

# Building Services Planning Proposal Review

For

## Mixed Use Community Centre & Residential Development

At

## 23 Kiara Road & 2-6 Willock Avenue, Miranda

**Client:**

Formus Miranda Pty Ltd  
Level 4, 130 Pitt Street  
Sydney NSW 2000

**Project Number:**

NSW220032

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Nsw220032 Building Services Planning Proposal Review

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**Document Revision History**

Date	Rev	Author	Reviewed by	Approved by	Comments
19/10/23	A	Rod Ware/ Alex Rodriguez	Brett Lipscombe	Brett Lipscombe	First Issue
23/10/23	B	Rod Ware/ Alex Rodriguez	Brett Lipscombe	Brett Lipscombe	First Issue

# 1 Executive Summary

This Planning Proposal Review outlines a desktop review of the existing Authority Infrastructure that may be available to service the proposed mixed use residential development site at 23 Kiora Road and 2-6 Willock Street, Miranda.

The information contained herein has been prepared with reference to the current planning proposal scheme developed by Turner.

The Authority infrastructure issues that have been identified herein are as expected for this type of development, and will be resolved as the design develops to ensure integration of the proposed development with the Authority infrastructure.

## 1.1 Infrastructure Summary

A summary of our preliminary Authority infrastructure review for the proposed development is as follows;

Service	Assessment	Comment
<b>Electrical Supply</b>	⊘	Our desktop assessment indicates that Ausgrid Energy High Voltage (HV) infrastructure along Willock Avenue and Kiora Road underground on the opposite side with respect to the development site to provide electricity to the site. Ausgrid will need to confirm existing electrical capacities and confirm if street electricity infrastructure requires upgrading. It is anticipated that a new 1000kVA outdoor indoor mini-chamber substation will be required for the proposed development. Electrical infrastructure works will be required to bring a high voltage feed to the site. Ausgrid need to confirm the extent of any infrastructure works on the existing electricity network.
<b>Communications</b>	☑	There appears to be adequate NBN telecommunications pit and pipe infrastructure reticulating in-ground, alongside and adjacent to the site property boundary at Willock Avenue and Kiora Road to the proposed development to enable the NBN to reticulate telecommunications fibre cabling to the site.
<b>Stormwater Drainage</b>	☑	An existing Council stormwater main is located adjacent to the site in Willock Avenue and Kiora Road.  The site will require standard provisions of on-site stormwater detention and water quality measures associated with the proposed development compliance to Sutherland Shire Council policies. However, it is anticipated that the existing Council stormwater assets will be suitable to service the site.
<b>Sewer Drainage</b>	⊘	There is an existing Sydney Water Corporation 225mm sewer main located within the southern boundary that runs parallel to the boundary line and is a distance of approximately 1m from the boundary. The proposed development is currently designed to extend to the southern and western boundaries. This building is within the zone of influence of this sewer main and will require coordination with a SWC Water Servicing Coordinator by the means of an out of scope building plan approval.  There are also existing Sydney Water Corporation 225mm sewer main in Willock Avenue and an existing Sydney Water Corporation 225mm sewer main in Kiora Road. At this stage, it is expected that the proposed development will discharge into the sewer main in Willock Avenue.  The feasibility of actual capacities, connection depths and inground services coordination all need to be investigated with Sydney Water via a

		Water Servicing Coordinator and Section 73 Application at the earliest possible opportunity should the development proceed.
<b>Potable Cold Water and Fire Services Water</b>	<input checked="" type="checkbox"/>	<p>There are existing Sydney Water 150mm potable cold water mains within Willock Avenue and Kiora Road. Either are likely to have adequate capacity to service the proposed development with cold water with reference to typical Water Code of Australia design requirements. However, Sydney Water Corporation do make independent assessments based upon their actual internal system modelling.</p> <p>Based on the SWC Pressure Inquiries obtained by Intrax, the water mains will also likely have capacity to service the proposed development for fire services. Refer to copies of the SWC information in the Appendix.</p> <p>The feasibility of actual capacities, potential amplifications and inground services coordination all need to be investigated with Sydney Water via a Water Servicing Coordinator and Section 73 Application at the earliest possible opportunity should the development proceed.</p>
<b>Natural Gas Service</b>	<input checked="" type="checkbox"/>	<p>There are existing Jemena medium pressure (210kPa) gas mains in Willock Avenue and Kiora Road. Both are on the opposite side of the street from the proposed development.</p> <p>Either main is likely to have adequate capacity to service the development. This will need to be confirmed with Jemena upon application for the proposed development.</p>

Infrastructure Services have been assessed as follows;

- Infrastructure connection is readily available.
- Infrastructure connection requires minor adjustment of existing services.
- Infrastructure connection requires significant amplification or diversion of existing services.

