

**GROWTH AREAS AUTHORITY**

ASSESSMENT FOR  
PROVISION OF SERVICES

**BERWICK WATERWAYS  
PRECINT STRUCTURE PLAN  
PSP AREA 9**

DRAFT

DSA REF: 2322/P  
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Version B



**DON STIZZA & ASSOCIATES PTY. LTD.**

• CONSULTING CIVIL ENGINEERS • LAND DEVELOPMENT CONSULTANTS

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## **1.0 INTRODUCTION**

The Berwick Waterways, Precinct Structure Plan Area 9 (PSP Area), is located in Berwick within the City of Casey. It covers an area of approximately 83 hectares inside the Urban Growth Boundary. The land abuts Centre Road, Homestead Road, Ward Road and the levee banks of the Hallam Valley Contour Drain and Berwick Town Drain. It is currently zoned "Rural Living 2 Zone" under the Casey Planning Scheme. The area has previously been subdivided into allotments varying in sizes between 2 and 10 hectares and is almost entirely surrounded by existing conventional urban residential development.

The site is irregular in shape and has not been zoned for further development due to the fragmented ownership and more particularly due to site constraints related to stormwater drainage.

In the course of our investigations we have inspected the subject site and its environs and sought advice from servicing authorities in relation to the provision of services.

This report concludes that the existing infrastructure surrounding the site is capable of providing adequate services to the proposed development.

## **2.0 SITE DESCRIPTION**

The study area is generally flat with a minimal fall in the order of 1 in 750 from south to north. It is currently being used for various purposes including rural residential, wholesale plant nursery, greyhound boarding kennels and a Buddhist Temple.

The land was originally floodplain and subject to frequent inundation from large upstream catchments known as Ti Tree Creek and Hallam Valley floodplains. As such the area is naturally wet and prone to waterlogging. A high levee banks now separates the land from the main waterway at the southern and western boundary of the site. The land is surrounded by existing residential estates, most of which were developed in the period between 1997 and 2001. The density of existing development is in the order of 12 to 13 lots per hectare.

The land has been heavily cultivated in the last 50 years and most remnant vegetation has long been removed. However a small amount of native vegetation can be found along the verges of roads beside somewhat deep table drains and along some of the property boundary fences.

### **3.0 INFRASTRUCTURE ITEMS**

#### **3.1 ROADS**

The responsible authority for roadworks within the PSP Area is the City of Casey.

##### Existing Roads

Three existing roads traverse the site. These are described in more detail below.

##### Centre Road

The northernmost road is Centre Road. It runs in an east-west direction and as a trunk collector, forms a major link between Clyde Road to the east and Narre Warren Cranbourne Road to the west. From Clyde Road to a point just east of the subject site Centre Road is fully constructed to an urban standard with kerb & channel and footpaths to both sides. It provides direct vehicular access to existing residential lots on both sides of the road. Within the PSP area, Centre Road exists as a two-way, two lane carriageway with crushed rock shoulder and table drain on each side. It continues as a fully sealed road rural/urban standard until it intersects with Narre Warren Cranbourne Road via a fully signalised intersection.

##### Homestead Road

Commencing at Clyde Road to the east, Homestead Road runs through the land in an east-west direction until it reaches the western boundary of the site. Thereafter, it heads in a northerly direction until it intersects with Centre Road. East of the PSP area, Homestead Road is fully constructed to an urban standard with kerb & channel and footpath to both sides. It provides direct vehicular access to existing residential lots on both sides. Within the study area, Homestead Road exists as a gravel road with a table drain on each side.

##### Ward Road

Commencing at Domain Drive to the east, Ward Road enters the PSP area and runs along the southern boundary for approximately 260metres. Thereafter, it heads in a northerly direction until it intersects with Homestead Road. East of the site, Ward Road is partially constructed to an urban standard with kerb & channel and footpaths on the north side and a crushed rock shoulder and table drain on the south side. It provides direct access to existing residential lots on the north side of the road. No lots exist on the south side of Ward Road. Within the PSP area, Ward Road exists as gravel road with a table drain on each side.

##### New Roads

New roads will be required as part of the development of the area in order to provide access to new subdivisional lots and to allow for the safe passage of vehicles, cyclists and pedestrians. The road hierarchy should be developed by a traffic engineering specialist in consultation with City of Casey.

