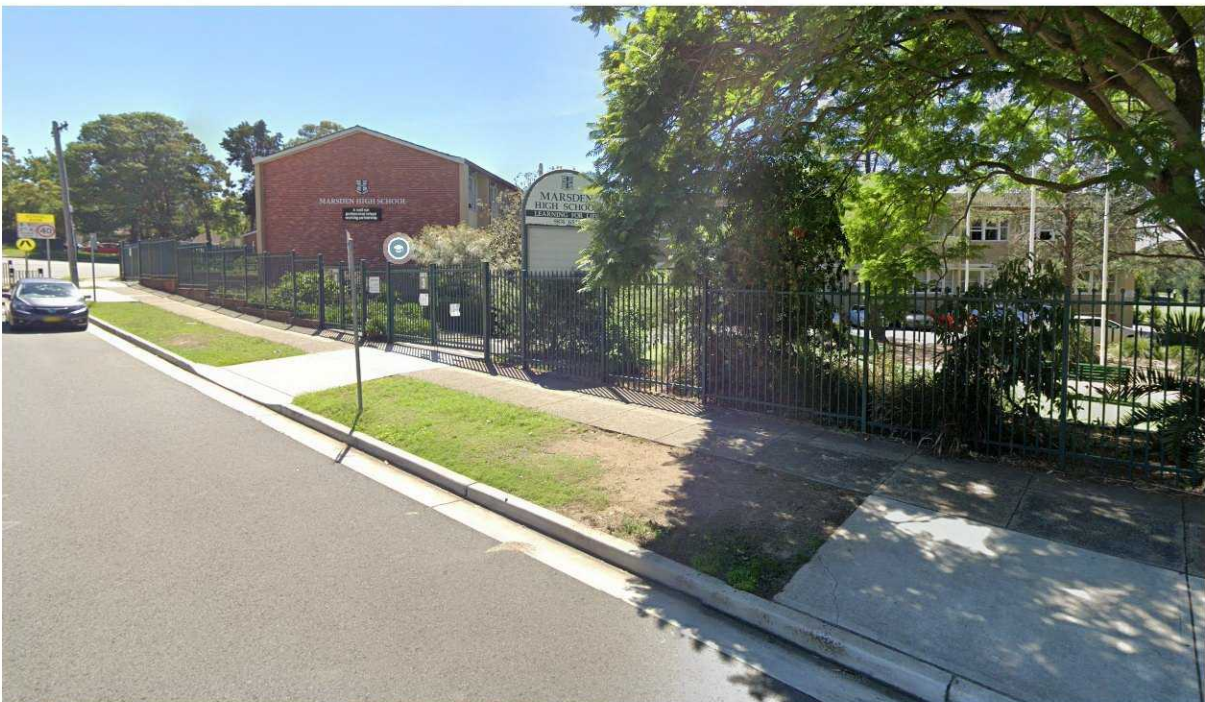


SINSW

# 22 WINBOURNE STREET SITE INFRASTRUCTURE ASSESSMENT

JANUARY 2021

CONFIDENTIAL



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## 22 WINBOURNE STREET SITE INFRASTRUCTURE ASSESSMENT

### SINSW

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REV	DATE	DETAILS
A	22/01/2021	Preliminary Issue for information
B	27/01/2021	Preliminary Issue for inclusion within Masterplan report
C	08/04/2021	Updated to compressed version
D	12/05/2021	Site boundaries updated

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# 1 INTRODUCTION

## 1.1 GENERAL

The objective of this report is to provide information on the existing site infrastructure at 22 Winbourne street and provide an overview of infrastructure requirements for planning to support proposal for future new development

This site infrastructure assessment report provides an overview of the electricity, communications, potable water, sewerage and gas infrastructure for the existing **22 Winbourne Street**.

All existing structures and services within the site are proposed to be decommissioned, demolished and removed with all new services required for future development to be sought under separate planning pathway.

## 1.2 SITE LOCALITY MAP



## 1.3 SOURCES OF INFORMATION

This report considers information obtained from:

- 1 Dial Before You Dig (**DBYD**) responses from affected utilities
- 2 Statement of Available Pressure and Flow, Lodged to Sydney Water – 27th of January 2021.
- 3 Ausgrid preliminary enquiry Assessment
- 4 City of Ryde Council guidelines
  - City of Ryde Development Control Plan 2014 including 2017 adopted amendments
  - Ryde Local Environmental Plan 2014
- 5 Relevant Australian Standards, primarily AS/NZS 3000, AS/NZS 3500, AS 5601, AS.2419 and AS.2118

## 1.4 ADDITIONAL SITE CONDITIONS AFFECTING DESIGN

The site is understood to fall within a bushfire area buffer zone and shall be protected with appropriate measures as required by the development consent conditions and as prescribed by the specialist bushfire consultant engaged by SINSW. The following diagram indicates the extent of the Ryde bushfire zoning available from City of Ryde Council's online mapping portal.

