INFRASTRUCTURE SERVICING REPORT

Pondicherry Part Precinct
The Northern Road
Oran Pk

PREPARED FOR GREENFIELDS DEVELOPMENT COMPANY

19-000948 | 26 February 2020

Calibre Consulting (NSW) Pty Ltd
ABN 30 109 434 513

DOCUMENT CONTROL

ISSUE	DATE	ISSUE DETAILS	AUTHOR	CHECKED	APPROVED
A	26/02/2020	Final Report	MO & PW	RT	JM
B	25/09/2020	Final Report rev 2	MO & PW	RT	JM

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1 Introduction

This Infrastructure Report has been prepared to inform the Planning Proposal for the proposed rezoning of the site known as “Pondicherry Part Precinct” from a Rural zoning (RU1) to Residential (R1). The site is proposed to ultimately comprise of approximately 400 low density residential dwellings.

This report assesses the capacity of the existing infrastructure services (water, wastewater, power and gas) to service the proposed rezoning and identifies any potential system upgrades/extensions. Sydney Water, Endeavour Energy, NBN and Jemena were all consulted as part of the process.

2 Site Location

The subject site is located within the suburb of Oran Park within the Marylands Precinct of the South West Growth Centre of Sydney. The Site is located on The Northern Rd, Oran Park approximately 7 km from Narellan, 10 km from Campbelltown and 65 km from Sydney CBD. It is bounded by The Northern Rd to the west, the remainder of the Pondicherry Precinct to the north and the future Rail Line to the east. The existing land use has largely been utilised as pasture land and the site is predominately cleared. A major transmission line and associated easement runs east west through the site.

The rezoning area comprises a total area of 48 hectares and is anticipated to deliver a dwelling yield in the order of 400 dwellings. The proposed rezoning area is shown in Figure 2.1.

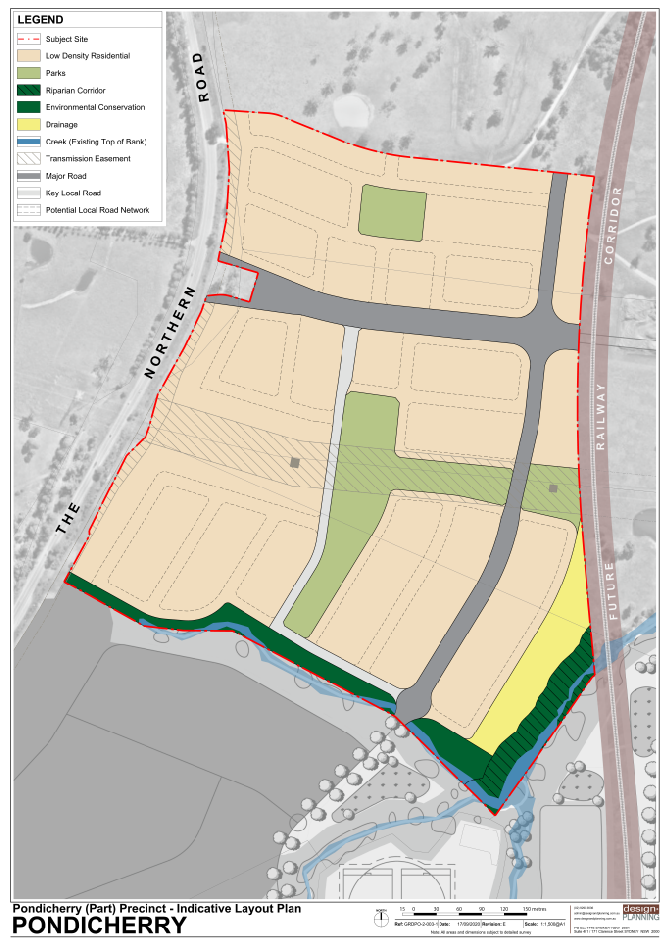


Figure 2.1 Proposed Rezoning Area

3 Water Supply

The subject area is not located within an area designated for provision of reticulated recycled water. Therefore, it is assumed that BASIX requirements will be met through the provision of rainwater tanks on each individual property.

3.1 Existing Water Supply Infrastructure

The site is not currently served with water. Dial Before You Dig (DBYD) plans shows that the nearest existing watermain (DN300) is located along Dick Johnson Drive approximately 1km to the south of the subject site. However, trunk watermains (2 x DN500) are currently being delivered along Northern Rd as part of the road widening. The proposed DN500 watermains have been designed to supply the future growth within the South West Growth areas including the subject site. Current source of supply is via the existing Narellan Reservoir which can only supply land to a maximum ground level of approximately RL 120m.

Figure 3-1 shows the existing trunk water supply infrastructure (shown in blue) adjacent to the subject site. Detailed location of existing water supply infrastructure (including reticulation) is shown in Appendix A.

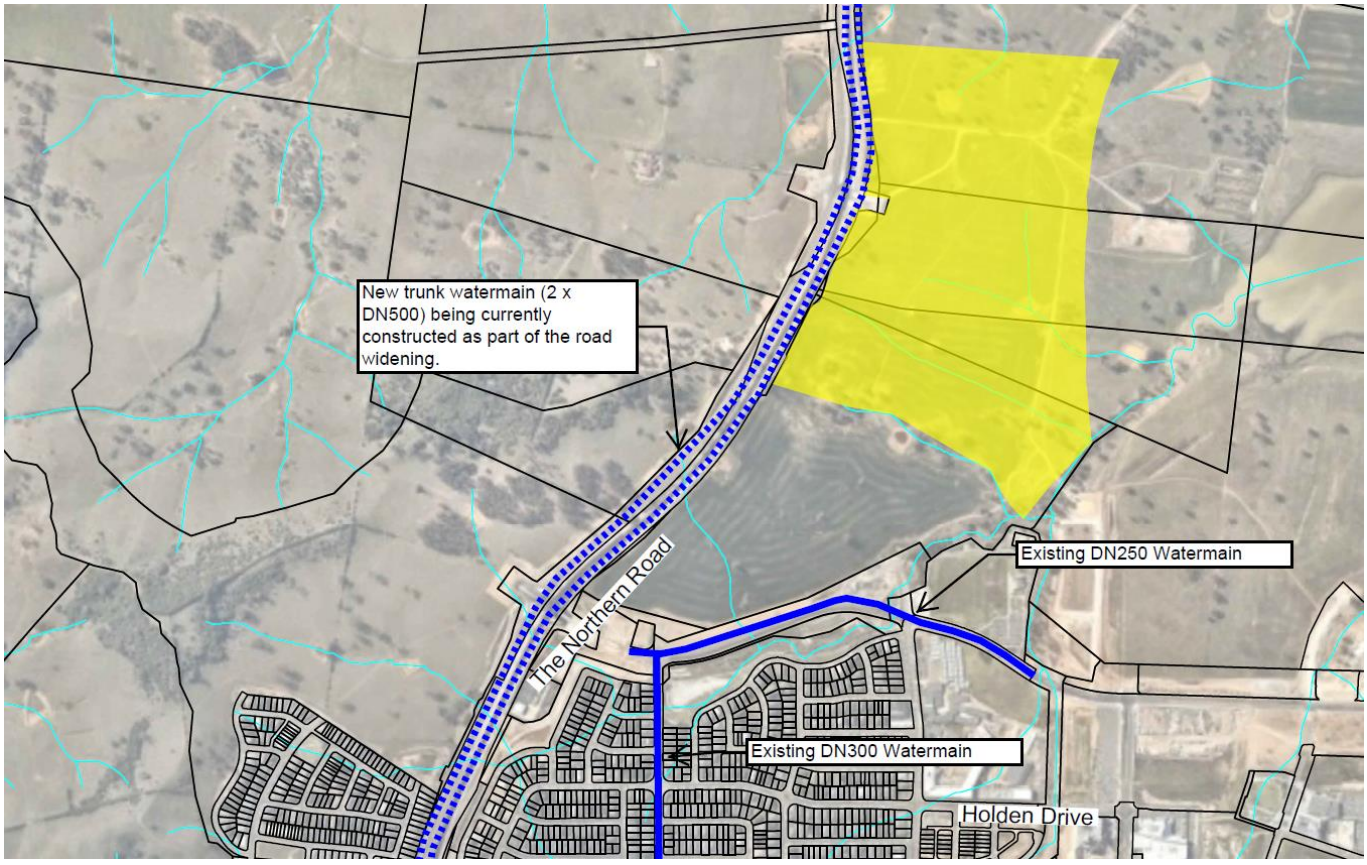


Figure 3.1 Existing Trunk Water Supply Infrastructure (Source: DBYD)

3.2 Water Supply Demands

Estimated water demands for the proposed development site are shown in the table below. The rates adopted are based on design rates outlined in Sydney Water's "Water System Planning Guidelines". These demands are only preliminary and will be refined during the detailed planning phase of the project.

Table 3.1 Estimated Water Supply Demands

No. of Residential Lots	Highest Ground Level (RL)	Estimated Average Day Demand (MLD)	Estimated Max Day Demand (MLD)	Estimated Max Hr Demand (MLD)
400	RL 112m	0.3	0.88	2.2

3.3 Proposed Water Supply Strategy

Calibre lodged a Feasibility Application with Sydney Water in regards servicing the subject site. Sydney Water's response is shown in Appendix B. The proposed strategy to service the site is:

- Development to initially be supplied via the existing Narellan Water Supply System. This reservoir can supply to a maximum ground level of approximately RL 120m. The highest ground level within the subject site is RL 112m.
- Ultimately the subject site will be supplied via the future Oran Park reservoir. This reservoir is planned to service up to a ground level of approximately RL 140m. Where maximum pressures exceed Sydney Water normal requirements (generally 60m) then pressure reduction may be required. Indicative critical ground levels where pressure reduction may be required are RL 80m and below. Construction of the new reservoir by Sydney Water is anticipated by 2022.
- Connection to the water supply will ultimately be via the DN500 watermain currently being constructed along The Northern Rd as part of the road widening. The DN500 watermains being constructed will have adequate capacity to supply the subject site. Individual customer connections to these mains will not be permitted by Sydney Water.
- Preliminary assessment indicates a pipe size of approximately DN375 may be required as the lead-in however the final size will depend on Sydney Water's ultimate servicing plan for the area. The DN375 will ultimately link to the remainder of the Pondicherry Precinct.
- During the initial stages of the development, Sydney Water have advised that to prevent water quality issues (due to excessive water age) that a temporary connection be provided from the existing DN100 reticulation main located at the corner of Dick Johnson Drive and South Circuit to service the subject site.
- It is anticipated that most of the proposed lots within the subject site will require frontage to DN100 or DN150 reticulation watermains.
- Typical water supply servicing costs range between $3500 - $5000 per residential lot (including reticulation)

The servicing strategy for provision of trunk water services to the site is shown in Figure 3.2.

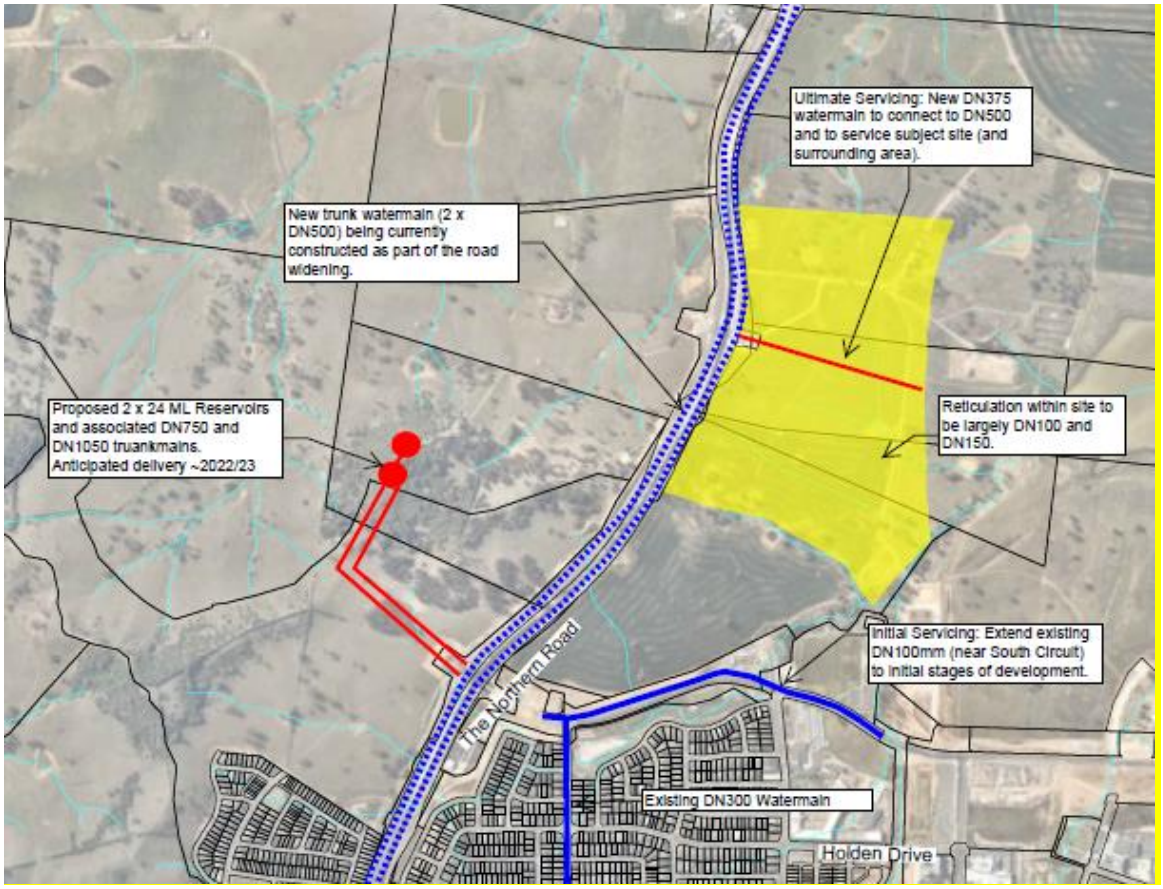


Figure 3.2 Proposed Water Supply Servicing

4 Wastewater

4.1 Existing Wastewater Infrastructure

The site is not currently serviced with a reticulated sewer system. Dial Before You Dig (DBYD) plans shown that the nearest existing sewer main (DN375) is the Oran Park Carrier located to the south east of the subject site.

