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South Creek West Belmore Road Precinct

Infrastructure Servicing Strategy

August 2024

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Author	R. Higgisson	**Reviewed**	C. Avis

1 Introduction

This report summarises the infrastructure investigations relating to the infrastructure strategies for the South Creek West Belmore Road Precinct. The Belmore Road Precinct is located within the South Creek West Release Area, however it is yet to be rezoned for residential development.

The Belmore Road Precinct is expected to be developed into primarily low-density residential estates, with potential for mixed use and/or higher density development around local and town centres.

The Belmore Road Precinct is located within the South West Growth Area and is subject to the Western Sydney Growth Area Special Infrastructure Contribution (SIC) framework.

This report outlines a potential strategy for the provision of utility services for the Belmore Road Precinct. Specifically, this report will outline:

- Existing services within the vicinity of the Belmore Road Precinct
- Current and planned utilities infrastructure projects
- Implications of the above and potential servicing strategies for the proposed development of the Belmore Road Precinct

2 Belmore Road Precinct

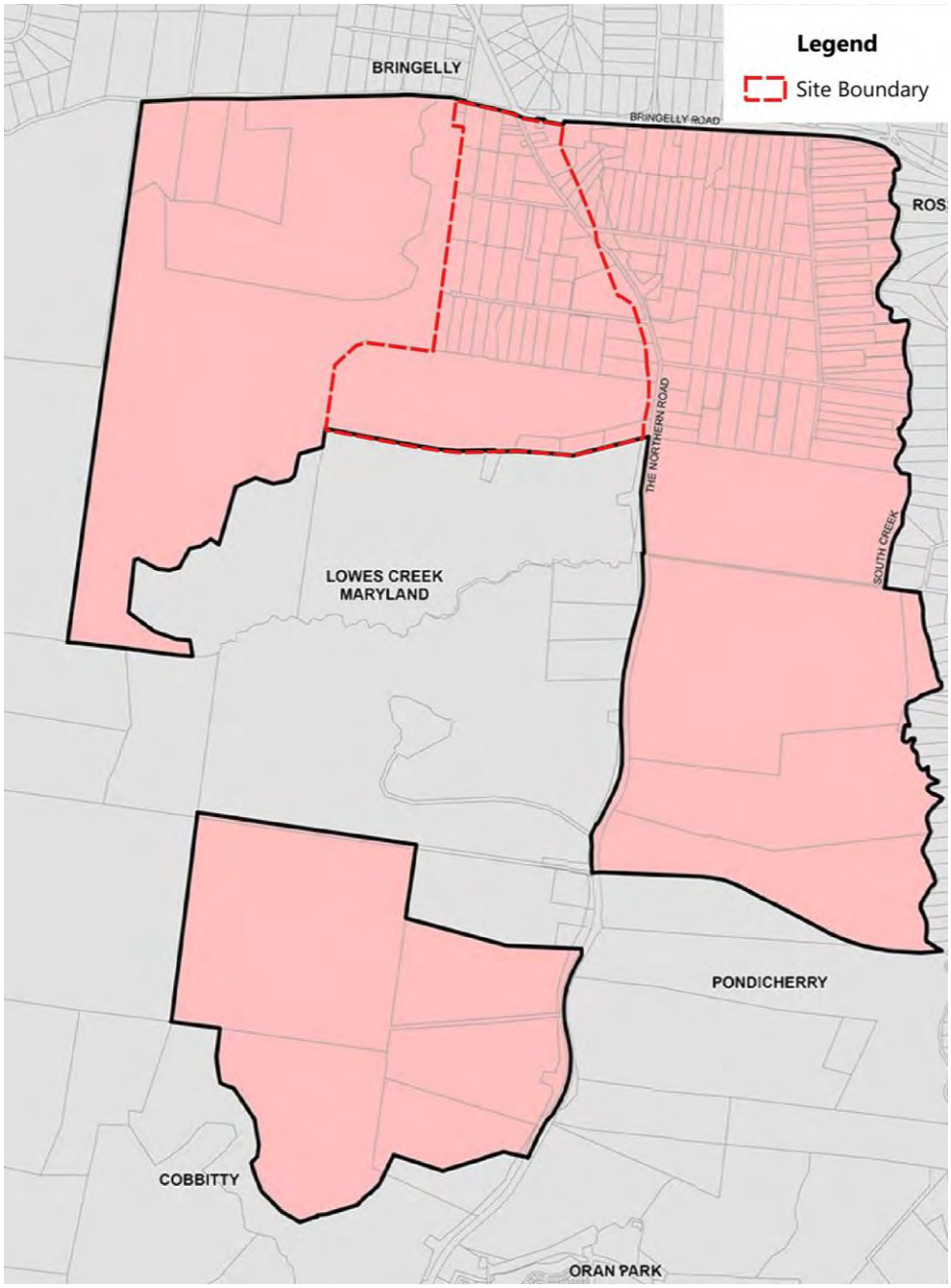
The South Creek West Belmore Road Precinct is located within the Camden LGA and is approximately 186 hectares in size. It is part of the South West Growth Area and is bound by The Northern Road to the east, Bringelly Road to the north and existing rural properties to the south and west. Importantly, to the south of the precinct is the Lowes Creek Maryland proponent led development site. The Belmore Road Precinct is currently zoned for agricultural purposes.

This area generally falls from south-west to north east and contains numerous creeks as is indicated in Figure 1.

Figure 1 – Belmore Road Precinct Cadastre and Hydrolines

The Belmore Road Precinct is situated within the South Creek West Release Area as defined by the NSW Department of Planning, Industry and Environment (DPIE). The South Creek West Release Area is shown in Figure 2. The area is 1,500 hectares in size and will be rezoned for urban development. It is anticipated that up to 30,000 new homes will be provided within the South Creek West Release Area.

Figure 2 - South Creek West Release Area



Source: NSW Department of Planning, Industry and Environment (2020)

2.1 Proposed Development

The Belmore Road Precinct will be rezoned as part of the South Creek West Release Area to provide a mix of development typologies. For the purpose of this assessment we have assumed the maximum dwelling yield.

The ILP has been revised since the last revision of this report, prepared in July 2022. Key changes proposed to address comments from Council and public submissions include:

- Updates to the road network including:
  - Introduction of additional green streets into the ILP
  - Replacement of the landscape buffer along The Northern Road with a new street typology
  - Additional north-south lots across the Precinct
  - Removal of collector road between the two southern playing fields
  - Introduction of laneways west of the northern playing fields
  - Removal of sub-arterial road to reflect Lowes Creek Maryland gazetted proposal
- Updates to the Wentworth Road Investigation Area including:
  - Introduction of employment uses surrounding the local heritage item
  - Introduction of Low Density Band 1 residential
  - Introduction of an 8,000sqm local park
- Updates to open space including:
  - Introduction of a new open space category – tree retention (where tree retention is prioritised)
  - Introduction of a local park on the RMS landholdings north of Belmore Road
  - Relocate and increase the size of Local Park 7 from 4,000sqm to 5,000sqm
  - Increase the size of Local Park 8 from 6,000sqm to 7,000sqm
  - Introduction of a linear park in the south-west portion of the site, connecting the ridgeline to the riparian corridor
- Changes to residential areas including:
  - Removal of any residential land from the PMF flood level
  - Introduction of additional medium density on the RMS landholdings south of Belmore Road
  - Replacement of Low Density Band 2 with Medium Density Band 1 north of the northern playing fields
  - Introduction of Environmental Living lots on the south-west ridgeline
- Relocation of the future educational establishment onto the proponent's landholdings
- Introduction of a small retail centre within the south-west portion of the site

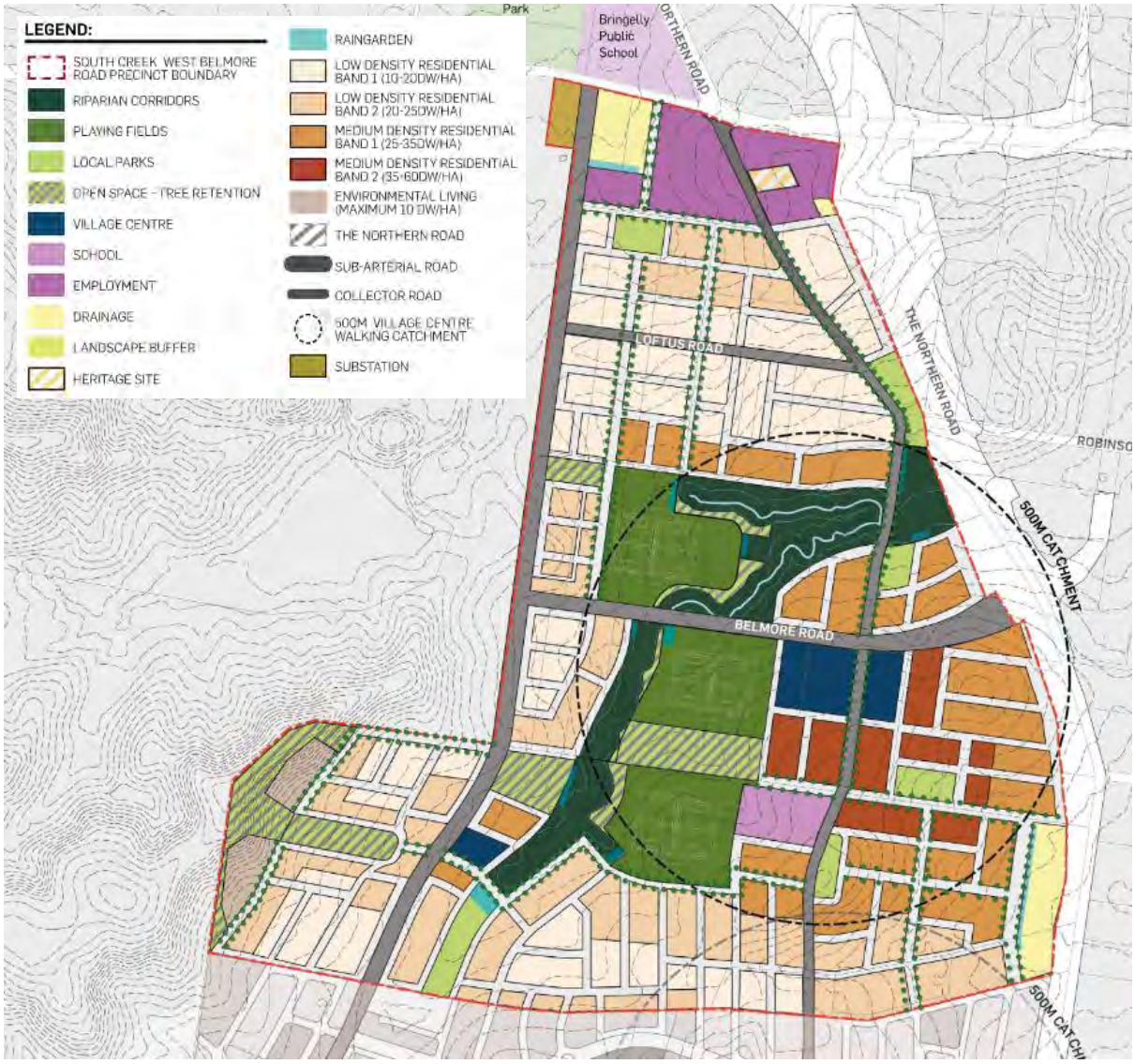
A breakdown of the expected residential development is provided in Table 1.

