposed subdivision increases the proportion impervious for the sub catchment Sub05 from 33.1% to 57.3%. Running the analysis outlined above for the range of short storms up to 60 minutes, and comparing the change in impervious area in the associated subdivision catchment results in a small increase in peak discharge. Table 1 below presents the peak discharges for the full catchment outfall to the waterway, and for the sub catchment associated with the development (Sub05) which includes the residential lots on Clarence St.

Table 1: Pre- and Post-Development Discharge

AEP	Critical Duration (min)	Pre-Development (m³/s)		Post-Development (m³/s)		Increase (%)
		Full Area	Sub05	Full Area	Sub05	
20%	10	2.86	0.21	3.00	0.37	4.9
10%	10	3.48	0.25	3.66	0.42	5.2
5%	10	4.12	0.29	4.32	0.49	4.9
2%	10	5.25	0.38	5.51	0.62	5.0
1%	10	6.11	0.43	6.40	0.73	4.7

The increase in peak discharge from the sub catchment associated with the development is greater than the overall increase in peak at the outfall (waterway discharge point) due to the slightly faster response time.

The increase in impervious area associated with the subdivision catchment will obviously increase peak discharge. When considering the total discharge to the waterway, including discharge from the upstream catchment, the Perth Recreation Ground and the new subdivision, the increase across the range of AEP for critical storms is approximately 5%.

EXHIBITED

Planning Scheme Considerations

## E9.6.2 Water Quality Management

The proposed subdivision will discharge stormwater from the new lots and collect existing runoff from the adjacent Clarence St road and properties to the waterway that runs through 1-3 George St. Comment is provided below with regard to performance criteria P1:

- i. The approx. 200m water course from the catchment discharge point on George St to the South Esk River is highly modified in that it runs as a landscaped feature through 1-3 George St. The upstream catchment is almost fully urbanised, excepting the upper portion which is rural residential. As such the natural flow regime does not exist in its historical undisturbed form. The proposed development will increase peak discharge across the range of AEP events by no more than 5%, a minor change to the current flow regime. No change in time of peaks or stream hydrograph shape will result from the addition of new impervious area at the bottom of the catchment.
- ii. No structures or buildings are proposed in the waterway. A culvert headwall incorporating retaining across the existing swale where it discharges to the waterway will be constructed, in accordance with NMC standard drawings.
- iii. Contamination of the waterway will come from the addition of impervious surfaces such as new roof and road. The removal of the existing grassed swale from Clarence St reduces some of the WSUD benefit. Provision of new treatment elements to intercept runoff from impervious surfaces is proposed.
- iv. Open swales and other biological methods of treatment for nutrient removal cannot be provided as there is no public open space within the development. It is proposed to install Humeceptor hydrodynamic separators in order to remove suspended solids, with minor reductions in TN and TP.

The proposal to treat discharge from the new cul-de-sac can be achieved by provision of an STC-2 model at the cul-de-sac (Option 1 below). This will remove approx. 93% of TSS from the road and roof discharge.

To treat the entire subdivision will require a larger Humeceptor at the sub catchment outlet (STC-3 at Option 2). This will remove 83% of TSS from the existing and new roads, as well as all roof areas connected to the stormwater system. Access to this unit is difficult due to the landscaped waterway.

An option to provide a second smaller Humeceptor (STC-2 at Option 1a) will treat the discharge from the NMC road that is currently flowing in the swale. This option is not proposed as part of this development.

EXHIBITED



Figure 7: Humeceptor Options



- v. The waterway is highly modified and landscaped, and wholly contained outside this development. The opportunity to provide new vegetation is not available.

With regard to performance criteria P2.1:

- a) Runoff from new residential roof and road areas may contain pollutants, and will be directed through a treatment device.
- b) The restriction on locations for a Humeceptor (see Figure 7 above) in order for access by NMC maintenance crews limits the placement. It is proposed that a Humeceptor be installed at the cul-de-sac head to treat runoff from the new road.
- c) The target reduction of 80% TSS from the new road is achieved by provision of an STC-2 unit (93% removal). TN and TP removal may only be achieved at the target levels of 45% reduction by way of biological methods (swale, bio-retention) which cannot be installed in this residential development.

EXHIBITED

## E9.6.2 Sediment and Erosion Control

With regard to performance criteria P1, the contractor will be required to implement recognised sediment control measures, including:

- Silt fence provision at the downslope boundaries with the waterway;
- Treatment of topsoil stockpiles and earthworks with silt fence, water cart use to minimise dust;
- Disturbed footprint to the minimum required for road and infrastructure works, to minimise dust and sediment runoff.

EXHIBITED





# Traffic Assessment

---

## Proposed Subdivision

### Clarence, Elizabeth and George Streets Perth, Tasmania

SUBMITTED BY:

TERRY EATON  
TRAFFIC ENGINEER  
29 CAREY'S ROAD  
BRIDGENORTH TAS 7277  
TEL / FAX: (03) 6330 1510

MAY 2018 - REV 1

EXHIBITED



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### ATTACHMENTS

1. Subdivision Plan

## 1. Introduction

A proposal is being advanced for a staged subdivision of land with frontage to Clarence Street, Elizabeth Street and George Street, Perth.

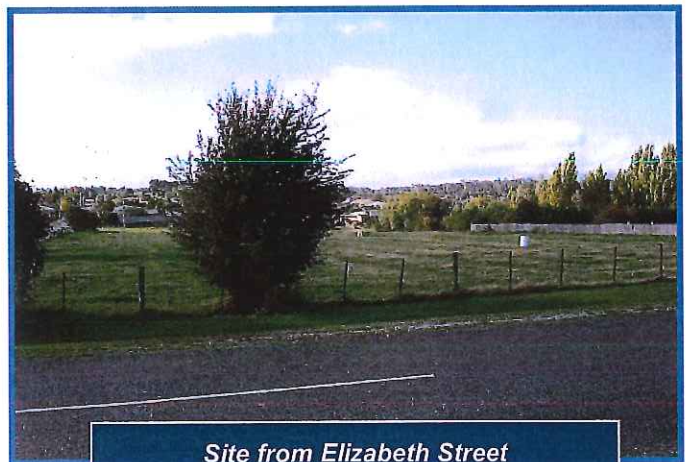
As a preliminary to acceptance of a development application for the proposal a traffic assessment report to the satisfaction of the Northern Midlands Council Infrastructure Department is required. This report, prepared by Terry Eaton, an experienced traffic engineer, is provided for that purpose.

Preparation of the report has included a site visit and discussions with the applicant.

## 2. The Site

The site is land of area some 2.6 hectares situated on the eastern side of Clarence Street between Elizabeth Street and George Street with frontage to the 3 streets.

The land is grass surfaced and generally slopes downward diagonally from the south western corner to the north eastern corner, most of the land is relatively flat, less than 2% fall except for the George Street frontage some 5% fall down from Clarence Street. A relatively steep galley is located some 40 metres south of George Street which slopes to an existing water course beyond the eastern boundary of the land.



Development in proximity to the site includes:

- An abutting cemetery with frontage to Elizabeth Street
- Residence on the opposite sides of the frontage streets
- The Perth Primary School site to the south west of the Clarence Street / Elizabeth Street intersection



### 3. The Proposal

The proposal is to subdivide the land, generally seen as residential infill within the residential area of Perth.

The development is proposed to be staged by:

- Stage 1 – 7 lots; 5 lots fronting George Street plus 2 abutting lots with frontage to Clarence Street
- Stage 2 – 8 lots with six lot cul-de-sac off Clarence Street and 2 lots fronting that street, lots 8 to 14 and 24.
- Stage 3 – 9 lots; 6 lots with frontage to Clarence Street and 3 lots with frontage to Elizabeth Street
- Residual, existing Cemetery area some 9,000m<sup>2</sup> with frontage to Elizabeth Street

Comparison between the land form and the proposed subdivision indicates that the cul-de-sac development and lot layout should permit acceptable access to these components of the development.

### 4. Street Network

- **Clarence Street**

This street is considered as a major collector within the Perth street network. The street provides access for frontage and intersecting side street residents with a component of through traffic travelling via the street, and Mill Road to the Launceston Airport.

The street is considered in function as similar to a Category 4 road in the State Road Hierarchy.

In proximity to the site the street is constructed with a sealed pavement some 7.25 metres wide with kerb and channel, footpath and nature strip on the western (opposite) side of the street from the site. A narrow gravel shoulder and grass verge some 6.0 metres wide are located at the site frontage.

Opposite the site at the George Street intersection an indented area of pavement widening some 24 metres lay by 1.5 metres wide is provided.

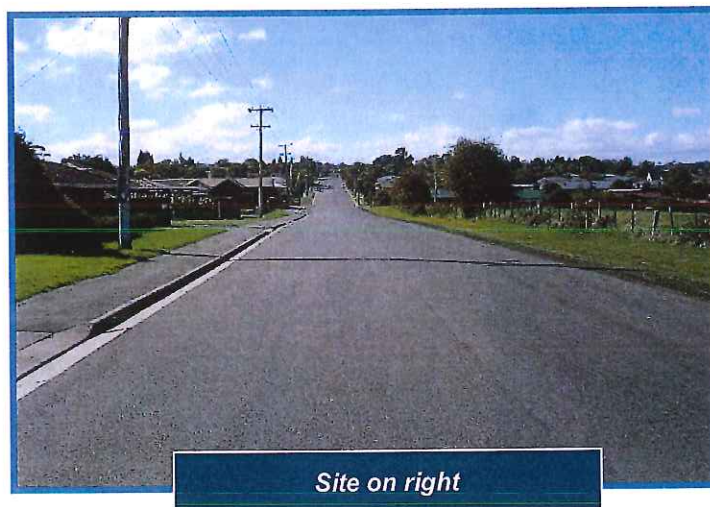
The sealed road width varies between Elizabeth Street and George Street between some 7.7 metres and 10 metres just south of George Street with an average width of some 8.5 metres considered as representative.

The street is straight at the north of the site frontage to beyond Arthur Street. To the south the street curves toward the east at Elizabeth Street (radius some 150 metres).

The road profile is a downgrade of less than 2% to the north to a sag curve, centre some 30 metres south of George Street to an upgrade of some 8% beyond George Street.

