

infrastructure & development consulting

**Westmead South Precinct**

Existing Utilities Infrastructure Audit

October 2023

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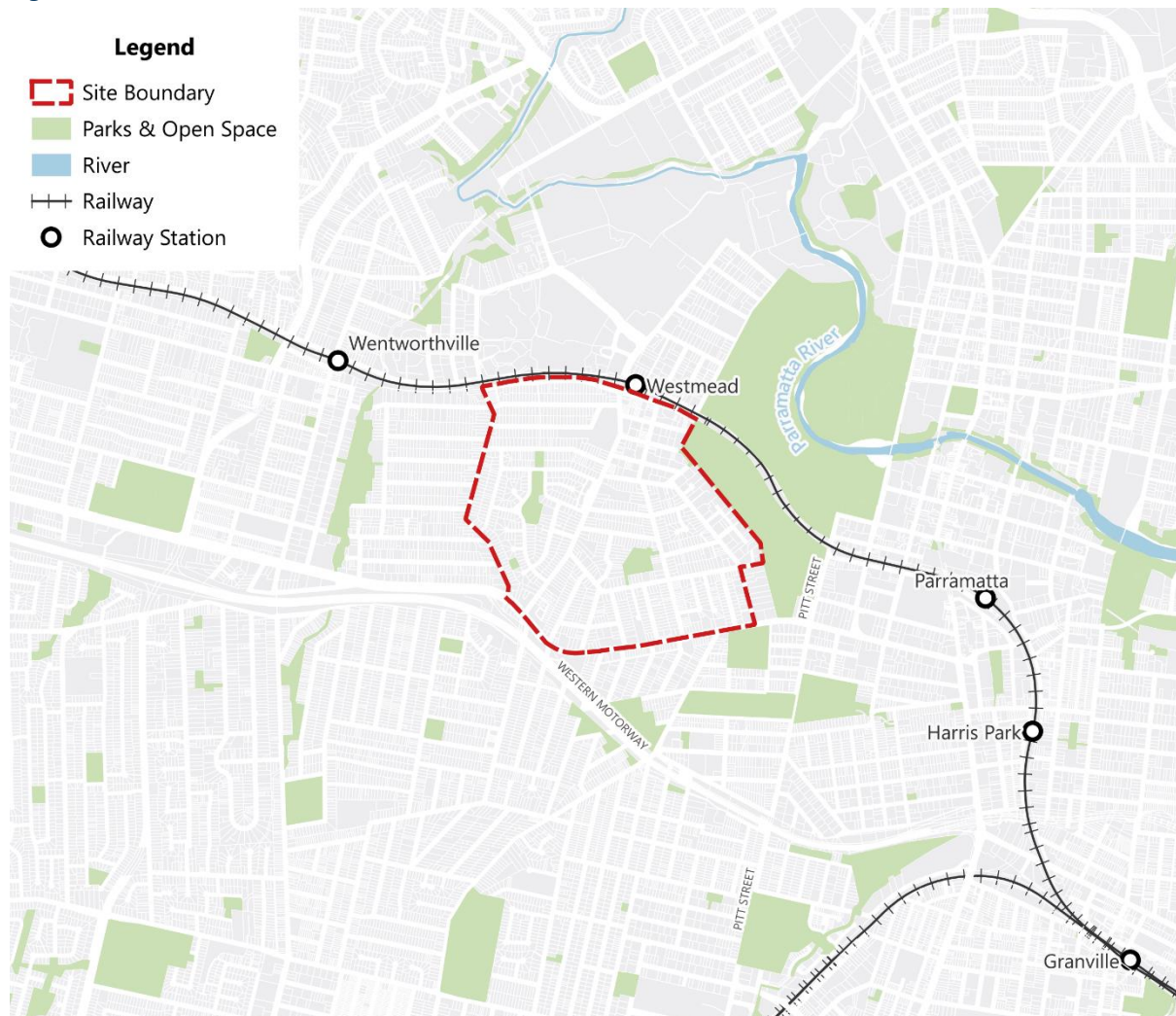
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# 1 Introduction

Infrastructure & Development Consulting (IDC) have been engaged to undertake an existing utilities audit for the Westmead South Precinct. This report will outline the existing utilities infrastructure within and surrounding the Precinct and provide comment on constraints and opportunities for servicing future development. This report will inform the proposed master plan currently being prepared for the Precinct.

The Westmead South Precinct is located within the Cumberland City Council Local Government Area (LGA) and covers an area of approximately 131 hectares. The Precinct is bound by the Main Western Railway to the north, Parramatta Park and Aquatic Centre to the east, the Great Western Highway to the south and Bridge Road to the west. The Westmead South Precinct is shown in Figure 1 below.

