indara
DIGITAL INFRASTRUCTURE

Development Application for Planning Consent

Proposed New Telecommunications Facility at
128 Shaw Road, Wavell Heights QLD 4012
Lot 1 on Registered Plan 165923

Town Planning Report

Project Reference: 440099 – Glen Kedron
RFNSA Reference: 4012011

November 2023

Document Control

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1	07/11/23	Final Report for Submission	Musab Kadan	Daniel Prior

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Contents

Executive Summary

Site Information	**Lot description:** Lot 1 on Registered Plan 165923 **Physical address:** 128 Shaw Road, Wavell Heights QLD 4012 **Coordinates:** -27.406407, 153.044173
Proposal	Indara Infrastructure Pty Ltd (Indara), part of the Indara Group, are seeking a development permit for the use and development of a new telecommunications facility at 128 Shaw Road, Wavell Heights QLD 4012 on Land Described as Lot 1 on Registered Plan 165923. The proposed facility will be owned by Indara and will host Vodafone and Optus telecommunication equipment, providing 4G and 5G services to Wavell Heights and the surrounding areas. The proposal includes the following: • One (1) 35m Indara monopole. • One (1) new triangular headframe. • Fifteen (15) new panel antennas (4G and 5G). • One (1) six bay outdoor equipment cabinet at ground level. • Ancillary equipment associated with operation and safety of the facility, including remote radio units, elevated cable tray, cabling and antenna mounts, group meter panel, security fencing with 3m wide double access gate etc. The monopole and associated equipment will be finished in a pale grey, while the equipment cabinet will be a pale eucalypt or beige colour unless otherwise conditioned by Brisbane City Council.
Purpose	Indara, with Vodafone and Optus, are proposing a new telecommunications facility in the Wavell Heights area, to provide improved mobile and data services to Vodafone and Optus customers in the surrounding area. The facility has been designed as a neutral host facility, capable of supporting co-location by other carriers, government entities and other wireless service providers.
Planning Considerations	**LGA:** Brisbane City Council **Zoning:** SR3 – Sports and Recreation (Metropolitan) OS2 – Open Space (District) **Overlays:** Airport Environs Overlay Bicycle Network Overlay Biodiversity Areas Overlay Community Purpose Network Flood Overlay Industrial Amenity Overlay Potential and Actual Acid Sulphate Soils Overlay Road Hierarchy Overlay
Applicant	Indara Infrastructure Pty Ltd Tenancy 1.3 / 35 Miles Platting Road Eight Mile Plains, QLD 4113 Contact Person: Musab Kadan Email: Musab.Kadan@indara.com Our Reference: 440099 – Glen Kedron

1. Introduction

Indara Infrastructure Pty Ltd (Indara), part of the Indara Group, are seeking development consent for a new telecommunications facility at 128 Shaw Road, Wavell Heights QLD 4012 on Land Described as Lot 1 on Registered Plan 165923 (The Subject Site).

The new facility will be comprised of a 35m monopole supporting Vodafone and Optus telecommunications antennas and equipment (The Proposed Facility). The purpose of the project is to significantly improve Vodafone and Optus mobile and data services, including coverage and network capacity, in Wavell Heights and the surrounding areas.

This Town Planning Report provides an assessment of the project against the relevant planning controls.

2. Background

2.1 Indara, Vodafone and Optus

This development application has been prepared and submitted by Indara.

Indara are Australia's leading independent owner and provider of shared wireless telecommunications infrastructure, with a portfolio of over 4300 telecommunications sites across Australia

Indara are Australia's leading independent owner and operator of digital infrastructure. We provide critical communications and data solutions that help support the digital transformation of our society. We're passionate about investing long term in our nation, building and designing digital infrastructure that creates long term value for our customers and the broader Australian community.

Indara has partnered with Vodafone to expand their mobile network across Australia. This proposal is part of Vodafone and Optus' Extended Joint Venture program, meaning that Optus telecommunications equipment will also be installed. The proposed facility will improve Vodafone and Optus mobile services in Wavell Heights and the surrounding areas.

The proposed facility is comprised of a new 35m monopole and associated passive infrastructure, which will be owned and managed by Indara, and active infrastructure (antennas and telecommunications equipment) which will be owned and managed by each carrier.

Note for legal purposes, the applicant for this development application is Indara Infrastructure Pty Ltd.

2.2 Demand for Network Services

Access to high quality telecommunications services is vitally important to the community. Mobile usage continues to trend upward.

- 99% of Australians use a mobile phone; 76% of Australians do not have a landline phone and rely exclusively on a mobile phone[1].
- Mobile data usage continues to significantly increase as the network is used in different ways. Between 2020 and 2021, the amount of data downloaded by phone increased by over 29%[2]. In the first quarter of 2022, global mobile data usage grew by 40%[3]. Streaming and video calling are major drivers of this increased demand.
- Covid-19 significantly changed the way that Australians live and work – 61% of employed Australians worked online from home in 2021[4]. With many Australians continuing to adopt flexible or hybrid work arrangements, additional demand has been placed on the mobile network.
- Public safety is a significant driver behind improvements to mobile coverage. In 2021, around 78% of emergency calls were made from a mobile handset[5].

More than ever, mobile telecommunications are an essential service. By extension, mobile base stations are essential infrastructure – it is important that mobile infrastructure keeps pace with this increasing demand.

2.3 Coverage Objectives

There is a high demand for network coverage in this area, for several reasons:

- The Brisbane metropolitan area is well established residential metro area with increased population growth within continuous demand for improved mobile phone coverage and capacity. The Brisbane Growth Strategy forecasts a future population growth from 1.26 million people to 1.55 million people by the year 2041 or an increase by 28%[6].
- The proposed facility will provide appropriate mobile and data services to cater for both the existing and future growth of the area, particularly the higher density zoned area surrounding the recreational reserve.

[1] https://www.acma.gov.au/publications/2021-12/report/communications-and-media-australia-how-we-communicate

[2] https://www.acma.gov.au/publications/2021-12/report/communications-and-media-australia-how-we-use-internet

[3] https://www.ericsson.com/en/reports-and-papers/mobility-report/dataforecasts/mobile-traffic-update

[4] https://www.acma.gov.au/publications/2021-12/report/communications-and-media-australia-trends-and-developments-telecommunications-2020-21

[5] https://www.triplezero.gov.au/triple-zero/How-to-Call-000/advanced-mobile-location

[6] https://www.brisbane.qld.gov.au/planning-and-building/planning-guidelines-and-tools/other-plans-and-projects/brisbanes-sustainable-growth-strategy

- The undulating topography of the surrounding area restricts the ability of the surrounding base stations to adequality service the area. As such, a new facility has been proposed to deliver the required coverage and capacity improvements with particular improvement to indoor building coverage.

- Following the Covid-19 pandemic, there has been strong demand for hybrid working arrangements. The influx of people working from home (WFH) has put additional strain on the existing network, due to the increased demand for downloading data (specifically from entertainment streaming services), as well as the notable increase in data uploads, due to the adoption of online learning and productivity platforms such as Zoom, Google Classroom, Microsoft Teams and Skype etc.

This project is intended specifically to deliver improved network coverage and capacity to Ian Healy Oval and the surrounding residences, Kedron State School and Eagle Junction Station.

The proposed facility will work in conjunction with the other base stations in the surrounding area to deliver the required network improvements.

3. Candidate Selection

3.1 Site Selection

Before proposing a new base station, mobile carriers will attempt to resolve service issues by reconfiguring or upgrading existing base stations. If upgrades do not resolve service issues, the carrier will consider any opportunities to co-locate on an existing mobile facility, building or other structure.

If there are no feasible co-location opportunities, the carrier will proceed to deploy a new 'greenfield' base station.

This facility is proposed in partnership with Vodafone and Optus, who have confirmed a new telecommunications facility will be needed in the Wavell Heights area and are working with Indara to deploy the new facility.

3.2 Upgrade and Co-Location Opportunities

Existing telecommunications facilities in the area have been assessed to confirm if they are feasible for co-location.

Figure 1 shows the location of existing facilities in the area around this proposed site, based on information from the Radio Frequency National Site Archive (RFNSA) database (www.rfnsa.com.au). None of the existing sites in the area are suitable for co-location.