Bus stops are located in Clarence St. either side of the site, at Arthur Street to the north and some 60 metres south of Elizabeth Street (northbound) and at Frederick Street for southbound.

Traffic signing at the frontage includes 50 km/h speed control plus 10 tonne load limit signs.





- **Elizabeth Street**

The section of street east of Clarence Street is considered as a local residential street serving frontage residents and via a junction with William Street providing for some traffic from that street.

The street is constructed with a sealed pavement width of some 7.0 metres, footpath and nature strip on the south side, 0.6 metre gravel shoulder and 6.0 metre grass verge with a central earth drain on the north side.

The street is straight and past the site grades down from Clarence Street at some 2%.



A "Give Way" sign is located to face traffic exiting the street at Clarence Street.

Sight distance at the Clarence Street intersection is in excess of 300 metres to the north and some 180 metres to the south.

The default 50 km/h speed limit is applicable.

- **George Street**

The section of street east of Clarence Street is a local residential street some 210 metres long and could be considered as a cul-de-sac providing frontage for six dwellings with the cul-de-sac end terminating at the Department of State Growth quarry. This quarry is non-operational with the area in use for construction material storage.

The street is constructed with a sealed pavement width some 7.8 metres wide, kerb and channel and grass nature strip on the north side with a narrow gravel shoulder and grass verge some 6.5 metres wide at the site frontage. An open drain is positioned near the centre of the verge.

A "Give Way" sign is positioned at the Clarence Street intersection.

The urban street 50 km/h default speed limit is applicable to the street.

Sight distance at Clarence Street is some 240 metres to the north and some 370 metres to the south.



## 5. Traffic Data

- **Clarence Street**

Analysis of traffic data for a Northern Midlands traffic count in Clarence Street south of Talisker Street in September / October 2014 indicates an Average Daily Traffic (ADT) value of some 765 vehicles. Comparing this count location to the subdivision site suggests no likely significant change in traffic use such that adoption of this value is considered acceptable for this assessment.



- **Elizabeth Street**

Analysis based on the frontage properties served, including William Street north of Frederick Street at a residential generation of 6 two-way tips per dwelling per day with allowance for some visitors to the Cemetery and Esplanade suggests an ADT value of some 120-150 vehicles.

- **George Street**

As per the lot generation for Elizabeth Street for the number of properties served suggests an ADT value of some 50-70 vehicles.

- **Proposed Subdivision**

Based on the lot generation of some 6 two-way vehicles per day suggests:

- Clarence Street – 10 lots, allow 60 vehicles per day
- Cul-de-sac – 6 lots, allow 40 vehicles per day
- Elizabeth Street – 3 lots, allow 20 vehicles per day
- George Street – 5 lots, allow 40 vehicles per day

**Total 24 lots and 160 vehicles per day**

## 6. Assessment

Assessment in accord with the Northern Midlands Interim Planning Scheme indicates:

- 1) The subdivision is zoned residential and is considered with the location within a residential neighbourhood as infill development and as such is considered consistent with that land use.

2) 10.4.15.7 P1

- a) The site of the proposed development fronts existing streets except for a short 6 lot cul-de-sac to Clarence Street. The layout is considered satisfactory for the location, having access to existing street with access to the public transport route via Clarence Street. Bus stops are located within the street blocks either side of the site.
- b) Not applicable
- c) The existing posted and default 50 km/h urban speed limit are considered satisfactory for the proposed layout. Subdivision street to be constructed to Northern Midlands Council's Infrastructure Department requirements should take this into consideration.
- d) Not applicable
- e) Not applicable
- f) The layout by development to existing streets with a short cul-de-sac is considered compliant. The layout with the cul-de-sac infill is considered to have adequate interconnectivity to other streets by use of the existing street network.
- g) The road reservation cul-de-sac turning head at 25 metres meets Northern Midland Council's standard requirements for an urban cul-de-sac.
- h) Relevant to the subdivision street layout no significant features have been identified.

3) E4 Road and Railway Assets Code

E4.6.1 P2 The proposal is to provide for residential lots opposite the existing residential development on all streets plus a minor cul-de-sac with frontage to Clarence Street.



The subdivision layout and site topography should permit suitable access ways to be provided for all lots. The subdivision layout is considered as suitable to permit development to be advanced in compliance with Norther Midland Council subdivision guidelines and standards.

- Sight Distance:

- i) Clarence Street; the available sight distance for the intersections at Elizabeth Street and George Street and for the cul-de-sac junction and frontage lots is in excess of table E4.7.4 provisions, i.e. sight distance values are well in excess of the 80 metre requirement for a 50 km/h speed zone.
- ii) Elizabeth Street; the proposed lots are in close proximity to Clarence Street with the street considered as a low use residential street where almost all users will be familiar with this roadside development. Minimum sight distance for the left turn to a driveway on the eastern side of Lot 24 at 33 metres satisfies ASD for a 40 km/h approach speed with 40 km/h assessed as in excess of the estimated turn speed of some 30 km/h.

Note, ASD recommended by AustRoads as the minimum level of sight distance which should be available at intersections.

Sight distances to lots 25 and 26 are in excess of the ASD value for lot 24 and as such are considered satisfactory.

- iii) George Street; sight distance for a vehicle turning right from Clarence Street to the rear of a vehicle waiting to enter a driveway on the eastern side of lot 5 at some 22 metres just satisfies ASD for a 30 km/h approach speed and as such is considered satisfactory.

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Sight distance to driveways for lots 1 to 4 are in excess of this value and as such are considered satisfactory.

E4.7.1 Not applicable

E4.7.2 A1 Street construction for the proposed development to be limited to providing one driveway per lot

E4.7.3 Not applicable

E4.7.4 Considering the location of this proposal within a 50 kmh residential area the assessment as outlined in Section E4.6.1 suggests satisfactory sight distance should be available to all lots plus the cul-de-sac junction.

#### 4) Traffic Efficiency

##### (a) Clarence Street

The addition of the assessed traffic generation from the proposal to the existing use of this street suggests a possible maximum increase in ADT from some 765 vehicles to some 925 vehicles. This maximum value is assessed as well below the considered practical capacity of the street of some 4,500 vehicles per day indicating no traffic efficiency concerns likely.

##### (b) Elizabeth Street

The addition of 3 lots to this street is assessed as increasing the ADT value to a maximum of 170 vehicles, this is a low volume for a residential street well below the amenity value for an access place of 300 vehicles per day. An access place is considered in function as the lowest order street in the normally adopted urban street hierarchy.



(c) George Street

This assessment suggests that the addition of 5 lots to this street will increase the ADT value to a maximum of some 110 vehicles indicating a low use street with no likely amenity issues.

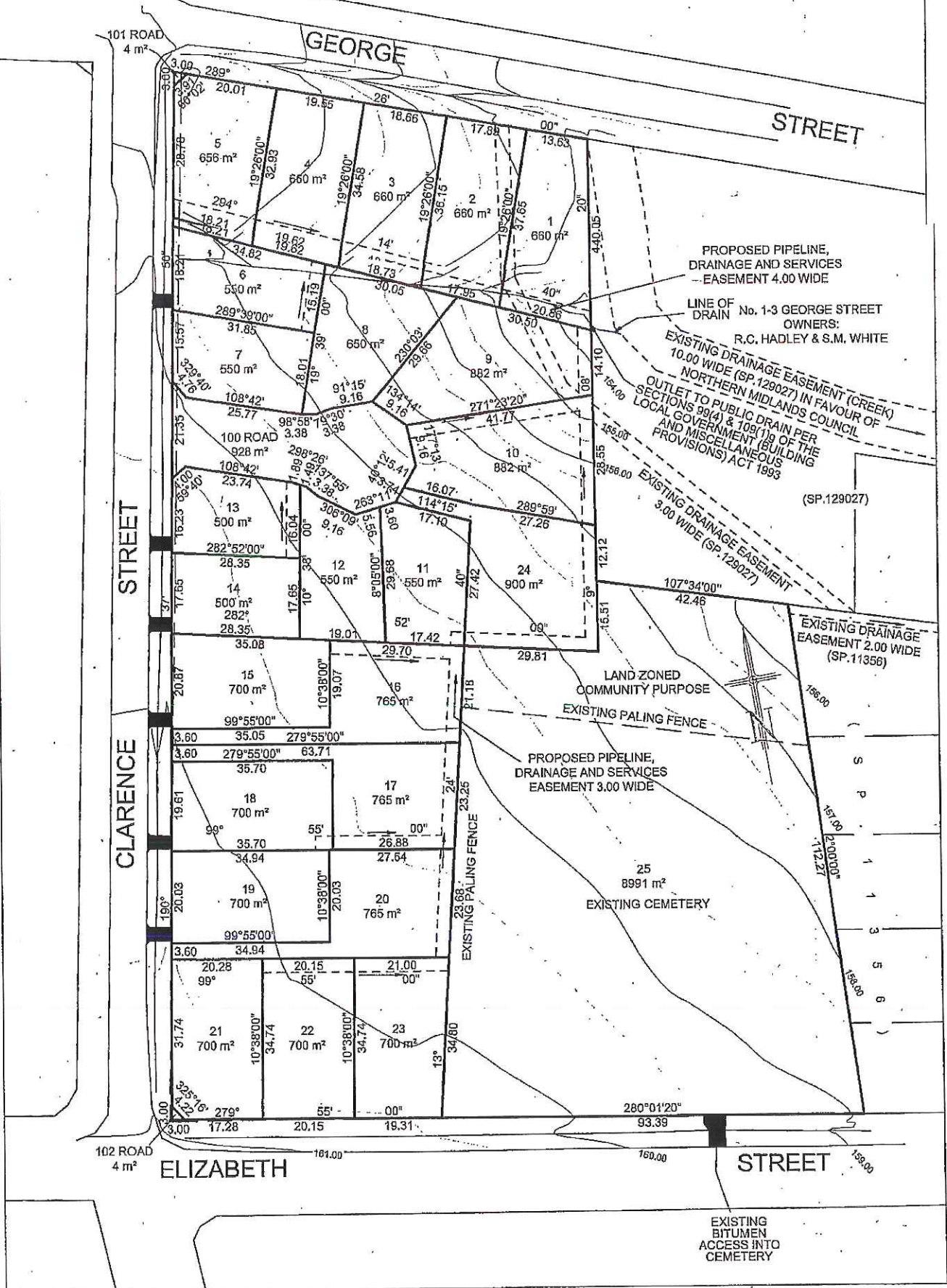
## 7. Conclusion

A traffic assessment for a proposed 25 lot urban subdivision at Clarence Street / Elizabeth Street / George Street, Perth, indicates that provided consideration is given to the suggestions outlined in this report the development should comply with the relevant traffic related requirements of the Northern Midlands Council Interim Planning Scheme.