**Figure 1 - Westmead South Precinct**



## 1.1 Greater Parramatta & Olympic Peninsula

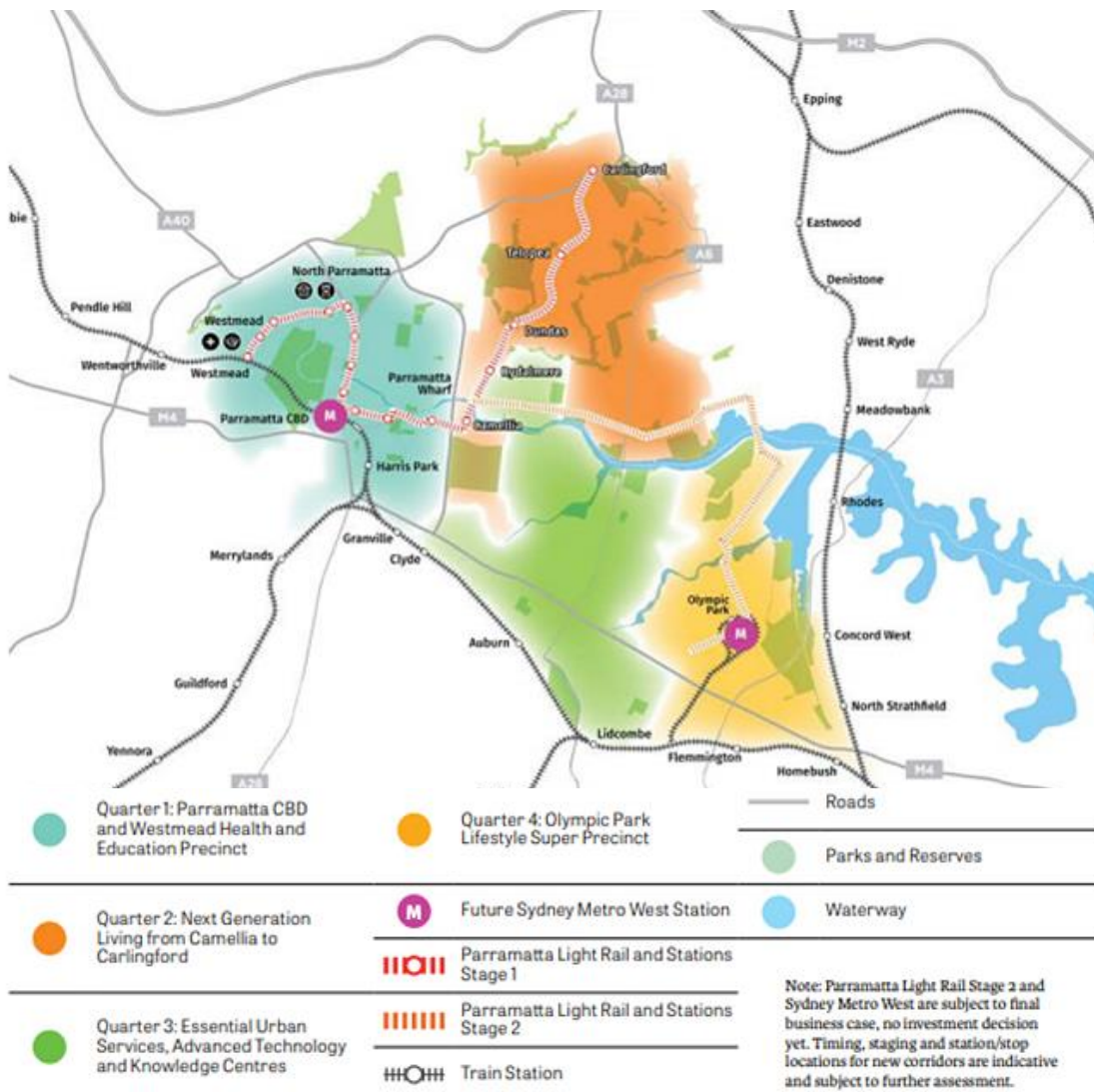
The Westmead South Precinct forms part of the larger Greater Parramatta and Olympic Peninsula (GPOP) corridor. GPOP covers a total area of approximately 6,000 hectares and has been divided into 26 precincts. The corridor is characterised by four Quarters:

- Quarter 1 – Parramatta CBD and Westmead Health & Education Precinct
- Quarter 2 – Next Generation Living from Camellia to Carlingford
- Quarter 3 – Essential Urban Services, Advanced Technology and Knowledge Centres
- Quarter 4 – Olympic Park Lifestyle Super Precinct

The Westmead South Precinct is located within Quarter 1. The GPOP corridor is shown in Figure 2 below.

In 2020, the NSW Department of Planning & Environment (DPE) announced that a strategic plan would be prepared for GPOP to establish a land use vision for each of the 26 precincts. This strategic plan will investigate potential growth options and infrastructure needs.

