

4. EXISTING ROAD AND TRAFFIC ENVIRONMENT

4.1 Road Characteristics

Drummond Street, which passes along the northern boundary of the Site, plus Main Road, which is the continuing street at the eastern junction of Drummond Street, have until recently been respectively, Illawarra Main Road and the Midland Highway; both state government roads.

These streets will be the two main streets affected by the proposed subdivision and development of the Site considered in this report.

To a lesser extent, Norfolk Street, Drummond Crescent (2 junctions) and Scone Street, which form junctions on the northern side of Drummond Street, will also be affected to a lesser extent due to the road connectivity that has been proposed along Drummond Street.

Drummond Street has a straight, generally east-west alignment on a fairly flat grade. At its eastern end it meets Main Road at an angle of around 30 degrees, while the western end of the road terminates at a turning circle.

Currently Drummond Street has kerb and gutter along both sides of the street from the east for a distance of around 170m with a width between kerb faces of around 13.0m. To the west of this, there is kerb and gutter only along the northern side of the street and the width between kerb face and edge of seal is around 9.9m.

There is a centreline marking along the street and a fairly basic channelisation layout at Drummond Street/Main Road junction. A footpath has been constructed along the northern side of Drummond Street for around half the length of Drummond Street from Main Road.

Main Road to the north of Drummond Street has a width between kerb faces of around 12.4m. To the south of Drummond Street, the width between kerb and gutter along the western side and seal edge along the eastern side is around 11.5m.

There are footpaths along both sides of Main Road to the north of Drummond Street and along the eastern side to the south of Drummond Street.

Views along Drummond Street and Main Road are seen in Photographs 4.1 to 4.4.





Photograph 4.1: View to east along Drummond Street towards junction with Main Road



Photograph 4.2: View to west along Drummond Street



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DEVELOPMENT - DRUMMOND STREET, PERTH



Photograph 4.3: View to east along Drummond Street at junction with Main Road



Photograph 4.4: View to north along Main Road with Drummond Street junction on left

Norfolk Street, Drummond Crescent and Scone Street are local residential streets which provide frontage access to residential properties. They form near right angle T-junctions with Drummond Street.

The width of these streets varies from around 7.2m for Norfolk Street up to around 10.3m for the other streets.

The current speed limit is 70km/h along Drummond Street, 60km/h along Main Road in the area of Drummond Street junction and 50km/h for the other side streets.

4.2 Traffic Activity

Before the recent opening of the Midland Highway bypass of Perth, Main Road functioned as the Midland Highway through Perth and Drummond Street was Illawarra Main Road which provided access to the Bass Highway and the northwest of the state.

In 2019 Main Road carried an Average Annual Daily Traffic Volume of 8,134 vehicles/day at a point 120m south of Drummond Street and 6,869 vehicles/day at a point 80m north of Drummond Street. At the same time, Drummond Street carried an Average Annual Daily Traffic Volume of 4,165 vehicles/day at a point 40m west of Norfolk Street.

Current traffic volumes along these streets are much reduced due to the bypass of Perth.

In order to have some knowledge of the current traffic volumes in this area, a turning movement survey was undertaken at the Main Road/Drummond Street junction by this consultant on 1 July 2020.

There were Covid-19 social distancing restrictions in place in Tasmania at this time, but there were no travel constraints which would have reduced the traffic volumes passing through the Main Road/Drummond Street junction during the survey period.

The survey was undertaken during the 4:00pm – 5:00pm period and included Old Punt Road and Clarence Street which junction with eastern side of Main Road, opposite to around 40m to the north of Drummond Street junction.

The results from the survey have been summarised in Figure 4.1.

During this afternoon period, Main Road traffic volume was 218 vehicles/hour and Drummond Street traffic volume was 76 vehicles/hour.

The morning peak hour traffic is expected to be quite similar, but slightly lower.



This indicates the daily traffic volumes are around 2,000 vehicles/day on Main Road and 750 vehicles/day on Drummond Street at the intersection of these streets.

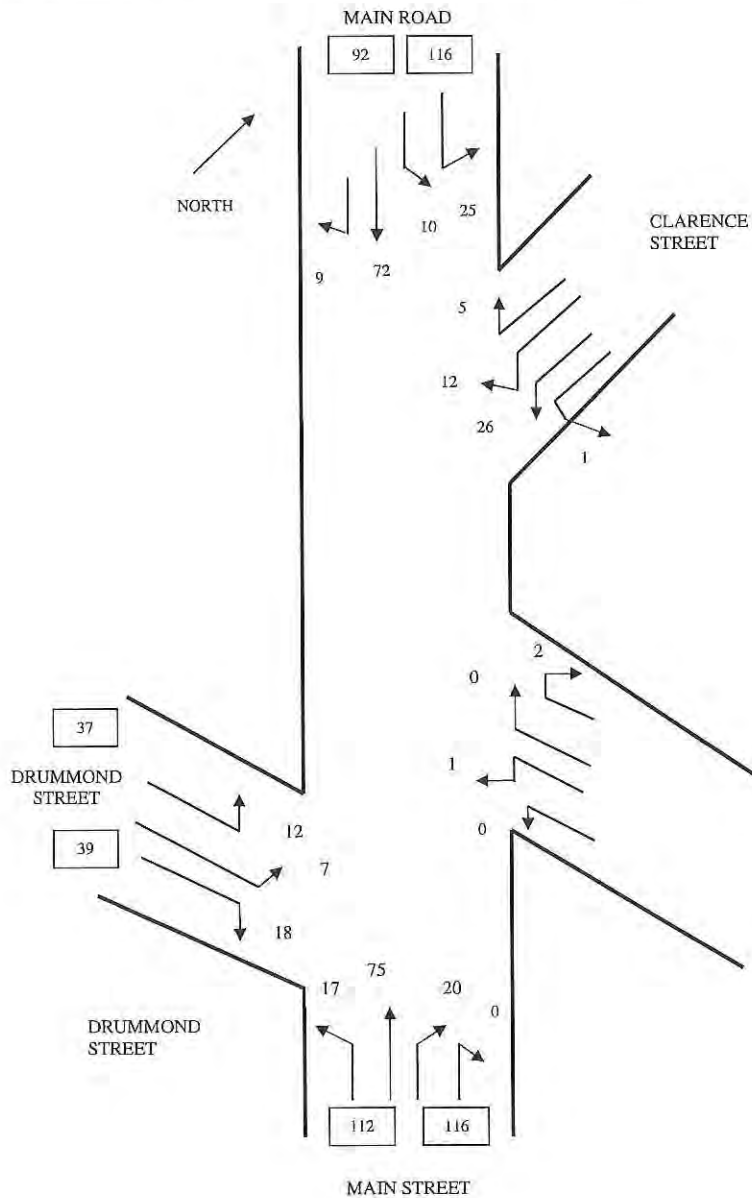


Figure 4.1: Turning traffic volumes at junction of Drummond Street/Main Road/Clarence Street - 4:00pm to 5:00pm July 2020

4.3 Crash Record

All crashes that result in personal injury are required to be reported to Tasmania Police. Tasmania Police record all crashes that they attend. Any crashes that result in property damage only, which are reported to Tasmania Police, are also recorded even though they may not visit the site.

Details of reported crashes are collated and recorded on a computerised database that is maintained by DSG.

Information was requested from DSG about any reported crashes over the last five and a half years, since January 2015, along the following streets:

- Drummond Street (Illawarra MR);
- Norfolk Street;
- Drummond Crescent;
- Scone Street;
- Main Road between 300m south of Drummond Street and Frederick Street.

There have been 27 reported crashes along these streets over this period of time.

Six of these crashes occurred along Main Road, four due to parking incidents and all resulted in property damage only. There have also been seven crashes at the intersection of Drummond Street/Illawarra Road/Youl Road, all rear end or angle collisions and two crashes resulting in injury.

Along Drummond Street, there have been five midblock crashes which were mixed in type, including one pedestrian collision in 2015 which resulted in injury.

Two angle collisions occurred at the intersection of Frederick Street and Main Road, one resulting in injury.

There has been only the one collision at Drummond Street/Main Road junction, in 2017. This was a rear end collision which resulted in minor injury.

Each of the other six collisions occurred at different locations on other of the above streets and all resulted in property damage only.

Overall, there is not a significant concern with the crash record from the viewpoint of the future traffic impact of the proposed rezoning application followed by the residential and commercial development.



5. TRAFFIC GENERATION BY THE DEVELOPMENT

As outlined in Section 3 of this report, the rezoning and future subdivision of the land will result in the construction of 390 residential lots. There will also be 31,500m² of the Site to be developed with residential town houses/units. This is expected to result in some 70 units being constructed.

In considering the traffic activity that each lot will generate when occupied, guidance is normally sought from the New South Wales, Road Traffic Authority document – Guide to Traffic Generating Developments. The RTA guide is a nationally well accepted document that provides advice on trip generation rates and vehicle parking requirements for new developments.

The updated 'Technical Direction' to the Guide dated August 2013 advises that the trip generation for residential dwellings in regional areas of New South Wales is 7.4 trips/dwelling/day.

This is consistent with findings by this consultant for dwellings in Tasmania. Surveys in the built-up areas of Tasmania over a number of years have found that typically the trip generation rate for residential dwellings is 8.0 trips/dwelling/day.

Residential units will typically generate less traffic, depending on the size of the unit. Larger residential units will generate around 6 trip/unit/day and smaller unit will generate around 4 trips/unit/day.

Based on these trip generation rates, it will be assumed the single dwelling lots will generate 8 vehicles/lot/day and the residential units will generate an average of 5 vehicles/unit/day.

On this basis, the total traffic generation by the residential dwelling development is expected to be 3,470 vehicles/day and around 350 vehicles/hour during peak hour periods, based on the peak hour traffic being 10% of the daily traffic volume.

The land for the commercial development will have an area of 42,500m². This area will include buildings and car parking. There will also be land that will need to be allocated to the set back of buildings and other losses.

At this stage it is not known what the commercial/retail development will be proposed on this land. Therefore, it will be assumed around one third of the land will be required for building setbacks, easements, and other such requirements, and a third will be required for car parking.

This leaves an area of around 14,170m² which will be the total building floor area.

It is expected the retail development will be at street level and a significant proportion buildings will have residential unit development on upper floor levels.



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The extent of the residential development is not defined at this stage; a best guess is that there could be 200 such units, as an upper limit.

When considering factors such as the units being within the retail area, closer to public transport along Main Road, possibly be smaller units for the total retail floor area, a traffic generation rate of 4 vehicles/unit/day will be assumed.

Applying this traffic generation rate, these residential units will generate up to 800 vehicles/day and around 80 vehicles/hour during peak hour periods.

Based on guidance from the RTA - Guide to traffic generating developments, retail development generates around 80-120 vehicles/day/100m² and 6-12 vehicles/hour/100m², the higher the total floor area, the lower the rate.

For this assessment it will be assumed the traffic generation rate will be 85 vehicles/day/100m² and 8 vehicles/hour/100m². This will result in some 12,000 vehicles/day and 1,150 vehicles/hour in peak hour periods generated by the retail development.

The above assessment indicates the total estimated traffic generation will be around 16,270 vehicles/day and 1,580 vehicles/hour, some of this traffic activity will be multipurpose and linked trips and others will be internal trips (trips within the Site).

Based again of advice in the RTA guide and applying discount of 20%, the total traffic generation is likely to be up to 13,000 vehicles/day and 1,260 vehicles/hour during peak hour periods.



6. TRAFFIC ASSESSMENT AND IMPACT

This section of the report considers the impact of traffic, which is expected to be generated by the proposed development on the existing road network.

Discussion is also provided on the proposed road network within the Site plus required intersection arrangements at the subdivision access road connections with existing streets and intersection improvements at other locations.

6.1 Road Network Considerations

The Masterplan for the Site shows a proposed internal road network.

Within the Site, the road network will include a main east-west street passing through the middle of the residential development and through the commercial development with side streets to the north and south of this street. The side streets are shown positioned to create four-leg intersections within the Site.

The Masterplan indicates there will be four subdivisional street links in a northerly direction to Drummond Street and each of these streets will meet Drummond Street opposite an existing local street that junctions with the northern side of Drummond Street, to also form a four-leg intersections.

There are no concerns with the proposed overall road network layout and connectivity of the roads. However, a consequence of the layout will be that all four-leg intersections will need to have roundabout controls. Roundabout control at intersections is supported and recommended at any four-leg intersection because they ensure improved safety and traffic calming upstream and downstream of the roundabout.

If there is any concern about the number of roundabouts, consideration would need to be given to staggering the approaches of the minor streets to the main through street.

Development of the Site will result in frontage development along the southern side of Drummond Street. As a result, the speed limit along Drummond Street will need to be reduced from 70km/h to 50km/h.

Within the Site, the subdivisional streets through the residential part of the Site will have the basic function of a minor local street providing direct frontage access to the residential lots. The design characteristics of such residential streets need to encourage driver behaviour which will be appropriate for this local street function and to among other things ensure good residential amenity along the streets. As well as introducing bends and other slow point characteristics into the road design to provide for a speed environment of not higher than around 40km/h this is typically achieved by limiting street widths and lengths.

It is considered that the Local Government geometric street design standards require street widths that are far too wide for the intended local access street function. Widths of 8.9m between kerb faces are more appropriate for significant collector roads rather than local residential streets, which the main collector street will be.

As the residential streets in this subdivision will have straight alignments, it is recommended subdivisional streets should be constructed to an absolute maximum width between kerb faces of 7.2m which is the same as constructed in some more recent subdivisions (e.g. the main subdivisional streets in area of New Town at 110 Giblin Street).

While it is understood Council would generally like to follow the LGAT/IPWEA standard drawings, the amenity for residents with lower speeds, amenity for pedestrians with lower speed of approaching traffic and shorter crossing distances consistent would be strategies that council should aim to achieve with development.

Standard road widths in other states for traffic volumes less than 1,000 vehicles/day are 6.0m to 7.3m. Council can give approval to these lesser widths through the General Manager.

The streets within and passing through the commercial area should be wider to accommodate the higher traffic volume as well as provide for any needed frontage on-street parking.

6.2 Operational Impact of Generated Traffic Activity

In Section 5 of this report, it was determined the expected future residential and commercial development on the rezoned land would generate around 13,000 vehicles/day and 1,260 vehicles/hour during peak hour periods.

The time frame for the full construction and occupancy of the commercial and residential buildings may take more than 20 years. For the purpose of assessing the operational impact of the generated traffic, a 10 year time frame has been assumed, to 2030.

Further assumptions that have been made is the traffic growth along Main Road through Drummond Street junction will increase at 2% p.a. to that presented in Figure 4.1.

It has been determined the future development on the Site will generate 1,260 vehicles/hour during peak hour periods external to the Site.

Most of this traffic is expected to travel along Drummond Street between the side streets to the Site and Drummond Street/Main junction. However, due to the road connectivity across Drummond Street, there will be a significant vehicle volume that will use the north-south street links between the commercial development plus residential development on the Site and the

existing residential areas to the north of Drummond Street. This may account for around 15% of the total traffic; around 180 vehicles/hour.

On this basis, the total conflicting traffic volume at Drummond Street/Main Road junction could be up to around 1350 vehicles/hour.

Furthermore, with the connectivity of the commercial area to Scone Street as well as the proposed street link between Drummond Street and Main Road, to the east of Scone Street, this conflicting traffic volume at Drummond Street/Main Road junction would reduce to around 850 vehicles/hour beyond the next decade.

The traffic conflict at other affected intersections will be significantly less than this.

As indicated earlier, the time frame for the development is likely to be longer than 10 years, pushing out the above traffic conflict volumes to 15-20 years' time.

Intersections and junctions reach capacity when the total conflicting approach traffic volumes are around 1,500 vehicles/hour.

The conflicting traffic volumes at all affected intersections will be far less than this maximum volume. Therefore, the development of the Site will not create any operational issues along the affected road network.

6.3 Intersection Safety Considerations

As well as the consideration of the adequacy of the operational efficiency, other safety assessments are normally required. These include the adequacy of available sight distances at intersections and the need for additional management measures at intersections.

Drummond Street has a straight and flat alignment, so that there are no sight distance issues to and from the exiting junctions along this street. The recommended installation of a roundabout control at each of these future four-leg intersections further ensures the adequacy of sight distances at these locations.

Within the Site, the streets are shown to also have relatively straight road alignments, which again will provide for adequate intersection sight distances in a slower speed environment. The recommended installation of roundabouts at all four-leg intersections will further add to good safety outcomes.

While outside of the immediate area of the Site, council will need to consider future improvements and traffic interventions at the Main Road/Drummond Street junction and along Main Road.

The Main Road/Drummond Street junction should be upgraded to a more squared T-junction with a more contemporary channelisation scheme.



Council should also consider the installation of a two-way right turn median treatment as much as possible along Main Road, similar to that along sections of Wellington Street and Marlborough Street through Longford, and many other collector and arterial roads across Tasmania.

The median treatment may require the relocation of existing kerb lines. However, it will provide a right turn facility clear of any following vehicles as well as regular crossing point for pedestrians at pedestrian refuges.



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7. SUMMARY AND CONCLUSIONS

This Traffic Impact Assessment has been prepared to detail the traffic effects from planning scheme amendment to rezone the land that would allow residential and commercial development on the land along the southern side of Drummond Street.

The immediate road network carries much reduced traffic volumes due to the recently completed highway by-pass of Perth.

Based on peak hour traffic surveys in July 2020, the daily traffic volumes currently are around 2,000 vehicles/day on Main Road and 750 vehicles/day on Drummond Street at the intersection of these two streets.

The crash database has record of 27 reported crashes since January 2015, along the following streets:

- Drummond Street (Illawarra MR);
- Norfolk Street;
- Drummond Crescent;
- Scone Street;
- Main Road between 300m south of Drummond Street and Frederick Street.

Of these crashes, five have resulted in minor injury, all the other crashes resulted in property damage only.

Overall, there is not a significant concern with the crash record from the viewpoint of the future traffic impact on the proposed rezoning application.

It has been estimated that the rezoning and subsequent development of the Site is expected to generate up to 13,000 vehicles/day and 1,260 vehicles/hour during peak hour periods.

The Masterplan for the Site shows a proposed internal road network which will include a main east-west street passing through the middle of the residential development as well as commercial development with side streets to the north and south of this street.

This road network will create a number of four way intersections both within the Site and along Drummond Street. There are no concerns with the proposed overall road network layout and connectivity of the roads. However, it is recommended all four-leg intersections be constructed with a roundabout control.

With frontage development along the southern side of Drummond Street, the speed limit along Drummond Street will need to be reduced from 70km/h to 50km/h.



Within the Site, the residential subdivisional streets will have the basic function of a minor local street. It is recommended subdivisional streets should be constructed to an absolute maximum width between kerb faces of 7.2m if not slight less than this. It is understood Council would generally like to follow the LGAT/IPWEA standard drawings, but greater safety and amenity outcomes will be achieved with these slightly narrower streets.

The streets within and through the commercial area will need to be wider to accommodate the higher traffic volumes as well as on-street parking.

While it has been determined the future development on the Site will generate up to 1,260 vehicles/hour during peak hour periods, external to the Site, having regard to the proposed future road network connectivity, the conflicting traffic volume at Drummond Street/Main Road junction (which will be the busiest junction in the immediate area) will be around 850 vehicles/hour, with the completion and occupancy of the Site. The conflicting traffic volumes at other affected intersections will be far less than this maximum volume.

At these levels of traffic conflict, the development of the Site will not create any operational issues along the road network.

There are no sight distance concerns for any of the intersections. The recommended installation of a roundabout control at all future four-leg intersections will ensure the adequacy of sight distances at these locations and add to good safety outcomes.

