



YARRABILBA

CONTEXT PLANNING AREA STRATEGY

Precinct 4

Lendlease RPS
KN Group Natura
Design Flow MWH
Cardno

Date: February, 2022

COMPLIANCE ENDORSEMENT
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2011/187

Date: 6 July 2022



Queensland
Government

Document Information

Project Name: Precinct 4, Yarrabilba
 Reference: PR124141
 Document Title: Context Planning Area Strategy
 Contact: Gavin Edwards (RPS)

Version History

Version	Date	Purpose	Author	Reviewer	Approval Date
Final Draft		Preliminary Review by EDQ	CS	EM	
Draft for EDQ and other stakeholder review		Consultation Draft	CS	EM	7 February 2017
Final for lodgement		Final for lodgement incorporating feedback	CS	EM/ PM	27 March 2017
Resubmission of Final lodgement		Resubmission including EDQ comments on lodged CPAS.	CS	EM	2 May 2017
Amendments		Amendments to Precinct Boundary & Precinct Numbering (Change "Precinct 5" to "Precinct 4A" - subsequently abandoned)	LS	EM	25 October 2021
Amendments		Amendments to Precinct Numbering (Change "Precinct "5" to "Precinct 4")	LS	GE	1 February 2022

PRECINCT OVERVIEW

Precinct 4 represents the first precinct in Yarrabilba south of the power line easement. It is a large precinct that will provide land supply for Yarrabilba for an approximate 3-4 year period based on current sales rates.

Precinct 4 follows from Precinct 3. Precinct 5 is identified as part of the Mixed Industry and Business Area (MIBA) area and will be subject to a future development application once Yarrabilba matures and there is an economic need for the MIBA area.

A locality plan is included at Figure 1. The Key Elements of Precinct 4 include:

- A State primary school – this represents the second State primary school site for Yarrabilba and is proposed to be located on the main collector road in Precinct 4;
- District Sports Park;
- District Recreation Park;
- Park and open space elements to cater for existing natural features and local values on the site including:
 - ‘South Rock’ (refer to Image 1);
 - Existing vegetation adjoining the north-south waterway on the western part of the precinct; and
 - Further extension of an east-west linear corridor protected by the EPBC approval to provide connection to the external ‘Wal’s Block’ (Lot 530 on NPW687) which will provide opportunities for fauna movement through into Plunkett Conservation Park.
- The Precinct will provide in the order of 2000 residential lots, providing suburban residential neighbourhoods of 15 dwellings/ha or greater with some more dense urban residential neighbourhoods. These urban residential neighbourhoods are expected to support densities of 20 dwellings/ha.

Cultural heritage investigations of Precinct 4 have been completed and there are no significant findings have been reported.

Precinct 4 will preserve ‘South Rock’, a natural area of local environmental quality which will be an open space area for the Yarrabilba community.

Image 1 – South Rock



Purpose

This context planning area strategy (CPAS) has been prepared in accordance with Condition 7 of the whole site MCU (DEV2011/187). This strategy requires compliance assessment against condition 11 of the approval.

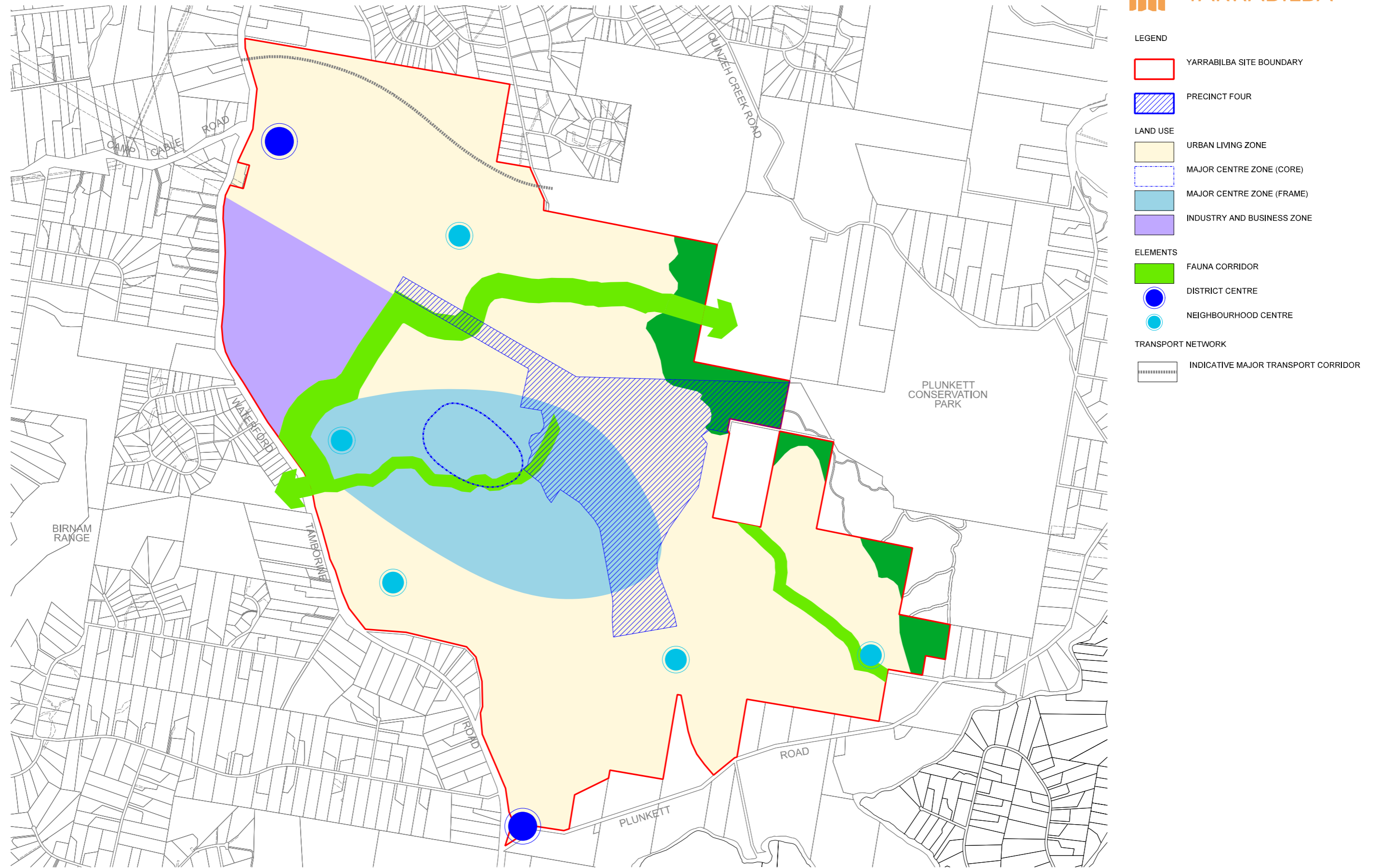
Context Plans

A series of plans have been developed as follows in support of this CPAS:

1. Location Plan;
2. Indicative Context Plan;
3. Yarrabilba Precinct Plan;
4. Aerial Photo;
5. Constraints Plan; and
6. Open Space and Linkages Plan

The Context Plan is included as an indicative plan within this CPAS. A Context Plan will be submitted as part of the first permissible development in the Precinct 4 area and will go through a separate endorsement process.

Figure 1 - Location Plan



- LEGEND**
- YARRABILBA SITE BOUNDARY
 - PRECINCT FOUR
 - LAND USE**
 - URBAN LIVING ZONE
 - MAJOR CENTRE ZONE (CORE)
 - MAJOR CENTRE ZONE (FRAME)
 - INDUSTRY AND BUSINESS ZONE
 - ELEMENTS**
 - FAUNA CORRIDOR
 - DISTRICT CENTRE
 - NEIGHBOURHOOD CENTRE
 - TRANSPORT NETWORK**
 - INDICATIVE MAJOR TRANSPORT CORRIDOR

SOURCE: ZONING MAP WITH TOWN CENTRE CORE RELOCATION AS AGREED WITH EDQ

YARRABILBA PRECINCT FOUR CONTEXT PLAN LOCATION

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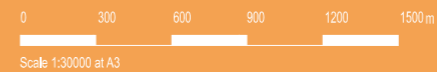
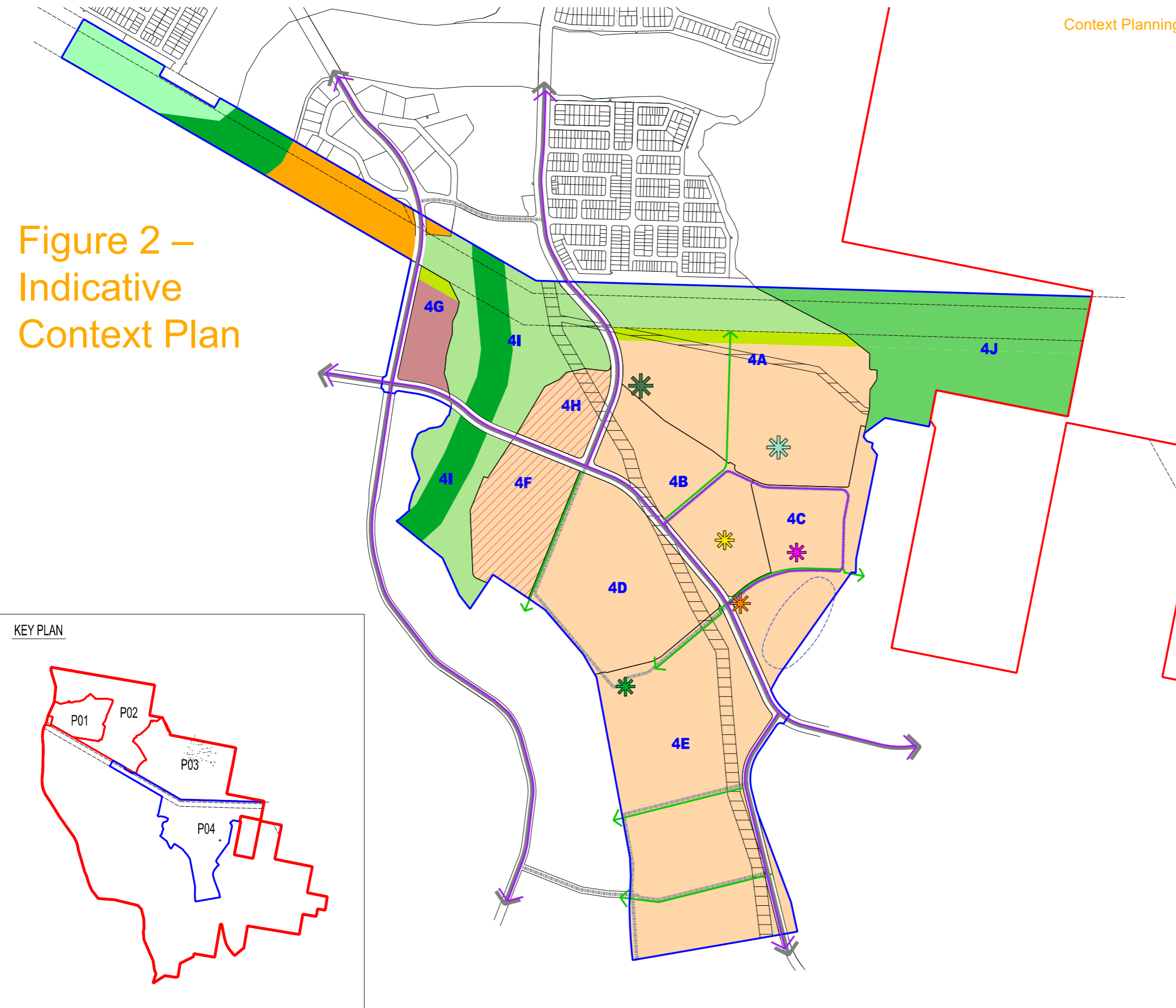


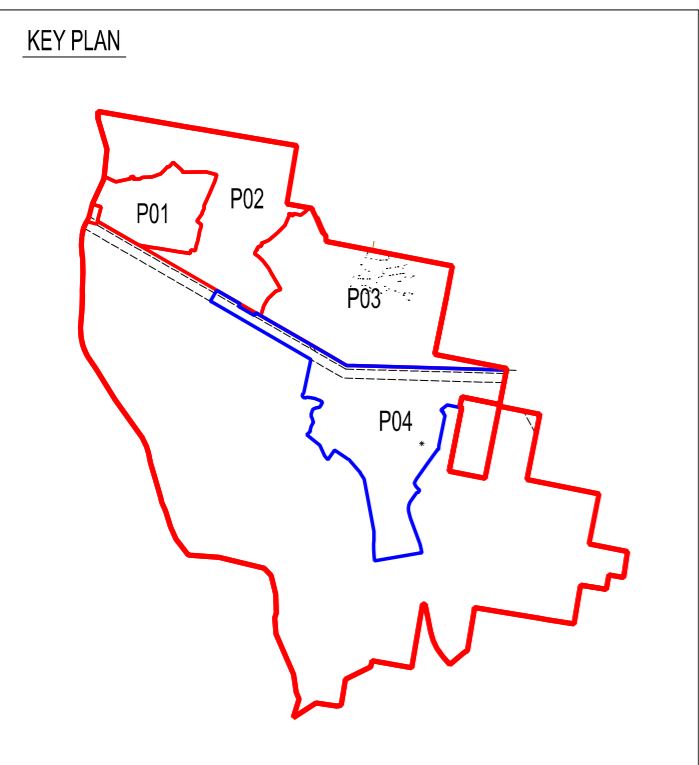
Figure 2 –
Indicative
Context Plan



- LEGEND**
- YARRABILBA SITE BOUNDARY
 - PRECINCT FOUR BOUNDARY
 - PRECINCT FOUR SUB-PRECINCT BOUNDARY

- RESIDENTIAL
- URBAN RESIDENTIAL (min 20dw/ha)
- EDUCATIONAL ESTABLISHMENT - 7.0ha min
- INFRASTRUCTURE & EMPLOYMENT
- POTENTIAL COMMUNITY FACILITY
- FAUNA CORRIDOR (ENVIRONMENTAL PROTECTION)
- CONSERVATION PARK / ENVIRONMENTAL PROTECTION
- CONSERVATION OPEN SPACE / PARK
- LINEAR SPACE
- INFRASTRUCTURE EASEMENT BUFFER
- NEIGHBOURHOOD PARK (0.5ha min)
- SOUTH ROCK LOCAL PARK
- DISTRICT SPORTS PARK - 7.5ha min
- DISTRICT RECREATION PARK - 5.0ha min
- INFRASTRUCTURE EASEMENT
- PRIMARY MOVEMENT NETWORK
- SECONDARY MOVEMENT NETWORK
- PROPOSED GREEN LINK
- PROPOSED BUS ROUTE
- FORMER ROAD RESERVE
- BALANCE LAND IN SEPERATE STORMWATER CATCHMENT
- RESIDENTIAL WITH POSSIBLE INVESTIGATION AREA FOR HIGHER DENSITIES (min 15dw/ha)

TOTAL PRECINCT AREA	246.76 ha
RESIDENTIAL (INCLUDES SPORT AND RECREATION PARKS AND SCHOOL)	145.92 ha
ELECTRICITY EASEMENT BUFFER	3.51 ha
ENVIRONMENTAL	37.93 ha
ROAD	12.50 ha
INFRASTRUCTURE EASEMENT	46.90 ha



DISCLAIMER
The context plan is intended to guide development within the Yarrabilba Precinct Four area and show the preferred land use designations and structural elements. The context plan does not prescribe these designations and structural elements with complete accuracy and the final location will be determined through further detailed design and development applications.

