



INFRASTRUCTURE DELIVERY, MANAGEMENT AND STAGING
PLAN

Fairfield Showground Community and Events Centre

430-482 Smithfield Rd, Prairiewood NSW

Ref: SY230893-00-BS-BR01
Rev: 9
Date: 11 Sep 2025

PREPARED FOR
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Infrastructure Delivery, Management and Staging Plan

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Executive Summary

This Utilities and Infrastructure report for has been prepared on behalf of NBRIS for Fairfield City Council and relates to the development at Fairfield Showground. The Consulting Engineers responsible for each relevant service is as follows:

- Power Systems – Northrop Consulting Engineers Pty Ltd (Northrop)
- Communications Systems – Northrop Consulting Engineers Pty Ltd (Northrop)
- Water Infrastructure – Northrop Consulting Engineers Pty Ltd (Northrop)
- Sewer Infrastructure – Northrop Consulting Engineers Pty Ltd (Northrop)
- Stormwater Infrastructure – Birzulis Associates (Birzulis)

This report outlines the existing infrastructure, detailing information on the existing capacity and any augmentation to the aforementioned services required for the proposed development. The report also details records of consultation with relevant agencies. The details within this report are preliminary and based on currently available information and correspondence undertaken at the time of writing. This report is provided in response to the Secretary's Environmental Assessment Requirements (SEARs) issued for the project and has been prepared for lodgment as part of the State Significant Development (SSD) application.

The development does not pose any significant capacity issues from our review. The major alterations required to service the project within the scale of allowable expansion and extension of existing infrastructure.

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1. Development Description

1.1 Introduction

This Utilities and Infrastructure Report accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), in respect of a State Significant Development Application (SSDA) for the construction and operation of Fairfield Showground Community and Events Centre. This report addresses the relevant Secretary’s Environmental Assessment Requirements (SEARs) issued for the project, notably:

Table 1 – Summary of Relevant SEARs and Response

SEAR	Requirement	Response	Report Section
22	<p>Infrastructure Requirements and Utilities</p> <ul style="list-style-type: none"> In consultation with relevant service providers: <ul style="list-style-type: none"> assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site. identify any infrastructure required on-site and off-site to facilitate the development and any arrangements to ensure that the upgrades will be implemented on time and be maintained. provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated, funded and delivered to facilitate the development. 		4

1.2 Project Site Description

The project site is located within the Fairfield Local Government Area (LGA), at 430-482 Smithfield Road, Prairiewood, legally identified as Lot 1 DP 1251493 and known as Fairfield Showground.

Lot and DP	Lot Area
Lot 1 DP 1251493	30.1 hectare

Fairfield Showground currently comprises a number of different uses including Fairfield Markets, outdoor sports fields, grandstands incorporating function centres, at-grade parking in multiple locations throughout the site and a range of other community and recreational uses.

The project site is located to the west of the existing market awning as shown in **Figure 1**.



Figure 1 - Project Site (Source: DFP/Nearmap)

The regional context of the project site is shown in **Figure 2** and includes the following:

- **Fairfield Hospital:** Located approximately 250m to the north of the Fairfield Showground Precinct are Braeside and Fairfield Hospital.
- **Fairfield City Golf Club:** Also located to the north of the site, the Fairfield City Golf Club is an 18-hole golf course, inclusive of a driving range and associated club house.
- **Wetherill Park Shopping Centre:** Located approximately 600m to the north east of the site is the Stockland Wetherill Park Shopping Centre
- **Mackillop Catholic College:** To the east of the site is Mackillop Catholic College, being an independent Catholic school for girls.
- **Deerbush Park:** To the site of the site is Deerbush Park. In the broader context of land to the south of the site are a range of low-medium density residential developments.
- **Transport Corridors:** The key regional transport corridors in proximity to the project site are:
 - Smithfield Road – Smithfield Road adjoins the eastern side of the site. A number of bus services travel along Smithfield Road, notably from Parramatta Station (Stand B2).
 - Cumberland Highway – The Cumberland Highway is located approximately 1.5km to the east of the site.



Figure 2 - Regional Context (Source: DFP/Nearthmap)

1.3 Project Description

The project forms part of a masterplan located on the Fairfield Showground site which will comprise works to be carried out under multiple planning pathways.

Under *State Environmental Planning Policy (Transport and Infrastructure) 2021 (SEPP TI)*, certain works can be undertaken as development permitted without consent (Part 5 approval). Accordingly, these works do not form part of the scope of physical works proposed under this State Significant Development Application (SSDA).

The proposed extent of works to be carried out under the development permitted without consent (Part 5/REF) planning pathway as part of the masterplan includes:

- Demolition of six small ancillary buildings and construction of a new amenities block;
- Road and car parking upgrades and new car parking area;
- Services Trenching works (Refer to ‘Combined site wide services trench sketch’ in Section 5)
- New kiosk/substation; and
- Associated civil and landscape works.

The proposed extent of works to be carried out under this SSDA as part of the masterplan includes:

- Construction and use of a one-storey multi-purpose building; and
- Associated civil and landscape works.

2. Site Description

2.1 Existing Site

The existing site will be altered to incorporate a new Community and Events Centre. The existing showground facilities will be retained as shown in the proposed site plan, with the new building integrating into the operation of the precinct.