Figure 4.1 shows the existing trunk wastewater infrastructure (shown in brown) adjacent to the proposed site. A potential connection point to the existing carrier is also shown but this is subject to confirmation of available capacity by Sydney Water. Detailed location of existing wastewater infrastructure (including reticulation) is shown in Appendix A. Figure 4.1 also shows the wastewater catchment areas within the site with two clearly defined catchment areas: Northern Catchment and the Southern Catchment.

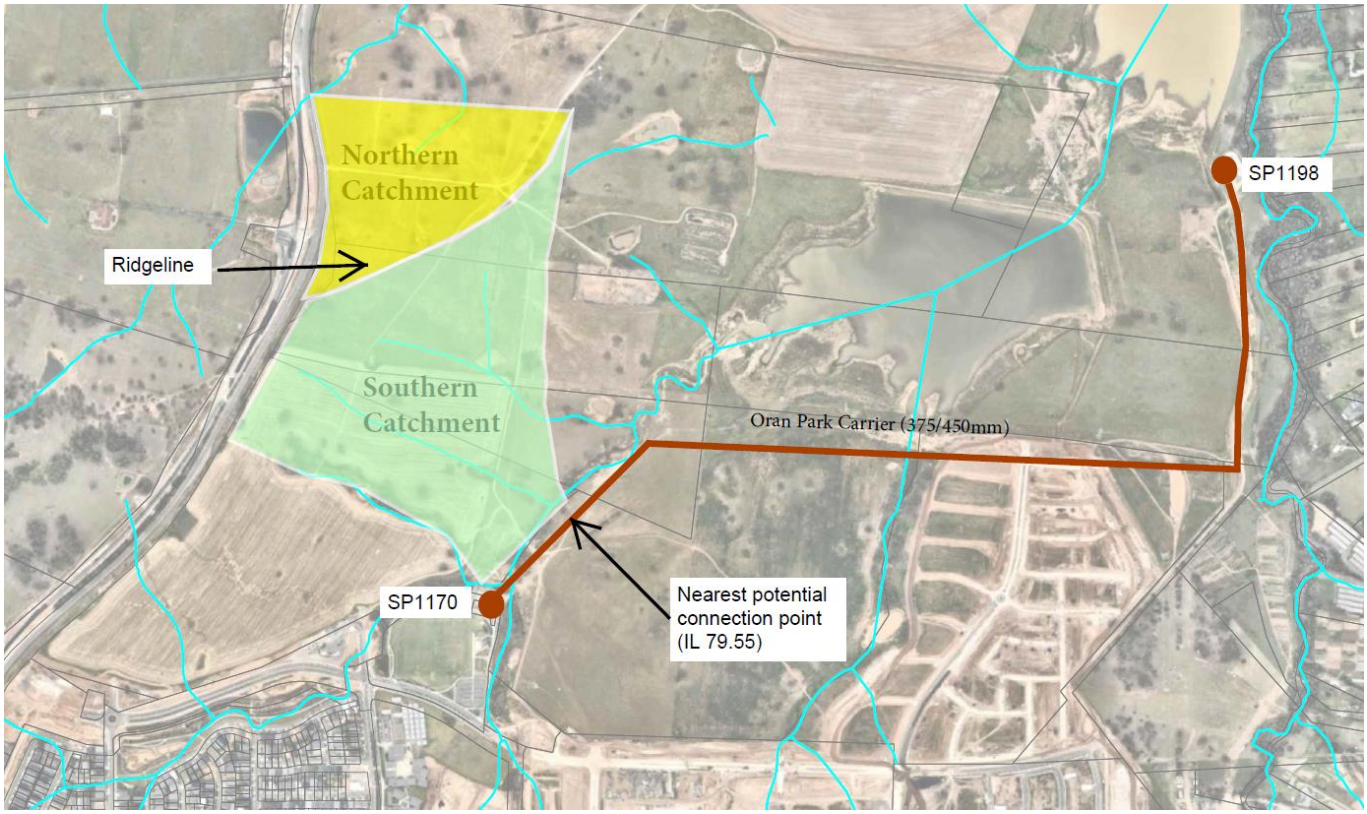


Figure 4.1 Existing Trunk Wastewater Infrastructure (Source: Sydney Water)

4.2 Wastewater Flows

Estimated wastewater flows for the proposed development site are shown in the table below. The planning and design criteria used to forecast future sewer loadings are generally taken from the Sewerage Code of Australia, Sydney Water Edition, WSA 02 – 2002 and are expressed as an Equivalent Population (EP) for a particular land use. These flows are only preliminary and will be refined during the detailed planning phase of the project.

Table 4.1 Estimated Wastewater Flows

Catchment	Lots	Proposed Development	Estimated EP	Estimated ADWF (L/s)
Northern	150 (approx.)	Residential	450	0.8
Southern	250 (approx.)	Residential	750	1.3
Total	400	Residential	1200	2.1

4.3 Proposed Wastewater Strategy

4.3.1 Regional Servicing Strategy

Wastewater flows from South Creek West Precinct (which includes the subject site) will ultimately be treated at the future South Creek wastewater treatment plant that Sydney Water plans to deliver no earlier than 2026. In the interim it understood that Sydney Water plan to deliver a sewage pump station (SP1209) in the vicinity of the confluence of Lowes Creek and South Creek which will pump flow back to the existing West Camden wastewater system. The proposed SP1209 is planned to have a capacity for approximately 4,000 dwellings and will largely serve the initial stages of the Lowes Ck Marylands Precinct Acceleration Precinct (PAP) to the north of the subject site.

Preliminary assessment indicates that SP1170 has very limited capacity and is unlikely to have spare capacity to accept wastewater flows from the subject site. Sydney Water's preferred strategy for the initial servicing of the Pondicherry Precinct is to transfer flows to SP1198 via the proposed South Marylands Carrier. There is also potential to transfer flows to SP1209 (via the new Lowes Creek Carrier) if there is available uncommitted spare capacity. Sydney Water's preferred servicing strategy for the Camden area which includes the subject area is shown in Figure 4.2.

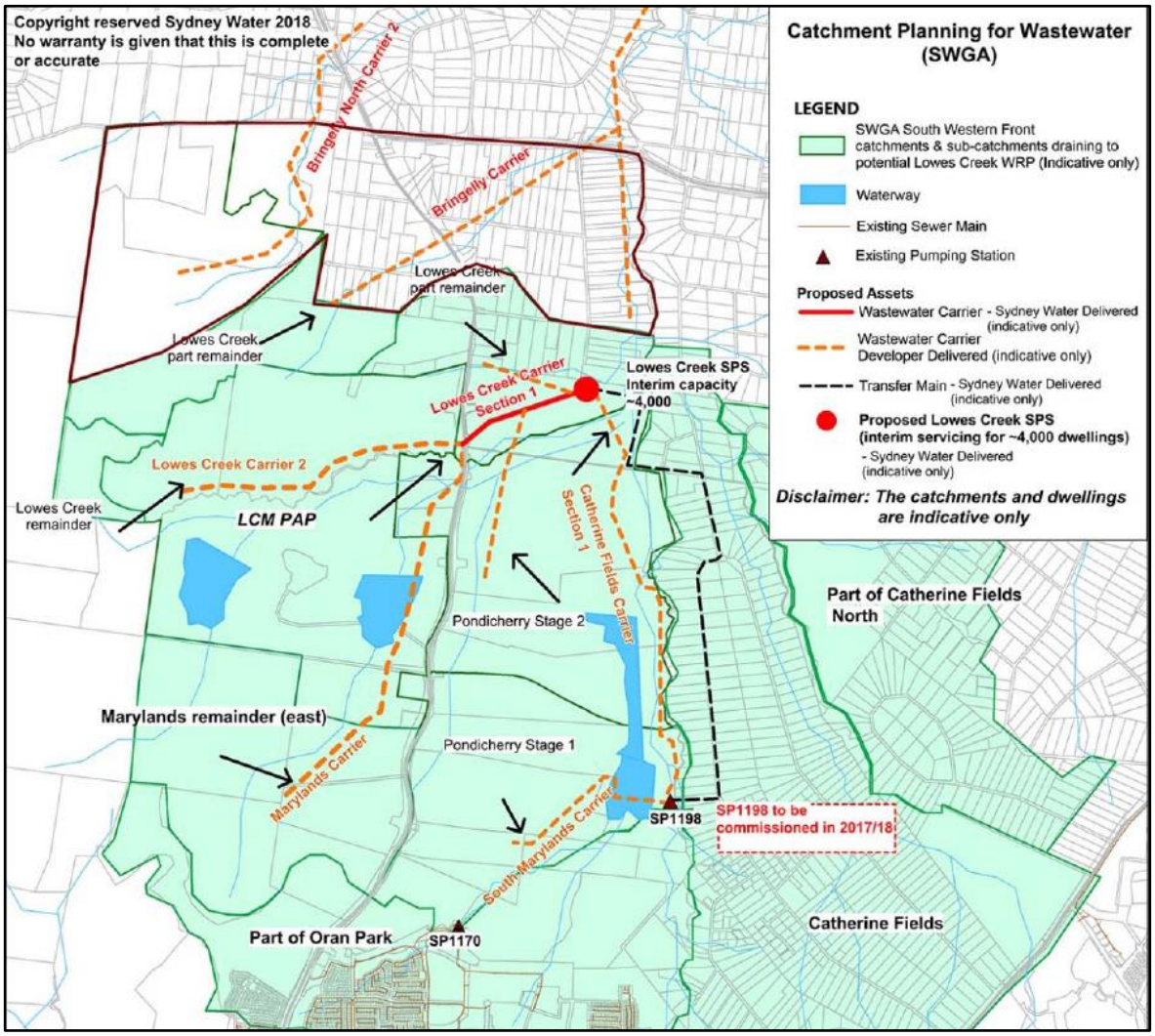


Figure 4.2 Indicative servicing strategy for the South Creek West Precinct. (Source Sydney Water)

4.3.2 Potential Wastewater Servicing Strategies

Calibre lodged a Feasibility Application with Sydney Water in regards servicing the subject site. Sydney Water's response is shown in Appendix B.

Four wastewater servicing strategies were identified that are potentially available to service for the subject site. These strategies are described below:

Strategy WW1 – Transfer (via gravity) both northern and southern catchments to the existing Oran Pk Carrier which drains to SP1198. The proposed sewer will include a boreline and therefore will result in deep sewers being required. Sydney Water have advised that they will not accept a deep bore to service the northern catchment as these flows were not designed to be transferred to the SP1198 catchment.

Strategy WW2 – Transfer (via gravity) southern catchment to the existing Oran Pk Carrier. Transfer northern catchment to southern catchment via an interim pump to sewer arrangement (IOP). Ultimately the northern catchment will form part of Sydney Water's preferred servicing strategy for the area (ie transfer to SP1209) when it is delivered and the pump to sewer will be decommissioned. Sydney Water have advised that they may consider interim pumping (for a short period) to service the northern catchment subject to capacity being available.

Strategy WW3 – Transfer (via gravity) southern catchment to the proposed South Marylands Carrier. Transfer northern catchment to SP1198 to the proposed South Marylands Carrier via interim pumping. Sydney Water have advised they have no current plans to deliver the South Marylands Carrier and has assumed that it will be constructed by the lead developer for the Pondicherry Precinct.

Strategy WW4 – Transfer (via gravity) southern catchment to the existing Oran Pk Carrier. Transfer (via gravity) the northern catchment to the future SP1209 via Lowes Creek Carrier. The timing of the delivery of this carrier is subject to the timing of the rezoning of the Lowes Creek Marylands PAP.

In each of the above strategies where the southern catchment connects to the existing Oran Park Carrier (WW1, WW2 & WW4), Sydney Water have advised that a future cross connection be included from the Oran Park Carrier to the future South Marylands Carrier to divert part of the flow. This will need to be incorporated as part of the design requirements of the South Marylands Carrier.