## 1.2 Limitation Of Review

Review provided by Intrax Consulting Engineers Pty Ltd as presented in this report contains the following general limitations;

- The information contained herein refers to desktop review of existing Authority infrastructure.
- Noting this is a planning proposal, further detailed analysis will be undertaken at DA stage to validate Authority Infrastructure capacity assessments.

## 2 Introduction

### 2.1 Introduction

This report supports a Planning Proposal request submitted to Sutherland Shire Council pursuant to Section 3.33 of the Environmental Planning and Assessment Act 1979 (EP&A Act) on behalf of The Salvation Army and Formus Miranda Pty Ltd (the Proponents).

As a first step in the planning approvals process, the Proponents seek to amend development standards in Sutherland Shire Local Environmental Plan 2015 (SSLEP 2015) to facilitate the future redevelopment of 23 Kiora Road and 2-6 Willock Avenue, Miranda (the site).

This report forms part of the Planning Proposal request to enable a mixed-use development in the Miranda strategic centre that will enhance The Salvation Army (TSA)'s operations within the Sutherland Shire by enabling them to offer greater support to the community through a renewed community centre which forms part of a mixed use development, including the provision of diverse housing to meet the local market demand and cater to key workers in the Sutherland Shire.

Specifically, this report will include reference to the following Authority infrastructure;

- Power Supply
- Communications
- Stormwater Drainage
- Sanitary Drainage
- Potable Cold Water/Fire Services Water
- Natural Gas

The aim of this review is to provide a high level understanding of the existing Authority infrastructure, with a view to identifying the potential capacity of such infrastructure to support the proposed development.

### 2.2 Briefing Documents

The building services engineering elements considered in this report have taken into account the following preliminary documentation and investigations;

- Planning Proposal architectural scheme developed by Turner Studio
- Before You Dig Australia inquiry.
- NBN Co Availability Website.
- Sutherland Shire Council stormwater asset plans available from the Council web site.
- Sydney Water Corporation Pressure Inquiry data.

### 2.3 Site Description

The site is located at 23 Kiora Road and 2-6 Willock Avenue, Miranda, within the Sutherland Shire Local Government Area (LGA). The site sits within the Miranda Town Centre, one of two strategic centres in the Sutherland Shire (the other being Sutherland-Kirrawee), which is situated approximately 5km west of the site. The site comprises four (4) lots under single ownership, and is legally described as follows:

- Lot 2 DP359422 – 23 Kiora Road
- Lot 3 DP21777 – 2 Willock Avenue
- Lot 4 DP21777 – 4 Willock Avenue
- Lot 5 DP21777 – 6 Willock Avenue

The site's existing improvements comprise two (2) main buildings. Situated on the lot known as 23 Kiora Road, is TSA's existing community centre, which comprises a single storey building adjoined by a hardstand car parking area, which generally occupies the remainder of the Kiora Road frontage as well as the corner of Kiora Road and Willock Avenue. The second building is a former dwelling house fronting Willock Avenue, which is now used for on-site administration by TSA. Grassed lawns occupy the front and rear setbacks of this lot (6 Willock Avenue), as well as interspersed trees and other vegetation. The site has multiple vehicular access points, with each of the four (4) individual lots having a dedicated driveway. The Brush Box and Camphor Laurel street trees fronting Kiora Road are listed as items of heritage significance in Schedule 5 of Sutherland Shire Local Environmental Plan 2015.

## 2.4 The Salvation Army

The Salvation Army is a Christian organisation that provides a range of services to people in need. Their primary mission is to assist individuals and families overcome a wide array of social challenges, as well as offer spiritual guidance and support. TSA provide support to communities by addressing immediate needs, whilst also providing resources for long-term stability and success. TSA's operations in Miranda and the broader Sutherland Shire champion the above services, with a range of faith and connection groups for people of all ages, as well as social support services including crisis assistance, financial counselling, transitional housing, and rehabilitation services.

The Planning Proposal seeks to enhance TSA's operations within the Sutherland Shire by enabling them to offer greater support to the community through a renewed community centre which forms part of a mixed use development, including the provision of diverse housing to meet the local market demand and cater to key workers in the Sutherland Shire.

## 2.5 The Planning Proposal

The Planning Proposal seeks the following amendments to the development standards in Sutherland Shire Local Environmental Plan 2015 (SSLEP 2015).