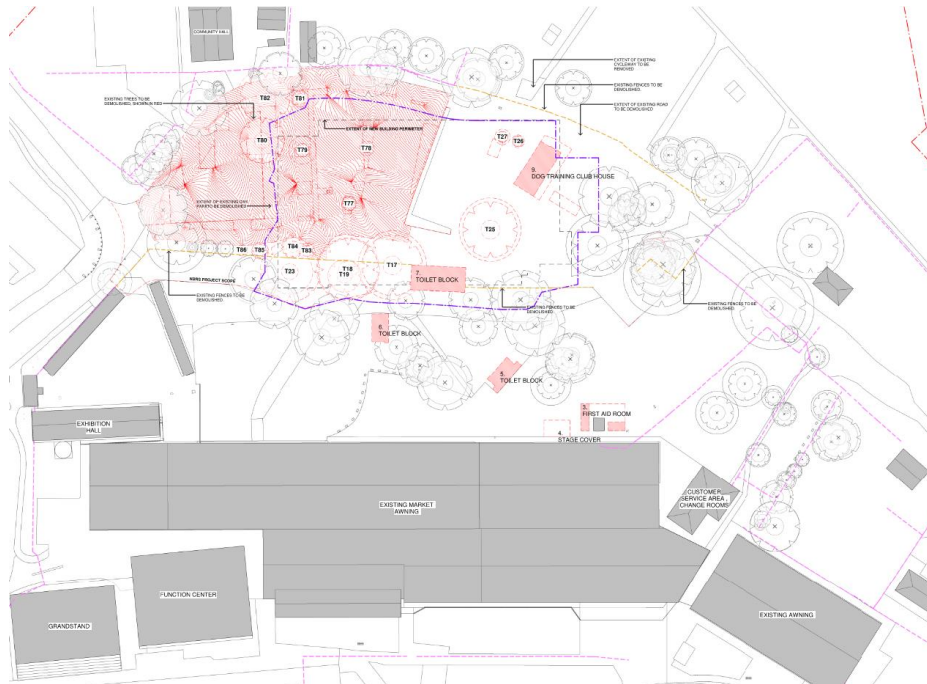


Figure 4 - Proposed Demolition Site Plan

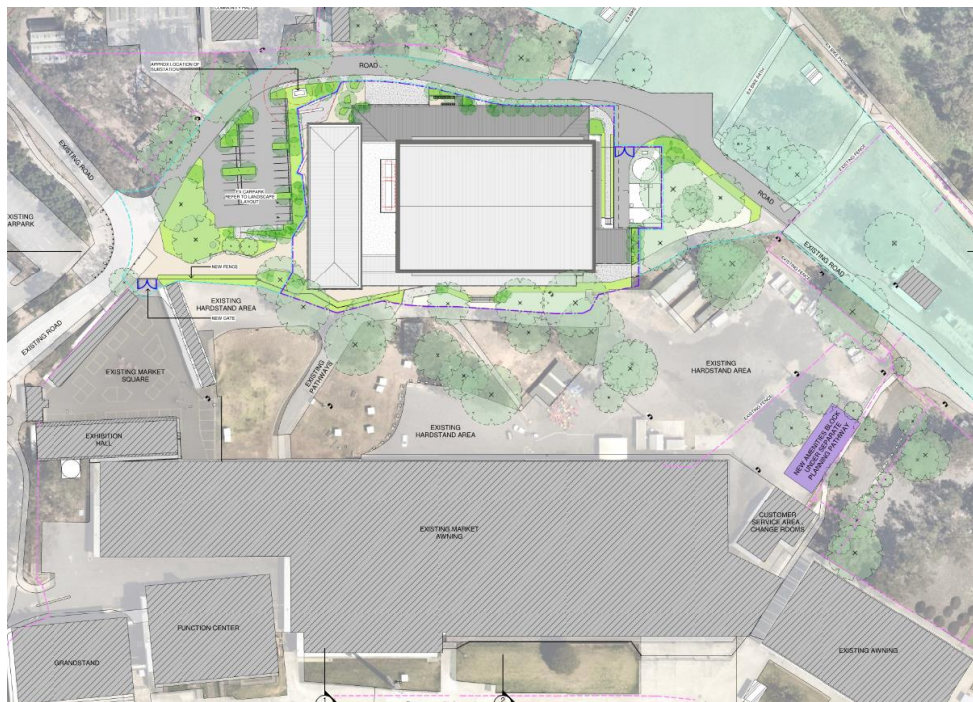


Figure 5 - Proposed Site Plan

3. Existing Services

3.1 Power

Northrop has performed non-invasive investigations in regard to the existing site conditions, considering the context of the proposed development.

Our assessment has been based on the site inspection, information provided by the relevant electrical and telecommunications utility authorities, and information provided by the project representatives including but not limited to:

- Surveyors' Drawings
- Fire/Evacuation Diagrams

3.2 Electrical Utility Infrastructure

The existing site is supplied by electrical utility infrastructure from Ausgrid, as per the following:

Asset Number	PMSUB 54451/54450
Type of Asset	Padmount Substation
HV Operating Voltage	11kV
Location on Site	Adjacent showground building
Incoming Consumer Mains	Unknown
Capacity	2x1,000kVA

Supply Authority metering for the existing site is located external main switchboard.

3.3 Water

The development has access by the following Sydney Water mains:

- DN100 DICL water main at the southeast side of the site within Smithfield Road, which is about 400m away from the proposed building;
- DN100 DICL water main at the southwest side of the site within Moonlight Road, which is about 210m away from the proposed building.

The existing water infrastructure is owned and maintained by Sydney Water. The water supply for the existing amenities on site (to be demolished) is from the existing market awning, which is fed from the DN100 water main within Smithfield Road (TBC by further survey), the incoming pipe size is to be confirmed.