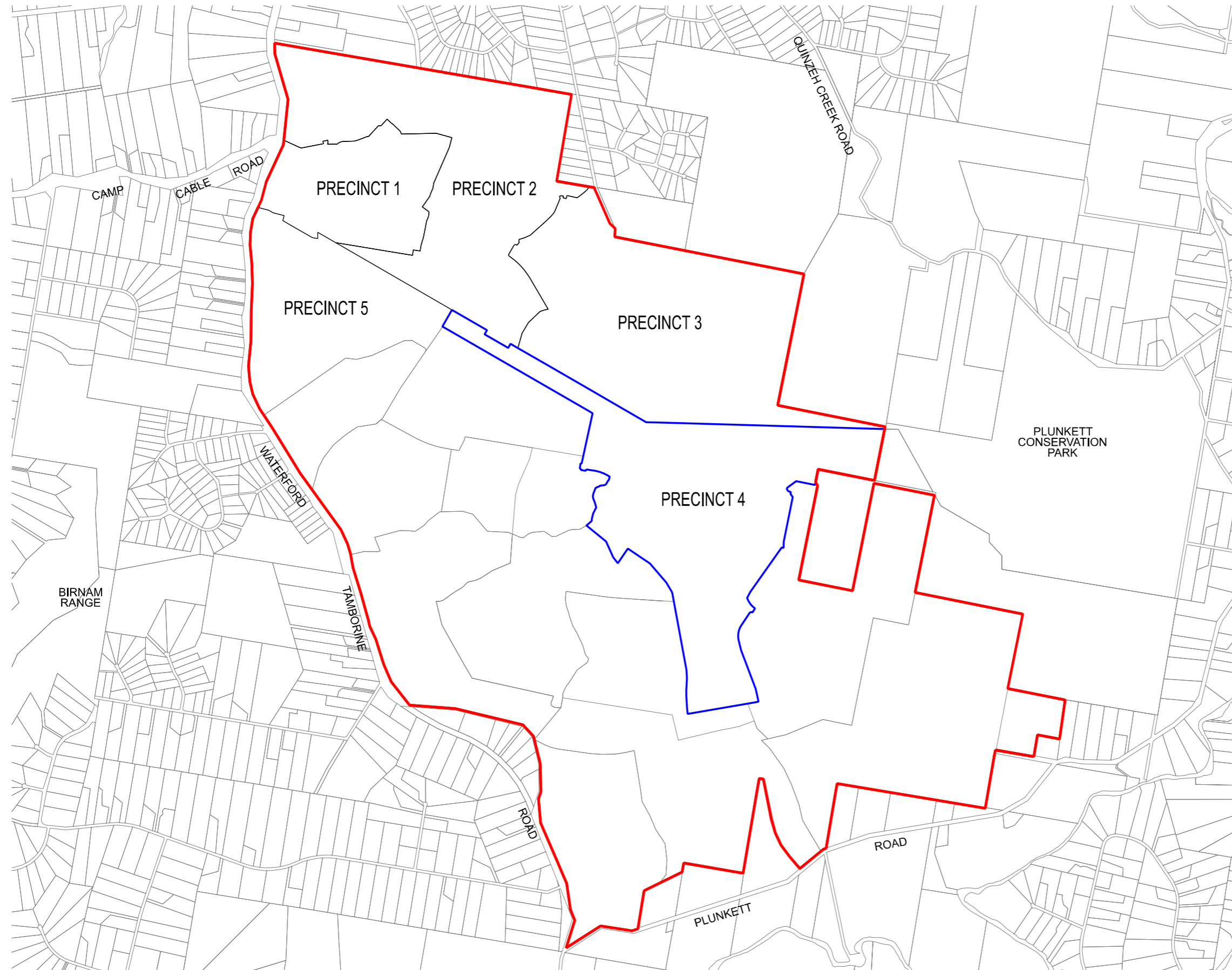
NOTES
The contents of this plan are conceptual only. All areas are approximate only and subject to relevant studies, survey, engineering and relevant authority approvals.





YARRABILBA PRECINCT FOUR
INDICATIVE CONTEXT PLAN

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Figure 3 - Yarrabilba Precinct Plan



- LEGEND
-  YARRABILBA SITE BOUNDARY
 -  PRECINCT FOUR
 -  EXISTING PRECINCTS
 -  INDICATIVE FUTURE PRECINCT BOUNDARIES

NOTE:-
BOUNDARIES FOR PRECINCTS
BEYOND PRECINCT FOUR
ARE INDICATIVE

YARRABILBA PRECINCT FOUR PRECINCT PLAN

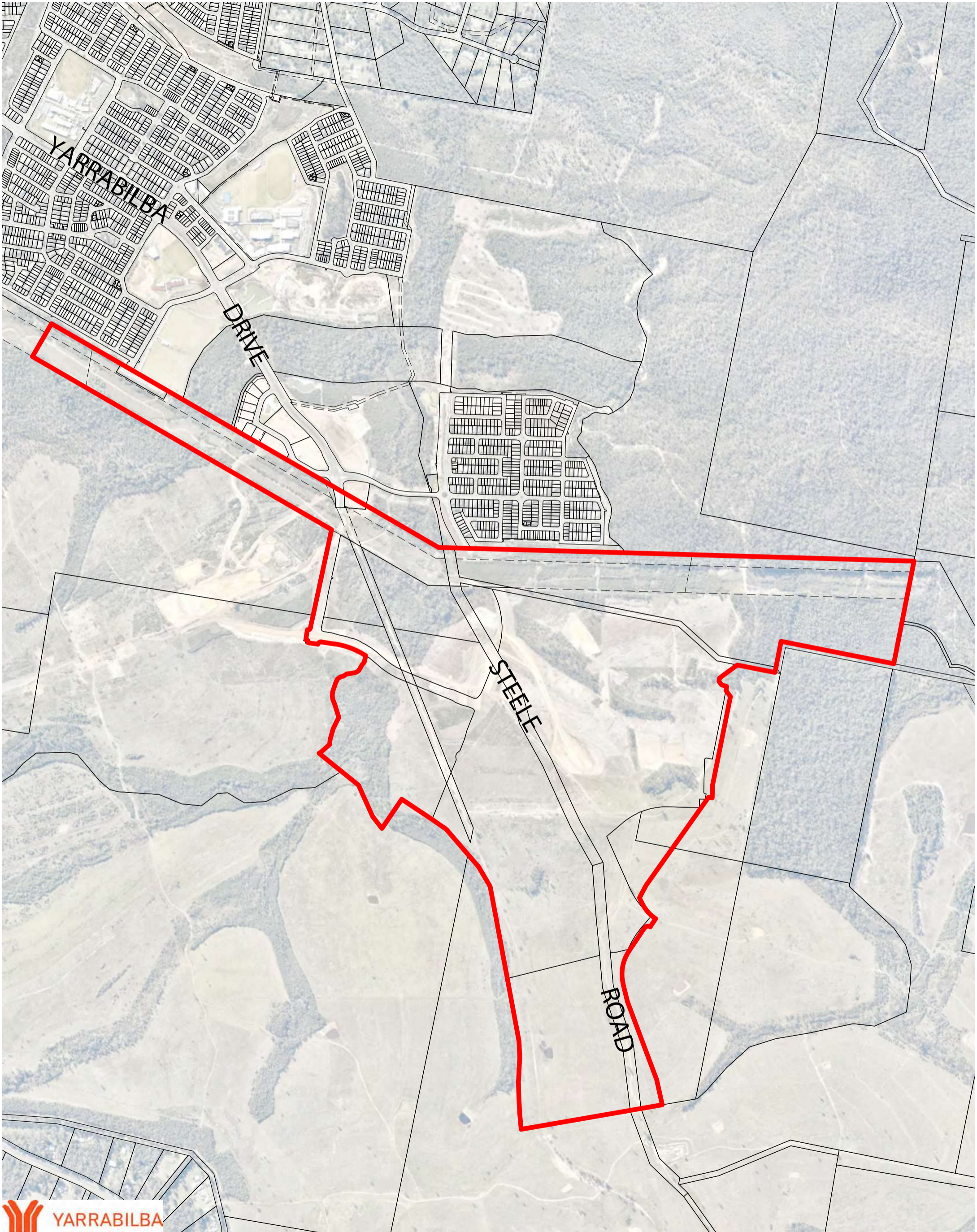
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0 300 600 900 1200 1500m

Scale 1:30000 at A3



Figure 4 - Aerial Photo



PLAN REF: 106127 - 138
Rev No: F
DATE: 11 January 2022
CLIENT: LENDLEASE
DRAWN BY: NV
CHECKED BY: WNW



YARRABILBA
PRECINCT 4
Aerial



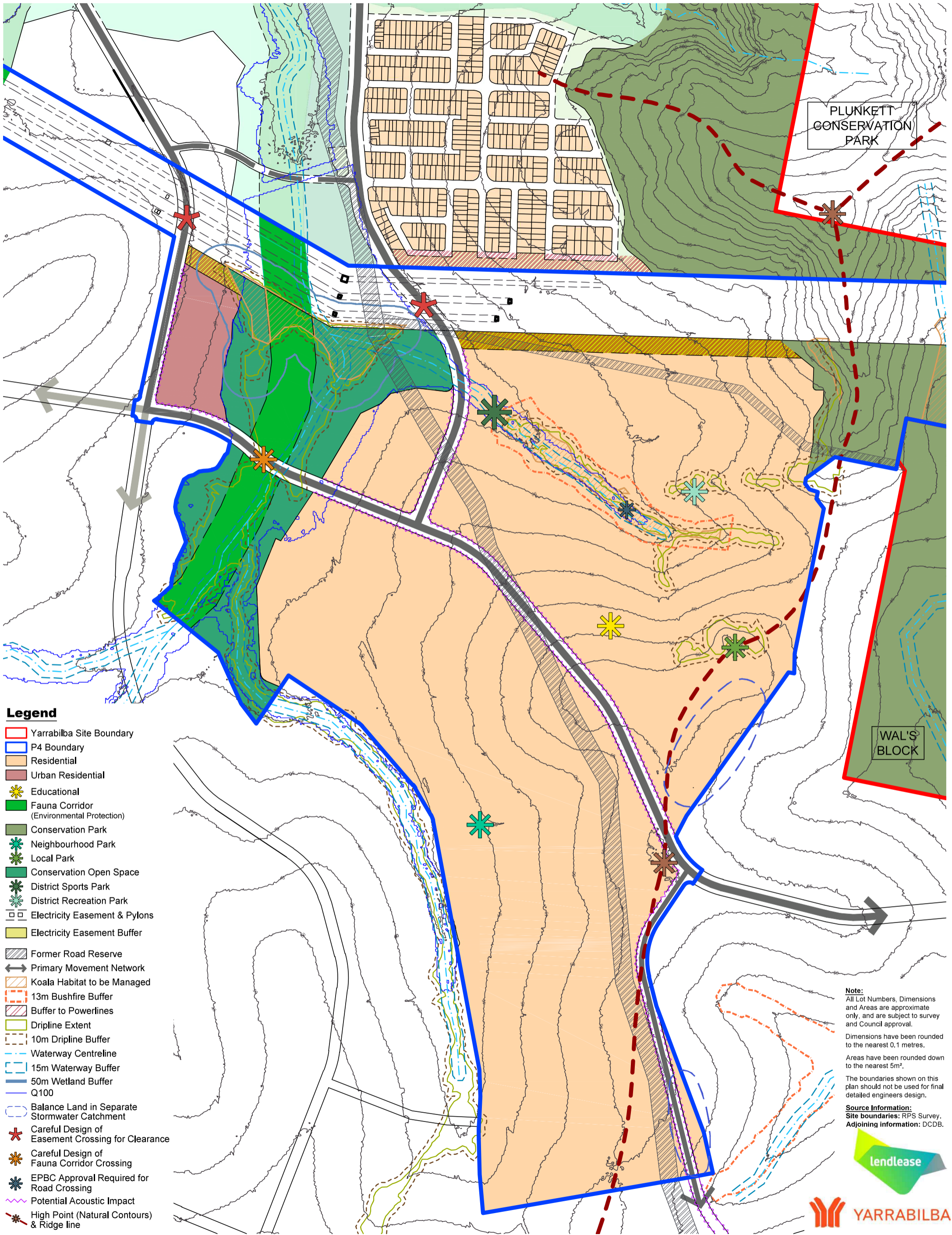
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0 100 200 300 400 500 600 700 1 : 12,500 @ A3

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Figure 5 - Constraints Plan



Legend

- Yarrabilba Site Boundary
- P4 Boundary
- Residential
- Urban Residential
- ✱ Educational
- Fauna Corridor (Environmental Protection)
- Conservation Park
- ✱ Neighbourhood Park
- ✱ Local Park
- Conservation Open Space
- ✱ District Sports Park
- ✱ District Recreation Park
- Electricity Easement & Pylons
- Electricity Easement Buffer
- Former Road Reserve
- Primary Movement Network
- Koala Habitat to be Managed
- 13m Bushfire Buffer
- Buffer to Powerlines
- Dripline Extent
- 10m Dripline Buffer
- Waterway Centreline
- 15m Waterway Buffer
- 50m Wetland Buffer
- Q100
- Balance Land in Separate Stormwater Catchment
- ✱ Careful Design of Easement Crossing for Clearance
- ✱ Careful Design of Fauna Corridor Crossing
- ✱ EPBC Approval Required for Road Crossing
- Potential Acoustic Impact
- ✱ High Point (Natural Contours) & Ridge line

Note:
All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and Council approval.
Dimensions have been rounded to the nearest 0,1 metres.
Areas have been rounded down to the nearest 5m².
The boundaries shown on this plan should not be used for final detailed engineers design.

Source Information:
Site boundaries: RPS Survey.
Adjoining information: DCDB.



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DATE: 22 March 2022
CLIENT: LENDLEASE
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CHECKED BY: WNW

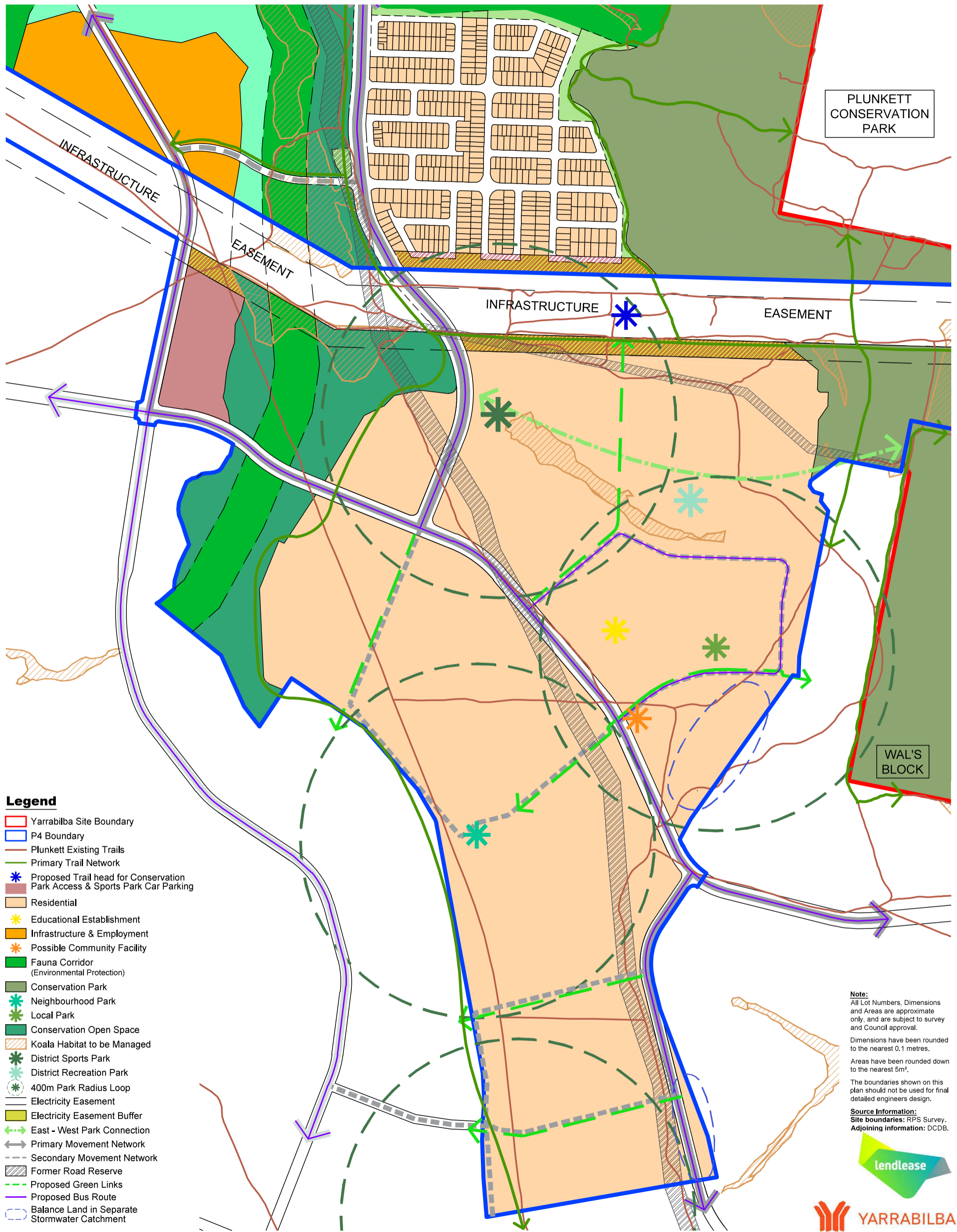


YARRABILBA - PRECINCT 4 CONSTRAINTS

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Figure 6 - Open Space and Linkages Plan