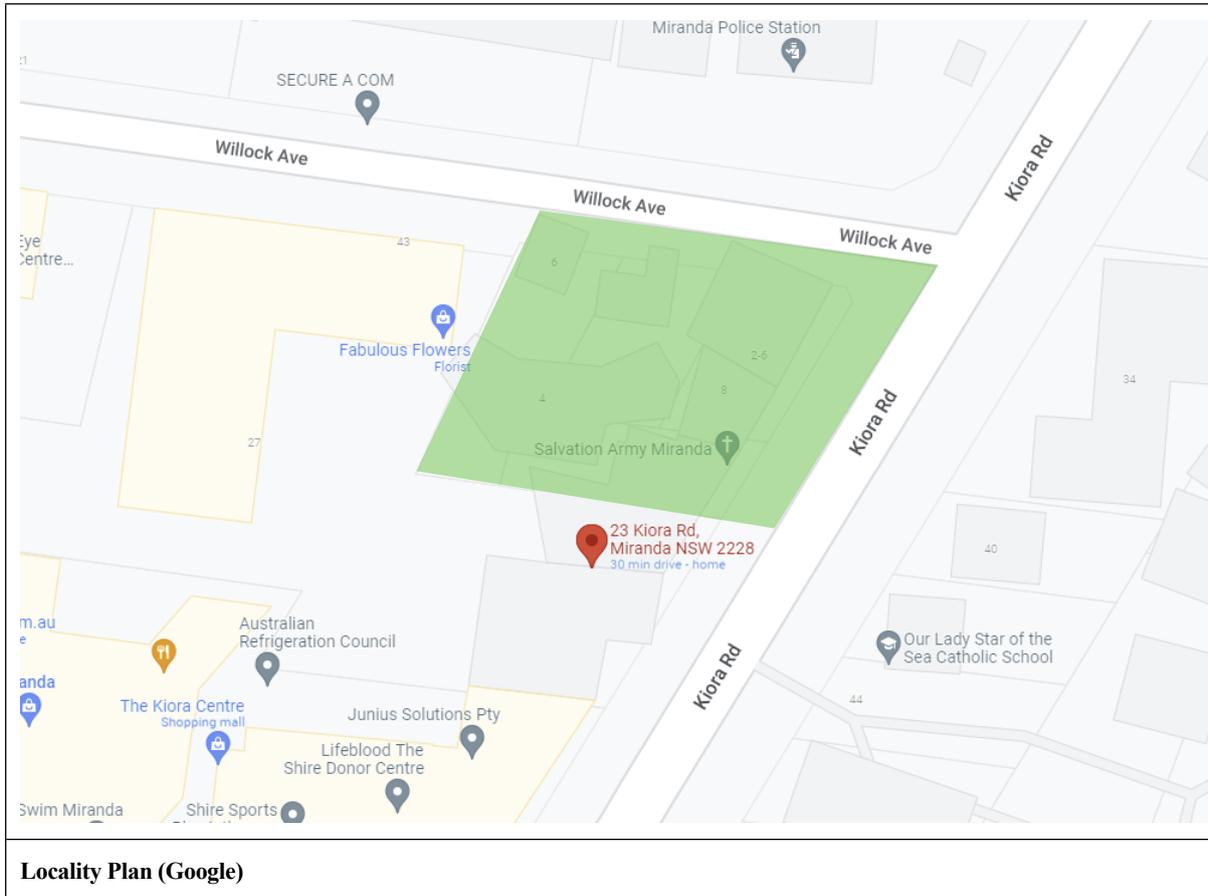
- Amend the Sutherland Shire LEP Maximum Height of Buildings Map to a maximum of 60 metres (from the existing 25 metres).
- Amend the Sutherland Shire LEP Floor Space Ratio Map to a maximum floor space ratio (FSR) across the site of 5.5:1 (from the existing 2:1 floor space ratio).

The Planning Proposal will enable the redevelopment of the site to accommodate a mixed-use development, commensurate with the site's location in the Miranda strategic centre. The mixed-use development will consist of:

- A four-level podium comprising:
  - Three levels of residential apartments; and
  - A holistic community centre for The Salvation Army on the ground floor, encompassing:
    - Salvos Co-Op dignity store;
    - A kitchen and back-of-house facilities;
    - Loading, parking, and services;
    - Consulting rooms;
    - Family services and children's play zone;
    - A multi-purpose community centre; and
    - An outdoor communal garden.
- A residential building above, with communal facilities on the rooftop; and
- Three basement levels comprising car parking, bicycle storage, waste storage, utility rooms, and residential storage cages.

## 2.6 Locality Plan

The proposed development will include 23 Kiara Road site and extend to Willock Avenue by consolidating with adjacent properties.



## 2.7 National Construction Code Classifications

The building services design for this project shall be prepared in accordance with the 2022 National Construction Code (NCC) to be adopted by states and territories from 1<sup>st</sup> of May 2023, specifically Volume One (The Building Code of Australia Class 2 to Class 9 Buildings). With respect to the NCC we understand that the buildings classifications are as follows;

Building Area	NCC Classification
Underground Carparks	Class 7a
Community Centre	Class 9b
Residential Areas	Class 2

- For the purposes of fire safety requirements, the building has an effective height more than 25m as classified by the NCC.
- For the purposes of fire safety requirements, the building has an effective height greater than 50m as classified by the NCC.