Table 1 – Belmore Road Precinct Residential Development Breakdown

Land Use	Area (Ha)	Yield
Low Density Residential Band 1 (10-20 dw/ha)	41.6	831
Low Density Residential Band 2 (20-25 dw/ha)	35.4	885
Medium Density Residential Band 1 (25-35 dw/ha)	25.7	899
Medium Density Residential Band 2 (35-60 dw/ha)	7.3	440
Village Centre (2-3 Storey Apartments)	3.6	217
Total	**113.6**	**3,271**

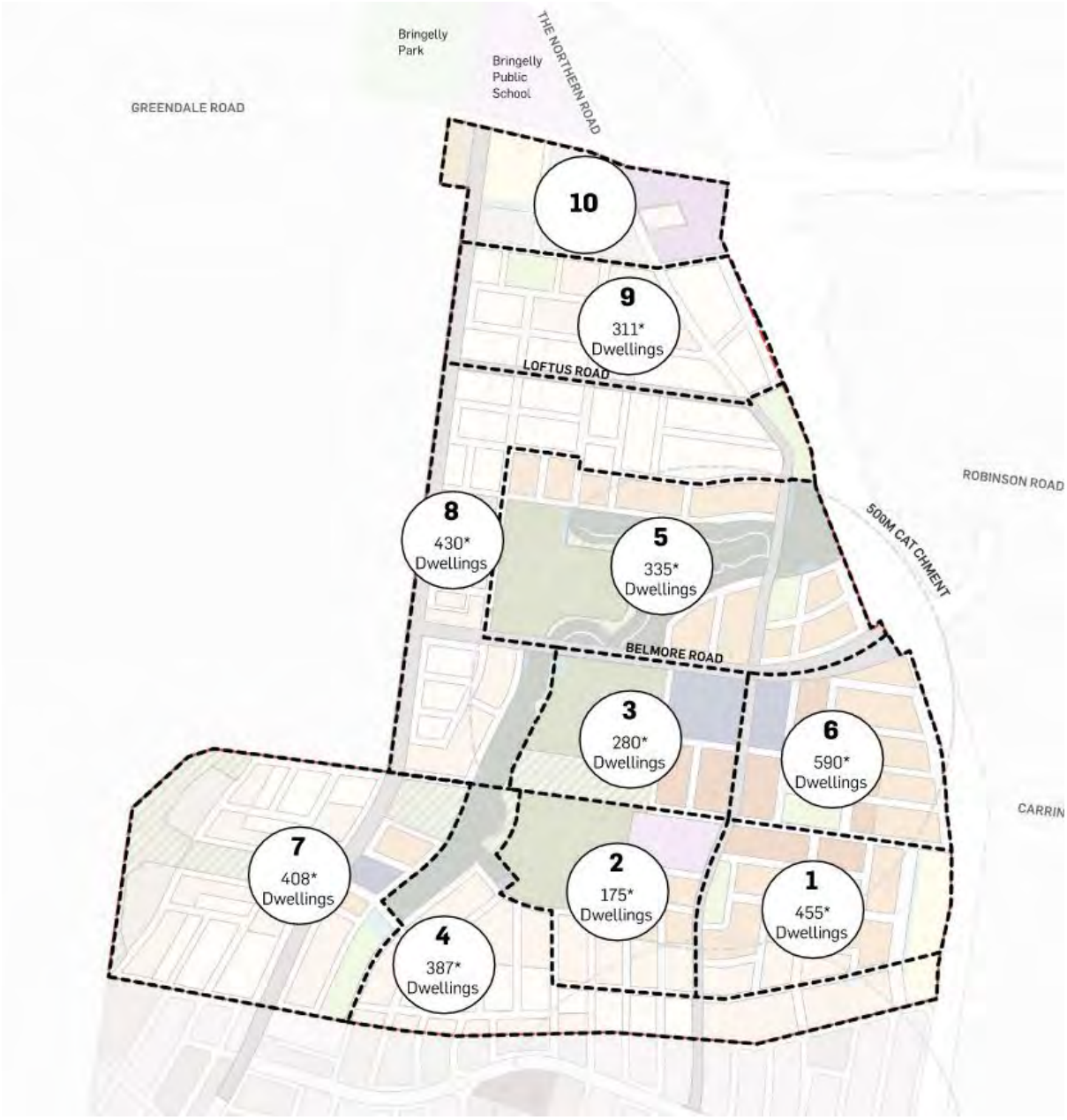
The proposed Indicative Layout Plan is shown in Figure 3.

Figure 3 - Proposed Development



The proposed staging plan for the Belmore Road Precinct is shown in Figure 4.

Figure 4 - Proposed Staging Plan



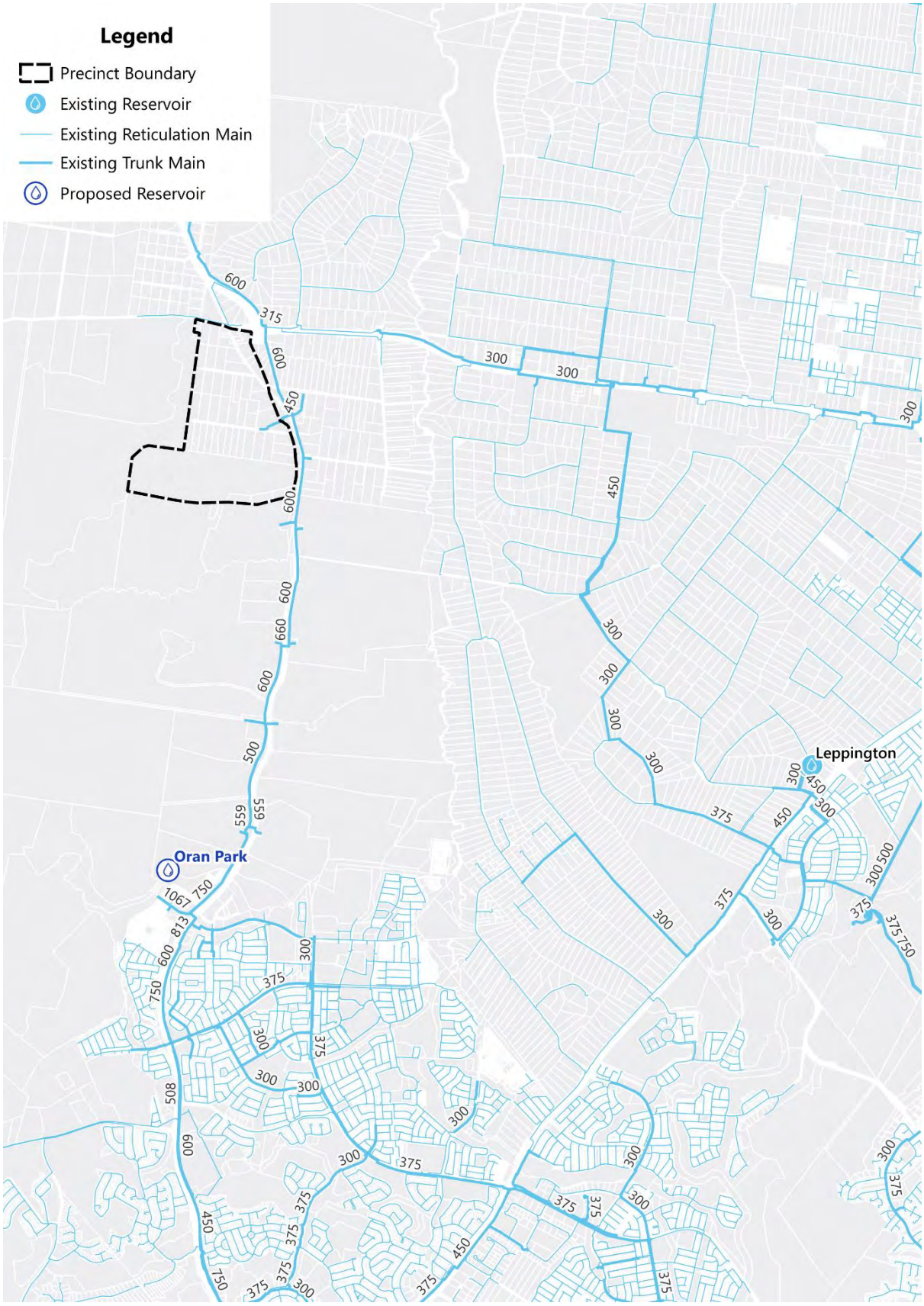
3 Water

3.1 Existing Network

The Belmore Road Precinct is not currently serviced by the Sydney Water potable water network. Existing infrastructure is largely located to the east of the Belmore Road Precinct on the Northern Road, supplying existing rural properties in Rossmore and Leppington, and recent developments in Oran Park, to the south of Belmore Road Precinct. The closest reservoir to The Belmore Road Precinct is the Leppington reservoir, located 6km to the south east.

Sydney Water have recently delivered two trunk potable water mains along The Northern Road. These mains will connect to two 24ML reservoirs which are currently being delivered at Oran Park. These reservoirs are located on the western side of The Northern Road and will be delivered in 2024. An indicative location is shown on the figure below. The trunk potable water network is shown in Figure 5 below.

Figure 5 - Existing Potable Water Network



3.2 Sydney Water Growth Servicing Plan

Sydney Water's Growth Servicing Plan (GSP) outlines the servicing strategy to support planned growth in Greater Sydney from 2024-2029. The GSP indicates that there are limited existing services until planned reservoirs at Oran Park are delivered in 2024. Services for the South Creek West precinct are in the design and delivery phase.

3.3 Feasibility Application

A feasibility application was lodged with Sydney Water to determine the servicing requirements for the site. The associated case number is 200326. Sydney Water advised that the development is planned to be serviced via the proposed Oran Park reservoirs which are currently scheduled for delivery in 2024. A copy of the feasibility response is provided in Appendix A.

3.4 Proposed Network

A high-level assessment was undertaken using the Water Supply Code of Australia (WSA) to determine the infrastructure requirements to support the proposed development. This involved determining the minimum trunk main size by calculating the peak hourly demand.

The maximum water demand rates were estimated using the WSA. These rates were used to determine the peak hour demand for each land use type. The results of the assessment are provided in Table 2.

Table 2 - Proposed Water Demand Calculations

Land Use	Max Day Demand (kL/day)	Peak Hour Demand (kL/hour)	Peak Demand (L/s)
Low Density	2,245.6	289.4	80.4
Medium Density	2,160.0	180.0	50.0
Village Centre (Apartments)	282.0	23.5	6.5
Retail & Employment	515.5	43.0	11.9
School	90.0	7.5	2.1
Open Space (Playing Fields)	112.3	7.0	2.0
Total	**5,405.4**	**466.8**	**129.7**

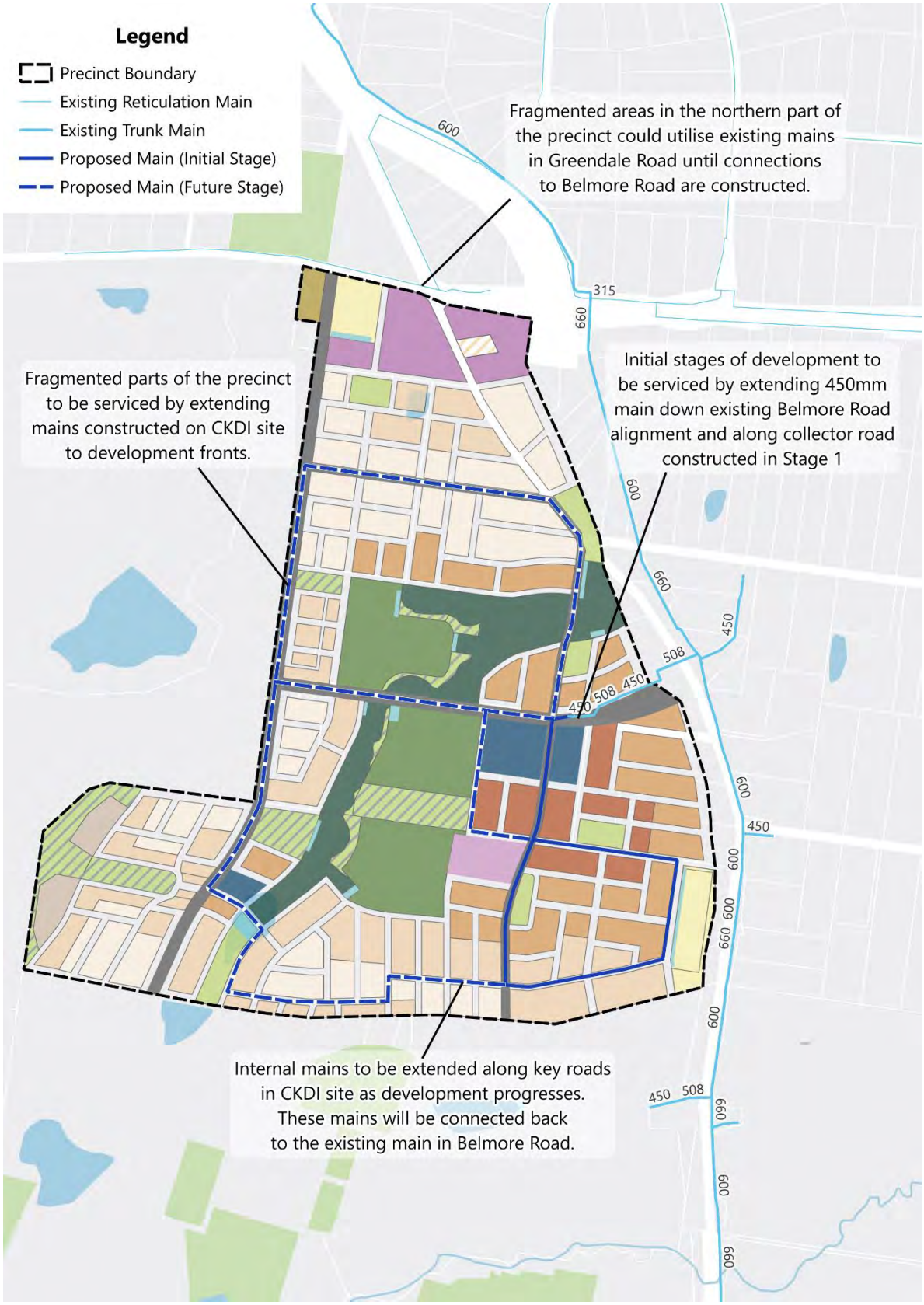
Based on the above assessment a trunk water main of approximately 350mm diameter would be required to support the proposed development. This may be provided through a series of smaller mains rather than a single 350mm main and would be subject to future options analysis, concept and detailed design. As discussed in Section 3.3, Sydney Water have advised that the Belmore Road Precinct will be supplied by the new Oran Park reservoirs, via the recently constructed trunk mains in The Northern Road.