The strategies are Illustrated in Figures 4.3, 4.4, 4.5 and 4.6. All pipeline alignments and location of proposed infrastructure are indicative only and are subject to further detailed assessment during the detailed planning phase of the project including technical, environmental, geotechnical and cost considerations. Additionally, all strategies are subject to confirmation by Sydney Water that sufficient capacity is available for connection as proposed by the various strategies.

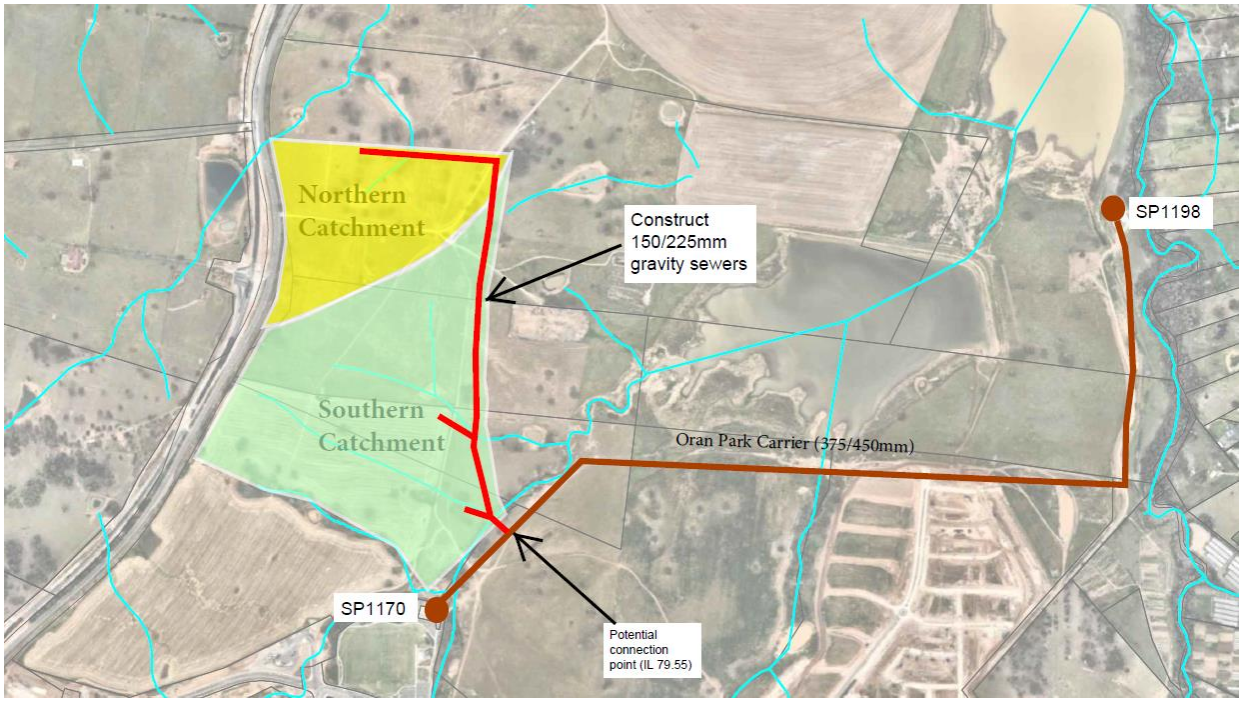


Figure 4.3 Strategy WW1 – Transfer flows to SPS 1198 (via Oran Pk Carrier) via gravity

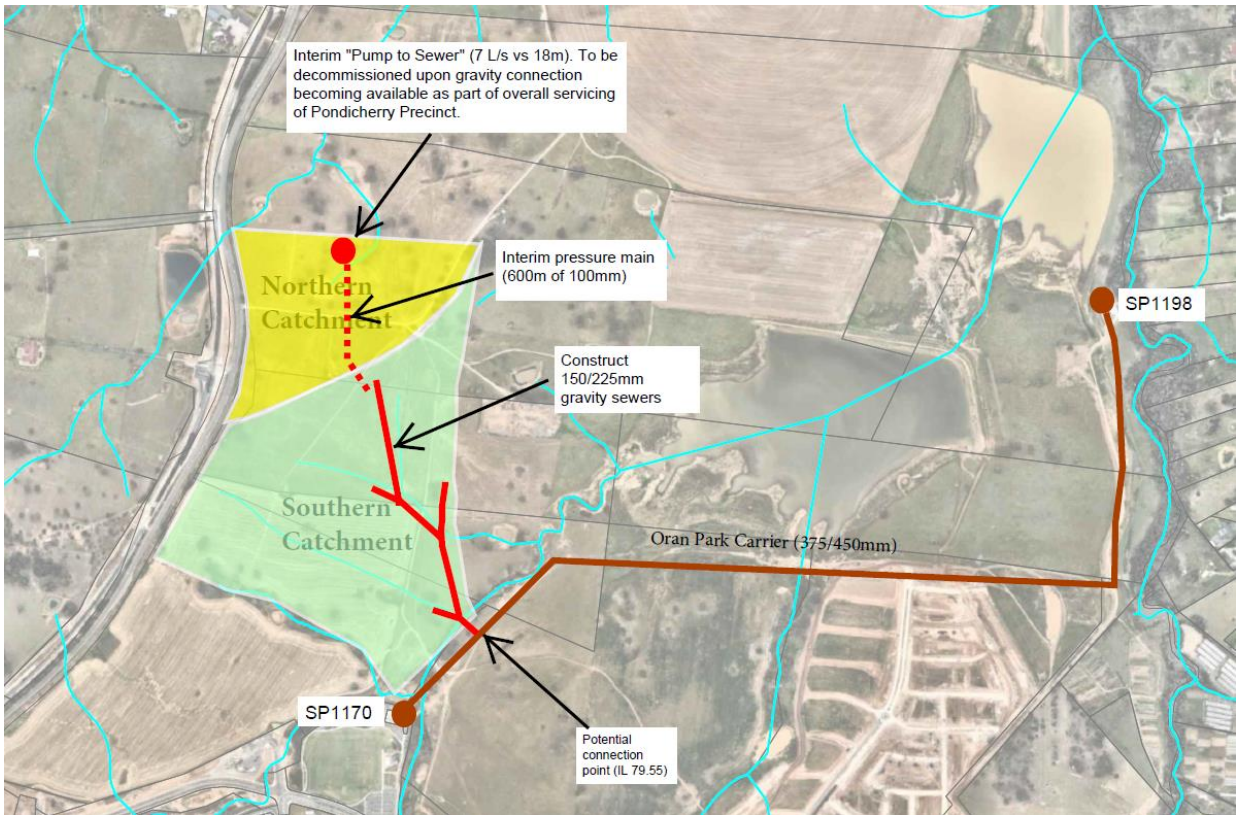


Figure 4.4 Strategy WW2 – Transfer flows to SPS 1198 (via Oran Pk Carrier) with interim pumping.

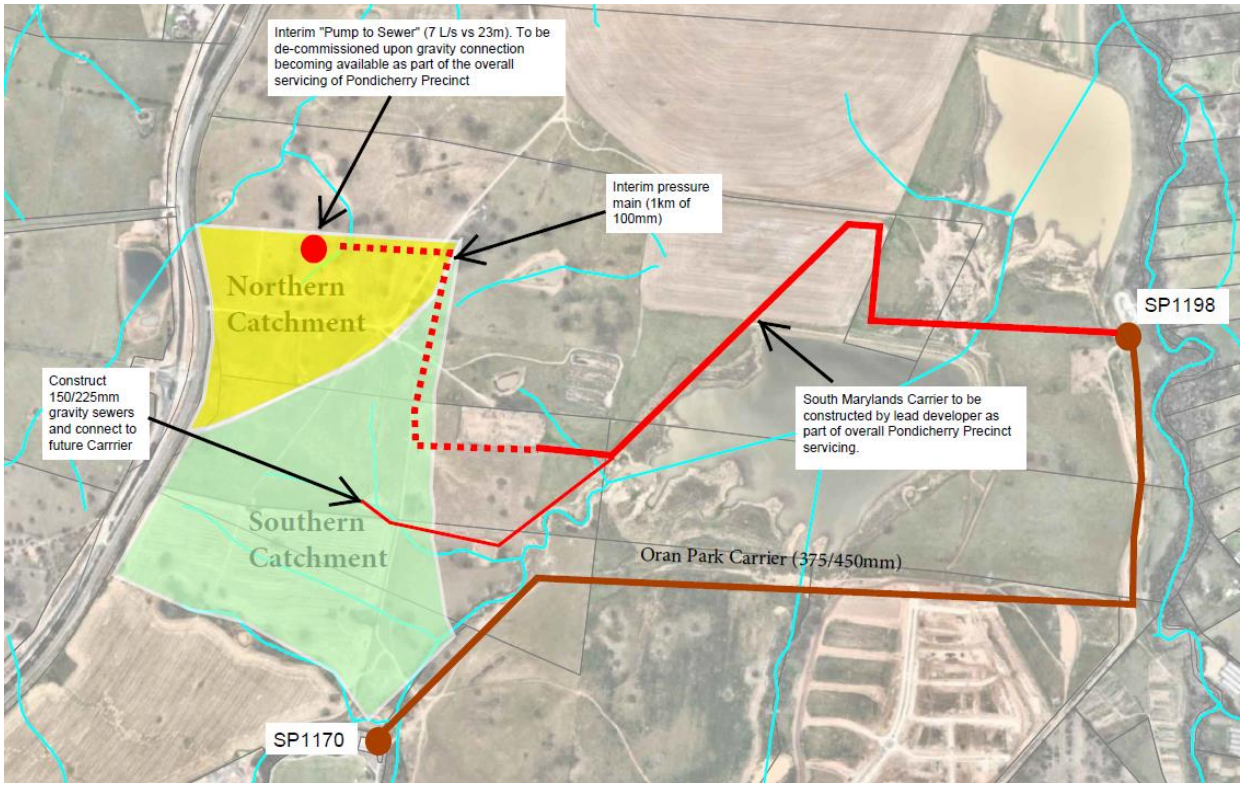


Figure 4.5 Strategy WW3 – Transfer flows to SPS 1198 (via future South Marylands Carrier).

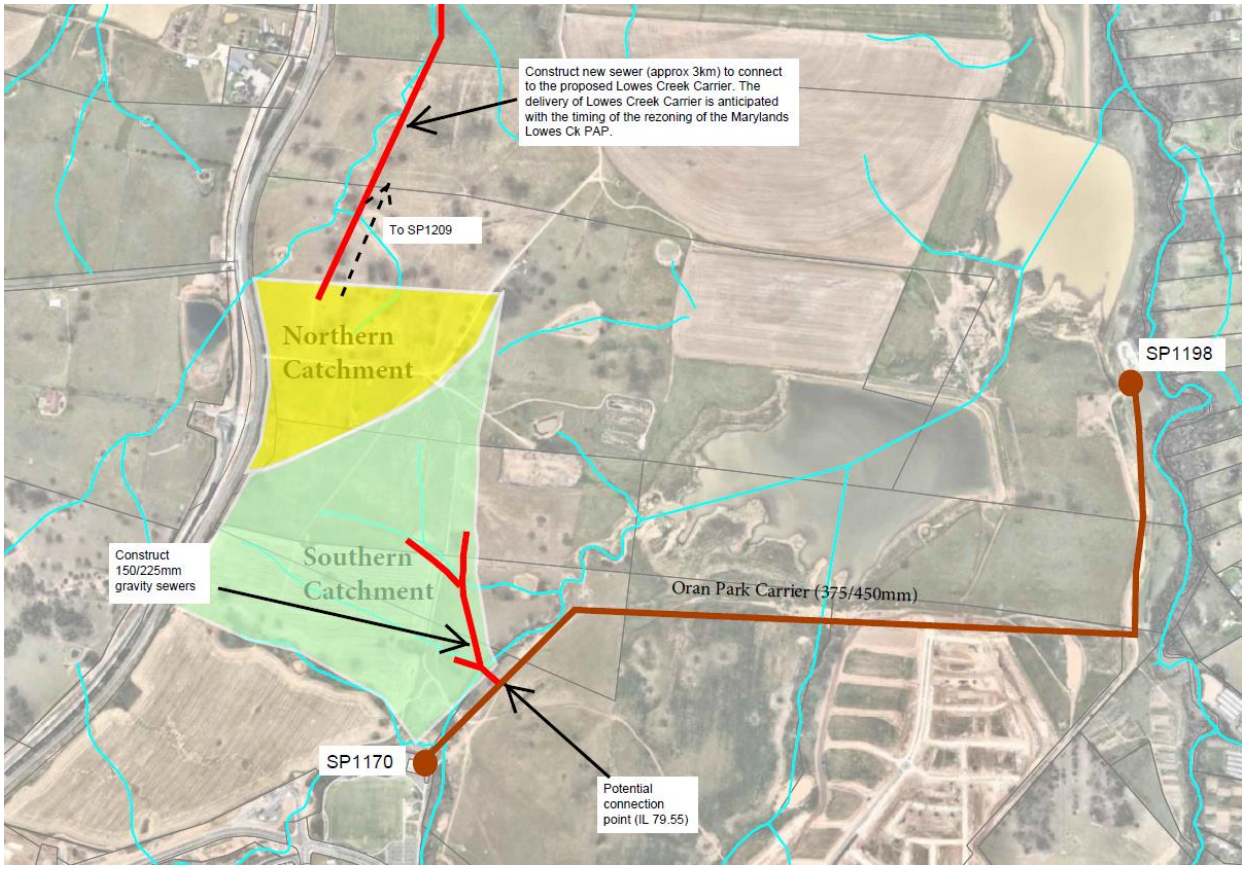


Figure 4.6 Strategy WW4 – Transfer flows to SPS 1209 (via future Lowes Creek Carrier).