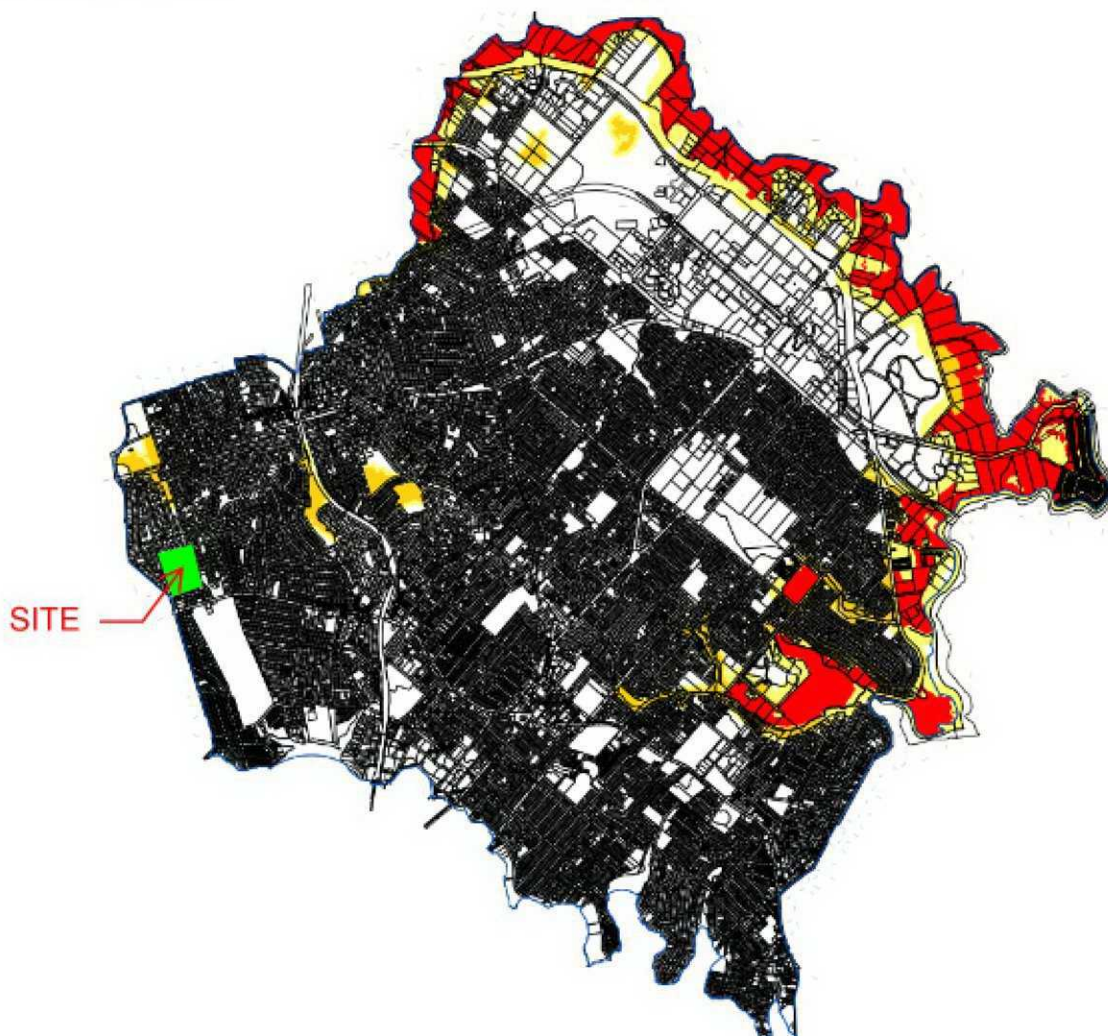


Figure 1 –Bushfire zoning extract from online mapping

## 1.5 ASSUMPTIONS

WSP have made the following assumptions in preparing this report:

- 1 The assessments contained herein is based upon the sources of information listed in **Section 1.2**. Should additional site utility infrastructure information be made available beyond the course of our scope, WSP reserve the right to review and amend our assessment outcomes accordingly.

- 2 Our assessments of fixed fire protection equipment requirements are based upon the following assumptions:
  - Site fire hydrant demand of two (2) hydrants operating simultaneously @ 20L/s
  - Should the design requirements of the project exceed this assumption, the contractor shall lodge pressure and flow enquiries to validate the final design outcome as necessary.
  - The pressure and flow statement is valid only for **12 months** from date of issue.
- 3 A site Feasibility Study (pre-DA Section 73) should be undertaken for site specific Authority advice regarding their assets should be undertaken to validate WSP's preliminary advice. The turnaround time on a feasibility study by Sydney Water is approximately two (2) months.
- 4 Coordination between any new incoming utilities to service the site has not been reviewed.

## 2 ELECTRICAL

### 2.1 EXISTING INFRASTRUCTURE

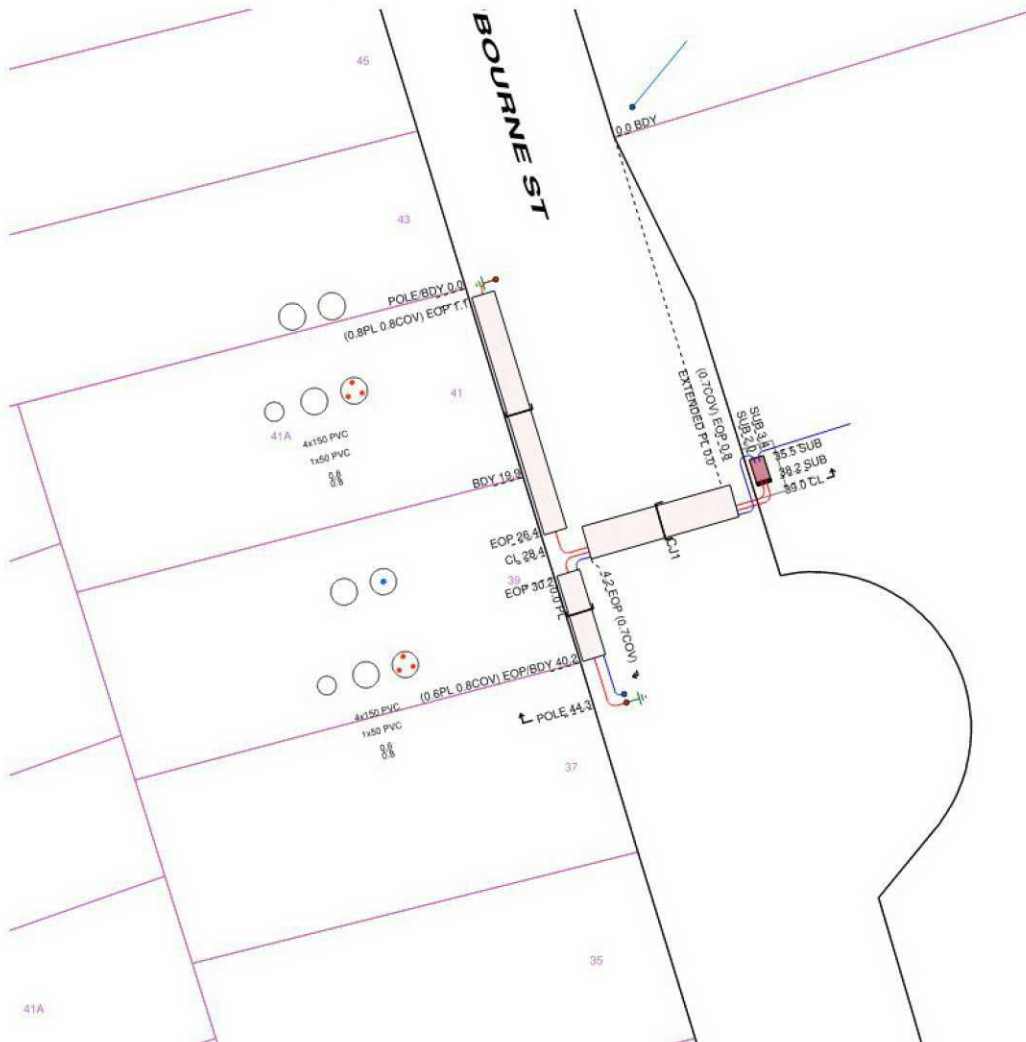


Figure 2 - Ausgrid Extract with Substation Asset.