When specifying the geometric standard of a road, It is important to consider the installation of utility services. Where possible a minimum road verge of 4.5m should be maintained to accommodate the installation of services and street trees.

### **3.2 STORMWATER DRAINAGE**

The responsible authority for main drainage, floodplain and waterway management is Melbourne Water Corporation (MWC).

The responsible authority for the construction of minor stormwater drainage is the City of Casey.

A detailed drainage analysis is beyond the scope of this report. However, it is important to note that the major obstacle to the development of this area has been the absence of an adequate drainage system. Much of the area is flood prone and development will require the construction of significant drainage infrastructure. To enable development to occur, drainage specialists Stormy Water Solutions and Neil M. Craigie & Associates have been engaged to conduct an investigation and develop a suitable drainage strategy for the PSP area. Their commission is to set out a Surface Water Management Strategy (SWMS) that will ensure delivery of a safe, equitable and effective drainage system for the future development of the area. For a detailed description of the proposed drainage strategy, the reader is referred to the SWMS.

### **3.3 POTABLE WATER SUPPLY**

The responsible authority for the provision of reticulated potable water supply to the PSP area is South East Water.

#### **Existing Service**

The surrounding residential developments are all supplied with potable water. The PSP area is currently served by three major sources of supply.

- 1 An existing 225mm dia PVC main is located on the north side of Centre Road at the eastern boundary of the PSP area. This main enters the PSP and continues along Centre Road for a distance of approximately 140m. From this point a 150mm dia asbestos main crosses to the south side of the road and continues west through the entire PSP area.
- 2 An existing 100mm dia PVC water main is located on the south side of Homestead Road. Where Homestead Road turns to the north, the water main size increases to 150mm and continues north until it connects with the existing 150mm dia main in Centre Road
- 3 An existing 300mm dia water main located on the south side of Ward Road. A 100mm dia asbestos main exists along part of the north-south leg of Ward Road. This 100mm dia main connects to the existing main in Homestead Road but does not extend far enough south to connect with the 300mm dia main running along Ward Road south.

Drawing No. 2322/SP1 shows the location and alignment of existing mains in blue

### **Future Servicing Arrangements**

South East Water has advised that potable water can be made available to the PSP area. To enable the land to be rezoned and developed into residential lots, it will require the construction and upgrade of water supply mains as described below.

South East Water has advised that two scenarios exist with the final decision being dependant on the desired lot yield.

### **For a Lot Yield 800 to 900 lots**

1. The existing 150mm dia main in Centre Road is to be upgraded to a 225mm size. This new 225mm dia main will extend in a westerly direction to the intersection of Centre Road / Homestead Road. In addition, to ensure adequate supply and pressure, South East Water will require a cross connection to an existing 375mm dia main located in Golf Links Road. To achieve this connection a new pipeline will have to be constructed through the proposed Melbourne Water Drainage Reserve north of Centre Road. The new main will continue through the reserve until it reaches Golf Links Road. There it will connect to the existing 375mm dia main. Where a water main of this size crosses private property (including Melbourne Water reserves) it is required to be within a 6m wide easement. Thus an easement would have to be created at time of construction.
2. The existing 100mm dia main in Homestead Road will have to be upgraded to 225mm dia size. This will involve upgrading a section of main outside the PSP area east along Homestead Road to the intersection of Homestead Road / Bellevue Drive / Domain Drive. The new 225mm dia main will extend the full length of Homestead Road within the PSP area and connect with the proposed 225mm dia main in Centre Road.
3. The existing 100mm dia main in Ward Road is to be replaced with a new 150mm dia watermain. It would need connect to the existing 300mm dia main to the south and to the proposed 225mm dia main in Homestead Road to the north.

Drawing No 2322/SP1 shows the location and alignment of the proposed necessary watermain upgrades in a black broken line. In addition to these mains, basic size mains will be provided along all new roads within the PSP area to service proposed lots.

### **For a Lot Yield 1200 to 1300 lots**

If a lot yield in the order of 1200 to 1300 lots is anticipated, additional augmentation of the water supply system will be required as follows:

1. An existing 225mm dia main in Golf Links Road between Fleetwood Drive and Narre Warren – Cranbourne Road would have to be upgraded to a 300mm dia main. The length of main of main requiring upgrade would be approximately 1.4Km.