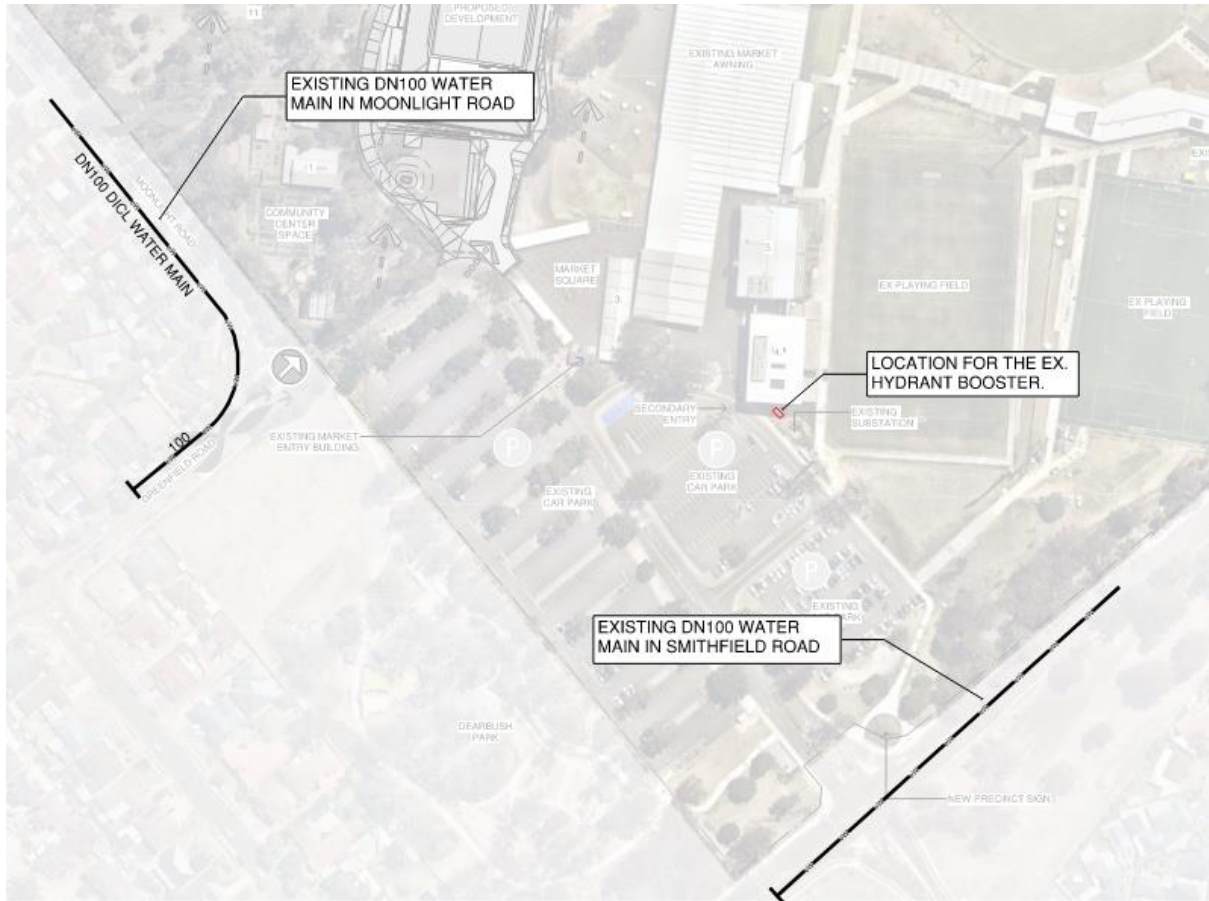


Figure 6 - Water Authority Infrastructure Map

3.3.1 Wet Fire Services

An existing fire hydrant booster is positioned adjacent to the existing carpark serving the existing grand stand and fed by the DN100 water main in Smithfield Road (TBC by further survey).

The supplies extend from the booster to the hydrant pump room where the supplies are pressurised via pumpset and then extend throughout the existing building.