- Legend**
- Yarrabilba Site Boundary
 - P4 Boundary
 - Plunkett Existing Trails
 - Primary Trail Network
 - * Proposed Trail head for Conservation Park Access & Sports Park Car Parking
 - Residential
 - * Educational Establishment
 - Infrastructure & Employment
 - * Possible Community Facility
 - Fauna Corridor (Environmental Protection)
 - Conservation Park
 - * Neighbourhood Park
 - * Local Park
 - Conservation Open Space
 - Koala Habitat to be Managed
 - * District Sports Park
 - * District Recreation Park
 - * 400m Park Radius Loop
 - Electricity Easement
 - Electricity Easement Buffer
 - ↔ East - West Park Connection
 - ↔ Primary Movement Network
 - - - Secondary Movement Network
 - Former Road Reserve
 - - - Proposed Green Links
 - - - Proposed Bus Route
 - Balance Land in Separate Stormwater Catchment

Note:
All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and Council approval.
Dimensions have been rounded to the nearest 0,1 metres.
Areas have been rounded down to the nearest 5m².
The boundaries shown on this plan should not be used for final detailed engineers design.

Source Information:
Site boundaries: RPS Survey.
Adjoining information: DCDB.



PLAN REF: **106127 - 139**
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 DATE: 22 March 2022
 CLIENT: LENDLEASE
 DRAWN BY: NV
 CHECKED BY: WNW

YARRABILBA - PRECINCT 4 CONTEXT PLAN - OPEN SPACE AND LINKAGES

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CPAS FOR IMP AND OSS AREAS

Strategies:

The following strategies are proposed for Precinct 4.

- | | | | |
|--------------------|---|---------------------|---|
| Strategy 1: | Accessible Housing & Social Housing | Strategy 8: | Housing Affordability Infrastructure Master Plan |
| Strategy 2: | Community Development Plan | Strategy 9: | ICT Strategy & Master Plan |
| Strategy 3: | Community Facilities Infrastructure Master Plan | Strategy 10: | Overarching Site Resource Strategy |
| Strategy 4: | Community Greenspace Infrastructure Master Plan | Strategy 11: | Water & Waste Infrastructure Master Plan |
| Strategy 5: | Earthworks Infrastructure Master Plan | Strategy 12: | Total Water Cycle Management Infrastructure Master Plan |
| Strategy 6: | Employment and Economic Overarching Site Strategy | Strategy 13: | Movement Network Infrastructure Master Plan |
| Strategy 7: | Energy Services Master Plan | Strategy 14: | Natural Environment Overarching Site Strategy |

STRATEGY 1:

ACCESSIBLE HOUSING & SOCIAL HOUSING OVERARCHING SITE STRATEGY

Strategy

The *Accessible Housing and Social Housing OSS* for Yarrabilba involves ongoing actions for the project that will continue to be met. It is the intention to deliver a range of housing options at Yarrabilba, including accessible housing and social housing options that will allow for a diversity of residents and community members. The successful establishment of community and social housing relies on tenants' easy access to community services, employment and other goods and services.

The *Accessible Housing and Social Housing OSS* for Yarrabilba outlines that social housing in Logan is owned and/or managed by the Department of Housing and Public Works. In late 2016 it was announced by the DHPW that the Logan City Renewal Initiative would no longer be supported. As such, Lendlease's early engagement with Logan City Community Housing is no longer relevant.

In December 2016, DHPW announced an alternative initiative – Better Neighbourhoods Logan. This program is understood to be a partnership between DHPW and Economic Development Queensland. The initiative is intended to deliver over 3,000 new social and affordable homes over the next 20 years in Logan.

Within the time horizon for Precinct 4, between 2018 and 2021, the key focus areas to advance the OSS within Yarrabilba will include:

- **Community & Social Housing**
- **Accessible Housing**

COMMUNITY & SOCIAL HOUSING

- **Ongoing identification** of potential Community Housing and Social Housing partners.
- **Engagement** with DHPW and EDQ to discuss the detail of the Better Neighbourhoods Program and any opportunities for them to advance the outcomes sought in the OSS within Precinct 4.
- **With each ROL identify** specific lots for Community and Social Housing that may be subject to a first right of refusal at full market value;
- **Report** to EDQ with the second and subsequent applications within an Urban Neighbourhood, outcomes of engagement and strategy for delivery of community/social housing product during the Precinct 4 horizon.

ACCESSIBLE HOUSING

- **Identification** of lots within Precinct 4 that would be suitable for the construction of accessible homes at the MCU/ROL stage and inclusion of an accessible lot plan with each ROL application (i.e. a plan indicating flat and sloping lots).
- **Engagement** with builders to encourage accessible housing product to be included within their portfolios, and to make customers aware of the benefits of accessible housing over the life of a home.
- **Requirement** of builders within any display village to either construct display village homes to a 'silver standard' against the Liveable Housing Design Guidelines, or to provide housing of this standard within their portfolios.
- **Preparation** or update of a guide that details accessible housing product options available through Lendleases's partner builders. This guide (or update) is to be available through the sales and information centre within 12 months of the first ROL approval being issued for Precinct 4.
- **Report** to EDQ within the last application in Precinct 4, outcomes of engagement with builders and customers during the Precinct 4 horizon.

STRATEGY 2:

COMMUNITY DEVELOPMENT PLAN OVERARCHING SITE STRATEGY

Strategy

The Community Development overarching site strategy (OSS) for Yarrabilba has ongoing actions for the project that will continue to be met. Within the time horizon for Precinct 4, between 2018 and 2021, the key focus areas to advance the OSS and community development within Yarrabilba will include the delivery of the second new State primary school as well as:

Community Connection Strategies

- ensuring serviced land for permanent facilities are delivered;
- access to community services and programs;
- continuing to provide support to the Yarrabilba Community Association via a partnering approach to community events and initiatives;
- funding approved for the permanent community facilities in the Shaw Street Ovals in partnership with Logan City Council. Expected opening in early/mid 2018; and
- strengthen relationship with Logan City Council and work towards an agreement for the footprint for community facilities within the Major Town Centre.

Education & Community Services

- a new State primary school will be located within Precinct 4 (7ha site per approval requirements); and
- ongoing discussions with university partnerships are continuing. Potential tertiary education strategy to be developed in parallel with the adjacent major centre strategy development.

Sport & Recreation Strategies

- continuing to work with Council and sporting clubs to provide clubhouses and ancillary facilities as well as establishing organised sporting activities within the major sports parks being delivered in P2/P3. Continue discussions with State sporting organisations regarding activation; and
- trail head locations have been identified and are being considered to provide access into the Plunkett Conservation Park. Continue to work with Qld Parks & Wildlife Service (QPWS) to open these facilities to the community.

STRATEGY 3:

COMMUNITY FACILITIES INFRASTRUCTURE MASTER PLAN

Strategy

To provide serviced land for community facilities for the Yarrabilba community in accordance with the Yarrabilba Community Facilities Infrastructure Master Plan, and to work with infrastructure providers to ensure that the facilities provided are fit for purpose and delivered within a reasonable timeframe.

It is noted that discussions with Logan City Council and EDQ are currently occurring as to whether any early provision of community facilities is beneficial in the Precinct. At a minimum, the required infrastructure will be provided.

Table 1: Community Facilities: Key Infrastructure

Infrastructure shall be delivered in accordance with:

- Community Facilities EDQ PDA Guideline No. 11; and
- Engineering Standards EDQ PDA Guideline No. 13.

Community Infrastructure	Required in Precinct 4	Already provided in Precincts 1, 2 and 3
Neighbourhood Meeting Room (0.075ha)	2 sites (trigger 4,400 and 5,280 residential lots)	2 sites (co-located) in Shaw St Oval and 2 sites proposed in Precinct 3A)* Further discussions around the location of the sites are occurring and if Logan City Council and EDQ agree, the sites could be co-located in Precinct 3A.
Local Community Centre/ Hub (0.5ha)	N/A – the trigger for the second local community centre site has not been reached in P4.	1 site proposed in Precinct 3A
District Community Centre (1ha)	N/A	1 site may be provided in Precinct 3A, subject to EDQ and Council's agreement. Note trigger for first facility is 6,000 lots.
Major Civic Centre/Hub (1.5ha)	N/A	N/A
Major Sporting Facility (1.8ha or 2 x 0.9ha)	N/A	1 x 0.9ha site may be provided in Precinct 3A, subject to EDQ and Council's agreement. Note the trigger for first facility is 9,000 lots.
State Primary School (7ha)	1 site (trigger 5,500 residential lot)	1 State primary school and 1 private primary school provided in Precinct 2
State Secondary School (12ha)	N/A— while an indicative location is shown in Precinct 4 for the second State secondary school given the trigger for provision of the second site is the 15,000 residential lot, the location of this is being amended to better align with when it is delivered. Otherwise we will end up with 12ha vacant lot for substantial period.	1 State high school and 1 private high school provided in Precinct 2
Ambulance (0.5ha)	N/A	N/A
Fire and Rescue (0.6ha)	N/A	N/A
District Police (0.6ha)	N/A	N/A

Community Health Centre Hub (3.2ha)	N/A	N/A
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** The neighbourhood meeting rooms may be provided in Precinct 3A if Logan City Council accept this provision; or If Logan City Council do not allow the neighbourhood meeting rooms to be provided in Precinct 3A they will be provided in Precinct 4.*

STRATEGY 4:

COMMUNITY GREENSPACE INFRASTRUCTURE MASTER PLAN

Strategy

To provide land for open space and recreation for the Yarrabilba community in accordance with the Yarrabilba Community Greenspace Infrastructure Master Plan.

To deliver a range of different parks for different purposes, including recreation and sporting activities. The Precinct provides a network of parks that protect environmental features such as waterways and important existing vegetation that also provide opportunities for the community to access these features.

Infrastructure shall be delivered in accordance with:

- Park Planning and Design EDQ PDA Guideline No. 12; and
- Engineering Standards EDQ PDA Guideline No. 13.

Other considerations

Precinct 4 will deliver three parks and include the preservation of 'South Rock':

- District Sports Park (7.5ha) located in the north of Precinct 4. This park provides an appropriate buffer to the powerlines and co-locates car parking for sporting and trail users within the power line corridor;
- District Recreation Park (5ha) located to incorporate area of natural fauna habitat providing the opportunity for recreational outcomes using these natural site values;
- 'South Rock' (3.17ha) an arch of natural environmental significance incorporated as a local park; and
- New neighbourhood and local parks.

Key Infrastructure to be provided:

Infrastructure to be provided in Precinct 4 is detailed below based on the categories of park required in the IMP.

Table 2: Community Greenspace: Key Infrastructure

<i>Park type</i>	<i>Precinct 4 requirements (241.49Ha - assuming 2000 dwellings, and 5400 persons)</i>			<i>Park provision from Precincts 1, 2 and 3</i>
Local Recreation Park	Required	0.1ha/ 1,000 person (min park size 500m ²)	0.540ha	1.61ha surplus provision currently
Neighbourhood Recreation Park	Required	0.5ha/ 1,000 persons (min park size 5,000m ²)	2.7ha	3.85ha surplus provision currently
Local and major linear	Required to coincide with waterways and fauna corridors	Local 0.7ha/1,000 persons Major 0.5ha/1,000 persons	Local – 3.78ha Major – 2.7ha	Precincts 1-3 provide sufficient credits in linear park (31.1ha above minimum provision). This is sufficient to cater for the balance of the project.
District Recreation Park	While not required by the IMP the district recreation park is well suited to be place in P4 as it adjoins south of the power line easement and the fauna corridor.	Minimum 5ha	Minimum 5ha	From the District Recreation Parks already provided in Precincts 1-3, the development currently is in surplus 6.4ha. The development will deliver the District Park as per IMP but at an increased distribution.
Major Recreation Park	Not required			N/A – Is provided later in the development.
District Sports Park	Required	Minimum 7.5ha	Minimum 7.5ha	3.7ha above minimum provision
Major Sports Park	Not required			18.8ha above minimum provision
Overall Recreation Park requirements	Required	2.8ha/ 1,000 persons	15.12ha	11.89ha above minimum provision
Overall Sporting Park requirements	Required	1.8ha/1,000 persons	9.72ha	22.58ha above minimum provision

STRATEGY 5: EARTHWORKS INFRASTRUCTURE MASTER PLAN

Strategy

Precinct 4 shall comply with the requirements of the Earthworks Infrastructure Master Plan.

Key actions relevant for Precinct 4 include:

- **As part of the first application:**
 - Submit Precinct wide erosion and sediment control measure as part of the Stormwater Management Plan.
- **Prior to any subdivision applications being lodged:**
 - Commission a geotechnical study for Precinct 4 to be completed prior to the lodgement of the subdivision applications.
- **As part of subdivision applications**
 - Submit bulk earthworks plans and management plan;
 - Submit soils management strategy;
 - Confirm how the earthworks strategy addresses the geotechnical study findings; and
 - Address IMP code.

STRATEGY 6:

EMPLOYMENT & ECONOMIC OVERARCHING SITE STRATEGY

Strategy

The Employment and Economic OSS for Yarrabilba has ongoing actions for the project that will continue to be met. Within the time horizon for Precinct 4, between 2018 and 2021, the high priority areas to advance the employment and economic development within Yarrabilba are identified below. It is noted that the majority of Precinct 4 is a residential area with parks, and a new school planned. As such activities during this period will support planning in adjoining precincts. The opportunities for employment and economic development directly in Precinct 4 are in the school, potential community and sporting facilities and in home businesses. Within the higher density areas close to the major centre frame, there is opportunity to deliver housing product to support home businesses outcomes.

Attracting investment and employment by:

- Continued planning for upcoming employment areas including the major centre and MIBA and identification of potential catalyst products and tenants; and
- Continuing to work towards ensuring District Centre 1 continues to develop to capacity.

Enabling infrastructure:

- 'The Exchange' is a construction industry training, skills and employment facility which is operational and has initially been located at Shaw Street ovals in Precinct 1. This is a relocatable facility which will continue to operate and promote employment skills and job opportunities for local people;
- Workforce Development Plan – Continue to monitor and pre-empt emerging employment opportunities within Yarrabilba. Liaise with local businesses about their forecast workforce needs and work with the training and employment organisations operating from within 'The Exchange' to prepare and match local jobs for local people; and
- Implement the Lendlease Yarrabilba Smart Community Strategy and Technology Blueprint. Leverage the delivery of this smart infrastructure foundation/platform by partnering with Council and Utilities for the delivery of specific smart city initiatives.