4.3.3 High Level Assessment

Table 4.2 describes the advantages and disadvantages for each of the wastewater strategies identified at a high level.

4.3.4 Proposed Servicing Strategy

The preferred wastewater strategy is likely to depend on the timing of the subject site requiring wastewater services and also the timing of delivery of future trunk infrastructure (eg Lowes Creek Carrier, South Marylands Carrier) by Sydney Water or adjacent developers. For example, if no trunk infrastructure has been delivered at the time of Pondicherry Part Precinct requiring services then the preferred strategy is likely to be WW2 (assuming sufficient spare capacity is available in the Oran Park Carrier). However, if the South Marylands Carrier is available for connection at the time of Pondicherry Part Precinct requiring services then the capacity of this carrier should be utilised and strategy WW3 is likely to be the preferred strategy. Any initial servicing of the northern catchment is likely to involve interim arrangements until the Lowes Creek Carrier and associated lead-in mains are provided closer to the subject site. Sydney Water have advised that it will not permit permanent transfer of flows from the northern catchment to SP1198 (eg Strategy WW1) due to this area being within the natural catchment of SP1209.

As there are a number of potential feasible options to service the site, the preferred wastewater strategy will need to be subject to Sydney Water's detailed planning process (including a detailed present value cost analysis) to determine the least cost option at acceptable risk to Sydney Water and the stakeholders involved.

Table 4.2 High Level Assessment of Wastewater Options

Option	Strengths (+)	Weaknesses (-)
Strategy WW1 Transfer to existing SP1198 via Oran Pk Carrier (gravity)	• Not reliant on any future trunk infrastructure to be constructed by SWC. • Involves gravity flow (ie no pumping). • Low risk for odour/septicity issues. • No interim infrastructure involved. • Likely the least cost option. • Shortest lead time for servicing implementation. • Avoids crossing the rail link corridor.	• Deep sewers required to drain Northern Catchment • Existing Oran Park Carrier and SPS1198 are not designed to accept flows from Northern Catchment. • Unacceptable to Sydney Water • TransGrid easement crossing • Potential environmental constraints in the south east of the site may impact planning approvals for proposed works.
Strategy WW2 Transfer to existing SP1198 via Oran Pk Carrier (interim pumping)	• Not reliant on future trunk infrastructure to be constructed by SWC or adjacent developers. • Avoids construction of long sections of deep sewers. • Avoids crossing the rail link corridor. • Interim 'pump to sewer' delays construction of high cost trunk lead-in to Lowes Creek Carrier until sufficient flow available to minimise odour/septicity risks. • The 'pump to sewer' has potential to increase its catchment to service other adjacent properties within the overall Pondicherry Precinct. This may provide cost efficiencies.	• Interim pump to sewer arrangement required and is subject to SWC approval • Developer likely to pay for capital and O&M costs for interim works with no reimbursements from SWC. • Developer will need to engage experienced contractor to operate and maintain pump facility for the term of the interim servicing period. • TransGrid easement crossing • Potential environmental constraints in the south east of the site may impact planning approvals for proposed works. • Suitable site needs to be found for the pump facility and associated infrastructure (eg overflow).
Strategy WW3 Transfer to existing SP1198 via future Sth Marylands Carrier (interim pumping)	• Avoids construction of long sections of deep sewers. • Interim 'pump to sewer' delays construction of high cost trunk lead-in to Lowes Creek Carrier until sufficient flow available to minimise odour/septicity risks. • The 'pump to sewer' has potential to increase its catchment to service other adjacent properties within the overall Pondicherry Precinct. This may provide cost efficiencies.	• Reliant on construction of the South Marylands Carrier. • Interim pump to sewer arrangement required and is subject to SWC approval. • Developer likely to pay for capital and O&M costs for interim works with no reimbursements from SWC. • Developer will need to engage experienced contractor to operate and maintain pump facility for the term of the interim servicing period. • Potential issues with access to other private property (for pressure main) • Potential environmental constraints in the south east of the site may impact planning approvals for proposed works. • Suitable site needs to be found for the pump facility and associated infrastructure (eg overflow).
Strategy WW4 Transfer to future SP1209	• Involves gravity flow (ie no pumping). • Most consistent with SWC's ultimate servicing strategy for the Pondicherry Precinct (see Figure 4.2). • No interim infrastructure involved. • Avoids crossing the rail link corridor. • Full reimbursement of costs likely by SWC for trunk infrastructure delivered by developer.	• Reliant on construction of the Lowes Creek Carrier. • Longest length of sewer main required. • Risk of septicity due to long detention times and low flow in lead-in main to Lowes Creek Carrier. • Highest Upfront Cost option • Potential issues with access to other private property (for lead-in main). • Longest lead time for servicing implementation • TransGrid easement crossing. • Potential environmental constraints in the south east of the site may impact planning approvals for proposed works.

5 Electricity

5.1 Endeavour Energy

DBYD plans (see Appendix A) show existing and proposed infrastructure along The Northern Road that front the subject site. An existing 132 kV transmission line follows The Northern Road past the development and connects the Oran Park Zone Substation (ZS) and the Bringelly ZS.

The nearest existing zone substation to the subject site is the Oran Park Zone Substation (ZS) which is located along The Northern Road about 1 km south of the site. There is an existing 11 kV feeder (OP1112) adjacent to the site along The Northern Rd. Another existing substation is the Bringelly ZS which is located near the corner of The Northern Rd and Bringelly Rd and connects to the Oran Ok ZS via the existing transmission line along The Northern Road. A proposed new zone substation (Marylands ZS) is proposed to be constructed to supply the future Maryland and Lowes Creek precincts by 2023. This substation is proposed to be located north of the site along The Northern Rd. The location of the zone substations are shown in Figure 5.1

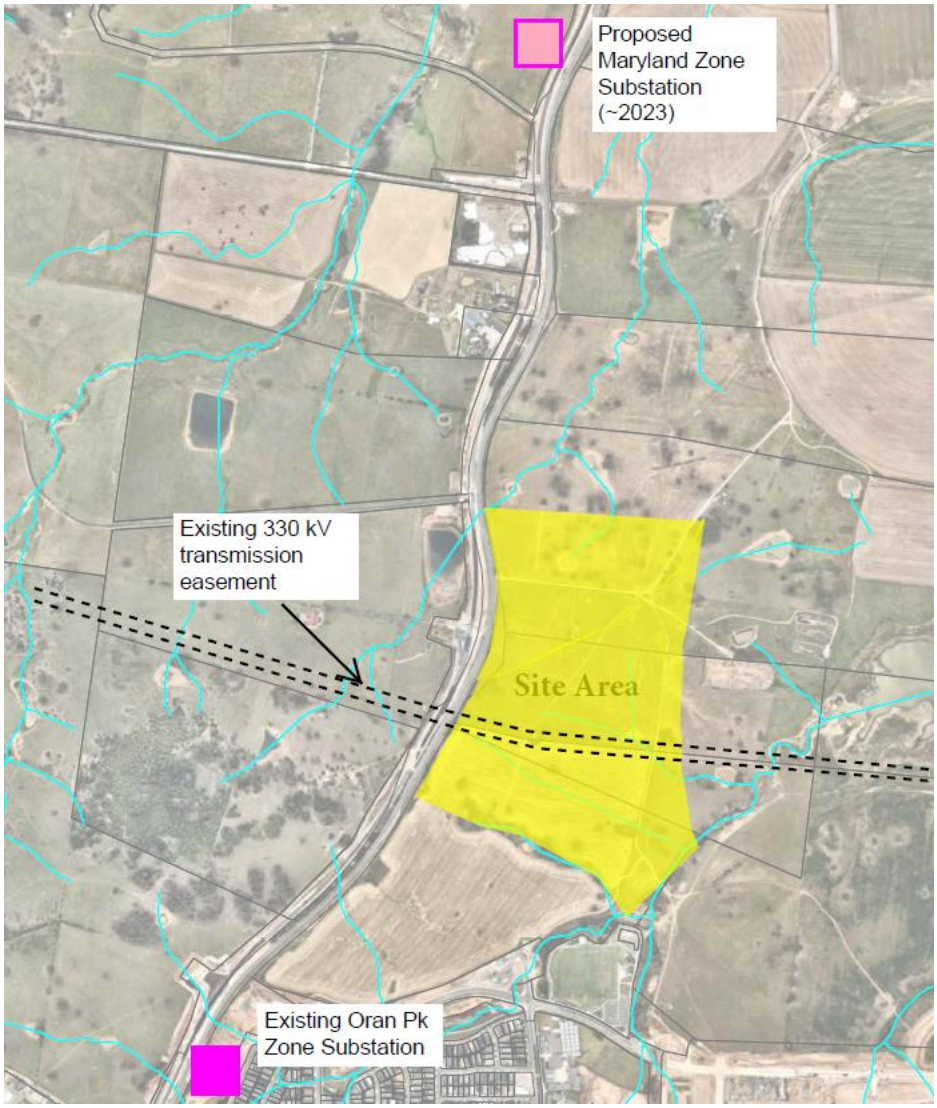


Figure 5.1 Existing Electricity Infrastructure (Source: Endeavour Energy)

5.2 TransGrid

Existing 330kV transmission lines cross the site (east to west) towards the southern end and are located within a 60.96m easement. Figure 5.1 shows the approximate location of the transmission easement.

5.3 Proposed Servicing Strategy

A Technical Review Request was submitted to Endeavour Energy to seek advice on the servicing of the subject site. A copy of Endeavours advice is attached in Appendix B.

Based on 400 residential lots the estimated load for the proposal is 1.7 MVA.

Endeavour Energy have advised that the subject site will be supplied by the existing Oran Park ZS. At present there is spare capacity on the existing feeder OP1112 that fronts the subject site to supply approximately 300 lots. Additional supply to service the remainder of the lots is required via construction of a new 11 kV feeder from Oran PK ZS. Endeavour Energy advise that they do not reserve capacity and that due to the number of load applications within the vicinity, the limited capacity within the existing feeder OP1112 may be reached by the time the subject development progresses which may require the additional feeder being constructed earlier than anticipated to supply the subject site.

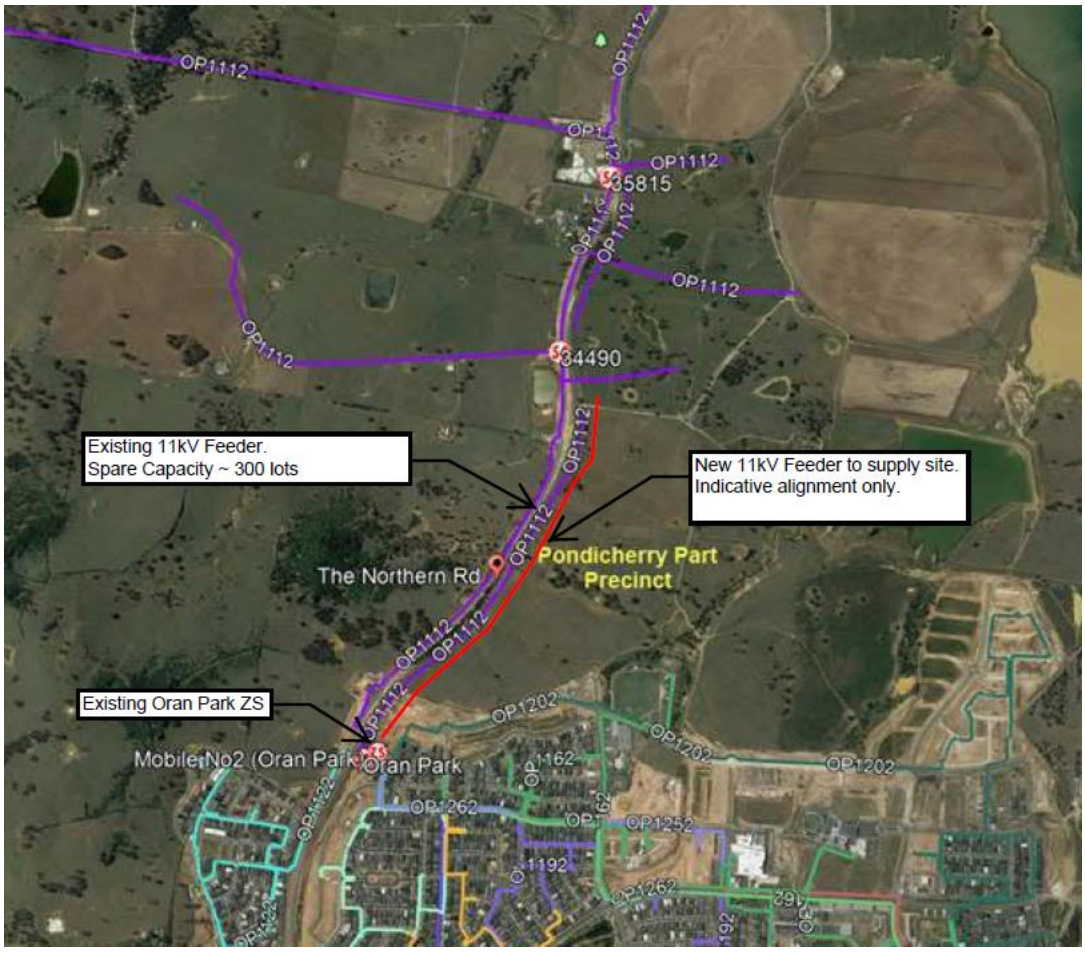


Figure 5.2 Proposed Electricity Supply (Source: Endeavour)

6 Gas

A Feasibility Request was sent to Jemena to seek advice on the provision of gas services to the subject site. A copy of Jemenas advice is attached in Appendix B.