2. The 100mm existing main in Ward Road would need to be upsized to a 225mm dia. rather than to a 150mm dia. as mentioned in item 4 of section 3.6 above.

### **3.4 RECYCLED WATER SUPPLY**

The responsible authority for the provision of reticulated recycled water supply to the subject area is South East Water.

The surrounding residential developments are not supplied with recycled water. The PSP area is not within South East Water's mandated Recycled Water area and the authority has no current plans to supply recycled water to the PSP area. South East Water has advised that if recycled water is desired in the PSP area then a business case must be prepared showing the provision of this service to be economically viable. South East Water has also suggested an option that could be considered and discussed is stormwater harvesting and treatment to class A for use in houses and gardens.

### **3.5 SEWERAGE**

The responsible authority for the provision of reticulated sewerage to the PSP area is South East Water.

#### **Existing Service**

The surrounding residential developments are all serviced with an underground reticulated sewerage system.

The locations of existing sewers are shown in red on Drawing No. 2322/SP2. Two existing major trunk sewers will be utilised to provide suitable outfalls for the new sewerage reticulation network required to service the new lot developed in the PSP area.

The major existing sewer to be utilised outfalls from the 'Ward Road No.1 (West)' Sewerage Pumping Station. It is a 900mm dia pipe that runs along Ward Road in a westerly direction. The pipe size increase to 1500mm dia and then crosses under the Hallam Valley Contour Drain. It then follows the west side of the drain in a northerly direction eventually crossing under Centre Road and makes it's west towards Narre Warren South.

The other major existing sewer that will be utilised to service the PSP area is the 600mm dia pipeline that runs along Centre Road from the eastern edge of the PSP area to the bend in Centre road. The pipe increases in size to a 900mm dia and runs north through the Melbourne Water Reserve and then west towards Narre Warren South.

#### **Future Servicing Arrangements**

South East Water has advised that the existing gravity sewerage reticulation network can provide a suitable outfall for the PSP area.

To enable the land to be rezoned and developed into residential lots South East Water will require the construction of new reticulated sewer mains discharging to the existing sewer between maintenance chambers Ex. BEE3 and Ex. BEE6A and to maintenance chamber Ex.HVM33 as schematically shown on Drawing No. 2322/SP2 in black broken line. These sewer mains will form the basic sewer grid by which smaller lateral sewers can service the new subdivisional lots. Due to the low lying level of the land, significant fill will be required to ensure that all lots are controlled by gravity sewers and also to provide adequate cover over all new sewer pipes.

### **3.6 NATURAL GAS**

Envestra is the responsible body for the provision of natural gas to service the PSP Area.

#### **Existing Service**

- 1 A 100mm dia gas main exists in Centre Road both east and west of the PSP area but does not extend through the site.
- 2 An existing high pressure 100mm dia gas main is located in Homestead Road from the eastern boundary to the intersection of Ward Road. The pipe dia is reduced to 50mm dia as it passes Ward Road. The 50mm main terminates at the bend in Homestead Road and no gas supply currently exists in the north-south leg of Homestead Road.
- 3 A 50mm gas main runs east west along the southern portion of Ward Road.
- 4 An existing 100mm dia gas main runs along Greaves Road and crosses under the Melbourne Water main drainage channel to the bend in Ward Road. It continues north along Ward Road until it connects with the 100mm dia high pressure main in Homestead Road.

#### **Future Servicing Arrangements**

Envestra has advised that natural gas can be supplied to the PSP area from the existing mains.

It was further advised by Envestra that there will more than likely be a shortfall charge to supply this area with gas due to being flood as additional costs will be required to service this area.

Envestra is unable to provide any cost estimate until a formal application for supply has been made.

### **3.7 ELECTRICITY**

SP AusNet is the responsible authority for the provision of electricity supply to service the PSP Area.

SP AusNet has advised that sufficient power exists to adequately supply the PSP area.



### **Existing Service**

Existing High Voltage supply lines are located in Centre Road and Homestead Road and are shown in red on Drawing No. 2322/SP4

### **Future Servicing Arrangements**

Provision should be made for overhead power lines within the PSP area to be replaced with underground reticulated high voltage cables as part of the development. The final power grid would include underground high voltage and low voltage reticulated electricity supply along all new and existing roads along with several kiosk type electrical substations strategically located at a spacing of approximately 150m each serving approximately 130 lots.