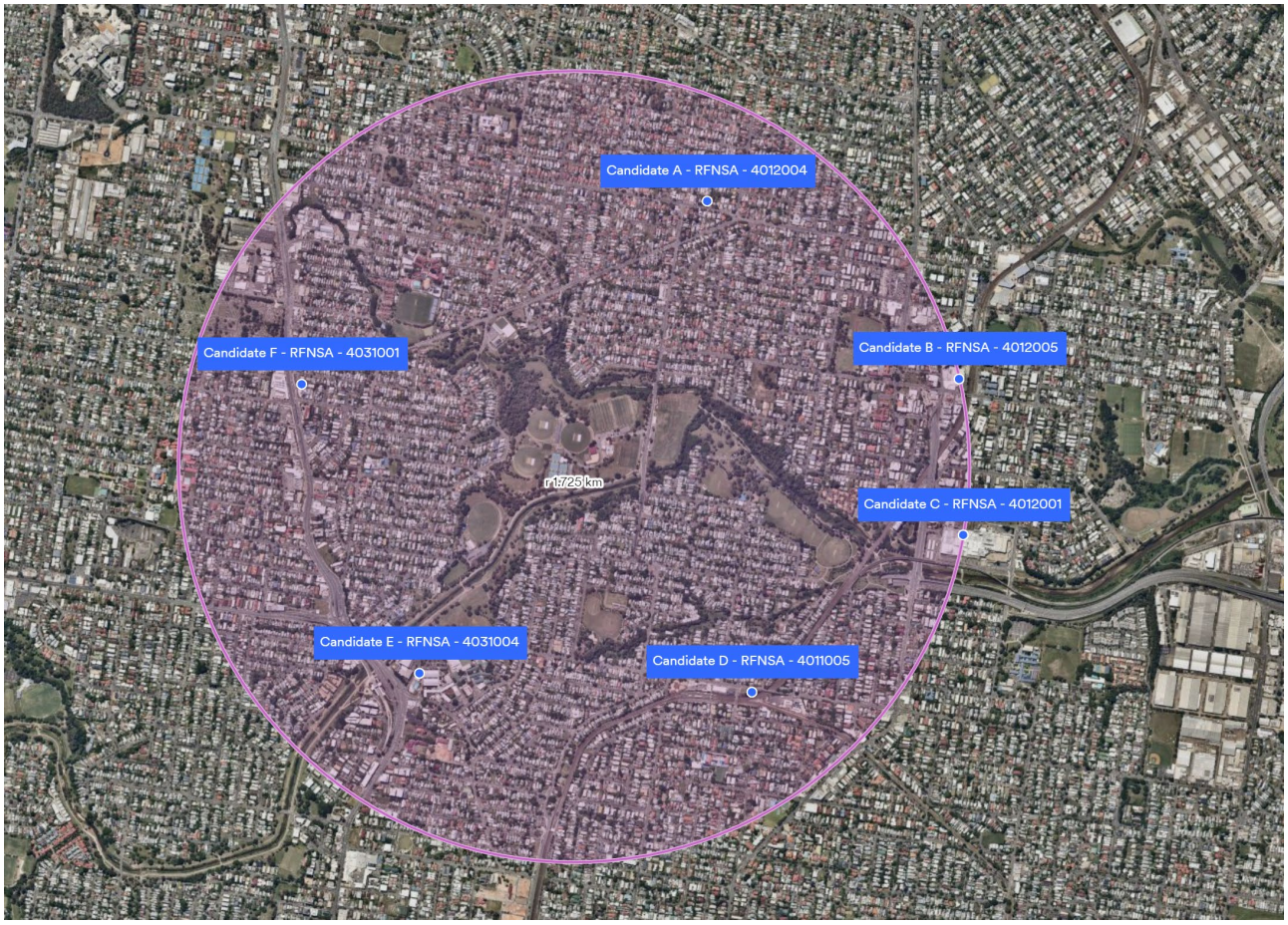

Figure 1 – Aerial view of the existing telecommunication facilities in a 1.7km radius of the Wavell Heights area (Source: Nearmap 2023 and RFNSA 2023).

Table 1: Existing Communications Facilities			
Candidate	**RFNSA Details**	**Site Address**	**Comments**
A	**4012004** Carrier 1 – Vodafone Carrier 2 – Optus Carrier 3 – Telstra	149 Rode Road Wavell Heights QLD 4012	Existing rooftop facility, approximately 1.3km northeast of the coverage area. The Vodafone and Optus equipment was upgraded in 2021, as part of planned network upgrades for the area. While these upgrades delivered improved network coverage and capacity to the area surrounding the site, this facility is too far removed to service the coverage area to the southwest. This candidate was therefore discounted.

Table 1: Existing Communications Facilities Cont.			
Candidate	**RFNSA Details**	**Site Address**	**Comments**
B	**4012005** Carrier 1 – Vodafone Carrier 2 – Optus Carrier 3 – Telstra	89 Buckland Road Nundah QLD 4012	Existing 23.80m Amplitel monopole, approximately 1.8km northeast of the coverage area. The Vodafone and Optus equipment was upgraded in 2022, as part of planned network upgrades for the area. While these upgrades delivered improved network coverage and capacity to the area surrounding the site, this facility is too far removed to service the coverage area to the southwest. This candidate was therefore discounted.
C	**4012001** Carrier 1 – Vodafone Carrier 2 – Optus Carrier 3 – Telstra	1015 Sandgate Road Nundah QLD 4012	This existing rooftop facility has been decommissioned, due to the planned demolition of the shopping centre, as a result of a major flooding event in 2022. A temporary facility has been deployed to ensure the continuity of service to customers in the area, while a replacement is sought. This candidate was therefore discounted.
D	**4011005** Carrier 1 – Optus Carrier 2 – Telstra	248 Junction Road Clayfield QLD 4011	Existing 20m Amplitel monopole, approximately 1.8km southeast of the coverage area. The Optus equipment was upgraded earlier in 2023, as part of planned network upgrades for the area. While these upgrades delivered improved network coverage and capacity to the area surrounding the site, this facility is too far removed to service the coverage area to the northwest. This candidate was therefore discounted.
E	**4031004** Carrier 1 – Vodafone Carrier 2 – Optus Carrier 3 – Telstra	125 Kedron Park Road Kedron QLD 4031	Existing rooftop facility, approximately 1.08km southwest of the coverage area The Vodafone equipment is currently being upgraded as part of planned network upgrades for the area, while the Optus equipment was upgraded in 2021. While these upgrades will deliver improved network coverage and capacity to the area surrounding it, this facility is too far removed to service the coverage area to the northeast. This candidate was therefore discounted.

Table 1: Existing Communications Facilities Cont.			
Candidate	**RFNSA Details**	**Site Address**	**Comments**
F	**4031001** Carrier 1 – Optus Carrier 2 – Telstra	385 Gympie Road Kedron QLD 4031	Existing 23.6m Indara facility, approximately 1.22km northwest of the coverage area The Optus equipment was upgraded as part of planned network upgrades for the area, while the Optus equipment was upgraded in 2021. While these upgrades will deliver improved network coverage and capacity to the area surrounding it, this facility is too far removed to service the coverage area to the southeast. This candidate was therefore discounted.

3.3 Alternate Candidates

A robust investigation of potential candidates has been undertaken.

In identifying a candidate, we have sought to maximise separation from residences and sensitive uses where possible, whilst also endeavouring to minimise impacts on the environment and scenic amenity as far as practicable.

A precautionary approach has been taken to site selection in accordance with sections 4.1 and 4.2 of the *C564:2020 Mobile Base Station Deployment Code*.

Figure 2 – Aerial view of the investigated candidates within the Wavell Heights area (Source: Nearmap 2023).