**Figure 2 - GPOP Corridor**

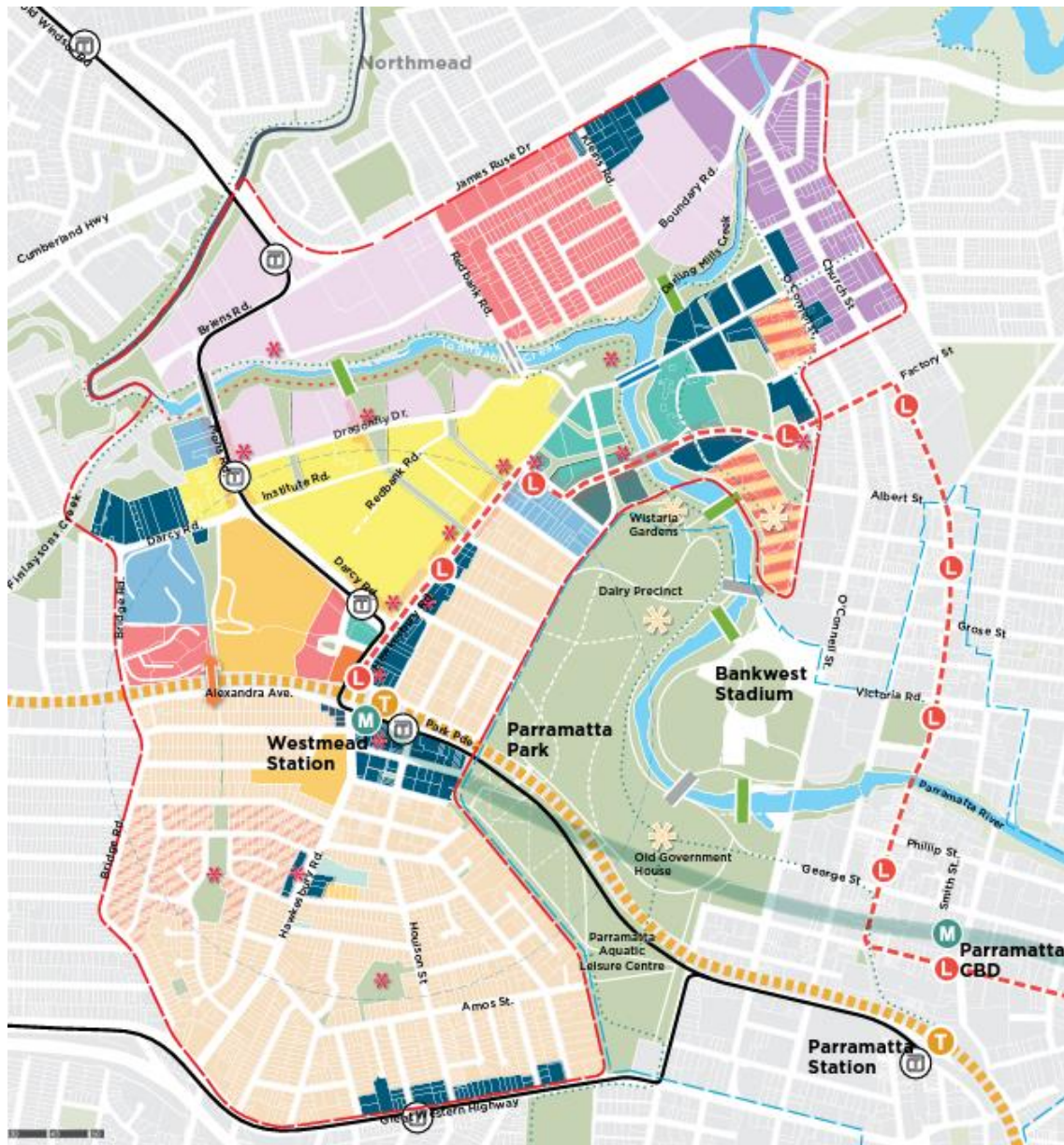


## 1.2 Westmead Place Strategy

A place strategy for Westmead was prepared in 2022 and aims to guide the continued evolution of Westmead to 2036. The Westmead Precinct, which includes areas to the north of the rail corridor within the Parramatta LGA, will benefit from the proposed Sydney Metro West line, which will connect the Sydney CBD to Greater Parramatta. The 24km line will double the existing rail capacity between the two CBDs and includes a station to be co-located with the existing Westmead Station.

The vision for Westmead is to be Australia’s premier health and innovation district which delivers a highly integrated mix of uses, including health and medical care, education and training, research and development, innovation commercialisation and industry.

**Figure 3 - Westmead Precinct Structure Plan**



Source: Westmead 2036 Place Strategy – NSW Department of Planning & Environment (August 2022)

## **2 Water**

### **2.1 Existing Infrastructure**

The precinct is located within the Sydney Water Prospect North water supply zone. The closest reservoirs to the precinct are the Mt Dorothy Reservoir, located 1.5km to the north-west on Coloola Road, and the Holroyd Reservoir, located 3.5km to the south-west on Benaud Street.

A series of trunk mains extend from each reservoir towards the precinct. From the Mt Dorothy Reservoir, a 500mm diameter main extends along Warra Street. This main reduces in size to 375mm then extends along Darcy Road and Bridge Road. This main crosses the rail corridor and traverses Bridge Road throughout the extent of the precinct. This trunk main connects to a 450mm main on the northern side of the Great Western Highway, which connects back to the Holroyd Reservoir via Old Prospect Road and Cumberland Road.