- For the purposes of energy efficiency requirements, the building is located within Climate Zone 5, as classified by the NCC.

## 2.8 Title Arrangements

The development will be provided under multiple stratum. Details of the title arrangements would need to be confirmed after further design development, however preliminary assumptions are as follows.

Building Area	Title
<b>Ground Level/The Salvation Army</b>	Separate Stratum
<b>Residential Units</b>	Separate Stratum

### 3 Electrical Services

#### 3.1 Electrical Services Generally

Specifically, this Planning Proposal Review shall cover the following services;

- Authority Infrastructure (High Voltage HV Power Supply)

#### 3.2 Authority Infrastructure

Ausgrid are the electricity supply authority in terms of high voltage power infrastructure reticulate alongside Willock Ave and Kiora Rd on the opposite side with respect to the proposed development site.

Intrax Projects has undergone an early electrical maximum demand calculation to ascertain the approximate total electrical load of the proposed site. The calculated electrical maximum demand for the site based on AS/NZS 3000: 2018 is calculated to be 1271A/Ph (877kVA) at 0.8 site wide diversity factor applied. A new Ausgrid mini-chamber substation will likely be required to supply the proposed site. A certified Level 3 Accredited Service Provider (ASP) will be required to be engaged to ascertain the type of electricity supply to the development.

Based on the dial before you dig there appears to have high voltage infrastructure along Willock Ave and Kiora Rd, however there is the possibility that the high voltage street infrastructure may require upgrading. Ausgrid need to confirm whether any upgrades to the Ausgrid network are required due to the additional load.

The chamber substation location shall comply with the requirements of local supply authority (Ausgrid) and the Level 3 ASP designer's design.

An accredited Level 3 service provider (ASP) will be required to undergo the chamber substation design and to undergo an investigation for the most effective location the substation to connect to the existing Ausgrid electricity network. Dial Before You Dig information suggests that the electricity network is available within the vicinity of the site however the nearest high voltage connection points between existing Ausgrid substations need to be confirmed by Ausgrid. Refer to appendix section for more information.

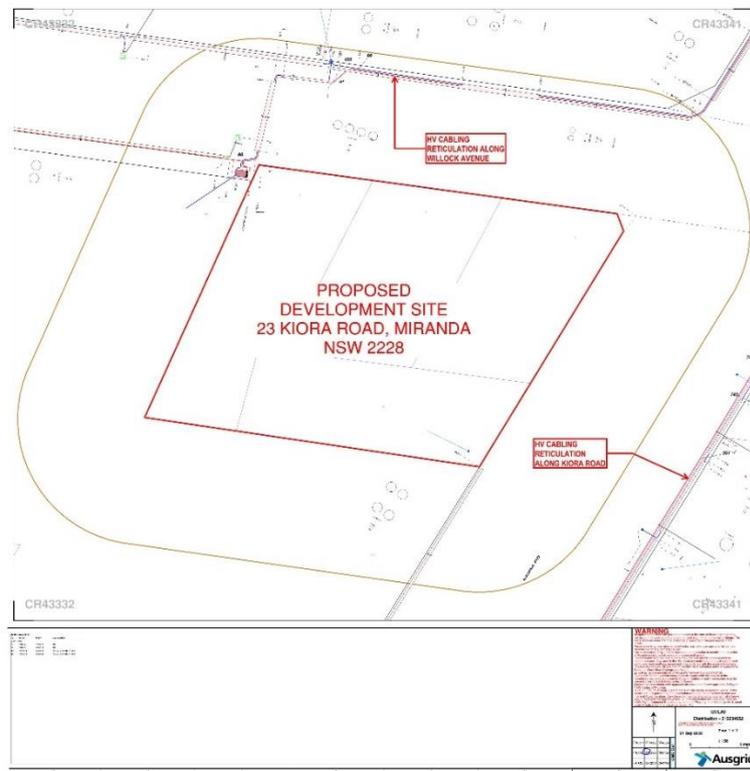


Figure 1 - Ausgrid Infrastructure Along Willock Avenue and Kiora Road

## 4 Communications Services

### 4.1 Communications Services Generally

Specifically, this Planning Proposal Review shall cover the following services;

- Authority Infrastructure (Communications Street Supply)

### 4.2 Authority Infrastructure

Our assessment of the communications infrastructure indicates that there is sufficient NBN Street Infrastructure available to provide fibre communications services to the development.

NBN Co fibre are available in the area and is proposed to be used for the development. There appears to be communications pit and pipe infrastructure available along Willock Avenue and Kiora Road to enable NBN Co fibre reticulation to the proposed development site.