## 2.2 POWER INFRASTRUCTURE ASSESSMENT

### 2.2.1 EXISTING POWER SUPPLY ARRANGEMENT

The power supply to the current site is serviced from Ausgrid substation S3276 located in Winbourne street. The substation is a shared substation providing power to the school and other customers in the area.

From the substation power is serviced to the main switchboard located near the library via a private pillar. The current service size is estimated to be 500 A from the site investigation and available documentation.

## 3 COMMUNICATIONS

### 3.1 NBN INFRASTRUCTURE



Figure 4: NBN Dial Before You Dig Plan Showing Network assets

### 3.2 COMMUNICATIONS INFRASTRUCTURE ASSESSMENT

#### 3.2.1 TELSTRA

Telstra has underground telecommunication assets located surrounding the site. There is an online process for registering your development with Telstra. The developer must apply to Telstra for the delivery of telecommunications services to the site at: <http://www.telstra.com.au/smart-community/developers/>

#### 3.2.2 NATIONAL BROADBAND NETWORK (NBN)

NBNCo dial before you dig mapping and site investigations confirm NBN service is currently available to the site. The rollout map indicates there is currently an active NBNCo service connection within the existing layback connected to G Block.

The architecture and communications planning of the building shall accommodate an FTD and an NTD within a dedicated communications room.



## 4 WATER AND SEWER

### 4.1 SYDNEY WATER INFRASTRUCTURE

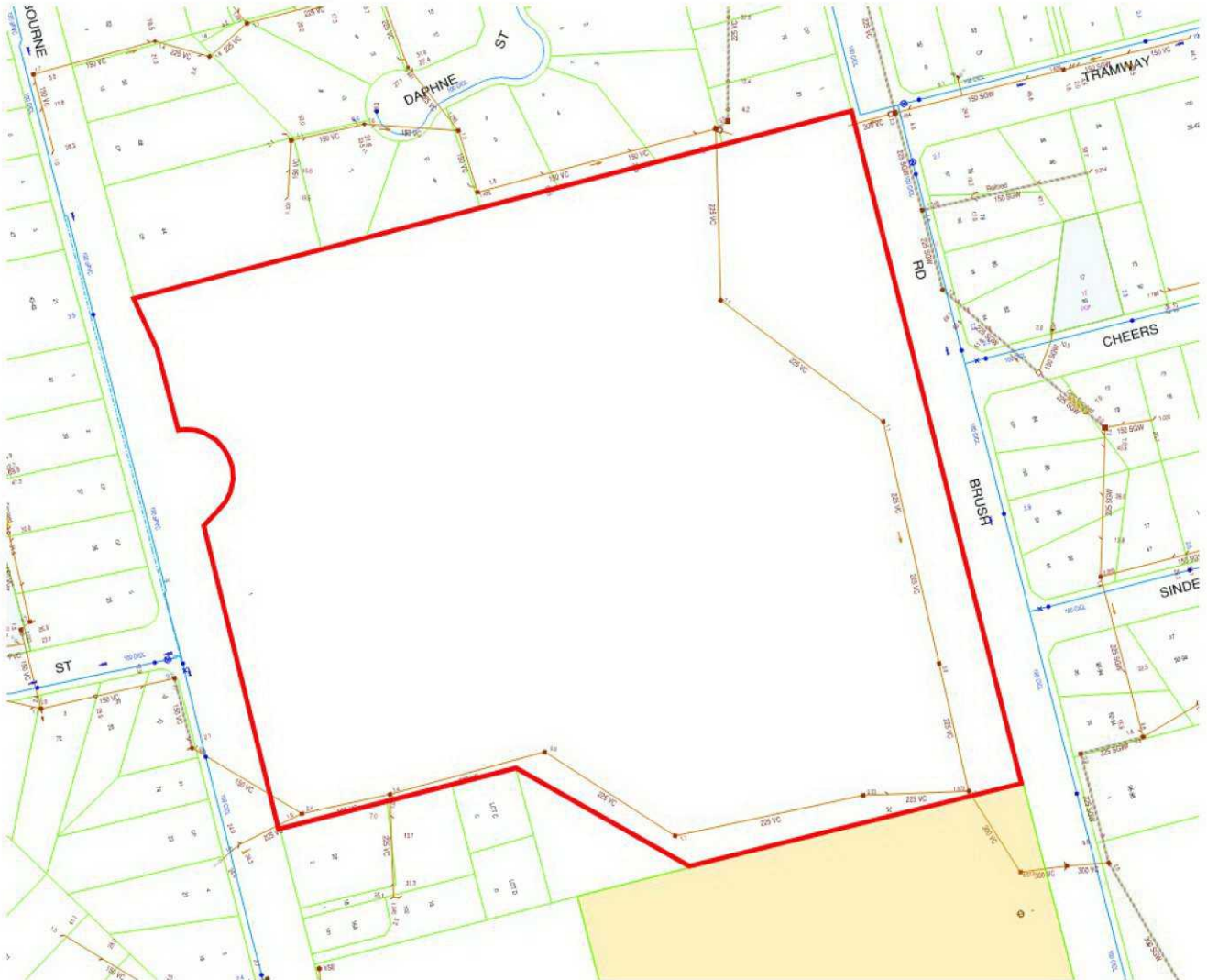


Figure 5: Sydney Water Dial Before You Dig Plan Showing Sewer and Water Networks within vicinity of redevelopment site

### 4.2 WATER INFRASTRUCTURE ASSESSMENT

The site is unencumbered of utility water mains and the site appears to be suitably serviced in its existing form. The existing Sydney Water' water mains infrastructure consists of water mains routed the entire length of the site in both Winbourne and Brush Streets.

- 1 The site has access to two Sydney Water assets:
  - Winbourne Street – 100mm water service
  - Brush Street – 100mm water service
- 2 The existing water mains routes appear clear of and may not be impacted by future developments

- 3 The site is proposed to utilise two (2) water connections consisting of separate domestic and fire hydrant supplies.
- 4 The architecture and plumbing design shall accommodate individual water metering for each stratum zone should the redevelopment be split into separate managed portions.
- 5 The Central Western boundary of the site adjacent to existing turning apron is the proposed position of site water meters and required fire hydrant booster assembly per Australian standards, design guidelines and site architectural master planning options.
- 6 The proposed location exceeds a 10m setback from the building to house the booster assembly in this location in accordance with NCC 2019 Deemed to Satisfy (DtS) requirements.