Natural Gas is available in the vicinity and Jemena may be able to supply this proposal. In consideration of their shareholders' interests and under NSW regulation, Jemena Gas Networks (NSW) Ltd is required to ensure that any connection to the natural gas distribution system is commercially viable.

Jemena have advised that the nearest existing suitable gas main available for connection for the subject site is located at the corner of Peter Brock Drive and Oran Park Drive (see Figure 6.1). The 160mm pressure main (210 kPa) has sufficient capacity to service the precinct at this time.

Jemena also advised that in order to enhance the viability of gas supply to the site the developers should allow for the provision of all trenching required throughout the site at no cost to Jemena.

7 NBN

NBN was contacted to confirm timing and servicing of the subject site. NBN advised that timing and dates cannot be issued to developers, however as the service is currently being rolled out to surrounding areas, the subject site will be near the footprint of existing network and there be no issues in servicing the subject site.

8 Conclusion

In conclusion preliminary investigations have shown that all services including Sewer, Water, Power, Communications and Gas can be provided to the subject site.

Water services can be extended into the subject site once the trunkmains along The Northern Rd have been completed (expected by 2019/20). Initial supply may be required via the existing reticulation watermain to the south of the site to manage water quality issues. Prior to the new Oran Park Reservoir being constructed (~ 2022), the subject site will be supplied from the existing Narellan Reservoir. Wastewater from the site will ultimately drain to the future South Creek treatment plant expected to be constructed no earlier than 2026. Prior to this, there are a number of feasible wastewater options that could service the subject site. It is likely that interim wastewater servicing will be required for the northern catchment of the subject site.

Both Endeavour Energy and Jemena have confirmed the availability of Electricity and Gas to the site. However, Endeavour did indicate that the capacity within the existing network was limited and that the capacity of the feeder may be reached prior to a formal request for a connection. If the existing capacity has been exhausted a new 11kV feeder to the site will be required.

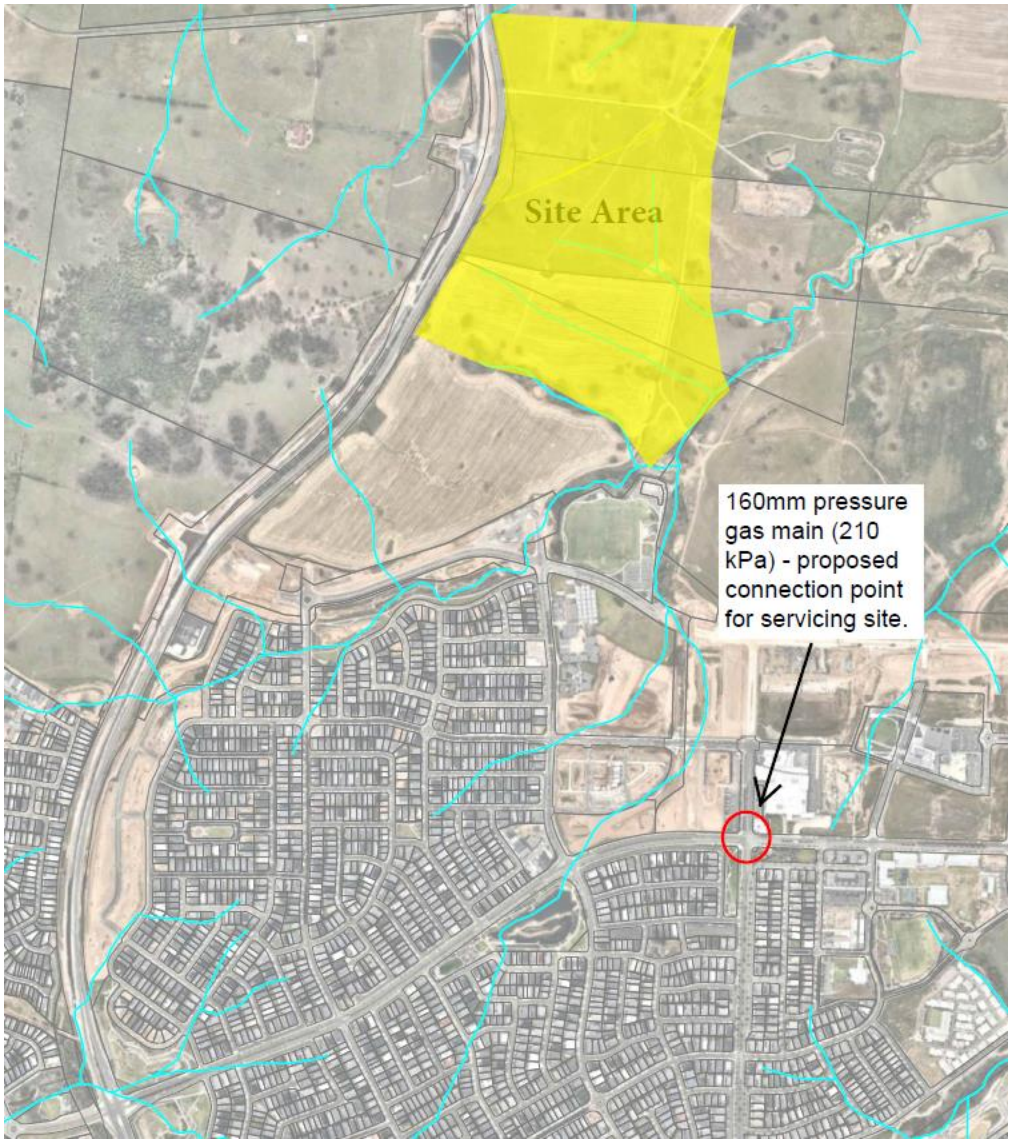


Figure 6.8.1 Proposed Connection Point for Gas (Source: Jemena)

PONDICHERRY PART PRECINCT THE NORTHERN ROAD ORAN PK

Appendix A Dial Before You Dig (DBYD) Plans

GREENFIELDS DEVELOPMENT COMPANY

A0

THE NORTHERN

RD

DBYD Address:
n/a Northern Road
Oran Park NSW 2570

DBYD Job No: 18463808

DBYD Sequence No: 91505840

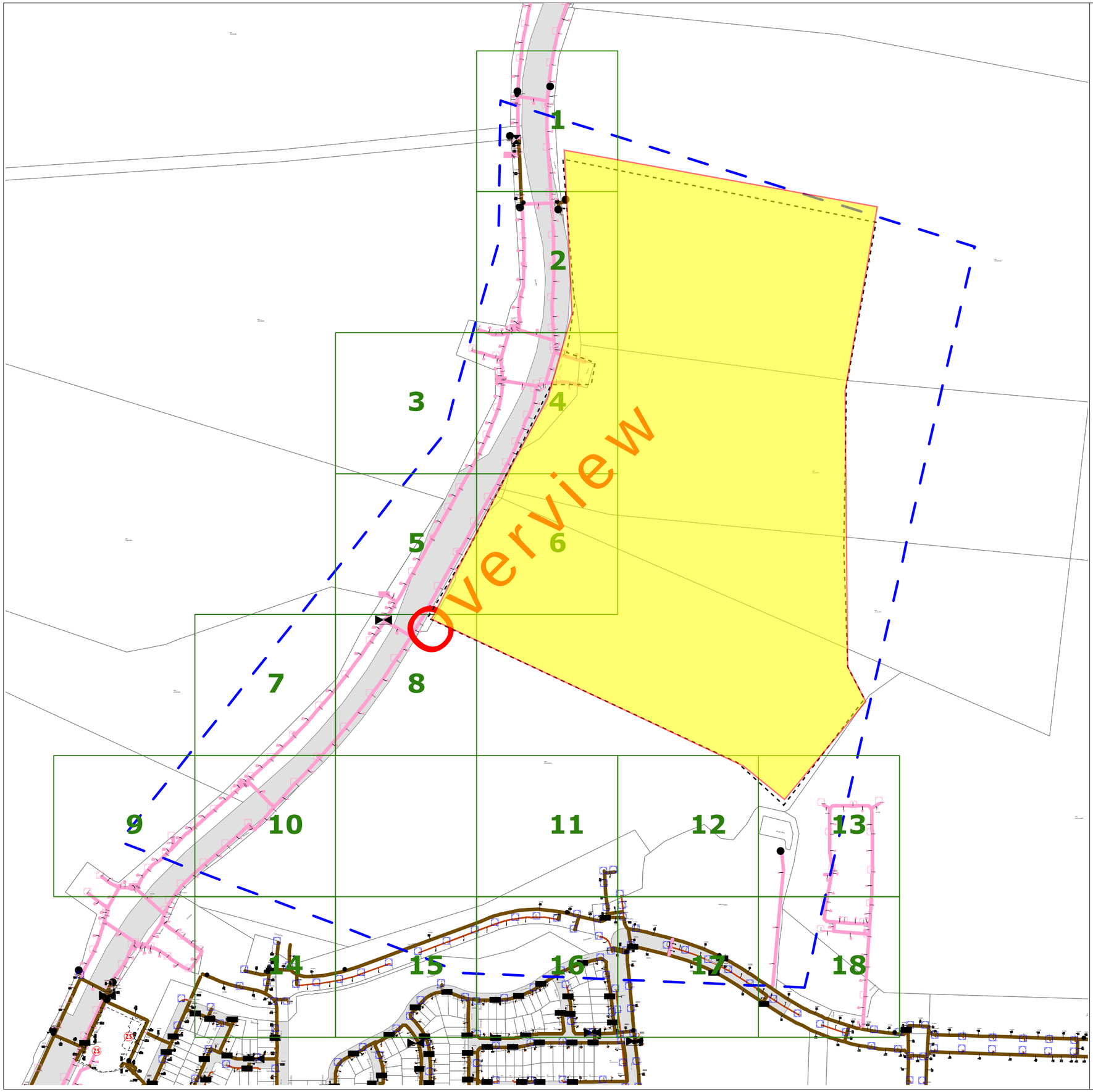
Scale: 1:2000

Date of Production: 28/10/2019

Plan 1 of 1

N

0m 30m 60m 90m 120m 150m



Endeavour Energy

WARNING

- **All electrical apparatus shall be regarded as live until proved de-energised.** Contact with live electrical apparatus will cause severe injury or death.
- In accordance with the *Electricity Supply Act 1995*, you are obliged to report any damage to Endeavour Energy Assets immediately by calling **131 003**.
- The customer must obtain a new set of plans from Endeavour Energy if work has not been started or completed within twenty **(20)** working days of the original plan issue date.
- The customer must contact Endeavour Energy if any of the plans provided have blank pages, as some underground asset information may be incomplete.
- Endeavour Energy underground earth grids may exist and their location **may not** be shown on plans. Persons excavating are expected to exercise all due care, especially in the vicinity of padmount substations, pole mounted substations, pole mounted switches, transmission poles and towers.
- Endeavour Energy plans **do not** show any underground customer service mains or information relating to service mains within private property.
- Asbestos or asbestos-containing material may be present on or near Endeavour Energy's underground assets.
- Organo-Chloride Pesticides (OCP) may be present in some sub-transmission trenches.
- All plans must be printed and made available at the worksite where excavation is to be undertaken. Plans must be reviewed and understood by the crew on site prior to commencing excavation.

INFORMATION PROVIDED BY ENDEAVOUR ENERGY

- Any plans provided pursuant to this service are intended to show the approximate location of underground assets relative to road boundaries, property fences and other structures at the time of installation.
- Depth of underground assets may vary significantly from information provided on plans as a result of changes to road, footpath or surface levels subsequent to installation.
- Such plans have been prepared solely for use by Endeavour Energy staff for design, construction and maintenance purposes.
- All enquiry details and results are kept in a register.

DISCLAIMER

Whilst Endeavour Energy has taken all reasonable steps to ensure that the information contained in the plans is as accurate as possible it will accept no liability for inaccuracies in the information shown on such plans.