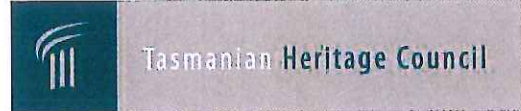
Terry Eaton

STAGE 1: CEMETERY AND BALANCE LAND  
STAGE 1A: LOTS 1-7  
STAGE 2: LOTS 8-14 & 24  
STAGE 3: ALL REMAINING LOTS  
STAGES MAY BE COMPLETED IN ANY ORDER.  
APPLICATIONS MAY BE MADE FOR SEALING  
OF INDIVIDUAL LOTS.

PIPELINE, DRAINAGE & SERVICES  
EASEMENTS 3.00 WIDE UNLESS OTHERWISE  
STATED.  
PROPOSED ACCESSES 3.00 WIDE SHOWN ON  
LOTS 6, 13, 14, 15, 18 & 19. LOCATION OF  
ACCESSES EXCEPT WHERE SHOWN SUBJECT  
TO FINAL ENGINEERING DESIGN.







Tasmanian Heritage Council  
 GPO Box 618 Hobart Tasmania 7000  
 Level 3, 200 Collins St, Hobart Tasmania 7000  
 Tel: 1300 850 332  
 enquiries@heritage.tas.gov.au  
 www.heritage.tas.gov.au

PLANNING REF: P18-135  
 THC WORKS REF: #5613  
 REGISTERED PLACE NO: #5207  
 FILE NO: No File Ref.  
 APPLICANT: Carlton Dixon  
 DATE OF DECISION: 25 June 2018

## NOTICE OF HERITAGE DECISION

*(Historic Cultural Heritage Act 1995)*

The Place: St Andrew's Cemetery, 21-43 Clarence Street, Perth.  
 Proposed Works: Subdivision (25 lots).

Under section 39(6)(b) of the *Historic Cultural Heritage Act 1995*, the Heritage Council gives notice that it consents to the discretionary permit being granted in accordance with the documentation submitted with Development Application P18-135, advertised on 02/06/2018, subject to the following conditions:

- I. (i) **The excavation of sewer and stormwater trenches to the west and northern sides of the Existing Cemetery must stop on the discovery of significant archaeological features.**  
 (ii) **If significant archaeological features are discovered, the work in that area must cease for 24 hours and Heritage Tasmania must immediately be contacted for further advice.**  
 (iii) **Significant archaeological features include deposits of domestic material, monuments/headstones, unmarked graves, and building foundations.**

Reason for condition

To ensure that the sub-surface heritage information is not lost.

2. **Replacement fencing to the new boundaries between the Existing Cemetery (Lot 25) and Lots 24, 16, 17, 20 & 23 must be of a hardwood paling construction, of consistent height and finish, to a maximum 1800mm high. The new fences are to be constructed so that the palings face the Existing Cemetery. The new fencing must not be of Colorbond steel.**

Reason for condition

To clarify the scope of this approval, and to ensure that works not adequately documented in the Works Application minimise the impact on the place's heritage values.

Advice

The Heritage Council advises that excavation must not occur within the 'Existing Cemetery' (Lot 25), bound by the 'existing paling fence', without further heritage approval.

The applicant should note that all of the areas affected by the subdivision will remain entered in the Tasmanian Heritage Register as part of the original entry for the site, and that heritage works to the new lots shall require heritage approval pursuant to Part 6 of the *Historic Cultural Heritage Act 1995*. The applicant/owner may request a review and amendment to the place's entry in the THR once the new property title/s are sealed.

Please ensure the details of this notice, including conditions, are included in any permit issued, and forward a copy of the permit or decision of refusal to the Heritage Council for our records.

Please contact Mr Chris Bonner on 1300 850 332 if you require clarification of any matters contained in this notice.



Russell Dobie  
**Works Manager (Acting) – Heritage Tasmania**  
*Under delegation of the Tasmanian Heritage Council*



**NORTHERN MIDLANDS COUNCIL**

**REPORT FROM:** HERITAGE ADVISER, DAVID DENMAN  
**DATE:** 01-Jun-2018  
**REF NO:** P18-135; 103000.11s813  
**SITE:** 21-43 Clarence Street, PERTH  
**PROPOSAL:** 25 Lot Subdivision (Heritage Listed Property)  
**APPLICANT:** C Dixon  
**REASON FOR REFERRAL:** LOCAL HISTORIC HERITAGE CODE  
HERITAGE-LISTED PLACE (cemetery)  
NOT IN A HERITAGE PRECINCT

Do you have any objections to the proposal: **No**

Do you have any other comments on this application?

**This proposal is for a 25-lot subdivision.**

**The lots are of a size and layout that will allow for the construction of new houses that can be sympathetic with the existing houses in the area.**

**The adjoining historic cemetery will be retained on a separate title and will not be adversely affected by the proposed subdivision.**

*Email referral as word document to David Denman - [denmanarchitects@bigpond.com](mailto:denmanarchitects@bigpond.com)*

*Attach public exhibition documents*

*Subject line: Heritage referral P18-135 - 21-43 Clarence Street, PERTH*



David Denman (Heritage Adviser)

Date: 9/7/2018



**E13.6.2 Subdivision and development density**

*Objective: To ensure that subdivision and development density does not impact on the historic heritage significance of local heritage places and the ability to achieve management objectives within identified heritage precincts.*

<b>Acceptable Solutions</b>	<b>Performance Criteria</b>
A1 No acceptable solution.	<p>P1 Subdivision must:</p> <p>a) be consistent with and reflect the historic development pattern of the precinct or area; and</p> <p>b) not facilitate buildings or a building pattern unsympathetic to the character or layout of buildings and lots in the area; and</p> <p>c) not result in the separation of building or structures from their original context where this leads to a loss of historic heritage significance; and</p> <p>d) not require the removal of vegetation, significant trees or garden settings where this is assessed as detrimental to conserving the historic heritage significance of a place or heritage precinct; and</p> <p>e) not detract from meeting the management objectives of a precinct identified in Table E13.1: Heritage Precincts, if any.</p>

**Comment:**

- a) The proposed subdivision layout is sympathetic with the size and pattern of the existing adjoining lots in George, Clarence and Elizabeth Streets.
- b) Future buildings on the new lots will be compatible with the existing buildings and lots in the area.
- c) There are no significant heritage buildings or structures that will result in loss of original context because of the proposed subdivision.
- d) There is no significant vegetation or trees that require removing on the subject land.

**PERTH HERITAGE PRECINCT CHARACTER STATEMENT**

*The Perth Heritage Precinct is unique because it is still the core of a small nineteenth century riverside town, built around the thoroughfare from the first bridge to cross the South Esk River, and which retains its historic atmosphere. It combines significant colonial buildings, compact early river's edge residential development, and retains the small-scale commercial centre which developed in the nineteenth century at the historic crossroads and river crossing for travel and commerce between Hobart, Launceston and the North West. Perth's unique rural setting is complemented by its mix of businesses still serving local and visitor's needs. Perth's heritage ambience is acknowledged by many of those who live in or visit the town, and will be enhanced by the eventual construction of the Midland Highway bypass.*



- e) **The existing houses that adjoin this proposed subdivision are relatively recent buildings and have no heritage value.**

**Therefore, the proposed subdivision will not detract from meeting the management objectives of the precinct.**

## Submission to Planning Authority Notice

Council Planning Permit No.	P18-135	Council notice date	01/06/2018
<b>TasWater details</b>			
TasWater Reference No.	TWDA 2018/00893-NMC	Date of response	06/06/2018
TasWater Contact	Anthony Cengia	Phone No.	(03) 6237 8243
<b>Response issued to</b>			
Council name	NORTHERN MIDLANDS COUNCIL		
Contact details	Planning@nmc.tas.gov.au		
<b>Development details</b>			
Address	21-43 CLARENCE ST, PERTH	Property ID (PID)	6741256
Description of development	24 Lot + Balance Subdivision		
<b>Schedule of drawings/documents</b>			
Prepared by	Drawing/document No.	Revision No.	Date of Issue
Nick Griggs & Co.	429510 Plan of Subdivision (2 Sheets)		18/05/2018
Nick Griggs & Co.	429510 Services Plan (2 Sheets)		18/05/2018
TasWater	Sewer Works External Plan		06/06/2018
<b>Conditions</b>			
<b>SUBMISSION TO PLANNING AUTHORITY NOTICE OF PLANNING APPLICATION REFERRAL</b>			
Pursuant to the <i>Water and Sewerage Industry Act 2008 (TAS)</i> Section 56P(1) TasWater imposes the following conditions on the permit for this application:			
<b>CONNECTIONS, METERING &amp; BACKFLOW</b>			
<ol style="list-style-type: none"> <li>1. A suitably sized water supply with metered connections / sewerage system and connections to each lot of the development must be designed and constructed to TasWater's satisfaction and be in accordance with any other conditions in this permit.</li> <li>2. Any removal/supply and installation of water meters and/or the removal of redundant and/or installation of new and modified property service connections must be carried out by TasWater at the developer's cost.</li> <li>3. Prior to commencing construction of the subdivision/use of the development, any water connection utilised for construction/the development must have a backflow prevention device and water meter installed, to the satisfaction of TasWater.</li> </ol>			
<b>ASSET CREATION &amp; INFRASTRUCTURE WORKS</b>			
<ol style="list-style-type: none"> <li>4. Plans submitted with the application for Engineering Design Approval must, to the satisfaction of TasWater show, all existing, redundant and/or proposed property services and mains.</li> <li>5. Prior to applying for a Permit to Construct new infrastructure the developer must obtain from TasWater Engineering Design Approval for new TasWater infrastructure. The application for Engineering Design Approval must include engineering design plans prepared by a suitably qualified person showing the hydraulic servicing requirements for water and sewerage to TasWater's satisfaction.</li> <li>6. Prior to works commencing, a Permit to Construct must be applied for and issued by TasWater. All</li> </ol>			



infrastructure works must be inspected by TasWater and be to TasWater's satisfaction.