Growing local business:

- Continued business development activities to attract owners and tenants for non-residential land in Precincts 1 – 3;
- Incorporation of POD provisions to encourage home based businesses, especially in the Urban Residential area of Precinct 4; and
- Collaboration with developers regarding the delivery of multi-residential housing types (i.e. SOHO, WOHO type housing).

Business connectedness:

- Continue working with key organisations such as the Yarrabilba Community Association, Yarrabilba Economic Development Committee, The Exchange (facilities manager) and local business representatives to ensure business connections are fostered through local events and mutually agreed initiatives.

Place creation and amenity:

- Continue planning for upcoming employment areas including the major centre and MIBA; and
- Investigate opportunities in housing products in increased density areas close to the major centre frame that will provide opportunities for home businesses to support future activities in the major centre (i.e. SOHO, WOHO type housing).

Economic flexibility:

- Continuing to provide flexibility for a range of non-residential land in P4 for sporting, community uses and home businesses to meet the current need of the residents and future growth.

Governance, monitoring and resourcing:

- Reporting on progress of compliance with EEOSS to be provided as part of development applications.

STRATEGY 7:

ENERGY SERVICES INFRASTRUCTURE MASTER PLAN

Strategy

To develop Precinct 4 in accordance with the Energy Services Infrastructure Master Plan.

This will ensure that residents and businesses within Yarrabilba will have access to high quality energy services. Within the time horizon for Precinct 4, between 2018 and 2021, the key actions are:

- Confirmation from Powerlink has been acquired and no substation is required at present. Discussions with Energex are ongoing as to whether they have any requirements. Any requirements can be accommodated in Precinct 3d if appropriate.
- A suite of programs focusing on environmental sustainability and energy efficiency are being developed. These include small subsidies to increase the uptake of PV, education materials to assist households in understanding how they can save energy and a demonstration home that will be designed to reduce energy use and include a PV system and battery storage.
- The CSIRO Virtual Power Station 2 project is in the process of being set up, with over 60 households and the sales office included in the trial. The equipment will be installed within the households and monitoring starts in 2017 and will continue for two years. Further investigation is continuing into the opportunities for Yarrabilba to be part of the Virtual Power Station 3 project.

STRATEGY 8: HOUSING AFFORDABILITY INFRASTRUCTURE MASTER PLAN

Strategy

The *Housing Affordability Infrastructure Masterplan* for Yarrabilba involves ensuring allocation of housing considers smaller housing product that will remain within affordable rental and purchase ranges for Band 1-3 incomes.

The income ranges for the bands reflect buying capacities as illustrated in Table 1.

Table 1: Buying capacities for different bands within the Housing Affordability Infrastructure Masterplan

	Band 1 lower	Band 1 upper	Band 2 lower	Band 2 upper	Band 3 lower	Band 3 upper
Annual Income (2011)	\$46,000	\$60,000	\$65,000	\$80,000	\$85,000	\$108,000
Average Household Income p.a. (2016)	\$50,278	\$65,580	\$71,045	\$87,440	\$92,905	\$118,043
Mortgage Repayments - % of income	35%	35%	35%	35%	35%	35%
Deposit/Equity %	5%	5%	5%	5%	5%	5%
Buying Capacity	\$268,478	\$348,058	\$376,479	\$461,743	\$490,165	\$620,904
IMP Requirement for % of total homes	5%		10%		10%	

Examples of different product (current as of December 2016) which meet the relevant bands are shown in Table 2, alongside the minimum requirement of product to be provided in Precinct 4.

The following assumptions have been used to determine the buying capacity:

- Interest rate assumed at 6% (could be lower in current market, although affordability calculations should probably remain off a more conservative basis and longer term view);
- 5% deposit;
- 30 year term;
- 35% gross income for debt service;
- Incomes reference approved IMP bands at 2011;
- Index rate per ABS stats for WPI for QLD; and
- First home owners granted of \$7k .

Table 2: Typical Housing Product and minimum % makeup for homes in Precinct 4

Band	Typical Housing Product	Cost (House and Land)*	Minimum requirement for total homes to be provided in Precinct 4 based on predicted yield of 2000 dwellings
Band 1 (\$268,478 - \$348,058)	Villa, Town Cottage, Town Villa, Terrace, MFF, MFS, Smart Lots	\$291,990-\$340,500	5% (100 homes)
Band 2 (\$376,479 - \$461,743)	Premium Villa, Courtyard (14m)	\$394,200-\$449,800	10% (200 homes)
Band 3 (\$490,165 - \$620,904)	Land – 400-448m ² Traditional Courtyard (15m wide)	\$469,950+	10% (200 homes)

**Note: these costs are indicative only, current as of December 2016, and subject to fluctuation.*

It is noted that the PDA Housing Guideline has been updated since the Development Scheme was adopted and the Yarrabilba Housing Affordability IMP was endorsed by EDQ. It is understood that this changes the way in which the bands for affordability are calculated which are crucial for the Yarrabilba project to achieve.

Lendlease remains committed to investigating new housing products to continue Yarrabilba's strong achievements to date in delivering a range of housing affordability outcomes, particularly for Bands 1 and 2. During the period of Precinct 4, this commitment will continue with the identification of further opportunities for more affordable housing options at Yarrabilba, reflective of the new band intentions

Lendlease has identified further opportunity for diversity in product as the project matures and development moves closer to the proposed town centre. As such, it is envisaged that this greater diversity in housing product will occur within and in close proximity to the major centre frame area.

STRATEGY 9:

ICT STRATEGY & MASTER PLAN

Strategy

The ICT IMP is an evolving document that outlines deliverables required to support the progressing delivery of the Yarrabilba development from a Communication Technology perspective at a regional level. The strategy focuses on technology cycles and the use of ICT services, systems and functions across the development.

The core attributes for achieving a successful ICT strategy include:

- Focusing investment on delivery of “enablers”;
- Technology will force change, accepting the fact that the technologies communities will enjoy in 10, 15 and 30 years’ time have not been invented, or even contemplated yet;
- Not over-investing in technology early in the project life;
- Partner where appropriate and do not lock into single vendor, carrier or proprietary technologies;
- Maintaining awareness of the political and industry changes impacting the Australian telecommunications marketplace; and
- A technology “blueprint” strategy document has been developed to address future ICT based opportunities and needs. This has been discussed with Logan City Council and EDQ. As this strategy appears to align well with their broader city wide ICT planning, Council are very interested and willing to be involved.

For Precinct 4, the below tasks are applicable:

- Intermediate tasks
 - Continuation of FTTP network rollout including suitable provisioning as needed for opportunities under the Yarrabilba technology “blueprint” strategy;
 - Continue discussions with providers for further coverage of mobile phone & data services; and
 - Extending the availability of public wifi in selected open space areas, while continuing to work towards available wifi in all public open spaces.
- Future tasks:
 - Increase carriage services to Yarrabilba; and
 - Review the ICT strategy as required.

STRATEGY 10: OVERARCHING SITE RESOURCE STRATEGY

Strategy

Continue to implement requirements of the Overarching Site Resource Strategy within Precinct 4 to ensure that the project achieves planned sustainable development outcomes.

Precinct 4 has a time horizon between 2018 and 2021. During this time the high priority areas to advance sustainable development outcomes within Yarrabilba will be:

- The project is targeting a 6 star Green Star Community rating. The project has been formally registered with the Green Building Council and the Round 1 submission is planned to be lodged in the first half of 2017;
- Planning is currently underway to develop a sustainable display home. This home will demonstrate an accessible, environmentally friendly home that is affordable to purchase and minimises ongoing water and energy bills;
- Maintain, and expand where practical, the adopted strategies for use and re-use of site materials to minimise the importation of externally sourced construction materials; and
- While school student patronage on the Yarrabilba bus service has continued to steadily increase (latest advice from Logan Coaches indicates school patronage at over 350 students), commuter patronage numbers continue to be low. Current commuter levels are 20-25 persons on the Monday-Friday public transport commute. Continued monitoring and identifying further options to promote increased use of sustainable transport (active and public transport options) within Yarrabilba will occur.

STRATEGY 11: WATER & WASTEWATER INFRASTRUCTURE MASTER PLAN

SEWER (WASTEWATER)

Strategy

Sewering of the proposed Precinct 4 development will be based on the internal collection system layout outlined in the “Yarrabilba – Infrastructure Master Plan, MWH, September 2013”. This approach has been amended as outlined in Section 5 of the “Yarrabilba Precinct 3 - Precinct Network Plan - Water and Wastewater Infrastructure” report and the amended IMP currently being prepared. The long term approach is to transfer sewage to a new treatment plant near Logan Village as identified by Logan City Council.

Recently EDQ, in conjunction with LCC and major developer Logan PDA stakeholders, developed a revised sewerage strategy that includes the Yarrabilba and Park Ridge areas as outlined in “Logan South Wastewater Servicing Strategy” dated 27 May 2016. As part of the strategy, a regional sewage treatment plant (STP) will be constructed to the west of Logan Village. The first stage of the STP is to be completed by 2021 in conjunction with a new rising main from Yarrabilba to the regional STP. As part of the planning for Precinct 4, the timing of the new regional pumping station (PS3) will be confirmed.

Prior to completion of the STP, sewage from Precincts 1 to 3 and early stages of Precinct 4 will be collected at a temporary pumping station, PS3A (located near the site of the future PS3) built as part of Precinct 3 and transferred to the Loganholme WWTP via the Logan Village pumping station. The provision of an on-site wet weather storage facility at pumping station PS1 that will be constructed on 2017 as part of the Precinct 3 development will ensure that the existing network has capacity to transfer or contain flows from Yarrabilba Precincts 1, 2, 3 and initial stages of Precinct 4 development up to 2021, when the new STP will be commissioned per Council’s report. The servicing of the early stages of Precinct 4 will be addressed in the PNP.

Changes are currently being made to the IMP to include the revised sewerage strategy.

Key issue

Lendlease will continue to work with EDQ and LCC to confirm the long term regional sewerage strategy and the construction of the new regional STP. Lendlease will continue working with EDQ and LCC to confirm this strategy. The proposed temporary pumping station PS3A combined with the wet weather storage facility at PS1 will serve Precinct 4 until the new regional sewage treatment plant is completed in 2021. The timing of the replacement station PS3 will need to be defined.

Approach to Services for Precinct 4

A Precinct Network Plan (PNP) for Precinct 4 will be submitted and endorsed prior to the granting of the first ROL. The PNP will include both interim and ultimate solutions in accordance with the revised regional strategy agreed by both EDQ and LCC. The PNP is a detailed planning document that identifies all trunk infrastructure to service the proposed Precinct both internal and external to the site. The PNP shall include plans of all the infrastructure required, including layout, pipe sizes, conceptual design of the new pump station, vertical alignment of controlling sewer, and conceptual design of interim servicing infrastructure required to address development staging and odour/corrosion control. The PNP shall be supported by an assessment to verify that Desired Standards of Service are met and each lot can be serviced in an efficient way.

Standards to be applied to the provision of wastewater infrastructure are:

- SEQ Water Supply and Sewerage Design and Construction Code;
- Logan Water Desired Standards of Service – Water;
- WSA 02-2014 Sewerage Code of Australia (Second Edition, 2014); and
- WSA 04-2005 Sewerage Pump Station Code of Australia (Second Edition, Version 2.1, 2005).

Timing

The PNP will be submitted and endorsed prior to the granting of the first ROL.

The IMP will be submitted and endorsed prior to the granting of the first ROL.

WATER SUPPLY

Strategy

Servicing the proposed Precinct 4 development with Potable Water will be generally in accordance with the strategy outlined in the “Yarrabilba Precinct 3 - Precinct Network Plan - Water and Wastewater Infrastructure” dated September 2015, which is to be included in the update of the IMP. The development will be served from the Travis Road reservoirs, i.e. an existing 3 ML and new 6 ML reservoir being constructed in 2017 (as per the recent Precinct 3A development approval).

Supply to the Travis Road reservoirs will be provided by a new connection from the Southern Region Water Pipeline (SRWP) at Chambers Flat. Confirmation of this strategy provided following the completion of a regional bulk water strategy being undertaken by Seqwater with an estimated completion date of around mid-2017. It is understood that other options are being considered, such as connections to a Seqwater planned Wyaralong Water Treatment Plant, however all options take account of both the capacity and timing of the Yarrabilba development. Prior to the new bulk water connection being made available, LCC will construct a new 6 ML reservoir at Travis Road and 1.8 km of 500 mm diameter trunk main in Camp Cable Road. This bulk supply augmentation will supply the Precinct 4 development until 2021 at current growth rates.

Internal water supply system augmentations for Precinct 4 will include completion of the trunk main on Yarrabilba Drive and extension to the Precinct 4 development area. There are no constraints in relation to the delivery of these augmentations. A pressure management strategy will be developed for Precinct 4 and surrounding areas.

The IMP is being updated based on the delivery of bulk water from the SRWP. The EP trigger for the construction of the new SRWP connection shall be identified in the IMP/PNP.

Key issue

Water supply for Precinct 4 will be supplied via the new 6 ML reservoir at Travis Road reservoir with bulk supply from a new connection to the SRWP around 2021. The bulk supply to this reservoir complex will be finalised following Seqwater confirmation of the regional supply to be constructed before 2021. Lendlease will continue working with EDQ and LCC to confirm this strategy. A pressure management strategy will also be developed for Precinct 4.

Approach to Services for Precinct 4

A Precinct Network Plan (PNP) will be required for Precinct 4. The PNP will include both interim and ultimate solutions in accordance with the revised regional strategy agreed by both EDQ and LCC. The PNP is a detailed planning document that identifies all trunk infrastructure to service the proposed Precinct, both internal and external to the site. The PNP shall include plans of all the infrastructure required to deliver peak demand, fire flow and pressure management (as required), including layout, pipe sizes, and details of pressure reduction areas and equipment. The PNP shall be supported by an assessment to verify that Desired Standards of Service are met and each lot can be serviced in an efficient way.

Standards to be applied to the provision of water supply infrastructure are:

- SEQ Water Supply and Sewerage Design and Construction Code;
- Logan Water Desired Stands of Service – Water; and
- WSA 03-2011 Water Supply Code of Australia (Second Edition, 2011).

Timing

The PNP will be submitted and endorsed prior to the granting of the first ROL.

The IMP will be submitted and endorsed prior to the granting of the first ROL.

STRATEGY 12: TOTAL WATER CYCLE MANAGEMENT OVERARCHING SITE STRATEGY

Strategy

The *Total Water Cycle Management Strategy* (TWCMS) (DesignFlow, Oct 2021) provides an overarching strategy that combines the individual Infrastructure Master Plans (IMP) and site assessments covering stormwater, flooding, waterways, groundwater and water supply/wastewater.

While separated for the purpose of strategy discussion below, the management of land and infrastructure for these water cycle elements can be integrated to achieve a range of beneficial outcomes including ecological waterway protection, multiple use open spaces, improved landscape amenity and reduction in potable water demand. Recognition of the social element of total water cycle management is included to ensure the community both contributes to and benefits from an integrated approach to water management with Yarrabilba.

The Precinct 4 strategy details relating to each of the intermittent water cycle elements (stormwater, flooding, waterways and groundwater) are provided on the following plans, with site constraints presented in Figure 7 and indicative infrastructure locations and management zones identified in Figure 8. The constant urban water cycle elements of water supply and wastewater are discussed briefly for completeness within the TWCM strategy. Reference should be made to the separate Water and Sewerage Context Plan Area Strategy (CPAS) for further detail on the relevant strategies and infrastructure requirements of these associated elements of the water cycle.