3.5 Servicing Strategy

Initial stages of development will be serviced by extending the existing 450mm main in Belmore Road along the collector road constructed in Stage 1. Internal mains through the CKDI site will then be extended along key road corridors, and connected back to the existing main along Belmore Road.

To supply fragmented areas, the main along Belmore Road could be extended to development fronts. For development in the northern parts of the precinct, existing reticulation mains in Greendale Road could be extended to the site until these areas can be connected to new reticulation within the precinct. New water mains will be constructed within the standard shared trench allocation in the reserve of all new roads within The Belmore Road Precinct boundary. All roads within the precinct boundary will be delivered by the proponent. The proposed potable water servicing strategy is shown in Figure 6.

Figure 6 – Water Servicing Strategy



4 Sewer

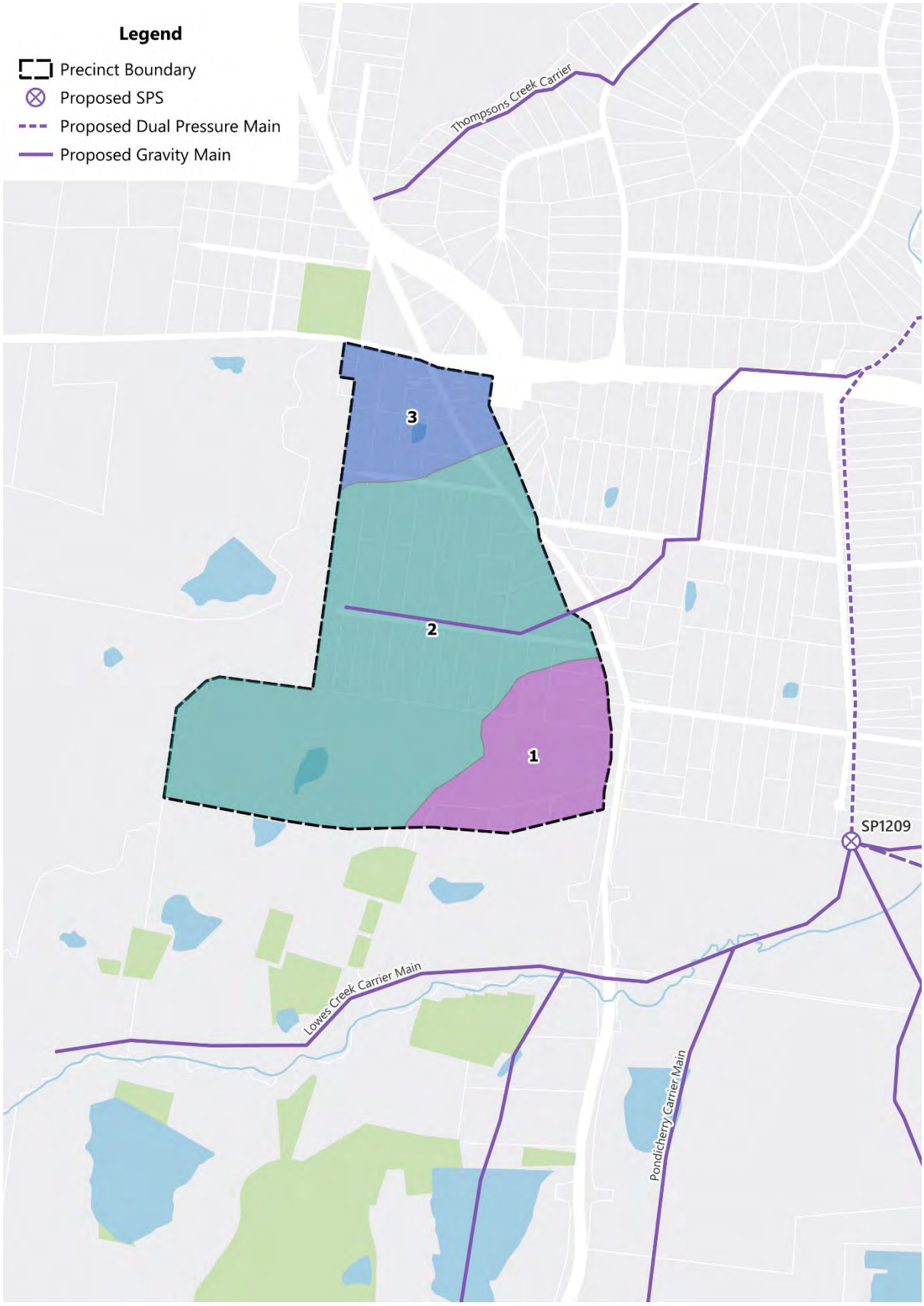
4.1 Existing Network

The Belmore Road Precinct and surrounding area are not currently serviced by the Sydney Water sewer network. Existing rural properties in the area utilise on-site septic systems for sewage collection and disposal. Newer developments within Oran Park, Harrington Park and Turner Road, located to the south of the Belmore Road Precinct, are serviced by the Sydney Water sewer network. Sewer from these developments is transferred to the West Camden Water Recycling Plant (WRP), located approximately 12km south west of the subject site.

The SWGA and Aerotropolis are set to undergo significant change over the coming years which will require large investment in utilities infrastructure. Relevant to the Belmore Road Precinct are the Thompsons Creek Carrier and the Lowes Creek Lead-In (shown in Figure 7 below). This infrastructure drains northwards, towards the future Upper South Creek Advanced Water Recycling Centre (AWRC).

The Belmore Road Precinct falls into three sewer catchments which are shown in Figure 7.

Figure 7 – Sewer Catchments & Trunk Infrastructure

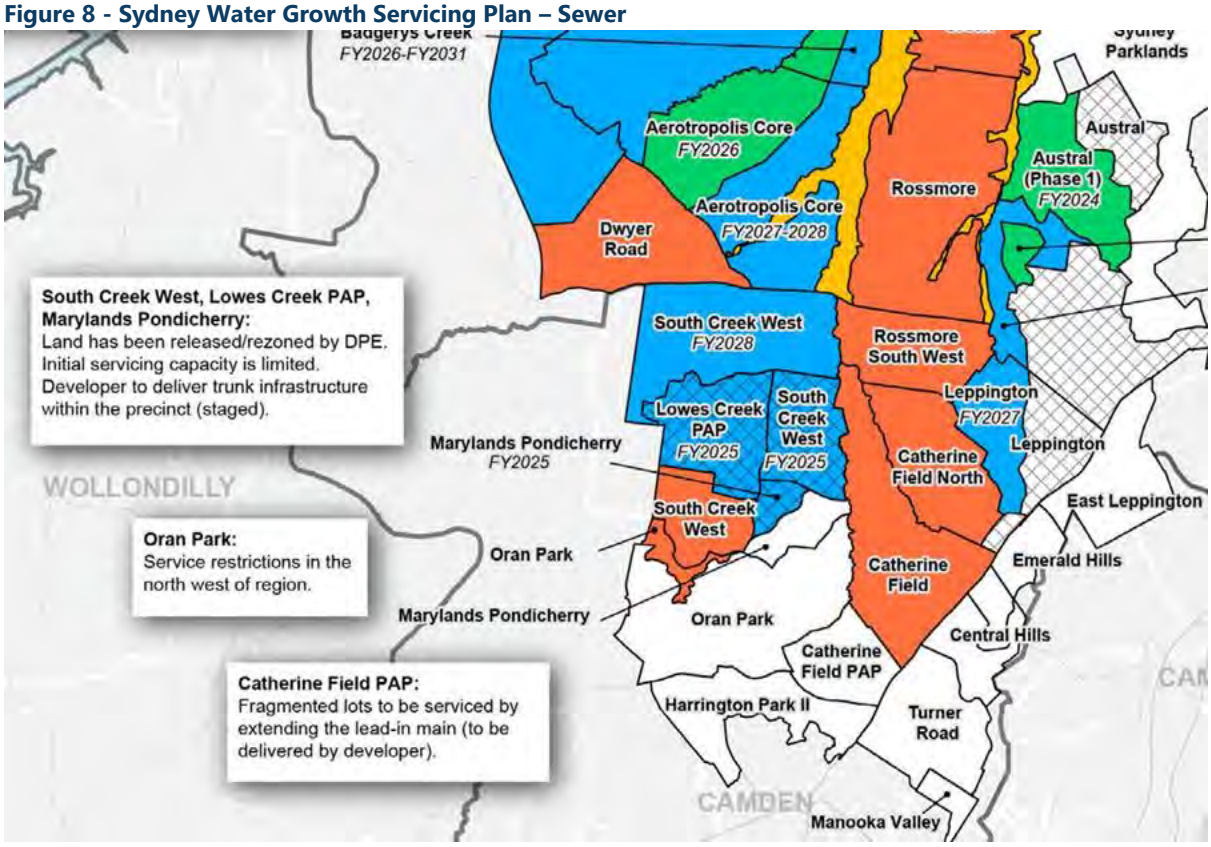


4.2 Sydney Water Growth Servicing Plan

Sydney Water's GSP indicates that the South Creek West Release Area is in the concept planning phase (indicated in blue on Figure 8), with infrastructure delivery currently planned for the 2028 financial year.

The plan indicates that trunk infrastructure will service initial development within the Belmore Road Precinct and infrastructure is expected to be delivered by developers.

Figure 8 - Sydney Water Growth Servicing Plan – Sewer



Source: Sydney Water Growth Servicing Plan (2024)

4.3 Feasibility Application

A feasibility application was lodged with Sydney Water to determine the servicing requirements for the site. The associated case number is 200326. Sydney Water advised that the development is planned to be serviced by the Upper South Creek AWRC, which will be operational by 2026.

The development is located within the Thompsons Creek catchment, and Sydney Water are currently seeking funding for concept designs of trunk wastewater infrastructure within this catchment. This infrastructure is expected be delivered in 2028.

While part of the site falls within the natural drainage catchment of SP1209, Sydney Water have advised this infrastructure has been designed to cater for existing zoned land and there is no capacity to service development within the Belmore Road Precinct.