Outside of the Site, it is recommended:

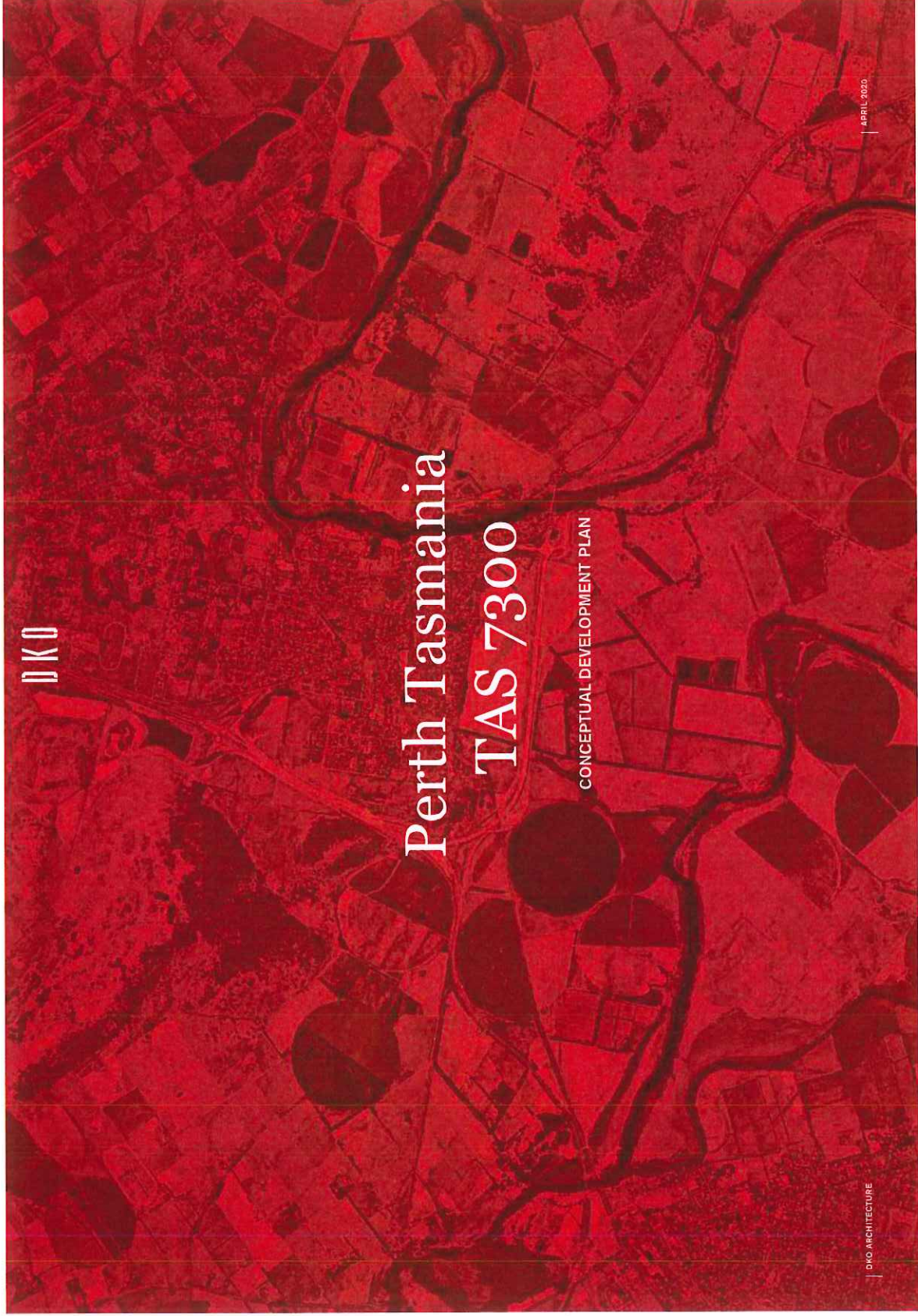
- the Main Road/Drummond Street junction is upgraded to a more squared T-junction with a more substantial and a more contemporary channelisation scheme; and
- a two-way right turn median treatment is installed along Main Road, which may require the repositioning of the kerb line along one side of the street.

Overall, the rezoning of the Site is supported from a consideration of the road and traffic environment, with the subdivision development to include road design and management measures recommended in this report.

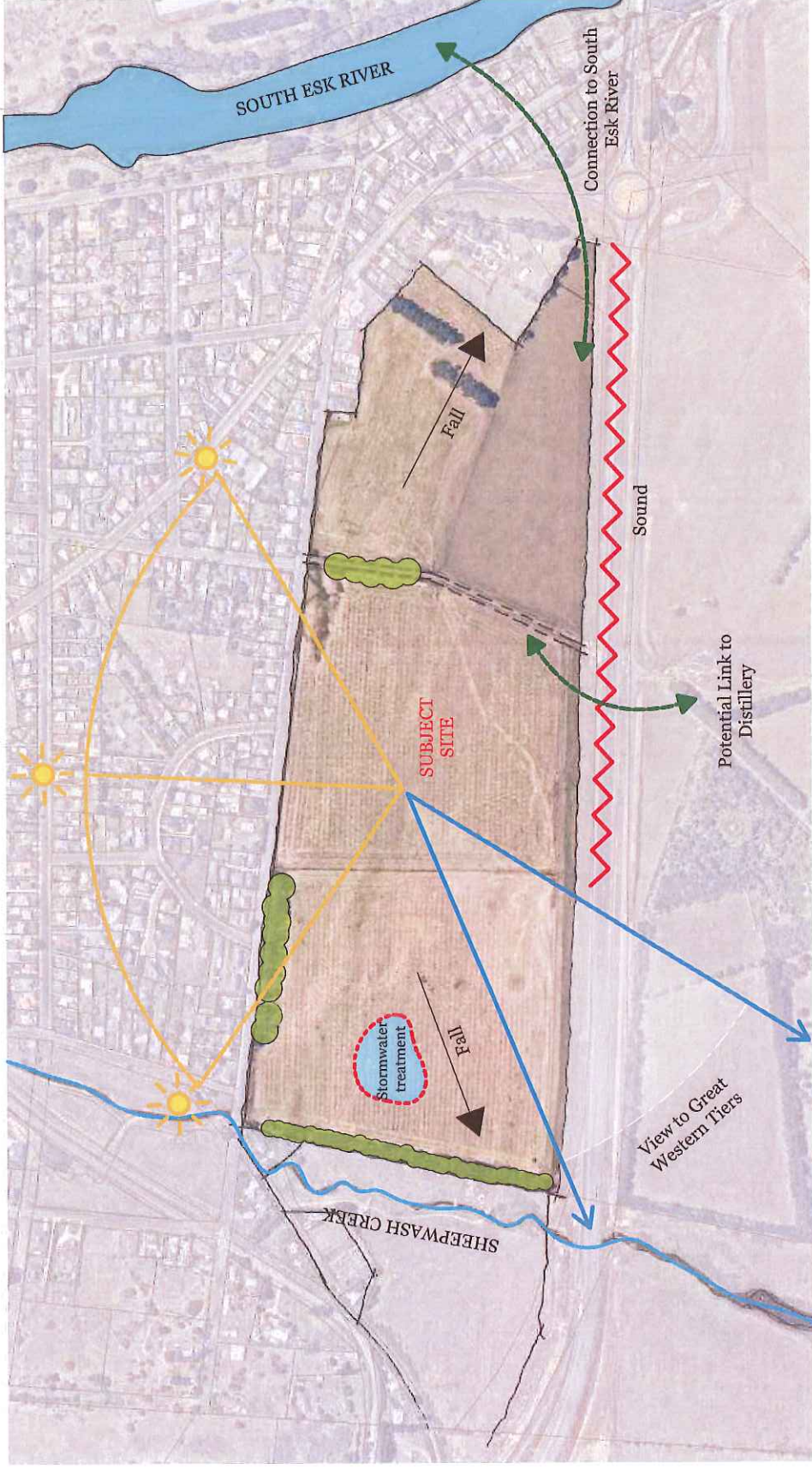


ATTACHMENT A

Perth Conceptual Development Plan



Opportunities & Constraints



DHO ARCHITECTURE

PERTH
TASMANIA 7300

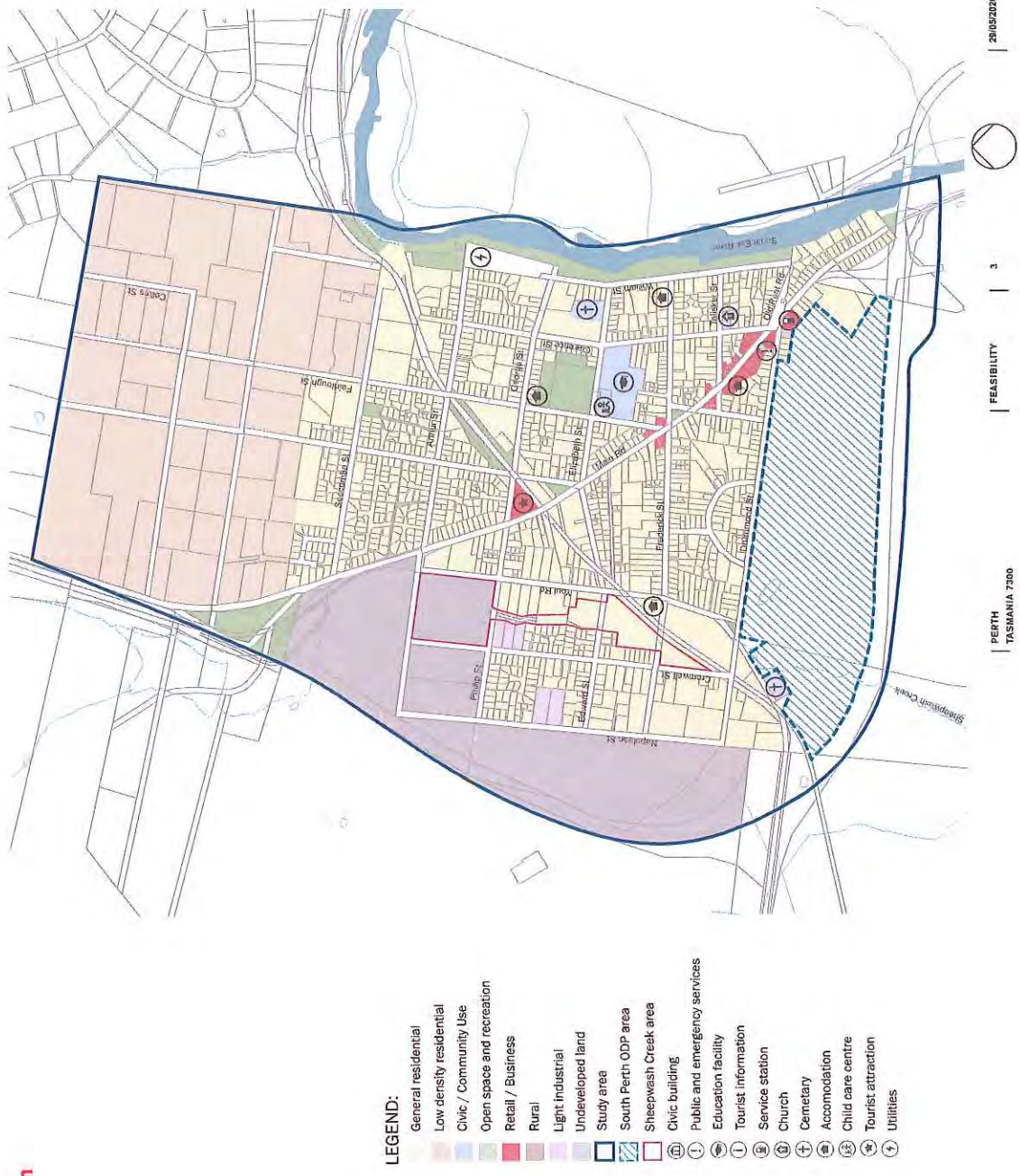
FEASIBILITY

2



20/05/2020

Existing Context Plan



DND ARCHITECTURE

Structure Plan & Principles

- 3 Establish new retail centre and community facilities within South Perth Area. Strengthen also the direct retail spine along Main Road.
- 5 Opportunity to re-develop strategic corner site in prominent location, to create a community centre and open plaza space for gathering.
- 7 Extend the local connector road network to provide a logical road layout within the new development areas (South Perth and Sheepwash Creek), which is well integrated with the surrounding road network.
- 8 Create a new shared use path network through open space spines within the South Perth Area and along Sheepwash Creek.
- 11 As a longer term solution, close western portion of Drummond Street to minimize traffic conflicts at this location.
- 14 Establish a strong linear open space network within the South Perth area and along Sheepwash Creek.
- 15 Employ water sensitive urban design practices for stormwater drainage.
- 19 Preservation of existing mature trees along entrance to 35 Drummond Street.



DINO ARCHITECTURE

Design Response

- Move 50 meters green spine south and provide potential link to South Esk River



DNO ARCHITECTURE

PERTH
TASMANIA 7300

FEASIBILITY

5



20/05/2020

Design Response

- Establish new retail centre and community facilities with South Perth area and strengthen retail along main road
- Preservation of existing mature trees along entrance to 35 Drummond Street



DKO ARCHITECTURE

PERTH
TASMANIA 7200

FEASIBILITY

| 6



20/02/2020

Design Response

- Extend local road and pedestrian connections to integrate existing links into the new development areas



DNO ARCHITECTURE

PERTH
TASMANIA 7300

FEASIBILITY | 7



20/05/2020

Design Response

- Establish a strong linear open space network within the South Perth area
- Create new shared path network through new open space spines



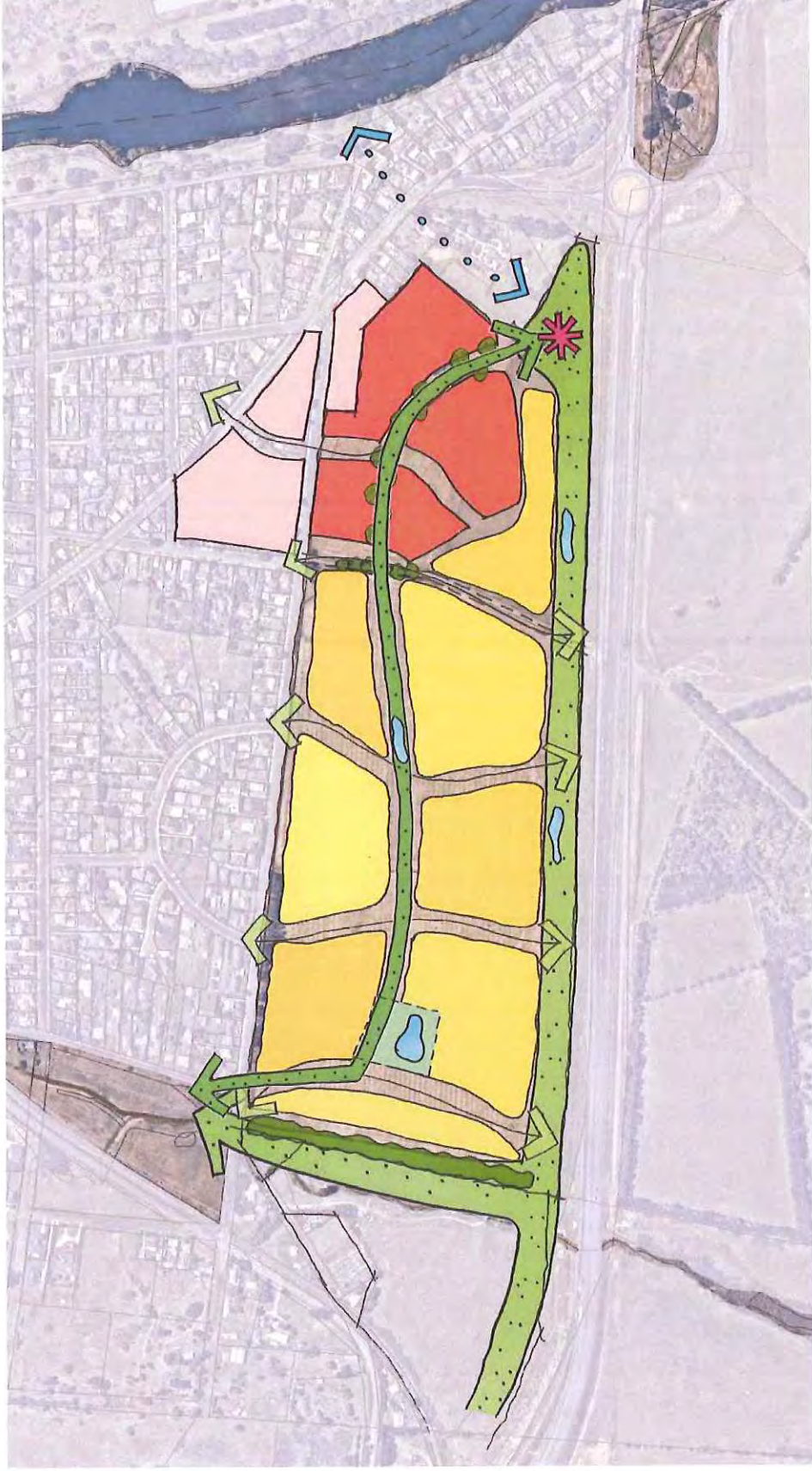
Design Response
- Employ WSUD practices



DKO ARCHITECTURE | PERTH TASMANIA 7300 | FEASIBILITY | 9 | 20/05/2020

Design Response

- Site grouped into villages with associated amenity and active uses



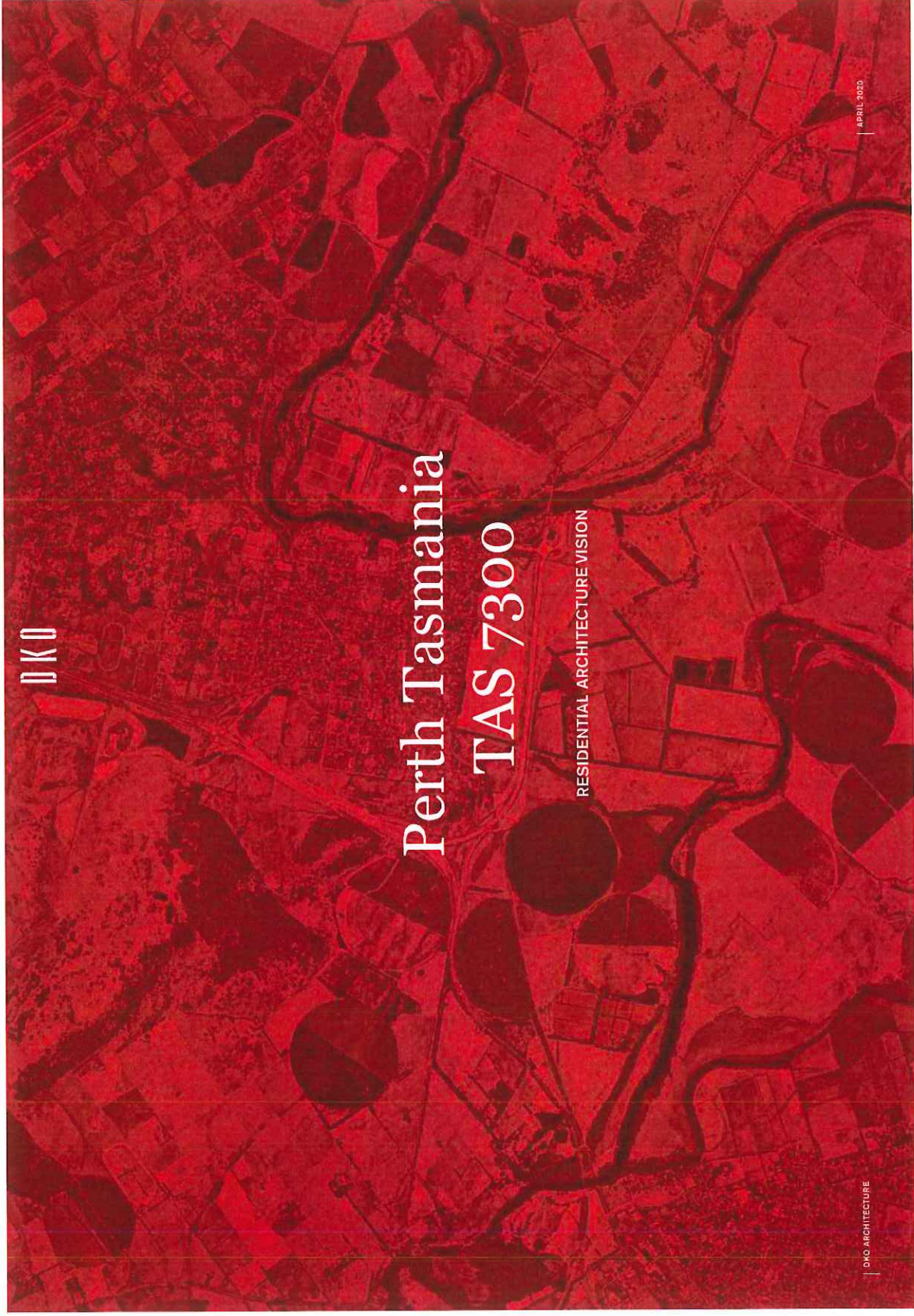
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PERTH
TASMANIA 7300