Figure 7 - Precinct 4 Flooding, Stormwater and Waterway Constraints

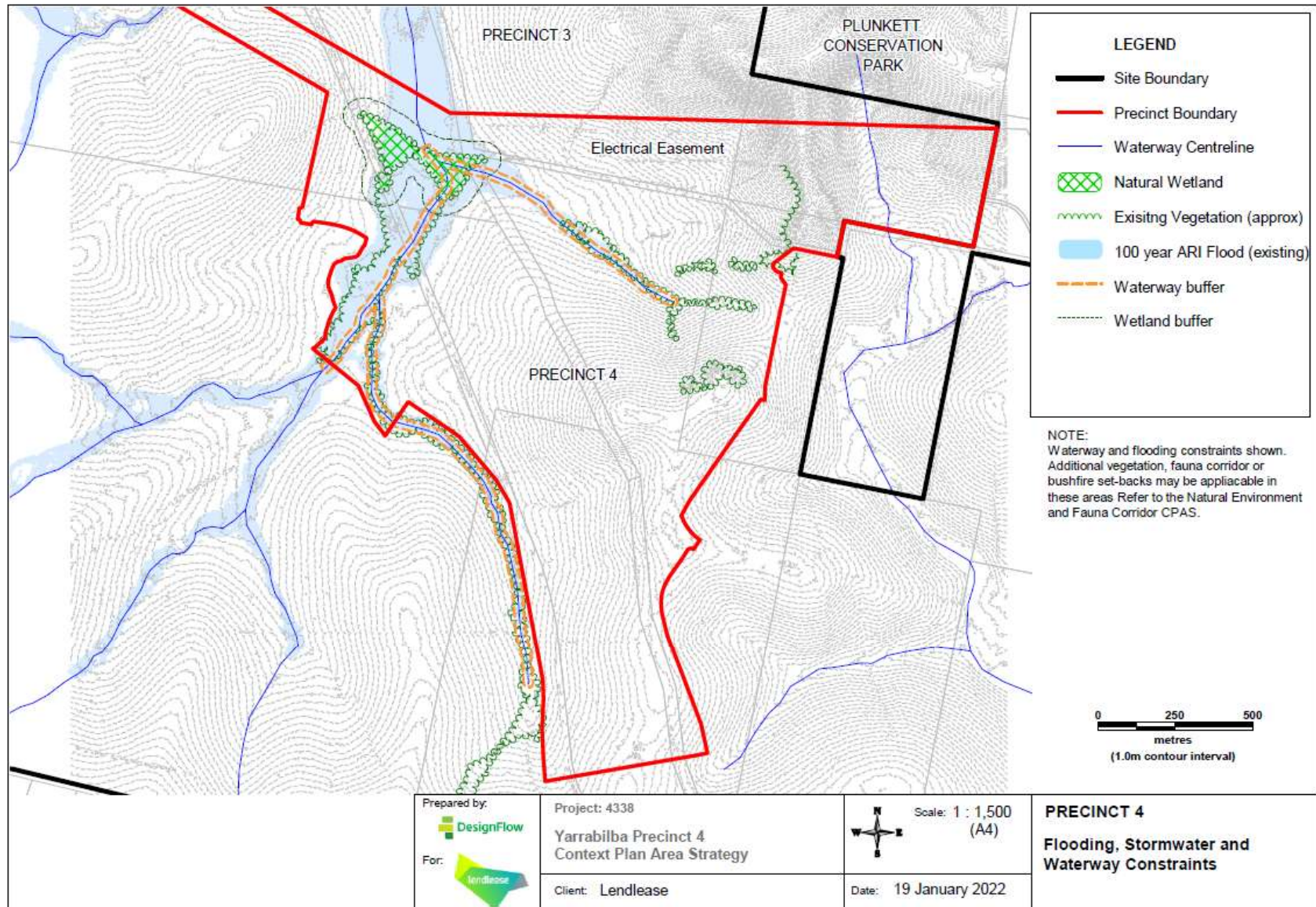
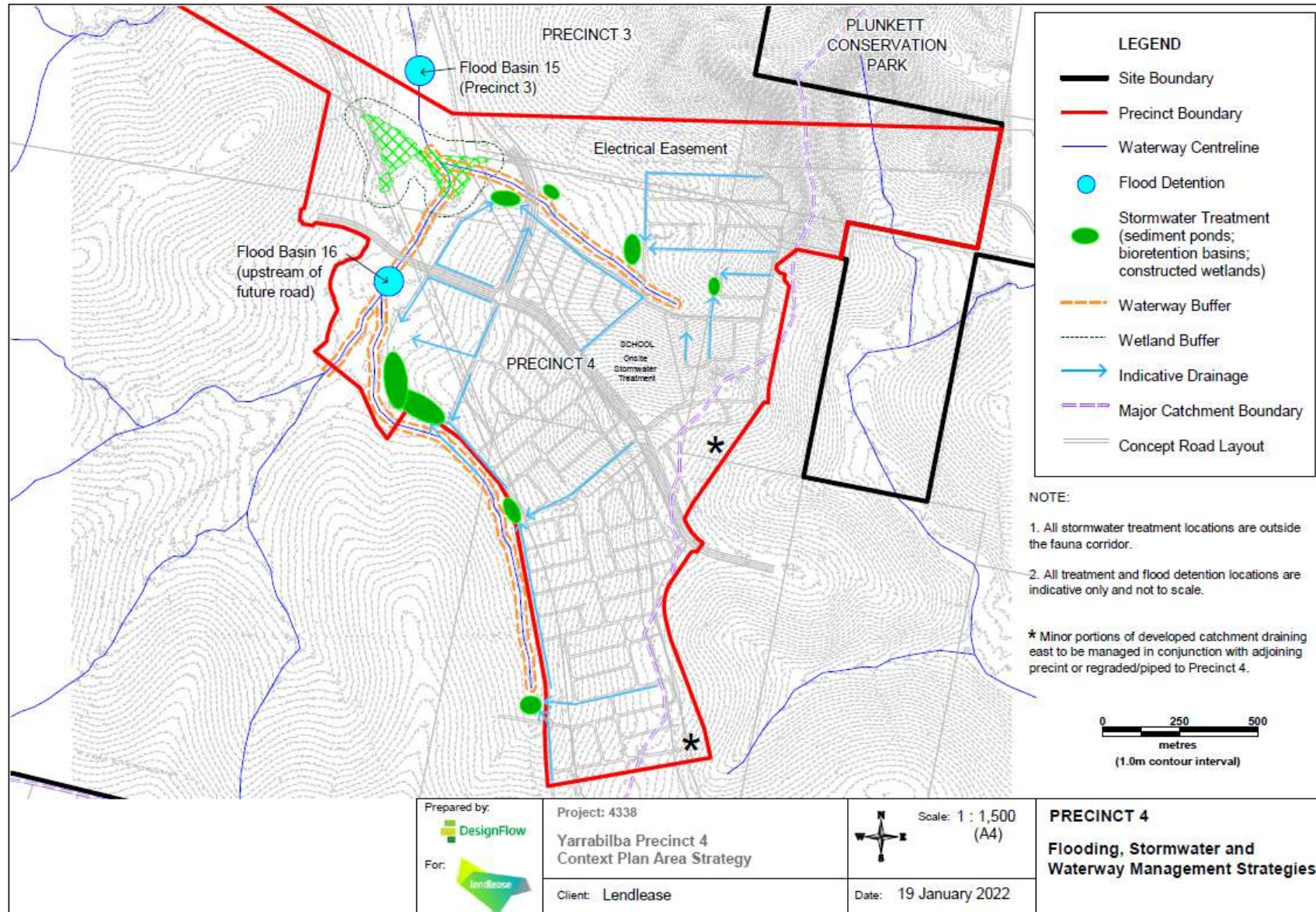


Figure 8 - Precinct 4 Flooding, Stormwater and Waterway Management Strategies



STORMWATER

Strategy

To protect ecosystem health and stability of receiving waterways or improve the condition of degraded waterways by managing urban stormwater to meet the objectives identified in Table 1 and 2 of the *Stormwater Infrastructure Master Plan* (DesignFlow, Oct 2021) and summarised below:

- achieve best practice pollutant load reductions for key stormwater pollutants; and
- minimise impacts on waterway stability by controlling 1 year ARI (63% AEP) discharge at key locations.

In addition, opportunities for the provision of fit for purpose alternative water supply options such as stormwater harvesting for open space irrigation will be identified and assessed where practical.

Key Infrastructure

Stormwater management infrastructure (and strategies) associated with Precinct 4 are shown in Figure 8 and include:

- Sediment ponds, bioretention basins and constructed wetlands for water quality and minor flow attenuation; and
- Protection/stabilisation/rehabilitation of waterway corridors (dependent on condition) and integration of vegetated stormwater infrastructure into degraded waterway buffers to enhance habitat value, amenity and contribute to multiple use open spaces.

Stormwater infrastructure aims to integrate closely with the flooding infrastructure and waterway management strategy to achieve a range of goals while optimising use of space and resources. However, waterway riparian buffers and overriding setback requirements under the Natural Environment Site Strategy and Fauna Corridor CPAS must be considered when locating key infrastructure.

Where existing erosion/scour is present, or potential instability is identified, rehabilitation works (such as rock protection and/or revegetation) will be undertaken to minimise instability and erosion under post-development hydrological conditions.

Stormwater infrastructure shall be delivered in accordance with:

- Park Planning and Design – EDQ PDA Guideline No. 12; and
- Engineering Standards – EDQ PDA Guideline No. 13.

Reporting

A stormwater quality management plan is required as part of the first development application to demonstrate that stormwater quality and minor flows can be managed onsite to achieve the pollutant load reduction and flow management objectives. This management plan will link with the flooding (stormwater quantity) and waterway stability management plans (where required).

FLOODING

Strategy

To provide flood management infrastructure that integrates with parks and natural open spaces in order to meet the objectives identified in Table 7 of the *Stormwater Infrastructure Master Plan* (DesignFlow, Oct 2021) and summarised below:

- mitigate flood impacts on people, property and infrastructure external to Yarrabilba by preserving peak site discharge and flood levels upstream and downstream of the site to predevelopment conditions for all events from 2 to 100 year ARI (50% to 1% AEP); and
- maintain flood conveyance through the site while providing 100 year ARI (1% AEP) flood immune development.

Key Infrastructure

Flood management infrastructure to be provided within or associated with Precinct 4 is shown in Figure 8 previously and includes:

- Flood Basin 15 (constructed as part of Precinct 3); and
- Flood Basin 16 (constructed in interim form as part of Precinct 2).

Flood management will generally be undertaken in accordance with the *Yarrabilba Development: Flood Risk Management Strategy* (BMTWBM, 2012) which beneficially exploits the use of the natural terrain and constructed road crossings (over drainage features and watercourses) to attenuate increased runoff from development.

It should be noted that flood mitigation infrastructure is not constructed solely for a single stage or precinct, but functions as part of a total site flood management strategy that addresses current and future development precinct requirements.

Flood infrastructure shall be delivered in accordance with:

- Park Planning and Design – EDQ PDA Guideline No. 12;
- Engineering Standards - EDQ PDA Guideline No. 13; and
- Protection from Flood and Storm Tide Inundation – EDQ PDA Guideline No. 15.

Reporting

Confirmation should be provided with each ROL that stormwater quantity management is consistent with the current version of the Yarrabilba (Quinze Creek) Flood Study.

WATERWAYS

Strategy

To protect and enhance waterways and wetlands for ecosystem health and amenity to meet the objectives identified in Table 5 and, where relevant, Table 6 of the *Stormwater Infrastructure Master Plan* (DesignFlow, Oct 2021). Waterway management (from engineering perspective) is inseparable from the strategies outlined in the Natural Environment Site Strategy and Fauna Corridor Master Plan CPAS and must therefore be cognisant of the overlapping constraints and requirements in key areas.

Key Infrastructure

The potential impacts of urban runoff on waterway health and stability are managed via the implementation of water quality and flow attenuation strategies identified as part of the stormwater and flooding components of the CPAS. To further preserve or enhance the ecosystem and character values of waterways and wetlands onsite, riparian buffers have also been adopted in accordance with Section 4.4 of the *Stormwater Infrastructure Master Plan* (DesignFlow, Oct 2021) as shown in Figure 7. Minimum buffers are:

- 30m to major creeks;
- 15m to minor creeks and drainage lines; and
- 50m to wetlands of local significance.

Where the *Natural Environment Overarching Site Strategy and Fauna Corridor Infrastructure Master Plan*, or the CPAS identifies greater setback requirements for vegetation fauna corridors or bushfire, these will override the minimum riparian buffer widths stated above. Conversely, where riparian buffer allowances are not constrained by other setbacks and are degraded, it may be practical to co-locate low impact uses such as vegetated stormwater treatment infrastructure or passive recreational infrastructure partly within the buffer in conjunction with rehabilitation. Figure 9 outlines the permissible uses within the defined waterway and wetland buffer widths in Precinct 4.

For waterways or drainage lines that are degraded, rehabilitation through stabilisation works and/or revegetation to suit post development hydrology and use (e.g. flood detention or treatment) is proposed. The *Yarrabilba General Waterway Condition Assessment* (DesignFlow, 2013) provides broad assessment of the Precinct 4 areas for consideration. However, as part of each stage/open space interface design, a detailed review of waterway and riparian condition is proposed to ensure the local issues (including small scale issues such as scour) are addressed through design.

Waterways and waterway buffers shall be delivered in accordance with:

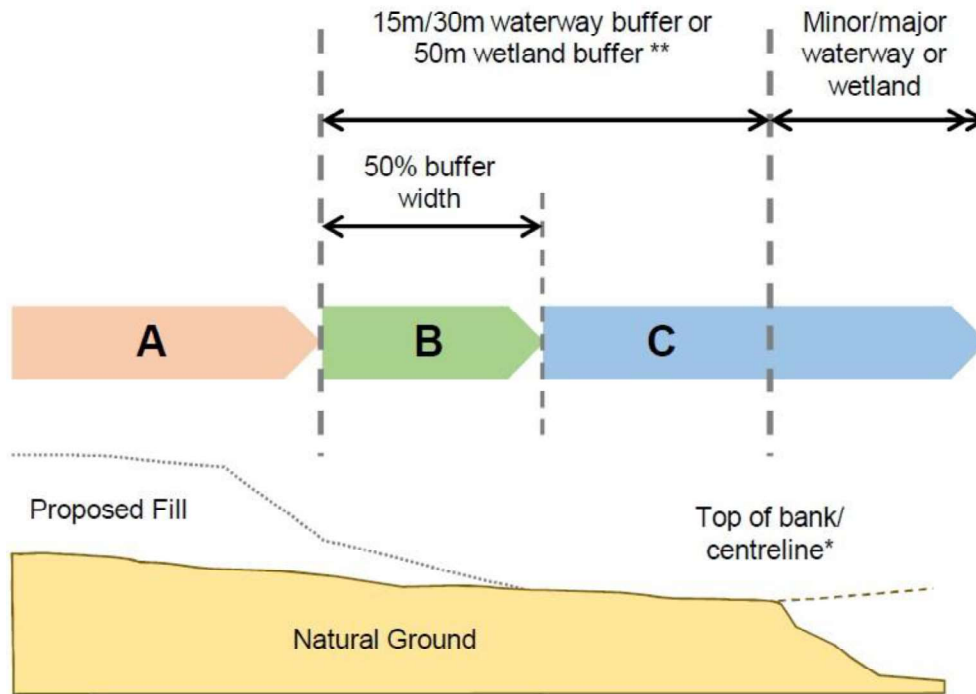
- Park Planning and Design – EDQ PDA Guideline No. 12;
- Environmental Values and Sustainable Resource Use – EDQ Guideline No. 14; and
- Development Interfaces – EDQ PDA Guideline No. 18.

An important factor in the implementation of waterway protection or rehabilitation is the comparatively slow timeframes over which protection/improvement can be measured (compared to the rate of development). Based on the Precinct 1 and 2 experiences, there is merit in limiting the intervention in degraded/disturbed waterways until development within the catchment has neared completion (unless major issues are evident prior). Allowing natural regeneration and succession of vegetation species within waterways (including weeds initially) has been shown to represent a beneficial and cost effective outcome for particular waterways. However, where overriding requirements for Koala or other fauna/flora management exist, these must be taken into consideration and adopted where necessary.