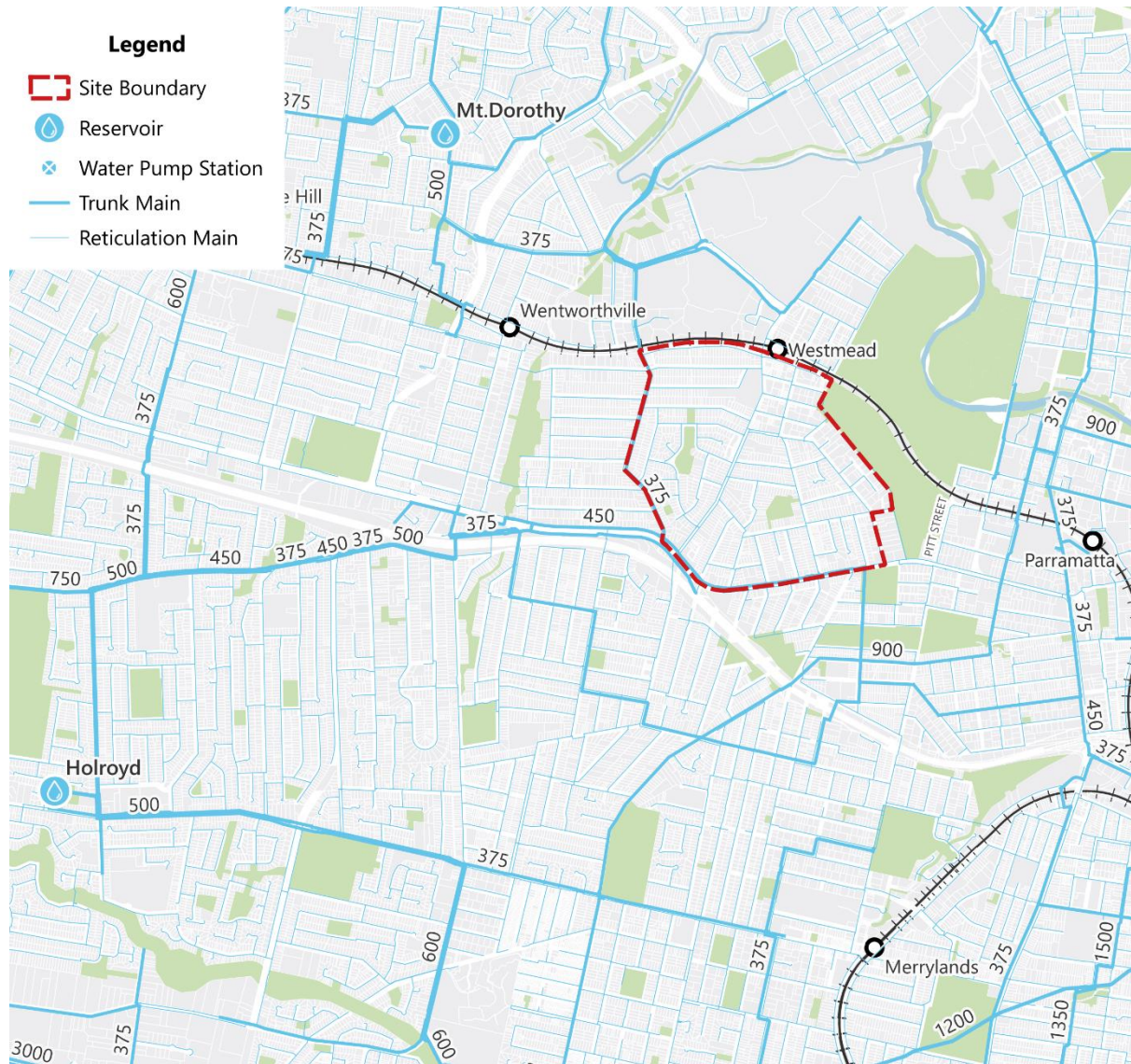
A series of smaller reticulation mains extend along existing roads within the precinct from the trunk mains in Bridge Road and the Great Western Highway to supply development. The existing potable water infrastructure within the vicinity of the precinct is shown in Figure 4.

### **2.1 Sydney Water Growth Servicing Plan**

Sydney Water's 2022 Growth Servicing Plan (GSP) outlines the servicing strategy to support planned growth in Greater Sydney up to 2027. The GSP has assessed the Greater Parramatta to Olympic Peninsula (GPOP) growth area, which includes the precinct. For the Westmead South Precinct, Sydney Water anticipate that there is adequate existing trunk capacity in the potable water network to support the planned growth.

It should be noted that while the GSP focuses on short term growth over a five-year period, Sydney Water also undertake medium and long-term planning for growth areas identified by the NSW Government. As plans progress and development yields become more certain, Sydney Water can refine their infrastructure servicing strategies for these growth areas. It is expected that future revisions of the GSP will cover more of the Westmead Place Strategy horizon, which extends to 2036.

**Figure 4 - Existing Potable Water Infrastructure**



## 2.2 Key Findings

- The Westmead South Precinct is supplied potable water via Sydney Water’s Prospect North supply system.
- The closest reservoirs to the precinct are the Mt Dorothy and Holroyd Reservoirs. Trunk mains extend from these reservoirs to Bridge Road and the Great Western Highway. Smaller reticulation mains then extend along all roads within the Precinct to supply development sites.
- Sydney Water’s GSP indicates that there is sufficient existing trunk capacity in the potable water network to supply the planned growth within the Precinct.
- Provision of potable water is therefore not expected to pose a constraint to future growth.
- The servicing requirements for the precinct will be determined through consultation with Sydney Water during a subsequent stage of the project.



## 3 Sewer

### 3.1 Existing Infrastructure

The existing uses in the precinct are serviced by the Sydney Water sewer network. The Precinct falls within the North Head wastewater system catchment.

The Westmead South Precinct falls into two sewer catchments:

- Areas east of Hawkesbury Road drain northwards to the Westmead Submain, which crosses the rail corridor and connects to a pump station (SP0103) on the northern side of Toongabbie Creek.
- Areas west of Hawkesbury Road drain northwards to the Hainsworth Street Carrier. This carrier is 300mm in diameter and also services Westmead Hospital. It connects to the Westmead Submain on the southern side of Toongabbie Creek.

From SP0103, flows are pumped northwards to the Northern Suburbs Ocean Outfall Sewer (NSOOS). The NSOOS traverses the northern side of the Parramatta River and transfers wastewater to the North Head Water Resource Recovery Facility in Manly. The NSOOS is 25km in length and services 1.7 million people in Sydney's western and northern suburbs including areas as far west as Blacktown.