FEASIBILITY | 10

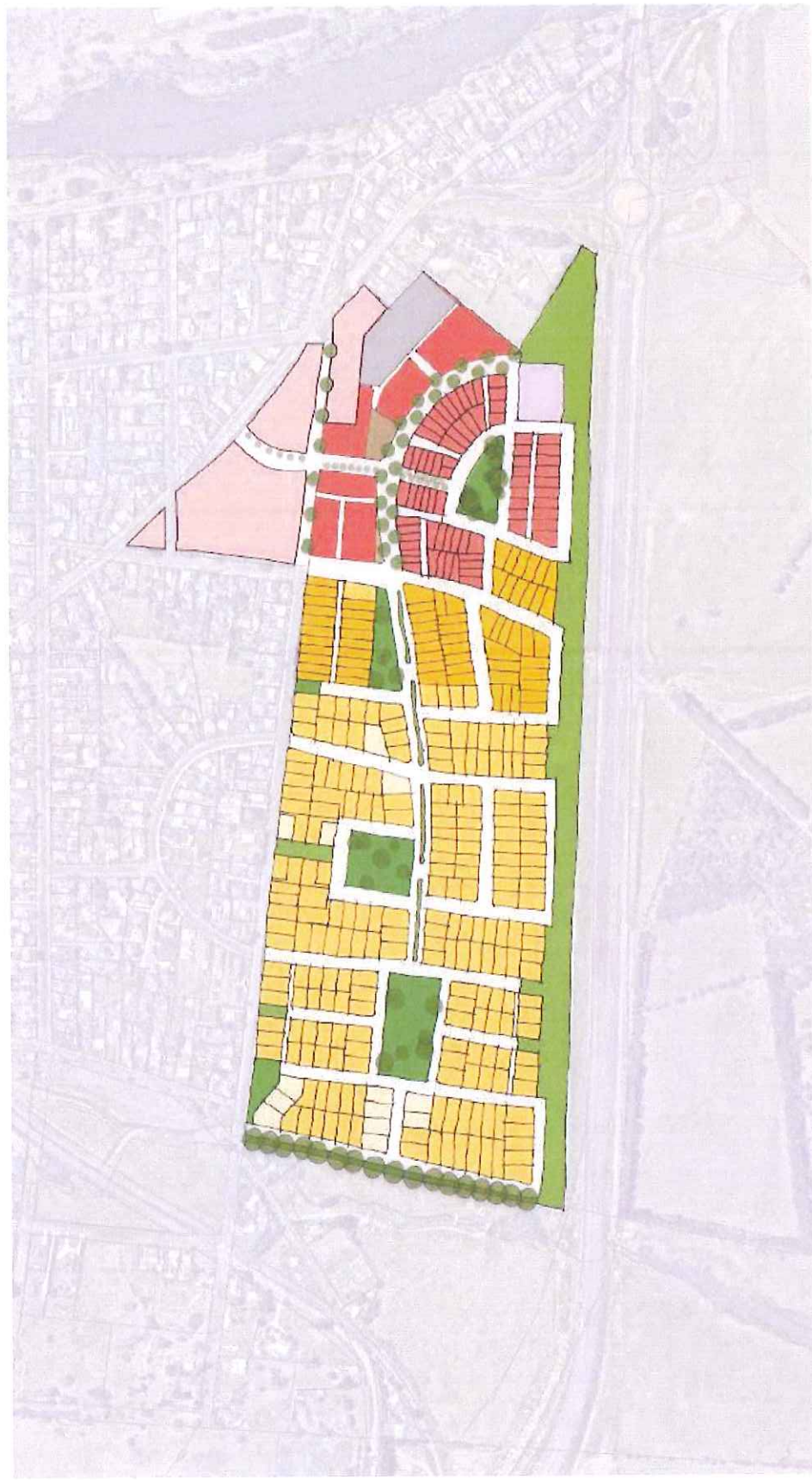


28/05/2020



Masterplan

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DHO ARCHITECTURE

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FEASIBILITY

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20/05/2020

Housing Lots

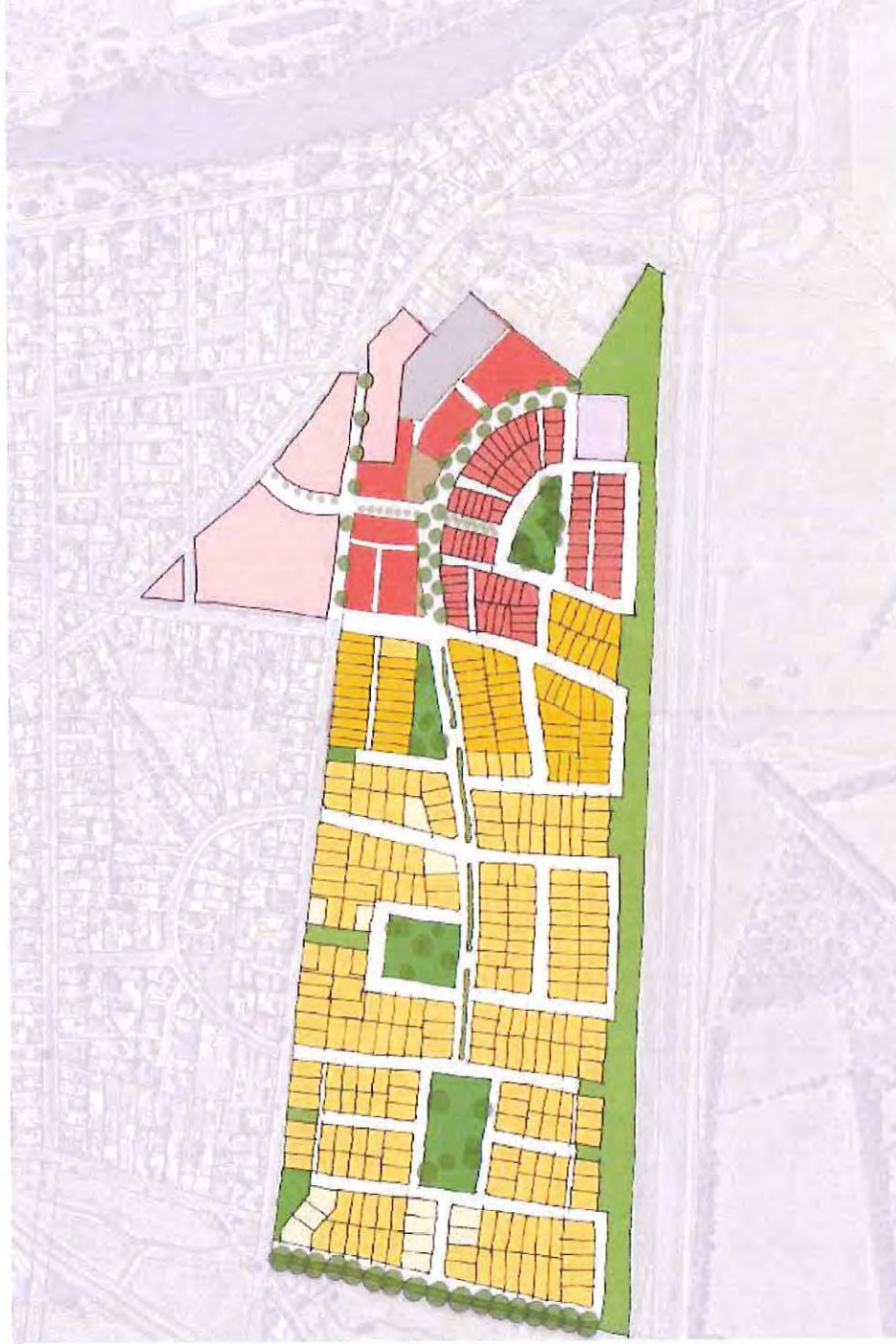
Up to 390 lots

Developable Area	A (0000 m ²)	(%)
Residential Lots	214.5	49.9
Town Home Lots	31.5	6.3
Commercial Lots	37.5	7.5
Hotel	5	1
SUBTOTAL	288.5	57.7

Public Open Space	A (0000 m ²)	(%)
Village Square	3	0.6
Village Green	4.5	0.9
Green Spine	57	11.4
Western Tree Reserve	4	0.8
Green Space 01	2.5	0.5
Green Space 02	10.5	2.1
Green Space 03	7.5	1.5
Green Space 04	4.5	0.9
SUBTOTAL	93.5	18.7

Roads	A (0000 m ²)	(%)
Laneways	7.5	1.5
Roads	110.5	22.1
SUBTOTAL	118	23.6

SITE AREA	500
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GHD

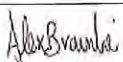
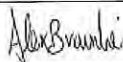
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Document Status

Revision	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
DRAFT A	Jen Welch					05/05/2020
DRAFT B	Jen Welch	Alex Brownlie				07/12/2020
0	Jen Welch	Alex Brownlie		Alex Brownlie		11/12/2020

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Drummond Street Developments Pty Ltd

Drummond Street Planning Scheme Amendment Planning Assessment

December 2020

WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

Appendix G – Services Infrastructure Assessment



Drummond Street Developments Pty Limited

Drummond Street Rezoning and Subdivision Infrastructure Assessment

December 2020

WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

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Appendices

Appendix A – Regional Flood Map

Appendix B – Report Figures

Appendix C – NMC South Perth Concept WSUD – Preliminary Options

1. Introduction

1.1 Purpose of this report

The purpose of this report is to highlight the infrastructure components of the proposed amendment for the land at 35 Drummond Street, Perth. The infrastructure elements reviewed include the Stormwater infrastructure, Sewage infrastructure, and Water supply infrastructure.

This report is suitable for consideration at the rezoning stage of development. Additional design will be required prior to later development stages.

This document should be read in conjunction with assessment undertaken in Drummond Street Planning Scheme Amendment; Planning Assessment (GHD), and is consistent with the scope, limitations and assumptions within that document.

1.2 Scope and limitations

This report has been prepared by GHD for Drummond Street Developments Pty Limited and may only be used and relied on by Drummond Street Developments Pty Limited for the purpose agreed between GHD and the Drummond Street Developments Pty Limited as set out in section 1.1 of this report.

GHD otherwise disclaims responsibility to any person other than Drummond Street Developments Pty Limited arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

GHD has prepared this report on the basis of information provided by Drummond Street Developments Pty Limited and others who provided information to GHD (including Government authorities), which GHD has not independently verified or checked beyond the agreed scope of work. GHD does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

2. Stormwater infrastructure

2.1 The Site

The Drummond St Development is located between Drummond Street and the new Perth Links Highway. Sheepwash Creek runs to the west of the development area. The site is generally flat and currently undeveloped (paddocks).

2.2 Regional flooding

Sheepwash Creek presents a risk of regional flooding. Council has developed a flood inundation map for the 1% AEP (also referred to as the 100 year flood). The map is included in Appendix A. The extent of inundation around the proposed development based on the Council mapping is superimposed on the site plan in Figure 1.



Figure 1 Regional flooding

Based on the above, flooding from Sheepwash Creek is unlikely to impact the proposed development.

2.3 NMC South Perth Concept WSUD – Preliminary Options

Northern Midlands Council has provided the South Perth Concept WSUD – Preliminary Options Memorandum (included in Appendix C). The memorandum provides guidance on possible options for providing storage, drainage and treatment for an alternate development layout of the Drummond Street site.

The memorandum outlines that there are engineering solutions to stormwater management on the site and includes several items in common with the solutions proposed in the following sections. These include.

- Proprietary treatment devices;
- On site detention storage; and
- Sediment ponds.

These items are discussed further in the following sections.

2.4 Site stormwater quantity

Conveyance

The site is currently pervious to rainfall with no sealed surfaces evident. Development will increase the impervious area and so the rainfall runoff from the site. The site stormwater will be discharged from the site at several locations based on the existing site grading.

While the site is flat, an indicative stormwater piped system has been considered. The system could be achieved with pipe grades at approximately 0.5%. Minor earthworks would likely be required particularly at localised low points to generally provide continuous overland flow paths off the site. We understand it is likely that a new stormwater pipe along Drummond Street may be required as part of the development to adequately drain areas draining towards Drummond Street as Council has advised the existing drainage system in Drummond Street does not meet current design standards.

There is an opportunity to discharge site drainage through the existing services conduit under the highway. The LIDAR in the location shows ground level around the conduit is RL 164.0 m AHD. Lots along the Sheepwash Creek boundary fall to as low as RL 157.0 m. It would not be possible to drain much of the site surface runoff through the services conduit due to levels and the size of the conduit. We recommend the conduit is considered for non-gravity services such as telecommunications and electricity. We recommend the conduit is not used for stormwater.

Peak Flows

The peak flows from the site can be limited to the pre-existing peak outflows by the use of detention tanks and/or basin(s). Figure 2 shows the main catchments and discharge locations across the site. The main opportunity for a detention basin is the park at location "A".



Figure 2 Catchments

Three possible solutions for managing the peak stormwater flows from the site are outlined below:

- Community detention;
- Private lot based detention; and
- Early peak discharge.

Each of these possible solutions for managing stormwater discharge along the existing discharge routes is considered below. The exact solution will be determined during a later design stage, however, it is likely to include a combination of these strategies.

Community detention

A detention basin located at location "A" is likely to provide peak flow attenuation for flows discharging to Sheepwash Creek. In order to provide detention for the 1% AEP flood event, a storage of approximately 2,500 m³ is required (i.e. nominally an area of 2,500 m² and 1 m deep). This storage would generally be dry but fill during flood events. A lesser depth and larger area may be preferable as it would provide increased safety and possibly aesthetics.

Additional storage(s) would be needed for the areas draining to Drummond Street and to the East. Discharge locations to the East do not have similar obvious locations for detention in a community location. Underground detention is possible to address detention of stormwater from the eastern catchments. The underground detention could be located under carparking or roads where parks are not available.

Private lot based detention

Alternatively, the detention can be located on each individual property. Assuming 300 lots, a storage of approximately 8,500 L per lot would be required to maintain pre-development runoff from the site. The hydraulic arrangements would need to be further considered to confirm this figure. The advantage of this approach is the additional public space that is free of encumbrance of the requirements of a detention basin. Maintenance costs would also fall to the landowner rather than to Council. However, there is a risk that landowners may prefer to use the detention storage for garden water or similar and so block the outlet (so the tank is not necessarily empty at the start of the design storm). This would negate the use of the property storage as detention and runoff from the site would likely be significantly higher than current conditions.

Early peak discharge (no detention)

There is an opportunity to discuss the timing of the peak with Council and reducing detention requirements on the basis that the development peak flow does not coincide with Sheepwash Creek peak flows which can be expected to take longer to occur. This has not been explored formally with Council at the time of writing. However, it is likely that this would provide a very cost effective solution with minimal ongoing maintenance and therefore be a beneficial solution for both Council and the developer. It is recommended that this be explored further with Council and if acceptable in-principle to Council, investigated in more detail during the next design stage.

Conclusion

Several possible ways of managing the quantity (and timing) of stormwater outflows from site have been noted above. The final stormwater design is likely to include a combination of these measures across the site for maximum benefit to the developer, future residents, and Council.

2.5 Site stormwater quality

Stormwater runoff from the site is to meet to requirements outlined in the Planning Scheme and the State stormwater strategy such that the following pollutant reductions are achieved.

Table 1 Pollutant reduction targets

Parameter	Required Reduction
Gross Pollutants	100%

Parameter	Required Reduction
TSS	80%
TP	45%
TN	45%

A combination of several components is proposed to provide this reduction. This may include:

- Highway buffer vegetated swales / bioretention swales
- Bioretention basin in Park (adjacent 'A' in Figure 2)
- GPT immediately prior to site discharge at each discharge point and/or
- Secondary treatment proprietary device immediately prior to discharge

A combination of these measures are likely to provide sufficient treatment to meet the above targets for discharge from the site.

One possible treatment device for stormwater leaving the site is the Ecosol Stormtrap Class 2. This unit provides the following capture efficiencies:

Figure 3 Capture Efficiency

Pollutant	Capture Efficiency	Details
Gross Pollutants (GP)	98%	Particulate >200 micron
Total Suspended Solids (TSS)	72%	Suspended Particulate
Total Phosphorous (TP)	50%	Particulate and dissolved
Total Nitrogen (TN)	43%	Particulate and dissolved
Heavy Metals	32%	Particulate and dissolved
Total Petroleum Hydrocarbons (TPH)	80%	Particulate and dissolved

When this unit is appropriately sized and maintained, it can therefore be expected to provide pollutant reduction in stormwater close to the pollutant reduction targets. Additional treatment can be achieved through the use of grassed buffer strips, sediment ponds, and aforementioned treatment devices.

Conclusion

An option for site stormwater treatment is noted above. Alternate options such as those discussed in the 'South Perth Concept WSUD – Preliminary Options' (Appendix C) are also possible for the Drummond St site.

3. Sewage infrastructure

The site is bounded to the North by Drummond Street. There is an existing TasWater Sewer Pump Station (SPS) on Drummond Street as shown below.



Figure 4 Existing sewer

The average dry weather flow for sewer from the 390 lot site is 2.1 L/s. TasWater has advised that their SPS is likely to have capacity for this development.

A concept sewer servicing plan has been developed.



Figure 5 Proposed sewer servicing plan

The key features are the proposed pump station in the south western corner of the site with associated rising main to the existing SPS in Drummond St. TasWater has indicated this is their preferred method of servicing the site (where it cannot drain by gravity to the Pump Station or other network in Drummond St). Lots which can not drain by gravity to the existing infrastructure in Drummond St will utilise the proposed pump station in the south western corner of the site.

The proposed pump station shall have a 30m buffer to residential lots and likely odour control infrastructure. Both pumpstations will need emergency storage. It is likely that the existing pumpstation will require both additional emergency storage, and a pump upgrade. The existing rising main from the existing pumpstation is DN150 and is likely to be sufficient.

There is an alternative to pump to the services conduit underneath the highway, and then construct a gravity main along the easement to the Sewage Treatment Plant to the south. The advantage of this approach is that the emergency storage and pump capacity at the existing pumpstation may not require upgrade, however there would be a significant additional cost of gravity main from the highway conduit to the STP.

4. Water supply

There is existing water supply infrastructure adjacent to the site in Drummond St. The DN100 reticulation main runs along Drummond Street. A DN250 Bulk Supply main passes the north western corner of the site but is unlikely to be available for connection.



Figure 6 Existing water supply infrastructure

The water supply demand for the 390 lots is 601 kL/day for a peak day and 267 kL/day for an average day both with a required pressure of 333 kPa at the proposed connection points along Drummond St.

A concept Water supply design has been undertaken as depicted below.

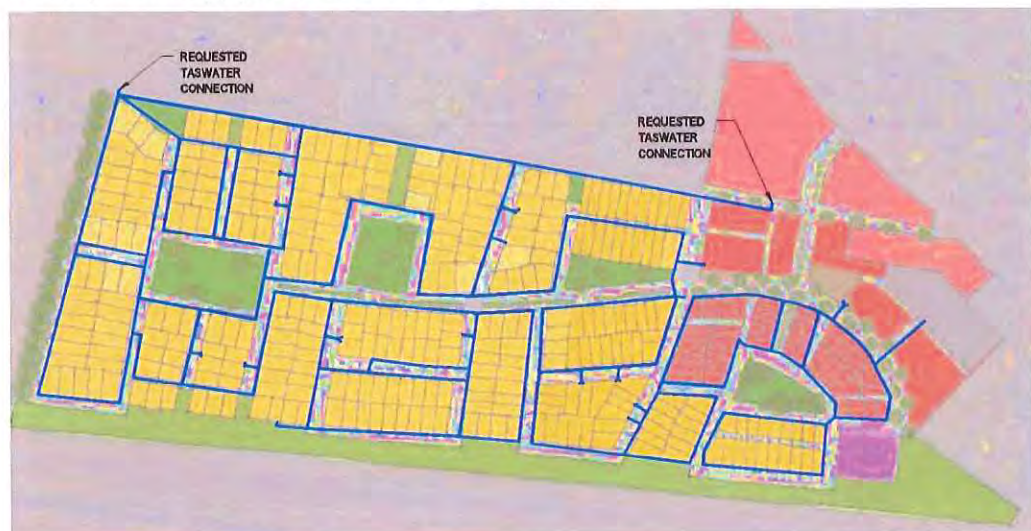


Figure 7 Concept water supply

TasWater has advised that they are likely to be able to provide sufficient supply at the above locations.

5. Conclusion

Flooding from the Sheepwash Creek is unlikely to impact the site significantly. Stormwater from the site can be drained to the East and to Sheepwash Creek. Peak stormwater runoff from the site can be limited to that currently running off the site in the 5% AEP event by community detention basins (to the west and east) and/or a private detention tank per lot.