Reporting

As waterway management requires strategic input from both engineering and ecological disciplines, the waterway management strategy will be captured across the Stormwater Management Plan (for engineering strategies associated with stormwater quality and stability management) and the Vegetation and Rehabilitation Management Plans (for ecological strategies relating to flora/fauna protection and enhancement).

Figure 9: Precinct 4 Waterway Buffer Uses



* Where a waterway does not exhibit a defined channel and banks, the buffers will be applied to the approximate centreline such that the total riparian corridor achieved is a minimum of twice the buffer width prescribed for that waterway type.

** Where a more conservative setback to earthworks or infrastructure is required for vegetation, fauna corridor or bushfire buffers, these will override the minimum buffers identified here for waterway riparian corridors. Refer to Strategy 14 for details.

Note: Buffers and permissible uses apply to land disturbing activities. Design must therefore allow for constructability to ensure encroachment/ disturbance beyond allowable zones does not occur during construction.

Permissible Uses within Waterway or Wetland Buffers:

Zone A

No restrictions to development or infrastructure from waterway/ wetland riparian buffers

Zone B

Permitted:

- Vegetated stormwater treatment systems with batters 1:4 max.
- Development batters 1:6 max. (vegetated)**
- Pathways
- Zone C allowances (see below)

Not Permitted:

- Clearing of native canopy vegetation
- Building allotments
- Road reserve (other than for waterway crossings)
- Retaining walls
- Scheduled maintenance areas of stormwater treatment systems (e.g. forebays)

Zone C

Permitted :

- Stormwater outlets/headwalls/diversions
- Waterway stabilisation works
- Riparian rehabilitation planting
- Road/water/sewer/stormwater/flood bund/pathway crossings of waterway

Not Permitted:

- All other general development earthworks, infrastructure and land disturbing activities

GROUNDWATER

Strategy

To protect the ecological health, environmental values and water quality of groundwater and dependent ecosystems while managing the potential impact of groundwater on development and infrastructure.

Key Infrastructure

Key infrastructure within Precinct 4 impacting groundwater will be the road crossings of waterways (where bridges are not proposed). These will require design to allow shallow groundwater flow through low level culverts or alternative sub-surface engineered drainage system to avoid adverse impacts to existing significant vegetation or aquatic communities in these areas. The engineering design will also consider the structural impacts of seasonally wet sub-surface foundations.

Infrastructure shall be delivered in accordance with:

- Engineering Standards - EDQ PDA Guideline No. 13.

Reporting

No specific reporting is required for subsequent applications as groundwater factors are addressed through stormwater quality management (see above) and detailed civil engineering design.

COMMUNITY

Strategy

To adopt urban and landscape design that responds to and promotes community awareness of water supply and use, waterway function, local environment and where practical, allows for safe interaction with these natural areas.

Key Infrastructure

Integrate community infrastructure into public open spaces within and surrounding areas designated for stormwater, flooding and waterways strategies discussed previously (i.e. multiple use public open spaces) by including pathways adjacent to and through waterway/vegetation corridors for use during low or no rainfall periods.

Provide educational signage to highlight the environmental/ecological role of waterways and vegetation corridors while protecting public safety through warning/caution signage to reinforce the flood conveyance role of these areas and risk associated.

Ensure infrastructure design is sensitive to the adjoining natural landscape to promote a blurred interface between urban and natural landscapes.

Reporting

No stand-alone reporting is required for this aspect of the Total Water Cycle Management (TWCM) CPAS as these elements form part of the detailed planning and design of stormwater infrastructure and open space landscapes.

STRATEGY 13: MOVEMENT NETWORK INFRASTRUCTURE MASTER PLAN

Previous Work/Reporting

Cardno has been working with Lendlease for close to five years assisting with the development of the appropriate traffic and transport plans for the Yarrabilba development. The latter has been reported in the following documents:

- Yarrabilba Masterplan – Micro-Simulation Modelling – Transport Assessment Report (Cardno, August 2012);
- Yarrabilba Precinct 2 – Integrated Transport Assessment Report (Cardno, November 2013);
- Yarrabilba Masterplan – Micro-simulation Modelling – Revised Land Use and Road Network (Cardno, 4 November 2013);
- Yarrabilba Amended Movement Infrastructure Master Plan (Cardno, February 2014);
- Yarrabilba Precinct 2 – Yarrabilba Drive Intersection Configurations (Cardno, 11 March 2014);
- Yarrabilba Movement Infrastructure Master Plan (Cardno, 20 May 2015);
- Yarrabilba Movement Infrastructure Master Plan (Cardno, 8 October 2015) – amended and endorsed by Economic Development Queensland (EDQ) on 11 November 2015;
- Yarrabilba Context Planning Area Strategy – Precinct 3 (Lendlease, 17 June 2016) – amended and endorsed by Economic Development Queensland (EDQ) on 26 July 2016;
- Yarrabilba Precinct 3A Traffic Impact Assessment (Cardno, 20 July 2016);
- Yarrabilba Precinct 3 Traffic Assessment (Cardno, 17 November 2016);
- Yarrabilba Precincts 3B & 3C Traffic Impact Assessment (Cardno, 25 November 2016); and
- Yarrabilba Masterplan Trigger Analysis for Yarrabilba Drive Intersections (Cardno, 29 November 2016).

The Movement Infrastructure Master Plan includes the *Yarrabilba Public Transport Servicing Strategy* (MRCagney, 7 August 2012).

The endorsed Yarrabilba Movement Infrastructure Master Plan (IMP), dated 8 October 2015, has been used to govern traffic and transport planning for the Yarrabilba Development. That Movement IMP will be updated as part of the Precinct 4 planning and approval to reflect the changes introduced as part of Precinct 4.

Planning is currently underway as part of Precinct 4 to revise the internal major road network within the Yarrabilba development to improve transport connections and linkages with external road infrastructure. The revised road network retains the currently endorsed external intersections with Waterford-Tamborine Road and Plunkett Road (and the future Southern Infrastructure Corridor). Importantly, the revised network retains the road network functionality and a road hierarchy consistent with the endorsed Movement IMP. Of relevance to Precinct 4, the changes primarily relate to a realignment of the proposed New Internal Road which provides a connection from Yarrabilba Drive to the Waterford-Tamborine Road / Dollarbird Drive intersection. Whilst it is understood that the overall development yield will remain relatively constant, proposed changes to the respective location of land uses and road infrastructure, will result in revised traffic volumes along internal roads and at intersections.

As such, a revised technical assessment will be required to reassess the intersection and midblock link requirements as well as public and active transport connections. This is to be undertaken as part of an amended Movement IMP which is currently being prepared.

Cardno has provided input to the preliminary planning and design for Precinct 4 in support of this CPAS, such that the transport elements (roads, public transport, and active transport) will be consistent with the Movement IMP (recognizing the revised network and retaining the endorsed transport infrastructure functions).

Development Yield/Road Network

The final development yield for Precinct 4 has not been determined but based on the planning to date, the precinct is expected to provide the following key land use elements:

- Approximately 2,000 residential lots;
- A State primary school;
- A district sports park;
- A district recreation park; and
- A range of other park & open space.

The development yield is greater than what has previously been adopted in Precinct 4 for the traffic modelling conducted for Yarrabilba to date this is a result of revisions to the size and shape of the Precinct. The previously approved modelling only included provisions for approximately 1,350 dwellings within the Precinct area. It is understood that the additional lots and State primary school included within the Precinct 4 application are not expected to contribute to a larger yield in the overall Yarrabilba masterplan, but will include land uses previously envisaged in nearby precincts (i.e. land uses and the precinct boundaries have moved but no new uses added).

The road network proposed as a part of the Precinct 4 application (major road network and key collector street connections) remains generally consistent with the intent of the endorsed Movement IMP in terms of connection types, however the road alignment and layout has been revised to better reflect the construction conditions of the Precinct 3 application.

As such, a revised traffic model is to be developed to reflect the revised road network.. Using the outputs from the revised traffic model a technical assessment will be conducted as a part of an amended Movement IMP to reflect the most recent road network planning. The Precinct 4 application will document how the revised road network achieves consistency with the amended Movement IMP.

The revised road network to be delivered as part of Precinct 4 will include the following:

- Extension of the New Internal Road (connecting Yarrabilba Drive at Precinct 3 to Waterford-Tamborine Road at Dollarbird Drive) through the centre of Precinct 4, continuing to the south-east towards Plunkett Road;
- Extension of Eastern Perimeter Link from the southern boundary of Precinct 3B to the New Internal Road (connecting Yarrabilba Drive at Precinct 3 to Waterford-Tamborine Road at Dollarbird Drive) and continuing towards Plunkett Road; and
- Any associated intersection infrastructure.

The Precinct 4 Traffic Infrastructure Agreement will confirm the timing need for:

- An upgrade of the proposed New Internal Road / Waterford-Tamborine Drive / Dollarbird Drive intersection; and/or
An extension of the New Internal Road from Precinct 4 to a new intersection with Plunkett Road to the south-east.
Timing: A revised movement network IMP to be endorsed prior to the first ROL being granted.

Road Hierarchy/Cross Sections

The extension of a new route into Precinct 4 provides a sub-arterial connection through the centre of Precinct 4. Whilst the endorsed Movement IMP envisages a similar sub-arterial connection through Precinct 4, the alignment has been altered to better suit the connection to the New Internal Road proposed in the Precinct 3 application. The roads are to be designed to generally comply with the cross sections provided in the Movement IMP, (Appendix C – Cross Sections).

The road hierarchy will be updated in an amended Movement IMP to reflect the proposed revision to the road network alignments. This document will also confirm the road requirements of all major road infrastructure, including road form, major intersections, capacity, hierarchy and lane configurations. The Precinct 4 application will document the development's consistency with the intent of the endorsed Movement IMP (Figure 5-1) and the amended Movement IMP.

Public Transport

The bus route planning for Precinct 4 is yet to be undertaken, however preliminary assessment indicates that the function of the bus routes as identified within the endorsed Movement IMP (Figures 5-3 to 5-5) can be implemented within the revised road network and will be appropriate to serve the catchment of Precinct 4.

The updated Movement IMP will be consistent with the intent of the public transport strategy outlined in the endorsed Movement IMP. Additional local bus routes and bus stops will be provided to capture 90% of all dwellings within 400 metres of a public transport service as per the Movement IMP (Section 5.2 – Public Transport Strategy). Traffic Impact Assessment reports submitted as a part of the individual development applications will address these design requirements.

The current bus route along Yarrabilba Drive will be extended and connected to the Eastern Perimeter Link Road. Future bus routes will also be provided from the Eastern Perimeter Link Road and Yarrabilba Drive to connect the northern side of Precinct 4.

The bus network, bus stops and bus services to be identified in Precinct 4 will ensure compliance with the recommended bus service provision strategy as documented in the *Yarrabilba Public Transport Servicing Strategy*. Currently, the bus routes servicing Yarrabilba are compliant with the Yarrabilba Public Transport Servicing Strategy and provide:

- Three inbound AM Peak Hour services to Loganlea Station;
- Three outbound PM Peak Hour services from Loganlea Station; and

- Two return off-peak services to Loganlea & Hyperdome.

Information required to be submitted as part of subsequent development applications:

- At the time the context plan is submitted, the potential bus routes will be identified on the context plan; and
- At the time of an ROL application within P4, the potential bus stops will be identified (when the subdivision phase is occurring).

Active Transport

Detailed planning of the active transport network is yet to be finalised, but the proposed network will need to be consistent with the revised road network and the amended Movement IMP.

Commuter cycle routes will run alongside the higher order road network, and are to be continued along the extension of the Eastern Perimeter Link, with additional connectivity provided along the new internal road that links Precinct 4 to Waterford-Tamborine Road and the roads that would ultimately link to Plunkett Road. These routes will be consistent with the amended IMP where principal cycle routes are identified.

Local active transport routes are to be provided along the major roads and green space areas consistent with amended IMP. These routes will encourage local trips to be made via walking and cycling, and will be designed for riders including children and less confident cyclists, by using off road shared paths where possible.

Information required to be submitted as part of subsequent applications:

- With the first development application within the precinct a concept plan for the major local active transport routes for Precinct 4 shall be provided; and
- Details of all active transport paths shall be provided with each ROL application outlining the location and width of the pathway, and its purpose for pedestrians, cyclists or shared.

STRATEGY 14:

NATURAL ENVIRONMENT OVERARCHING SITE STRATEGY

Overview

The *Natural Environment Site Strategy* (NESS) (Natura Consulting, 30 March 2016) provides an overarching plan that pulls together the individual Infrastructure Master Plans (IMP), such as the Fauna Corridor Master Plan (FCMP) (Natura Consulting, 2012), and site assessments addressing vegetation and fauna management. While separated for the purpose of strategy discussion below, the management for these components is typically integrated for construction or post-construction outcomes. The Precinct 4 strategies pertaining to each of these key components are discussed separately below and constraints are identified in Natura Figure 1. Also detailed below are a number of assessments/reports to be completed for Precinct 4 which are to be certified and endorsed with the subsequent applications.

Buffers and Determining the Extent of Works

A number of setbacks to environmental values are identified within the IMP/OSS and planning documents and these are consistent with those being used in the Precinct 4 CPAS. The setbacks and buffers applicable to the Precinct 4 area are summarised in the following text and presented graphically in the subsequent six figures.

Natura Figure 2: Wetlands/waterway buffers (section 4.4 of the *Stormwater Infrastructure Master Plan* (DesignFlow, Oct 2021):

- 15 m to minor creeks and drainage lines;
- 30 m to major creeks; and
- 50 m to wetlands of local significance.

Natura Figure 3: Fauna Corridor construction setbacks (section 4.3.1 of the Fauna Corridor Master Plan):

- 10 m construction setback to mitigate damage to retained tree root shields within the fauna corridor.