4.4 Proposed Network

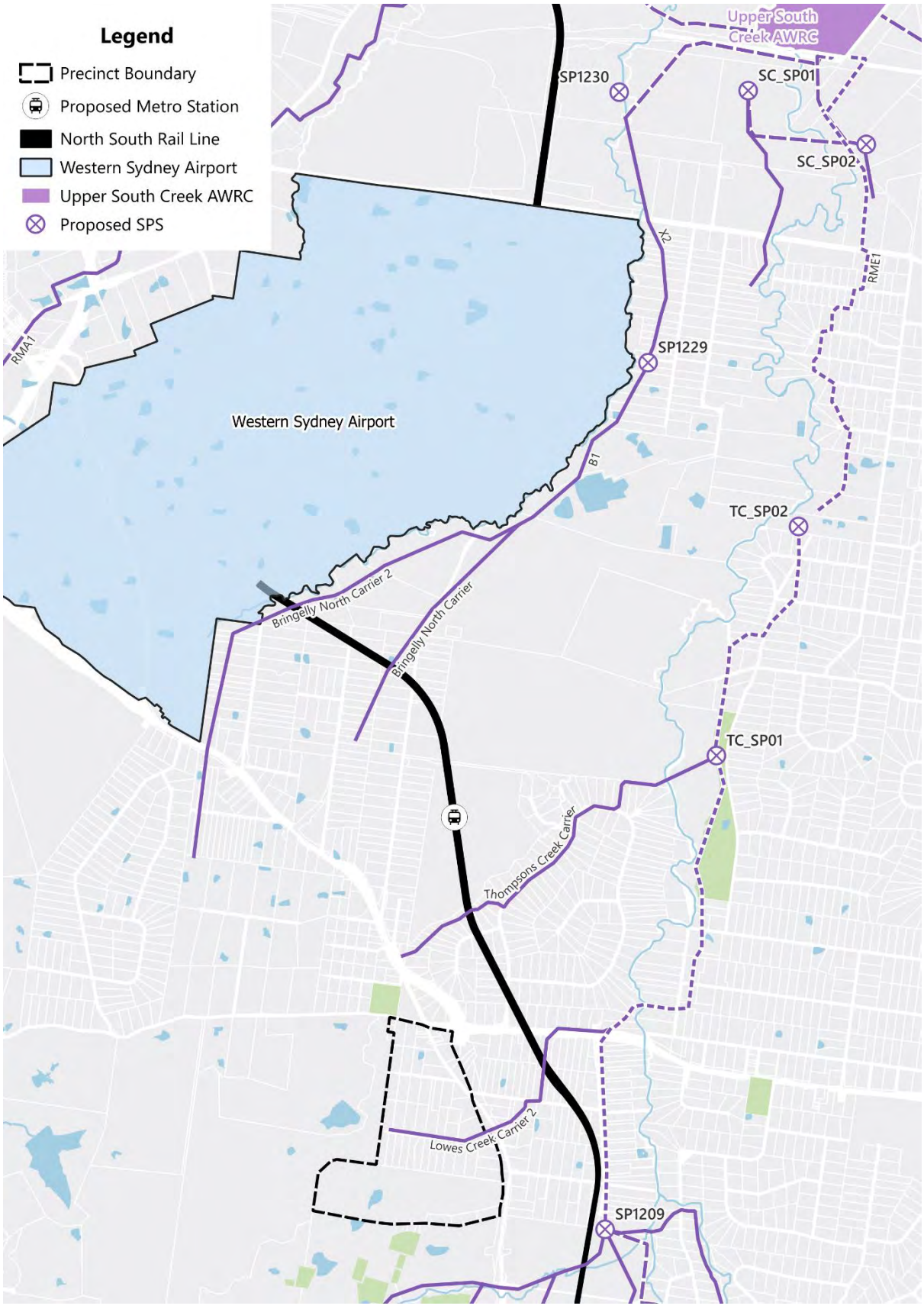
As discussed in Section 4.1 and shown in Figure 7, the Belmore Road Precinct contains three distinct sewer catchments. Catchment 1 naturally drains towards a future sewer pump station at Lowes Creek (known as SP1209). This pump station will temporarily transfer flows to the West Camden WRP and will have an interim capacity of 4,000 dwellings. Once the Upper South Creek AWRC is operational in 2026, and the required lead-in infrastructure has been constructed, flows from SP1209 will be transferred to the AWRC via a dual pressure main connection to the AWRC. The AWRC will be located near the confluence of South Creek, Badgerys Creek and Kemps Creek, north of Elizabeth Drive.

Catchment 2 naturally drains to a proposed carrier main which bisects the site (Lowes Creek Carrier 2), which is located within Sydney Water's Thompsons Creek Stage 2 works. The infrastructure to support Stage 2 is currently planned for delivery in 2028.

Catchment 3 naturally drains to the Thompsons Creek Carrier, located to the north of the Belmore Road Precinct. The Thompsons Creek Carrier will also service areas within the Aerotropolis Core Precinct. The Thompsons Creek Carrier forms part of Sydney Water's Thompsons Creek Stage 1 works, which is currently planned for delivery in 2026.

The trunk regional sewer infrastructure within the vicinity of the site is shown in Figure 9.

Figure 9 - Regional Sewer Strategy



4.5 Servicing Strategy

As discussed in the Sections above, the Belmore Road Precinct falls into three sewer catchments, however Sydney Water have advised that there is insufficient capacity at SP1209 to service Catchment 1, which forms the first stage of development. We have undertaken a high-level analysis to determine the most efficient way to provide sewer servicing to this catchment and the broader Belmore Road Precinct.

Given the capacity constraints at SP1209, two interim servicing options have been explored for the Belmore Road Precinct. These options include:

- Provision of a pump station to convey flows from Catchment 1 to Catchment 2 where flows will drain to the Lowes Creek Carrier 2
- Provision of pump stations to convey flows from Catchments 1 and 2 to the Thompsons Creek Carrier (if development progresses ahead of the Lowes Creek Carrier 2 being constructed)

These options are explored further in the following sections.

A high-level assessment of the required trunk sewer infrastructure was undertaken using the Sewage Supply Code of Australia (SSA). The load on the sewer network is expressed in Equivalent Population (EP). The EP for each land use were extracted from the SSA. For residential uses, EP is expressed as a rate per dwelling. For non-residential uses, EP is expressed as a rate per hectare of development (gross). The proposed land uses were split based on the catchments shown in Figure 7. The approximate total EP for each catchment was then calculated using the EP rates tabulated below.

Table 3 – Calculated Equivalent Population

Land Use	EP Rate	Catchment 1	Catchment 2	Catchment 3	Total EP
Low Density Residential	3.5/dw	875	3,885	864	5,614
Medium Density Residential	3/dw	2,095	2,364	-	4,458
Town Centre Units	2.5/dw	-	700	-	700
School	100	-	100	-	100
Employment & Retail	75/Ha	-	279	504	783
Total		**2,993**	**7,705**	**1,372**	**12,069**

Based on the above, a total equivalent population of 12,069 is expected within the Belmore Road Precinct.

Approximate trunk main sizing requirements have been estimated for each catchment based on the above EP values. Catchment 1 will require a 225mm main, Catchment 2 a 300/375mm main and Catchment 3 a 225mm main.

As discussed above, the sizing of the trunk carrier mains that will ultimately service the development are unknown at this stage. Given that these trunk mains will service a larger catchment including development outside the Belmore Road Precinct, it is likely these mains will be considerably larger than this.

4.5.1 Option 1 – Connect to Lowes Creek Carrier 2

The Lowes Creek Carrier 2 falls within the second package of works which will be delivered by Sydney Water to support the Thompsons Creek catchment. These works are expected to be delivered in 2028.

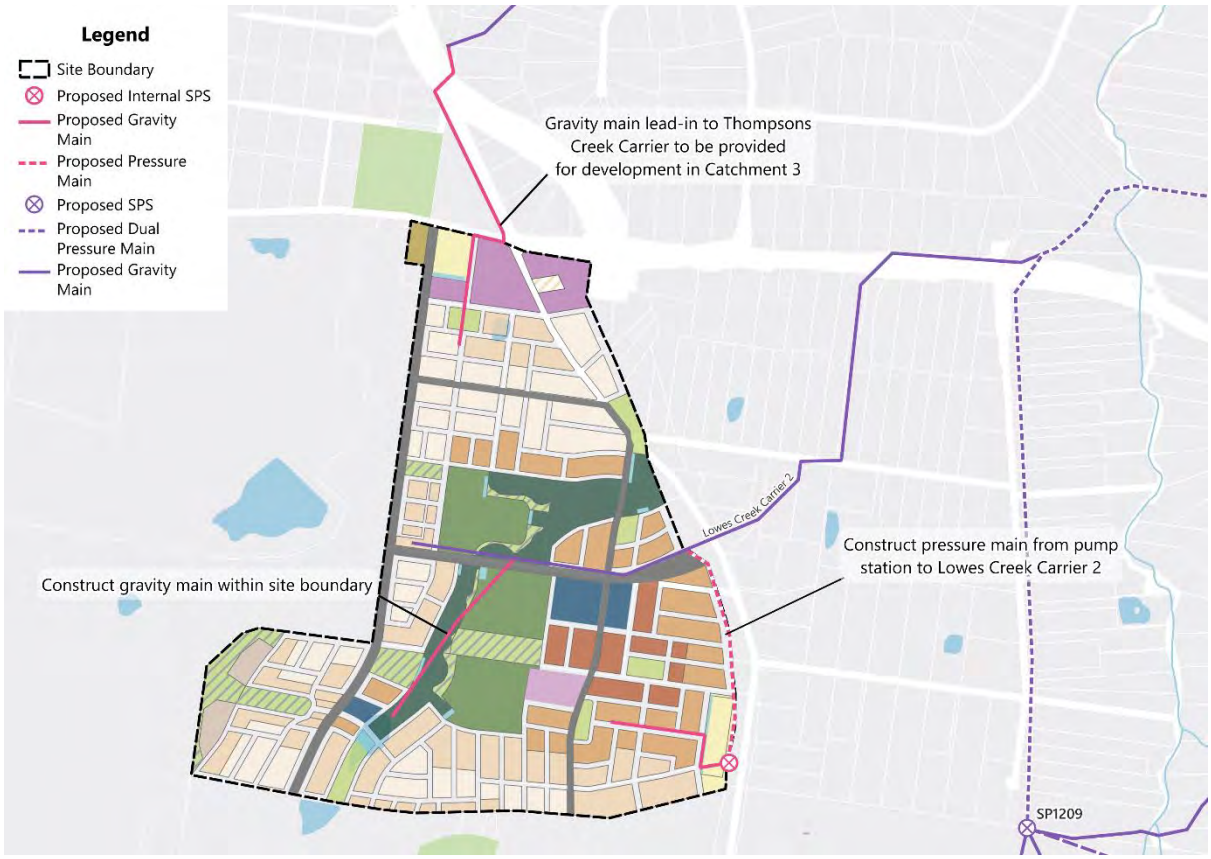
If this infrastructure is delivered on time, a pump station could be provided at the low point of Catchment 1 to transfer flows from initial stages of development to this infrastructure. Development within Catchment 2 would drain directly to this Carrier.

A high-level estimate of the costs associated with Option 1 are summarised in Table 5. This estimate assumes that the length of the Lowes Creer Carrier 2 located within the Precinct boundary will be delivered as part of the development works, while lengths outside the Precinct boundary will be delivered by Sydney Water.

Table 4 – Sewer Option 1 Cost Estimate

Item	Unit	Benchmark Rate	Quantity	Cost
New 225mm dia uPVC sewer gravity main servicing Catchment 3 and connecting to Thompsons Creek Carrier	m	$350	920	$322,000
New 225mm dia uPVC sewer gravity main servicing Catchment 1	m	$350	500	$175,000
New 250mm dia sewer rising main from Catchment 1 to Lowes Creek Carrier 2	m	$400	740	$296,000
New Sewer Pump Station	Item	$1,500,000	1	$1,500,000
New 300mm dia uPVC sewer gravity main servicing Catchment 2 and connecting to Lowes Creek Stage 2 Carrier	m	$500	1,520	$760,000
Underbore of Northern Road	item	$600,000	1	$600,000
			Approx. Total (excl contingency)	$3,653,000

Figure 10 - Proposed Sewer Option 1



4.5.2 Option 2 – Connect to Thompsons Creek Carrier

As mentioned above, the Thompsons Creek Stage 1 infrastructure is expected to be delivered in 2026. It is expected that this infrastructure will include the Thompsons Creek Carrier. As this infrastructure is likely to be delivered ahead of the Lowes Creek Carrier 2, flows from Stage 1 of the development could be transferred to Catchment 3 via a pump station and a lead in will be constructed from the site boundary to the carrier.

This infrastructure could also be used to support Catchment 1 and early stages of Catchment 2, should development progress ahead of the delivery of the Lowes Creek Carrier 2. In this case, flows from Catchment 2 would also be transferred to Catchment 3 via a pump station.