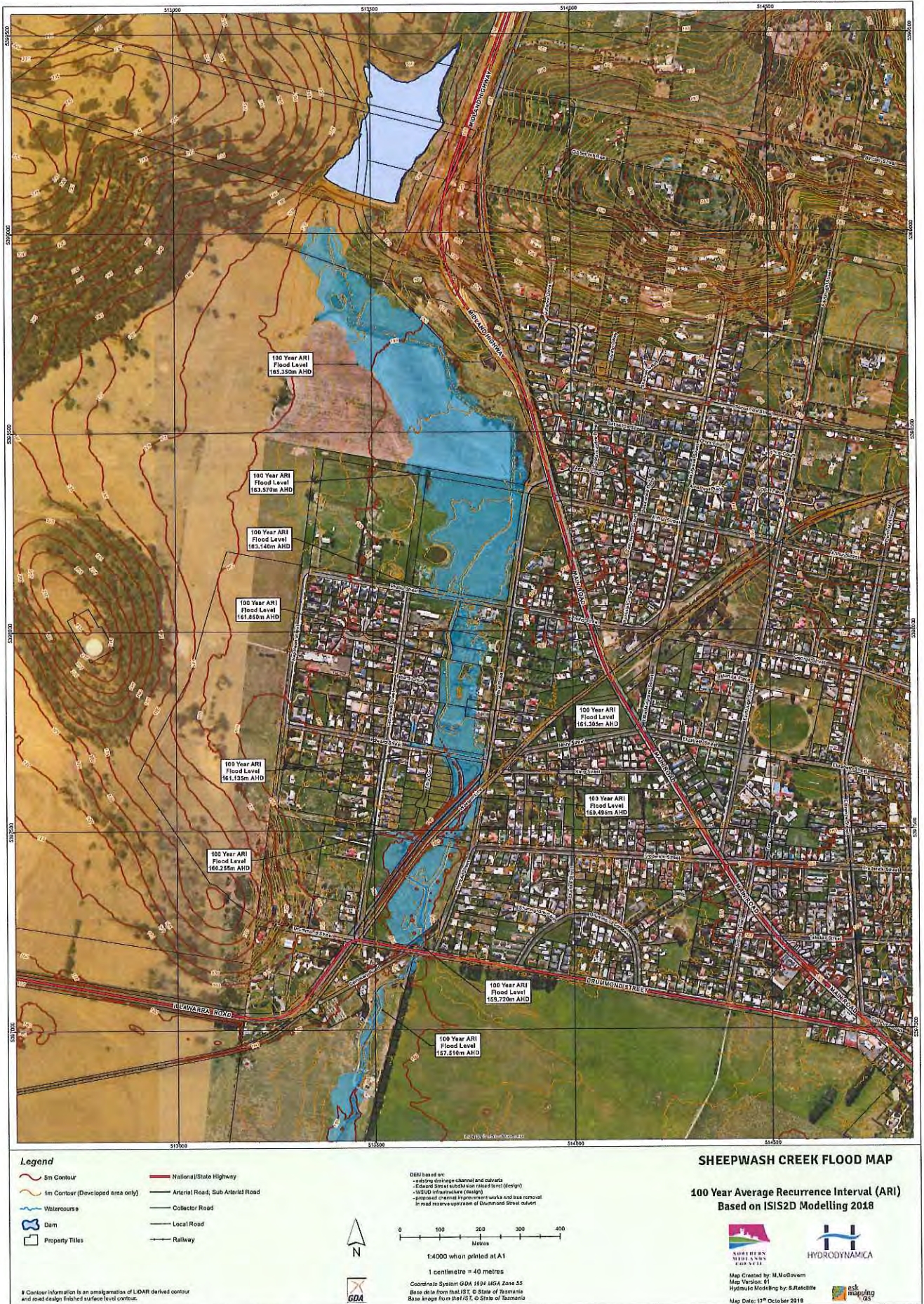
Stormwater runoff can be treated to meet TSS/TP/TN targets of 80/45/45 percentage reduction within the site by a combination of bioretention basins/swales, vegetated swales, and/or proprietary devices at discharge locations.

Sewer and Water services are likely to be able to be provided by TasWater for the site. The developer will need to provide a SPS and will likely need to upgrade the existing SPS in Drummond St. A 30 m buffer around the SPS to residential lots will be required

Appendices

Appendix A – Regional Flood Map

Sheepwash Creek 1% AEP Flood Peak Flood Level



Appendix B – Report Figures

- Catchments
- Existing Sewer
- Proposed Sewer Servicing Plan
- Existing Water Supply Infrastructure
- Concept Water Supply
- Concept Stormwater Drainage



Drummond Street Developments Pty Ltd
Drummond Street Rezoning and Subdivision

Job Number: 12510470
Revision: B
Date: 27 Oct 2020

Figure 2

2 Salamance Square, Richard Tasmans 7000 Australia T 613 6210 0600 E hburmal@ghd.com W www.ghd.com

1:6,000 @ A4

0 50 100 150 200

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1984
Grid: GDA 1984 MGA Zone 55

— Catchment boundary
— Major contour (2m interval)
- - Minor contour (0.2m interval)
— Watercourse
— Highway/arterial
— Collector sub arterial
— Local Road
- - Access/Vehicular Track
— Bike: Walking
— Bike: Cycling
— Railway

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 Data sources: DPPAVE LUT base data and Imagery, 2020; GHD, catchments, survey contours and proposed layout, 2020. Created by: dcoates



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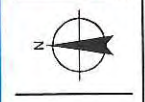
Job Number: 12510470
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Figure 3

Existing Sewer

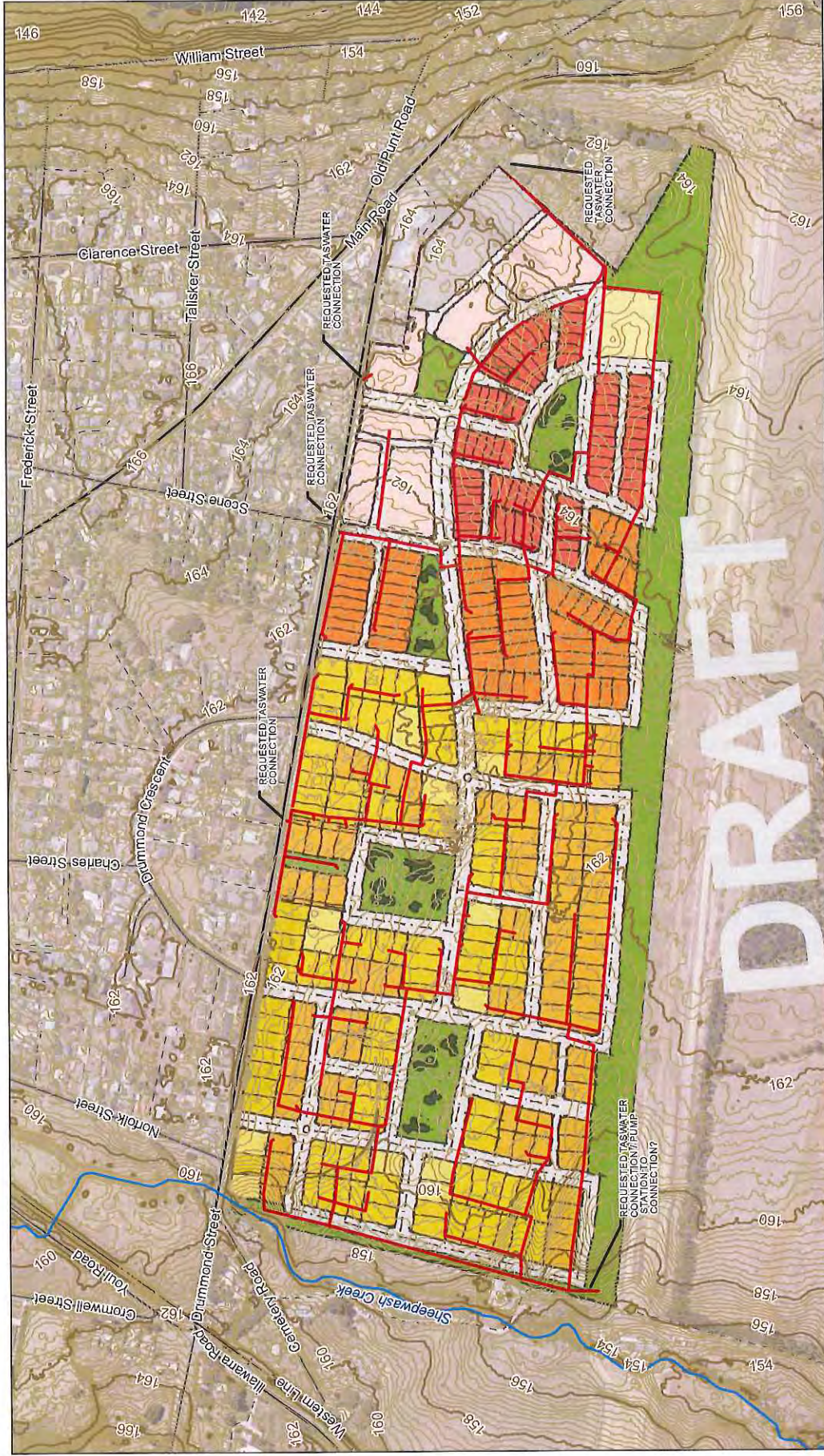
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 Data source: DPWPVE, LIST base data and Imagery, 2020; TasWater, sewer infrastructure via LIST, 2020; GHD proposed layout, 2020. Created by: dcoates

- Sewer Lateral Line
- Sewer Main
- Sewer Pressurised Main
- Watercourse
- Highway/arterial
- Collector/ Sub arterial
- Local Road
- Access / Vehicular Track
- Bike; Walking
- Railway



1:6,000 @ A4
 0 50 100 150 200
 Metres

Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 55



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 Drummond Street Rezoning and Subdivision



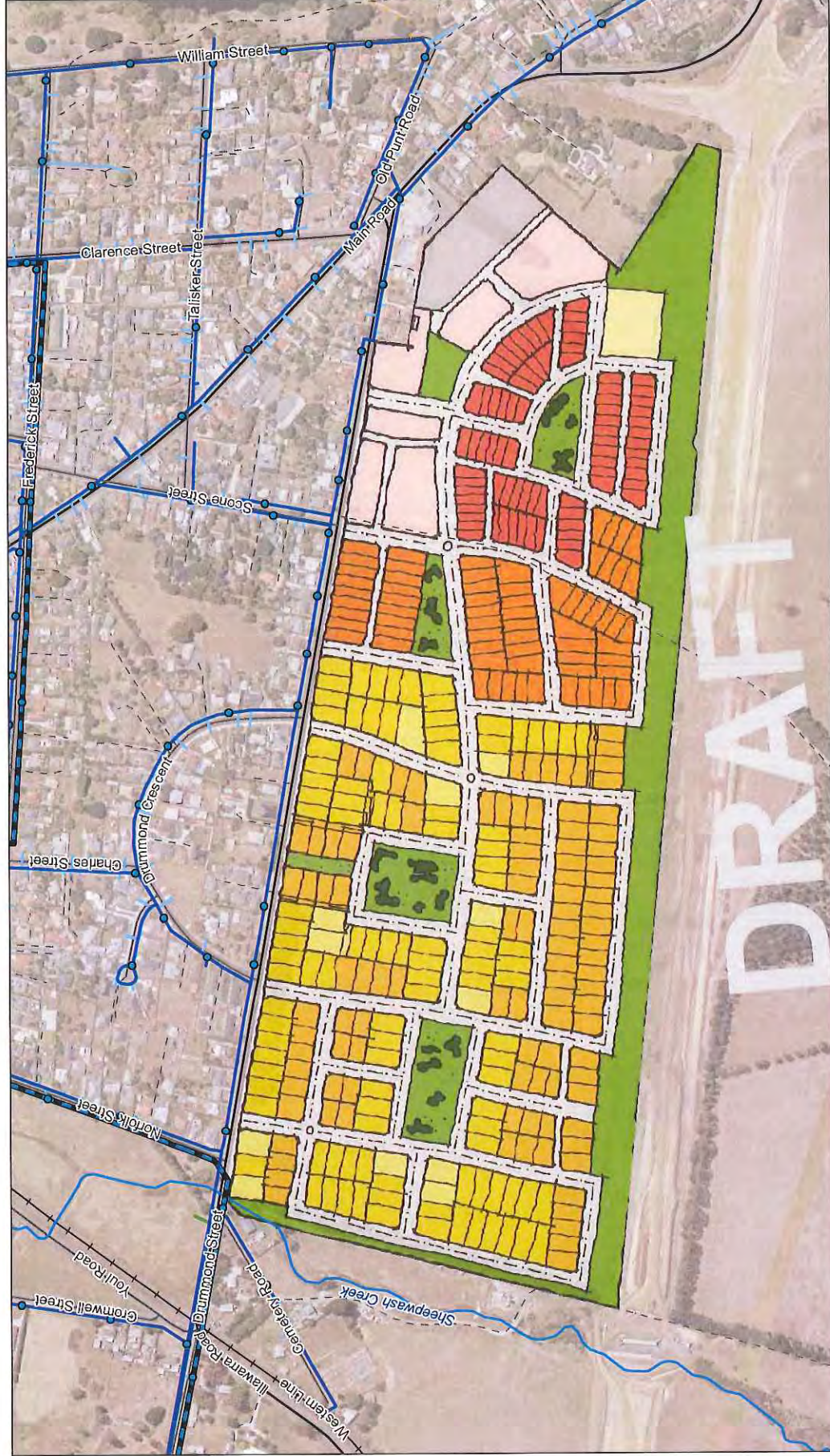
- 1:6,000 @ A4
- 0 50 100 150 Metres
- Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1984
 Grid: GDA 1984 MGA Zone 56
- North Arrow
- Concept Sewer
- Collector/ Sub arterial
- Local Road
- Access/Vehicular Track
- Bike: Walking
- Highway/arterial
- Major contour (2m interval)
- Minor contour (0.2m interval)
- Watercourse
- Requested Tasmater Connection
- Requested Tasmater Station/Pump Connection?

Job Number 12510470
 Revision C
 Date 24 Nov 2020

Concept Sewer Servicing Plan

Figure 4

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 Data sources: DPIPWE, LISI base data and imagery, 2020; GHD proposed layout, sewer concept and survey contours, 2020. Created by: dcastles



Job Number | 12510470
Revision | B
Date | 27 Oct 2020

Drummond Street Developments Pty Ltd
Drummond Street Rezoning and Subdivision



- Bulk Transfer Main
- Water hydrant
- Reticulation Main
- Watercourse
- Scour Pipe
- Water lateral
- Local Road
- Access /Vehicular Track
- Highway/arterial
- Collector/ Sub arterial
- Bike; Walking
- Railway



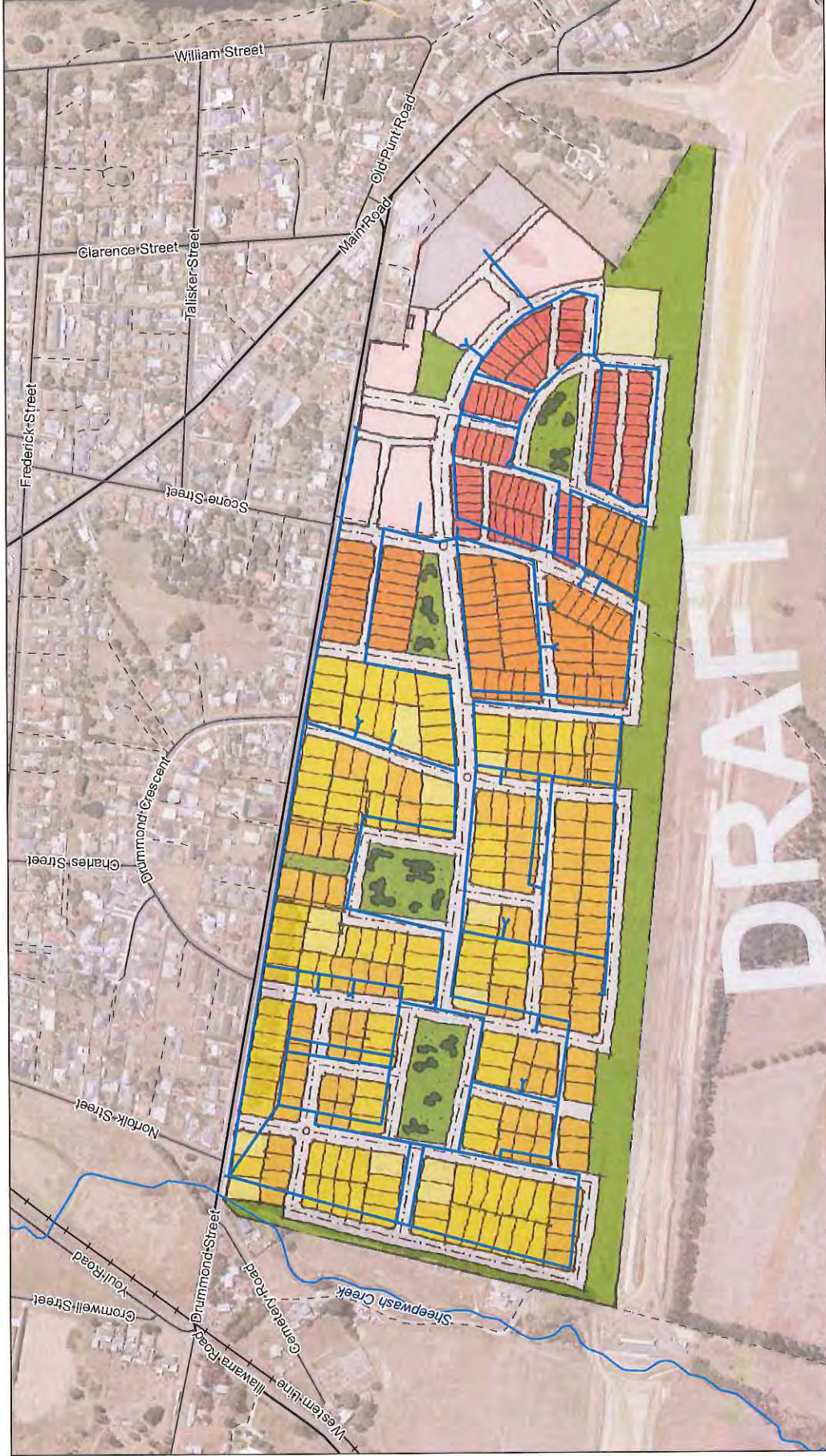
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Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

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Data sources: DPMPWE, LIST base data, and Imagery, 2020; TestWater, water infrastructure via LIST, 2020; GHD proposed layout, 2020. Created hydrostates

Figure 5
Existing Water

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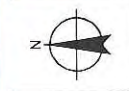


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- Concept Water
- Watercourse
- Highway/arterial
- Collector Sub arterial
- Local Road
- Access / Vehicular Track
- Bike; Walking
- Railway

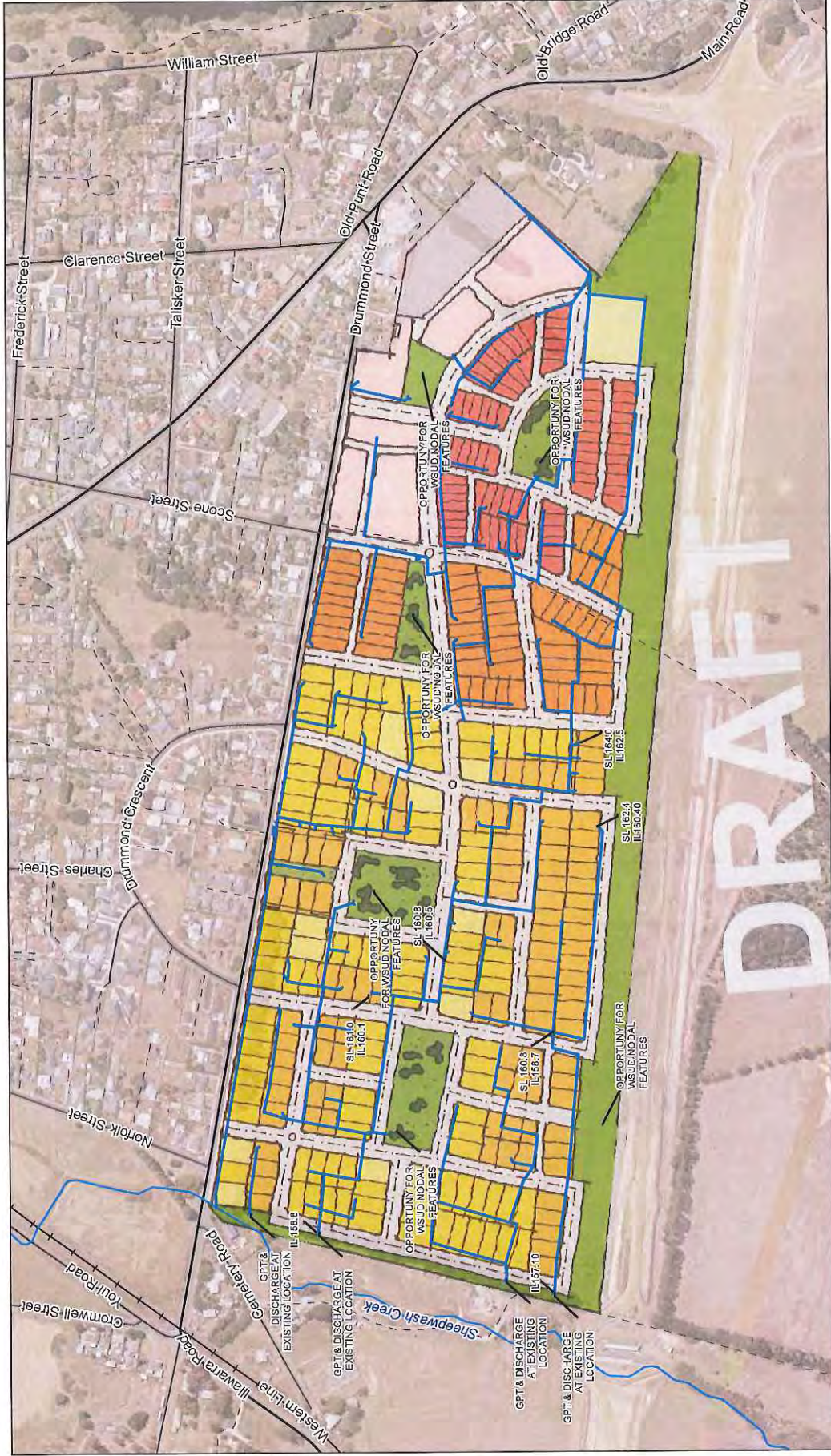


1:6,000 @ A4
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 Metres
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1994
 Grid: GDA 1994 MGA Zone 55

Figure 6

Concept Water

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 Data source: DPMP/PEL/IST base data and imagery, 2020; GHD, concept water servicing and proposed layout, 2020. Created by: dcates



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Drummond Street Developments Pty Ltd
 Drummond Street Rezoning and Subdivision



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Concept Stormwater
 Local Road
 Access / Vehicular Track
 Watercourse
 Highway/arterial
 Collector/ Sub arterial
 Bike, Walking
 Railway



1:6,000 @ A4
 Map Projection: Transverse Mercator
 Horizontal Datum: GDA 1984
 Grid: GDA 1984 MGA Zone 55

Figure 7

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 Data sources: DPMPWE, LIDAR base data and imagery, 2020; GHD, concept water servicing and proposed layout, 2020. Created by: hbnm

Appendix C – NMC South Perth Concept WSUD – Preliminary Options



MEMORANDUM

TO:	Northern Midlands Council	PAGE:	1 of 15
ATTENTION:		DATE:	15 July 2020
PROJECT:	South Perth – Concept WSUD	PROJECT #:	365.01
FROM:	Glenn Allen	REFERENCE:	365.01-M01
FAX OR EMAIL #:			
TRANSMITTED BY:	Mail <input type="checkbox"/> , Hand <input type="checkbox"/> , Fax <input type="checkbox"/> , Email <input checked="" type="checkbox"/>		
SUBJECT:	RE: South Perth Concept WSUD – Preliminary Options		

This memo provides an overview of the issues facing the application of water sensitive urban design principles and stormwater management across the future development of residential areas to the south of Drummond St.

