URBIS

TELOPEA CONCEPT PLAN AREA

CONCEPT PLAN AND STAGE 1A BUILT FORM ENVIRONMENTAL IMPACT STATEMENT

PREPARED FOR

FRASERS PROPERTY TELOPEA DEVELOPER PTY LTD

JULY 2021

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

Director	Murray Donaldson
Associate Director	Samantha Wilson
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Consultant	Brigitte Bradley
Project Code	P0021243
Report Number	Final – For Public Exhibition

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DECLARATION

SUBMISSION OF ENVIRONMENTAL IMPACT STATEMENT

This EIS has been prepared in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulations 2000*.

Environmental Assessment prepared by:	
Name	Murray Donaldson (Director) Samantha Wilson (Associate Director) Genevieve Beard (Associate Director) Holly Rhoades (Senior Consultant) Brigitte Bradley (Consultant)
Address	Urbis Pty Ltd Angel Place, Level 8, 123 Pitt Street Sydney, NSW 2000
In respect of	Telopea Concept and Stage 1 State Significant Development
Applicant and Land Details	
Applicant	New South Wales Land and Housing Corporation
Applicant Address	Level 4, 219 – 241 Cleveland Street, Strawberry Hills NSW 2016
Land to be developed	Refer to **Section 2.1.1** for land to be developed.
Project	Telopea Concept and Stage 1 State Significant Development

Declaration

I certify that the contents of the Environmental Impact Assessment to the best of my knowledge has been prepared as follows:

- In accordance with the requirements of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000*, and *State Environmental Planning Policy (State and Regional Development) 2011*.
- The information contained in this report is true in all material particulars and is not misleading.

Name	Murray Donaldson, Director	Samantha Wilson, Associate Director	Genevieve Beard, Associate Director	Holly Rhoades, Senior Consultant	Brigitte Bradley, Consultant
Signature					
Date	30/07/2021	30/07/2021	30/07/2021	30/07/2021	30/07/2021

GLOSSARY AND ABBREVIATIONS

Term/ Acronym	Description
AADT	Annual Average Daily Traffic
AIA	Arboricultural Impact Assessment
ABS	Australian Bureau of Statistics
ACHAR	Aboriginal Cultural Heritage Assessment Report
ACM	Asbestos Containing Material
ADG	Apartment Design Guide
AEBP	Allowable End Bearing Pressure
AEP	Annual Exceedance Probability
AHD	Australian Height Datum
AHIMS	Aboriginal Heritage Information Management System
AIHW	Australian Institute of Health and Welfare
AMP	Asbestos Management Plan
ARH SEPP	*State Environmental Planning Policy (Affordable Rental Housing) 2009*
ARI	Annual Recurrence Interval
ARR	Australian Rainfall and Runoff
AVTG	*Assessing Vibration – A Technical Guideline*
BASIX	Building Sustainability Index
BC Act	*Biodiversity Conservation Act 2016*
BCA	Building Code of Australia
BOSCAR	NSW Bureau of Crime Statistics and Research
BV Map	Biodiversity Values Map
CALD	Culturally and Linguistically Diverse
CC	Construction Certificate
CEMP	Construction Environmental Management Plan
CHP	Community Housing Provider
CICL	Cast Iron Cement Lined

Term/ Acronym	Description
CPTED	Crime Prevention Through Environmental Design
Concept Masterplan	The concept masterplan for LAHC owned sites in the Telopea Precinct.
Concept Plan Area or CPA	The area in Telopea Precinct seeking Concept DA approval.
CMP	Construction Management Plan
CNVMP	Conservation Native Vegetation Management Plan
Communities Plus	Communities Plus Program run by LAHC
COVID	Corona-virus 2019 pandemic
DA	Development Application
DBYD	Dial Before You Dig
DCJ	NSW Department of Communities and Justice
DCP	Development Control Plan
DEC	NSW Department of Environment and Conservation
DECCW	NSW Department of Environment, Climate Change and Water
DEM	Digital Elevation Model
District Plan	*Central City District Plan*
DNRCBR	*Department of Planning Development Near Rail Corridor and Busy Roads – Interim Guideline*
DoH	Western Australia Department of Health
DPIE	NSW Department of Planning, Industry and Environment
DSI	Detailed Site Investigation
EIS	Environmental Impact Statement
Education SEPP	*State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017*
EES	Environmental Earth Sciences
ENM	Excavated Natural Material
EPBC Act	*Environmental Protection and Biodiversity Conservation Act (Cth)*
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Reg	*Environmental Planning and Assessment Regulation 2000*