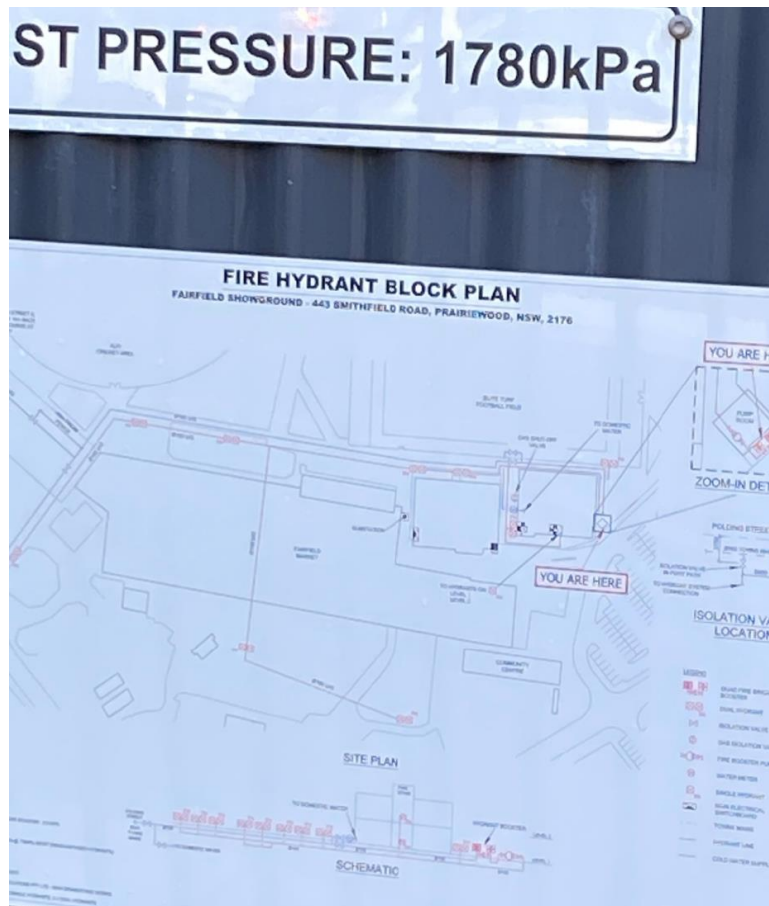


Figure 7 – Existing Fire Hydrant System Block Plan for Grandstand

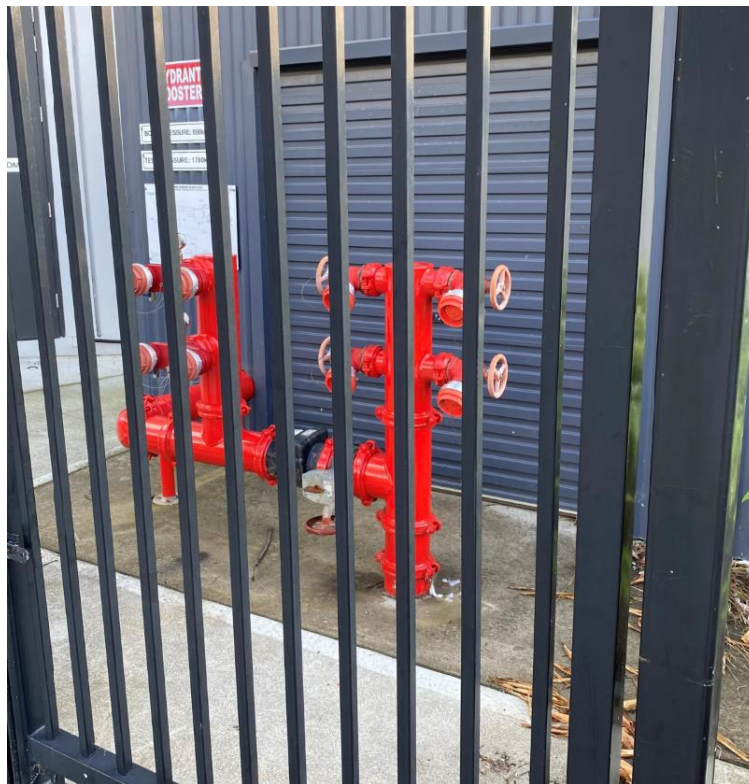


Figure 8- Existing Hydrant Booster and Pump Room for Grand stand

FAIRFIELD SHOWGROUND - 430 SMITHFIELD RD, PRAIRIEWOOD

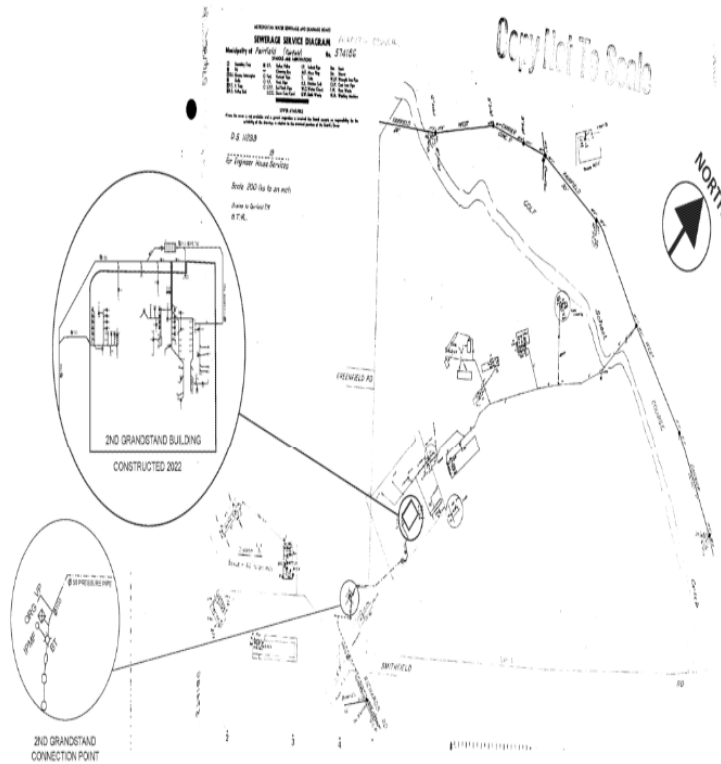


Figure 10 – Existing Sewer Service Diagram

The existing sewer infrastructure is owned and maintained by Sydney Water. The sewer service diagram obtained from Sydney Water Tap-in shows the existing site all drains via gravity to a 150mm connection into the existing DN750 sewer main at the north.

3.5 Natural Gas

Gas service is not required to the new development.

3.6 Stormwater

The site currently has an ad hoc drainage system consisting of pits and pipes ranging in size from 150mm to 300mm at depth of 400-800mm below the finished surface. An existing swale runs along the north-western side of the showground, the site slopes towards the swale which discharges to a Dam located at the northern side of the showground (Figure 11).



Figure 10 - Existing stormwater discharge location (Nearmap, 2024).

Figure 11 shows the direction of overland flow path in reference to the ground contour. As shown in the figure, surface water discharges towards the existing swale leading to the Dam as an ultimate point of discharge.

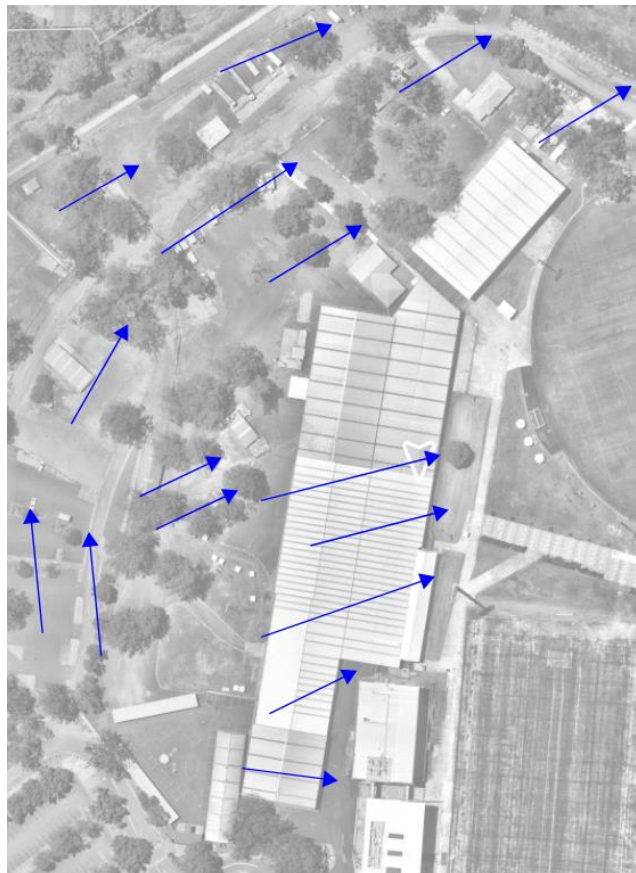


Figure 11 - Overland Flow Path for Surface Water Run-off

4. Proposed Infrastructure & Augmentation

4.1 Electrical

4.1.1 Incoming Supply

Correspondence has been initiated with the local energy authority, Ausgrid on your behalf to determine the proposed supply arrangement.