Table 2: Prospective Candidates Investigated		
Candidate	**Site Address**	**Comments**
A	New 35m Monopole Ian Healy Oval (Location 1) 128 Shaw Road Wavell Heights QLD 4012	This candidate proposed a light pole swap, with a new 35m monopole, with the existing lighting reinstated on the proposed monopole. While this candidate was able to achieve the coverage objectives for Vodafone and Optus, a facility in this location was not compatible with the landowners' plans for the property. This candidate was therefore discounted.
B	New 35m Monopole Ian Healy Oval (Location 2) 128 Shaw Road Wavell Heights QLD 4012	This candidate proposed a new 35m monopole, adjacent to the carpark. This candidate was able to achieve the coverage objectives for Vodafone and Optus and the landowner was amenable to entering into a lease agreement for the proposed facility. Additionally, facility in this location would have a similar appearance to the existing flood lights, which would aid in mitigating the amenity impacts of the proposal. This candidate was considered to be the most appropriate location for a facility and is the subject of this development application.
C	New 35m Monopole 100 Fifth Avenue Kedron QLD 4031	This candidate proposed a light pole swap, with a new 35m monopole, with the existing lighting reinstated on the proposed monopole. While this candidate was able to achieve the coverage objectives for Vodafone and Optus, it was considered to have a higher amenity impact, due to its proximity to the surrounding residences, compared to Candidate B. This candidate was therefore discounted.
D	New 35m Monopole Shaw Park 151 Shaw Road Wavell Heights QLD 4012	This candidate proposed a light pole swap, with a new 35m monopole, with the existing lighting reinstated on the proposed monopole. While this candidate was able to achieve the coverage objectives for Vodafone and Optus, it was considered to have a higher amenity impact, due to its proximity to the surrounding residences, compared to Candidate B. This candidate was therefore discounted.
E	New 35m Monopole Kalinga Park 64 Lewis Street Kalinga QLD 4030	This candidate proposed a 35m monopole adjacent to the rail corridor. This candidate was unable to achieve the coverage objectives for Vodafone and Optus.

		This candidate was therefore discounted.

4. Site Context

The proposal involves the establishment of a new telecommunications facility at 128 Shaw Road, Wavell Heights QLD 4012 (Lot 1 on Registered Plan 165923). The overall land holding shown in **Figure 3** is a collection of 13 lot holdings as part of the Brisbane City Council Recreational Reserve west of Shaw Road with a total area of 41.62ha and is held by the same owner. A copy of the Certificate of Title is provided in **Appendix A – Certificate of Title**. Signed owners' consent for lodgement of the development application is provided in **Appendix B – Owners Consent.**

The subject site is zoned as Sports and Recreation (SR3) and Open Space (OS2) under the Brisbane City Plan 2016.

The lot is currently developed as a recreational reserve, with a bikeway, ovals, fields and tennis courts, supporting community recreational activities. The reserve grounds will act as a buffer between the established residential land uses in the wider surroundings and the proposal, due to its location near the centre of the reserve, adjacent to the Tennis Centre carpark.

The nearest residence is located approximately 215m south of the proposed facility location.

Kedron Brook traverses past the northern and southern boundaries of the reserve, along with several strands of mature vegetation, which are identified as being of high ecological significance. No aspect of the proposal will encroach on these areas of ecological significance and no vegetation removal is proposed or anticipated.

The vegetation surrounding the park will afford significant screening opportunities to the proposal from the residences bordering the reserve grounds, mitigating direct views of the monopole.

The subject site is impacted by bushfire overlay however given the largely disturbed footprint and scale of the subject site being within the Urban Interface, there exists a safe separation from the medium and high-risk hazard areas along the western perimeter.

Figure 3 – View of the subject site and the context of the surrounding area (Source: Brisbane City Plan 2014).

Figure 4 – Aerial view of the subject site in relation to the general surrounding uses (Source: Nearmap 2023).

Figure 5 – Aerial view of the subject site in relation to the general surrounding uses (Source: Nearmap 2023).

Figure 6 – Proposed lease area west of the tennis court parking area (not to scale) (Source: Indara 2023).

5. Proposed Works

5.1 Equipment to be Installed.

The proposed works involve the installation of:

- One (1) 35m Indara monopole.
- One (1) new triangular headframe.
- Fifteen (15) new panel antennas (4G and 5G).
- One (1) six bay outdoor equipment cabinet at ground level.
- Ancillary equipment associated with operation and safety of the facility, including remote radio units, elevated cable tray, cabling and antenna mounts, group meter panel, security fencing with 3m wide double access gate etc.

The monopole and associated equipment will be finished in a pale grey, while the equipment cabinet will be a pale eucalypt or beige colour unless otherwise conditioned by Brisbane City Council.

The overall height of the facility, including antennas and equipment, and will not exceed 38.61m.

The site drawings are provided in **Appendix C – Proposal Plans**.

5.2 Site Access and Parking

The proposed facility will be accessed via the existing access route, off Shaw Road.

Once the proposed facility is operational, it will require access approximately 2-4 times annually for routine maintenance, during which a four-wheel drive vehicle is normally used. The facility will otherwise operate on an unmanned basis and will not generate significant vehicle traffic.

Figure 7 – **Existing access, off Shaw Road, to the proposed facility location (Source: Google Street View 2023).**

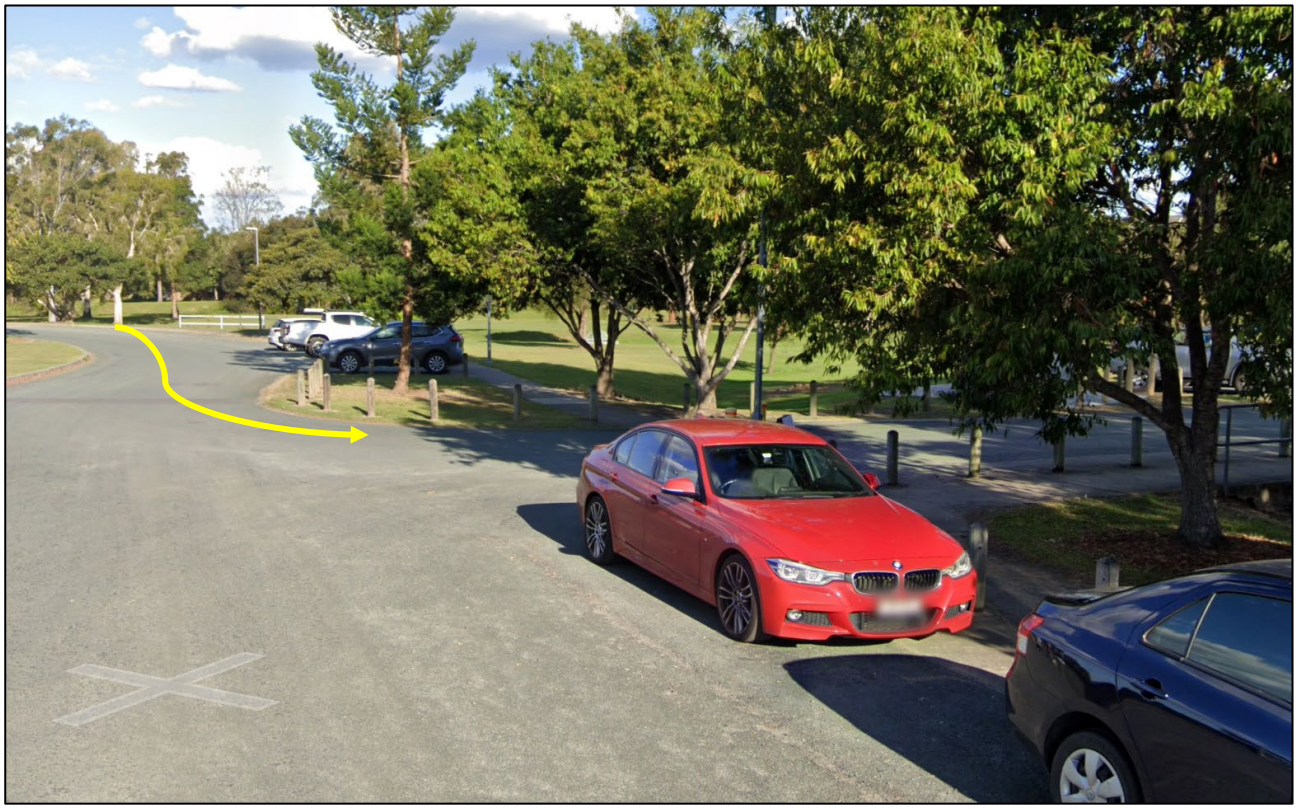

Figure 8 – Existing access road, through the park, towards the location of the proposed facility (Source: Google Maps Street View 2023).

5.3 Noise

The facility will not be a significant generator of noise. The only part of the facility that generates noise is the cooling fans on the equipment cabinet.

Cooling equipment will only operate when required and will not operate continuously. Cooling equipment will operate at levels generally comparable to those of a domestic air conditioner and is not expected to represent a noise nuisance.

5.4 Power and Utilities

Indara propose to connect the facility to mains power from the existing switchboard, adjacent to the carpark, southwest of Ian Healy Oval, subject to confirmation by the power authority.

No works associated with stormwater drainage, or connections to reticulated water and sewerage, are proposed, or required.

Figure 9 – Existing main switchboard (Source: Indara 2023).