Term/ Acronym	Description
EPA	NSW Environmental Protection Authority
ERA	Environmental Risk Assessment
Future Directions	*Future Directions for Social Housing in NSW*
Frasers	Frasers Property Telopea Developer Pty Ltd
FRNSW	Fire Rescue NSW
FSR	Floor Space Ratio
GFA	Gross Floor Area
GLVIA	*Guidelines for Landscape and Visual Impacts Assessment 3rd edition*
GP	Gross Pollutants
GPOP	Greater Parramatta to Olympic Peninsula
ha	Hectares
HIS	Heritage Impact Statement
ICOMOS	International Council on Monuments and Sites
ILU	Independent Living Unit
ISEPP	*State Environmental Planning Policy (Infrastructure) 2007*
JWP	J Wyndham Prince
KS Airport	Sydney (Kingsford Smith) International Airport
kV	Kilovolt
LAHC	NSW Land and Housing Corporation
LEP	Local Environmental Plan
LGA	Local Government Area
LOS	Level of Service
LSPS	Local Strategic Planning Statement
LUIIP	Land Use and Infrastructure Implementation Plan
m^2	metres squared
m^3	metres cubed
mm	millimetre
m/s	metres per second

Term/ Acronym	Description
MNES	Matters of National Environmental Significance
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
NABERS	National Australian Built Environment Rating System
NATA	National Association of Testing Authorities
NatHERS	Nationwide House Energy Rating Scheme
NEPC	National Environment Protection Council
NBN	National Broadband Network
NPI	National Pollutant Inventory
NPW Act	*NSW National Parks and Wildlife Act 1974*
NSW	New South Wales
OC	Occupation Certificate
OEH	Office of Environment and Heritage
OSCH	Outside school hours care
OSD	On-site detention
PAC	Physical Absorption Capacity
PACM	Potential Asbestos-Containing Material
PCT	Plant Community Types
PDCP 2011	*Parramatta Development Control Plan 2011*
PLEP 2011	*Parramatta Local Environmental Plan 2011*
PLR	Parramatta Light Rail
PMF	Probable Maximum Flood
PSI	Preliminary Site Investigation
RAP	Remediation Action Plan
Region Plan	*A Metropolis of Three Cities: Greater Sydney Region Plan*
RTA	Roads and Traffic Authority
RW	Weighted Sound Reduction Index
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy

Term/ Acronym	Description
SEPP 55	*State Environmental Planning Policy No. 55 – Remediation of Lands*
SEPP 65	*State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development*
SIDRA	Software package used for intersection (junction) and network capacity, level of service and performance analysis
SMDD	Standard Dry Density
SRD SEPP	*State Environmental Planning Policy (State and Regional Development) 2011*
SRD	Site Reference Discharge
SSD	State Significant Development
SSD DA	SSD Development Application
SSR	Site Storage Requirement
STS	Soil Test Services Pty Ltd
Stage 1A	Stage 1 Development Application area
TAFE	Technical and Further Education NSW
Telopea Precinct	Land zoned by DPIE in 2018 including public and privately owned land
TN	Total Nitrogen
TP	Total Pollutants
TSS	Total Suspended Solids
TUFLOW	TUFLOW simulates flooding in major rivers through to complex overland and piped urban flows, estuarine and coastal tide hydraulics and inundation from stormwater
UFP	Unexpected Findings Protocol
UPRCT	Upper Parramatta River Catchment Trust
Urbis	Urbis Pty Ltd
VENM	Virgin Excavated Natural Material
VDV	Vibration Dose Values
VPA	Voluntary Planning Agreement
WH&S	Work Health and Safety
WMP	Waste Management Plan