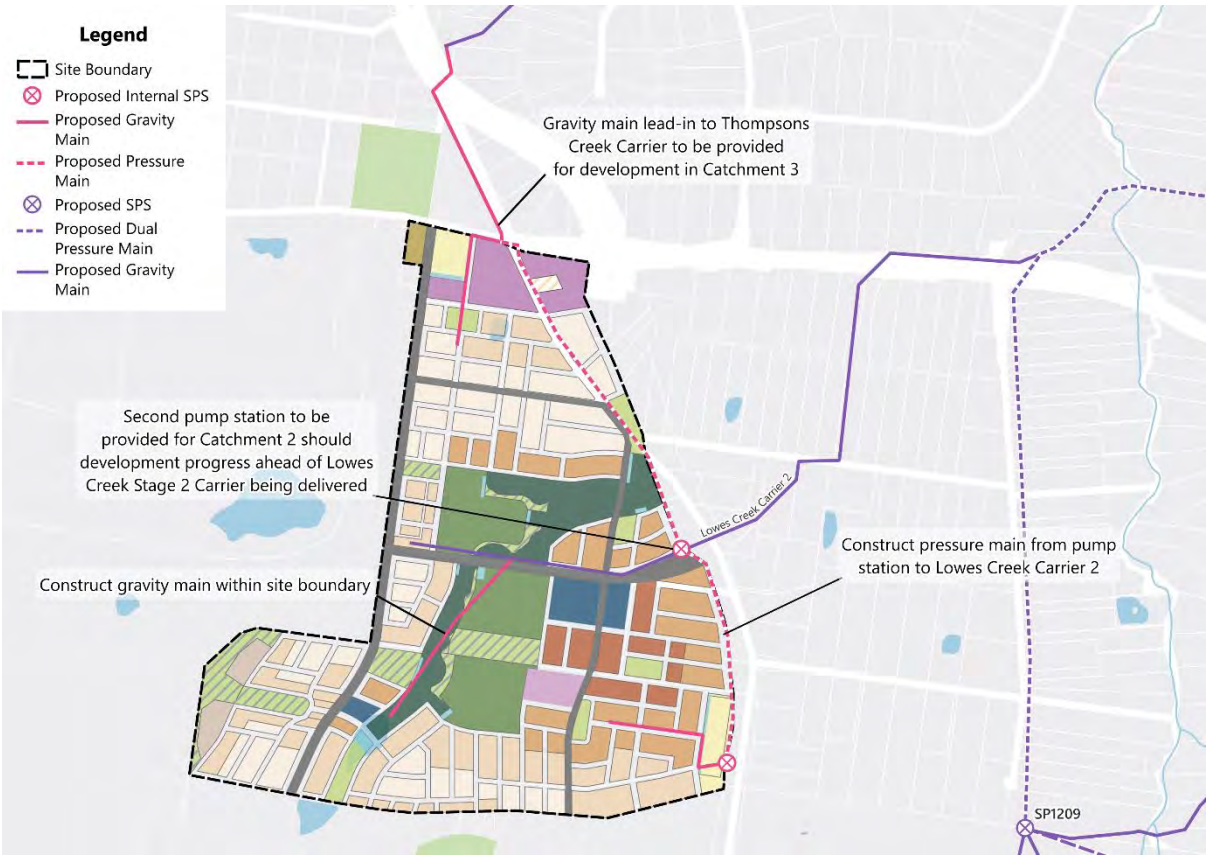
Once the Lowes Creek Stage 2 Carrier is operational, later stages of development within Catchment 2 could connect to this infrastructure via a gravity lead-in.

A high-level estimate of the costs associated with Option 2 are summarised in Table 5. It should be noted that the connection point for lead-in mains on the respective carrier mains are unknown and have been estimated for this assessment.

Table 5 – Sewer Option 2 Cost Estimate

Item	Unit	Benchmark Rate	Quantity	Cost
New 225mm dia uPVC sewer gravity main servicing Catchment 3 and connecting to Thompsons Creek Carrier	m	$350	920	$322,000
New 225mm dia uPVC sewer gravity main servicing Catchment 1	m	$350	500	$175,000
New 250mm dia sewer rising main from Catchments 1 & 2 to Thompsons Creek Carrier	m	$400	1,910	$764,000
New Sewer Pump Stations	Item	$1,500,000	2	$3,000,000
New 300mm dia uPVC sewer gravity main servicing Catchment 2 and connecting to Lowes Creek Stage 2 Carrier	m	$500	1,520	$760,000
Underbore of Northern Road	item	$600,000	1	$600,000
			Approx. Total (excl contingency)	$5,621,000

Figure 11 - Sewer Option 2



4.6 Staging

We have prepared a high-level staging plan based on the above sewer servicing options. The staging plan assumes 300 lots are delivered each year, starting in 2028.

This staging is based on Option 1 and assumes that the Lowes Creek Carrier 2 will be commissioned in 2028 and be available for connection. In this scenario, Catchment 1 will require a pump station to transfer flows to Catchment 2, where flows will connect to the Lowes Creek Carrier 2. A summary of the staging plan is provided in Table 6.

Table 6 - Staging

Stage	Year	Catchment	Dwellings	Dwellings Total	Key Infrastructure
1	2028	1	300	300	Lowes Creek Carrier 2, SPS and rising main for Catchment 1
1/2	2029	1/2	300	600	
2/3	2030	2	300	900	
3/4	2031	1/2	300	1,200	
4/5	2032	2	300	1,500	
5/6	2033	2	300	1,800	
6	2034	2	300	2,100	
6/7	2035	2	300	2,400	
7/8	2036	2	300	2,700	
8	2037	2	300	3,000	
8/9	2038	2/3	3,11	3,371	Developer lead-in to Thompsons Creek Carrier

5 Electricity

5.1 Existing Network

The Belmore Road Precinct is located within the Endeavour Energy (EE) electrical supply zone. The Bringelly Zone Substation (ZS) is located adjacent the north west corner of the Belmore Road Precinct boundary. Endeavour Energy have indicated that there is limited available capacity in this zone substation to support additional growth. EE estimate that two existing 11kV distribution feeders from this ZS have capacity for 795 additional dwellings.

Existing substations are also located at North Leppington, on Bringelly Road at Eastwood Road, and at Oran Park, located on The Northern Road near Dick Johnson Drive.

EE are planning for two new ZS within the vicinity of the precinct. The Bradfield City ZS will be located within the Aerotropolis Core precinct and support growth in this area. The Maryland ZS will be located on the western side of The Northern Road, approximately 2km south of the precinct. This ZS is flagged for delivery in 2027.

The Belmore Road Precinct is bisected by twin 132kV overhead Sub-Transmission Lines. These Sub-Transmission Lines have an associated easement width of 30m.

Figure 12 - Existing High Voltage Electrical Network

5.2 Endeavour Energy Regulatory Proposal

Endeavour Energy's latest Regulatory Proposal outlines their planned investment to maintain and support growth in the electricity network from 2024-2029. Within the South West Growth Area, EE plan to invest approximately $22 million on growth projects to ensure connection capacity is available to meet planned growth in the area.

This includes a new substation at Maryland which will support development in the Lowes Creek Maryland and South Creek West precincts. It is anticipated that 11,000 lots will be delivered which will generate an ultimate load of 44MVA. Initial development in the area will be supplied by the Oran Park and Bringelly ZS before the delivery of the new ZS.

A new substation will also be provided within the Aerotropolis Core on Badgerys Creek Road. This substation is expected to be delivered after 2025.

5.3 Proposed Network

A high level assessment was undertaken to determine the electrical servicing requirements for the precinct. The electrical demand generated by the proposed development was calculated using residential electrical demand rates provided by Endeavour Energy, and non-residential demand rates extracted from *AS/NZS 3000 Wiring Rules*. The results are tabulated below.

Table 7 – Endeavour Energy Demand Forecast

Land Use	Dwellings/GFA	ADMD per Dwelling/GFA (kVA)	Forecast Load (MVA)
Low Density	1,604	5.4	8.7
Medium Density	1,486	4.5	6.7
High Density	280	3.3	0.9
School	9,000*	0.06	0.5
Retail	28,200*	0.07	1.9
Commercial	39,365*	0.08	3.1
Total			**21.9**

*Assumed GFA equals 50% of site area

Based on the assumption that a single 11kV HV feeder can supply approximately 4.5MVA, the proposed development would require 4-5 11kV feeders over time.

IDC have engaged with Endeavour Energy to determine a servicing strategy to suit the proposed development. As mentioned above, EE advised that there are two existing 11kV distribution feeders from Bringelly ZS located along The Northern Road which have capacity for approximately 795 dwellings based on an average ADMD of 4.4kVA per dwelling across the three tabled categories of residential land use. New distribution feeders would be required to be developed to service dwelling numbers exceeding 795 dwellings.

EE is currently undertaking interim augmentation measures at the Bringelly ZS to provide three additional connection points for new distribution feeders. These connection points will service:

1. Early Aerotropolis development
2. Metro construction supply
3. Spare connection for other development

The development could utilise the spare connection if not taken by other developments including Agribusiness sites or Sydney Water infrastructure requirements. It should be noted that spare capacity cannot be reserved for developments and connection applications are assessed as they are received.

Alternative servicing options include extending distribution feeders from the North Leppington ZS or the Oran Park ZS in the interim period before a committed investment to either establish the Bradfield City ZS or augmentation of the Bringelly ZS (or a combination of both). At this point in time, availability of a new Bradfield City ZS or augmentation of Bringelly ZS is envisaged to occur between 2025 – 2030.

Both options would result in a 22kV serviced distribution network with suitably located special distribution substations (similar to typical padmount substations seen in suburban streets) to transition between the new 22kV network and the existing 11kV network supplied from North Leppington and Oran Park ZS. This could be located along the southern and eastern boundaries of the development where it interfaces with the Lowes Creek Maryland Precinct. A new underground 22kV distribution network would be required to support this.

EE is in the process of confirming the establishment of the Aerotropolis 132kV "foundation supply" feeder. This feeder would extend from the South Erskine Park ZS to the Bringelly ZS following Luddenham Road, Adams Road and the Northern Road. This feeder will provide transmission capacity within the Aerotropolis area. Key load centres such as the Sydney Science Park, Western Sydney Airport and the Aerotropolis Core will then connect to this 132kV transmission artery via new zone substations.

As part of this project, Bringelly ZS will have its existing 132kV busbar extended, making it suitable for subsequent augmentation and provision of 22kV output capacity of the substation.