A number of additional setbacks/buffers, outside of those identified above, are also applied within this CPAS:

Natura Figure 4: Retained Regional Ecosystem (RE) vegetation and other retained vegetation construction setbacks:

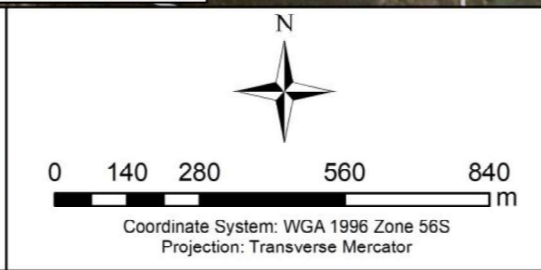
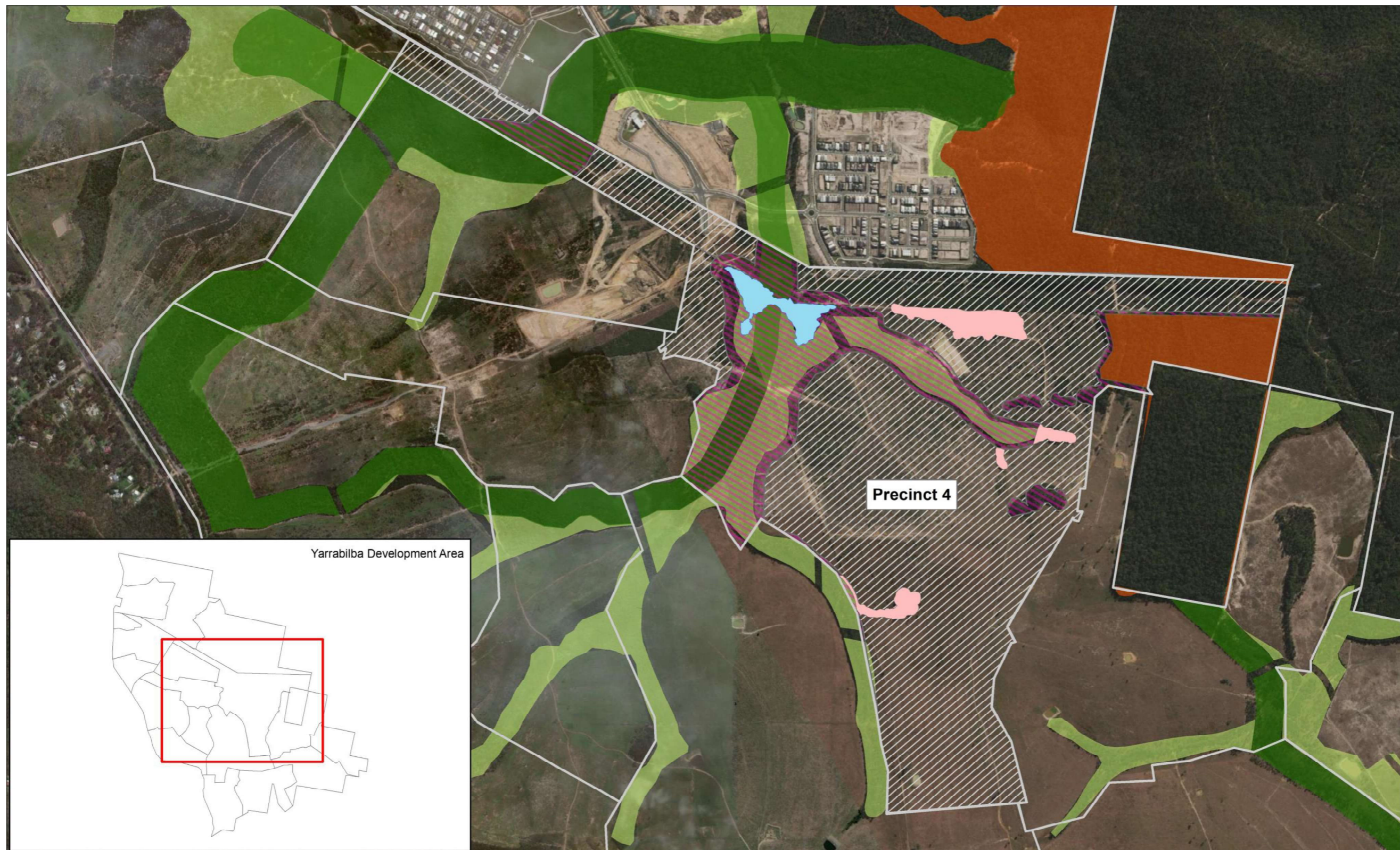
- 10 m construction setback to mitigate damage to retained tree root shields; and
- Exceptions occur in instances such as parks where retained vegetation is incorporated with recreational areas or where other park infrastructure is approved. In these cases, tree protection zones (TPZs) are calculated for individual trees by the project arborist, in accordance with Australian Standard 4970:2009.

Natura Figure 5 Bushfire setbacks (identified through expert advice from the Bushfire Management Consultant):

- 20 m to areas of bushland wider than 100 m (i.e. Fauna corridors);
- 13 m to greenspace corridors in the north-east of Precinct 4;
- 11 m to the corridor separation between Precincts 2 and 3; and
- 10 m to vegetation retained within park adjacent to the proposed state school site.

Collectively, all of the required setbacks have been used to map the extent of developable area (Natura Figure 1).

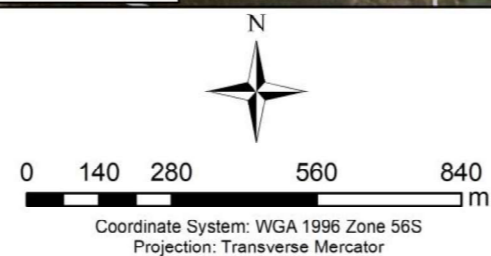
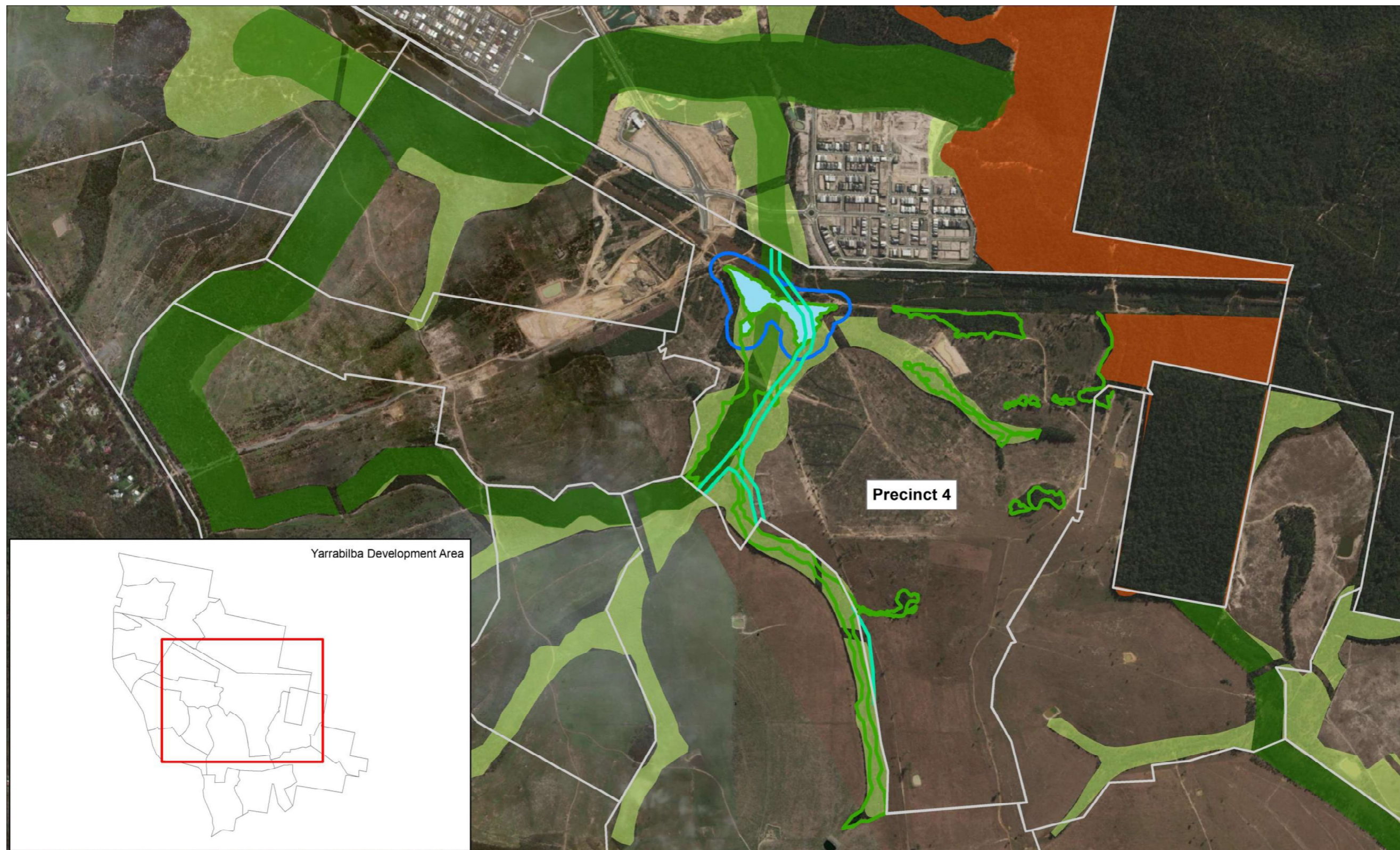
Natura Figure 1: Precinct 4 CPAS Overall Developable Areas



Precinct 4 Wetland	Yarrabilba Precincts
Developable Areas	Fauna Corridor (non-developable)
Non-developable Areas	Greenspace Corridor
Constraint within Developable Area	Conservation Areas (non-developable)

**Figure 1:
Precinct 4
CPAS Overall
Developable Area**

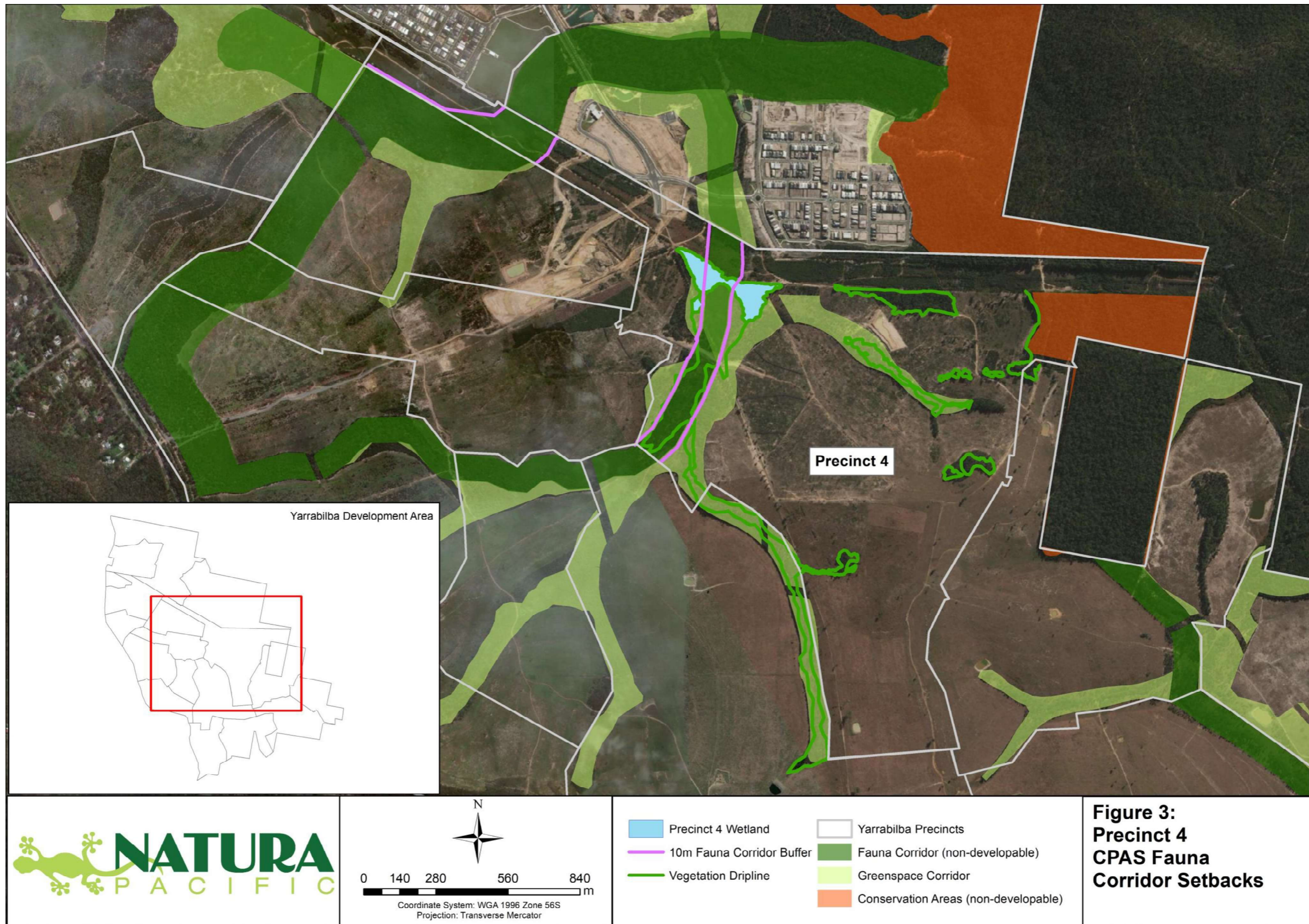
Natura Figure 2: Precinct 4 CPAS Waterways Setbacks



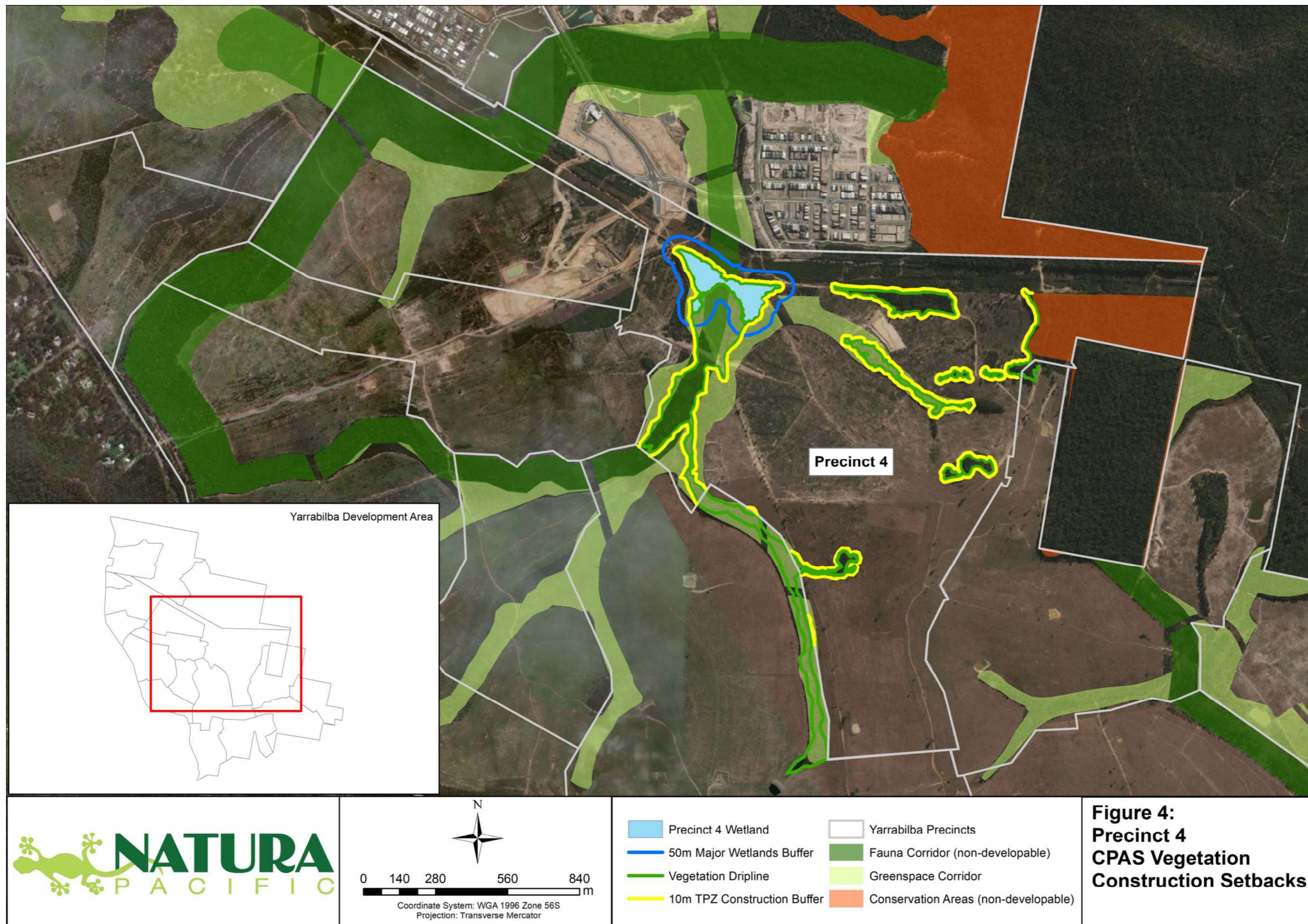
- | | |
|---------------------------|--------------------------------------|
| Precinct 4 Wetland | Yarrabilba Precincts |
| 50m Major Wetlands Buffer | Fauna Corridor (non-developable) |
| 15m Minor Creek Buffer | Greenspace Corridor |
| Vegetation Dripline | Conservation Areas (non-developable) |