## **3.8 TELECOMMUNICATION SERVICES**

Currently Telstra is the responsible body for the provision of telephone services to the PSP area.

### **Existing Service**

Telephone cables exist in all streets surrounding the PSP Area.

Drawing 2322/SP5 shows the location of Telephone cables in close proximity to the site.

### **Future Servicing Arrangements**

Telstra officers were reluctant to provide specific advice on the future servicing arrangements for the PSP area as the situation is changing on a regular basis.

Whereas, it was generally agreed that telecommunication services can be made available to the PSP area, it is the method of delivery that is in contention.

As stated above, Telstra is currently the responsible body for the provision of telecommunication services to the PSP area. However, this will change with the introduction of the National Broadband Network (NBN) legislation and changes to Universal Service Obligations (USO) that are also currently the responsibility of Telstra.

The establishment of the NBN will result in significant changes to the structure of the telecommunications industry in Australia.

It is fair to say that the current Labor Government is committed to ensuring that high speed fibre optic infrastructure (referred to as Fibre To The Premises - FTTP) is installed in all new greenfield developments.

The Labor Government has determined that from 1 January 2011 a new Commonwealth agency called NBN Co will act as wholesale provider of last resort in new developments. Developers will be required to cover the costs of trenching and ducting. NBN Co will cover the other costs of installing fibre infrastructure in the development.

In the medium term Telstra will have a regulated obligation to continue to operate and maintain its existing copper lines while the fibre network is rolled out, until the copper exchange associated with that fibre area is decommissioned.

However, with an election due in approximately two weeks from the writing of this report, the Federal Government has gone into caretaker mode. The Liberal Party has indicated that if they are elected to Government, they will not continue with the proposed NBN legislation. Details of their proposal are not available at this time, thus creating the level of uncertainty on the future delivery of telecommunications that was referred to by Telstra Officers.

#### **4.0 CONCLUSIONS**

PSP Area 9 can be provided with adequate services.

Drainage is obviously a key issue that requires careful and detailed planning and ultimately the provision of significant infrastructure.

To a lesser extent, water supply will have to be reviewed in line with the final lot yield to determine the level of augmentation required.

Recycled water is not available and cannot be provided at this time.

Gravity sewer outfall is available within the PSP area and sewerage reticulation can be provided to the development.

Electricity, Gas & and Telecommunication services can be provided by extending the existing surrounding networks.

From a staging perspective it would appear logical to commence development at the northern end of the Precinct where drainage facilities can be made available more readily.

#### **5.0 SOURCES OF INFORMATION**

Don Stizza & Associates has sought preliminary information from the relevant servicing agencies in relation to the availability and capabilities of their existing infrastructure to service further development of the PSP area. We have noted proposed and future upgrades and extensions as well as expected points of connection. The final alignments and points of connection may vary from those suggested above and may be dictated by the ultimate lot configuration and road network alignment.

#### **Acknowledgements**

Don Stizza & Associates acknowledges the assistance of the following officers of the relevant agencies:

- Potable Water, Recycled Water, Sewerage – Darren Bollard (South East Water);

- Electricity Supply – Harry Illiadis (SP AusNet);
- Telecommunications – Peter Febo (Telstra)
- Natural Gas – Julieanne Free (Envestra)

The servicing advice provided here is based on preliminary information obtained from the relevant authorities that is usually reliable but never guaranteed. All items are therefore subject to confirmation and review by agencies as the structure plan develops.