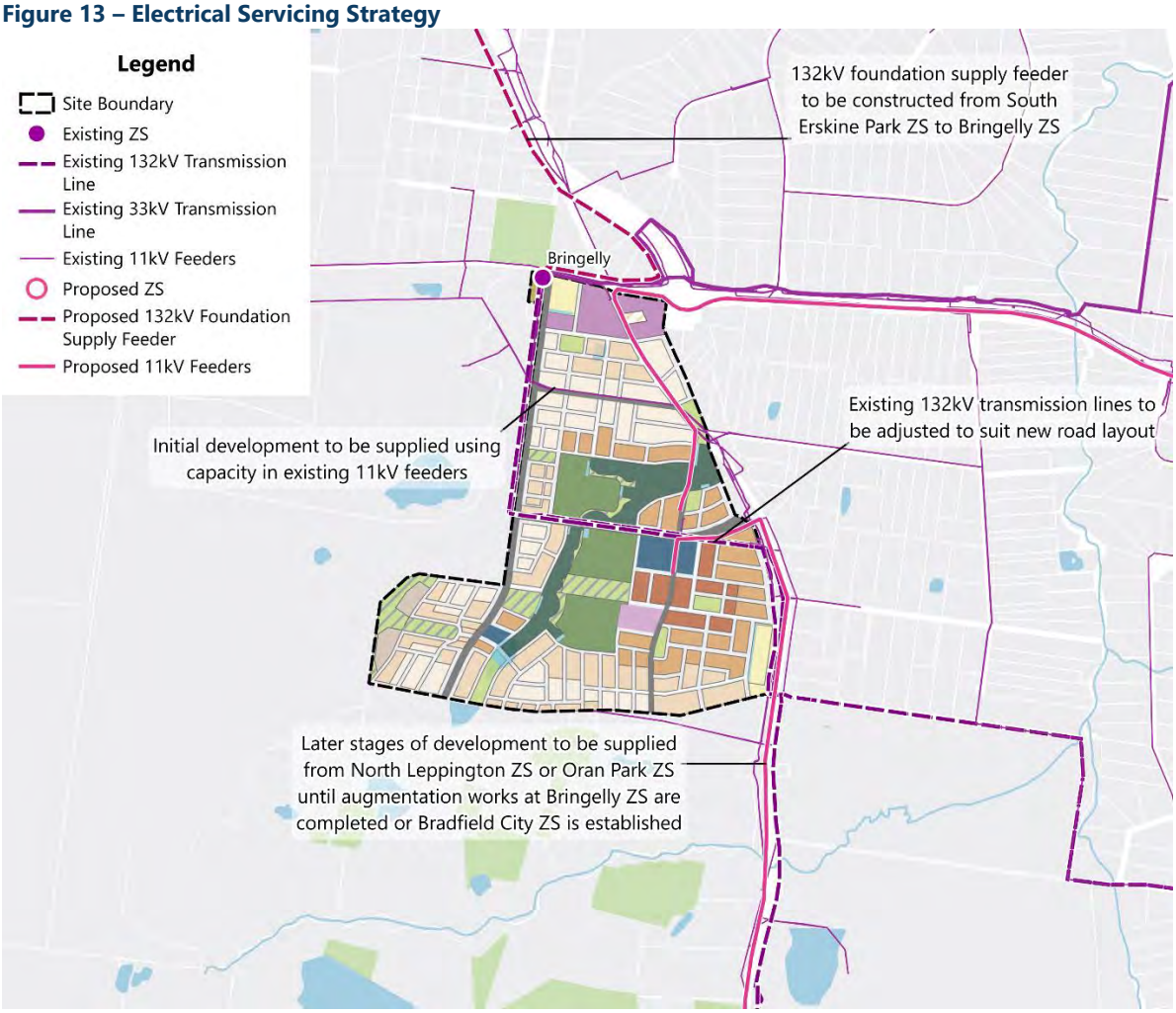
Endeavour Energy's servicing strategy for the site is provided in Appendix A.

5.4 Servicing Strategy

Existing high voltage feeders within the Belmore Road Precinct boundary will be decommissioned or, where required, relocated underground as new roads are constructed to ensure service to adjacent properties is maintained.

As discussed above, initial development may be serviced by leveraging any available capacity in existing high voltage feeders from Bringelly ZS as advised by Endeavour Energy. Subsequent stages of development will be supplied by constructing new high voltage feeders from the Oran Park or North Leppington substations within the standard shared trench allocation in the road reserve. The electrical servicing strategy for the Belmore Road Precinct is shown in Figure 13.

Figure 13 – Electrical Servicing Strategy



6 Telecommunications

6.1 NBN

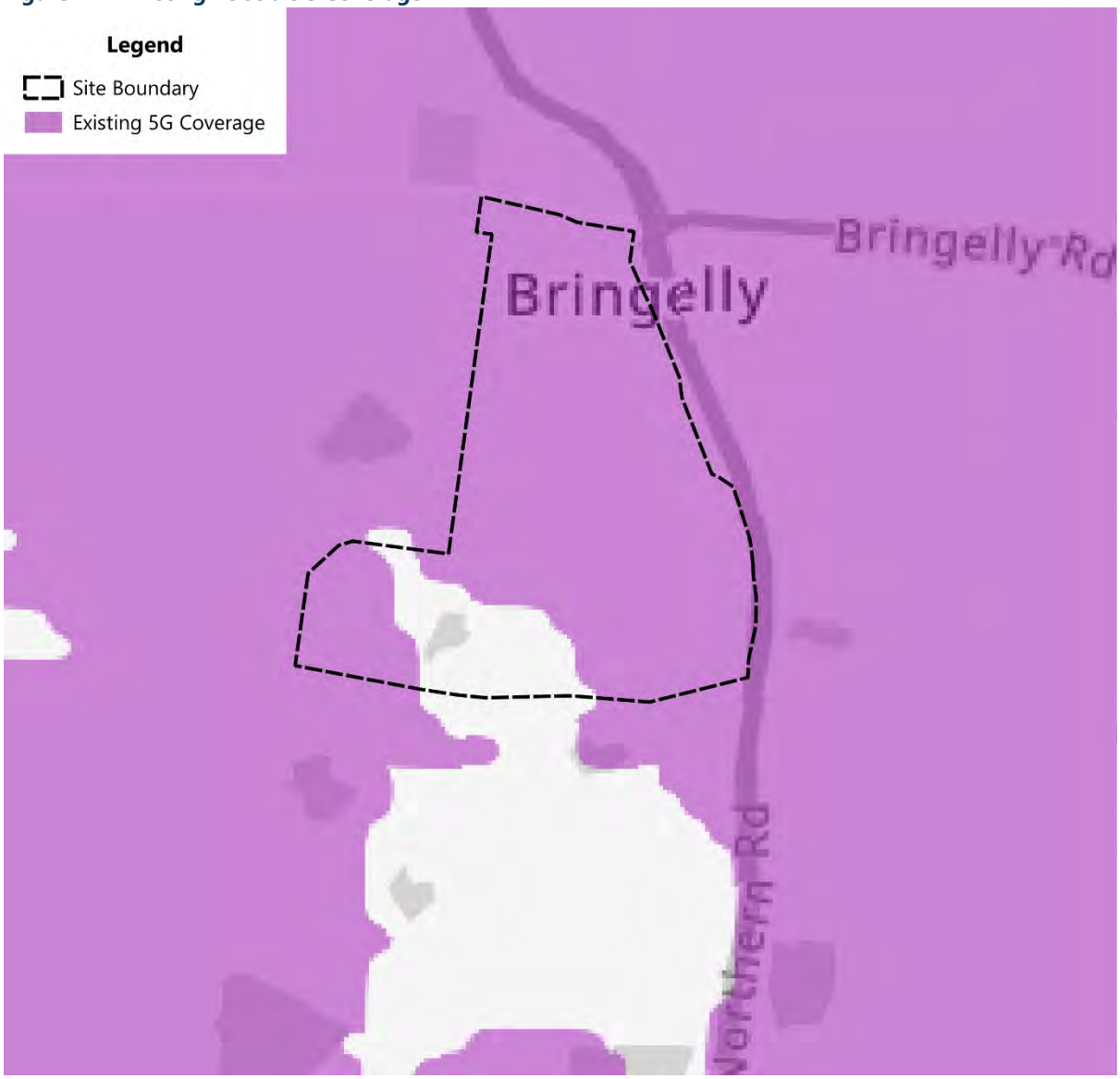
The Belmore Road Precinct will be serviced by NBN Co. fixed line connections. Fibre to the Kerb technology is currently available for the northern portion of the study area. The southern portion is covered by satellite connection, however it is expected that fixed line connections will be available in these areas as development progresses.

CKDI are currently engaging with NBN Co. to establish an agreement for servicing, however NBN Co. have confirmed that the proposed development is located within the fibre footprint and therefore qualifies to receive fibre infrastructure. Confirmation is provided in Appendix A.

6.2 5G Network

Rollout of Telstra's 5G network has commenced across western Sydney. Most of the Belmore Road Precinct can already access 5G coverage, with a small section in the southern part of the precinct yet to receive coverage. Figure 14 shows the existing 5G network coverage. Future infrastructure rollout across the South West Growth Area and Western Sydney Aerotropolis will be staged to match the pace of development. It is expected that 5G network coverage will extend across the whole Precinct over the coming years.

Figure 14 – Existing Telstra 5G Coverage



7 Conclusion

7.1 Water

The Belmore Road Precinct will be supplied potable water by the Oran Park reservoirs and associated trunk mains located along The Northern Road. Reservoir construction is expected to be completed in 2024.

New water mains will be constructed within the standard shared trench allocation in the reserve of all new roads within the Belmore Road Precinct boundary. For trunk supply, a 300mm ring main will be constructed along the key collector roads within the Belmore Road Precinct, with smaller reticulation mains constructed along local roads to supply dwellings. It is understood that no potable water lead ins will be required.

7.2 Sewer

The Belmore Road Precinct contains three distinct sewer catchments as shown in Figure 7:

- Catchment 1 naturally drains towards a future sewer pump station at Lowes Creek (known as SP1209). Sydney Water have advised that there is insufficient capacity at SP1209 to service Catchment 1, which forms the first stage of development.
- Catchment 2 naturally drains to the Lowes Creek Stage 2 Carrier, which is a dual pressure main which will transfer flows from SP1209 to the Upper South Creek AWRC. The delivery timing for this infrastructure is unknown at this stage, however it is unlikely to be operational prior to 2028.
- Catchment 3 naturally drains to the Thompsons Creek Carrier, located to the north of the Belmore Road Precinct.

Given the capacity constraints at SP1209 and the unknown delivery timing of the Lowes Creek Stage 2 Carrier, two interim servicing options have been explored for the Belmore Road Precinct. These options include:

- Provision of pump stations to convey flows from Catchments 1 and 2 to the Thompsons Creek Carrier
- A decentralised system (either pre-package plant and truck waste via Interim Operating Procedure (IOP), or on-site irrigation) with alternative water discharge off-site until the Upper South Creek AWRC is operational.

7.3 Electricity

IDC have engaged with Endeavour Energy to determine a servicing strategy to suit the proposed development. EE have advised that there are two existing 11kV distribution feeders which have capacity for up to (approx.) 800 dwellings. New distribution feeders would be required to be developed to service dwelling numbers exceeding 800 dwellings.

EE is currently undertaking interim augmentation measures at the Bringelly ZS to provide three additional connection points for new distribution feeders. These connection points will service:

4. Early Aerotropolis development
5. Metro construction supply
6. Spare connection for other development

The development could utilise the spare connection if not taken by other development.

Alternative servicing options include extending distribution feeders from the North Leppington ZS or the Oran Park ZS in the interim period before a committed investment to either establish the Aerotropolis ZS or augmentation of the Bringelly ZS (or a combination of both). At this point in time, availability of a new Aerotropolis ZS or augmentation of Bringelly ZS is envisaged to occur between 2025 – 2030.

7.4 Telecommunications

The Belmore Road Precinct will be serviced by NBN Co. fixed line connections. Fibre to the kerb technology is currently available for the northern portion of the study area. The development qualifies for NBN Co fibre technology, which is expected to be rolled out throughout the precinct.

Rollout of Telstra's 5G network has commenced across western Sydney. Parts of the Belmore Road Precinct can already access 5G coverage and it is expected that 5G network coverage will extend across the whole Precinct over the coming years.

Appendix A – Service Authority Correspondence

Case Number: 200326

August 25, 2022

CKDI Bringelly PTY LTD Atf
c/- INFRASTRUCTURE AND DEVELOPMENT CONSULTING.

Feasibility Letter

Developer:	**CKDI Bringelly PTY LTD Atf**
Your reference:	**Ingham Property Group site - Appin North**
Development:	**Lot 6 DP1216926 37 THE NORTHERN RD, Bringelly**
Development Description:	**The Belmore Road Precinct covers an area of 187 hectares with the South West Growth Area and will provide approximately 3,300 new dwellings with an estimated population of approximately 11,100 people.**
Your application date:	**June 24, 2022**

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what our 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.**

We have not allocated any system capacity to your proposal from the investigation into this Feasibility advice. This advice is only an indication of our systems and possible requirements as of today. Where there is system capacity, it may have been fully utilised by the time you obtain a Consent. The requirements applied to any approved Development proposal may differ significantly in the future since the original advice was issued.

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 (WSC).

We'll then send you either a:

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

These documents will be the definitive statement of our requirements.

There may be changes in our 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

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

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 Plumbing, building & developing page on our website.

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

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

   You must engage an authorised WSC 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 WSC (at any point in this process) you must write and tell us.

   You'll find a list of WSC's at Listed providers on our website.

   The WSC will be your point of contact with us. 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 our costs).

3. **Developer Works Deed**

   After the WSC has submitted your new application, they'll receive the 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 we've signed the documents, one copy will be returned to the WSC.

   The Deed sets out for this project:
   - your responsibilities
   - our responsibilities
   - 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

We've assessed your application and found that:

- **This development is planned to be serviced via the proposed Oran Park reservoirs which are currently scheduled for delivery in 2024.**

- **You must construct a water main extension to serve your development**. These works must be constructed by a constructor with the appropriate capability. Your Coordinator will be able to provide further advice about this.