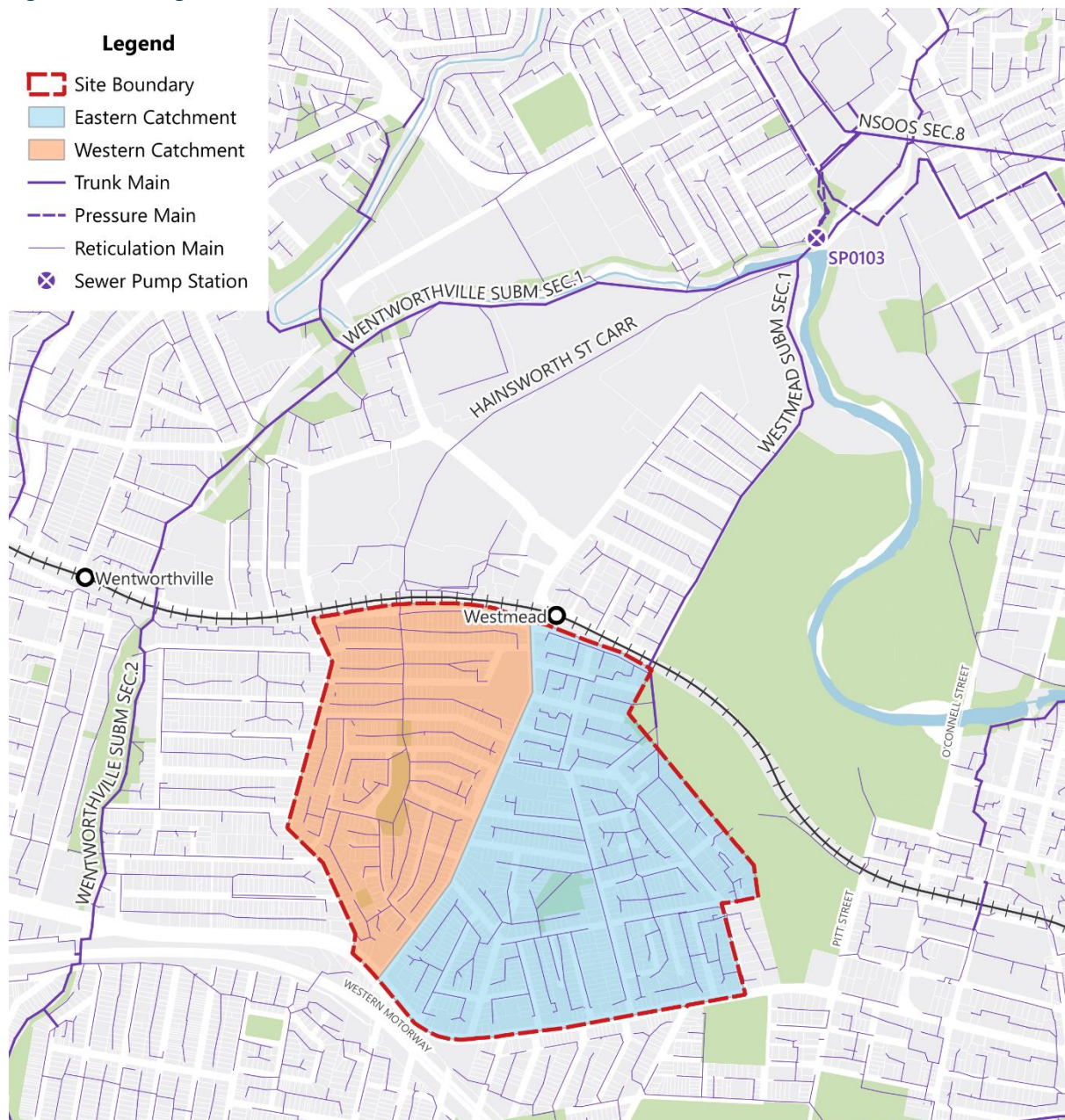
The existing sewer infrastructure within the vicinity of the precinct is shown in Figure 5 below.

### 3.1 Sydney Water Growth Servicing Plan

Sydney Water's 2022 GSP outlines the servicing strategy to support planned growth in Greater Sydney up to 2027. The GSP has assessed the GPOP growth area, which includes the precinct. For the Westmead South Precinct, Sydney Water note that there is limited existing trunk capacity, however new infrastructure to support growth is currently in the design and delivery phase. No information is currently available on the extent of proposed works or the expected delivery timeframe.

It should be noted that while the GSP focuses on short term growth over a five-year period, Sydney Water also undertake medium and long-term planning for growth areas identified by the NSW Government. As plans progress and development yields become more certain, Sydney Water can refine their infrastructure servicing strategies for these growth areas. It is expected that future revisions of the GSP will cover more of the Westmead Place Strategy horizon, which extends to 2036.

**Figure 5 - Existing Sewer Infrastructure**



### 3.2 Key Findings

- The precinct is located within Sydney Water’s North Head wastewater system catchment.
- The precinct falls into two sewer catchments which both drain to the NSOOS.
- The western catchment drains through the Westmead Hospital site via the Hainsworth Street Carrier, which is 300mm in diameter and may prove challenging to upgrade given its location.
- Sydney Water’s GSP indicates that there is limited existing trunk capacity in the sewer network, however new infrastructure is in the design and delivery phase.
- The servicing requirements for the precinct will be determined through consultation with Sydney Water during a subsequent stage of the project.

## 4 Electricity

### 4.1 Existing Infrastructure

The precinct is located within the Endeavour Energy (EE) electrical supply zone. The closest zone substations (ZS) to the precinct are:

- The West Parramatta ZS, located 500m east of the precinct. This zone substation has a firm capacity of 90MVA and is estimated to have 3.5MVA of spare capacity in 10 years' time.
- The Lennox ZS, located 800m south east of the precinct. This zone substation has a firm capacity of 50MVA and is estimated to have 9.6MVA of spare capacity in 10 years' time.
- The Holroyd ZS, located 900m west of the precinct. This zone substation has a firm capacity of 42.25MVA and is estimated to have 6.65MVA of spare capacity in 10 years' time.
- The Westmead ZS, located 1km north of the precinct. This zone substation has a firm capacity of 35MVA, however EE are in the progress of delivering an additional transformer which will provide an additional 45MVA of capacity.