LEGEND

- Street light column (or)
- Padmount substation
- Overground pillar (O.G.Box) (or)
- Underground pit
- Duct run
- Cable run
- Typical duct section
- Asbestos warning

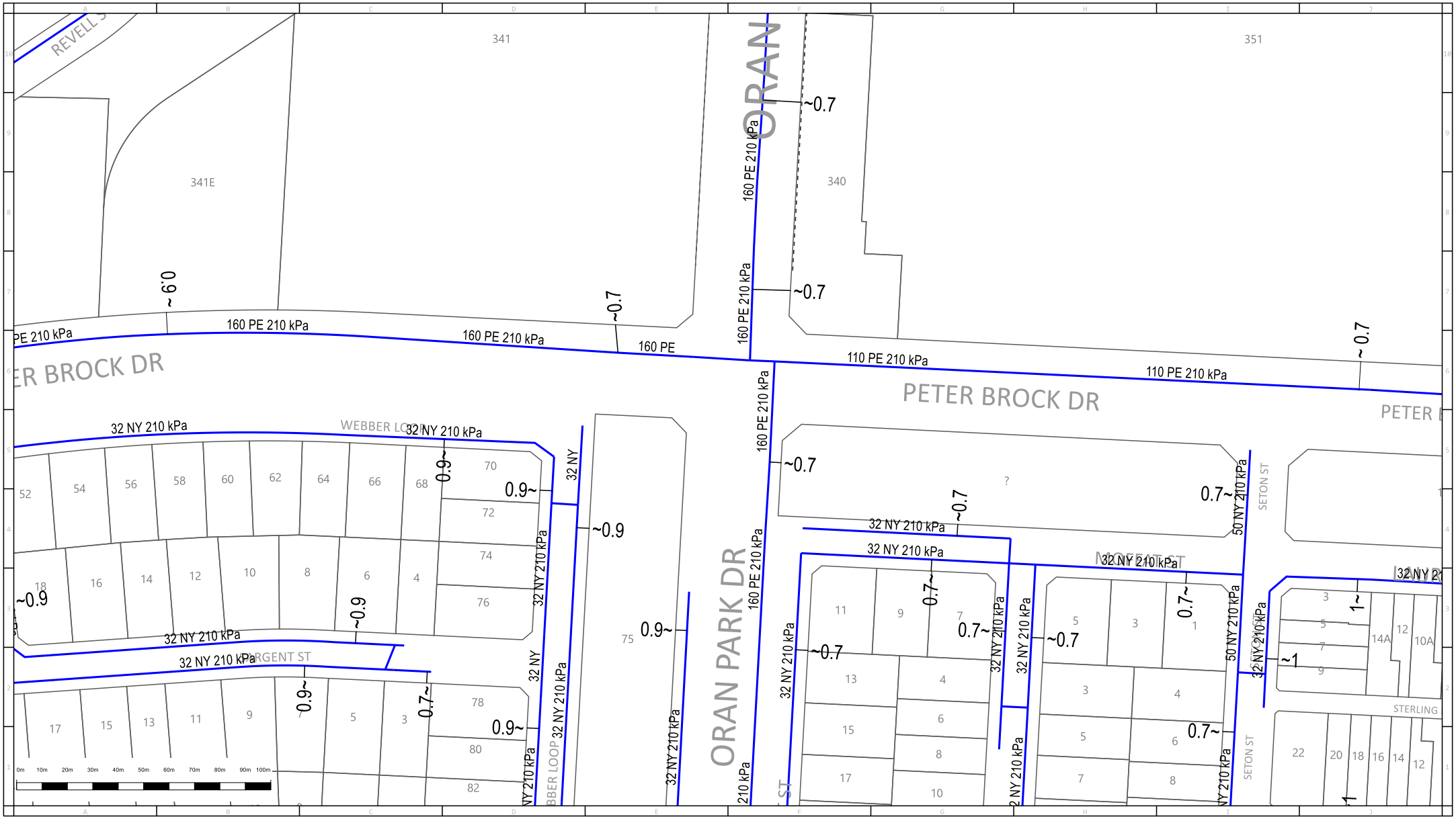
N

NOT TO SCALE

DBYD Sequence No.:	91505835
Issued Date:	28/10/2019

DBYD Authority: Jemena Gas Networks (NSW)

DBYD Location: Oran Park Drive Oran Park NSW, 2570



Jemena
ABN 87 003 004 322

Main	In Service	Proposed
Unknown Pressure		
Distribution - 2 kPa		
Distribution - 7 kPa		
Distribution - 30 kPa		
Distribution - 100 kPa		
Distribution - 210 kPa		

Main	In Service	Proposed
Distribution - 300 kPa		
Distribution - 400 kPa		
Proposed Isolate (coloured according to kPa)		
Conduit or Casing (*Size & Material*)	*100 PVC*	

High Pressure Main & Pipeline	In Service	Proposed
Critical Main Treat as High Pressure Main		
Secondary - 1050 kPa		
Secondary Service		
Primary - 3500 kPa		
JGN Trunk - 7000 kPa		
Transmission		

Fittings, Valves & Regulators		
Siphon		Regulator Set
Valve		Regulator Station
Distance in metres of Main from Boundary Line	~ 1.5	
MBK = Metres Back of Kerb		Automatic Line Break Valve
MFL = Metres from Fence Line		

N W E S

Issue Date: 03/11/2019

DBYD Seq No: 91726958

DBYD Job No: 18501936

Scale: 1:2000

WARNING: This is a representation of Jemena Gas Networks underground assets only and may not indicate all assets in the area. It must not be used for the purpose of exact asset location in order to undertake any type of excavation. This plan is diagramatic only, and distances scaled from this plan may not be accurate. Please read all conditions and information on the attached information sheet. This extract is subject to those conditions. The information contained on this plan is only valid for 28 days from the date of issue.

PONDICHERRY PART PRECINCT THE NORTHERN ROAD ORAN PK

Appendix B Service Provider Correspondence

GREENFIELDS DEVELOPMENT COMPANY

Case Number: 181757

20 December 2019

GREENFIELDS DEVELOPMENT COMPANY
c/- CALIBRE PROFESSIONAL SERVICES PTY LTD

FEASIBILITY LETTER

Developer:	**GREENFIELDS DEVELOPMENT COMPANY**
Your reference:	**OPP-9462**
Development:	**Northern, Oran Park**
Development Description:	**Greenfield Development Company is seeking to develop approximately residential 400 lots.**
Your application date:	**31 October 2019**

Note: **Level 2 water restrictions are in place from December 10**, which limits how and when water can be used outdoors. This can impact you and your contractors in the activities they need to undertake for this proposal.

Using water to suppress dust is only permitted via a permit when no other water source is available.

You/your contractors will need to apply for an exemption permit to use water for most outdoor uses including:

- Cleaning equipment and the exterior of **new** buildings
- Drilling and boring, and
- Batching concrete on-site

Fines for deliberate breaches of restriction rules are in place.

For more information on the restrictions and for applying for an exemption, visit our web site at https://www.sydneywater.com.au/SW/water-the-environment/what-we-re-doing/water-restrictions/level-2-water-restrictions/index.htm

The more water everyone saves, the longer we can stave off the progression to stricter restrictions or emergency measures.

Please provide this information to your contractors and delivery partners to inform them of their obligations and check our web site for up to date restriction information.

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Developer Works Deed (Deed) or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:

- if you change your proposed development eg the development description or the plan/site layout, after today, the requirements in this Letter could change when you submit your new application; and

- if you decide to do your development in stages then you must submit a new application (and pay another application fee) for each stage.

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

What You Must Do To Get A Section 73 Certificate In The Future.

To get a Section 73 Certificate you must do the following things. You can also find out about this process by visiting www.sydneywater.com.au > Plumbing, building & developing > Developing > Land development.

1. **Obtain Development Consent from the consent authority for your development proposal.**

2. **Engage a Water Servicing Coordinator (Coordinator).**

   You must engage your current or another authorised Coordinator to manage the design and construction of works that you must provide, at your cost, to service your development. If you wish to engage another Coordinator (at any point in this process) you must write and tell Sydney Water.

   For a list of authorised Coordinators, either visit www.sydneywater.com.au > Plumbing, building & developing > Developing > Providers > Lists or call **13 20 92.**

   The Coordinator will be your point of contact with Sydney Water. They can answer most questions that you might have about the process and developer charges and can give you a quote or information about costs for services/works (including Sydney Water costs).

3. **Developer Works Deed**

   After the Coordinator has submitted your new application, they will receive the Sydney Water Notice and Developer Works Deed. You and your accredited Developer Infrastructure Providers (Providers) will need to sign and lodge both copies of the Deed with your nominated Coordinator. After Sydney Water has signed the documents, one copy will be returned to the Coordinator.

   The Deed sets out for this project:
   - your responsibilities;
   - Sydney Water's responsibilities; and
   - the Provider's responsibilities.

   You must do all the things that we ask you to do in that Deed. This is because your development does not have water and sewer services and you must construct and pay for the following works extensions under this Deed to provide these services.

   Note: The Coordinator must be fully authorised by us for the whole time of the agreement.

4. **Water and Sewer Works**

   4.1 Water

   Your development must have a frontage to a water main that is the right size and can be used for connection.

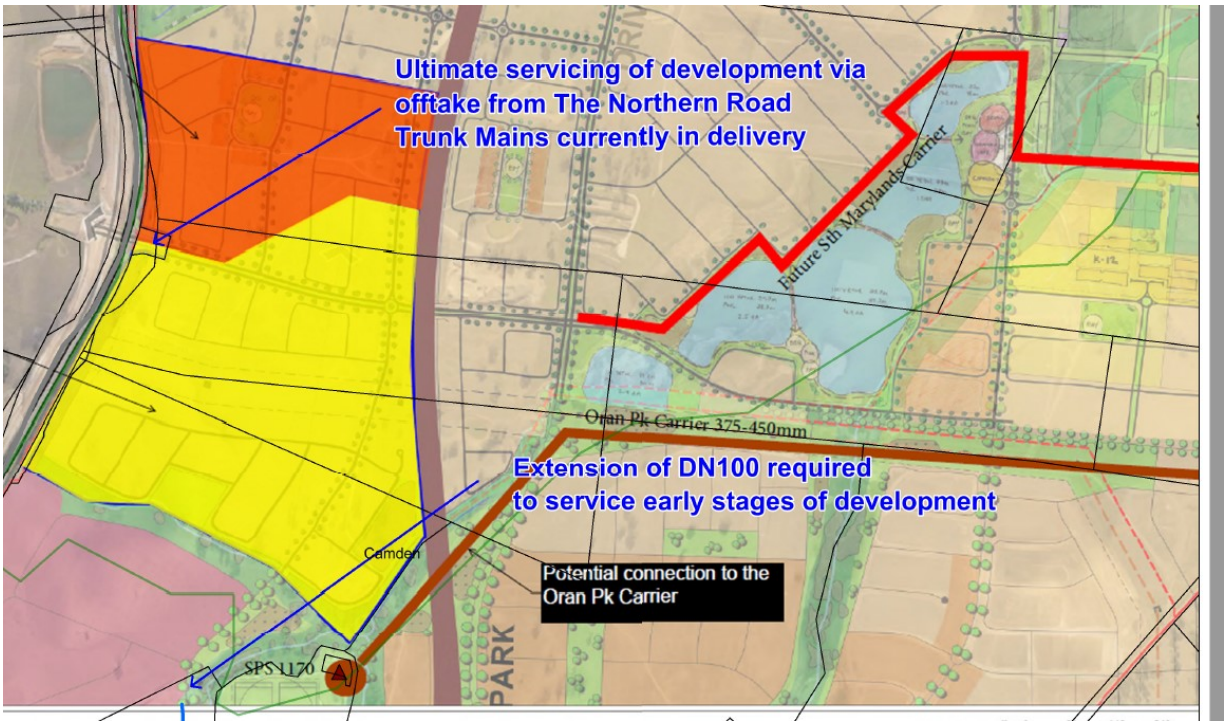
Sydney Water has assessed your application and found that:

Sydney Water are currently delivering trunk drinking water mains in The Northern Road. The mains are designed to be bi-directional for resilience of the water distribution system and to meet growth demands.

The trunk mains are large and initial small demands will mean that water quality is impacted. To address water quality issues, the initial stages of the development are required to be serviced via extension of the existing DN100 reticulation main located at the corner of Dick Johnson Drive and South Circuit. Refer to Figure 1.

Once demand is sufficient this development will be serviced via the offtake from the trunk main under construction in The Northern Road and pressures will be required to be managed via a Pressure Reducing Valve (PRV). Refer to Figure 1.

Figure 1



- **You must provide a water service connection and property service (also known as a "property service (main to meter) at your cost for all lots off the water main construction required above and your Coordinator must manage the work. See section below for details.**

- **Property Service (Main to Meter) Installation Details**

  The property service connection must be carried out by a Sydney Water listed Driller and the installation of the property service must either be carried out or supervised by a licensed plumber. They must meet the:

  (a) Administrative requirements of the New South Wales Code of Practice for Plumbing and Drainage; and
  (b) Sydney Water Property Service (Main to Meter) Installations Technical Requirements.