- **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 proposed water main construction required above and your WSC 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) Our Property Service (Main to Meter) Installations Technical Requirements.

Before the Certificate can issue, your Coordinator must give us:

- All the "Work as Constructed" information that shows what was constructed
- Certification that the property service works comply with our 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.

We've assessed your application and found that:

- **Currently no wastewater is available to service this development.** This development is planned to be serviced by the new Upper South Creek (USC) Advanced Water Recycling Centre (AWRC) planned to be delivered in 2025/26.
    - The development is located within the Thompsons Creek catchment and funding is currently being sought for concept design of the trunk wastewater infrastructure within this catchment
    - Trunk wastewater is currently scheduled for delivery by 2026/27 and subject to funding approval

- **You must construct a wastewater main extension to serve your development**. The terms of the Deed define this extension as 'Major Works'.

Funding of works

Under our '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 our Schedule of Rates or via the Procurement process. Your WSC can advise you in relation to this policy, the likelihood of us sharing a portion of the cost and the process you need to satisfy our probity requirements.

If you do choose to request a quote through the Schedule of Rates for our 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 us until we:

- Have reviewed the detailed design
- Have reviewed the detailed construction quotations needed to meet our probity requirements

- Come to an agreement on the amount.

5. Ancillary Matters

5.1 Asset adjustments

After we issue this Notice (and more detailed designs are available), we may require that the water main/sewer main located in the footway/your property needs to be adjusted/deviated. If this happens, you'll 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**. We'll need to see the completed designs for the work, and we'll 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 our **Permission to Enter** form(s) for this. You can get copies of these forms from your WSC or on our website. Your WSC 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 us may include:

- water main shutdown and disinfection
- connection of new water mains to our system(s)
- design and construction audit fees
- contract administration, Operations Area Charge & Customer Redress prior to project finalisation
- creation or alteration of easements etc

- 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 WSC 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 from us 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 in our Tap in™ system Sydney Water Tap in ™.

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

If our stormwater channel, pipe, or culvert is located within ten (10) metres of your development site it must be referred to us for a detailed review.

Your Coordinator can tell you about the approval process including:

- Possible requirements
- Their costs
- Timeframes.

If your building plans need to be referred to us for detailed review you will be required to pay us for the costs associated with the detailed review.

Note: You must obtain our written approval before you do any work on our systems. We'll 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.*

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 our sewer main. This work must meet our 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 our soffit requirements for property connection and drainage.

Requirements for Business Customers for Commercial and Industrial Property Developments

If this property is to be developed for Industrial or Commercial operations, it may need to meet the following requirements:

Trade Wastewater Requirements

If this development is going to generate trade wastewater, the property owner must submit an application requesting permission to discharge trade wastewater to Sydney Water's sewerage system. You must wait for approval of this permit before any business activities can commence.

The permit application should be emailed to Sydney Water's Business Customer Services at businesscustomers@sydneywater.com.au

It is illegal to discharge Trade Wastewater into the Sydney Water sewerage system without permission.

A **Boundary Trap** is required for all developments that discharge trade wastewater where arrestors and special units are installed for trade wastewater pre-treatment.

If the property development is for Industrial operations, the wastewater may discharge into a sewerage area that is subject to wastewater reuse. Find out from Business Customer Services if this is applicable to your development.

Backflow Prevention Requirements

Backflow is when there is unintentional flow of water in the wrong direction from a potentially polluted source into the drinking water supply.

All properties connected to Sydney Water's supply must install a testable **Backflow Prevention Containment Device** appropriate to the property's hazard rating. Property with a high or medium hazard rating must have the backflow prevention containment device tested annually. Properties identified as having a low hazard rating must install a non-testable device, as a minimum.

Separate hydrant and sprinkler fire services on non-residential properties, require the installation of a testable double check detector assembly. The device is to be located at the boundary of the property.

Before you install a backflow prevention device:

1. Get your hydraulic consultant or plumber to check the available water pressure versus the property's required pressure and flow requirements.
2. Conduct a site assessment to confirm the hazard rating of the property and its services. Contact PIAS at NSW Fair Trading on **1300 889 099**.

For installation you will need to engage a licensed plumber with backflow accreditation who can be found on the Sydney Water website:
http://www.sydneywater.com.au/Plumbing/BackflowPrevention/

Water Efficiency Recommendations

Water is our most precious resource and every customer can play a role in its conservation. By working together with Sydney Water, business customers are able to reduce their water consumption. This will help your business save money, improve productivity and protect the environment.

Some water efficiency measures that can be easily implemented in your business are:

- Install water efficiency fixtures to help increase your water efficiency, refer to WELS (Water Efficiency Labelling and Standards (WELS) Scheme, http://www.waterrating.gov.au/
- Consider installing rainwater tanks to capture rainwater runoff, and reusing it, where cost effective. Refer to http://www.sydneywater.com.au/Water4Life/InYourBusiness/RWTCalculator.cfm
- Install water-monitoring devices on your meter to identify water usage patterns and leaks.
- Develop a water efficiency plan for your business.

It is cheaper to install water efficiency appliances while you are developing than retrofitting them later.

Contingency Plan Recommendations

Under Sydney Water's **customer contract** Sydney Water aims to provide Business Customers with a continuous supply of clean water at a minimum pressure of 15meters head at the main tap. This is equivalent to 146.8kpa or 21.29psi to meet reasonable business usage needs.

Sometimes Sydney Water may need to interrupt, postpone or limit the supply of water services to your property for maintenance or other reasons. These interruptions can be planned or unplanned.

Water supply is critical to some businesses and Sydney Water will treat vulnerable customers, such as hospitals, as a high priority.

Have you thought about a **contingency plan** for your business? Your Business Customer Representative will help you to develop a plan that is tailored to your business and minimises productivity losses in the event of a water service disruption.

For further information please visit the Sydney Water website at: http://www.sydneywater.com.au/OurSystemsandOperations/TradeWaste/ or contact Business Customer Services on **1300 985 227** or businesscustomers@sydneywater.com.au

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 our system to provide that flow in an emergency. Sydney Water's Operating Licence directs that our mains are only required to provide domestic supply at a minimum pressure of 15 m head.

A report supplying modelled pressures called the Statement of Available pressure can be purchased through Sydney Water Tap in ™ and may be of some assistance when defining the fire fighting system. The Statement of Available pressure may advise flow limits that relate to system capacity or diameter of the main and pressure limits according to pressure management initiatives. If mains are required for fire fighting purposes, the mains shall be arranged through the water main extension process and not the Section 73 process.

Large Water Service Connection

A water main will be available, once you have completed your drinking water main construction to provide your development with a domestic supply. The size of your development means that you will need a connection larger than the standard domestic 20 mm size.

To get approval for your connection, you will need to lodge an application with Sydney Water Tap in ™. You, or your hydraulic consultant, may need to supply the following:

- a plan of the hydraulic layout
- a list of all the fixtures/fittings within the property
- a copy of the fireflow pressure inquiry issued by us
- a pump application form (if a pump is required)
- all pump details (if a pump is required).

You'll have to pay an application fee.

We don't consider whether a water main is adequate for fire fighting purposes for your development. We can't guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

Disused Water Service Sealing

You must pay to disconnect all disused private water services and seal them at the point of connection to our water main. This work must meet our 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.

Other fees and requirements

The requirements in this Notice relate to your Certificate application only. We 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;
- trade waste requirements
- large water connections and
- council firefighting requirements. (It will help you to know what the firefighting 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 us and to the extent that it is able, we limit 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

Rachel Higgisson

Subject: RE: Bringelly Precinct

From: Joe Degabriele
Sent: Wednesday, 2 March 2022 9:49 AM
To: Rachel Higgisson
Cc: Chris Avis; Deepak Sahay; Matt Lee; Jason Lu
Subject: RE: Bringelly Precinct

Hello Rachel,

The advice we provided below has not changed which means at present up to 795 dwellings could be accommodated from existing feeders then a new feeder is required for another 1000 dwellings and so on. As mentioned Bringelly ZS will have only one spare 11kV feeder port available after our interim augmentation works.

Kind Regards,

Joe Degabriele
Capacity Planner - Asset Planning & Performance

51 Huntingwood Drive
Huntingwood NSW 2148

Endeavour Energy

We're a proud supporter of... The Energy Charter

From: Rachel Higgisson
Sent: Tuesday, 22 February 2022 3:09 PM
To: Joe Degabriele
Cc: Chris Avis; Deepak Sahay; Matt Lee; Jason Lu
Subject: RE: Bringelly Precinct

Hi Joe,

Last year you assisted Chris and I with an electrical servicing strategy for a development site at Bringelly. The advice you provided is in the email thread below.

The client lodged the planning proposal for the site with Camden Council late last year, and received the attached RFI just before Christmas. Council have asked for written confirmation from the utility authorities that the strategies outlined in our report are sound and supported by the relevant authorities. I intend to include your advice in the below email as an appendix in the report, however given it has been 12 months I thought I should reach out to

confirm whether the below strategy is still current and appropriate. Can you please confirm whether there have been any changes to your network planning which would impact the advice provided? There have been no changes to the overall yield within the development site.

Thanks in advance for your help.

Kind regards,

infrastructure & development consulting
Rachel Higgisson
Civil Engineer

a Suite 414
410 Elizabeth St
Surry Hills NSW 2010

From: Joe Degabriele
Sent: Friday, 19 February 2021 3:30 PM
To: Jason Lu
Cc: Matt Lee
Subject: Bringelly Precinct

Hi Jason,

We have assessed the proposed development tabled below as having a combined forecast load of 18MVA.

Land Use	Density	Dwellings	Forecast Load kVA / MVA	ADMD kVA per dwelling
Low Density Residential	19 dw/ha	1,238	6,685 / 6.69	5.4
Medium Density Residential	35 dw/ha	1,634	7,353 / 7.35	4.5
High Density Residential	53 dw/ha	1,202	3,967 / 3.97	3.3
High Density Residential (village centre)	173 dw/ha	X	X	X
Total		**4,074**	**18,005 / 18.0**	

We previously advised that two existing 11kV distribution feeders from Bringelly Zone Substation heading south along The Northern Rd have capacity for up to 795 dwellings based on an average ADMD of 4.4kVA per dwelling across the three tabled categories of land use.

Based on the estimated production of 300 dwellings per year starting in 2024 and completing in 2036, this would equate to 3,600 dwellings *(4074 tabled)* in total within this period.

New distribution feeders would be required to be developed by the proponent to service dwelling numbers exceeding 795 dwellings. The capacity of one new distribution feeder can supply on average up to 1000 dwellings. Therefore the Bringelly Precinct ultimately requires the capacity of four (4) feeders at 11kV service voltage.

Endeavour Energy is in the process of carrying out interim augmentation measures at Bringelly Zone Substation to provide three additional connection points for new distribution feeders for (1) early Aerotropolis development, (2) Metro construction supply and (3) Spare.

The site could utilise the No.3 spare if not taken by other development including Agribusiness or Sydney Water infrastructure requirements to supply the Bringelly Precinct.

Other avenues could be explored such as developing or extending distribution feeders from the North Leppington Zone Substation (located along Bringelly Rd at Eastwood Rd) or the Oran Park Zone Substation (located along The Northern Rd near Dick Johnson Dr) in the interim period leading up to a committed investment to either establish the Aerotropolis Zone Substation or Augmentation of Bringelly Zone Substation or a combination of both. At this point in time, availability of a new Aerotropolis and / or augmented Bringelly substation is envisaged to occur between 2025-2030.

Both these latter investment options would result in a 22kV serviced distribution network with suitably located special distribution substations (similar to typical URD padmount substations seen in suburban streets) to transition between new 22kV network supplied from the Aerotropolis and / or Bringelly zone substations and existing 11kV network supplied from North Leppington and Oran Park zone substations. This may be entertained to occur along the southern and eastern boundaries of the proposed Bringelly Precinct where it interfaces with the Lowes Creek – Maryland Precincts. With this in mind, new underground distribution network is required to be installed and rated for 22kV operation with the exception of padmount substation transformers which would be changed-out by Endeavour Energy upon conversion from 11kV operation to 22kV operation.