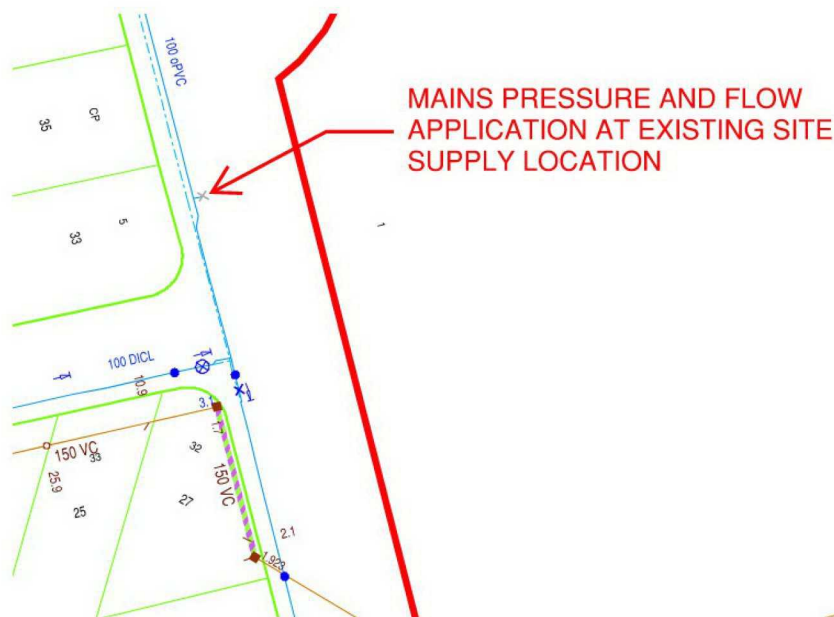


Figure 6: Mains locations of water pressure and flow test

A “Statement of Available Flows” enquiry to determine the 95% fire flows and pressures Shall be submitted to Sydney Water and an extract of their assessment is as follows:

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT		
Normal Supply Conditions		
Maximum Pressure	57 metre head	
Minimum Pressure	42 metre head	
WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	42
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5	39
	10	28
	14	11
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	5	37
	10	26
Maximum Permissible Flow	14	7

Figure 7: Sydney Water pressure and flow assessment extract

The water mains flow and pressure to service the development as advised by the pressure and flow statement obtained via Sydney Water are included in **APPENDIX A** indicate:

- 7 Fixed on-site fire hydrant protection system pumps and tanks are required for any the multi-story development
  - This assessment is based on assumed height of 12m with maximum allowable system losses of 150kPa as per AS.2419 requirements to achieve minimum unassisted supply of 10L/s (each) @ 250kPa supply at the most disadvantaged outlet(s)
  - This assessment is based upon the aggregate demand of hydrants required simultaneously as per AS.2419 and requirements.
- 8 Based upon the pressure and flow statement indicating the mains have insufficient flows available to supply the fire protection systems simultaneously, on-site dedicated fire protection storage tanks are required and will be designed to accommodate allowable inflows at the rate specified by the statement.
- 9 The site is advised as being situated within a bushfire danger zone, fire protection systems shall also provide for active bushfire protection measures in accordance with Development Consent and specialist consultant conditions.

The overall capacity of the water network must be assessed by Sydney Water via a *Section 73* application by the Part 4 consultant following submission of the development application (**DA**) process to the satisfaction of issue of a compliance certificate in accordance with Chapter 6 Part 2 Division 5 of the Water Management Act relating to the provision of services to the property.

---

## 4.3 SEWER INFRASTRUCTURE ASSESSMENT

The site is encumbered of utility sewer mains traversing the eastern and southern boundaries and the site appears to be suitably serviced by the existing Sydney Water sewer mains infrastructure with an existing sewer junction connection located in the south-eastern corner being the low point of the site.

- The Site is encumbered by the following assets:
  - Eastern boundary – 225mm VC sewer main falling towards the south along the watercourse alignment
  - Southern Boundary – 225mm VC sewer main falling from west to east along the existing embankment.
- The South-Eastern corner of the site would be the proposed position of connection.