5.5 Emissions

Operation of the facility will not result in emission of dust, heat, smoke, gaseous plumes or particulates.

To provide mobile coverage, the facility will produce electromagnetic EME emissions. These will be within the levels prescribed by ARPANSA and regulated by ACMA. An ARPANSA EME Report, demonstrating compliance with Australian safety standards, is attached. Refer Section 8 of this report.

5.6 Environment and Biodiversity

No vegetation removal is sought or anticipated as a result of this development.

While several scattered pockets of high ecological value vegetation remain, these are not in proximity to the proposed site location. As such, the proposal is not considered to have an adverse environmental impact.

5.7 Heritage

Online searches were conducted to identify any areas of heritage significance on the site, which include the following:

- Brisbane City Plan 2014 - Interactive Mapping property report.
- Vegetation Management Act Tool
- Queensland Heritage Register
- EPBC Search

The subject site is not heritage listed and searches indicate no record of European artefacts or sensitivity.

However, the duty of care outlined in the Aboriginal Cultural Heritage Act 2003 Duty of Care Guidelines will be exercised during construction. If any cultural items are located, all activities will cease until further directions are received from the relevant authority.

5.8 Aviation

The subject site is located within the Outer Horizontal Surface (152.50m AHD) of the Brisbane Airport Obstacle Limitation Surface (OLS) area.

Given the facility has an overall height of 50.00m AHD (based on a Google Earth ground level of approximately 11m AHD and an overall facility height of 38.61m), it does not protrude into the OLS and therefore is not considered to constitute an aviation hazard on this basis.

No specific aviation safety measures, such as lighting or obstacle paintwork, are currently proposed.

During construction, the temporary use of a 40m crane, for approximately 24 hours, will be required to install the monopole. Prior to the commencement of any works, Indara, or its representatives, will apply for the relevant crane permits from Brisbane Airport if required.

6. Legislative Context

6.1 Commonwealth Legislation

6.1.1 Telecommunications Act 1997 and Telecommunications (Low-Impact Facilities) Determination 2018

The *Telecommunications Act 1997* allows mobile carriers to perform certain maintenance and installation works without needing development consent. The *Telecommunications (Low-Impact Facilities) Determination 2018* also allows for certain kinds of 'Low Impact' equipment to be installed without development consent.

New towers do not fall within these federal planning exemptions. Accordingly, this proposal will require Brisbane City Council approval.

6.1.2 Telecommunications Code of Practice 2021

The *Telecommunications Code of Practice 2021* emphasizes "best practice" for the installation of facilities, compliance with industry standards and minimisation of adverse impacts on the environment.

This proposal has been designed with consideration for the Code of Practice. All steps will be taken to do as little damage as practicable; the facility will be constructed and operated in accordance with industry standards and good engineering practice; and the design of the facility will be in accordance with industry best practice.

6.1.3 C564:2020 Mobile Phone Base Station Deployment Code

The Communications Alliance Limited *C564:2020 Mobile Phone Base Station Deployment Code* (the Deployment Code) is an industry code of practice registered by the Australian Communications and Media Authority.

The Code applies to all licenced telecommunications carriers, and sets guidelines for site selection, community consultation, design, installation and operation of telecommunications facilities.
Sections 4.1 and 4.2 of the Code are relevant to this proposal, and require a precautionary approach to site selection, infrastructure design and site operation. The proposed facility has been sited and designed in accordance with Sections 4.1 and 4.2. Checklists demonstrating compliance can be provided on request.

The Code also requires an ARPANSA EME report be prepared for all new mobile base stations, to demonstrate compliance with relevant safety standards. The report is enclosed in **Appendix D – EME Report.**

6.2 State Legislation

6.2.1 Planning Act 2016

The *Planning Act 2016* guides planning in Queensland. Under the Act, the proposed telecommunications facility requires a Material Change of Use application, as it involves establishment of a new use on the premises.

Pursuant to section 44 of the Act, the proposed works are assessable development requiring Council development approval.

6.2.2 State Referrals

A referral agency is an agency which has jurisdiction over a matter in a development application if referral to that agency has been triggered by Schedule 10 of the *Planning Regulation 2017.*

The State Assessment and Referral Agency (SARA) consolidated all state department referrals within the Department of State Development, Manufacturing, Infrastructure and Planning (DSDMIP) as the single referral agency for all development applications with the Chief Executive of the Planning Act having jurisdiction as either the Assessment Manager or as a Referral Agency.

A detailed assessment of the relevant matters identified in Schedule 10 was undertaken and no state referrals have been determined to be relevant to this application.

6.3 Brisbane City Plan 2014

6.3.1 Overview

The proposed application seeks to attain a development permit for a Material Change of Use for a Telecommunication Facility which is defined under the *Brisbane City Plan 2014 as:*

‘’Telecommunications facility means the use of premises for a facility that is capable of carrying communications and signals by guided or unguided electromagnetic energy’’.

The proposal is subject to code assessment against Table 5.5.11 of the *Brisbane City Plan 2014.*

6.3.2 Site Zoning

The subject site has multiple zonings (SR3 and OS2) under the *Brisbane City Plan 2014.* The proposed facility will be positioned and assessed against the SR3 code provisions.

Under the SR3 zone, a telecommunication facility is not an acceptable use and will trigger an Impact Assessment pathway.

A property report has been generated by the City Plan 2014 mapping tool and is listed in **Appendix E – Brisbane City Council Property Report.**

Figure 10 – Zoning of the subject site under the Brisbane City Plan 2014 (Source: Brisbane City Plan 2014).

6.3.3 Overlays

A search of the subject site at 128 Shaw Road Wavell Heights QLD 4012 on Land Described as Lot 1 on Registered Plan 165923 has identified the site to be impacted by the following overlays:

Neighbourhood Plan

The subject site is identified to be within the Lutwyche Road Corridor Neighbourhood Plan. Further assessment of codes is provided in **Appendix F – Code Assessment** as part of the planning report.

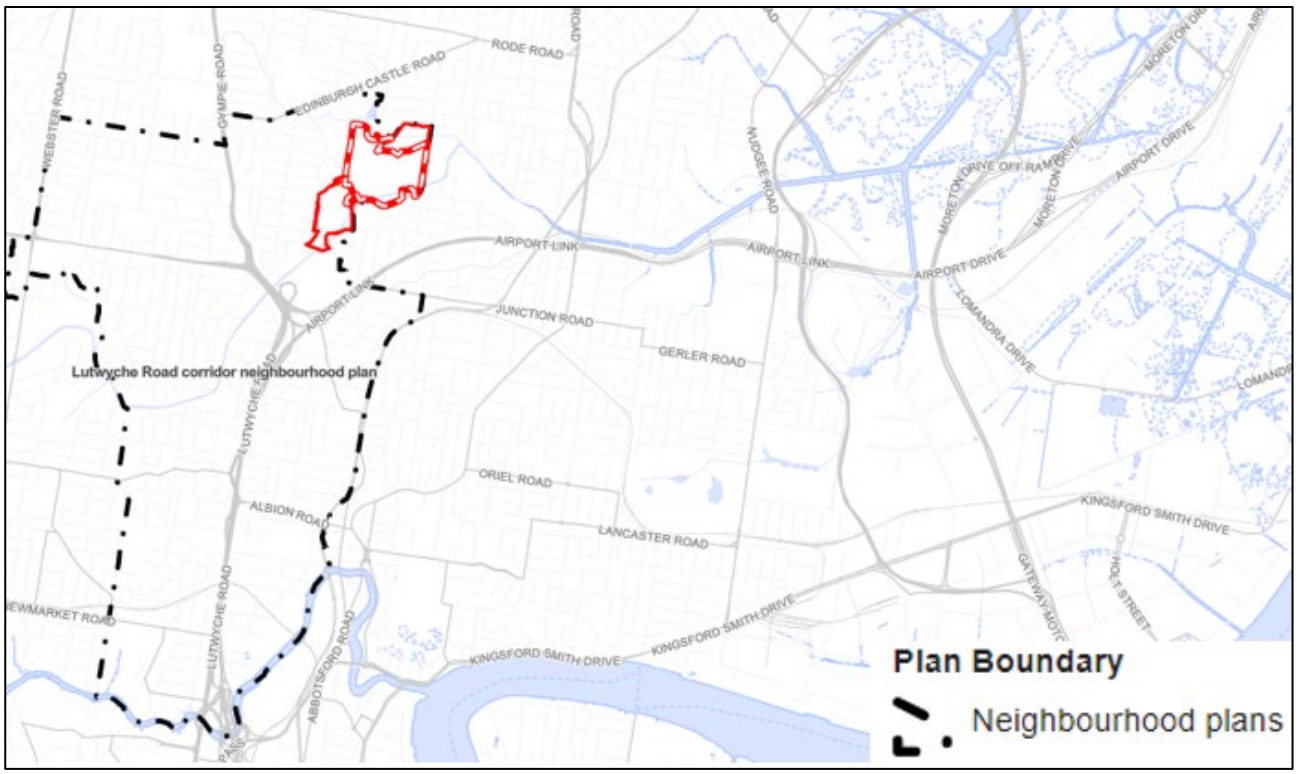

Figure 11 - Lutwyche Road Corridor Neighbourhood Plan (Source: Brisbane City Plan 2014).