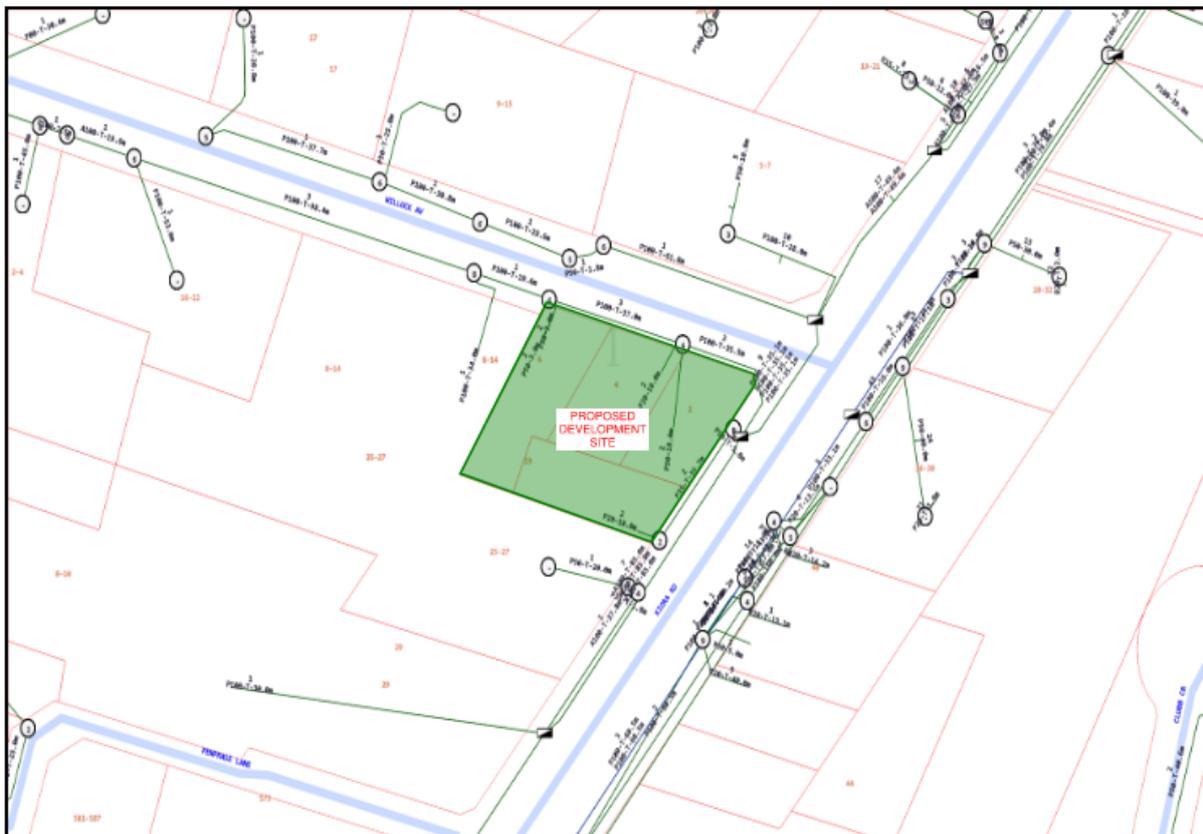


Figure 2 - NBN Service Availability ([www.nbnco.com.au](http://www.nbnco.com.au))

## 5 Stormwater Drainage Services

### 5.1 Stormwater Drainage Services Generally

Specifically, this section of the Planning Proposal Review shall cover the following services;

- Stormwater Drainage

### 5.2 Authority Infrastructure

Sutherland Shire Council are the Authority who provide stormwater drainage infrastructure in the locality of the development site.

- **Kiora Road** – An existing stormwater pipe runs on the western side of Kiora Road, parallel with the site’s eastern boundary and falling towards the north.
- **Willock Avenue** – An existing stormwater pipe runs on the northern side of Willock Ave and intersect with the stormwater main trunk at Kiora Road

Existing Council stormwater mains are located in adjacent Willock Avenue and Kiora Road. Refer to Sutherland Maps as shown in [Figure 3](#)



Figure 3 - Existing Stormwater System

### 5.3 Stormwater Drainage Requirements

The proposed development will provide commercial facilities in accordance with the Development Description as detailed herein. The site has an approximate area in the order of 2,447m<sup>2</sup>.

We have based our stormwater drainage load estimates upon the following allowances;

- 5% AEP (5 min) rainfall of 181mm/hr.
- 1% AEP (5 min) rainfall of 230mm/hr.

Peak run-off for a pre-developed site with a max of 75% impervious area has been estimated at 73.0 L/s for the 20% AEP storm event, and 136.0 L/s for the 1% AEP storm event.

## 5.4 Anticipated Works

Sutherland Shire Council will determine the available capacity of their network and the suitability of existing mains for connection of this development via a Stormwater Management Plan to be developed and submitted in association with the Development Application.