The expected maximum demand requires that a 1500 kVA Kiosk substation be installed on site. Electrical supply is proposed to be a direct underground service from this new substation. The contractor will be required to provide a suitable cable pathway to enable the installation of the consumer mains cabling.

4.1.1.1 Load Assessment Calculations

A preliminary assessment of the load requirements for the proposed development has been undertaken, according to AS/NZS 3000:2018 Table C1 & C3.

Assumptions used in the calculation are as follows:

- We have assumed **25 VA/m²** of air conditioning as per AS/NZS 3000:2018 Table C3 – this is based on either a local VRV system or a Central Chilled Water system. If a variable air volume system is instead selected, this figure may reduce.

The proposed demand requires a new dedicated substation extending the HV infrastructure from the existing twin padmounts.

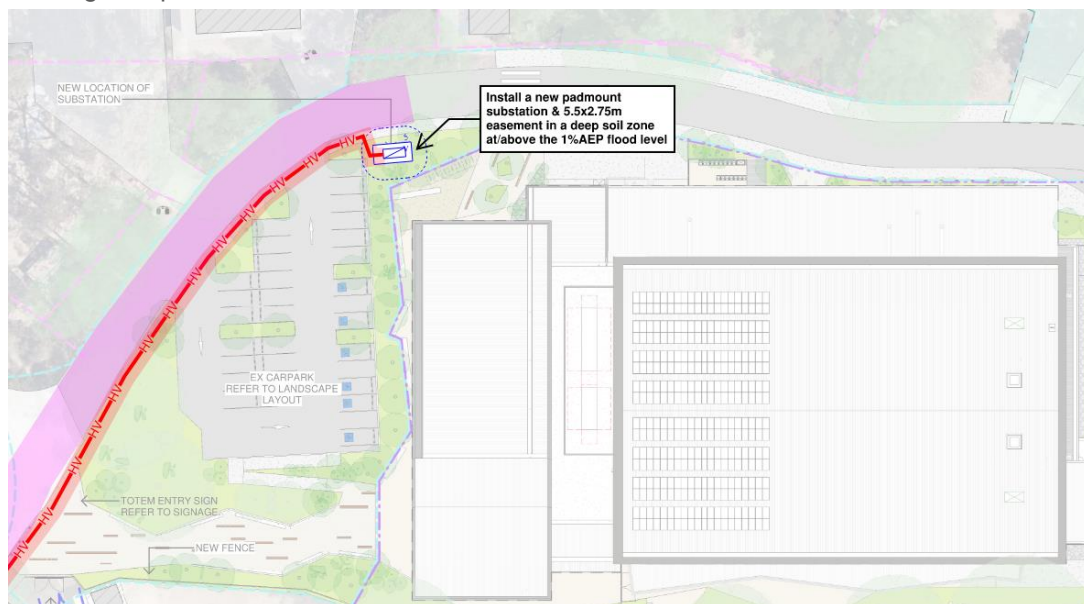


Figure 13 – Proposed Location of New Substation

NON DOMESTIC MAXIMUM DEMAND CALCULATION

PROJECT REFERENCE: SY230893
PROJECT: Fairfield Showround

REVISION: A
DATE: 16/04/2025

CALCULATED IN ACCORDANCE WITH AS/NZS 3000:2018 TABLE C3

NON-DOMESTIC

Group	Sub Location	Description	Area	VA/m2	Load (kVA)	Load (A / Phase)
		External Area	3324.5	5	16.62	23.99
GROUND FLOOR		Air lock	16	15	0.24	0.35
		Lobby	168	50	8.40	12.12
		Foyer	373	50	18.65	26.92
		Reception/Waiting Area	17	50	0.85	1.23
		Kiosk	32	200	6.40	9.24
		BOH Support	22	40	0.88	1.27
		Admin	75	80	6.00	8.66
		Centre Manager	13	80	1.04	1.50
		Store Room	9	10	0.09	0.13
		BEV Dry	11	20	0.22	0.32
		Bev Cool Room	11	50	0.55	0.79
		Air lock	17	15	0.26	0.37
		Stairs	11	15	0.17	0.24
		Amenities	6	15	0.09	0.13
		Comms	16	400	6.40	9.24
		Counting	4.5	20	0.09	0.13
		Amenities x 2	162	15	2.43	3.51
		Adult Change	12	30	0.36	0.52
		Cleaners	5	15	0.08	0.11
		Hall/Auditorium	2134	40	85.36	123.21
		Commercial Kitchen	104	400	41.60	60.04
		Circulation	274	30	8.22	11.86
		First Aid Room	9.5	100	0.95	1.37
		Amenities	37.5	15	0.56	0.81
		Shower/Change Room x 2	95	30	2.85	4.11
		UAT x 2	15	15	0.23	0.32
		Waste Store	55	10	0.55	0.79
		REF Change Room x 2	25	30	0.75	1.08
		Kitchen Store	36	15	0.54	0.78
		Dressing Room 1	28	30	0.84	1.21
		Amenities	38	15	0.57	0.82
		Laundry / Cleaners	15	150	2.25	3.25
		Dressing Room 2	28	30	0.84	1.21
		Meeting Room	29	70	2.03	2.93
	Air Lock	5	15	0.08	0.11	
	Reception/Waiting Area	7	50	0.35	0.51	
	Sports Store	74	10	0.74	1.07	
	Stage	220	400	88.00	127.02	
	Furniture Store	63	10	0.63	0.91	
	Theatre Store	116	10	1.16	1.67	
	MSB room	10	15	0.15	0.22	
	DB room	5	15	0.08	0.11	
LEVEL 1		Control Box	25	100	2.50	3.61
		Stair 1	11	15	0.17	0.24

Specific Loads	Description	Quantity	Load (A)	Load (A / Phase)
Hyd Loads	Including Diversity			498
Mech Loads	Including Diversity + 5% Spare			756
Spare Capacity				0.00%
Total AS3000 Maximum Demand (Non Domestic)			1159.23 kVA	
			1680.04 Amps/Phase	

Figure 14 - Proposed Maximum Demand

4.2 Telecommunications

A new dedicated telecommunications connection will be made from the existing ICT network within the existing function centre to the facility with extension/expansion of the council's ICT network within the development.