**Figure 2:
Precinct 4
CPAS Waterway
Setbacks**

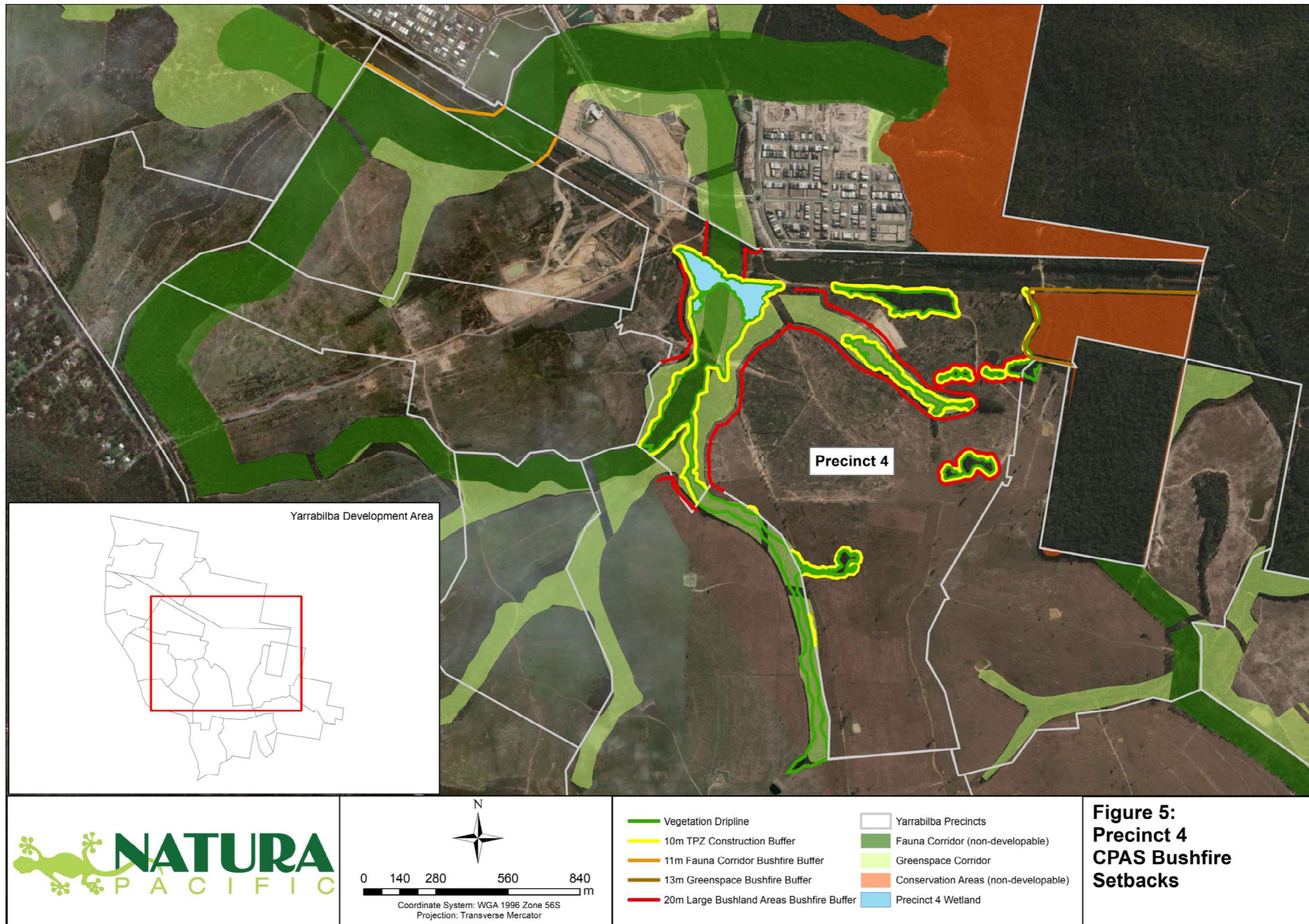
Natura Figure 3: Precinct 4 CPAS Fauna Corridor Setbacks



Natura Figure 4: Precinct 4 CPAS Vegetation Construction Setbacks



Natura Figure 5: Precinct 4 CPAS Bushfire Setbacks



VEGETATION

Strategy

Provide vegetation management actions which integrate the protection and enhancement of the floristic values associated with the fauna corridor, parks, waterways, conservation area adjacent to Plunkett Reserve interface and natural open spaces, in order to meet the objectives identified in Natural Environment Overarching Site Strategy, including:

- Weed control (bio-security) and revegetation;
- Protection and retention of significant trees;
- Assessment for and management of (where identified on site) significant flora species;
- Bushfire management;
- Assessment and management of remnant vegetation (Regional Ecosystems); and
- Rehabilitation and monitoring/compliance.

Key Issues

Vegetation management actions to be provided within or associated with Precinct 4 are highlighted in the following areas:

- Setbacks between development footprint and:
 - Fauna corridor, including 10 m soft interface (incorporating a batter, park, stormwater treatment/flood detention, verge, walking trails, road etc) or minimum bushfire setback, whichever is greater.
 - Conservation areas adjacent to Plunkett Reserve, including 10 m soft interface (incorporating a batter, park, verge, walking trails, road etc) or minimum bushfire setback, whichever is greater, incorporating a number of recreational trail networks.
 - Greenspace corridors, including retaining extent of mapped drip line vegetation and waterways setbacks as described in Section 4.4 of the Stormwater Infrastructure Master Plan (DesignFlow, Oct 2021).
 - Road/crossing clearing requirements incorporating retention of or offset provisions for significant sized trees.
- Road/crossing design in accordance with IMP/OSS documents, which also allows base/low flow level ground and surface water dispersal affecting vegetation retention or supports rehabilitation of degraded areas with improved vegetation communities. This is also to include supporting ecological assessments/report which addresses specific design requirements and includes preliminary civil designs as part of the Development Application.
- Gazetting appropriate ownership and detailing future management of fauna corridor and future conservation areas (conservation area adjacent to Plunkett Reserve) to ensure long term viability of retained vegetation.

Vegetation management will generally be undertaken in accordance with the *Yarrabilba Development: Natural Environment Site Strategy* (Natura Consulting, 30 March 2016) which highlights vegetation management procedures with regards to clearing approvals, revegetation, monitoring/compliance and design requirements. For this precinct, vegetation management is largely connected to, and integrated with, waterway setbacks, passive/recreational space and Koala habitat protection measure.

Consideration for gazetting future ownership of proposed conservation/recreation land:

- Fauna corridor: this area will be dedicated as follows:
 1. 'Open Space – Conservation' to Logan City Council prior to plan sealing of the last residential stage within Precinct 4 (or as otherwise negotiated with EDQ), with ongoing maintenance permission to comply with the Department of the Environment *Environmental Protection and Biodiversity Conservation Act* approval conditions; **or**
Legally secured by obtaining a voluntary declaration from the Queensland Department of Natural Resources and Mines under section 19F of the *Vegetation Management Act 1999* (Queensland) that the area is an area of high conservation value. The voluntary declaration will be obtained prior to plan sealing of the last residential stage within Precinct 4 (or as otherwise negotiated with EDQ), with ongoing maintenance permission to comply with the Department of the Environment *Environmental Protection and Biodiversity Conservation Act* approval conditions; **or**
 2. Land will be dedicated to the State as per the changes to the Fauna Corridor Infrastructure Plan in the draft Municipal IA.
- Recreational interface to Plunkett Reserve: should be transferred to the State in accordance with the Fauna Corridor Infrastructure Plan prior to plan sealing of the last residential stage within Precinct 4 (or as otherwise negotiated with EDQ), with ongoing maintenance permission to comply with the Department of the Environment *Environmental Protection and Biodiversity Conservation Act* approval conditions.
- Greenspace corridor/other parks: shall be transferred to Council in fee simple as trustee in accordance with relevant future PDA development approvals.

Vegetation management shall be delivered in accordance with:

- Tree Retention in Residential Subdivisions - EDQ PDA Practice Note No. 6 (where applicable);
- Environmental values and sustainable resource use – EDQ PDA Guideline No. 14;
- Remnant vegetation and koala habitat obligations in Greater Flagstone and Yarrabilba PDAs – EDQ PDA Guideline No. 17; and
- Development interfaces – EDQ PDA Guideline No. 18.

Vegetation management shall be coordinated with the bushfire management plan.

FAUNA

Strategy

Provide design components and/ or management actions which integrate fauna movement and habitat opportunities within the fauna corridor, parks, waterways, conservation area adjacent to Plunkett Reserve and natural open spaces as identified in the Fauna Corridor Master Plan. These include:

- Habitat rehabilitation and monitoring/compliance (for native species but with a focus on Koala);
- Road crossing design to allow fauna movement and fish passage (where applicable);
- Protection and retention of significant or specific habitat trees;
- Assessment for and management of all fauna species throughout pre construction and construction periods; and
- Feral animal monitoring and management.

Certification of ecological compliance will be provided as part of each Development Application.

Key Issues

Fauna management actions and strategies associated with Precinct 4 include:

- Development and/or enhancement of Fauna Corridors with functionality and connectivity as key principles;
- Fauna friendly design aspects such as using food and shelter trees in parks and street scaping, use of fauna friendly fencing, fauna crossings and fauna/fish passage;
- Ensuring bushfire or bushfire management practices do not pose significant risk to fauna or fauna habitat;
- Fauna spotter-catching during clearing works; and
- Rehabilitation/revegetation of fauna corridors/waterways/greenspace corridors and monitoring/compliance.

Fauna management will generally be undertaken in accordance with the Yarrabilba Development: Fauna Corridor Master Plan (Natura Consulting, 2012) which highlights fauna management procedures with regards to clearing direction, revegetation, monitoring/compliance, design requirements and education. The Fauna Corridor Master Plan aims to integrate closely with the Natural Environment Site Strategy to achieve a range of goals while optimising use of space and resources available for fauna with vegetation management and stormwater quality/flood mitigation areas. For this precinct, fauna management is largely connected to, and integrates with, retained vegetation areas which incorporate waterway setbacks, passive/recreational space and Koala habitat protection measures such as the fauna corridor and land adjacent to Plunkett Reserve.

The fauna corridor and conservation area to the further to the east of Precinct 4 are areas mapped as 'Koala Habitat to be Retained' and are highlighted under the EPBC conditions as 'offset areas'. Rehabilitation works in these areas are to address both the general fauna habitat requirements highlighted in EDQ plans and Koala habitat requirements identified in the EPBC approval conditions. A road crossing is proposed in an area of EPBC vegetation to be managed. Necessary actions will be taken to ensure this is reflected in the EPBC approval prior to any works being undertaken.

Designs of road crossings and services are to be supported by ecological advice (i.e. arborist report, fauna assessment and vegetation management plan) and preliminary civil designs submitted as part of Development Applications. Additionally, waterway/fauna corridor crossing design will incorporate vegetation retention (i.e. its placement will be provided in a location where minimal disturbance is required) and facilitate fauna movement and fish passage.

Fauna management shall be delivered in accordance with:

- Environmental values and sustainable resource use – EDQ PDA Guideline No. 14;
- Remnant vegetation and koala habitat obligations in Greater Flagstone and Yarrabilba PDAs – EDQ PDA Guideline No. 17; and
- Development interfaces – EDQ PDA Guideline No. 18.

Certification of ecological compliance will be provided as part of each Development Application.

Supporting Information

Reporting Requirements and Timing

Documentation type	Details	Instances when required	Timing of delivery
Vegetation drip-line mapping	<ul style="list-style-type: none"> Ground-truthed vegetation extent mapping to determine setbacks to protect extant vegetation. 	Per context area	Prior to or in conjunction with initial design
Vegetation Management Plan	<p>Flora assessment and management including sections on (where applicable):</p> <ul style="list-style-type: none"> Tree survey of proposed clearing locations; Mapping of tree locations; Tree protection/retention measures and management of retained trees; Tables containing tree data; Other flora species management; and Implementation of recovery actions for any confirmed EVNT species. <p>Fauna assessment and management including sections on (where applicable):</p> <ul style="list-style-type: none"> Koala, kangaroo and other fauna species management; Feral animal management; Fish passage assessment where waterway crossing are required; and Implementation of recovery actions for any confirmed EVNT species. 	Per context area or per clearing area. Where clearing of native vegetation is required.	Prior to clearing works
Spotter Catcher Report	<ul style="list-style-type: none"> During clearing works, an EPA approved spotter catcher is to undertake onsite fauna management actions (i.e. fauna capture and translocation); and Post clearing reporting of results, fauna species translocated and outcomes of fauna management actions. 	Per context area or per clearing area. Where clearing of native vegetation is required.	During and after clearing works
Flora trigger map protected plant survey (as per requirements under the <i>Nature Conservation Act 1992</i> for Rare, Vulnerable Near Threatened species)	<ul style="list-style-type: none"> Follow survey and reporting methodology outlined in the Nature Conservation Act guidelines; Where EVNT species are identified, provide a Flora Management Plan and implement recovery actions, such as a Xanthorrhoea Management Plan; and Gain permits from Ecoaccess (DERM) for clearance of threatened flora (where applicable) and provide necessary offsets. 	Per context area or per clearing area. Where clearing of native vegetation is required.	Prior to and during OPW

Documentation type	Details	Instances when required	Timing of delivery
Waterway and Fauna Corridor crossing/services design	<ul style="list-style-type: none"> • Design road waterway and fauna corridor crossing to allow Koala and other fauna movement; • Fish passage assessment and design; and • Rehabilitation approaches to entry and exit points of underpasses. <p>Review potential impact of crossing on extant vegetation long term health:</p> <ul style="list-style-type: none"> • Ground/storm water impact assessment; and • Baseflow water level assessment of surface and ground water within fauna and waterway corridors. 	Where road or other crossings traverse waterways or Fauna Corridors	Conceptual fauna crossing during DA Detailed design and certification during OPW
Bushfire Management Plan	<p>Review potential impact of bushfire with a number of objectives:</p> <ul style="list-style-type: none"> • Protect life and property; • Minimise bushfire risk within the development footprint and neighbouring properties; • Reduce unauthorised activities within the site through good management; • Identify and manage future vegetation areas within the site to improve their ecological diversity and sustainability; • Reduce the considerable incident of unplanned fire on the site by maintaining reduced fuel loads over future development areas within the site; and • Have regard to the draft SPP model Code 	Per context area	At DA stage and have regard to the draft SPP model Code.
Rehabilitation Management Plan	<p>Fauna corridor, Regional Ecosystem, offset area and 'Koala Habitat to be Retained' rehabilitation:</p> <ul style="list-style-type: none"> • Strategic vegetation and habitat restoration methods and outcomes; • Fencing requirements; • Weed management; • Maintenance timing and schedules; • Rehabilitation monitoring plan; and • 'As constructed' data demonstrating compliance with any offset requirements and certification of completion of works. 	Per context area or sub context area	Broad conceptual mapping during DA Detailed design and certification during OPW
Ecological equivalence assessment	<ul style="list-style-type: none"> • Undertaken where offsets are required for clearing 'significant vegetation' or other significant ecological value, which is otherwise unavoidable. 	Per context area	Prior to or in conjunction with OPW

Documentation type	Details	Instances when required	Timing of delivery
Kangaroo management strategy	<ul style="list-style-type: none"> • Mitigation of impacts to kangaroos will be addressed within the construction site; • Review of security fencing location, access and release points; and • Contractor education. 	Per context area	During OPW
Koala habitat and offset area monitoring/ compliance report	<ul style="list-style-type: none"> • Long term monitoring of koala habitat and offset areas to ensure benchmarks are being met; • Certification of results; and • Reporting to EDQ and EPBC. 	Per context area	Post OPW (timing varies, outlined in approved Koala Habitat Rehabilitation Monitoring Plan)
Awareness and education	<p>Community and/or contractor education documentation:</p> <ul style="list-style-type: none"> • Interpretive signage; • Responsible pet ownership; • Responsible gardening and plant selection; and • Appropriate and inappropriate activities in and around fauna corridors. 	Per context area	Prior to and during OPW
Certification of ecological compliance	Provided within individual reports listed within this table or as a separate certification letter	Per context area or individual design component i.e. for the design of fauna passage within road crossings	As part of each Development Application