At this stage we do not anticipate any stormwater drainage infrastructure upgrade works being required, however the typical council policy requirements for site stormwater drainage facilities will apply including;

- Water Quality Control Measures,
- On-site Stormwater Detention,
- Rainwater Re-use (in addition to BASIX requirements).

## 6 Sanitary Drainage Services

### 6.1 Sanitary Drainage Services Generally

Specifically, this section of the Planning Proposal Review shall cover the following services;

- Sanitary Drainage

### 6.2 Authority Infrastructure

Sydney Water are the Authority who provide sanitary drainage infrastructure in the locality of the development site. Currently there are three Sydney Water sewer mains located within the development site, described as follows;

- **Willock Avenue (225)** – an existing 225mm sewer main runs on the southern side of Willock Avenue, parallel with the sites northern boundary and falling towards the east.
- **Kiora Road (225)** – an existing 225mm sewer main runs on the western side of Kiora Road, parallel with the site's eastern boundary and falling towards the north.
- **Site Sewer (225)** – an existing 225mm traverses the site approximately 1m from the southern boundary and running parallel with the southern boundary. The main has a sewer manhole immediately outside the proposed development boundary on the east and west sides.

### 6.3 Sanitary Drainage Requirements

The proposed development will provide commercial facilities in accordance with the Development Description as detailed herein.

The final design of sanitary drainage requirements will be based upon actual fixtures connected, and the required sizing of main connections and reticulation pipework will be subject to the available gradient for the connected load. However, in terms of a preliminary estimate we have based our sanitary drainage load upon the architectural drawings provided and the Fixture Unit (FU) method outlined in AS3500.2.

For the proposed development we have estimated the load to be 1535FU, nominally requiring a 225mm sewer connection.

### 6.4 Anticipated Works

Sydney Water will determine the available capacity of their network and the suitability of existing mains for connection of this development via the Section 73 application process. A feasibility stage of this process can be undertaken prior to Development Application via a Water Servicing Coordinator.

At this point we anticipate the following Sydney Water infrastructure works may be required as a minimum;

- **Site Sewer (225)** – The existing 225mm sewer main within the site boundary will an out of scope building approval with Sydney Water through the Water Servicing Coordinator (WSC). The WSC will require the following as part of the out of scope building approval;
  - Service protection Report (Peg out).
  - Full Set of Architectural plans.
  - Site plan with Sydney Water assets overlaid as per the location shown on the peg out.
  - Engineering plans – needs to show clearances, cross section, and location of impacted assets.
  - Specialist engineering assessment – Completed by a chartered engineer.
  - Specialist engineering assessment checklist completed by engineer along with evidence of competency (Sydney Water have a template).
  - Work methodology – detail the protection of Sydney Water assets during construction.

## 7 Potable Cold Water Services

### 7.1 Potable Water Services Generally

Specifically, this section of the Planning Proposal Review shall cover the following services;

- Potable Cold Water Supply
- Fire Services Water Supply

### 7.2 Authority Infrastructure

Sydney Water are the Authority who provide potable cold water infrastructure in the locality of the development site. Currently there are two water mains located within close proximity to the development site, described as follows;

- **Willock Avenue (150)** – an existing 150mm uPVC water main runs on the southern side of Willock Avenue. The main is accessible for the entire length of the site's northern boundary.
- **Kiara Road (150)** – an existing 150mm DICL water main runs on the eastern side of Kiara Road. The main is accessible for the entire length of the site's eastern boundary.

### 7.3 Potable Cold Water Requirements

The proposed development will provide commercial facilities in accordance with the Development Description as detailed herein.

The final design of potable cold water service requirements will be based upon actual fixtures connected, and the required sizing of main connections and reticulation pipework will be subject to the connected load. However, in terms of a preliminary estimate we have based our potable cold water service load upon the architectural plans provided with the following allowances:

- Residential: 116 Units with a probable simultaneous flow rate of 9.3L/s,
- Ground Level (TSA): 1 tenancy with a flow rate of 1.05L/s,
- Irrigation: a flow rate of 1.0L/s.

The total diversified flow rate has been estimated at 11.3L/s, nominally requiring an 100mm main connection.

Water main capacities are typically designed with reference to the Water Code of Australia design requirements which are detailed as follows;

- Connections for buildings up to 4 stories should be obtained from minimum 100mm diameter water mains.
- Connections for building up to 8 stories should be obtained from minimum 150mm diameter water mains.
- Connections for building exceeding 8 stories should be obtained from minimum 200mm diameter water mains.

Based on the requirements above, the existing Sydney Water 150mm is expected to have adequate capacity to service the proposed development. However, Sydney Water do make independent connection assessments based upon their actual internal system modelling.

### 7.4 Fire Services Cold Water Requirements

The proposed development will provide commercial facilities in accordance with the Development Description as detailed herein.