Before the Certificate can issue, your Coordinator must give Sydney Water:
- All the "Work as Constructed" information that shows what was constructed; and
- Certification that the property service works comply with Sydney Water's requirements.

4.2 Sewer

Your development must have a sewer main that is the right size and can be used for connection. That sewer must also have a connection point within your development's boundaries.

Sydney Water has assessed your application and found that:

The southern area of the development drains to SP1198 via proposed Marylands South Carrier.

The Oran Park Carrier was not designed to accept flows from this development, refer to Figure 2 catchment plan from SP1198 and Oran Park Carrier Needs Specification. However, as the southern area of this development can drain to Oran Park Carrier, it is acceptable for the early stages of the development to drain to this carrier. In the future a cross connection between Oran Park Carrier and proposed Marylands South Carrier may be required. The WSC will need to carry out a detailed catchment analysis to address this when the Marylands South Carrier is designed.

Refer to Figures 2 for catchment plan included in the Needs Specification for Oran Park Carrier and Figure 3 for locality of development and future carriers.

The northern area (shown orange in Figure 3) drains naturally to a future carrier connected to proposed Lowes Creek Carrier Section 1. The option for this catchment to drain to the southern catchment via a deep bore is not acceptable due to capacity constraints in existing Oran Park Carrier.

Figure 2

Figure A-2 System Overview

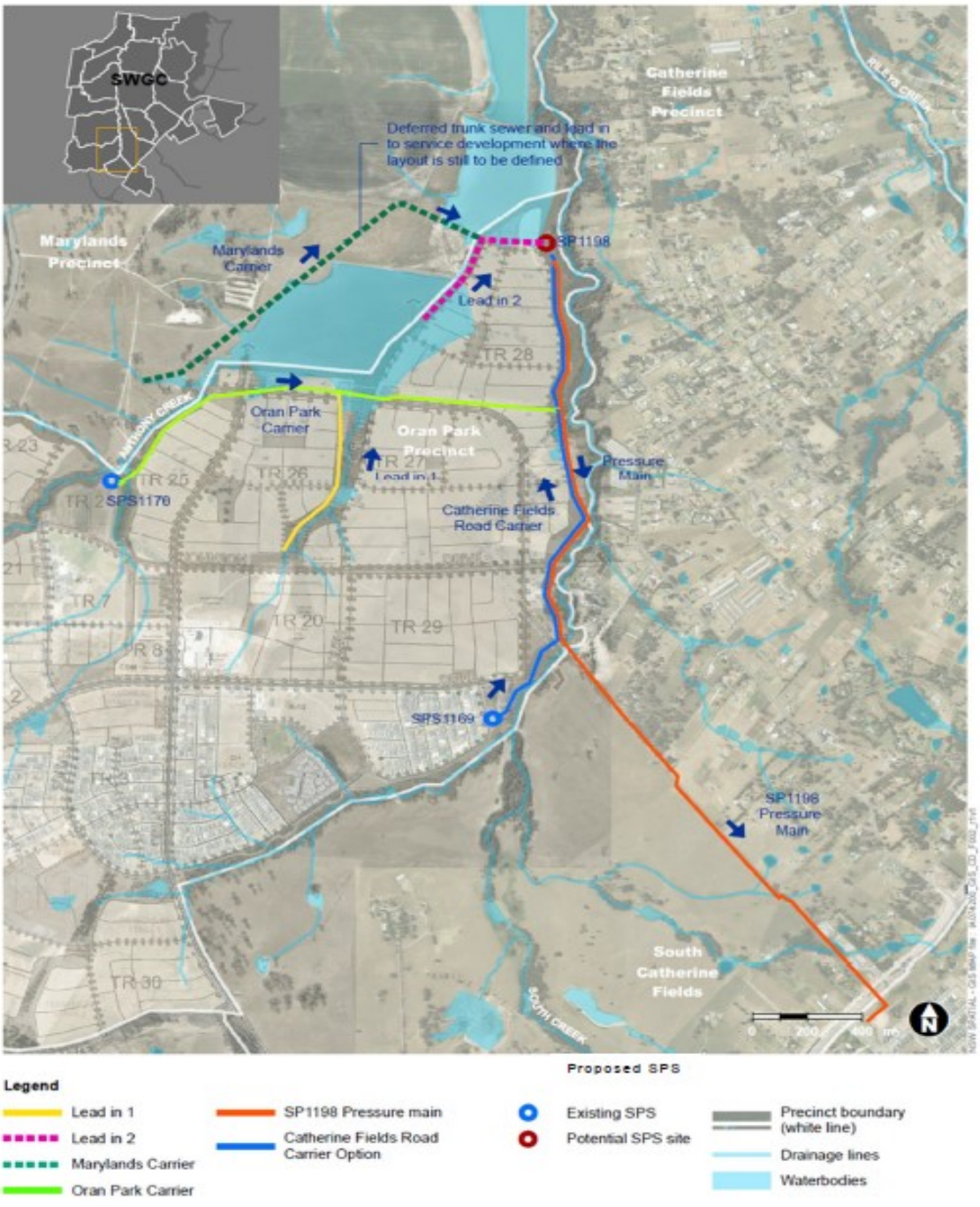
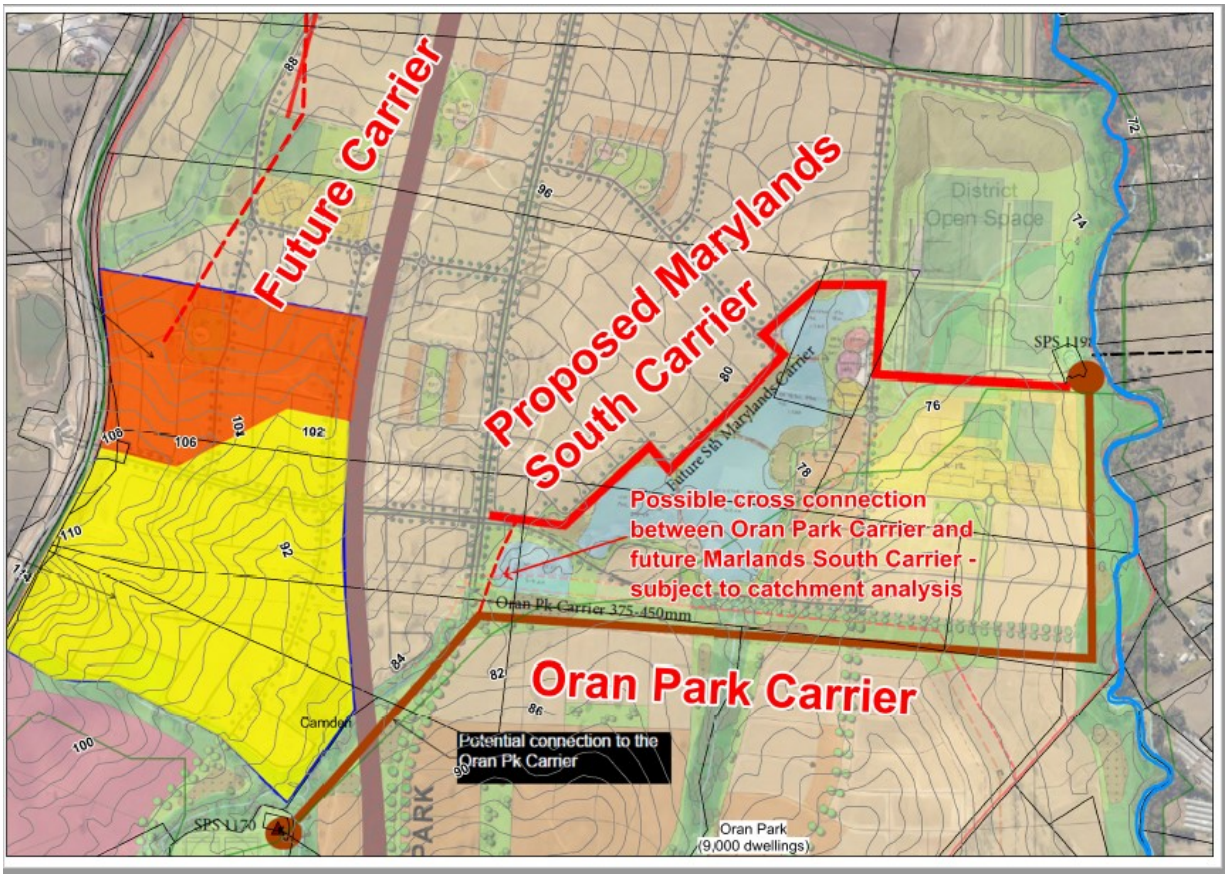


Figure 3



Funding of works

Under Sydney Water's 'Funding of infrastructure to service growth' policy we may agree to contribute towards a portion of the cost of the works you are required to build. This is done either by Sydney Waters Schedule of Rates or via the Procurement process. Your Water Service Coordinator can advise you in relation to this policy, the likelihood of Sydney Water sharing a portion of the cost and the process you need to satisfy Sydney Water's probity requirements.

If you do choose to request a quote through the Schedule of Rates for Sydney Water's contribution you will avoid going through the full procurement process. Your WSC can advise you of this option.

The funding assessment will be made at the detailed design stage, prior to any construction works commencing. A firm commitment would not be made by Sydney Water until we:

- Have reviewed the detailed design and;
- Have reviewed the detailed construction quotations needed to meet our probity requirements and;
- Come to an agreement on the amount.

5. Ancillary Matters

5.1 Asset adjustments

After Sydney Water issues this Notice (and more detailed designs are available), Sydney Water may require that the water main/sewer main/stormwater located in the footway/your property needs to be adjusted/deviated. If this happens, you will need to do this work as well as the extension we have detailed above at your cost. The work must meet the conditions of this Notice and you will need to complete it **before we can issue the Certificate**. Sydney Water will need to see the completed designs for the work and we will require you to lodge a security. The security will be refunded once the work is completed.

5.2 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have the written permission of the relevant property owners and tenants. You must use Sydney Water's **Permission to Enter** form(s) for this. You can get copies of these forms from your Coordinator or the Sydney Water website. Your Coordinator can also negotiate on your behalf. Please make sure that you address all the items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce their impacts. You will be responsible for all costs of mediation involved in resolving any disputes. Please allow enough time for entry issues to be resolved.

5.3 Costs

Construction of these **future** works will require you to pay project management, survey, design and construction costs **directly to your suppliers**. Additional costs payable to Sydney Water may include:

- water main shutdown and disinfection;
- connection of new water mains to Sydney Water system(s);
- design and construction audit fees;
- contract administration, Operations Area Charge & Customer Redress prior to project finalisation;
- creation or alteration of easements etc; and
- water usage charges where water has been supplied for building activity purposes prior to disinfection of a newly constructed water main.

Note: Payment for any Goods and Services (including Customer Redress) provided by Sydney Water will be required prior to the issue of the Section 73 Certificate or release of the Bank Guarantee or Cash Bond.

Your Coordinator can tell you about these costs.

OTHER THINGS YOU MAY NEED TO DO:

Shown below are other things you need to do that are NOT a requirement for the Certificate. They may well be a requirement of Sydney Water in the future because of the impact of your development on our assets. You must read them before you go any further.

Approval of your building plans

Please note that the building plans must be approved when each lot is developed. This can be done at Sydney Water Tap in™. Visit www.sydneywater.com.au > Plumbing, building & developing > Building > Sydney Water Tap in™.

This is not a requirement for the Certificate but the approval is needed because the construction/building works may affect Sydney Water's assets (e.g. water, sewer and stormwater mains).

Where a Sydney Water stormwater channel, pipe or culvert is located within ten (10) metres of your development site it must be referred to Sydney Water for further assessment.

Your Coordinator can tell you about the approval process including:

- Possible requirements;
- Costs; and
- Timeframes.

Note: You must obtain our written approval before you do any work on Sydney Water's systems. Sydney Water will take action to have work stopped on the site if you do not have that approval. We will apply Section 44 of the *Sydney Water Act 1994.*

Backflow Prevention Water supply connections

A backflow prevention containment device appropriate to the property's hazard rating must be installed at the property boundary. The device is to be installed on all water supplies entering the property, regardless of the supply type or metering arrangements. It is needed to reduce the risk of contamination by backflow from these supplies.

A licensed plumber with backflow accreditation can advise you of the correct requirements for your property. To view a copy of Sydney Water's Backflow Prevention Policy and a list of backflow accredited plumbers visit www.sydneywater.com.au > Plumbing, building & developing > Plumbing > Backflow prevention.

The water service for your development

Sydney Water does not consider whether the existing water main(s) talked about above is adequate for fire fighting purposes for your development. We cannot guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

You must make sure that each dwelling/lot has its own 20mm meter.

When access to the water supply is required, the property owner or agent must apply to Sydney Water online. Sydney Water must install a water meter before any water is used. It is illegal for anyone other than a Sydney Water employee to remove the locking mechanism on the water meter.