1 SITE TOPOGRAPHY

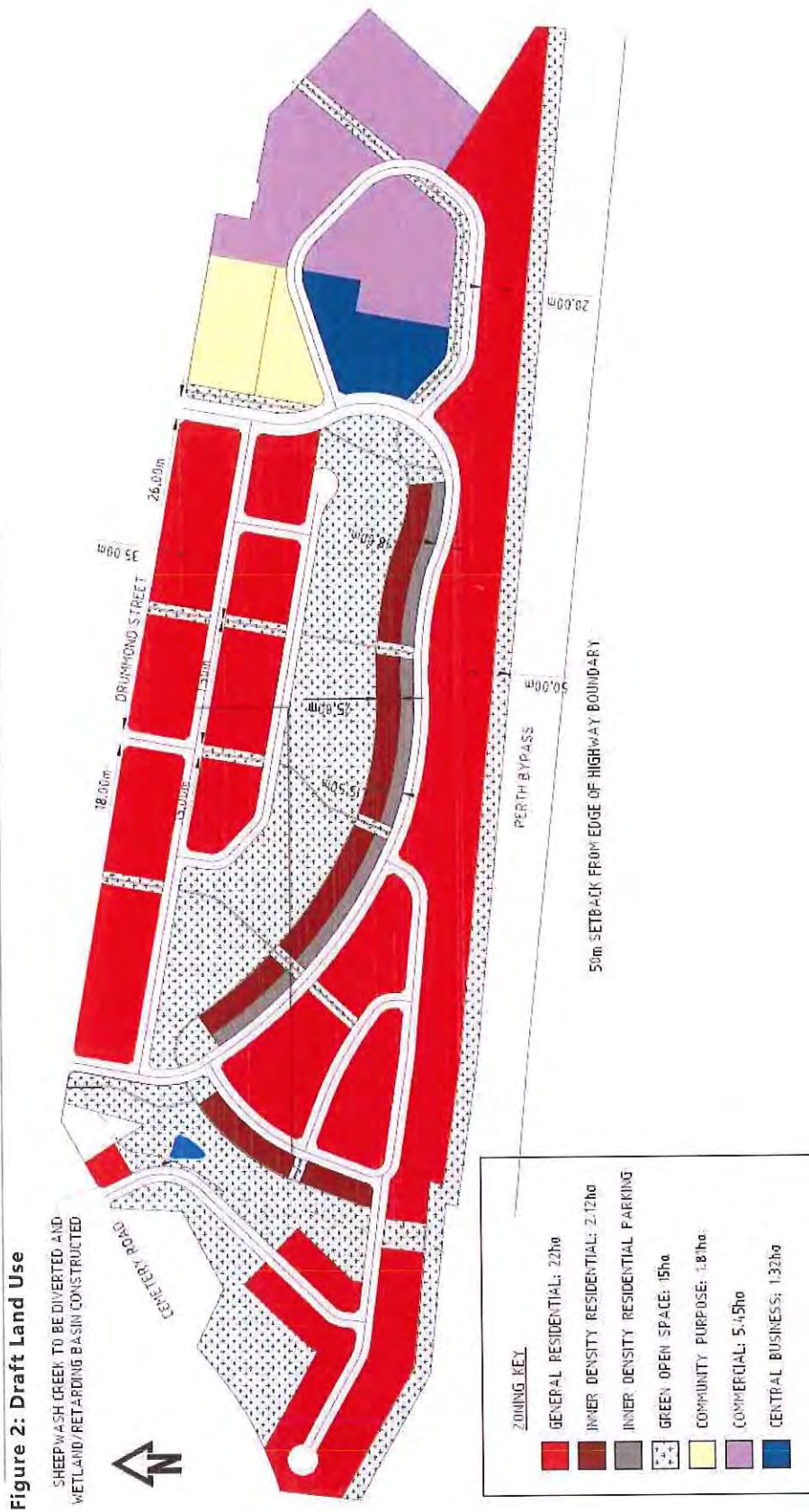
Figure 1 shows the area proposed, while Figure 2 is an extract from the Johnson McGee & Gandy document "Northern Midlands Land Use & Development Strategy - Perth Structure Plan Draft Amendment" dated 12 August 2019.

Figure 1: Proposed Site Area



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

Page 1 of 15



The proposal provides a site layout which effectively follows the site contours, creating a broad central swale with the Drummond St frontage falling to the large roadside open drain. It is noted however that the site is very flat, with a fall of approx. 0.1-0.2% along the line of the central drain from east to west, rising to approx. 0.6%-0.8% as the land climbs moving east. The "crossfall" of the site for drainage into the central line and the Drummond St open drain is similarly flat, at between 0.8 – 1.2%.

The site is possibly going to present difficulties in fully servicing the roads with traditional underground piped drainage when considering the minimum cover requirements, the wetlands depths to develop treatment volumes, and the depth for hydraulic connection at Sheepwash Creek under AEP 1% flood levels.

Site profiles are presented in Figures 4 – 7 below showing the elevation changes across and through the site. Although a volume of earthworks approximating some 20,000 to 30,000 cubic metres is expected to be available due to wetlands basin excavations, this would only result in raising of general site levels associated with development blocks adjacent the basin by 200-300mm.

Figure 3: Site Section Plan

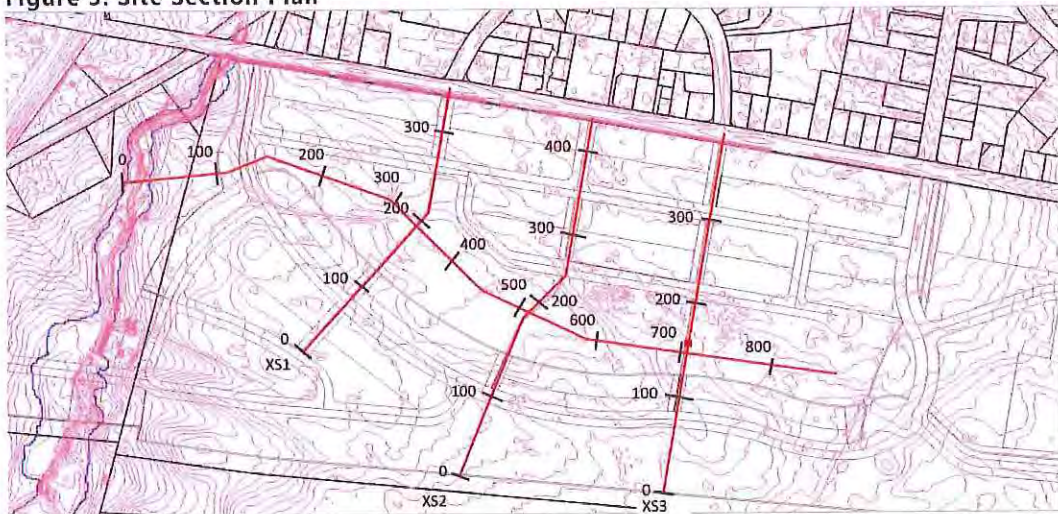


Figure 4: Site Long Section - Wetlands

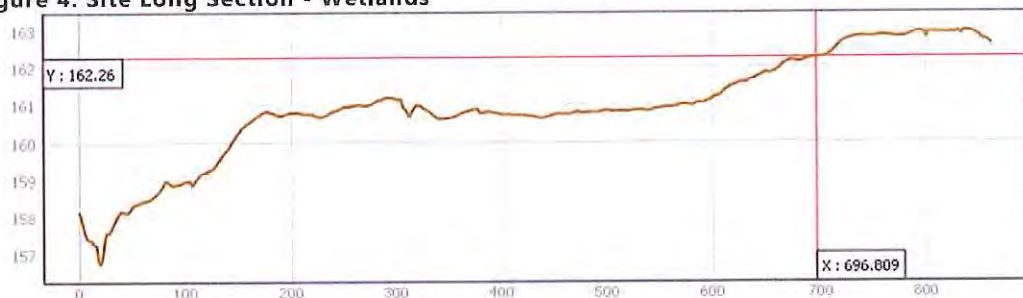


Figure 5: Site Cross Section 1

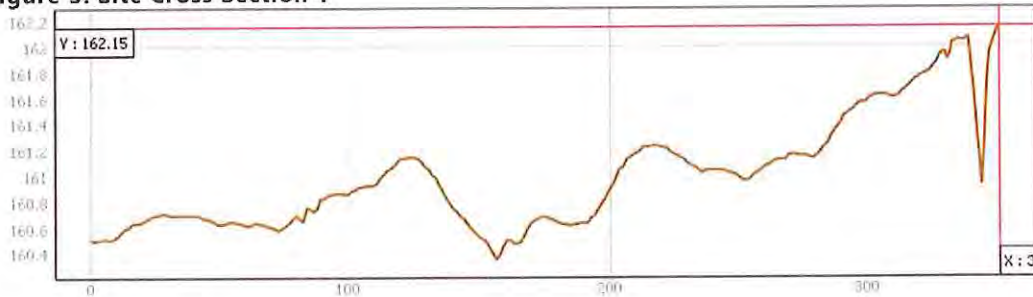


Figure 6: Site Cross Section 2

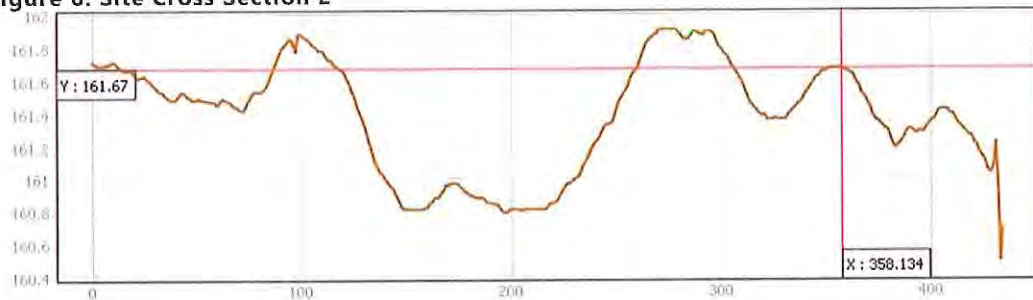
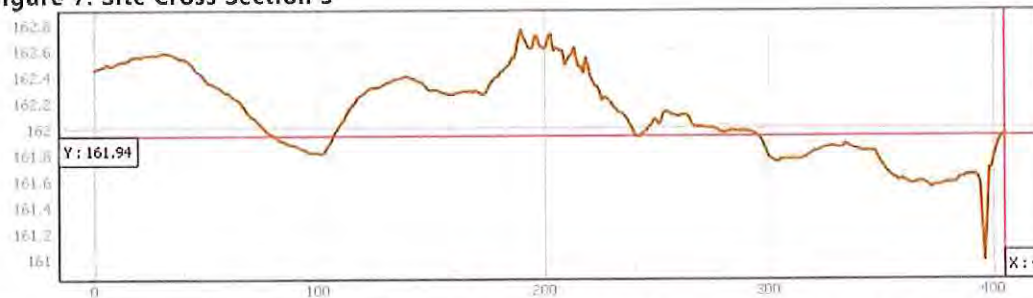


Figure 7: Site Cross Section 3



Site cross sections indicate the potential for residential development along the Drummond St frontage to be connected to the main roadside table drain. However, as there is approx. 0.7-1.2 difference between the drain invert and the general ground level for the adjacent residential blocks, traditional piping to convey stormwater is unlikely to be achieved with complying cover.

The layout proposal indicates landscaped & possible pedestrian access strips between the main development blocks. These paths provide a logical route for overland discharge of stormwater without traditional piping, where surface collection of roads and roof discharge may be made to surface drains within the road reserve.

An example of the approach is shown below, taken from Kingston in the Kingborough Council, Tasmania. An approach to discharging residential property frontages combined with road surface runoff to a central swale may applied in order to convey runoff via the access strips to the wetlands.

Figure 8: Central Road Swale Examples



It is noted however that the proposed road reserve widths of 18m are likely insufficient for this approach. Recent experience has shown that for subdivisions with full underground servicing the 18m road width is already very congested for service placement, particularly when considering sweeping road layouts.

Should the approach to minimise underground stormwater drainage be considered against the trade-off of more extensive earthworks volumes, then road reserve widths must also be taken into account.

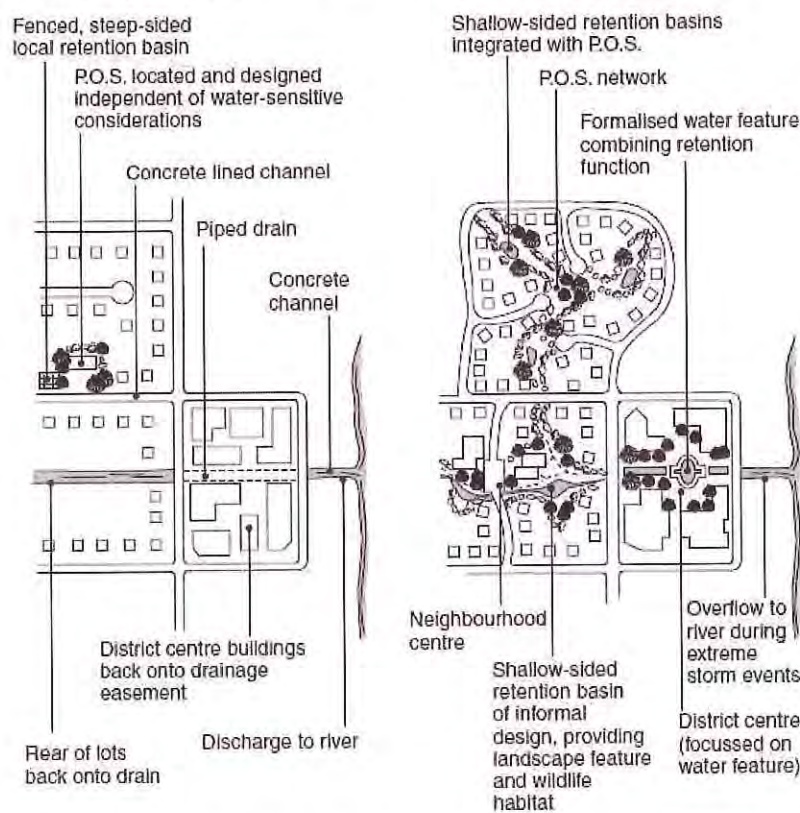
It is expected that road reserve widths of 22-25m would be required.

A similar approach may be applied to the eastern development area comprising the central business & commercial areas. It is noted that the elevation and grade constraints are not as critical in this area, allowing a traditional piped system to be installed to discharge to the central wetlands. However as this area is likely to be a larger impervious area, any improvement to water quality by local treatment will improve the performance of the main site system.

Figure 9: Commercial & Carparking Treatments



Figure 10: Commercial Area – WSUD Application Approach

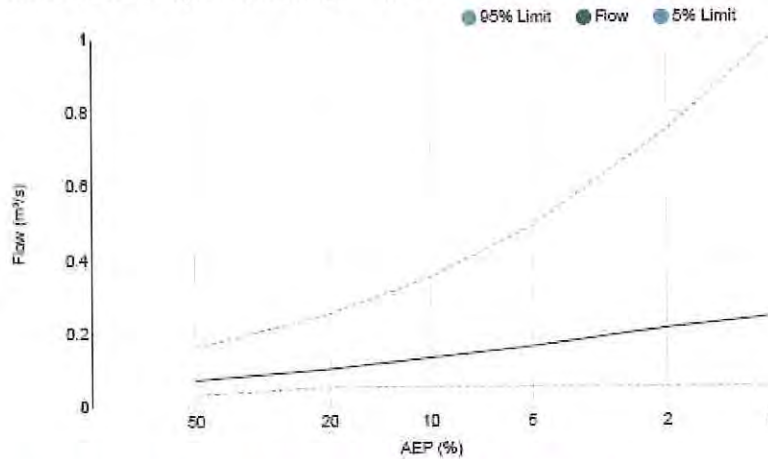


It should be considered that water sensitive urban design (WSUD) is a mature technology, with many successful applications across Tasmania and Australia. The primary consideration when incorporating WSUD across large multi-use sites is one of space. An allowance for sufficient space to incorporate the various elements must be included, for road reserve widths, footpath and verge allocations, carparking modules and commercial footprints. Public open space can be successfully networked into each of these areas.

2 STORMWATER VOLUMES & OSD

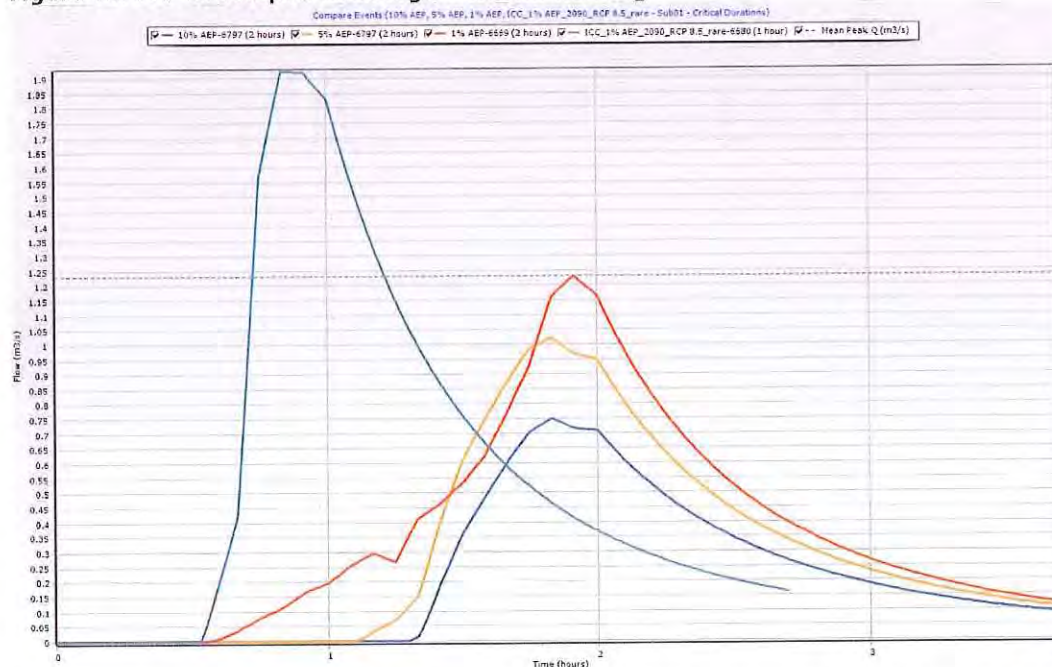
Analysis of the pre-developed site discharge to Sheepwash Creek has been undertaken using the Australian Rainfall & Runoff 2016 (ARR) methods. A comparison between the ARR regional flood frequency estimation (RFFE) outputs and a Watershed Bound Network Model (WBNM) routing model utilising ARR parameters indicates reasonable agreement. It is noted that the RFFE approach is not particularly accurate at this scale, but does allow some "eye-balling" of results from other methods.