# 5 NATURAL GAS

## 5.1 JEMENA GAS INFRASTRUCTURE

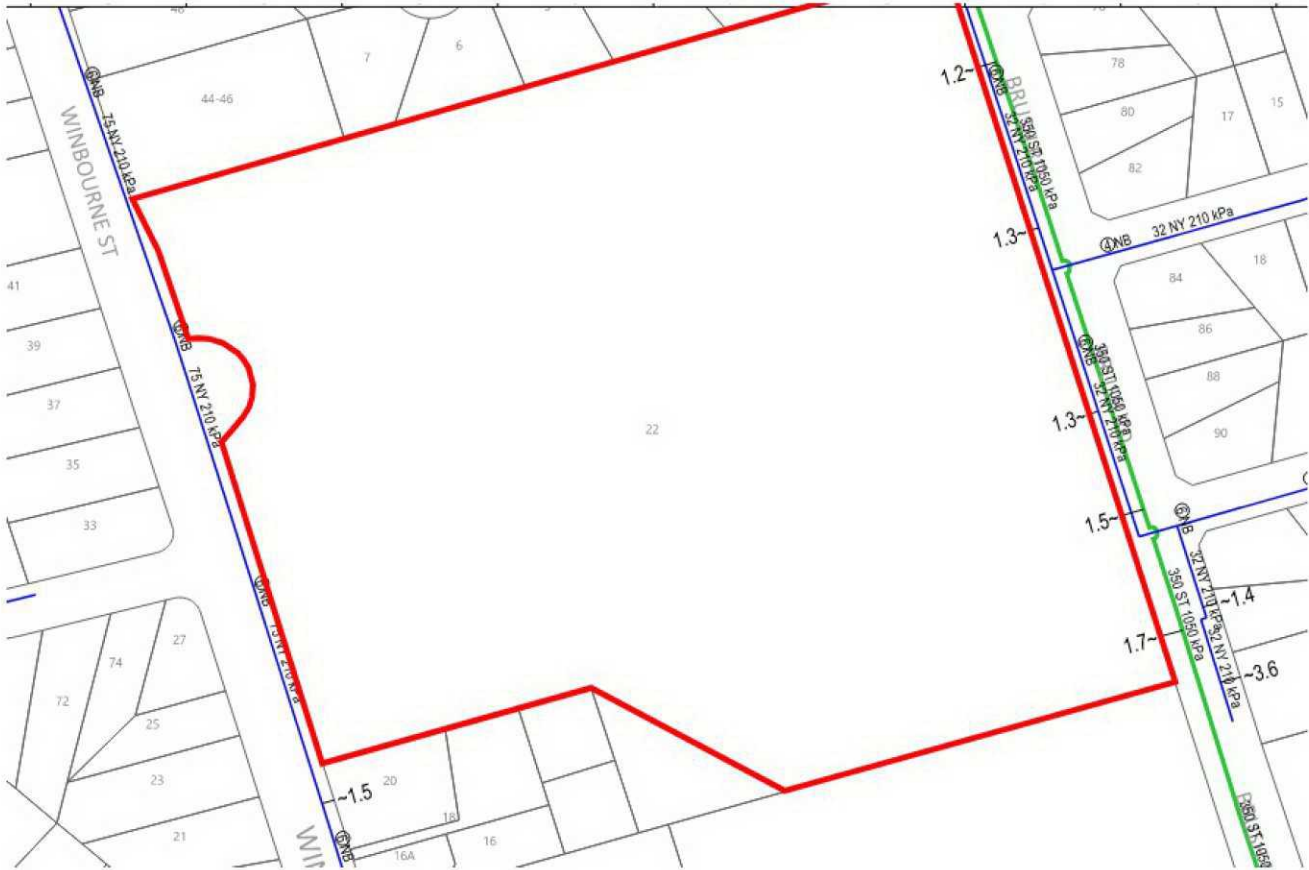


Figure 9: Jemena Dial Before You Dig Plan Showing Natural Gas Networks

## 5.2 GAS INFRASTRUCTURE ASSESSMENT

The site is currently in proximity of the following Jemena natural gas mains:

- 210kPa DN75 Nylon main along Winbourne Street currently serving the site;
- 210kPa DN32 Nylon main along Brush Street;
- 1050kPa DN350 Steel main along Brush Street; (Jemena do not permit connections to these mains)

Schools Infrastructure directive is to avoid use of gas where possible, in conjunction with Green star requirements the existing gas connection shall be decommissioned.

An “application to disconnect” shall be submitted to Jemena by the licensed plumber during construction.

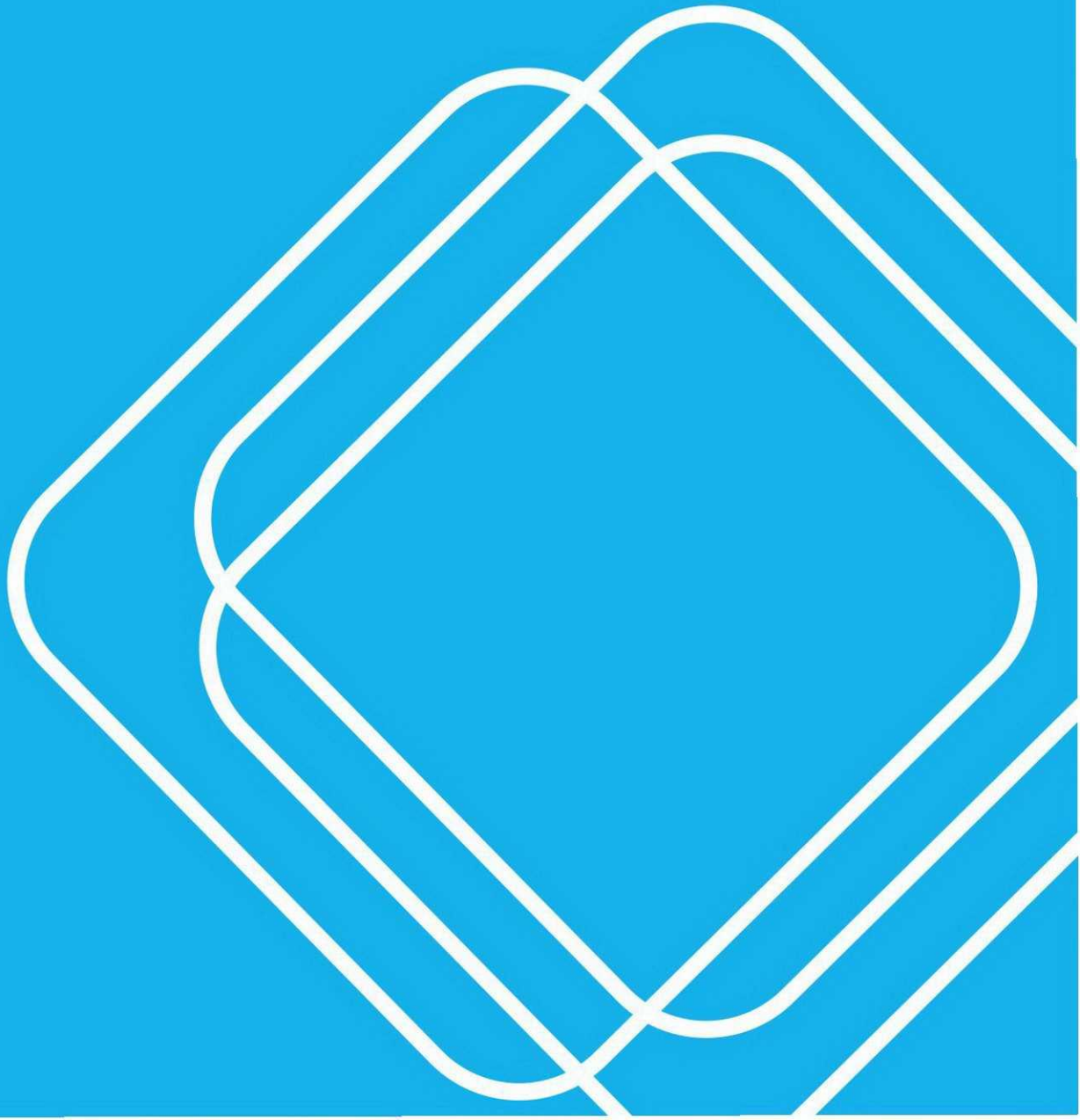
The existing gas mains are confirmed to supply gas to the site in the South western corner of the site.