Term/ Acronym	Description
WSUD	Water Sensitive Urban Design
XP-RAFTS	Urban Stormwater and River Systems Modelling

EXECUTIVE SUMMARY

This Environmental Impact Statement (**EIS**) has been prepared to accompany a State Significant Development (**SSD**) development application **(SSDA)** for Concept approval for the staged redevelopment of the **'Telopea Concept Plan Area'** (**CPA**), as well as a detailed proposal for the first stage of development known as **'Stage 1A'**.

This EIS has been prepared in response to Secretary's Environmental Assessment Requirements (**SEARs**) dated 1 April 2021 at **Appendix A,** and the supporting technical documents provided at **Appendix B–0**.

This EIS has been prepared in accordance with and meets the minimum requirements of Clauses 6 and 7 of Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (**EP&A Reg**) and contains an assessment of the proposal against the relevant considerations under Section 4.15 of the *Environmental Planning and Assessment Act 1979* (**EP&A Act**).

Communities Plus

Communities Plus is a government program which will facilitate non-government and private sector partnership to redevelop Land and Housing Corporation (**LAHC**) sites throughout metropolitan Sydney and regional NSW. Communities Plus is based on an asset management framework that leverages the value of the existing portfolio to accelerate supply. Communities Plus will redevelop LAHC land by engaging private sector developers and community housing providers to design, fund and build social, affordable and private housing. As each development is completed, new social housing properties are handed over to LAHC as payment for the land making the program entirely self-funding.

One of the actions for Future Directions is to *'increase redevelopment of Land and Housing Corporation properties to renew and grow supply'*, which will be achieved through Communities Plus. This action is guided by the following goals:

- Deliver redevelopment projects on LAHC sites throughout NSW through Communities Plus;
- Align redevelopment projects with Urban Growth priority renewal areas;
- Work with planning agencies and authorities to ensure appropriate rezoning is possible; and
- Ensure large redevelopment target of a 70:30 ratio of private to social housing to enable more integrated communities (generally with an increased number of social housing where practicable).

The Telopea Concept Plan Area has been identified as one of seven major sites to be delivered through the Communities Plus program. It will deliver approximately 740 social housing units and 256 affordable rental housing units, in addition to private dwellings, seniors living and other community facilities.

The Site

The Telopea Concept Plan Area (**CPA**) is approximately 13.4 hectares (**ha**) and comprises of 99 individual allotments. It currently accommodates 486 social housing dwellings across a mix of single dwellings, townhouses, and 3-9 storey residential flat buildings. The CPA also currently accommodates a range of existing community facilities including Dundas Community Centre, Dundas Branch Library, Community Health Centre, Hope Connect Church and Telopea Christian Centre. The CPA is generally owned and managed by LAHC with the exception of the Hope Connect Church, Christian Centre and Library.

The CPA is located in the Parramatta Local Government Area (**LGA**) around 4 kilometres (**km**) north-east of the Parramatta Central Business District (**CBD**), 6km south-west of Macquarie Park Strategic Centre and 17km from Sydney CBD. The site is located within the Telopea Precinct which forms part of the Greater Parramatta to Olympic Park (**GPOP**) Growth Area.

The site is predominately within a residential area and includes a neighbourhood centre known as Waratah Shops.