4.3 Water

The proposed building will be significantly larger scale than the existing amenities being demolished, therefore the existing incoming supply from the market awning may not have sufficient capacity to serve the new building, a new water connection to DN100 watermain within Fairfield Road or to DN100 watermain within Moonlight Road will be required.

Additional investigation is needed to identify which water main would be more efficient for the proposed building.

4.3.1 Wet Fire Services

The proposed development will incorporate a fire hydrant system and fire sprinkler protection (for stage only). The new hydrant system and sprinkler system will be installed as the existing grandstand system may not have enough capacity to service the proposed development.

Option 1 – Connection to the DN100 water main in Smithfield Road

As there are very limited pressure and flow that can be provided from the water main in Smithfield Road, both hydrant and sprinkler systems require a full capacity storage tank, i.e 288kL tank for hydrant system (split to 2 x 144kL as the standard required) and 80kL tank for the sprinkler system. Two half-duty pumps for the hydrant system and 2 pumps for the sprinkler system are required to be installed in the fire pump room.

ASSUMED CONNECTION DETAILS

Street Name: Smithfield Road	Side of Street: East
Distance & Direction from Nearest Cross Street	90 metres North from Richards Road
Approximate Ground Level (AHD):	26 metres
Nominal Size of Water Main (DN):	100 mm

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	84 metre head
Minimum Pressure	51 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	51
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	10	35
	15	14
	16	7
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	10	32
	15	11
Maximum Permissible Flow	16	4

Figure 16 – Statement of Available Pressure and Flow for DN100 in Smithfield Road

Option 2 - Connection to the DN100 water main in Moonlight Road

Due to the difference in terrain height, the system can still supply water to the tank although the pressure and flow remain limited. Therefore, a 72kL reduced-capacity tank with 15kL auto infill is required (split to 2 x 36kL tanks) for the hydrant system and an 80kL tank for the sprinkler system. Two half-duty pumps for the hydrant system and 2 pumps for the sprinkler system are required to be installed in the fire pump room.

ASSUMED CONNECTION DETAILS

Street Name: Moonlight Road	Side of Street: West
Distance & Direction from Nearest Cross Street	36 metres North from Greenfield Road
Approximate Ground Level (AHD):	34 metres
Nominal Size of Water Main (DN):	100mm (Target Point as per diagram provided)

EXPECTED WATER MAIN PRESSURES AT CONNECTION POINT

Normal Supply Conditions	
Maximum Pressure	76 metre head
Minimum Pressure	43 metre head

WITH PROPERTY FIRE PREVENTION SYSTEM DEMANDS	Flow l/s	Pressure head m
Fire Hose Reel Installations (Two hose reels simultaneously)	0.66	43
Fire Hydrant / Sprinkler Installations (Pressure expected to be maintained for 95% of the time)	10	40
	15	35
	20	28
	25	19
Fire Installations based on peak demand (Pressure expected to be maintained with flows combined with peak demand in the water main)	10	37
	15	32
	20	25
	25	16
Maximum Permissible Flow	26	14

Figure 17 - Statement of Available Pressure and Flow for DN100 in Moonlight Road

Additional investigation and survey of the water pipework running within the existing carpark area is needed to identify which water main would be more efficient for the proposed building. Consultation with Sydney Water will be required to determine if a secondary connection would be allowed as normally Sydney Water policy allow for a single connection into their water infrastructure. Further discussion with a Water Servicing Coordinator to carry out a Section 73 application would need to be implemented. Refer Figure 18 for the initial proposed connection routes.

4.4 Sewer Drainage

Wastewater generated from the site will be discharged to the existing sewer network. The existing sewer main and the connection on-site shall be adequate to service the proposed development. However, the invert level of the existing on-site sewer running is to be confirmed, sewer pump-out pit may be required if the new building cannot be drained to the existing onsite sewer system by gravitation.