Airport Environs Overlay

This overlay covers 100% of the subject site. The telecommunications site and proposed development footprint will be within this overlay. Further assessment of codes is provided in **Appendix F – Code Assessment** as part of the planning report.

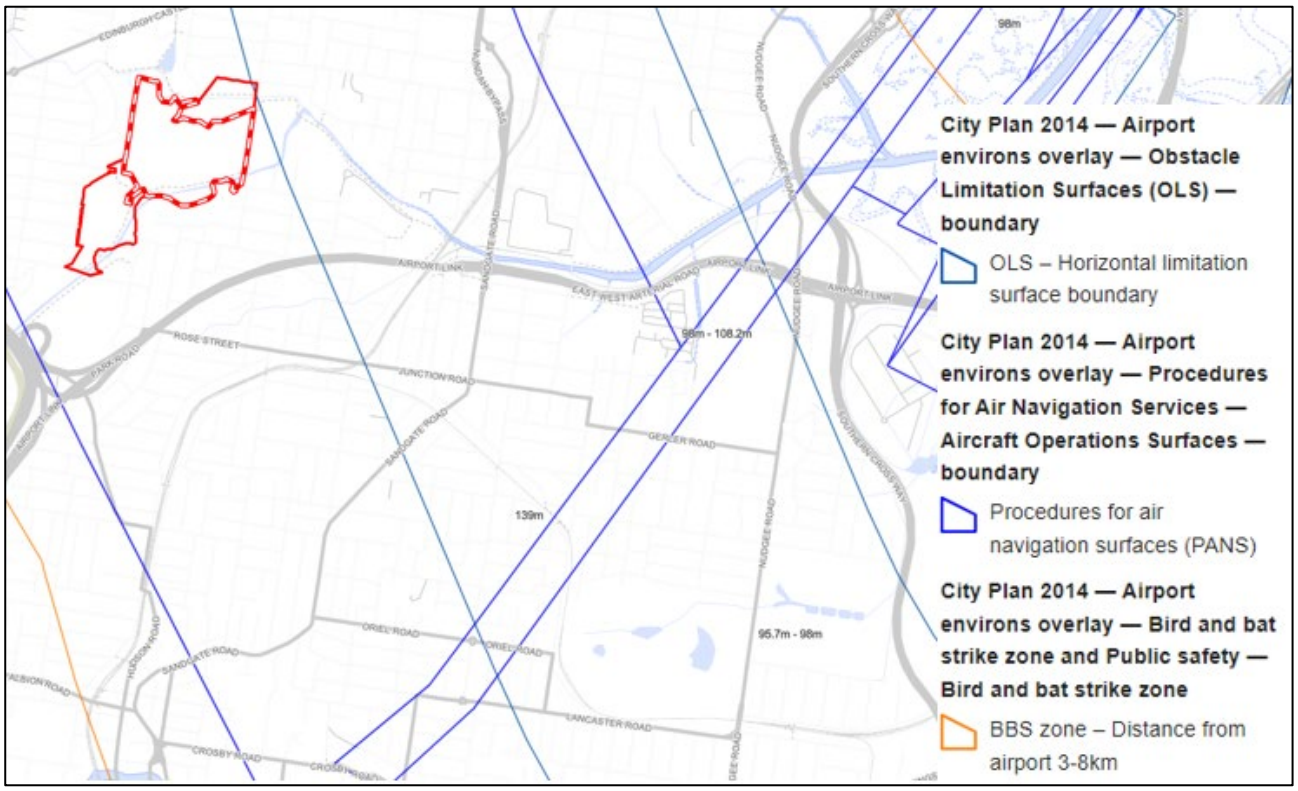

Figure 12 – Airport Environs Overlay at the subject site (Source: Brisbane City Plan 2014).

Biodiversity Areas Overlay

This overlay impacts the north and southern permitter of the subject site. The telecommunications site and proposed development footprint are not within this overlay. Further assessment of codes is provided in **Appendix F – Code Assessment** as part of the planning report.

Flood Overlay

This overlay impacts the northern, eastern and southern permitter of the subject site. The telecommunications site and proposed development footprint are in very close proximity to these overlays. Further assessment of codes is provided in **Appendix F – Code Assessment** as part of the planning report.

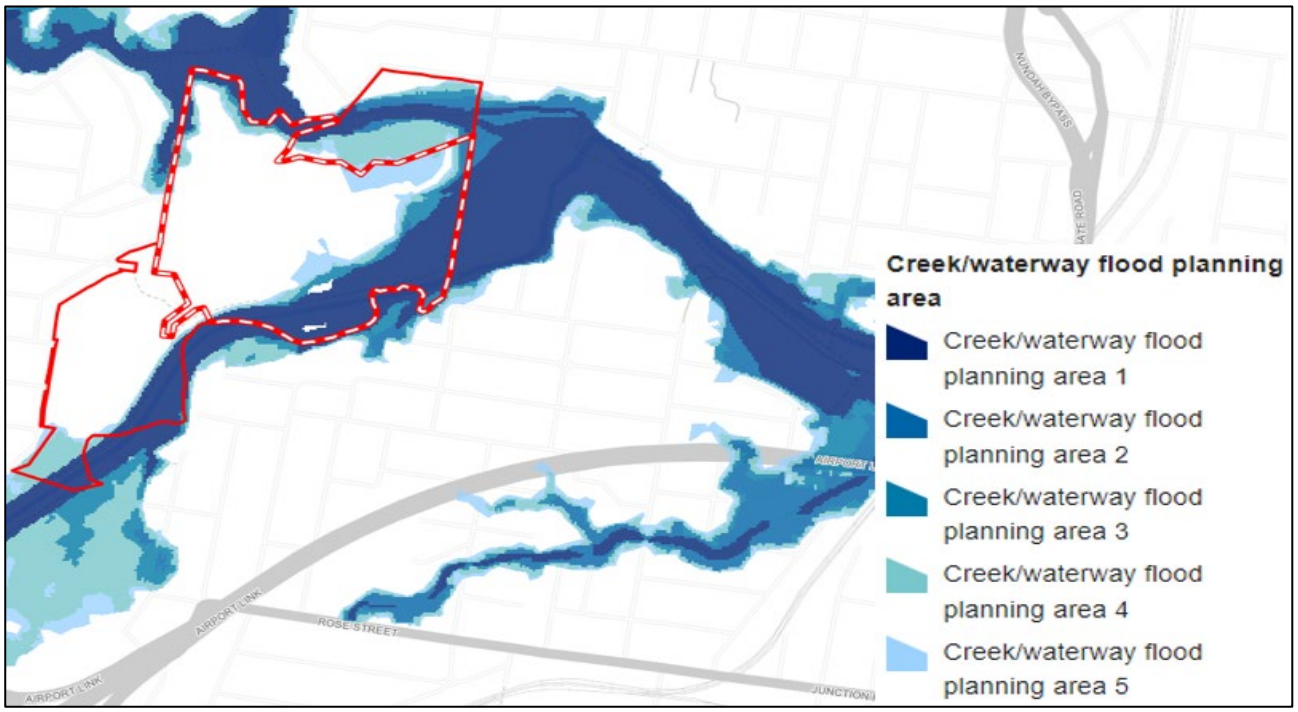

Figure 13 – Flood Overlay at the subject site (Source: Brisbane City Plan 2014).