Figure 11: Pre-Developed Discharge – RFFE



*The catchment is outside the recommended catchment size of 0.5 to 1,000 km². Results have lower accuracy and may not be directly applicable in practice.

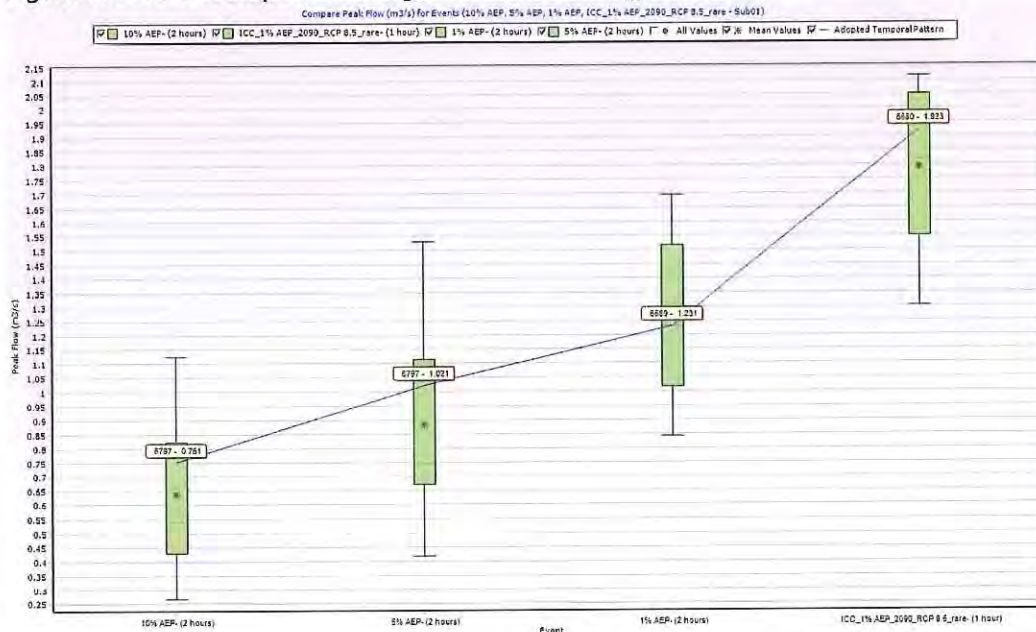
Figure 12: Pre-Developed Discharge – WBNM Routing



The adopted peak discharges for the pre-developed site across the range of annual exceedance periods are quite different when comparing the models. For the purposes of

this initial assessment of the proposed development and the stormwater management elements considered, the outputs from the WBNM model will be used. It is noted that the RFFE results are still within the bounds of the box plots of the ensemble of storms for the catchment.

Figure 13: Pre-Developed Discharge – WBNM Routing Box Plot



The proposed central wetland for water quality measures will be provided with an extended detention depth of 300-400mm, pending detailed design. It is this volume that will constitute the on-site detention measure for the developed site that discharges to the central area. As the majority of the site is able to be conveyed to the wetland (either as overland flow via surface channels / WSUD elements, or by piping associated with site topography changes), a simple Boyd’s Method has been used to “dial in” the OSD volumes required.

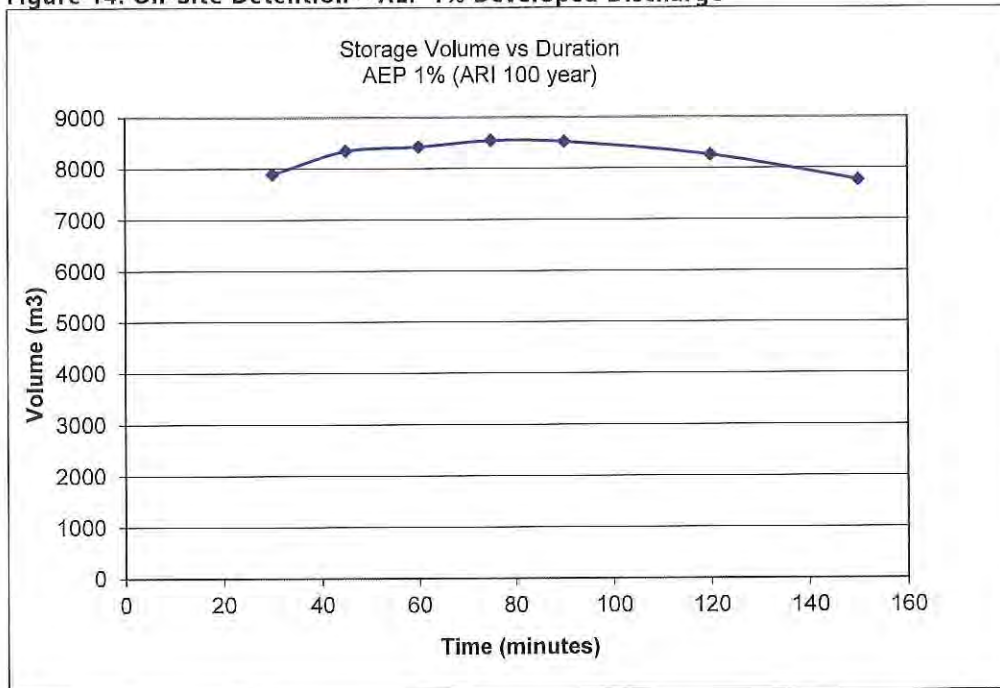
The areas derived from the Draft Land Use document, along with typical allowance for the measure of the fraction impervious are tabulated below:

Table 1: Development Area & Fraction Impervious

Description	C	Area (ha)	Cw
General Residential	0.55	18.959	10.43
High density residential	0.70	1.916	1.34
Commercial / Community	0.80	7.956	6.36
Roads (7.5m seal width)	0.90	3.221	2.90
Roads (verge, 18m reserve width)	0.35	4.510	1.58
Sub Total		36.560	0.62
Wetlands / reserve	0.65	6.400	4.16
Total		42.960	0.64

Applying the pre-development discharge determined for the site under the AEP 1% critical event (approximately the 1 in 100 year event) as the limiting outflow for the developed site indicates the following detention volume is required:

Figure 14: On-Site Detention – AEP 1% Developed Discharge



To limit discharge under the developed condition to the pre-developed AEP 10% (approx. 1 in 10 year ARI) discharge of 0.75m³/s will require approx. 8,500 cubic metres of storage.

For the allocated wetlands area, an extended detention depth of between 300-400mm requires an area of 21,000-28,000 square metres. There is approximately 35,000 square metres of area available within the central landscaped / wetlands zone, when considering a 20m offset from the boundary.

The combined provision of OSD and wetlands treatment is feasible and practical when considering the central location of the open space in relation to the developed site.

3 STORMWATER QUALITY

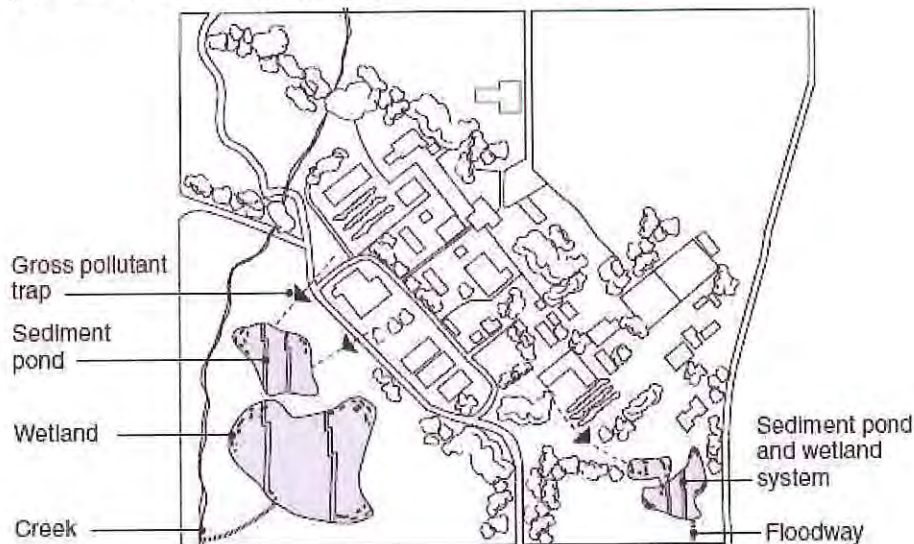
Nutrient control is a requirement for stormwater discharge from developed areas, particularly when the receiving waters are the natural environment. The central landscaped area provides a significant area in which to develop wetlands and associated elements such as sediment basins & gross pollutant traps.

Any wetland used for stormwater treatment and detention must be protected from the pollutants other than nutrients it is designed to treat. This generally means rubbish and dirt. Rubbish is removed by gross pollutant traps, such as end-of-line trash screens or hydrodynamic separators, while dirt and other particulates are removed by sediment basins.

The hydrodynamic separator can provide double duty for sediment removal, however it is noted that frequent maintenance should be allowed in order to stop the wet sump becoming a source of pollution or nuisance. The initial cost of a hydrodynamic separator is considerably larger than an end-of-line trash screen, but does have some aesthetic advantage.

See below for a typical layout approach to wetlands and upstream protection elements.

Figure 15: Wetlands Configuration – Treatment Train



3.1 Gross Pollutant Removal

The provision of gross pollutant traps prior to entry of stormwater to the central landscaped area & wetlands should be made at the end of the line. A distributed network of GPT as side entry pit inserts may be applied to a fully piped drainage network, however these are a larger maintenance issue. It is considered that fewer larger elements are more manageable, and are more obviously part of a whole of system treatment that has some public educational benefit.

The proposed development layout will permit GPT to be provided at the end of each of the access / overland flow strips that pass between residential blocks, prior to entering the central landscaped area.

Figure 16: Gross Pollutant Trap – Typical Examples



3.2 Sediment Removal

A preliminary analysis of discharge from the developed areas into the central landscape zone indicates distributed peak discharge rates of 300-500 litres/sec (AEP 1% 15 minute event), up to 500-800 litres/sec from the commercial zone. Although the potential to incorporate distributed WSUD elements as discussed in Section 1 will assist in removing sediments, a conservative approach is applied to the central landscaped area in order to determine "worst case" applications.

As shown in the general nomograph below for 125 micron particle removal, the total area of developed site may be treated by passing through 6-7 smaller sediment basins of typically 200-300 square metres each.

Figure 17: Sediment Removal – High Flow

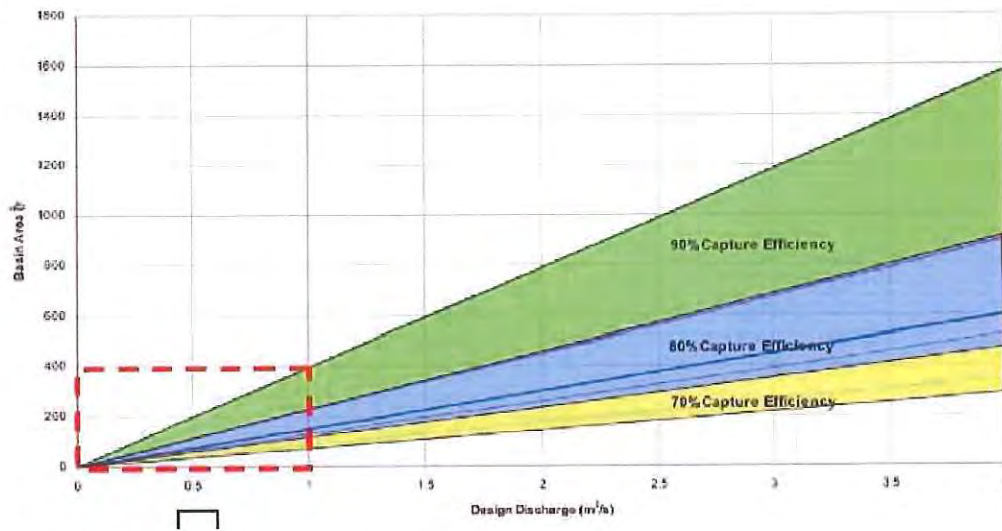
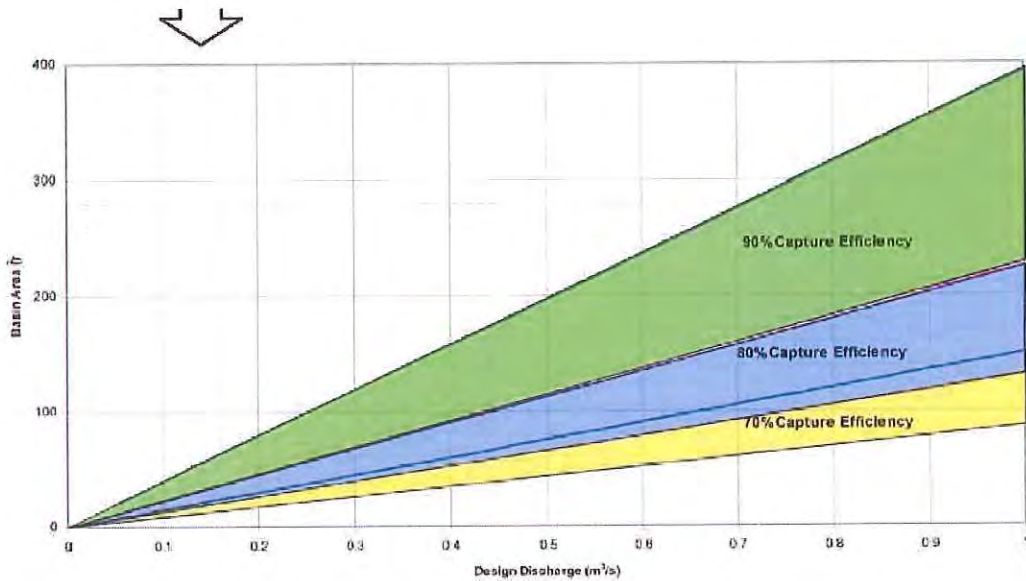
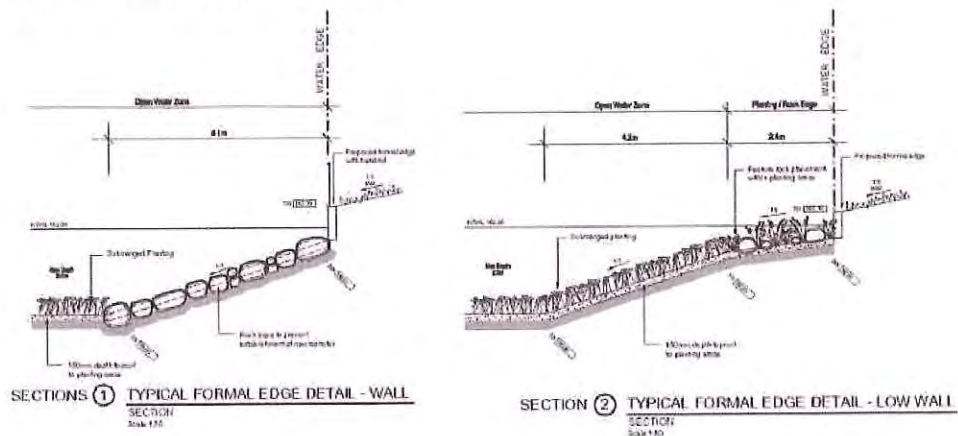


Figure 18: Sediment Removal – Low Flow



The sediment basins may be presented aesthetically as shown in the examples below, or may be hard engineered for ease of maintenance.

Figure 19: Sediment Basin – Examples



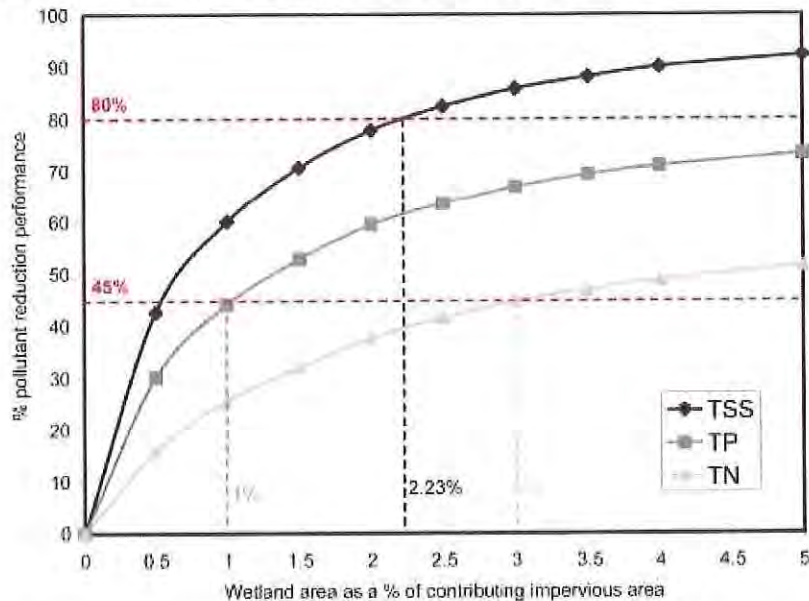
Access for Council maintenance vehicles, typically a vac truck or small tipper and bobcat must be included in the layout considerations.

3.3 Wetlands Treatment

The generalised nomograph for Tasmania indicates that incorporating the required area for on-site detention into the wetlands elements will satisfy treatment targets.

The contributing impervious area is approx 22.67 hectares, typically requiring a wetlands treatment area of approx. 5,050 square metres. Preliminary MUSIC modelling confirms this area is approximately required (variation of 3-5% each way depending on total modelling assumptions).

Figure 20: Wetlands Treatment – Area vs Effectiveness

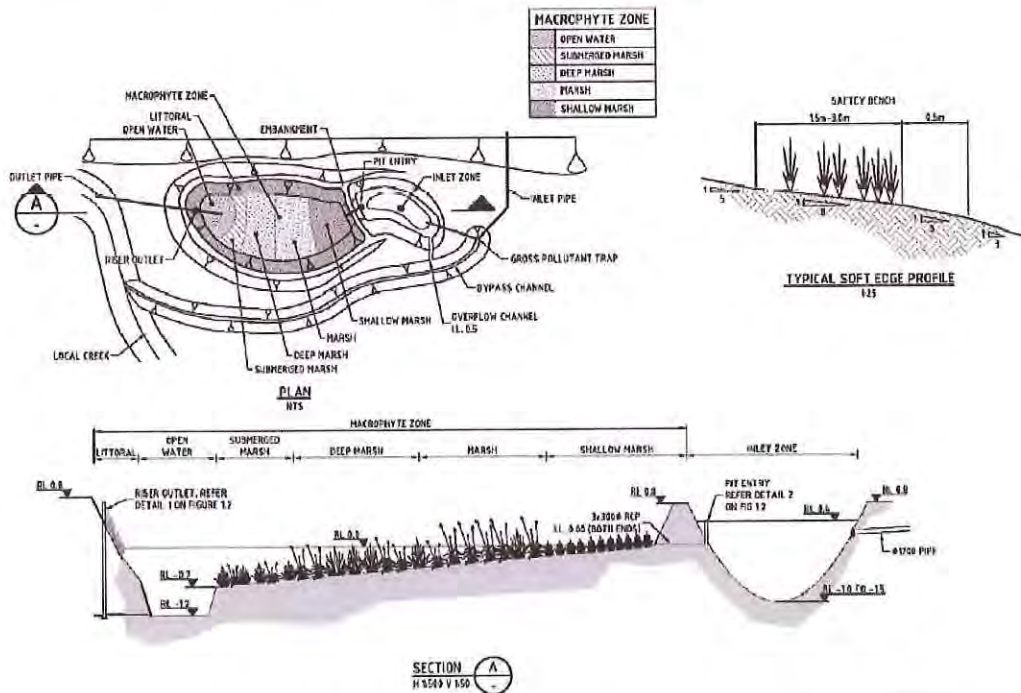


As the total area developed as a wetland with 300-400mm of extended detention in order to account for on-site detention is much greater than that required purely for nutrient removal, the more costly wetlands may be substituted with simpler landscaped basins to meet OSD targets.