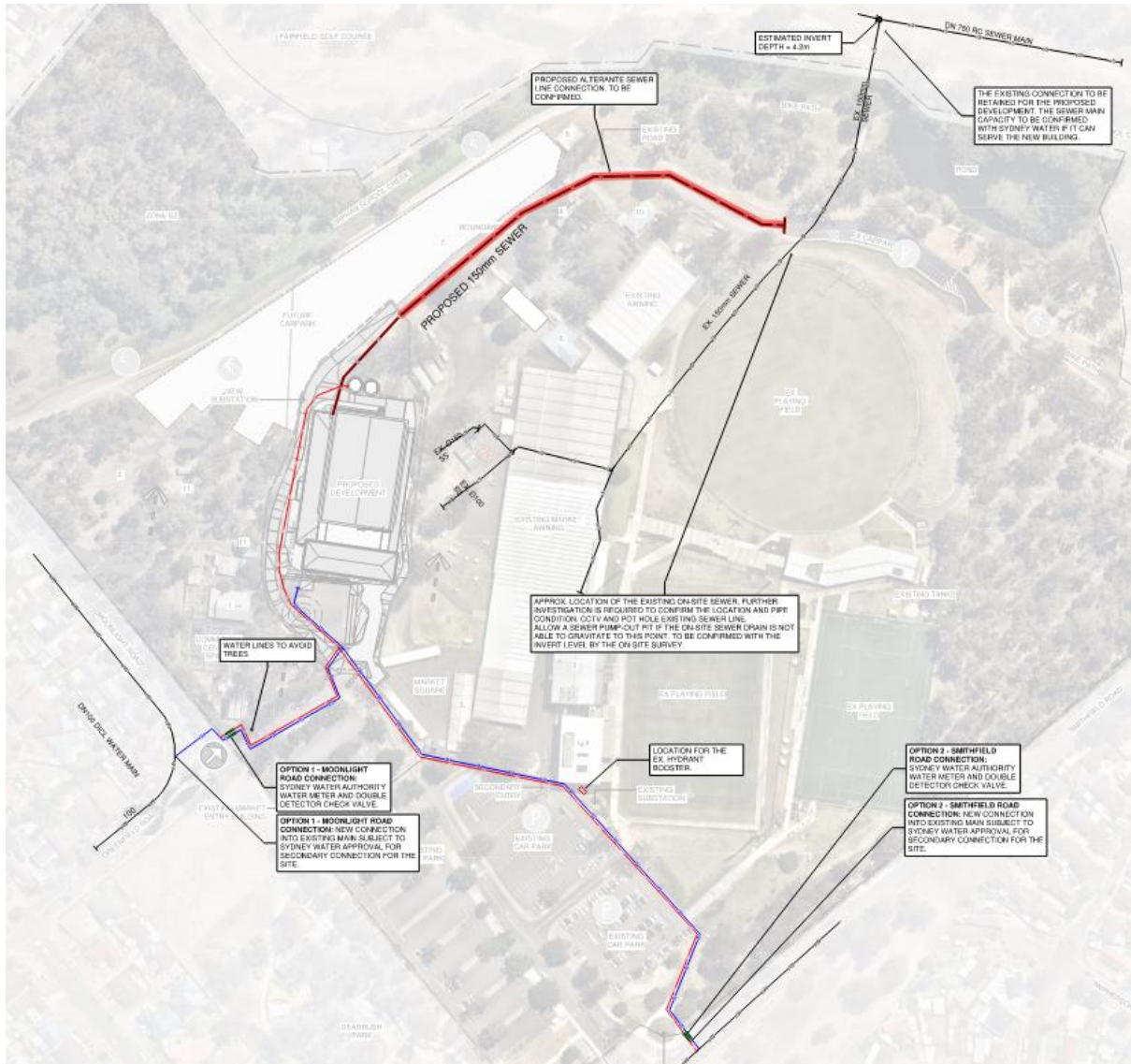


Figure 18 - Proposed water and sewer connections

4.5 Gas

Gas service is not required to the new development.

4.6 Stormwater

Fairfield City Councils map showing stormwater management zone within Fairfield LGA (Local Government Area), Figure 19 shows the map locating the proposed development site.

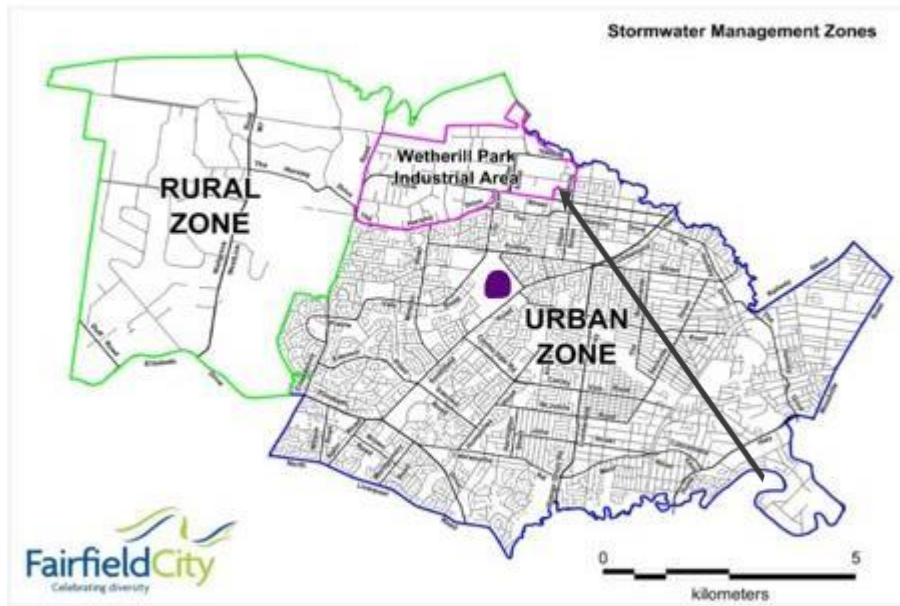


Figure 19 - Council's stormwater management Zone

As shown in Figure 19, the proposed development is in Urban Zone. Therefore, design requirement applicable for urban zone is applicable for this development. It is proposed that the roof water is collected through downpipes and discharged to the proposed 160 Kilolitres of Rainwater Tank (RWT) which will be used for irrigation purpose, overflow from rainwater tank discharges to the proposed 100 m³ of underground On Site Detention (OSD) tank.

4.6.1 Council's Requirement

A Stormwater Design Plan (SDP) shall include comprehensive stormwater system engineering design specifications and calculations.

The designer must be a registered professional engineer with specialisation on stormwater drainage who is either registered or eligible to be registered with the National Engineering Register in civil or environmental engineering.

The SDP must abide with all consent requirements and criteria set out by the Council. The plans and supporting information shall be submitted for this propose.

4.6.2 On-Site Detention Tank Requirement

As discussed above, the proposed site is in urban zone. As per council's DCP chapter 2, section 2.5.5, OSD tank is required for sporting and recreational facilities if the area is inside Urban Stormwater Management Zone. Therefore, the proposed development will introduce an OSD to ensure that the surface water run-off from the development does not exceed the runoff from pre-development condition for 5 and 100-year flood event. As mentioned in section 4.6 of this report, required detention volume for the site has been calculated as 100 m³.

Using OSD, it will be ensured that stormwater discharge is controlled, and development does not increase the risk of flooding and erosion of waterways. An OSD maintenance schedule will be prepared for the OSD system. The maintenance manual will be a simple set of operating instructions for future property managers, owners, and occupiers. It will be including a simplified plan showing the layout of the OSD system. The maintenance schedule will clearly set out the routine process that is necessary to keep the OSD system working.