7. In addition to any other conditions in this permit, all works must be constructed under the supervision of a suitably qualified person in accordance with TasWater's requirements.
8. The developer must design and construct an additional 6.22 m<sup>3</sup> of emergency storage to TasWater's satisfaction which is needed at TasWater's William Street Sewage Pumping Station PERTH (Maximo Location ID PERSP07) . The emergency storage must be designed and constructed to allow future augmentation.
 

*Advice: In accordance with TasWater's 'Developer Charges Policy' for developments located within Serviced Land where insufficient capacity is available within an existing system, the developer pays the costs of Expansion of the system to the level of capacity required to service the development.*
9. Prior to the issue of a Consent to Register a Legal Document all additions, extensions, alterations or upgrades to TasWater's water and sewerage infrastructure required to service the development are to be constructed at the expense of the developer to the satisfaction of TasWater, with live connections performed by TasWater.
10. After testing to TasWater's requirements, of newly created works, the developer must apply to TasWater for connection of these works to existing TasWater infrastructure, at the developer's cost.
11. At practical completion of the water and sewerage works and prior to TasWater issuing a Consent to a Register Legal Document the developer must obtain a Certificate of Practical Completion from TasWater for the works that will be transferred to TasWater. To obtain a Certificate of Practical Completion:
  - a. Written confirmation from the supervising suitably qualified person certifying that the works have been constructed in accordance with the TasWater approved plans and specifications and that the appropriate level of workmanship has been achieved;
  - b. A request for a joint on-site inspection with TasWater's authorised representative must be made;
  - c. Security for the twelve (12) month defects liability period to the value of 10% of the works must be lodged with TasWater. This security must be in the form of a bank guarantee;
  - d. As constructed drawings must be prepared by a suitably qualified person to TasWater's satisfaction and forwarded to TasWater.
12. After the Certificate of Practical Completion has been issued, a 12 month defects liability period applies to this infrastructure. During this period all defects must be rectified at the developer's cost and to the satisfaction of TasWater. A further 12 month defects liability period may be applied to defects after rectification. TasWater may, at its discretion, undertake rectification of any defects at the developer's cost. Upon completion, of the defects liability period the developer must request TasWater to issue a "Certificate of Final Acceptance". The newly constructed infrastructure will be transferred to TasWater upon issue of this certificate and TasWater will release any security held for the defects liability period.
13. The developer must take all precautions to protect existing TasWater infrastructure. Any damage caused to existing TasWater infrastructure during the construction period must be promptly reported to TasWater and repaired by TasWater at the developer's cost.
14. Ground levels over the TasWater assets and/or easements must not be altered without the written approval of TasWater.
15. A construction management plan must be submitted with the application for TasWater Engineering Design Approval. The construction management plan must detail how the new TasWater infrastructure will be constructed while maintaining current levels of services provided by TasWater



to the community. The construction plan must also include a risk assessment and contingency plans covering major risks to TasWater during any works. The construction plan must be to the satisfaction of TasWater prior to TasWater's Engineering Design Approval being issued.

#### FINAL PLANS, EASEMENTS & ENDORSEMENTS

16. Prior to the Sealing of the Final Plan of Survey, a Consent to Register a Legal Document must be obtained from TasWater and the certificate must be submitted to the Council as evidence of compliance with these conditions when application for sealing is made.
17. Pipeline easements, to TasWater's satisfaction, must be created over any existing or proposed TasWater infrastructure and be in accordance with TasWater's standard pipeline easement conditions.
18. In the event that the property sewer connection for affected lots cannot control the lot for a gravity connection, the Plan of Subdivision Council Endorsement Page for those affected lots is to note, pursuant to Section 83 of the Local Government (Building and Miscellaneous Provisions) Act 1993, that TasWater cannot guarantee sanitary drains will be able to discharge via gravity into TasWater's sewerage system.

*Advice: See WSA 02—2014-3.1 MRWA Version 2 section 5.6.5.3 Calculating the level of the connection point*

#### DEVELOPMENT ASSESSMENT FEES

19. The applicant or landowner as the case may be, must pay a development assessment and Consent to Register a Legal Document fee to TasWater, as approved by the Economic Regulator and the fees will be indexed, until the date they are paid to TasWater, as follows:
  - a. \$1,296.47 for development assessment; and
  - b. \$226.94 for Consent to Register a Legal Document

The payment is required within 30 days of the issue of an invoice by TasWater.
20. In the event Council approves a staging plan, a Consent to Register a Legal Document fee for each stage, must be paid commensurate with the number of Equivalent Tenements in each stage, as approved by Council.

#### Advice

##### General

For information on TasWater development standards, please visit <http://www.taswater.com.au/Development/Development-Standards>

For application forms please visit <http://www.taswater.com.au/Development/Forms>

##### Service Locations

Please note that the developer is responsible for arranging to locate the existing TasWater infrastructure and clearly showing it on the drawings. Existing TasWater infrastructure may be located by a surveyor and/or a private contractor engaged at the developers cost to locate the infrastructure.

A copy of the GIS is included in email with this notice and should aid in updating of the documentation. The location of this infrastructure as shown on the GIS is indicative only.

- A permit is required to work within TasWater's easements or in the vicinity of its infrastructure. Further information can be obtained from TasWater
- TasWater has listed a number of service providers who can provide asset detection and location services should you require it. Visit [www.taswater.com.au/Development/Service-location](http://www.taswater.com.au/Development/Service-location) for a list of companies



- TasWater will locate residential water stop taps free of charge
- Sewer drainage plans or Inspection Openings (IO) for residential properties are available from your local council.

#### Declaration

The drawings/documents and conditions stated above constitute TasWater's Submission to Planning Authority Notice.

#### Authorised by



**Jason Taylor**

Development Assessment Manager

#### TasWater Contact Details

Phone	13 6992	Email	development@taswater.com.au
Mail	GPO Box 1393 Hobart TAS 7001	Web	www.taswater.com.au





## REFERRAL OF DEVELOPMENT APPLICATION P18-135 TO WORKS DEPARTMENT

Property/Subdivision No: 103000.11s813

Date: 01-Jun-2018

Applicant: C Dixon

Proposal: 25 Lot Subdivision (Heritage Listed Property)

Location: 21-43 Clarence Street, PERTH

W&amp;I referral P18-135, 21-43 Clarence Street, PERTH

Jonathan - if you require further information, advise planning section as soon as possible – there are only 14 days from receipt of Permitted applications and 21 days from receipt of Discretionary applications to stop the clock.

Please inspect the property and advise regarding stormwater/drainage, access, traffic, and any other engineering concerns.

Is there is a house on one of the lots?	No
Is it connected to all Council services?	No
Are any changes / works required to the house lot?	N/A
Are the discharge points for stormwater, infrastructure that is maintained by Council? (This requires a check to ensure the downstream infrastructure is entirely owned, maintained, operated by Council and have been taken over as Council assets.)	Yes

**Stormwater:**

Does the physical location of stormwater services match the location shown on the plan? (Requires an on-site inspection)	Yes
Is the property connected to Council's stormwater services?	Yes
If so, where is the current connection/s?	
Can all lots access stormwater services?	Yes
If so, are any works required?	Yes, as follows
<b>Stormwater works required:</b>	
<i>As per design plans</i>	
Is there kerb and gutter at the front of the property?	No
Are any kerb-and-gutter works required?	Yes, all lots

**Road Access:**

Does the property have access to a made road?	Yes
If so, is the existing access suitable?	No
Does the new lot/s have access to a made road?	No
If so, are any works required?	As per design plans
Is off-street parking available/provided?	Yes
<b>Road / access works required:</b>	
<i>As per design plans</i>	
Is an application for vehicular crossing form required?	No
Is a footpath required?	Yes
Extra information required regarding driveway approach and departure angles	No

Are any road works required:	No
Are street trees required?	Yes
Additional Comments:	An Engineer's design is required.

Engineer's comment:

Note that the plans do not show an easement over the short section between the boundary of this development and the natural watercourse in 1-3 George St. I believe we need confirmation of this easement before the permit can be issued.

## WORKS DEPARTMENT CONDITIONS

### STANDARD CONDITIONS FOR SMALL SUBDIVISIONS

#### W.1 Stormwater

- o Each lot shall be provided with a connection to the Council's stormwater system, constructed in accordance with Council standards and to the satisfaction of Council's Works & Infrastructure Department.
- o All stormwater on the site shall be connected to the existing main on the northern side of Paton St.
- o A stormwater design plan including long sections and the depth, size and grade of all mains is to be provided to Council prior to the commencement of any works on site.
- o Calculations shall be provided to demonstrate that the system is of sufficient capacity to drain the road and all lots to be created.

#### W.2 Access (Urban)

- o A concrete driveway crossover and concrete apron shall be constructed for each lot from the edge of the street to the property boundary in accordance with Council standards.

#### W.3 Roadworks

- o Kerb and channel and hotmix sealed roads shall be constructed along the frontage of all lots.
- o Road widening shall be carried out in George St to match the existing kerb and channel on the western side of Clarence St
- o Road widening shall be carried out in Clarence St to a minimum width of 11m from face of kerb to face of kerb
- o Elizabeth St shall be widened to 8.9m from face of kerb to face of kerb
- o A 1.8m wide concrete footpath shall be created along the frontage of all lots in Clarence St, George St and along one side of the new cul de sac.
- o An engineering design plan showing the road, footpath and drainage system including pavement long sections and cross sections is to be approved by Council before the commencement of works on site

#### W.4 Street trees

A street tree shall be planted outside the frontage of each lot by the developer prior to handover to Council at the end of the maintenance period.

#### W.5 As constructed information

As Constructed Plans and Asset Management Information shall be provided in accordance with Council's standard requirements.