The above zone substations are connected via a series of 33kV and 132kV transmission lines, however the precinct is unconstrained by this infrastructure. The existing electrical infrastructure within the vicinity of the precinct is shown in Figure 6.

### 4.1 Endeavour Energy Regulatory Proposal & Greater Parramatta Area Plan

Endeavour Energy's latest Regulatory Proposal outlines their planned investment to maintain and support growth in the electricity network from 2024-2029. Within the Greater Parramatta area, EE plan to invest approximately \$40 million on growth projects to ensure connection capacity is available to meet planned growth in the area.

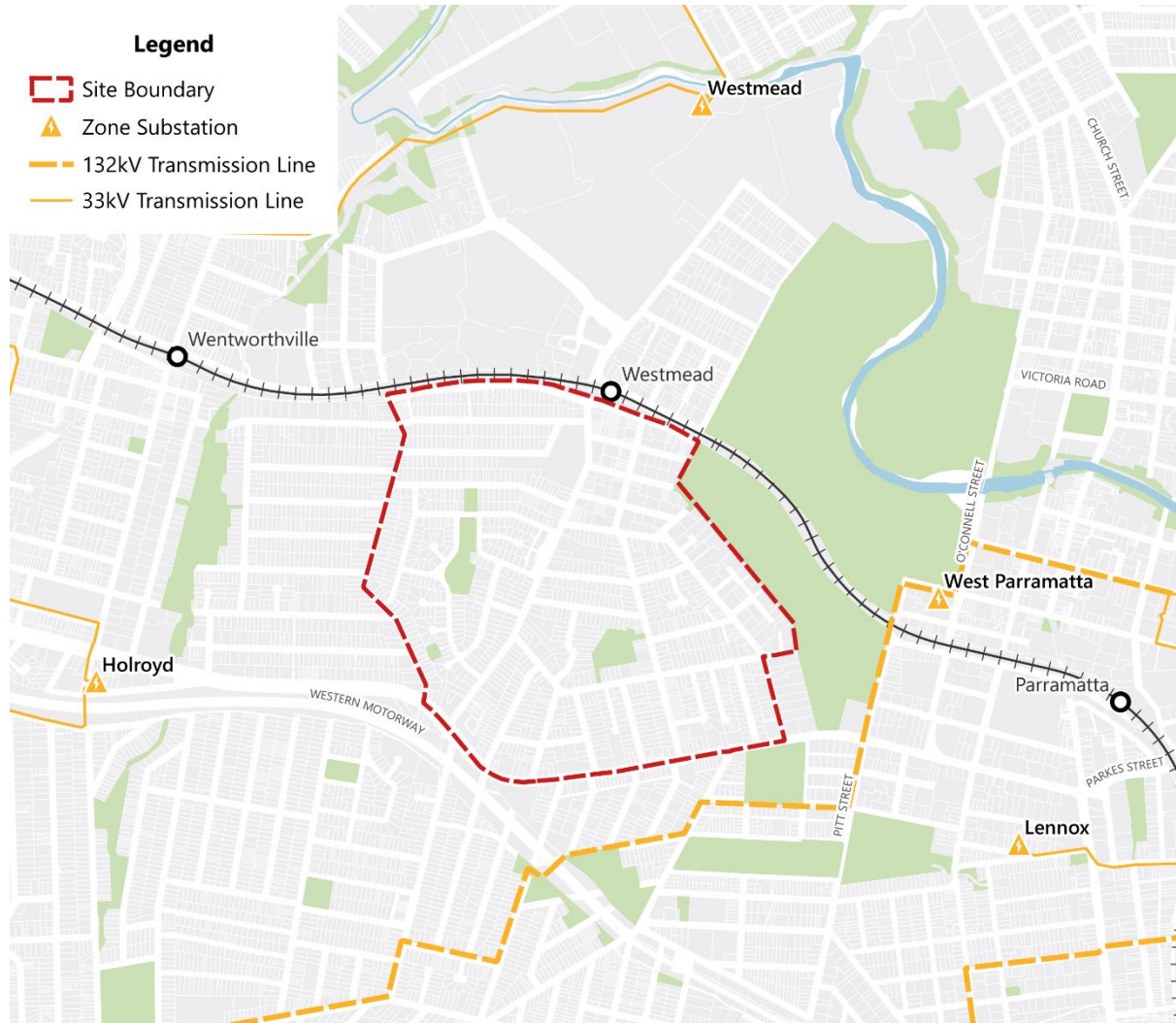
This includes an upgrade to the Westmead ZS to provide a third 45MVA transformer, which is expected to be delivered by FY2024. To supply the additional transformer, a new 132kV sub-transmission line will be constructed from the West Parramatta ZS. The new transformer will provide additional capacity to the Westmead Hospital switchboard and will relieve load off the ZS which currently supplies the entire Westmead Health Precinct and other residential and commercial loads in the surrounding area.

Noting that the Westmead ZS is supplied via the Sydney West Bulk Supply Point (BSP) and the West Parramatta ZS is supplied via the Holroyd BSP, the additional transformer and associated sub-transmission line will allow for the primary and backup supply for the hospital to originate from two separate bulk supply points, providing increased load security.