Endeavour Energy is in the process of committing to the establishment of the Aerotroplis 132kV *"foundation supply"* feeder to extend from our South Erskine Park Zone Substation to the Bringelly Zone Substation following Luddenham Rd, Adams Rd and The Northern Rd, which will provide capacity at a transmission network level into the Aerotropolis area. Key load centres such as the Sydney Science Park, Western Sydney Airport and the Aerotropolis Core will then connect to this 132kV transmission artery via aptly named zone substations.

As part of the Aerotropolis 132kV feeder project, Bringelly Zone Substation will have its 132kV busbar extended making it future ready for the subsequent augmentation and provision of 22kV output capacity of the substation.

We hope this provides an insight and some clarity into Endeavour Energy's servicing strategy.

Kind Regards,

Joe Degabriele
Capacity Planner – Asset Planning & Performance

Endeavour Energy

Monday 20th June 2022

Tank Tan
CKDI Bringelly Pty Ltd atf CKDI Bringelly Holding Trust

Dear Mr Tank Tan,

Thank you for your application requesting the installation of fibre infrastructure at **Belmore Road Precinct, Bringelly NSW**

We are pleased to confirm that this development is within our fibre footprint, and to that extent, your development qualifies to receive NBN Co fibre.

Once **CKDI Bringelly Pty Ltd atf CKDI Bringelly Holding Trust** has concluded an agreement with NBN Co on NBN Co's terms and conditions (including in relation to the construction of pit and pipe or pathway infrastructure at the development), then provided you comply with the terms and conditions of that agreement, NBN Co will agree to procure the installation of fibre infrastructure at the development.

If you need verification that you have requested broadband infrastructure from NBN Co to get council approval, please use this certificate.

Yours sincerely,

nbn – New Developments Team

Appendix B – Responses to Council Feedback

Monday, 4 July 2022

CKDI
Suite 703 North Tower
1-5 Railway Street
Chatswood NSW 2067

Response to Council Comments – Planning Proposal for South Creek West - Belmore Road Precinct

Attention: Mr. Tank Tan

Please see our responses to comments provided by Camden Council on the Infrastructure Servicing Strategy, to be included as an addendum to the report. Should you have any questions or concerns, please feel free to contact the undersigned.

1 Water

Existing Network - reference is made to the following statement on page 8 of the Infrastructure Servicing Strategy;

"Sydney Water have indicated that this infrastructure will have sufficient capacity to supply the proposed development of the Belmore Road Precinct."

It is requested that correspondence from Sydney Water confirming this statement is provided.

Refer to meeting minutes in Appendix A.

Sydney Water Growth Servicing Plan - reference is made to the following statement on page 9 of the Infrastructure Servicing Strategy;

"The GSP indicates that infrastructure to support the South Creek West Release Area is in the design and delivery phase and was due for completion in December 2019".

Notwithstanding the above statement, Sydney Water's Growth Servicing Plan 2020 – 2025 also states regarding South Creek West, that *"Existing services are limited until Sydney Water delivered reservoirs are constructed by 2022/2023".* In this regard, as noted in response to item 3.1 above, clear confirmation in writing from Sydney Water is required as to the extent of water servicing capacity available for the Belmore Road Precinct.

Noted, meeting minutes confirming that the proposed reservoirs will have capacity to support the development have been provided in Appendix A. As these reservoirs are currently being

delivered, we do not expect the provision of potable water infrastructure to pose a constraint to development.

Proposed Network - reference is made to the following statement on page 9 of the Infrastructure Servicing Strategy;

"As discussed in Section 3.1, it is expected the Belmore Road Precinct will be supplied by the new Oran Park reservoirs. In the unlikely event of insufficient capacity in the trunk mains constructed in The Northern Road, a further 400mm main would need to be constructed to supply Sub- Precinct 2. However, given the size of newly constructed mains, this is considered unlikely".

It is requested that correspondence from Sydney Water confirming this statement is provided. It is also requested that the Infrastructure Servicing Strategy is revised to clearly articulate and demonstrate satisfactory arrangements, with agreement from Sydney Water, for the provision of temporal, spatial and causal infrastructure provision.

Meeting minutes have been included in Appendix A. A feasibility application has been lodged with Sydney Water to determine the servicing requirements for the site. This application is currently being assessed and should the strategy outlined by Sydney Water differ from the above, this report will be updated to reflect any change in advice.

Servicing Strategy - as depicted in 'Figure 5 – Water Servicing Strategy' on page 10 of the strategy, proposed Water Mains are depicted throughout the extent of the Belmore Road Precinct.

Further information in the Strategy is requested to demonstrate how these Water Mains will ultimately be delivered (i.e. the southern-most connection point to the Trunk Water Main in The Northern Road would presumably be constructed by the proponent, to facilitate access to their development site).

It is also requested that the strategy is revised to demonstrate the proposed arrangements in facilitating Water Main connections to the remaining (fragmented) landholdings in the Precinct, whether from the east (The Northern Road corridor) or from the south (i.e. within the Sub- Precinct, from the proponents landholding).

Report has been updated to include commentary around the delivery of infrastructure within the precinct. Development is generally expected to progress from south to north, with the CKDI site delivered first and more fragmented areas delivered in later stages. Initial stages of development will be serviced by extending the existing 450mm main in Belmore Road along the collector road constructed in Stage 1. Internal mains through the CKDI site will then be extended along key road corridors, and connected back to the existing main along Belmore Road.

2 Sewer

Existing Network – reference is made to the following statement on page 11 of the Infrastructure Servicing Strategy;

"Relevant to the Belmore Road Precinct are the Bringelly Carrier and Bringelly North Carriers (shown in Figure 6 below). This infrastructure drains northwards, towards the future Upper South Creek Advanced Water Recycling Centre (USCAWRC). The status, timing and staging of these projects is unclear and further liaison will be required as designs progress with Sydney Water to determine these details."

Further information is requested in the form of correspondence from Sydney Water regarding the timing and staging of these projects in relation to South Creek West Belmore Road Precinct.

We understand from our engagement with Sydney Water on other projects in the area that SP1209 will transfer flows to the Upper South Creek AWRC from 2028. A feasibility application has been lodged with Sydney Water to determine the servicing requirements for the site. This application is currently being assessed and should the strategy outlined by Sydney Water differ from the above, this report will be updated to reflect any change in advice.

Sydney Water Growth Servicing Plan – it is noted that the 'Infrastructure Servicing Strategy' may have referenced an out-of-date extract of Sydney Water's Growth Servicing Plan on page 11. It is recommended the strategy is revised to reflect the most recent GSP.

It is noted that the strategy makes the point that "Sydney Water's GSP indicates that the northern parts of the South Creek West Release Area are in the strategic planning phase (indicated in orange) while the southern parts have been further progressed to the concept design phase (shown in blue)".

Given Sydney Water have delineated their study areas on this basis (i.e. not on any discernible precinct boundaries) there may be potential limitations for servicing capacity across the extent of the proposed Belmore Road Precinct (between the northern vs. southern area). It is requested that confirmation in this regard is provided from Sydney Water.

Report has been updated to reflect latest Growth Servicing Plan.

Proposed Network – reference is made to the following statement on page 13 in the 'Infrastructure Servicing Strategy'.

"This pump station has been designed for an interim capacity of 4,000 dwellings, however it is understood that Sydney Water are currently amending the concept designs to allow for the pump station to be delivered at full capacity (approximately 70,000 dwellings). Sydney Water have indicated that SP1209 will be delivered to align with development in the Lowes Creek Marylands precinct and is likely this infrastructure will be delivered in 2023/24. Sydney Water's

development priorities and infrastructure delivery timing are unknown at this stage".

The above statements are not considered adequate in demonstrating evidence of servicing capacity. It is requested that a written commitment from Sydney Water, clearly articulating the timeframe and servicing quantum of utility infrastructure for the Belmore Road Precinct is provided.

Meeting minutes have been included in Appendix A. A feasibility application has been lodged with Sydney Water to determine the servicing requirements for the site. This application is currently being assessed and should the strategy outlined by Sydney Water differ from the above, this report will be updated to reflect any change in advice.

Servicing Strategy Option 1 - The 'Infrastructure Servicing Strategy' proposes that the 'Bringelly Carrier' and the 'Bringelly North Carrier' could service part of the Belmore Road Precinct. However, as stated on page 14 of the Strategy;

"It is expected that delivery of the Bringelly and Bringelly North Carriers would be some time after the initial infrastructure to be provided for the Aerotropolis by 2026, possibly around 2028-2032 depending on the pace of development within the catchment".

Given that under Option 1, servicing for Sub-Precinct is available 10+ years from now, it is not considered a viable option.

We understand from our engagement with Sydney Water on other projects in the area that SP1209 will transfer flows to the Upper South Creek AWRC from 2028. Given development in Catchment 2 is currently planned to commence in 2028 and Catchment 3 in 2035, we consider Option 1 to be viable, pending confirmation from Sydney Water.

A feasibility application has been lodged with Sydney Water to determine the servicing requirements for the site. This application is currently being assessed and should the strategy outlined by Sydney Water differ from the above, this report will be updated to reflect any change in advice.

Servicing Strategy Option 2 – Drain to SP1209 via Pump Station - as noted under this option, the Infrastructure Servicing Strategy states:

"…further discussion with Sydney Water will be required should this option be progressed to confirm that sufficient capacity is available".

It is unclear as to whether SP1209 can service Sub- Precinct 2, in addition to other Precincts that may already have been accounted for in its planning. In this regard, as previously stated, further confirmation from Sydney Water is required.

Refer meeting minutes attached in Appendix A. Catchment 1 naturally drains to SP1209, and servicing this catchment using this infrastructure was discussed with Sydney Water. Figure 6 shows a Sydney Water planned main which would drain Catchment 1 to SP1209. SP1209 has

capacity to service 4,000 lots up to 2026. Capacity at this pump station cannot be reserved by other developments.

A feasibility application has been lodged with Sydney Water to determine the servicing requirements for the site. This application is currently being assessed and should the strategy outlined by Sydney Water differ from the above, this report will be updated to reflect any change in advice.

Option 3 – Interim On-Site Package Plant - Given the likely adverse environmental implications for on-site wastewater management, it is not reasonable to anticipate Council would be supportive of this option.

Noted, given the considerable land take required for irrigation we would not expect this option to be further progressed. It has been included as one of many options assessed in this report for completeness.

3 Electricity

Proposed Network – in noting that Endeavour Energy's Bringelly Zone Sub-Station is adjacent to the Belmore Road Precinct, as stated in the 'Infrastructure Servicing Strategy', its augmentation is intended to facilitate increased service to the Aerotropolis, supply of the new Sydney Metro line and spare capacity for Agribusiness or Sydney Water requirements. In this regard, current service planning for the Bringelly ZS does not appear to support the release of the Belmore Road Precinct.

The statement that the Belmore Road Precinct "*…could utilise the spare connection if not taken by other development sites*" is not considered as satisfactory to demonstrate capability of infrastructure servicing.

In response to the above, it is requested that evidence of appropriate arrangements which are not to the detriment of any other development is provided via written confirmation from Endeavour Energy.

The augmentation of the Bringelly ZS includes three additional connection points. The third connection point is a spare connection for other developments, Endeavour Energy have provided the example that this may include Sydney Water infrastructure or development within the Agribusiness precinct. This statement does not suggest that these examples will be the only development able to utilise the spare connection.

Should there be no available capacity at the Bringelly ZS, Endeavour Energy have indicated the site would be serviced by either the Oran Park ZS or North Leppington ZS.

The strategy outlined in this report has been prepared by Endeavour Energy for IDC. Given this, we consider the advice provided to be sufficient evidence to support the rezoning of the precinct from an electricity supply perspective. (refer to correspondence in Appendix A).

4 Gas

It is requested that written confirmation from Jemena is provided as to the means and timing for servicing of the precinct, and that the provision of gas supply to the site will not pose a constraint to the development of the site or its staging.

Gas is no longer being considered for this precinct and this section has been removed from the report.

5 Telecommunications

Written confirmation is requested from NBN/Telstra as to their capacity/commitment to deliver telecommunications infrastructure to the precinct.

CKDI are currently in discussion with NBN Co. to provide fibre infrastructure for the development. Please refer to Appendix A for correspondence with the NBN Co. New Developments team.

Yours Sincerely

infr **ısulting**

Rachel Higgisson

Senior Infrastructure Engineer