#### W.6 Municipal standards & certification of works

Unless otherwise specified within a condition, all works shall comply with the Municipal Standards including specifications and standard drawings. Any design shall be completed in accordance with Council's subdivision design guidelines to the satisfaction of the Works & Infrastructure Department. Any construction, including maintenance periods, shall also be completed to the approval of the Works & Infrastructure Department.

#### W.7 Works in road reserve

No works shall be undertaken within the public road reserve, including crossovers, driveways or kerb and guttering, without prior approval for the works by the Works & Infrastructure Manager. Twenty-four hours (24) notice shall to be given to the Works & Infrastructure Department to inspect works within road reserve and before placement of concrete or seal. Failure to do so may result in rejection of the vehicular access or other works and its reconstruction.



W.8 Hydraulic separation

- Any existing pipes and stormwater connections shall be located where required pipes are to be rerouted to provide an independent system for each lot.
- Certification shall be provided that hydraulic separation between the all lots has been achieved.

W.9 Easements to be created

Easements shall be created over all Council-owned services in favour of the Northern Midlands Council. Such easements shall be created on the final plan to the satisfaction of the Planning & Development Manager.

W.10 Pollutants

- The developer/property owner shall be responsible for ensuring pollutants such as mud, silt or chemicals are not released from the site.
- Prior to the commencement of the development works the developer/property owner must install all necessary silt fences and cut-off drains to prevent soil, gravel and other debris from escaping the site. No material or debris is to be transported onto the road reserve (including the naturestrip footpath and road pavement). Any material that is deposited on the road reserve shall be removed by the applicant. Should Council be required to clean or carry out works on any of their infrastructure as a result of pollutants being released from the site the cost of these works may be charged to the developer/property owner.

W.11 Bonds

The subdivision shall be subject to a maintenance period and a bond shall be held by Council until the completion of the maintenance period. The bond shall be calculated based on 5% of the total cost of works based on Council's standard road construction rates.

W.12 Naturestrips

Any new naturestrips, or areas of naturestrip that are disturbed during construction, shall be topped with 100mm of good quality topsoil and sown with grass. Grass must be established and free of weeds prior to Council accepting the development.

*Jonathan Galbraith (Works Officer)*

*Discussed with Leigh McCullagh (Works Manager)*

*Date: 21/6/18*

3 May 2018

General Manager  
PO Box 156  
LONGFORD  
Tasmania 7301

Dear Sir/Madam,

I am writing to you to lodge my opposition to the high-density subdivision development proposed for the block on Clarence Street between Elizabeth and George Streets.

I base my opposition to the subdivision on the points listed below:

- The current proposed development is not in keeping with the surrounding properties land usage, most of which are on medium to large blocks with off street parking and front and back gardens
- The Northern Midlands Council has recently employed a person to promote and advance the Councils' concept of Perth maintaining and progressing a Village lifestyle and buildings. This high-density proposal is in direct conflict with this philosophy
- The development has the potential to adversely affect the house and land values of the surrounding properties, will Council be offering compensation to these ratepayers who bought their properties in good faith for a county town
- In George St there is currently a substantial flooding problem of water and sewerage for several properties, the Council has been unable to resolve these issues to date and I am concerned that the development will only exacerbate the existing flooding issue
- The development will create traffic problems for surrounding properties as the development has no provision for off street parking for residents or visitors to residents, this will create a large amount of congestion at certain times of the day
- As there is limited vehicular access to the development, this poses a severe impediment to emergency service vehicles, in particular, in the case of fire
- The development has the potential to adversely affect the ability for Perth to maintain the current Heritage listings let alone future potential listings
- The development will require substantial changes to the Councils planning regulations, assuming these changes have not already been made to allow the development. This then opens the door for further high-density developments which will change the face of Perth to a satellite suburb rather than the Village lifestyle the Council is currently promoting.

I will take every opportunity I can to prevent this subdivision proposal from succeeding.

Regards,

Mr. Phillip Grace  
8 George Street  
PERTH Tasmania 7300



**Representation :**

P18-135, 21-43 Clarence St Perth

Mr Des Jennings General Manager

Northern Midlands Council

Dear Des

I wish to make representation regarding the above, basically two matters, firstly that there is insufficient information on which to make any conclusive assessment around the merits of the proposal and secondly, what information there is raises some red flags. The Planning Application is primarily a very basic Traffic Assessment and inadequate as a basis for informed or detailed community analysis.

Perth and the Northern Midlands stand at the crossroads of an exciting future with some very well balanced and strategic initiatives in train reflected in the NMC Strategic Plan 2017-2027. This has built extensive community capital and positive relations with Council.

At a minimum it would seem reasonable within the intent of the Land Use Planning and Approvals Act (1993) The Northern Midlands Interim Planning Scheme (2013) and the Perth Town Structure Plan (2017) that any decision by Council on the above Application be deferred until fulsome information is provided and a community engagement process agreed on.

Whilst to some extent the above Application appears as a relatively benign discretionary in fill proposal within a very good Town Structure Plan the process and information provided to date is simply inadequate to engender anything but caution. For example, whilst the schematics within the Perth Town Structure Plan (Section 9) are just that it is noteworthy that the Plan schematic of this site has around 13 dwellings whilst the Application has double the number of sites. The Application begins to look like crowding as many dwellings as possible on the site to maximise economic returns whilst minimising the aesthetics, access, amenities, public spaces for residents and, fit with the proximate neighbourhood.

There is a balance that needs to be struck here between the economic and many other goals of our town and with the Application, irrespective of technical compliance, we can see very little balance. The scant information provided raises immediate concerns regarding the extent to which the Applicant has made effort or intends to make effort to:

- (1) Demonstrate the proposal reflects both the broader goals and objectives of: the Northern Midlands Interim Planning Scheme as well as zone purposes and; the Perth Town structure Plan (2017) especially- [2.3] planning frameworks, [7] urban design principles and [9] proposed structure plan
- (2) engage with our community on this matter

I would therefore request that Council consider deferral of the Application until (1) and (2) above are canvassed preferably in the context of the Applicant meeting the requirements of Part B 8.1.2 (c) of the Interim Planning Scheme and that the Council is clear that all relevant matters under Part B 8.1.3 are resolved. It would be very useful to have a clear understanding of the next level of detail around crucial design features of the proposed dwellings, housing mix and interface with the neighbourhood.

Further to our community meeting this week which you attended it is clear that most all the neighbours are keen to welcome new folk into our community but are frustrated by the process to date and apparent lack of alignment with the Perth Town Structure Plan that so many were involved in developing. It is very clear that from the community perspective the Perth Structure Plan and its intent under the Scheme is a crucial relevant matter for Council and the Applicant to engage with.

Kind Regards

Professor David Adams

4 Frederick Street

Perth

0419340223



To whom it may concern

Please find my attached concern in regard to the proposed subdivision lot 21 43 Clarence street Perth

As a resident of Clarence Street i have still concerns the amount of blocks going in. Even though the amount has been slightly downsized. It still seems a crowded amount of blocks in the rural community we now live in.

I am not opposed to the development, but really feel this amount of housing does not blend with the Village lifestyle we are used to and feel it could lead to a negative standard.

The amount of traffic and traffic, vehicle access and parking is also a issue.

How the infrastructure will support the amount of housing. As we already have issues with stormwater flooding.

Yours Sincerely

Cathy Axton

General Manager  
Northern Midlands Council  
PO Box 156  
LONGFORD TAS 7301

Email: [planning@nmc.tas.gov.au](mailto:planning@nmc.tas.gov.au).

Dear Mr Jennings

I wish to make a further submission with respect to the application for the subdivision proposal that has been submitted for 21 - 43 Clarence Street Perth.

As a near neighbour, my property at 2A William Street will most likely be impacted directly by the proposed development.

I recognise that the proponent has made some amendments to the original proposal and also provided a report on the treatment of stormwater. However, this report is not clear to a layman.

The information provided in my view therefore remains insufficient for meaningful consideration. In order to gain a better understanding of the application, I would therefore require more detail about how the applicant proposes to deal with a range of issues including stormwater and sewage run-off, and building envelopes, easements and set-backs.

In Section 9 of the Perth Town Structure Plan, this site is identified for future medium density development. The notional schematic of this site shows around 13 lots in this land area. This would seem in keeping with the surrounding area in terms of lot size, provision of adequate space for appropriate dwellings, related infrastructure and landscaping.

The application makes no reference to the Land Use Planning and Approvals Act (1993) or to the broader goals and objectives of the Northern Midlands Interim Planning Scheme (2013). It also raises concerns about how the proposal would be informed by the recently released Perth Town structure plan.

The lack of detail on matters of such significance does little to allay community concerns about this development application.

It would be prudent to develop a local area plan before proceeding with a development on this scale. This would also show good faith after the extensive community consultation which preceded the adoption of the Perth structure plan.

I therefore urge Council to refuse the application until it can be considered in the context of a coherent local area plan.

Yours sincerely



Jan Davis  
16<sup>th</sup> June 2018



Dear Sir/Madam,

On behalf of myself, my husband & our daughter we would like to express how much we disagree with the proposed 28 lot subdivision at 21-43 Clarence St, Perth DA Ref: P18-135.

We live on Arthur St in Perth & my parents live on Elizabeth St in Perth, we walk past that beautiful, quiet paddock regularly & it would be such a shame if that was taken away & 25 houses were squished on it. Here are some points on why we strongly disagree with this proposal:

- Taking away the peaceful paddock & replacing it with busy small blocked houses.
- So much more traffic in that area where a lot of children walk to Perth primary school, more dangerous for kids.
- Most likely be cars parked all along the street as the driveways aren't long.
- It will diminish the neighborhood character, too many houses in a small area.
- We love walking past that lovely paddock with the horses on the way to the river, such a lovely part of town & it would be such a shame if houses were built there.

Thank you very much for spending the time to read this email, we really hope you take this seriously & please rethink the proposal for our lovely town Perth.

Regards, Natalie Gault.