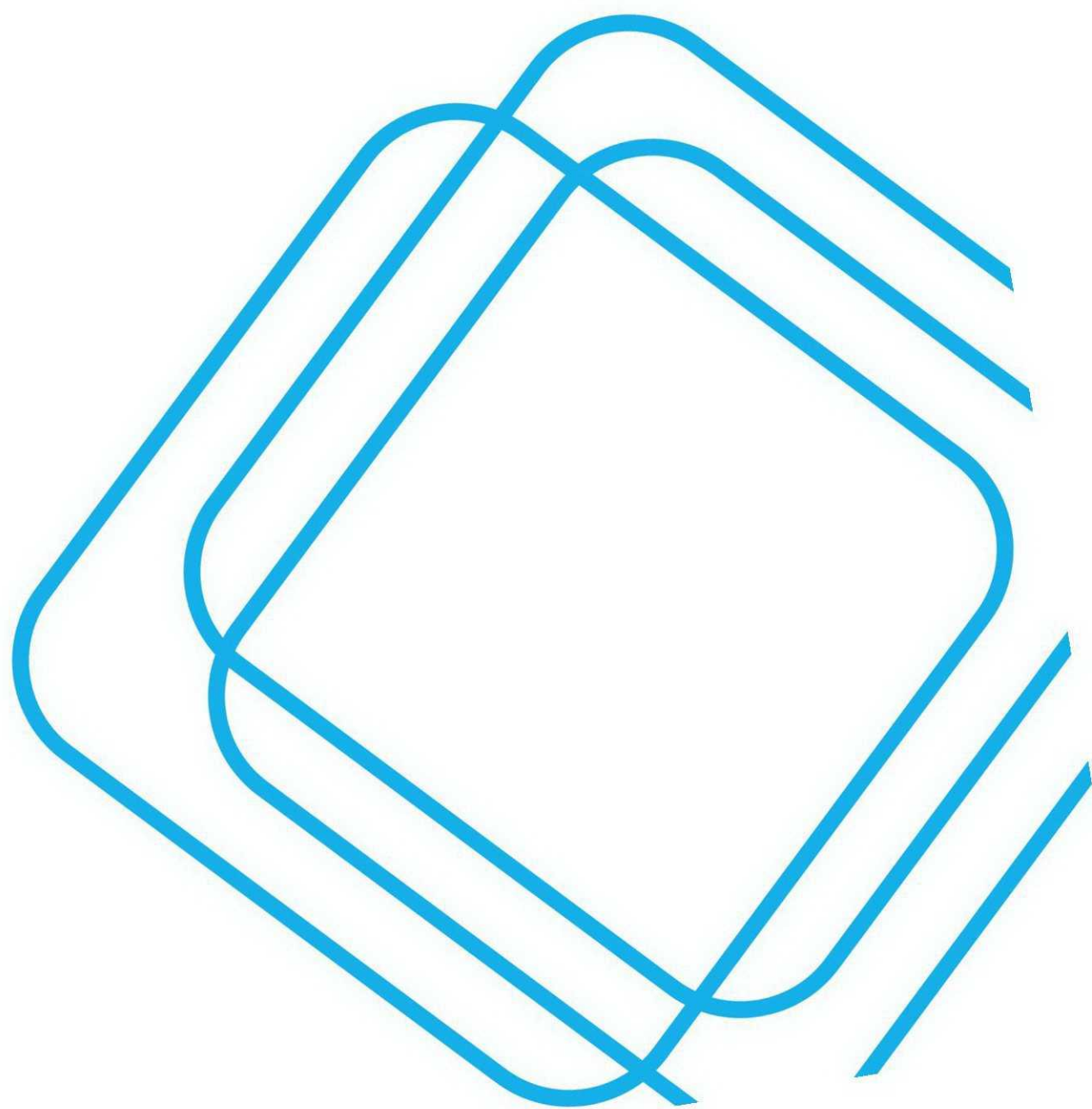
# END OF REPORT

# MARSDEN HIGH SCHOOL RECREATIONAL FACILITY PLANNING PROPOSAL

Traffic and Transport Impact Assessment

25 MARCH 2021







## Quality Assurance

<b>Project:</b>	Marsden High School Recreational Facility Planning Proposal		
<b>Project Number:</b>	SCT_00219		
<b>Client:</b>	Department of Education c/o School Infrastructure NSW	<b>ABN:</b>	40 300 173 822
<b>Prepared by:</b>	SCT Consulting PTY. LTD. (SCT Consulting)	<b>ABN:</b>	53 612 624 058

### Quality Information

<b>Document name:</b>	Marsden High School Recreational Facility Planning Proposal
<b>Prepared:</b>	Adam Smith, Consultant
<b>Reviewed:</b>	Jonathan Busch, Associate Director
<b>Authorised:</b>	Andy Yung, Director

Revision	Revision Date	Details
1.0	16 March 2021	Draft report
1.1	23 March 2021	Updated draft report
2.0	25 March 2021	Final report

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## Executive Summary

### Purpose of this report

A Traffic and Transport Impact Assessment has been undertaken to support the Department of Education c/o School Infrastructure NSW in a planning proposal seeking rezoning of the site.

### The proposal

The planning proposal seeks to rezone the existing Marsden High School site from SP2 Educational Establishment to RE1 Public Recreation. The rezoning will accommodate a future recreation use for 32 outdoor netball courts, a four-court indoor facility with associated support spaces, and at grade car parking at the site. The proposed recreational facilities are part of wider plans by Greater Sydney Commission to relocate the 28 outdoor courts existing netball facility at Meadowbank Park. The proposed recreational facilities at the study site will be by the Eastwood Ryde Netball Association (ERNA).

### Future planning context

The rezoning of the site supports the high population and economic growth in the City of Ryde Local Government Area (LGA) that is placing pressure on sporting facilities, which have insufficient space for expansion. This recreational facility supports delivery of the Meadowbank Education and Employment Precinct (Greater Sydney Commission), which is relocating Marsden High School into the education and employment precinct by 2022.

Future transport initiatives are aimed at connecting people to jobs, goods, and services in our cities and regions. These investments will increase the permeability of public transport networks throughout suburbs, which benefit both students and school employees through improved accessibility and service. Provision for pedestrian and cyclist activity and efficient interchanging contributes to a safe and comfortable active transport environment. This in turn promotes sustainable mode share.

The North District Plan indicates major transport, health, and education investments are underway, with a focus on well-connected walkable places that build on local strengths to deliver quality public places. This will encourage both school employees and students to shift to public transport or active transport due to improved accessibility around the site.