The final design of fire services requirements will be based upon actual building uses and fire compartment areas. In terms of a preliminary estimate we have based our fire service water supply requirements on the following system allowances:

- The selection of a combined fire hydrant and fire sprinkler system as the most cost-efficient alternative for the development.

- The building being more than 25m in effective height as classified by the National Construction Code and therefore requiring dual water supplies.
- A worst case sprinkler system hazard classification for retail of Ordinary Hazard III, requiring a design density of 5mm/m<sup>2</sup> over 216m<sup>2</sup>, or 18 heads operating in the commercial tenancy/salvation army portion.
- A worst case fire hydrant system fire compartment area in excess of 5,000m<sup>2</sup>, requiring a design flow of 30L/s.
- No allowance for wall wetting fire sprinkler drenchers at this stage.

The total combined fire hydrant / fire sprinkler system flow rate has been estimated at 50L/s. It would be reasonable to assume that this flow rate can be supplied by either of the Willock Avenue or Kiora Road water mains. Refer to the available flow and pressure assessments from Sydney Water Corporation in the Appendix.

## 7.5 Anticipated Works

Sydney Water will determine the available capacity of their network and the suitability of existing mains for connection of this development via the Section 73 application process. A feasibility stage of this process can be undertaken prior to Development Application via a Water Servicing Coordinator.

At this point we anticipate that either of existing 150mm mains adjacent to the site would have adequate capacity to service the development.

## 8 Natural Gas Services

### 8.1 Natural Gas Services Generally

Specifically, this section of the Planning Proposal Review shall cover the following services;

- Natural Gas

### 8.2 Authority Infrastructure

Jemena are the Authority who provide natural gas infrastructure in the locality of the development site. Currently, there are two natural gas mains located within close proximity to the development site, described as follows;

- **Willock Avenue (75)** – an existing 75mm nylon 210kPa gas main runs on the northern side of Willock Avenue, parallel with the site's northern boundary. The main is accessible for the entire length of the site's northern boundary.
- **Kiora Road (40)** – an existing 40mm nylon 210kPa gas main runs on the eastern side of Kiora Road, parallel with the site's eastern boundary. The main is accessible for the entire length of the site's eastern boundary.

The capacity of existing natural gas mains will need to be investigated by Jemena once a connection application is made. However, in terms of initial planning, we believe that the existing 40mm or 75mm medium pressure nylon mains will have adequate capacity to service the proposed development.

### 8.3 Natural Gas Requirements

The proposed development will provide residential facilities in accordance with the Development Description as detailed herein.

The final design of natural gas service requirements will be based upon actual appliances connected, and the required sizing of main connections and reticulation pipework will be subject to the connected load. However, in terms of a preliminary estimate we have based our natural gas service load upon the architectural plans provided with the following allowances;

- Residential centralized gas hot water plant of 1,600MJ/hr,
- Residential unit load of 86MJ/hr per unit equating to 2,230MJ/hr (diversified),
- Ground Level (TSA) gas allowance of 600MJ/h.

The total gas load has been estimated at 4,430MJ/h.

It is noted that further development on Client requirements may remove some or all of the gas supply from this development.