1-400

**Robert Hadley and Shan White**  
**1 - 3 George Street**  
**Perth**

Bob: 0418 315 923 Shan: 0428 865 226

Email: shan.white@rch.net.au

General Manager  
Northern Midlands Council  
Smith Street  
Longford Tas 7301

14 June 2018

via Email: [planning@nmc.tas.gov.au](mailto:planning@nmc.tas.gov.au)

**SUBJECT: Proposed 25 Lot Subdivision, 21 – 43 Clarence Street, Perth**  
**DA Ref: P18-135 (Heritage Listed Property)**

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We hereby submit a representation with respect to the above proposed 25 Lot Subdivision.

Our property 1-3 George Street shares a common boundary with the land proposed for this subdivision and stormwater and sewerage pipelines run directly through our property from the undeveloped land at 21-43 Clarence Street.

A major concern we have is the lack of information about what measures will be undertaken to deal with stormwater and sewerage from the proposed subdivision. Stormwater run-off from the block (as per the plans supporting the subdivision show) will be directed into the open easement (drain) across 1-3 George Street. We believe that increased stormwater run-off will have a significant impact on our land in terms of increased erosion not only during the development of the subdivision but also once houses are built. It is understood that the sewage line running from the Clarence Street property through to the pump station on the riverbank in William Street will require upgrading to accommodate increased flow.

At a meeting held on Tuesday 12 June 2018 with yourself and the Perth District Committee, we were advised of a review to be undertaken with respect to the plans for management of the stormwater run-off. We were also advised of plans for Tas Water to upgrade the sewerage treatment plant in William street, however, no plans to upgrade the existing sewerage pipeline.

We continue to have major concerns regarding this amended 25 lot subdivision as previously with the 28 lot subdivision, that the increase in stormwater created by this development will greatly impact out property in terms of erosion along the boundary fence as well as in the existing stormwater drain on our property at the very least. I posed an alternative suggestion at this meeting to your Planning Officer with respect to directing the stormwater out into George Street and then directly along George Street to the South Esk River (see attached plan). Your Planning Officer noted this suggestion and advised that he would investigate this as an alternative. We would appreciate being informed of the outcome of this investigation.



Comments related to the document prepared by *Hydrodynamica* included with this planning application:

***Page 1: "A detailed catchment analysis has not been undertaken given the lack of specific site information...The analysis is derived from recent aerial photography to determine the approximate impervious fraction..."***

I noted at the meeting on Tuesday night that it is impossible to understand the current stormwater flow or the effects this development would have without a site inspection both in fine weather as well as when it is raining.

***Page 6: The approx. 200m water course from the catchment discharge point on George St to the South Esk River is highly modified is that it runs as a landscaped feature through 1-3 George St. The upstream catchment is almost fully urbanised, excepting the upper portion which is rural residential. As such the natural flow regime does not exist in its historical undisturbed form.***

We believe this statement is not entirely accurate in terms of the landscape of our property, however, at the very least this statement would suggest that a site visit is imperative in order to assess the effects of an increased flow of stormwater.

Previously, we submitted a representation in relation to DA REF: P18-095 to which we received an acknowledgement from the Northern Midlands Council, however, no further response was received to any of our concerns outlined in our representation. Therefore, we have once again included some of the key points from our previous submission for your consideration and response.

Listed below are some additional points which we believe may demonstrate a conflict with the Northern Midlands Council planning scheme and this development:

#### **10.1 Zone Purpose**

***10.1.1.1 To provide for residential use or development that accommodates a range of dwelling types at suburban densities, where full infrastructure services are available or can be provided.***

No information has been provided within this application to support/confirm infrastructure suitability and proposed loading/s

***10.1.1.4 To encourage residential development that respects the neighbourhood character and provides a high standard of residential amenity.***

This proposal contains considerably smaller lot sizes to that of surrounding properties within Clarence, Elizabeth and George Streets. This does not maintain and/or respect the predominant neighbourhood character. The proposed lot sizes and density would not support a high standard of residential amenity.

#### **10.4.15 Subdivision**

***Objective: To provide lots with areas and dimensions that enable the appropriate siting and construction of a dwelling, private open space, vehicle access and parking, easements and site features.***

The density of the proposed subdivision and minimal lot sizes does not appear to support the inclusion of the specified objectives upon all lots.

**10.4.15.5 Integrated Urban Landscape**

**Objective: To provide attractive and continuous landscaping in roads and public open spaces that contribute to the:**

- a) character and identity of new neighbourhoods and urban places; or**
- b) to existing or preferred neighbourhood character, if any.**

This proposal does not address the acceptable solutions and/or performance criteria of this clause insofar as it has little regard for existing/significant features and does not enhance the visual amenity or attractiveness of the urban environment.

We are not adverse to development and would welcome the development of 21-43 Clarence Street in a substantially different format, however, more importantly, we have numerous questions relating to how this proposed development will directly affect our property and would request that you consider it a priority that we be given the opportunity to discuss this further with yourself prior to progressing the development to the next stage.

Thank for your urgent attention to this matter.

Yours sincerely



Robert Hadley and Shan White

Attachment: Plan of Subdivision – suggested stormwater flow



# Nick Griggs & Co.

Land Surveyors, 295 Elizabeth Street, North Hobart 7000  
Phone: 6234 5022 Fax: 6231 2412

## PLAN OF SUBDIVISION

OWNER: THE TRUSTEES OF THE DIOCESE OF TASMANIA

LOCATION: 21-43 CLARENCE STREET, PERTH

MUNICIPALITY: NORTHERN MIDLANDS COUNCIL

### Important Note:

This plan was prepared as a proposed subdivision to accompany a subdivision application to Northern Midlands Council and should not be used for any other purpose. The dimensions, areas and total number of lots shown hereon are subject to field survey and also to the requirements of Council and any other authority which may have requirements under any relevant legislation. In particular, no reliance should be for any financial dealings involving the land. This note is an integral part of this plan.

MEASUREMENTS ARE IN METRES AND SUBJECT TO FINAL SURVEY

SCALE: 1:750

CONTOUR INT: 0.5m

DATE: 18/05/2018

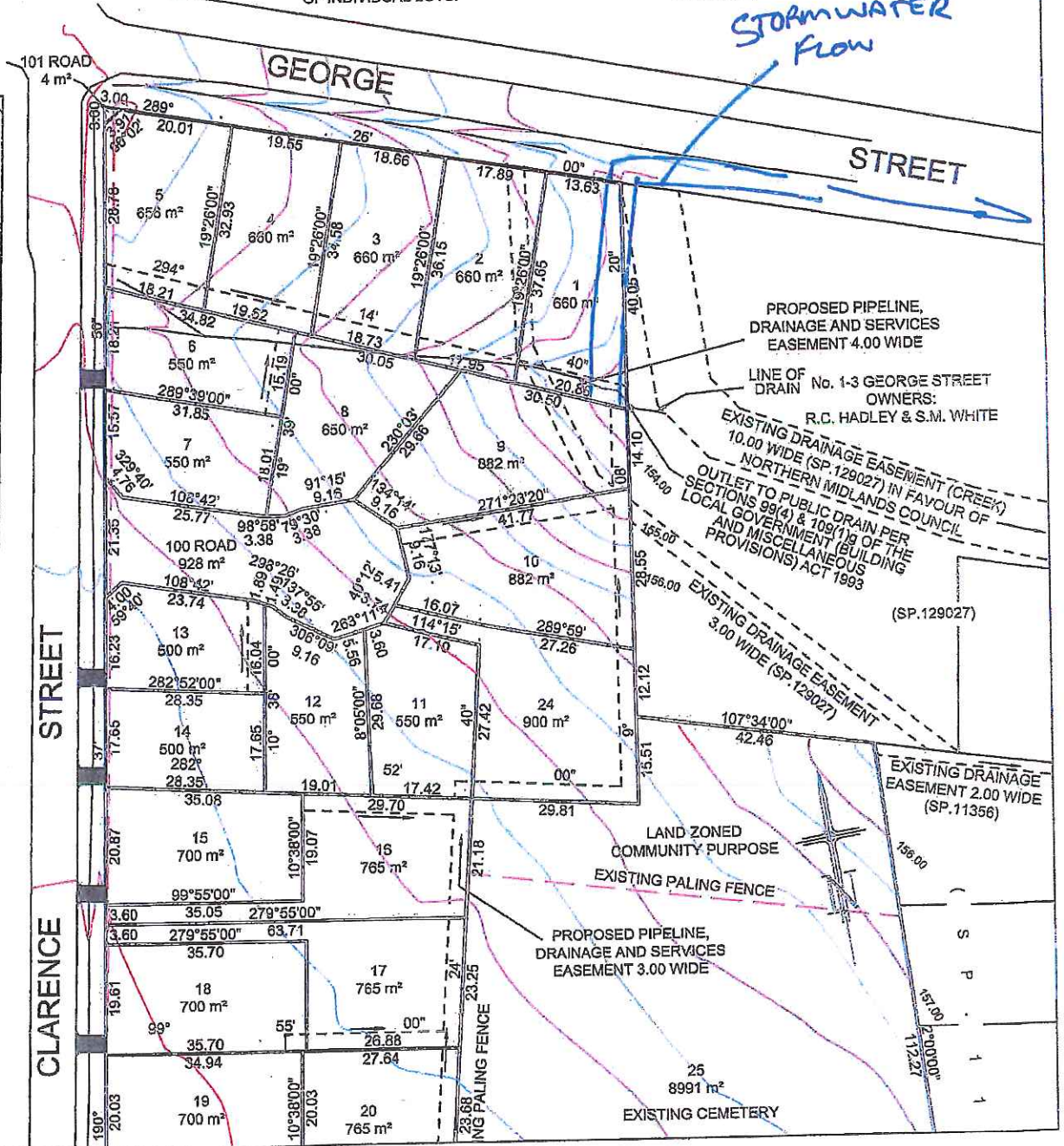
REF. No: C.T. 250977/1

File No: 429510

**NOTE**  
SEE SEPARATE SERVICES PLAN  
STAGE 1: CEMETERY AND BALANCE LAND  
STAGE 1A: LOTS 1-7  
STAGE 2: LOTS 8-14 & 24  
STAGE 3: ALL REMAINING LOTS  
STAGES MAY BE COMPLETED IN ANY ORDER.  
APPLICATIONS MAY BE MADE FOR SEALING OF INDIVIDUAL LOTS.