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# ATTACHMENTS



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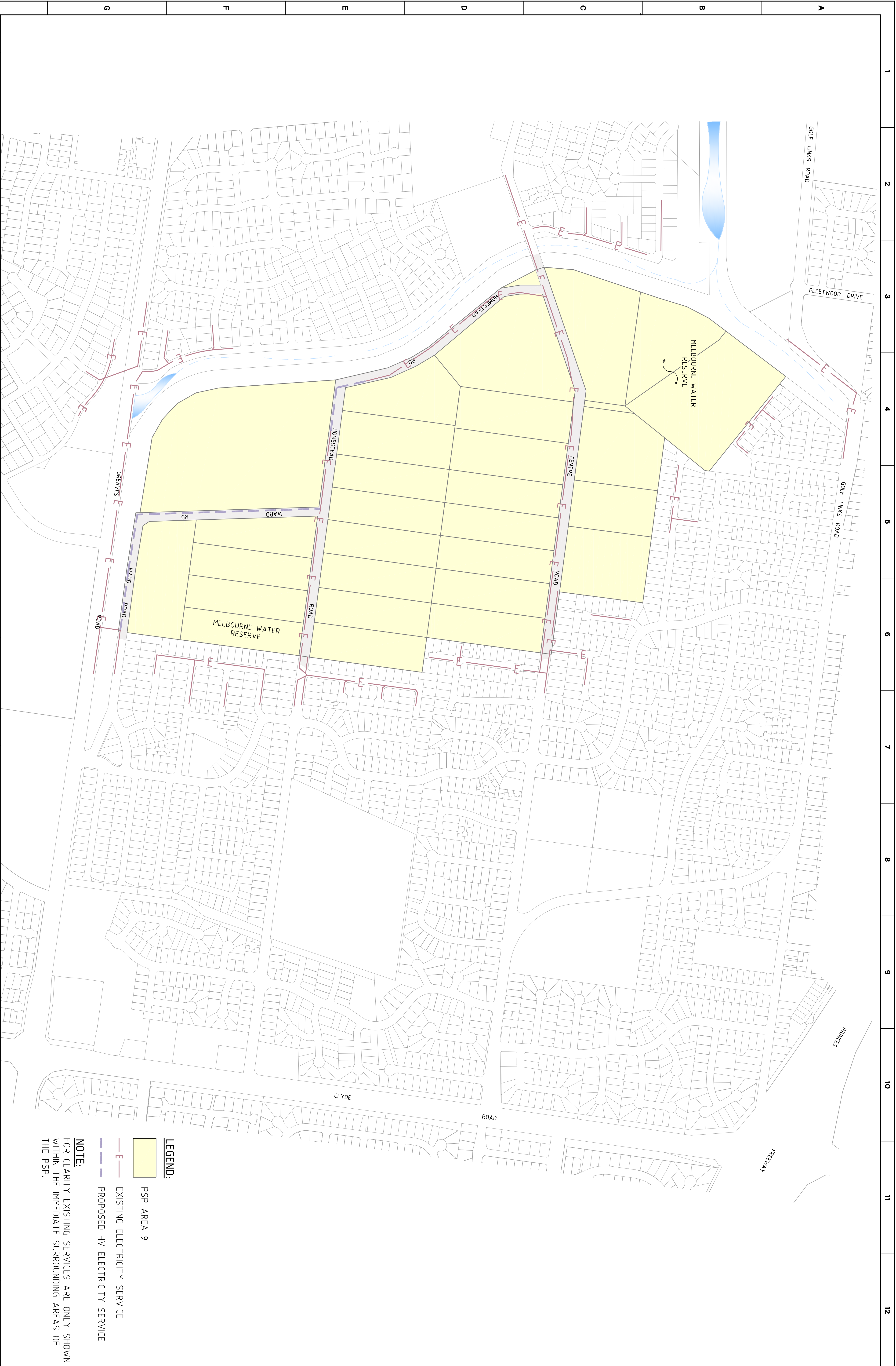












**LEGEND:**

- PSP AREA 9
- EXISTING ELECTRICITY SERVICE
- PROPOSED HV ELECTRICITY SERVICE

**NOTE:**  
FOR CLARITY EXISTING SERVICES ARE ONLY SHOWN  
WITHIN THE IMMEDIATE SURROUNDING AREAS OF  
THE PSP.

REF. ZONE	1	2	3	4	5	6	7	8	9	10	11	12
REVISION												
DATE												
APPD.												

DESIGNED: JCH	AUTHORISED:	DSA REF: 2322
CHECKED: DS	DATE:	CAD FILE No.: 2322-SP

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CITY OF CASEY	SCALE	NTS
<b>BERWICK WATERS</b>	LEVEL DATUM	
<b>BERWICK</b>	SHEET 4 OF 5	
ELECTRICAL PLAN	DRAWING No.	1A
	<b>2322/SP4</b>	