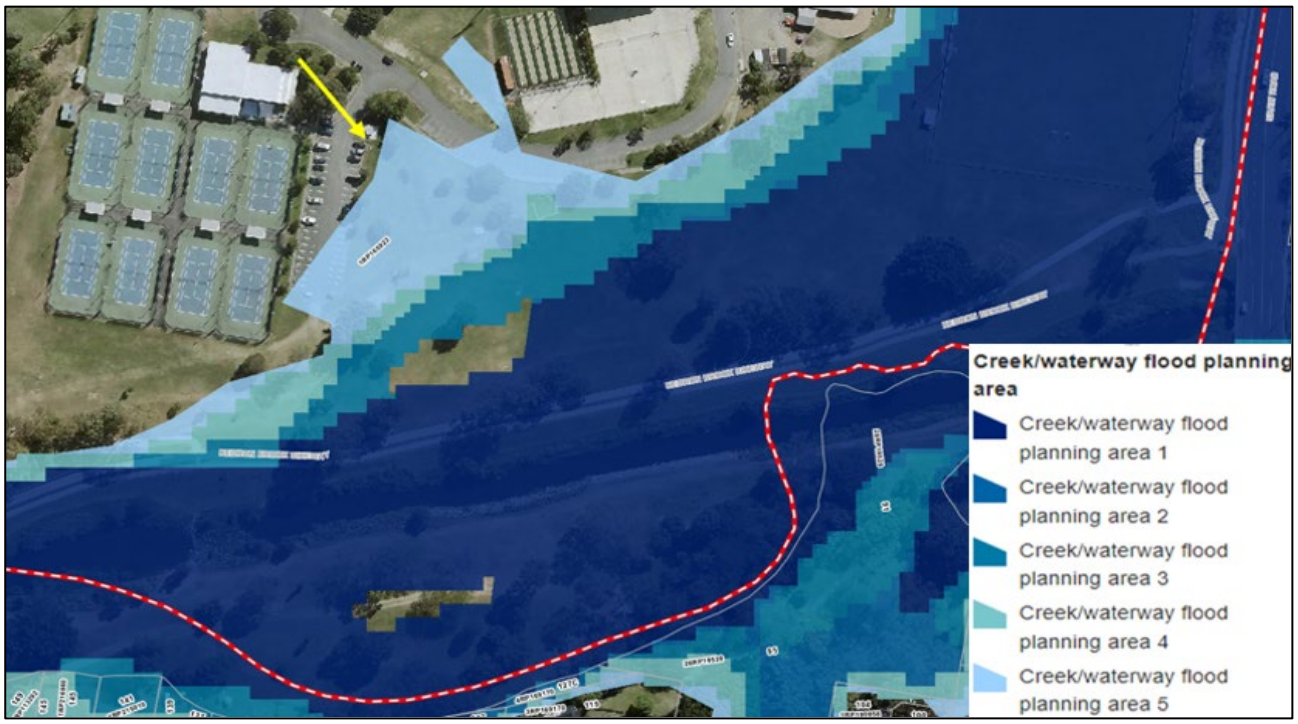

Figure 14 – Flood Overlay at the subject location (Source: Brisbane City Plan 2014).

Figure 15 – Overland Flow Flood Planning Area (Source: Brisbane City Plan 2014).

Potential and Actual Acid Sulphate Soils Overlay

This overlay impacts the entire subject site. The telecommunications site and proposed development footprint are within this overlay. Further assessment of codes is provided in **Appendix F – Code Assessment** as part of the planning report.

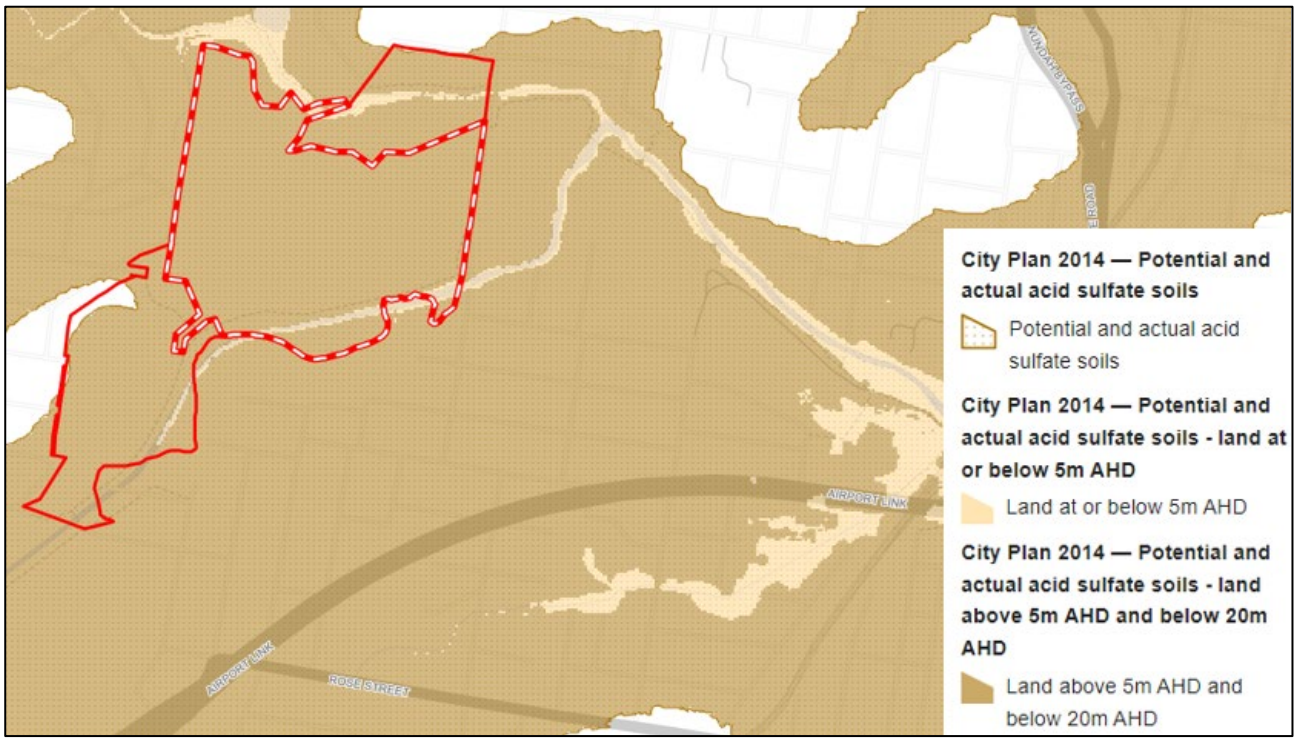

Figure 16 – Acid Sulphate Soil Overlay (Source: Brisbane City Plan 2014).

Waterways Corridors Overlay

This overlay impacts the northern, eastern, and southern permitter of the subject site. The telecommunications site and proposed development footprint are in very close proximity to these overlays. Further assessment of codes is provided in **Appendix F – Code Assessment** as part of the planning report.