BLACK DASHED LINES ARE PROPOSED PIPELINE, DRAINAGE & SERVICES EASEMENTS 3.00 WIDE UNLESS OTHERWISE STATED.  
PROPOSED ACCESSES 3.00 WIDE SHOWN ON LOTS 6, 13, 14, 15, 18 & 19. LOCATION OF ACCESSES EXCEPT WHERE SHOWN SUBJECT TO FINAL ENGINEERING DESIGN.

*STORMWATER FLOW*



EXHIBITED

I wish to register some of my concerns about the proposed subdivision 21-43 Clarence St, Perth.

- The loss of this open space would detract greatly from a major benefit of living in Perth – the feeling of being in a semi-rural area rather than a suburb of Launceston.
- The proposed density of dwellings is much greater than those in the surrounding areas, therefore does not respect the neighbourhood character. As I understand that this subdivision is part of a heritage precinct, I believe that the minimum block sizes will be non-compliant.
- Similarly this development would not complement the character of nearby heritage precincts or properties.
- Proximity to the cemetery, which is of great historic interest, is most inappropriate.
- The proposed density does not appear to provide for the required private open space, vehicle access and parking etc.
- There is no indication in the proposal of how “attractive and continuous landscaping” will contribute to the existing neighbourhood. The removal of mature eucalypts along the boundary with the cemetery was detrimental, but the proposed subdivision will be very much more so.
- Concerns about drainage affecting properties downstream of the subdivision do not appear to have been addressed adequately. It is essential that any consultant employed to advise on drainage is made aware of the the volume of water and rapidity of rise during heavy rain by taking advice from residents who experienced these events.

Christine Beswick  
PO Box 47,  
Perth  
(23 Old Bridge Rd)



1-405

Dear Sir or Madam, I would still like to voice my objection to the Proposed 28 Lot Subdivision at 21 - 43 Clarence Street, Perth, DA Ref: P18-135, even though there has been some changes. Only 3 less blocks is not enough. It is still an extremely high density development, and is certainly not in keeping with the village atmosphere of that area of Perth. Thanking you for your time. Regards, Paul Dyer of 2 Elizabeth Street, Perth.

NORTHERN MIDLANDS COUNCIL					
Location					
File No.					
Property					
Attachments					
REC'D 13 JUN 2018					
	I	A		I	A
ADM			NOYB		
PADM			ICES		
CSM			PLAN		✓
ELDM			TELD		
WM			TEY		

0437 095 435  
22 Clarence St.,  
Perth, 7300

9/6/2018

The General Manager,  
The Mayor and Councillors,  
Northern Midlands Council,  
13 Smith St.,  
Longford, 7301

Dear Mayor and Councillors,

re Subdivision (proposed) Clarence St (CT250977/  
25 lot.

I wish to lodge my displeasure at the above proposal. The developer, Mr Nixon is only thinking of his financial gain with no thought to the residents lifestyle living with or near this congestion of future houses.

We all understand progress happens, especially with vacant land such as this but such a density of (lots) houses has residents very dissatisfied. It is not on keeping with the surrounding residential area or the lovely village concept.

Clarence St is a very busy road with vehicles often exceeding the 50 kts, although your traffic advisor stated it would not involve a higher density of vehicles 2 to 3 per household plus visitors must add to the numbers.

I believe drainage/water run off is also a large concern to some residents as it should be. It does not affect me but I feel for those concerned with it.

P.F.O.



I do hope Councillors give this proposal considerable thought, with a reduction in house lots, more in keeping with the village and certainly keeping residents that are affected happy.

Thanking you.

(Mrs) Cathy Stebbings

**Tony Purse & Vanessa Lloyd**  
2 George St • Perth • TAS • 7300  
M: 0418 134293 • E: [tonypurse1@bigpond.com](mailto:tonypurse1@bigpond.com)

General Manager  
Northern Midlands Council  
Smith Street  
Longford TAS 7301

17 June 2018

Via Email: [planning@nmc.tas.gov.au](mailto:planning@nmc.tas.gov.au)

**Re: Proposed 25 Lot Subdivision at 21 – 43 Clarence Street, Perth  
(Heritage Listed Property)**

DA Ref: P18-135 (General Residential Zone – Heritage Code)

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Whilst we support appropriate development of the property located at 21 – 43 Clarence Street, Perth and acknowledge the revisions to that of the previous proposal, we wish to confirm our representation in regard to the current application.

We remain concerned that this proposal has continued to progress without appropriate levels of urban design input and adequate supporting technical information. Our grounds for representation include the following:

**10.1 Zone Purpose**

*10.1.1.1 To provide for residential use or development that accommodates a range of dwelling types at suburban densities; where full infrastructure services are available or can be provided.*

Information that has been provided within this modified application to support / confirm infrastructure suitability and proposed loading/s is, by self-admission, guesswork based upon visual mapping analysis and without detailed catchment input.

*10.1.1.4 To encourage residential development that respects the neighbourhood character and provides a high standard of residential amenity.*

This modified proposal still contains a considerable number of smaller lot sizes that would not support a high standard of residential amenity and subsequently compromises the predominant neighbourhood character. Of particular concern are the proposed smaller lot sizes that incorporate drainage easements that would reduce effective building area.

**10.1.2 Local Area Objectives**

*To consolidate growth within the existing urban land use framework of the towns and villages.  
To manage development in the General residential zone as part of or context to the Heritage Precincts in the towns and villages.  
To ensure developments within street reservations contribute positively to the Heritage Precincts in each settlement.*

Although an improvement upon the previous proposal, the proposed lot sizes and density would not complement the character of nearby heritage precincts and / or individual property. Furthermore, consolidated development adjacent to an historic cemetery is also considered inappropriate without effective future controls.

We remain concerned that little information has been submitted with regard to effective development controls of the subject site/s beyond the subdivision process and the lack of a Local Area Plan to guide this assessment process.



#### 10.4.15 Subdivision

*Objective:*

*To provide lots with areas and dimensions that enable the appropriate siting and construction of a dwelling, private open space, vehicle access and parking, easements and site features.*

The density of the proposed subdivision and number of minimal lot sizes does not appear to support the inclusion of these specified objectives upon all lots. Further nominal reduction / rationalisation of lot numbers would facilitate inclusion of these criteria.

#### 10.4.15.5 Integrated Urban Landscape

*Objective:*

*To provide attractive and continuous landscaping in roads and public open spaces that contribute to the:*

- a) character and identity of new neighbourhoods and urban places; or*
- b) to existing or preferred neighbourhood character, if any.*

This proposal does not address the acceptable solutions and/or performance criteria of this clause insofar as it has little regard for existing / significant features and does not include any proposal to enhance the visual amenity or attractiveness of the urban environment.

In addition to the above, there are a number of key points to consider in relation to neighbourhood character and context:

- a. The current proposal will result in an excessive amount of boundary fencing
- b. The proposed lot density will inhibit sustainable development
- c. The development application does not accurately represent the full impact of driveway crossovers along Clarence, Elizabeth & George Streets
- d. Stormwater discharge from the development has not been adequately addressed and will adversely impact upon adjacent property
- e. In its current form, the proposed subdivision will have a detrimental impact upon the amenity of surrounding properties in addition to diminished neighbourhood character.

The recently published 'Perth Structure Plan' (March 2017) clearly identifies the subject site as 'Medium Density – proposed' as an appropriate expectation within an existing medium density precinct. This proposal, in its current format, will undermine the core principles of sustainable development and positive contribution sought within the Structure Plan. (extract attached)

Given the extensive community consultation, which preceded the adoption of the Perth Structure Plan, it would be prudent for council to develop a Local Area Plan before proceeding with a development of this scale within this area.

We urge the Northern Midlands Council Planning Department and Elected Members to request a revised proposal that adequately addresses impact upon existing residential amenity and infrastructure in addition to provision of appropriate, desirable and sustainable planning outcomes for each proposed lot and local precinct.

Yours Sincerely




Tony Purse AIA & Vanessa Lloyd



**LEGEND**

-  Structure plan area
-  South Perth ODP Area
-  Low density
-  Medium density
-  Medium density - proposed
-  High density - Proposed
-  Lifestyle community living
-  Hotel / Temporary Accommodation - Proposed
-  Retail/commercial - Existing
-  Retail/commercial - Proposed
-  Community use
-  Open space
-  Utilities
-  Existing Roads
-  Proposed Roads
-  Open space pathways
-  Proposed shared surface (no kerb)
-  Enhance on-street open space connections
-  Lots with infill potential
-  Other strategic sites

N  
 Not to scale

**STRUCTURE PLAN: OPTION 2 (PREFERRED)**

*Extract from 'Perth Structure Plan' (March 2017 – GHD / NMC)*



09 July 2018

Northern Midlands Council  
PO Box 156  
Longford TAS 7301

Our ref:  
Your ref:

Attn: Paul Godier

Dear Paul,

## **21-23 Clarence Street Subdivision Hydrology Review Summary**

This following is a hydrology review undertaken for the proposed 21-23 Clarence Street Subdivision development. A review was undertaken of the provided Hydrodynamica (HDNA) Memorandum dated 29 May 2018 titled "NMC P18-095 – RFI Response – Stormwater".

### **1 Background & Project Appreciation**

Northern Midlands Council (NMC) engaged IPD Consulting (IPD) to review the hydrology assessment undertaken by HDNA for the proposed development at 21-23 Clarence Street, Perth.

IPD understand that there have been a number of representations; two of which relating to stormwater discharge.

IPD have also been asked to comment on the proposed overland flow path from the development, and provide comment on the suitability of mandatory on site detention for each lot, and the impact that may have on stormwater discharge into the adjacent watercourse.

The HDNA memorandum covers two items; a hydrological analysis of the existing watercourse and some performance criteria from the Planning Scheme. This summary letter reviews only the hydrology aspect of this report.

### **2 HDNA Memorandum Review**

#### **2.1 Overview of Memorandum**

HDNA have undertaken a hydrological review of the watercourse passing through 1-3 George Street, Perth. This is the nominated discharge location of stormwater for the proposed development.