Background

The Telopea CPA forms part of the Telopea Precinct. A masterplan was prepared for Telopea Precinct and submitted by LAHC and Parramatta City Council to the Department of Planning, Industry and Environment (**DPIE**) to amend the *Parramatta Local Environmental Plan 2011*. The masterplan seeks to renew the precinct through redeveloping social housing to provide more homes and a greater housing mix along with an upgraded public domain and community facilities. The Telopea Precinct was divided into two stages:

- Stage 1: Rezoning of land within the masterplan area prepared and consulted upon by LAHC in partnership with Parramatta City Council which includes land in LAHC ownership and private sites.
- Stage 2: Investigation of opportunities for rezoning in other parts of the precinct.

Within the Stage 1 masterplan area, there are around 1,400 existing dwellings with approximately 45% of the housing stock owned by LAHC, generally located in areas close to the station. The masterplan and associated statutory planning controls were exhibited from October to November 2017 and rezoned in August 2018. Key components of the masterplan include:

- A mix of dwelling types focusing new development close to the future light rail stop;
- Allow heights up to 70m (approximately 22 storeys) with retail or community uses at ground level, adjacent to the future light rail stop; and
- New light rail stop entry plaza.

The Proposal

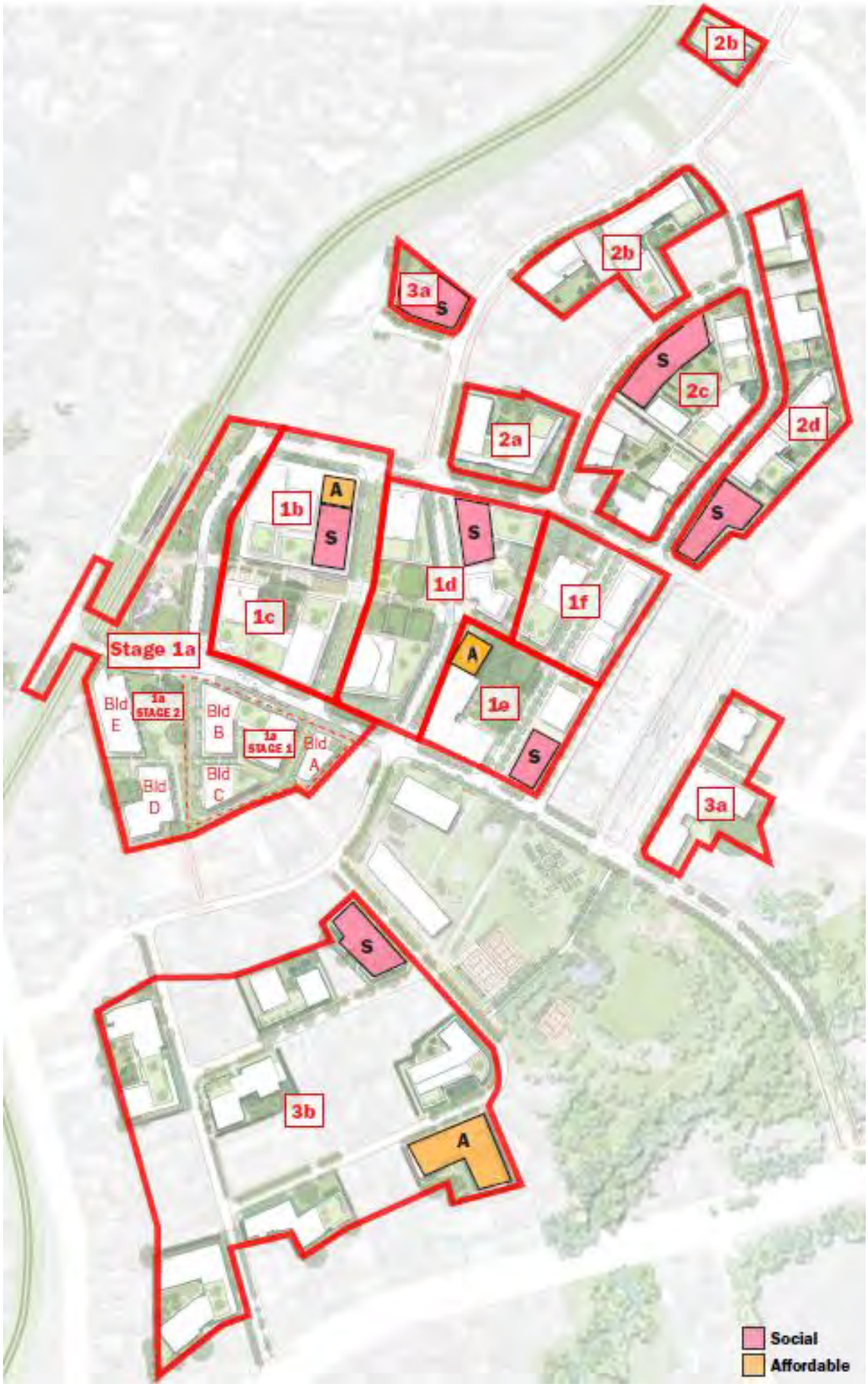
The SSDA seeks Concept approval for the staged redevelopment of the Telopea CPA, as well as a detailed proposal for the first stage of development. The Concept proposal sets out the maximum building envelopes and gross floor area (**GFA**) that can be accommodated across the CPA, and identifies the land uses and public infrastructure upgrades to be provided. The Concept proposal will establish the planning and development framework from which any future development application will be assessed against.