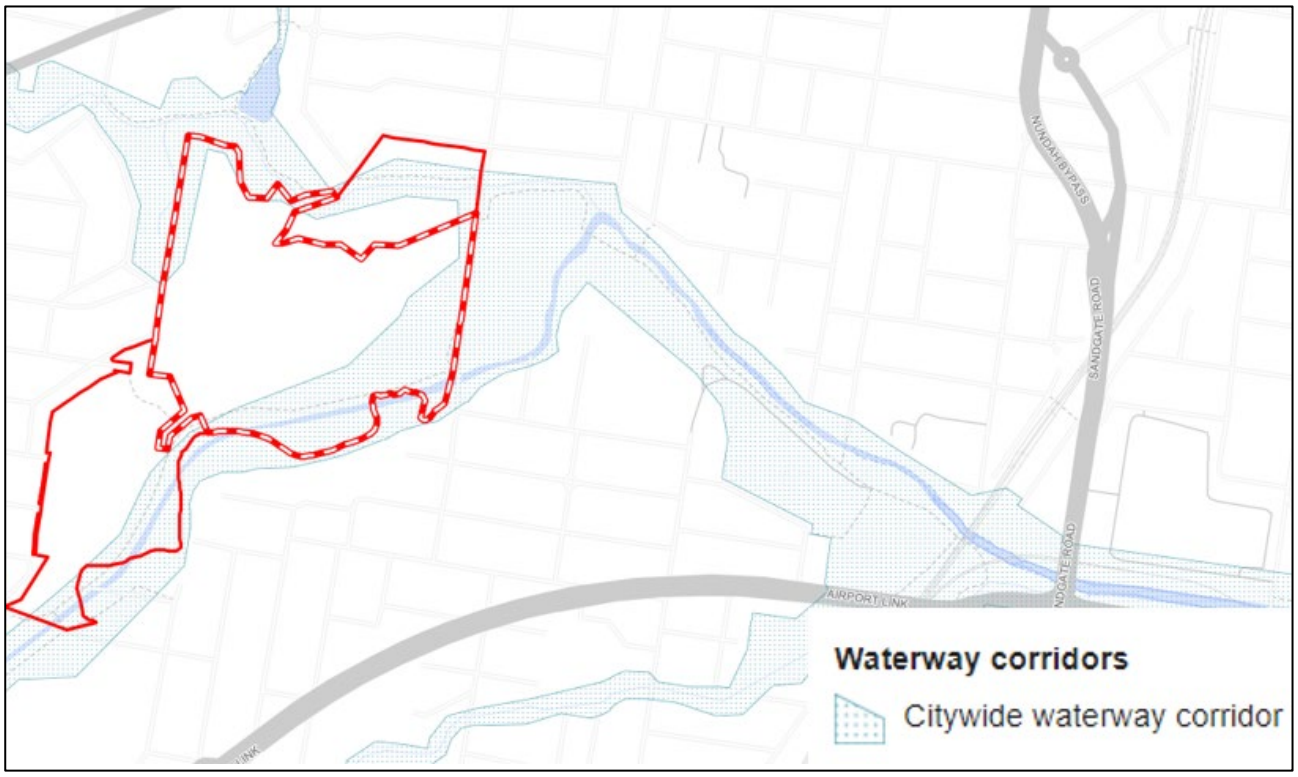

Figure 17 – Waterways Corridor Overlay (Source: Brisbane City Plan 2014).

Other overlays which impact the subject site are not further assessed in this report given they do not relate to the proposed telecommunication faculty. These include Bicycle networks overlay, Industrial amenity overlay and community purpose network overlay.

6.3.4 Relevant Planning Provisions

The following planning scheme provisions are relevant to this project.

- Code Assessment
- Strategic Framework
- 9.3.26 – Telecommunications Facility Code
- 9.4.3 – Filling and Excavation Code
- 9.4.4 – Infrastructure Design Code
- 9.4.5 – Landscape Work Code
- 9.4.7 – Outdoor Lighting Code
- 9.4.9 – Stormwater Code

6.3.5 Code Assessment

Sports and Recreational (Metropolitan) (SR3) Zone Code

The proposal has been assessed against the relevant planning scheme provisions. The proposal is generally compliant with the SR3 Zone Code.

Table 3: Summary of Compliance with SR3 Zone Under the City Plan 2014	
Development Location and Uses Overall Outcomes:	
a) Development provides for informal open-air recreation, outdoor cultural and educational activities, and opportunities for informal sports or other events on a casual basis and integration of stormwater functions in certain locations.	**Complies** – While not mentioned in (a), the proposed use is a telecommunications facility, which will provide essential supporting mobile and data services to the surrounding area.
b) Development serves the recreational needs of Brisbane's residents, workers, and visitors on a local, district and metropolitan scale.	**Complies** – While not mentioned in (b), the proposed use is a telecommunications facility, which will provide essential supporting mobile and data services to the surrounding area.
c) Development tailors the nature and range of activities to the type of park, as shown in the zone precincts.	**Not Applicable** – The proposal is for a telecommunication facility.
d) Development provides for public open space to be accessible to the general public, primarily as a park or environment facility, for a range of outdoor activities.	**Not Applicable** – The proposal is for a telecommunication facility. However, given the small scale of the proposal, it is not considered to adversely impact the park's ability to cater for the recreational needs of the community.
e) Development provides for land in the Open space zone to make an important contribution to Brisbane's liveability and provide visual relief from the built environment and a retreat from developed areas.	**Complies as far as practical** – The proposed facility will directly and indirectly support recreational needs of residents by providing essential mobile and data services. Indara note that telecommunications facilities, by their nature, must be tall enough to protrude above the surrounding environment to function, this is a technical requirement that cannot be avoided. The amenity impacts of the proposal have been mitigated as far as practical by locating the facility on an unutilised portion of land adjacent to the carpark near the centre of the park, which provides a level of separation from the surrounding residential land uses. Additionally, surrounding the proposed site location are a number of existing tall flood lights, which will aid in mitigating the impact of the proposal, as the monopole will be of a similar appearance and colour to that of the existing infrastructure. Furthermore, there are several vegetation buffers around the perimeter of the park, which will aid in screening direct views of the monopole to the surrounding residences. Refer to Section 7 for further information on Visual Impact.

f) Development requiring permanent facilities is accommodated where it is located in a district- or metropolitan-scale park. g) Development provides for a wide range of informal and limited formal recreational, cultural and educational activities. h) Development provides for open space qualities that are valued by residents to be maintained.	**Not Applicable** – The proposal is for a telecommunication facility.
i) Development for a compatible land use of club, community use, food and drink outlet, market, publicly accessible outdoor sport and recreation or theatre (where an outdoor cinema) may be located in a district- or metropolitan-scale park where it complements the leisure and recreation experience of users. j) Development provides park infrastructure, generally in accordance with recommendations for public park infrastructure embellishments in the Local government infrastructure plan.	**Not Applicable** – The proposal is for a telecommunication facility.
Development Form Overall Outcomes:	
a) Development minimises any adverse impact on surrounding land uses through appropriate location, site design and management.	**Complies as far as practical** – Indara note that telecommunications facilities, by their nature, must be tall enough to protrude above the surrounding environment to function, this is a technical requirement that cannot be avoided. The amenity impacts of the proposal have been mitigated as far as practical by locating the facility on an unutilised portion of land adjacent to the carpark near the centre of the park, which provides a level of separation from the surrounding residential land uses. Additionally, surrounding the proposed site location are a number of existing tall flood lights, which will aid in mitigating the impact of the proposal, as the monopole will be of a similar appearance and colour to that of the existing infrastructure. Furthermore, there are several vegetation buffers around the perimeter of the park, which will aid in screening direct views of the monopole to the surrounding residences. Refer to Section 7 for further information on Visual Impact.
b) Development is not carried out on land that is susceptible to flooding or drainage problems except for park facilities or infrastructure which has been designed and constructed for flood resilience.	**Complies as far as practical –**The subject site is noted to be impacted by the Flood Overlay along the perimeters of the Kedron Brook creek with overland and creek flooding events. The citing of the proposed facility has been positioned away from the flood levels to avoid any impact on the facility.
c) Development is designed to incorporate sustainable practices including water sensitive urban design. d) Development of high-patronage activities is supported by the necessary level of transport	**Not Applicable** – The proposal is for a telecommunication facility.

infrastructure to promote safe and efficient public transport use, walking and cycling.	
e) Development responds to land constraints, mitigates any adverse impacts on environmental values and addresses other specific characteristics, as identified by overlays affecting the site or in codes applicable to the development.	
Local Zone Precinct Overall Outcomes are –	
a) Development provides a park setting that will attract and cater for users from a local area (i.e. 1 suburb, area of approximately 750m radius).	**Not Applicable** – The proposal is for a telecommunication facility.
District Zone Precinct Overall Outcomes are –	
a) Development provides a park setting that will attract and cater for users from a district (i.e. 2 to 3 suburbs, area of approximately 3-5km radius).	**Not Applicable** – The proposal is for a telecommunication facility.
Metropolitan Zone Precinct Overall Outcomes are –	
a) Development provides a park setting that will attract and cater for users from across the Brisbane metropolitan area.	**Not Applicable** – The proposal is for a telecommunication facility.

Strategic Framework

In the Sports and Recreational Zone (Metropolitan) (SR3), a Telecommunication Facility triggers an Impact Assessment development application. As such, assessment against the Strategic Framework of the City Plan 2014 will be required.

An assessment of Strategic Plan is provided in **Appendix G – Strategic Framework Assessment.**

Secondary Codes

9.3.26 – Telecommunications Facility Code
The proposal is generally compliant with the Telecommunication Facility Code.

9.4.3 – Filling and Excavation Code
The proposal is generally compliant with the Filling and Excavation Code.

9.4.4 – Infrastructure Design Code
The proposal is generally compliant with the Infrastructure Design Code.

9.4.5 – Landscape Work Code
The proposal is generally compliant with the Landscape Work Code.

9.4.7 – Outdoor Lighting Code
The proposal is generally compliant with the Outdoor Lighting Code.

9.4.9 – Stormwater Code
The proposal is generally compliant with the Stormwater Code.