EE's Greater Parramatta Area Plan, which accompanies the Regulatory Proposal, also notes that a second zone substation within the Westmead Health Precinct may eventually be required to support future growth, however the construction of an additional 45MVA transformer at the Westmead ZS has pushed back the need date for the second zone substation beyond a 10-year

timeframe. EE will continue to monitor growth in the precinct to confirm the need and timing of the second zone substation.

**Figure 6 - Existing Electrical Infrastructure**



## 4.2 Key Findings

- The precinct is located within the Endeavour Energy electrical supply zone and is well serviced by electrical infrastructure.
- The precinct is not constrained by easements associated with transmission lines.
- EE have forecast that the West Parramatta ZS will have limited capacity to service additional growth over the next 10 years.
- EE are currently upgrading the Westmead ZS to provide a third transformer which will provide an additional 45MVA of capacity. In addition, EE may deliver a new zone substation in the area, however this infrastructure is unlikely to be delivered for at least 10 years. Future development of the precinct could likely be serviced via the upgraded Westmead ZS or the future zone substation, should this infrastructure be available.
- The servicing requirements for the precinct will be determined through consultation with Endeavour Energy during a subsequent stage of the project.

## **5 Telecommunications**

### **5.1 Existing Infrastructure**

#### **5.1.1 NBN**

NBN Co. is the wholesale provider for new broadband connections. NBN Co. provides services on its local access network on equivalent terms to retail phone and internet providers, to provision for end users.

The Westmead South Precinct is serviced via fixed line technology, where a physical line connects to each property to provide a connection. It is anticipated that any future development within the Precinct will leverage this existing infrastructure to receive telecommunications servicing. Existing infrastructure is located within the standard trench allocation of all road reserves.

#### **5.1.2 Telstra 5G**

Rollout of Telstra's 5G network has commenced across Western Sydney. The Westmead South Precinct has blanket existing Telstra 5G network coverage across the precinct.

### **5.2 Key Findings**

- The Westmead South Precinct is well serviced by telecommunications infrastructure.
- Telstra have blanket 5G coverage across the precinct.
- NBN fixed line technology is available across the precinct, any future development will be able to connect to this infrastructure.
- Provision of telecommunications infrastructure is therefore not expected to pose a constraint to development.