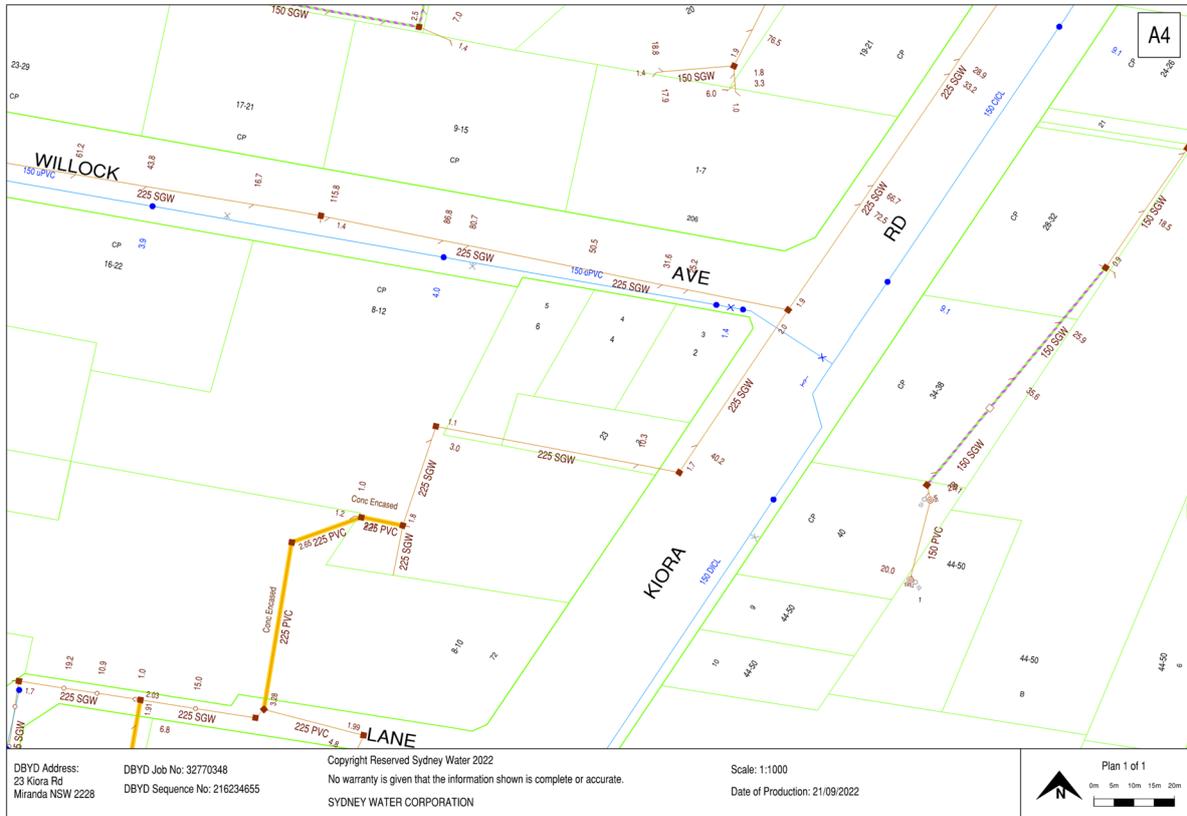
### 8.4 Anticipated Works

Jemena will determine the available capacity of their network and the suitability of existing mains for connection of this development via a preliminary connection application through their internet portal system. It is not possible to estimate capacity within the Jemena gas network.

At this point we anticipate that the existing 40mm or 75mm gas mains adjacent to the site will have adequate capacity to service the proposed development.

## 9 Appendices

### 9.1 Sydney Water Corporation Asset Diagram (Hydraplot)



## 9.2 Sydney Water Corporation Pressure Inquiry – Kiora Road



### Statement of Available Pressure and Flow

**Rodney Ware**  
 Level 13, 44 Market Street  
 Sydney, 2000

Attention: Rodney Ware

Date: 07/10/2022

**Pressure & Flow Application Number: 1511272**  
**Your Pressure Inquiry Dated: 2022-10-04**  
**Property Address: 23 Kiora Road, Miranda 2228**

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

#### ASSUMED CONNECTION DETAILS

Street Name: Kiora Road	Side of Street: East
Distance & Direction from Nearest Cross Street	30 metres South from Willock Avenue
Approximate Ground Level (AHD):	29 metres
Nominal Size of Water Main (DN):	150 mm (Target Point as per sketch provided)

#### EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	83 metre head
Minimum Pressure	58 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	58
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5	68
	10	68
	15	67
	20	66
	30	64
	40	62
	50	59
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	60	55
	5	58
	10	57
	15	57
	20	56
	30	54
Maximum Permissible Flow	40	51
	50	48
	60	44
	67	41

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

[swtapin@sydneywater.com.au](mailto:swtapin@sydneywater.com.au)

### 9.3 Sydney Water Corporation Pressure Inquiry – Willock Avenue



#### Statement of Available Pressure and Flow

**Rodney Ware**  
 Level 13, 44 Market Street  
 Sydney, 2000

Attention: Rodney Ware

Date: 07/10/2022

**Pressure & Flow Application Number: 1511291**  
**Your Pressure Inquiry Dated: 2022-10-04**  
**Property Address: 4 Willock Avenue, Miranda 2228**

The expected maximum and minimum pressures available in the water main given below relate to modelled existing demand conditions, either with or without extra flows for emergency fire fighting, and are not to be construed as availability for normal domestic supply for any proposed development.

#### ASSUMED CONNECTION DETAILS

Street Name: Willock Avenue	Side of Street: South
Distance & Direction from Nearest Cross Street	36 metres West from Kiara Road
Approximate Ground Level (AHD):	28 metres
Nominal Size of Water Main (DN):	150 mm (Target Point as per sketch provided)

#### EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	84 metre head
Minimum Pressure	59 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	58
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	5	68
	10	68
	15	67
	20	66
	30	63
	40	60
	50	56
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	60	51
	5	58
	10	57
	15	56
	20	55
Maximum Permissible Flow	30	53
	40	49
	50	45
	60	40
	67	36

(Please refer to reverse side for Notes)

For any further inquiries regarding this application please email :

[swtapin@sydneywater.com.au](mailto:swtapin@sydneywater.com.au)

### 9.4 Sutherland Shire Council Stormwater Assets



### 9.5 Jemena Gas Diagram