The online application can be found by visiting our website www.sydneywater.com.au **>** Plumbing, building & developing > Plumbing > Connections & disconnections. The applicant will need to have the:

1. Account (Property) Number which can be obtained from the Coordinator; and
2. Serial Number which can be found on the metal tag on your property service.

You can find more information by using the “Ask Sydney Water” section of our website.

Fire Fighting

Definition of fire fighting systems is the responsibility of the developer and is not part of the Section 73 process. It is recommended that a consultant should advise the developer regarding the fire fighting flow of the development and the ability of Sydney Water’s system to provide that flow in an emergency. Sydney Water’s Operating Licence directs that Sydney Water’s mains are only required to provide domestic supply at a minimum pressure of 15 m head.

Disused Water Service Sealing

You must pay to disconnect all disused private water services and seal them at the point of connection to a Sydney Water water main. This work must meet Sydney Water’s standards in the Plumbing Code of Australia (the Code) and be done by a licensed plumber. The licensed plumber must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Disused Sewerage Service Sealing

Please do not forget that you must pay to disconnect all disused private sewerage services and seal them at the point of connection to a Sydney Water sewer main. This work must meet Sydney Water’s standards in the Plumbing Code of Australia (the Code) and be done by a licensed drainer. The licensed drainer must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Soffit Requirements

Please be aware that floor levels must be able to meet Sydney Water’s soffit requirements for property connection and drainage.

Other fees and requirements

The requirements in this Notice relate to your Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements. These include:

- plumbing and drainage inspection costs;
- the installation of backflow prevention devices; and
- council fire fighting requirements. (It will help you to know what the fire fighting requirements are for your development as soon as possible. Your hydraulic consultant can help you here.)

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

END

02 December 2019

Endeavour Energy Ref: ENL3571 – 2014/02306/001

Calibre Group
PO Box 8300
NORWEST NSW 2153

Attention: Hark Obuchowski

ENL3571 – Technical Review | LOT 2,11,50,4-5, DP 1217189,1229416,1232523,1223563, The Northern Road, ORAN PARK

Thank you for your enquiry regarding the proposed greenfield residential development, known as Pondicherry Part Precinct, at the above address. This enquiry has been registered under our reference numbers – ENL3571. Please quote this number for all future correspondence.

Endeavour Energy acknowledges that the proposed Pondicherry Part Precinct development will possibly yield approx. 400 lots in two stages as per table 1 below.

Year	Milestone
June 2020	Rezoning
Nov 2020	DA consent for 200 lots
May 2021	DA consent for 200 lots

Table 1 – Proposed development staging plan

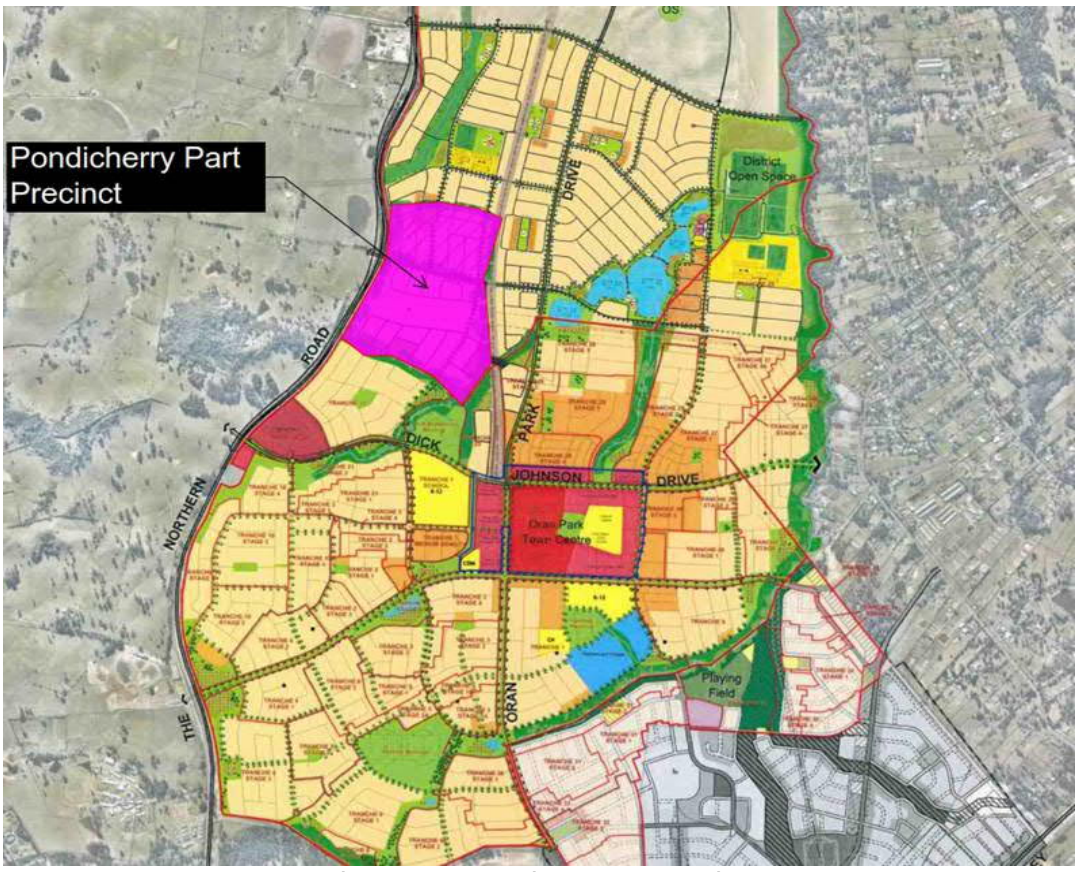


Figure 1 – Development Location

Network Capacity and Potential Supply Requirements

The proposed development is located approximately 1km north of Endeavour Energy's Oran Park Zone Substation (ZS), refer to Figure 2 below. At present time, there is spare capacity at Oran Park ZS to supply the proposed development.

The only existing 11kV feeder adjacent to the development site is Feeder OP1112 which originates from Oran Park ZS. At present, there is spare capacity on Feeder OP1112 to supply approximately 300 residential lots. It is envisaged that part of the proposed development may be supplied from 11kV feeder OP1112 initially and a new 11kV feeder will need to be developed from Oran Park ZS to and through the proposed development site to supply the remaining residential lots.

Proposed electrical reticulations to make supply available for proposed residential lots must be underground and where Endeavour Energy's overhead mains are currently installed, these mains shall be removed and replaced with underground assets where required by Endeavour Energy.

Design and construction of the proposed connection assets must be funded by the customer and gifted to Endeavour Energy under the contestable works framework. This process is documented in Endeavour Energy's Model Standing Offer for a Standard Connection Service. The customer must engage Level 3 and Level 1 Accredited Service Providers (ASP) for the proposed electrical works. A list of the Accredited Service Providers is available at the NSW Trade and Investment website: *https://energysaver.nsw.gov.au/households/you-and-energy-providers/installing-or-altering-your-electricity-service* or can be obtained via phone 13 77 88.

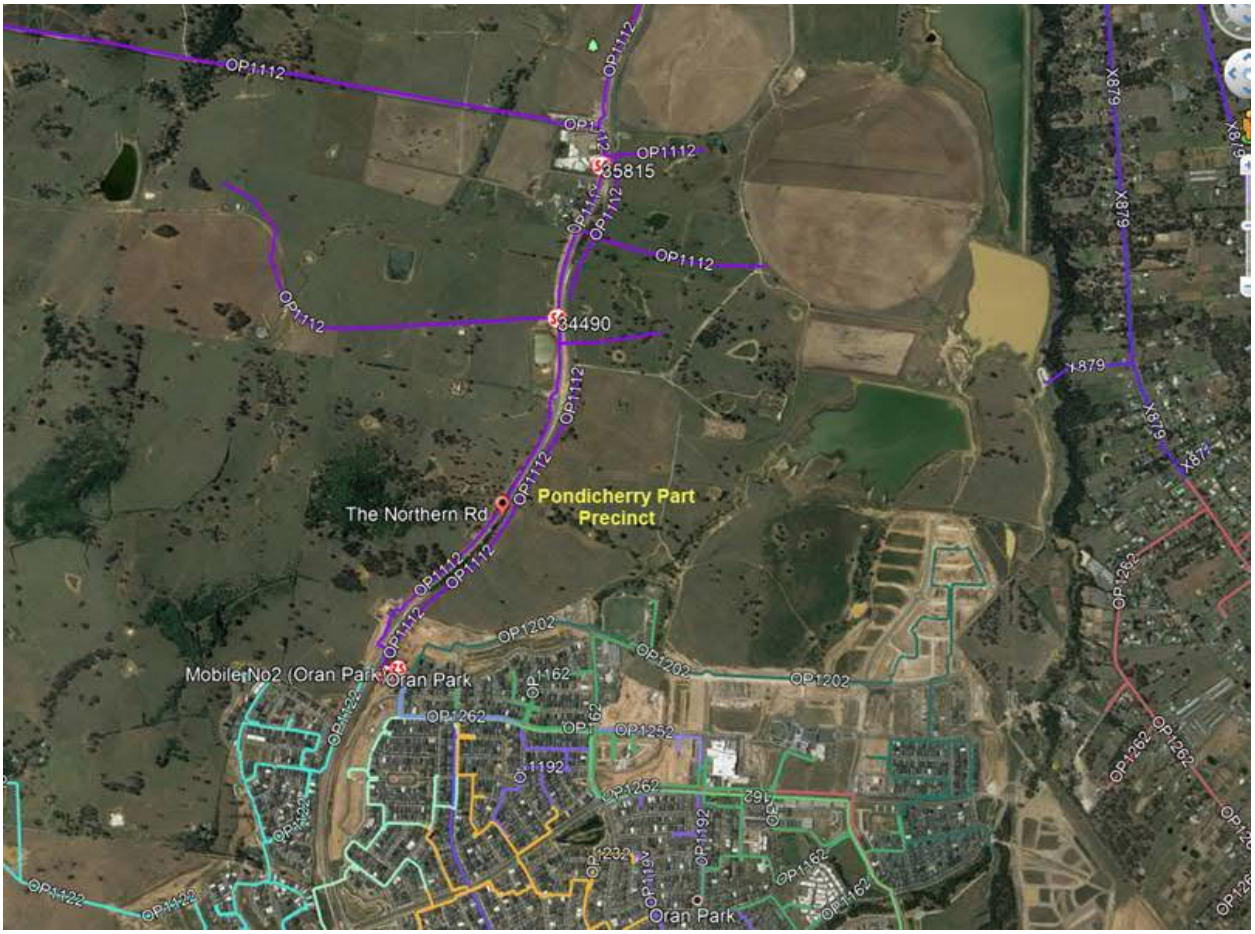


Figure 2 – Endeavour Energy's existing HV network

Hope this assists for the meantime and this advice provided is in response to an enquiry only and does not constitute a formal method of supply. Endeavour Energy does not reserve capacity. Further network capacity investigations will need to be conducted when the formal application for subdivision is submitted in the future.

Should you have any enquiries regarding your technical review request please contact the undersigned.

Yours faithfully,

J. Lei

Jonathan Lei
CONTESTABLE WOKRS PROJECT MANAGER
Ph: 02 9853 7905
Email: Jonathan.Lei@endeavourenergy.com.au

31/10/2019

Jemena Limited
ABN 95 052 167 405

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Calibre Consulting Pty Ltd
PO Box 8300
Baulkham Hills BC,
N.S.W. 2153

Att: Mr. Mark Obuchowski

Dear Mark:

RE: **Provision of Gas Services - Pondicherry Part Precinct**

Natural Gas is available in the vicinity and could be extended to supply this proposal.

Our policy is to extend gas mains to all developments wherever possible, depending upon economic viability.

In consideration of our shareholders' interests and under NSW regulation, Jemena Gas Networks (NSW) Ltd is required to ensure that any extension of the natural gas distribution system is commercially viable and therefore must assess each request for supply on an individual basis.

Upon the provision of the final approved layouts and gas Load configurations for the development a full economic evaluation can be undertaken to determine the availability of natural gas to the area.

A contribution may be required to assist in the economic viability of the proposals.

To assist in the planning of supply to this area

- I can confirm that Jemena has a suitable gas main located on the corner of Peter Brock Drive and Oran Park Drive and this main currently has sufficient capacity to service the proposed lots at this time.
- To enable a thorough economic evaluation to be undertaken we will require an accurate breakdown of the dwelling and any commercial loads proposed for the site once all approvals and zonings are in place.
- In order to enhance the viability of gas supply to the region the developer should allow for the provision of all trenching required throughout their site at no cost to Jemena. In order to access the site initially the opportunity to have a trench provided in conjunction with other utilities would be welcomed and may reduce the level of contribution required.

Jemena Gas Networks looks forward to providing the many benefits of Natural Gas to this area; to allow a full supply assessment to be undertaken Jemena will require planning approval advice and all relevant drawings to be provided once available, Jemena can then arrange for a full supply assessment to be undertaken.

Thank you for your enquiry. If further information or assistance is required, please do not hesitate to contact me on 0402 060 241.

Yours faithfully

Greg Knight

Greg Knight
Network Development Manager

CONTACT US

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