A detailed assessment of Code Compliance is in **Appendix G – Secondary Code Assessment.**

7. Visual Impact

7.1 Visual Impact Assessment

There are numerous technical requirements that need to be considered by mobile carriers with regards to site selection.

Telecommunications facilities, by their nature, must be tall enough to protrude above the surrounding environment to function. At this location, a 35m monopole is required to meet the targeted coverage objectives for Vodafone and Optus; it is the smallest structure capable of achieving a feasible level of service.

Indara acknowledge the facility will be visible from a number of perspectives within the locality. However, the visual impact of this proposal is not considered inappropriate in context – the site is located within a recreational precinct, which has a number of vertical elements, such as the existing flood lights, which have a similar appearance to the proposed monopole and will aid in blending the facility into the landscape. Accordingly, the proposed facility is not considered to be out of scale, context or character for the area.

Furthermore, certain measures have been taken to ensure that visual impact is mitigated as much as practicable, these include:

- Use of a monopole is proposed. Monopoles are considered to be a sympathetic inclusion to the environment when compared to other structure types, such as lattice towers, because of their slimmer profile.
- To minimize visual bulk, Vodafone and Optus antennas will be mounted on a single headframe, reducing visual impact compared with separate headframes at different heights.
- Indara has sought to minimise amenity impacts as far as possible by locating the proposed facility away from more sensitive land uses where possible.
- The facility will be finished in unpainted grey, which will be of a similar appearance to other lighting and electrical infrastructure. Grey facilities also tend to blend well into the skyline in all weathers and are considered to be the most sympathetic finish with regards to blending a facility into an urban landscape. However, Indara will consider an alternate colour scheme if requested by Council.

7.2 Technical Requirements

The visual impact of the proposed facility should also be considered in light of technical requirements; there are numerous technical requirements that need to be considered by mobile carriers with regards to site selection:

- Base stations must be close to the area they are servicing. Relocating the facility, even by a small distance, could impact the site's ability to service the area effectively, particularly when an area is subject to significant constraints.

- Individual base stations are cells within a wider network, meaning they must also work in conjunction with surrounding base stations in the area. If sites are too close to each other, they may cause interference, while sites that are too far from each other, may result in coverage interruptions.

- The coverage from a base station is impacted by terrain and environmental obstructions, like buildings and vegetation. Even a small shift can result in impacts to coverage.

The proposed facility is in a favourable location to service the local area. Even if an alternate site were available, relocating the facility may result in a substantially worse service outcome. The surrounding area has critical need for improved network coverage to meet both the existing demand, as well as future demand, as the population and employment centres grow. Not only must coverage be strong, but network capacity must be sufficient for both the existing, as well as planned population density growth and employment growth.

Photomontage have been prepared to show the indicative views of the proposed facility. These are provided in **Appendix L – Photomontages.**

Views from the East

The land to the east of the proposed site location consists predominantly of open space with multiple sporting and recreational fields lined with 30m flood lights interspersed throughout the landscape.

The surrounding vista has scattered vegetation, which will afford some screening opportunities to the facility and minimise long-distance views, as shown in **Figures 19 and 20**.

As such, the proposal is not considered to have an adverse impact on the amenity of the surrounding area, nor is it considered to be a focal point in the landscape from this aspect.

Figure 18 – View from the east along Shaw Road and the access to the subject site facing southwest towards the proposed facility location, approximately 350m away. From this aspect, the mature vegetation and flood lights will mitigate the amenity impacts of the proposal (Source: Indara 2023).

Figure 19 - View from the east along Shaw Road and the access to the subject site facing west towards the proposed facility location, approximately 310m away. From this aspect, the mature vegetation and flood lights will mitigate the amenity impacts of the proposal (Source: Indara 2023).

Views from the West

The land to the south of the proposed site location consists predominantly of low-density and medium density residential properties along Boree Street.

The surrounding vista is well vegetated with established trees, which will similarly afford either complete, or considerable screening to the facility and minimise long-distance views, as shown in **Figure 21**.

As such, the proposal is not considered to have an adverse impact on the amenity of the surrounding area, nor is it considered to be a focal point in the landscape from this aspect.

Figure 20 – View from the west along Boree Street, facing east towards the proposed facility location, approximately 310m away. From this aspect, the mature vegetation affords significant screening of the facility (Source: Indara 2023).

Views from within the subject site facing South West

Figure 21 – View further west from the club house along internal access road, facing southwest towards the proposed facility location, approximately 120m away. From this aspect, while the facility will protrude into the skyline and integrate within the existing lighting strucutres affording screening of the facility (Source: Indara 2023).

8. Radiofrequency Emissions and Safety

It is the position of the Australian government, and peak health bodies like the World Health Organization (WHO), that mobile base stations are safe.

Statement from Australia's Chief Medical Officer

I'd like to reassure the community that 5G technology is safe. There is no evidence that telecommunication technologies, such as 5G, cause adverse health impacts. This position is supported by health authorities in Australia – such as the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) – and around the world, such as the World Health Organization.

Mobile phone networks and other wireless telecommunications emit low-powered radio waves also known as radiofrequency (RF) electromagnetic energy (EME). This is different to ionising radiation associated with nuclear energy or use in medicine. The radio waves to which the general public is exposed from telecommunications are not hazardous to human health.

https://www.health.gov.au/news/safety-of-5g-technology

Australian Government Advice

What do we know about EME? Answer: extensive scientific research confirms that mobile technology has no long or short term health effects; and the Australian Government is focused on capturing the benefits of advanced telecommunications while ensuring strict protections and safety standards are met.

The EME standard set by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) defines the maximum exposure limit for all wireless equipment and is strictly enforced by the Australian Communications and Media Authority (ACMA). Measurements undertaken by carriers and ACMA show that mobile telecommunication sites emit a tiny fraction of maximum EME exposure limits. The exposure limits are themselves very conservative. As such, sites which operate at 100% of the limit are still considered safe.

This standard is informed by decades of quality studies undertaken by expert Australian and international scientists which show the low levels of EME produced by telecommunications equipment have no adverse effects. This includes previous generations of mobile technology, like 3G and 4G, and the higher, more efficient, radio waves used for 5G.

https://www.infrastructure.gov.au/media-centre/5g-and-electromagnetic-energy

EME is one of the most heavily studied types of energy in the world. Decades of research shows there is no verifiable evidence that EME from telecommunications facilities pose a negative health risk, especially when emission levels are below the maximum exposure limits set out in the Standard for Limiting Exposure to Radiofrequency Fields – 100 kHz to 300 GHz (the Standard).

https://www.infrastructure.gov.au/media-technology-communications/spectrum/5g-eme

All mobile base stations in Australia must comply with a strict safety standard called the *Standard for Limiting Exposure to Radiofrequency Fields – 100 KHz to 300 GHz (RPS S-1)*. The standard has been prepared by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA), based on the recommendations of ICNIRP (International Commission for Non-Ionising Radiation Protection).

The Australian Communications and Media Authority (ACMA) regulates compliance with the standard. The safety standard applies to all mobile frequencies currently used in Australia, including 4G and 5G.

The Standard operates by placing a limit on the strength of the signal (or RF EME) that mobile carriers can transmit to and from any network base station. The environmental standard restricts the signal strength to a level low enough to protect all people at all times. It has a significant safety margin, or precautionary approach, built into it.

An ARPANSA EME report has been prepared to demonstrate compliance with the Australian standard. This report demonstrates the maximum signal strength that a proposed telecommunications facility is capable of producing, assuming it is operating at maximum capacity.

This facility will operate at maximum EME levels representing **2.25%** of the Australian standard. Refer to **Appendix D – EME Report**.

Note that mobile base stations are designed to operate at minimum, not maximum, power levels at all times. The facility will only operate at a level necessary to accommodate the number of customers using the facility at any one time. Actual EME levels emitted by the facility will generally be much lower than those shown in the ARPANSA EME Report.

9. Conclusion

Indara is seeking development consent to install a new telecommunications facility at 128 Shaw Road, Wavell Heights QLD 4012 on Land Described as Lot 1 on Registered Plan 165923. The new facility is proposed to deliver improved mobile services in Wavell Heights and the surrounding areas.

The facility has been sited to minimise impact on surrounding land uses as far as practicable, generally accords with planning requirements for the site, and has as small as possible a visual impact.

Given the significant public benefit afforded by the proposal, it is requested that consent be granted to undertake the project.