HDNA used hydraulic modelling software (WBNM2017) to model a number of rainfall events, with reference to the 2016 Australian Rainfall and Runoff guidelines (ARR2016). Peak flows were calculated for a number of Annual Exceedance Probability (AEP) rainfall events, ranging from 1% AEP (1 in 100 year recurrence interval) through to 20% (nominally 1 in 5 year recurrence interval). This is a standard range of events for this type of assessment.

HDNA then compared the pre-development peak flows with the post-development peak flows to ascertain the proportional increase in peak flow for the watercourse as a result of the development.

It was suggested that the watercourse is likely to see approximately a 5% increase in peak flow as a result of the proposed development, for a range of AEP events.

## 2.2 IPD Comparison Hydrology Check

IPD undertook a high level review of the HDNA hydrology, which included an assessment of the proposed peak flows for the existing watercourse and the site of the proposed development. IPD used the same sub-catchment configuration for the proposed development in order to determine a direct correlation of results.

IPD used a Rational Method approach for determining comparison peak flows, using the same values for impervious fractions and sub-catchment areas. This high level review was selected by NMC, with the understanding that a more detailed review could be undertaken if necessary.

Table 2.1 shows a comparison of flows between the HDNA memorandum and the Rational Method calculations undertaken by IPD.

Table 2.1 Flow Comparison (m<sup>3</sup>/s)

AEP	Pre-Development (HDNA)		Pre-Development (IPD)		Post-Development (HDNA)		Post-Development (IPD)	
	Full Area	Sub 05	Full Area	Sub 05	Full Area	Sub 05	Full Area	Sub 05
20%	2.86	0.21	3.61	0.22	3.00	0.37	3.74	0.38
10%	3.48	0.25	4.3	0.26	3.66	0.42	4.45	0.46
5%	4.12	0.29	5.04	0.31	4.32	0.49	5.22	0.53
2%	5.25	0.38	6.15	0.37	5.51	0.62	6.36	0.65
1%	6.11	0.43	7.09	0.43	6.40	0.73	7.33	0.74

## 2.3 Discussion of Results

From Table 2.1 it can be seen that the results provided by HDNA are within the same magnitude as the high level check performed by IPD. The Rational Method peak flows are actually a result of using sub-catchments 2 to 5, and ignoring sub-catchment 1 to simulate partial area effects. Using the full sub-catchment area (including the rural sub-catchment 1) results in a significantly longer time of concentration, and therefore the results are skewed and not a direct comparison.

It is noted that the Rational Method calculations performed by IPD are more simplistic than a hydraulic model; as such the results from HDNA cater for routing of flows, volume and attenuation and therefore should be lower than a Rational Method calculation. This difference is magnified the greater the catchment size, and the results suggest this.

Whilst the peak flow predictions between the HDNA memorandum and the IPD Rational Method calculations are reasonable, IPD do not believe that the 5% is a reasonable assessment of the proportional increase in flow as a result of the proposed development for a range of AEP events.

Given the underground pipe network cannot transfer flows greater than approximately a 20% AEP event (nominally 1 in 5 year recurrence interval), a significant portion of the predicted flow for events which occur less frequently than a 20% AEP will be overland flow. Without completing a comparison hydraulic model and a detailed site assessment of the overland flow path from Seccombe Street West



to George Street, it is not possible to determine accurate overland flow paths and the time of concentration of these flows to join this watercourse, assuming the overland flow paths lead to George Street. The proposed development and sub-catchment 05 from the HDNA report appear to have well defined overland flow paths, and as such they are likely to reach the watercourse fairly quickly for rare events.

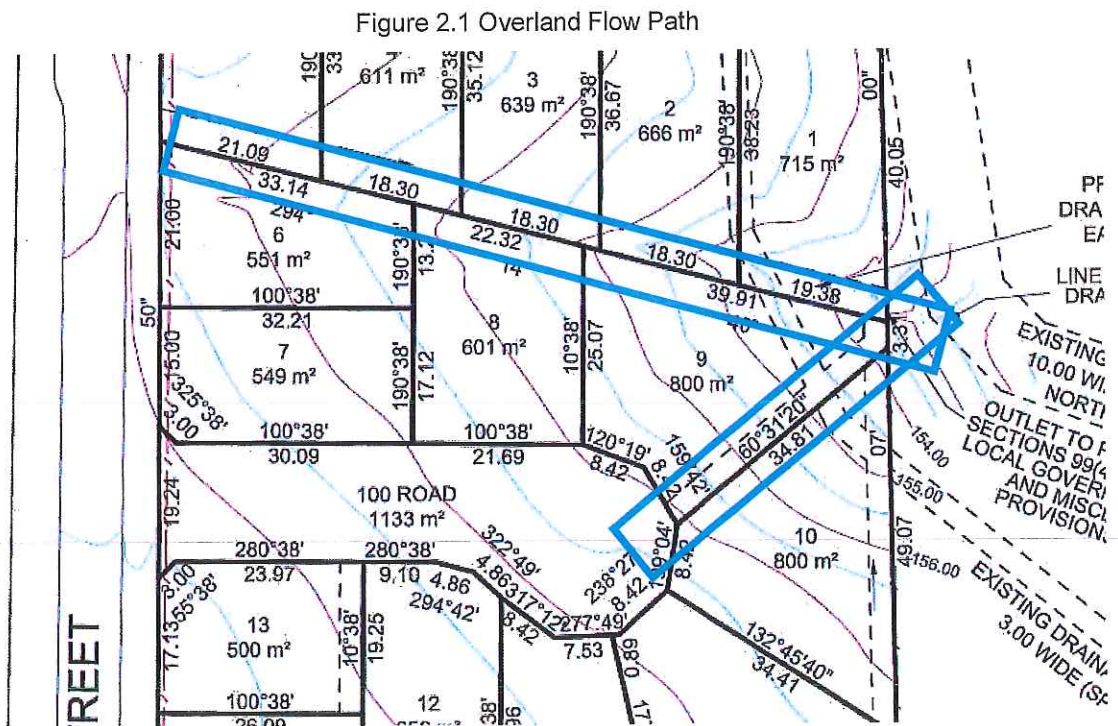
As such, it is likely that the creek flows will be limited to nominally 2.5 m<sup>3</sup>/s from the greater catchment, for up to a 1% AEP event. This results in a proportional increase of flow as a result of the proposed development the more infrequent the rainfall event, which is not outlined in the HDNA memorandum. As an approximation, the increase in flow through the watercourse will likely range from 5% for a 20% AEP event (as per HDNA memorandum) up to potentially 12% for a 1% AEP event, if the overland flow paths are not well defined.

It is IPD's opinion however that the watercourse can handle this increase in flow based on the grade and geometry of the watercourse. However, based on the site visit undertaken at 1-3 George Street, increasing flow in the watercourse is likely to have a detrimental impact on the landowners amenity, particularly given the regular maintenance obviously undertaken by the landowner.

Contamination from the proposed development (runoff from bitumen surfaces, roofs etc) is a significant concern to the watercourse condition, especially with the removal of the existing grassed swale. The humeceptors as proposed by the developers will remove the majority of contaminants, however this requires ongoing regular maintained by NMC. Vegetated swale drains and other natural contaminant removal options (WSUD alternatives) are preferred from a long term viability perspective, similar to what has been installed at Edward Street.

## 2.4 Overland Flow Path Review

The developers have nominated an overland flow path over the proposed drainage easement. The overland flow path is shown in Figure 2.1 in blue.



The overland flow path appears reasonable for this development, however the discharge point is of concern given it is over the proposed headwall for the stormwater drain.

This location will require an engineered retaining wall as part of the headwall installation given the natural surface level, and as such the design will need to ensure overtopping will not compromise the integrity of the wall. Reinforced concrete is suggested at this location for the retaining wall.

Given the drainage easement is the overland flow path, additional cover is recommended for these services to offset potential erosion.

## 2.5 On site detention

NMC has suggested the possibility of on-site detention with the use of individual stormwater tanks at each residence. This would reduce the peak discharge from the development for frequent rainfall events, up to nominally a 5% AEP event.

If the tanks are connected to domestic roof plumbing then the gutters and downpipes are generally rated for a 5% AEP capacity in accordance with AS3500.3. As such events which occur less frequently than this will overtop gutters, with a significant volume of stormwater then not collected by the on-site storage tanks.

Generally individual tanks are not used as a reliable source of stormwater detention for larger subdivision developments, instead generally above or below ground designated storage areas are used. To be a reliable option, the individual tanks would need to:

- Have a working volume that cannot be compromised ie. the tanks have to remain near enough empty except when retarding stormwater flows;
- Have a safe overflow which does not impact on the surrounding habitable structures; and
- Be sized appropriately to provide a worthwhile detention volume.

Problems can arise with systems that rely upon homeowner maintenance to operate effectively; and there is no guarantee that the systems will be working correctly long term. NMC would need to undertake regular inspection of these tanks if the system is reliant on the reduced stormwater discharge volume. These systems generally work better on strata title style developments where a body corporate manages the maintenance of these individual tanks.

An underground storage tank (Atlantis flow-tank modular system, precast concrete wells etc.) which is owned and maintained by NMC is a better long term solution for NMC, and fairly standard practice for subdivisions with downstream drainage network restrictions. Ideally above ground storage is better as it provides both detention, and also some degree of stormwater treatment if appropriately designed and vegetated, and generally cheaper to construct than underground storage. The available storage volumes for these options can be significant, and can provide as much detention as required to negate the impact of the development.

IPD recommend a single on-site detention solution instead of stormwater tanks at individual residences, should the impact of additional stormwater generated from the development be deemed an issue.

Given the proximity to the natural watercourse, a vegetated above ground stormwater detention basin would negate the need for humeceptors (and the associated maintenance requirement), and provide a reliable means of retarding stormwater discharge from the site.



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An alternative solution would be a packaged WSUD solution such as those developed by Stormwater 360 Australia, with their Filterra system, which I understand has been approved for use by at least one southern Tasmanian Council.

If you require any further information or clarification on any aspect of the above please don't hesitate to contact me on Mob: 0417 015 560 or Email: [mhay@ipdconsulting.com.au](mailto:mhay@ipdconsulting.com.au)

Yours faithfully  
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