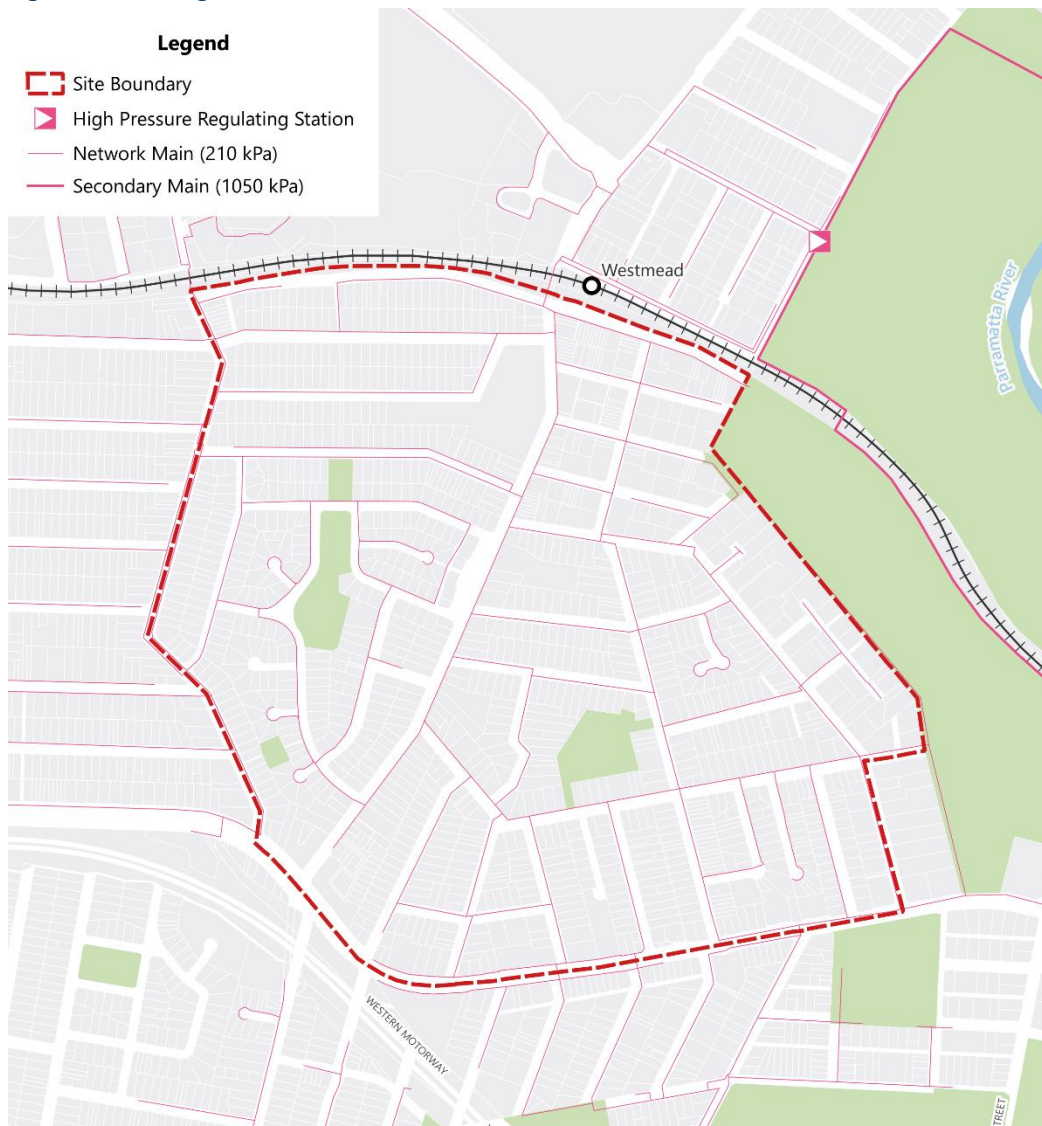
## 6 Gas

### 6.1 Existing Infrastructure

Gas is supplied to the precinct and surrounding area by Jemena. A high-pressure secondary gas main traverses the southern side of the rail corridor. This main crosses the rail corridor near the precinct boundary and traverses Park Avenue to a high-pressure regulating station located near Queens Road. From the regulating station, 210 kPa network mains extend along most streets within and surrounding the precinct, supplying existing homes. The existing gas infrastructure located within the vicinity of the precinct is shown in Figure 7.

As gas is a non-essential utility, rollout of gas infrastructure will be dependent on the appetite of each individual development. Generally, little demand for gas can be expected from non-residential development. Jemena will support the demand generated by residential development as required.

**Figure 7 - Existing Gas Infrastructure**



## 6.2 Key Findings

- The Westmead South Precinct is well supported by gas infrastructure
- Gas mains extend along all streets within the precinct boundary
- Future development within the precinct can leverage existing gas infrastructure
- Jemena will support the demand generated by residential development as required

## 7 Summary & Next Steps

This report has outlined the existing utilities infrastructure within and surrounding the Westmead South Precinct. A brief summary of the report findings is provided below.

### 7.1 Water

Existing development within the Westmead South Precinct is supplied potable water via the Mt Dorothy and Holroyd Reservoirs, located 1.5km north-west and 3.5km south-west of the precinct respectively.

Sydney Water's 2022 GSP indicates that there is adequate existing trunk capacity in the potable water network to support the planned growth in the Precinct. Provision of potable water is therefore not expected to pose a constraint to future growth.

The servicing requirements for the precinct will be determined through consultation with Sydney Water during a subsequent stage of the project.

### 7.2 Sewer

The Westmead South Precinct falls into two sewer catchments:

- Areas east of Hawkesbury Road drain northwards to the Westmead Submain, which crosses the rail corridor and connects to a pump station (SP0103) on the northern side of Toongabbie Creek.
- Areas west of Hawkesbury Road drain northwards to the Hainsworth Street Carrier. This carrier is 300mm in diameter and also services Westmead Hospital. It connects to the Westmead Submain on the southern side of Toongabbie Creek.

From SP0103, flows are pumped northwards to the NSOOS. The NSOOS traverses the northern side of the Parramatta River and transfers wastewater to the North Head Water Resource Recovery Facility in Manly.

Sydney Water's 2022 GSP notes that there is limited existing trunk capacity in the sewer network to support growth, however new and upgraded infrastructure is currently in the design and delivery phase. No information is currently available on the extent of proposed works or the expected delivery timeframe.

The servicing requirements for the precinct will be determined through consultation with Sydney Water during a subsequent stage of the project.

### 7.3 Electricity

The precinct is located within the Endeavour Energy electrical supply zone and is located within the vicinity of four zone substations:

- The West Parramatta ZS
- The Lennox ZS
- The Holroyd ZS
- The Westmead ZS

Endeavour Energy will invest approximately \$40 million on growth projects across the GOP area to ensure connection capacity is available to meet planned growth in the area. This includes an upgrade to the Westmead ZS to provide a third 45MVA transformer, which is expected to be delivered by FY2024. The new transformer will provide additional capacity to the Westmead Hospital switchboard and will relieve load off the ZS which currently supplies the entire Westmead Health Precinct and other residential and commercial loads in the surrounding area.

Endeavour Energy may also provide a second zone substation within the Westmead Health Precinct to meet the growing demand, however it is anticipated that this infrastructure will not be required for at least 10 years. Endeavour Energy will continue to monitor growth in the precinct to confirm the need and timing of the second zone substation.

#### **7.4 Telecommunications**

The Westmead South Precinct is well serviced by telecommunications infrastructure. NBN fixed line technology is available across the whole precinct. It is anticipated that any future development within the Precinct will leverage this existing infrastructure to receive telecommunications servicing.

Telstra 5G coverage is also available across the extent of the Precinct.

#### **7.5 Gas**

The Westmead South Precinct is well serviced by gas infrastructure. 210 kPa network mains extend along all existing roads, supplying residential dwellings.

As gas is a non-essential utility, rollout of gas infrastructure will be dependent on the appetite of each individual development. Generally, little demand for gas can be expected from non-residential development. Jemena will support the demand generated by residential development as required.



## 7.6 Next Steps

This Existing Utilities Audit will form the first component of an overarching Utilities Servicing Strategy for the Westmead South Precinct. The Utilities Servicing Strategy will be developed to support the Master Plan and will:

- Outline the existing utilities infrastructure within the vicinity of the Westmead South Precinct (included in this Existing Utilities Audit)
- Summarise current and planned utilities infrastructure projects (included in this Existing Utilities Audit)
- Estimate the potential demand for utilities generated by the proposed development of the Westmead South Precinct
- Outline a proposed servicing strategy to support growth in the Westmead South Precinct
- Explore opportunities to implement sustainable utilities infrastructure or schemes within the Westmead South Precinct