The central landscaped area provides significant space to work with a variety of treatment elements, as well as purely aesthetic landscaped elements. There is sufficient offset available from residential boundaries to provide walking / bike paths, as well as the required gradients & planted buffer zones from the edge of basins to deep water.

The figure below indicates the typical layout that may be provided as a set of smaller linked wetland & pre-treatment basins, or a single large basin of approx. 5,000 square metres.

Figure 21: Wetlands Treatment – Typical Layout



Preliminary MUSIC analysis & outputs will be provided as part of an appendix. An initial conceptual layout of basins and treatment element positions is to be developed with cost estimates for the treatment elements.

In summary, the proposed layout indicated in the Draft Land Use Plan can feasibly be serviced by a stormwater management and treatment system that is incorporated practically with the site contours.

Stormwater servicing may be achieved by predominately surface discharge, except in a small area to the south west where topography will permit traditional piped systems to be applied.

Piped drainage networks may be applied to the site as a whole, however it should be noted that this approach will require a substantial increase in earthworks volumes, due to the flat nature of the site and the need to achieve flood level freeboard separation at residential & commercial areas.

Sincerely,

Glenn Allen

Glenn Allen, Senior Civil Engineer

GHD





2 Salamanca Square
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DRAFT	F.Haynes	B.Davie	On file	A.Brownlie	On file	06/08/20
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Appendix H – Community and Stakeholder Consultation

Engagement Report

Drummond Street Development
WHAT WAS HEARD AND LEARNT
September, 2020



thenoagroup

helping groups move from uncertainty to purpose

Introduction

After securing the 50 hectares of land on Drummond Street, created by the development of the new Perth highway, Red Panda Properties sought engagement with key stakeholders and the broader Perth community to understand the issues around the proposed development of four villages incorporating around 370 dwellings of differing housing typologies, open spaces, shared pathways and a commercial area.

The previous main highway between the north, south and north-west of the State ran through the Main Street of the Perth township. It was a popular 'stop' for fuel, snacks and a break, in fact the township of Perth came into being as the first stop outside Launceston on the way to Hobart because it was where a new set of horses was needed to continue the journey. This present situation presents a significant change in not only how the township functions but how it responds to opportunities.

Prior to the Covid19 pandemic, the Perth township was highlighted as one of the key growth areas for Northern Tasmania with internal migration driving demand for new housing.

Given these influencing factors and the need to finalise concept and site plans, it was timely for the proponent to gain an understanding of the issues, insights and sentiment regarding the proposed development and its relationship to the future Perth township. The aim was to positively respond to stakeholder and community issues and maximise all potential opportunities.

Set out in this report are the findings of the engagement activities.

Bob Campbell, Lynda Jones & Lindsay Kelly
noagroup
September 2020.



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Content

Methodology

Community Noticeboard Quotes

At A Glance: Engagement Participation
and Summary

What We Heard in Detail

- Perth as a Destination
- Infrastructure and Commercial Area
- Traffic, Movement and Access
- Housing and Open Spaces

Over the months of July, August and September, 2020 the following engagement activities were undertaken:

Methodology

One on one interviews with businesses in the township; regional and sub-regional development agencies Northern Tasmania Development and Launceston Chamber of Commerce; key State Government service agencies TasWater, TasNetworks and State Growth and briefing sessions with the General Manager and Northern Midlands Councillors.

These interviews were held during Covid19 restrictions. To compensate for the difficulty and caution many had towards 'physical space' engagement, the program relied more heavily on communications. Traditional print news, radio, letter box drops and social media were used to 'launch' the broad concept of the development and to promote further comment and engagement. The Perth Notice Board on-line page was also monitored and comments made at the end of the 'launch' period captured and incorporated into this report.

Engaging with the broader community was through 'drop-in' workshops which were held at the beginning of September. Two sessions were offered. During these sessions, thoughts and ideas were sought on Perth as a Destination; Infrastructure and Commercial Area; Traffic, Movement and Access; Housing and Open Spaces. Insights into what residents 'Liked'; 'Needed to Know More' and 'Don't Like' about the proposed development guided and informed discussions. Apart from a broad cross-section of community members, a number of District Committee members also attended which was encouraging as this group had been in recession during Covid19 restrictions and attempts to organise contact had failed.

A special business breakfast was organised for businesses in the area and also those who would potentially be involved in the proposed development including senior representatives from the financier ANZ Bank. This proved to be another successful gathering with participants commenting on how to leverage the proposed development to stimulate local economic activity and also contribute to the State's post-Covid social and economic recovery.

Quotes from the community Notice Board



At a Glance: Participation and What We Heard

WORKSHOP PARTICIPANTS

Community: **59**

Business: **25**

Interviews: **32**

Like

The idea of Perth becoming a destination in its own right and everyone working on that with the new commercial addition playing a role
A focus on the produce of the area being part of the attraction
The development and the opportunity to make it 'not just another sub-division'
NBN roll out and 'model' residential development – great speed and smart homes
Green, alternative energies
Bigger IGA
Integrating the new commercial hub with the existing Main Street
Variety in block sizes
Complimentary but different types of house designs
Land and package purchase with influence over internal house layout
Resident diversity: all ages and stages of life
Engaging residents, talking together and working on issues
Communal gardens and orchards within the development
Making use of grey water and communal green composting
Each dwelling has own car parking spot

Like to know more

Stormwater issues in relation to the land and the development of a Stormwater Management Plan
Housing heights
Sustainability of new commercial offering
Social infrastructure fit for purpose and growth
Maintenance of open spaces
Trees as sound barrier to highway noise
Pine trees Drummond Street
Pine trees Cemetery Road
Communal parking for people visiting residents
Linking to other areas
Small 'town-go-round' vehicle to make it easy to access all commercial areas of the town
Lighting throughout development for safety and aesthetics

Don't Like

If the commercial area for the town becomes two separate areas
Drummond Street becomes busy again with increased traffic from the increased population
Potential for Scone Street to become a 'rat-run'
Potential noise from highway
Loss of views and privacy from building heights particularly those closest to the development
Any potential social divides within the development and also the township

What We Heard in Detail

This section brings the outputs together under themes.

There are four themes:-

1. Perth as a Destination
2. Infrastructure and Commercial Area
3. Traffic, Movement and Access
4. Housing and Open Spaces

Perth as a Destination

The new 'highway' has resulted in existing traffic from the north, south and north-west of the state now being diverted around the township. This is impacting existing businesses. There is strong support for Perth to re-invent itself as a destination in its own right and the new commercial centre, integrated into the existing Main Street, is seen as a way to achieve this. "The aim should be to keep people in Perth and to attract others to visit here."

A focus on heritage and produce from the Midlands Region, cafes, restaurants, whisky, and specialty retail offerings that reinforce the brand of Tasmania and Perth were put forward as contributing to a response to be able to 'shop for what we love'.

Signage on the highway at the outskirts of town was also seen as necessary. "Welcome. We're open!"

Infrastructure and Commercial Area

Stormwater: is an issue for the township. There will need to be a Stormwater Management Plan showing how water will be drained away from the proposed development land. This has the potential to contribute to a township solution.

NBN: Many thought this was a great addition and are hoping that better connection for the entire township would eventuate. The idea of being a 'showcase' for NBN in a residential development was also appreciated.

Alternative energies: Participants thought this was a good thing on two counts – cheaper energy costs and positive response for the environment and climate change.

Schools, childcare and early learning: There was strong sentiment not to create a 'Melbourne' problem where sub-divisions are built without adequate service provision and amenities particularly around child care and education.

Public open spaces: Open spaces, green canopies, playgrounds and shared pathways were seen as an integral part of a quality life; not just necessary for physical health but also mental wellness. Ongoing maintenance of open spaces and social infrastructure is a financial concern. Who will pay for the maintenance of public open spaces?

New commercial area: Will the new commercial 'hub' stand alone or will it integrate with the existing retail and service offer within the township of Perth? This is a concern to the community and their sentiment is that it should be integrated. In fact, integration of the development into the existing township is a key consideration. "We don't want it to be 'us and them'." Existing businesses should not be threatened but part of the new and expanded commercial offering.

Additional retail outlets for the commercial area put forward were:

- Supermarket: IGA moves to the new commercial centre for more space
- Bottle shop
- Specialty sweets and chocolate shop
- Florist
- Toy/Xmas shop
- Cafes and restaurants (Chinese restaurant)
- Whisky and mulled wine
- Hairdresser
- Hardware store
- Doctor/Dentist
- Gymnasium

There were concerns raised by older residents that if the IGA relocated to the new commercial area it would be too far for them to walk. A 'town-go-round' rider was put forward as something that could 'ferry' people from one part of the town to the other and be an added attraction to the commercial area.

Sustainability of commercial offering: One person commented on the fact that many Perth residents accessed their goods and services from Launceston and that there would need to be analysis on what services should be offered in the township. Another commented that a 35% increase in population may not sustain new businesses in the area. However, the majority of participants want the aim to be to keep people in Perth and attract others in. Many want to make the township 'their place' and not be a commuter area where people only sleep at night.

Gardens, watering and waste: Communal gardens and orchards were seen as a good idea to help build 'community' and to provide food for those living there. Communal green waste composting was also suggested. The use of grey water was seen as contributing to irrigating individual and common spaces.

Traffic, Movement and Access

Drummond Street Traffic: Residents don't want Drummond Street to become heavy with traffic again. Extra traffic will need to be calmed and changing the speed limit was suggested.

Scone Street Traffic: The residents of Scone Street do not want to become a 'rat-run' with residents from the new development accessing the Main Street. Cars need to be re-directed away from Scone Street.

Car parking internal: Each dwelling having their own car park was raised. The notion of communal parking within the area, for the visitors of residents of the proposed development was seen as a positive.

Traffic, Movement and Access (cont)

Car parking external: Needs to be enough car parking around the commercial area to make it easy for people to access. Again the 'town-go-round' was considered an idea worth exploring and being particularly useful for an ageing population.

Access to other areas: There was a strong desire to link shared pathways within the proposed development to existing tracks and trails. This was also coupled with an aspiration to join active transport links to the area's other townships of Longford and Evandale.

All who participated were keen to explore ways to access the river from the proposed development and Perth township.

Housing and Open Spaces

Typologies: Participants thought it important to fit in with the existing township and streetscapes so the proposed development extends the town as opposed to being a separate 'stuck-on' at the end of the town. Again this highlights the theme of integration.

Housing heights: were a concern for those residents living close to the development for the following reasons;

- Potential loss of views of the Tiers
- Privacy issues to those who back onto the proposed development
- Any potential shading or creation of wind tunnels

Land and package purchase: This was accepted by those considering the development as their future home. Having influence over internal configurations was also welcomed. The idea of complimentary but different types of house designs was well received.

Block sizes: Smaller block sizes were welcomed as a response to the diversity of needs and wants people have in various stages of their life. With smaller blocks there were questions around whether the laneways would accommodate parking for each dwelling. There was also a comment that laneways could become unsafe spaces with good lighting highlighted as a way of mitigating this.

Staged development: This was considered a good approach to avoid putting pressure on existing services while needed infrastructure and services were developed as the Perth township grows and develops.

Resident diversity: The idea of a mix of people, all ages and stages of life was well received including the potential for 'housing/apartments for life' to be able to successfully 'age in place'. Participants did not want to see 'social divides' within either the development or the township.

Trees in the area: The Drummond Street trees are considered by many residents as unsafe with a concern over falling limbs, tree roots having spread under the roadway and nettles invading existing lawns and gardens in close proximity. It was strongly rec-

ommended that an arborist report be prepared on the condition of the trees. One participant did not want any trees removed. Another resident was concerned over the trees running parallel to Cemetery Road and whether they would be removed. Participants from Drummond Street thought it would be a good idea to engage residents from that area in the decision regarding the pine trees.

Open spaces: The open spaces, greening and canopies were well received. Choice of trees were discussed with many wanting to have deciduous plantings for sunlight in winter, shade in summer and also a reinforcing alignment with the heritage character of the township.

Many hoped that the proposed development would accommodate a specific dog walking area.

Safety: Lighting is needed in the new development in streets and laneways for safety and aesthetics.

Highway noise: This is already proving a challenge for those living close to the new highway. The tree plantings are not considered an effective noise barrier due to the length of time to mature and provide density.

End.
September 2020



helping groups move from uncertainty to purpose

thenoagroup

More information about our work and processes can be found at

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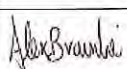
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Drummond Street Developments Pty Ltd

Drummond Street Planning Scheme Amendment Planning Assessment

December 2020

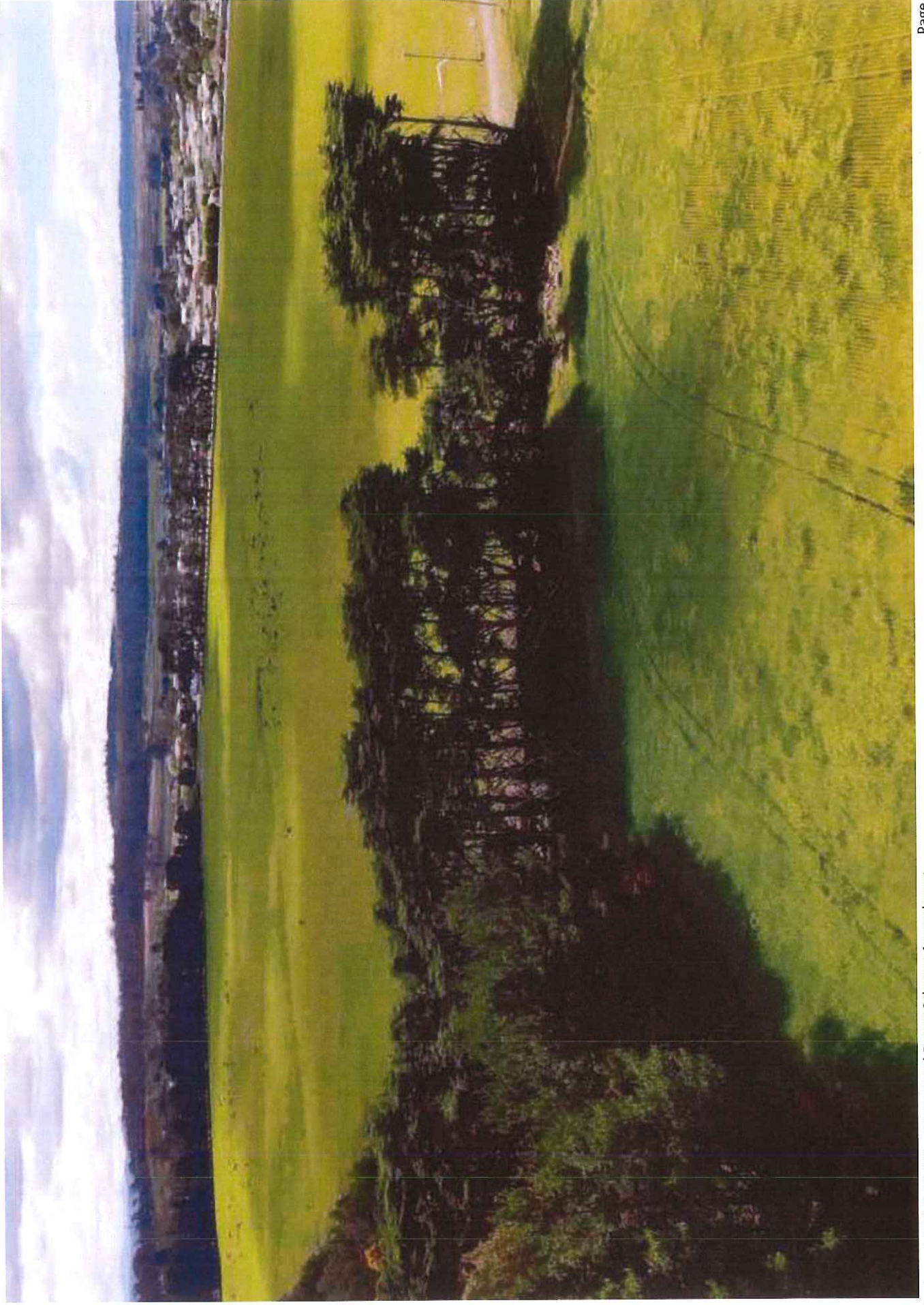
WATER | ENERGY & RESOURCES | ENVIRONMENT | PROPERTY & BUILDINGS | TRANSPORTATION

Appendix I – Development Concept Plan

HOME IN TASMANIA

The
Drummond Street
Project
SOUTH PERTH

*A proposed development by
Red Panda Properties*



Building...to help build Tasmania

The Drummond St Project represents both private investment by my company Red Panda Properties and an unwavering confidence in Tasmania's future. It will generate local employment for local contractors with a great flow-on potential for the community, region and our State.

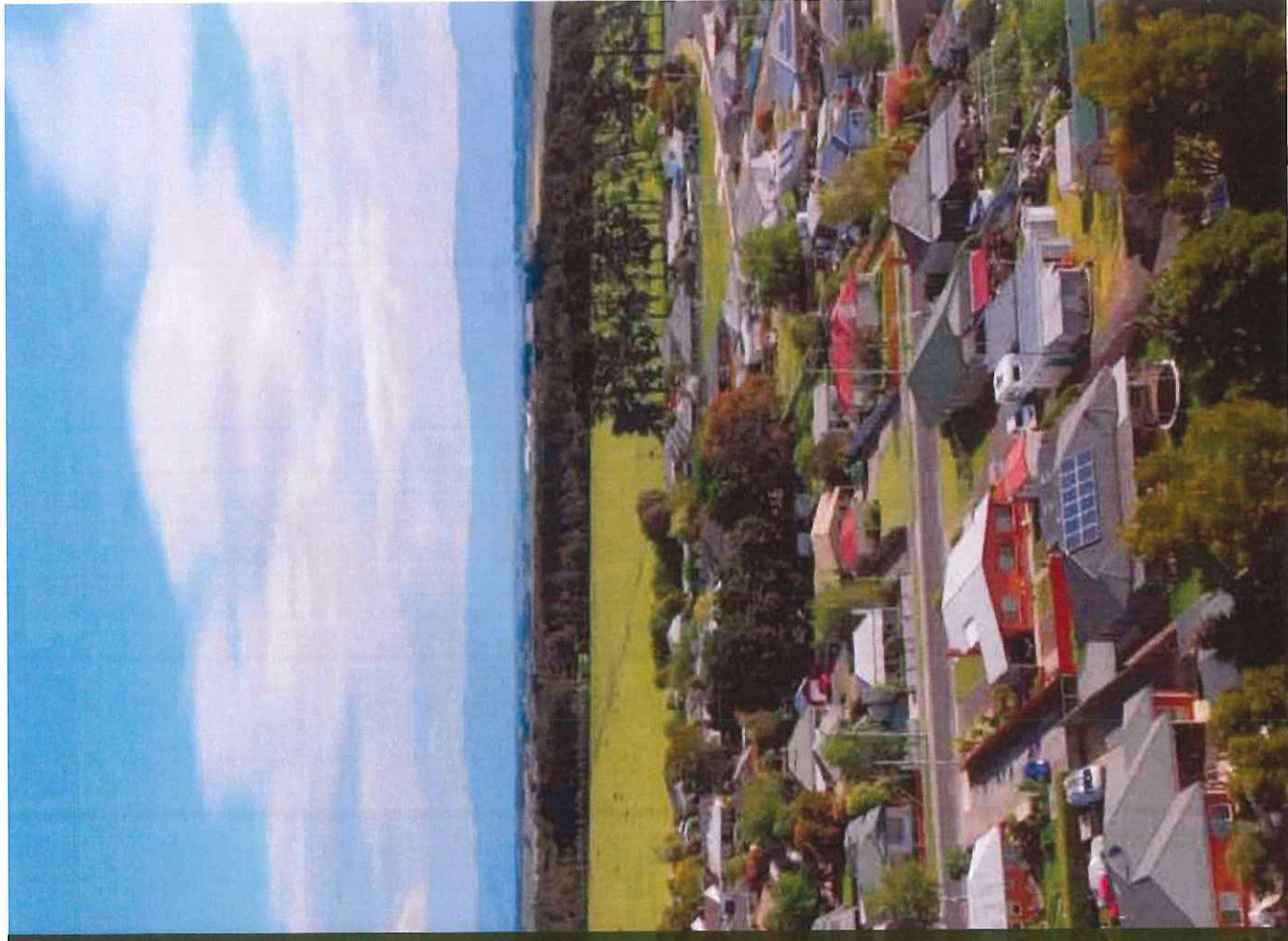
In the post-pandemic era, this project can be part of the path towards economic recovery. I also believe the proposed development is an opportunity to transform the township of Perth into a "go to" destination in Northern Tasmania.