Refer to section 4.2 of the Integrated Water Management Report for further information about strategies to achieve reduction in discharge for the proposed development.

4.6.3 RWT (Rainwater Tank Requirement)

As per council’s Stormwater management Policy section 5.4, all new commercial and industrial buildings must introduce rainwater tank. The proposed rainwater tank must meet the following requirements:

- Ensure that 80% of the development’s roof area drains to a tank or tanks with a 3,000 litres capacity per one hundred square meters of roof surface. All non-potable uses, such as washing machines, dryers, and toilet flushing, must be linked to the tank(s).
- Above ground rainwater tanks are to be located a minimum of 450mm from any adjoining property boundary.
- Only underground water tanks are permitted in the front yard and are encouraged to be placed under the driveway.
- Pumps must comply with the noise requirements of the New South Wales Protection of the Environment Operations Act, 1997.
- It is proposed to provide a RWT with a minimum capacity of 160,000L as per this requirement. Location of proposed tank in shown in Figure 20 below.

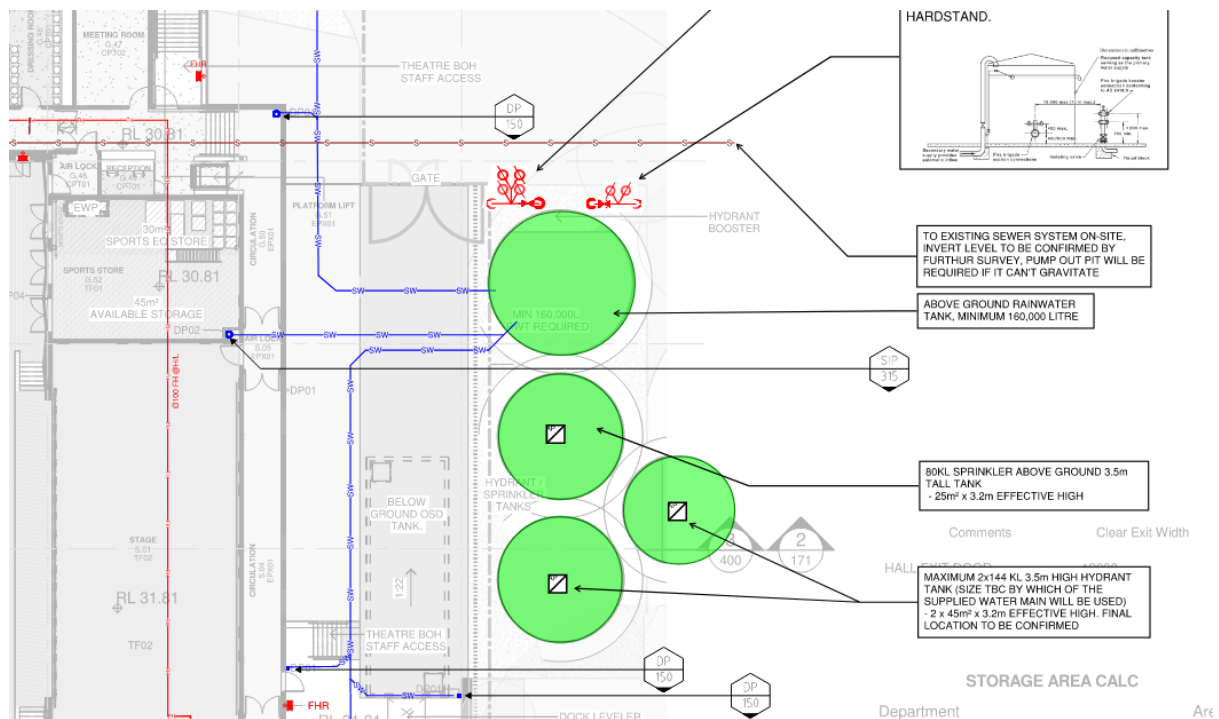


Figure 20 - Location of rainwater tank

4.6.4 Water Quality Requirement

As per Fairfield City Council’s Development Control Plan (DCP), 2013 section 2.5.7, only those areas within the Wetherill Park Industrial zone area required to satisfy water quality requirement. Since our

site is not located in this zone, requirements for water quality improvement does not apply for this development from a council perspective, however the some WSUD shall be introduced to meet Greenstar requirements.

Treatment chamber with filter cartridges has been proposed within the OSD tank to achieve reduction on the pollutants discharging from the development. Pollution reduction analysis has been done using MUSIC software, and the achieved reduction are as listed below:

- a) Total Gross Pollutants (GP): 100 % reduction
- b) Total Suspended Solids (TSS): 81.07% reduction
- c) Total Phosphorus (TP): 71.68% reduction
- d) Total Nitrogen (TN): 46.41% reduction

Refer to section 4.2 of the Integrated Water Management Report for further information about strategies to achieve better water quality for the proposed development.

5. Conclusion

This Utilities & Infrastructure Report outlining the proposed Utility Infrastructure servicing the proposed development addresses the Secretary's Environmental Assessment Requirements (SEARs) issues identified in this report. The development does not pose any significant capacity issues from our review. The major alterations required to service the project within the scale of allowable expansion and extension of existing infrastructure.

All proposed hydraulic and electrical service reticulation across the development site is to occur as part of the Part 5/REF in accordance with the findings and recommendations outlined in the Arboricultural Assessment Report. Service alignments will be coordinated to avoid encroachment into Tree Protection Zones (TPZs).

Where avoidance is not feasible due to site constraints or service requirements, only non-invasive or minimally invasive excavation techniques—such as pneumatic (air) excavation, hydro-vacuum excavation, or trenchless methods (e.g. horizontal directional drilling)—will be employed to minimise root disturbance and ensure the ongoing health and structural stability of any retained trees.

Final service alignments and construction methodologies within the vicinity of TPZs will be subject to review and approval by the project arborist prior to commencement of works, and all activities will be monitored in accordance with best practice tree protection measures.

COMBINED SITE WIDE SERVICES TRENCH SKETCH