As part of the proposed City of Ryde Bike Network, Winbourne Street located along the western perimeter of the school is set to become a 'Regional Route'. These routes operate as the 'main roads' of the cycle network providing the greatest connectivity and separation from vehicle traffic. The site's proximity to the boundary of the City of Parramatta means the delivery of the Parramatta Cycling Network will also key supporting cycling to the site.

### Existing conditions

The data derived from the 2018/2019 Household Travel Survey showed the Ryde- Hunters Hills SA3 (which the site is located within) is consistent with the Greater Sydney average for most travel modes and purposes of trips. One key difference is the area has a higher bus mode share (10% compared to 5%) which will partially be due to the frequency and speeds of bus services along Victoria Road between Sydney CBD and Parramatta.

The study area is located within walking distance of several bus stops on Winbourne Street (300 m) and Victoria Road (1,200 m). These bus stops located along Winbourne Street are served by routes connecting to Macquarie shops, Auburn and Eastwood. The stops along Victoria Road connect to Sydney CBD, Parramatta, and West Ryde. Services along Winbourne Street are about two every hour whereas along Victoria Road buses depart every 10-15 minutes.

There is no dedicated cycling infrastructure in the vicinity of the site. Pedestrian footpaths are provided on at least one side of the street for the majority of the network within 1,200m of the proposed recreational facility.

The main roads in the vicinity of the development include Victoria Road, Marsden Road, Winbourne Street, Brush Road, and Tramway Street.

### Transport assessment

The proposed recreational facility is estimated to generate 132 fewer vehicle trips over an average week compared to the existing Marsden High School.

The relocation of the 28 outdoor courts at Meadowbank Park to the proposed recreational facility means most of the vehicle trips (78%) attributed to the study site are not additional but redistributed from elsewhere in the LGA. The remaining 22% of the forecasted vehicle trips are due to the eight additional netball courts which are planned for the study site. The additional courts are required to population increase within the area.

Victoria Road, within a 1,200m walk of the site, is a high frequency bus corridor linking Sydney CBD, Ryde, and Parramatta. This could act as a viable alternative to the car for members located in proximity to the corridor and reduce pressure caused by high car use on the network. Initiatives, such as an on-demand shuttle bus from designated stops, could further increase the attractiveness of non-car travel modes.

The active transport network around the planning proposal allows for walking and cycling to the nearby residential areas, public parks, and bus stops located along Victoria Road. Initiatives included in this report have the potential to enhance walking and cycling in the area.

## Conclusion

The planning proposal is positively aligned with the City of Ryde's ambition to address pressure on sporting facilities within the LGA as well as allow for the creation of new school spaces as part of the Meadowbank Employment and Education Precinct.

The proposed facility will result in a different weekly traffic profile to the existing school site, and a reduction in vehicle trips overall. The proposed recreational facility is located closer to public transport and residential areas than the existing Meadowbank Park netball facility potentially resulting in less car dependency within the LGA.

Capital and operational expenditure proposals have been made in this report to enhance the attractiveness of walking, cycling, and public transport to the site. Nevertheless, the road network is expected to will have sufficient capacity in its existing form to accommodate the vehicle trips from the proposed recreational facility.

## 1.0 Introduction

### 1.1 Background

SCT Consulting has been commissioned by School Infrastructure NSW (SINSW) on behalf of the Department of Education (DOE) to prepare a Traffic and Transport Impact Assessment to support a Planning Proposal to amend the 'land use zone' Development Standard in Ryde City Local Environmental Plan 2014 from SP2 Educational Establishment to RE1 Public Recreation. The site will include an indoor facility comprising of four courts, 32 outdoor courts, and provision of on-site car parking. The subject site is bounded by Winbourne Street to the west, and Brush Road to the east, Ermington Public School to the south, and residential properties to the north as shown in **Figure 1-1**.

**Figure 1-1 Study area**



The intended future use of the recreational facility is for netball courts. The proposed future facility will consist of 32 outdoor hard courts and four indoor courts. The indoor recreational facility will have an approximate floor plan of 4,000m<sup>2</sup> and seating for 100 spectators. Most of the activity will take place on Saturday between 8am–5pm, and one weeknight between 6-10pm.

The proposal is part of wider development plans across the City of Ryde to redesign Meadowbank Park and Memorial Park and deliver new residential and educational premises. The redesign results in the removal of the existing 28 court netball facility.

## 1.2 Purpose and scope of the report

The purpose of this Traffic and Transport Impact Assessment is to support the planning proposal for a recreational facility at the existing Marsden High School site. The report will:

- Inform future planning controls to ensure a coordinated and efficient approach to land use planning, environmental management, and transport infrastructure
- Ascertain the cumulative and regional traffic and transport impacts associated with future land-based demands associated with the rezoning
- Maximise efficiency and safety of the existing / proposed transport systems in proximity to the subject site.

The scope of this traffic and transport impact assessment is to:

- Review of relevant background documents and information including relevant state, regional and local planning policies, transport planning documents and parking Development Control Plan (DCP) and standards
- Update the desktop review of existing traffic and transport conditions including Census, Journey-to-work data, travel mode, and existing network descriptions and performance
- Collection and analysis of peak time weekday traffic volumes at Brush Road and Winbourne Street
- Determine the difference in trip generation between the proposed development and the existing school site
- Identify public and active transport measures and sustainable travel initiatives for the development.

## 1.3 Report structure

This report has been structured into the following sections:

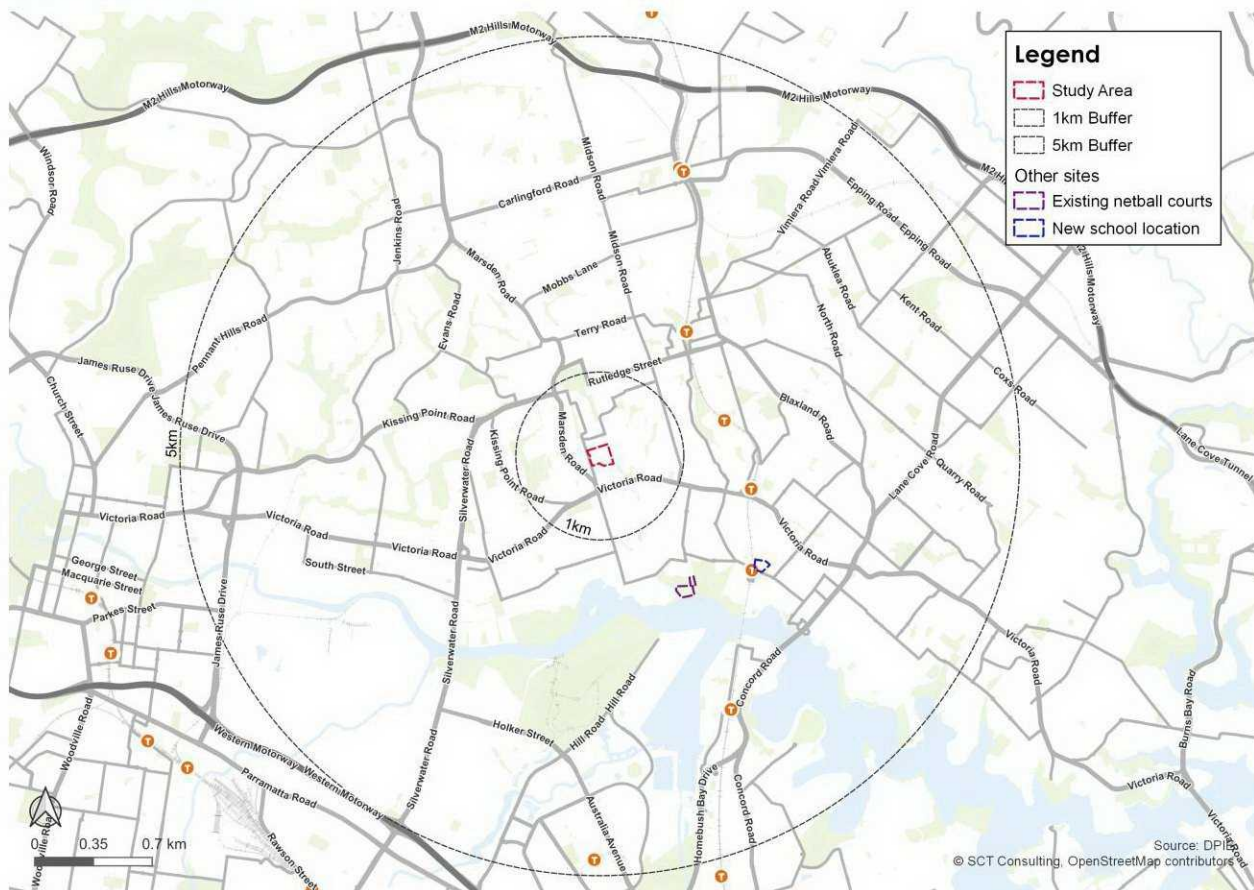
- **Section 2** reviews the relevant strategic planning and transport planning context
- **Section 3** describes the existing transport conditions in and around the site for all modes of transport
- **Section 4** describes the proposed development including development yield and proposed transport network
- **Section 5** discusses the traffic and transport appraisal which covers the assumed transport impacts and the mitigation measures
- **Section 6** presents the conclusions of the assessment

## 2.0 Strategic Context

### 2.1 Site context

The proposed recreational facility will be located at the existing Marsden High School site, 22 Winbourne Street, West Ryde. The site is situated between Winbourne Street to the west and Brush Road to the east. The site's regional context is shown in **Figure 2-1**.

**Figure 2-1 Site context**



The site is currently zoned as SP2 Educational Establishment. The planning proposal aims to amend the 'land use zone' Development Standard in Ryde City Local Environmental Plan 2014 to RE1 Public Recreation. The proposed recreational facility will primarily accommodate the 28 relocated netball courts from the existing facility at Meadowbank Park.

Concept Plans for the proposed recreational facility will see the overall frequency of netball courts increase by eight. The netball courts at Meadowbank Park are to be replaced by multi-purpose sports fields and a community lawn according to the *Meadowbank-Park and Memorial Park Draft-Masterplan (2018)*.

Ermington Public School (SP2 Educational Establishment) is located immediately south of the site. Low density residential properties surround the site to the north, east and west (R2 Low Density Residential). Maze Park (RE1 Public Recreation) is located south east of the site. There are two locally heritage listed items within vicinity of the site, being the former School residence/ 1988 Ermington School Building and Maze Park.

As part of the Meadowbank Education and Employment Precinct plans new residential, education, and employments premises will be situated in proximity to the Meadowbank Station. High residential development is also planned for Melrose park, south of Victoria Road.

## 2.2 Future Transport 2056

The Future Transport Strategy 2056 (NSW Government, 2018) is an update of NSW's Long-Term Transport Master Plan. It is a vision for how transport can support growth and the economy of New South Wales over the next 40 years. The strategy is underpinned by the Regional Services and Infrastructure Plan (NSW Government, 2018) and the Greater Sydney Services and Infrastructure Plan (NSW Government, 2018), as well as several supporting plans including Road Safety and Tourism (NSW Government, 2018).

The Future Transport Strategy 2056 sets the long-term vision for mobility and transport provision in NSW, explaining how the customer experience of transport will change and what this means for NSW. The Future Transport Strategy 2056 identifies Sydney as a growing global metropolis with benefits distributed more evenly across the city. It sets out a vision for a metropolis of three cities, with the vision helping to guide many of the planning, investment, and customer outcomes. Some of the key transport outcomes include faster, more convenient, and more reliable travel times to major centres, as shown in **Figure 2-2**.

**Figure 2-2 A future metropolis of three cities**



Source: The NSW Government Future Transport 2056 Strategy, 2018

Existing and potential transit connections, together with new technology and innovation, will make the network surrounding the site more responsive to demand and better able to manage congestion in the future. For the three cities identified, more specific outcomes listed as part of the Strategy which will benefit the site's transport context will include:

- A 30-minute access for customers to their nearest Centre by public transport 7-days a week
- Fast and convenient interchanging with walking times no longer than 5 minutes between services
- Walking or cycling as the most convenient option for short trips around centres and local areas, supported by a safe road environment and attractive paths
- Fully accessible transport for all customers.

Moving people from private vehicles to more sustainable transport modes will reduce congestion and the transport sector's emissions intensity, improve air quality, and support better health and wellbeing. Well-planned centres and cities will enable a shift from private cars to public transport and walking and cycling. In Sydney, the key to this will be the delivery of three 30-minute cities, supported by reliable 'turn up and go' mass transit services.

**Figure 2-3** shows some of the proposed public transport improvements between Sydney CBD and Greater Parramatta. The blue line labelled 11 is for the Victoria Road Public Transport Improvements program. The program involves improving bus connectivity, speed, and frequency along Victoria Road between Sydney CBD and Parramatta CBD. This could further increase the attractiveness of bus travel within this part of Greater Sydney providing a feasible alternative to the car.