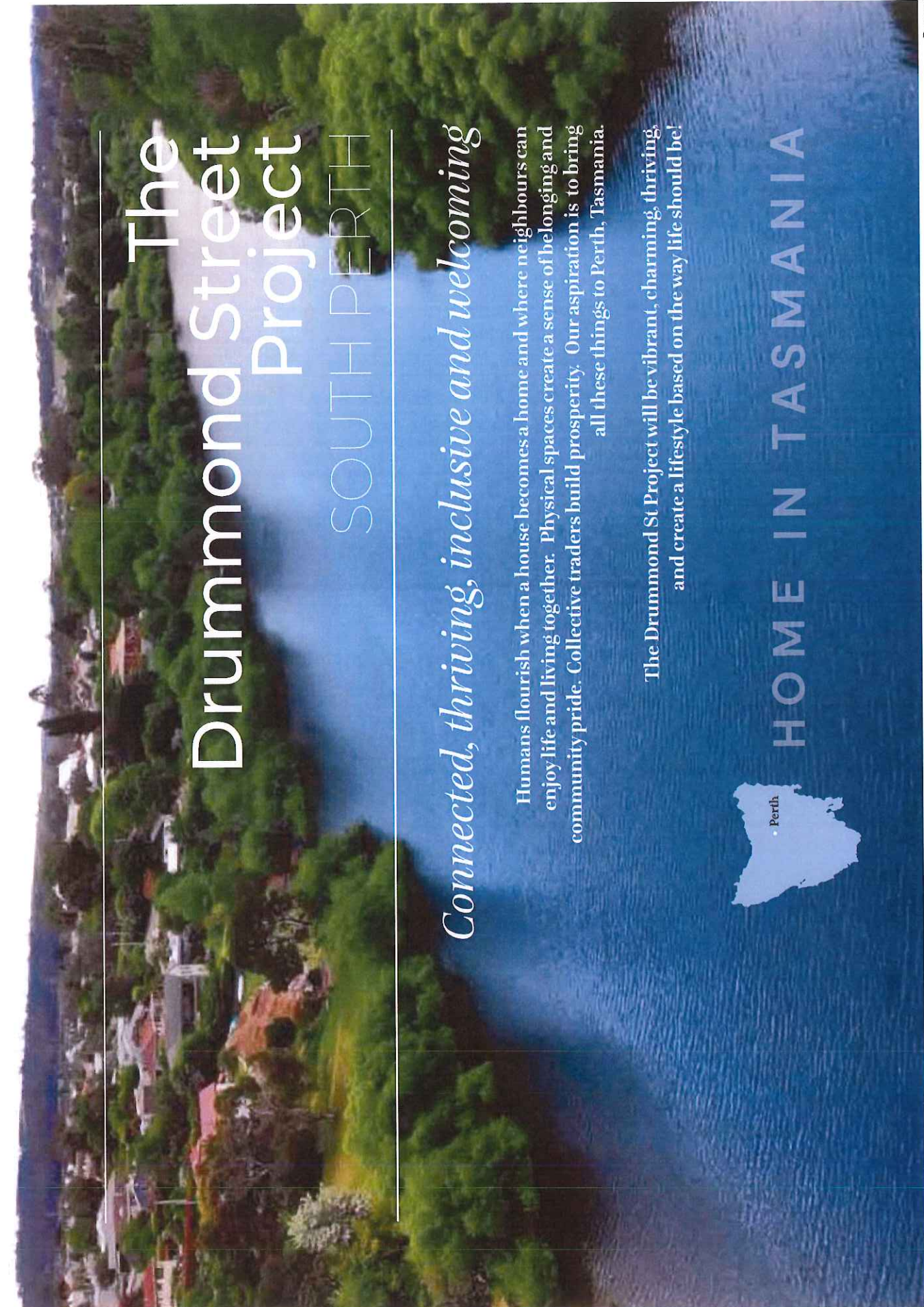
Responding to the vision and structure plan developed by the Northern Midlands Council for the township of Perth, my aim is to create a new benchmark in Village living, a place where people of all ages and diversity can build a home and a community that thrives.

To me and my team, it is about future prosperity through healthy living, economic opportunities, social connections and sustainable living ideals.

Tasmania is the greatest asset we have, and my aim is that this project will not just add to the existing charm and appeal of Northern Tasmania but continue to build the compelling story of our island home and all who live here.

Andrew McCullagh
Red Panda Property





The Drummond Street Project

SOUTH PERTH

Connected, thriving, inclusive and welcoming

Humans flourish when a house becomes a home and where neighbours can enjoy life and living together. Physical spaces create a sense of belonging and community pride. Collective traders build prosperity. Our aspiration is to bring all these things to Perth, Tasmania.

The Drummond St Project will be vibrant, charming, thriving,
and create a lifestyle based on the way life should be!

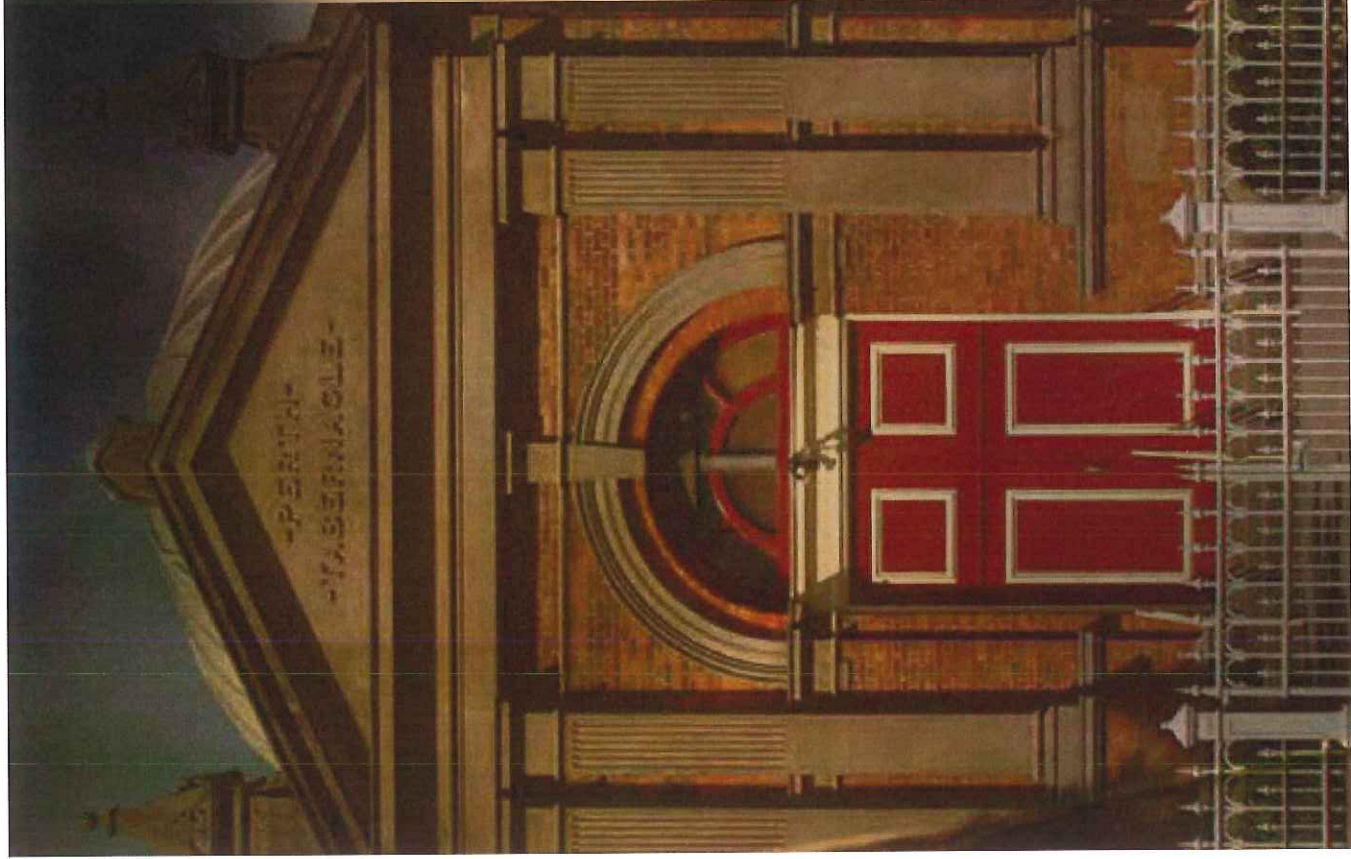


HOME IN TASMANIA



Located on 50 hectares of open land at the southern end of the heritage township of Perth; at the crossroads of Tasmania's north, south and north-west; 20 minutes from Launceston City; 15 minutes from the Launceston Airport with daily departures to Melbourne and Sydney; within the rural landscapes of the Northern Midlands; by the beautiful South Esk River and overlooking the Great Western Tiers you will find:

- 390 homes within 4 villages
- A commercial area where you can shop for what you need AND what you love!
- A flagship development for the NBN with the most up to date and fastest internet in the Country
- Solar and wind energy setting new standards in self-sufficient energy and carbon emissions
- Markets, parklands, community gardens, lakes, waterways, walking and cycling paths and tracks for healthy, active living and wellbeing



Historic Perth

When he passed through the plains below the Great Western Tiers in 1824, Governor Lachlan Macquarie declared that the site where Perth now stands was ideal for a staging post between Hobart and Launceston and the North-West Coast. In 1836, the settlement was declared a township. Today Perth is a heritage listed town with more than 40 important historic buildings dating from both the Georgian and Victorian periods of colonial architecture.

1836



Introducing the Project Team

RPP has teamed with a diverse
group of professionals
to bring this project forward.

The Project Development Team



RPP Developments

RPP has been finding opportunities to create places that people want to live in around Tasmania for nearly three decades.

RPP's philosophy is simple. Quality over quantity.

Architecture that is sympathetic to the history and human scale of Tasmania's heritage values.

Create built environments designed for live-ability with a smaller footprint and a greater sense of community. At every opportunity seek to set new standards for what it means to live and work in our island state. And develop in ways that leave a legacy for future generations and that improve with age.

RPP has developed sites in Hobart, Launceston, George Town, Mowbray, Wynyard, Youngtown and Longford.



DKO Architecture

Koos de Keijzer and Kai Chua

DKO was founded in 2000 with the aim of creating ingenious spaces. They have grown to become a design powerhouse in the Asia-Pacific region with 200 multi-disciplinary professions working across six offices in Australia, New Zealand and South East Asia. DKO has cemented itself as being at the forefront of residential design.

With the planet's economic, cultural and environmental futures already highly capricious, architecture is one method that can be used to control and adapt to changing times.



GHD

Founded in 1928, GHD has been creating lasting benefit for communities around the world for nearly 90 years. Today, GHD is one of the world's top employee owned professional services companies. Jen Welch a senior planner at GHD will be managing the planning issues associated with the project. Jen brings a wealth of knowledge, skills and experience to the project to ensure best planning outcomes are achieved.



noagroup

Lynda Jones and Bob Campbell have worked with communities throughout Tasmania, Australia and further afield. They specialise in helping groups and communities move from uncertainty to purpose.

Their community engagement processes have successfully assisted many companies and communities through planning applications around master planning, precinct planning, urban design frameworks and residential developments.

Lynda and Bob are joined by associate Lindsay Kelly, whose skills in brand development and alignment not only support the directions of Brand Tasmania but help generate a sense of belonging from those who will call this place home and want to build a community with a reputation as welcoming, inclusive and connected.



The Green Guys

The Green Guys are the leading designer, manufacturer, supplier and installer of high quality, Australian Standard LED Lighting.

The Group's proficiency in delivering Turnkey Solutions led to the establishment of a Solar Solutions division to complement the LED lighting business.

Since inception, the Group has successfully completed over 10,000 business LED lighting upgrades, saving customers in excess of \$70M on annual energy bills.

The Green Guys have partnered with RPP to develop a Microgrid at South Perth which will bring significant savings to all the home buyers and businesses in the new community.



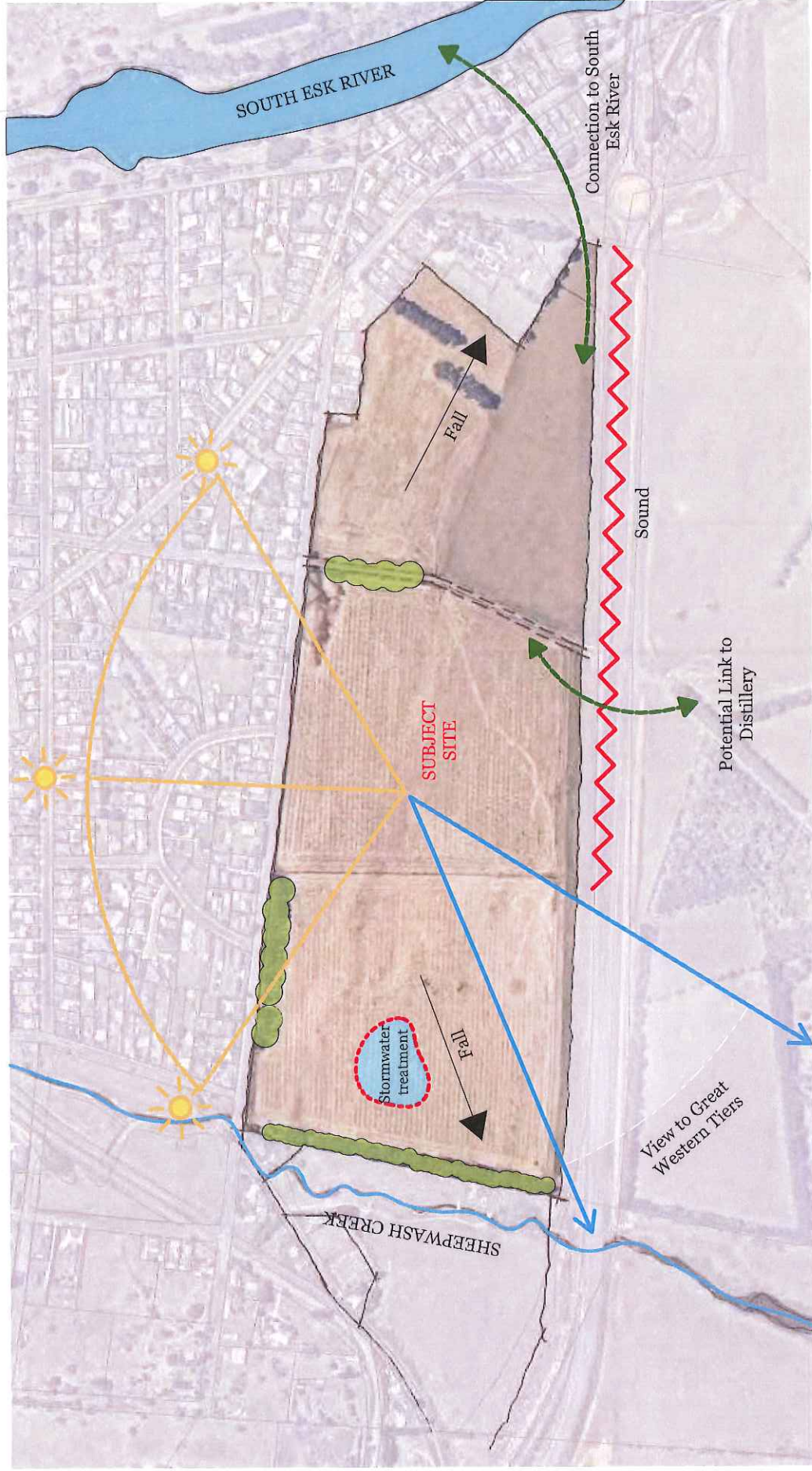
NBN

NBN Co was established in 2009 to design, build and operate Australia's wholesale broadband access network. Underpinned by a purpose to connect Australia and bridge the digital divide,

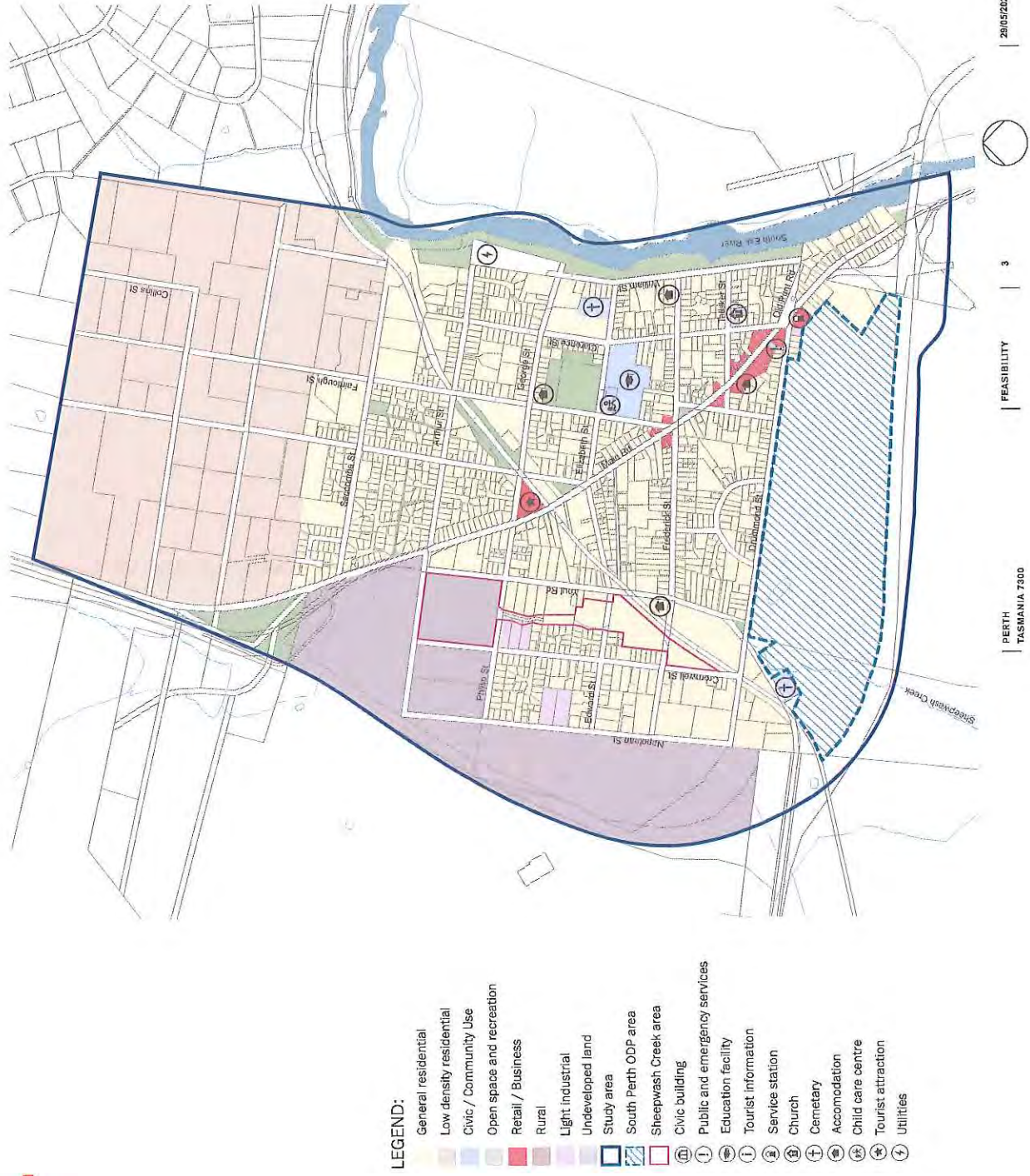
NBN's key objective is to ensure all Australians have access to fast broadband as soon as possible, at affordable prices, and at least cost.

NBN has partnered with RPP on this project to deliver a state of the art smart home solution that will offer all subscribers unparalleled 5G connectivity.

Opportunities & Constraints



Existing Context Plan



BKO ARCHITECTURE

Structure Plan & Principles

- ③ Establish new retail centre and community facilities within South Perth Area. Strengthen also the direct retail spine along Main Road.
- ⑤ Opportunity to re-develop strategic corner site in prominent location, to create a community centre and open plaza space for gathering.
- ⑦ Extend the local connector road network to provide a logical road layout within the new development areas (South Perth and Sheepwash Creek), which is well integrated with the surrounding road network.
- ⑧ Create a new shared use path network through open space spines within the South Perth Area and along Sheepwash Creek.
- ⑪ As a longer term solution, close western portion of Drummond Street to minimize traffic conflicts at this location.
- ⑭ Establish a strong linear open space network within the South Perth area and along Sheepwash Creek.
- ⑯ Employ water sensitive urban design practices for stormwater drainage.
- ⑲ Preservation of existing mature trees along entrance to 35 Drummond Street.