The Telopea CPA proposal comprises:

- A mixed-use development including:
  - Approximately 4,700 dwellings, including a mix of social, affordable and market dwellings
  - Inclusion of a new retail precinct with a new supermarket, food and beverage, and speciality retail
  - Proposed childcare facility
  - Proposed combined library and community centre
  - Proposed combined Church, Residential Aged Care Facility (**RACF**) and Independent living unit's (**ILU**) facility
- Delivery of new public open space, including:
  - A new light rail plaza
  - Hill top park
  - Elyes pedestrian link
  - Open space associated with the proposed library
- Retention of existing significant trees
- Road and intersection upgrades
- Cycle way upgrades
- Upgrade of utility services

The Telopea CPA is divided into three precincts known as Core, North, and South incorporating a total of 29 lots (refer Figure 1).

Figure 1 Staging Plan – Telopea CPA



Source: Bates Smart

The first stage of works to be delivered (known as 'Stage 1A') is located within the Core precinct adjacent to the Parramatta Light Rail station and will include:

- Site establishment works including demolition of all existing buildings and structures, tree removal, site preparation, excavation, and services augmentation.
- Construction of a new arrival plaza for the PLR known as 'Telopea Station Plaza' incorporating a hilltop park surrounding existing significant trees.
- Construction of the Sturt Street West extension over the PLR including Adderton Road intersection works and cycleway connection.
- Upgrade of Sturt and Shortland Streets including kerb realignment, new footpaths and verge landscaping, new indented parking bays, bus zones and pedestrian crossing.
- Construction of five residential buildings between 4 and 14 storeys in height with a shared basement, comprising a total of 443 studio, one-, two- and three-bedroom apartments.
- Construction of two basement levels with ingress/egress via Sturt Street and Winter Street comprising a total of 416 car parking spaces and 473 bicycle storage spaces, waste and loading facilities.
- Associated open space and landscaping works, including construction of a new public park and through site link, retention of existing significant trees, and ground and rooftop communal open space.
- Construction of a new publicly accessible mews street, providing access to the five residential buildings and new public park.
- Torrens Title Subdivision.

Consultation

Frasers and LAHC have undertaken engagement with a range of stakeholders, including Parramatta City Council, NSW Government Agencies, Registered Aboriginal Parties, utilities providers, and the local community, to discuss and inform the design of the Concept Plan and Stage 1A works.

Frasers is committed to continued meaningful engagement with stakeholders and the community. A range of engagement tools and techniques will be used to ensure the community can be informed about the project as it progresses and have an opportunity to provide input at the appropriate times as Telopea is created over the 15-20 year timeframe. Initially communications and engagement will focus on:

- refining the project vision and supporting high level planning applications;
- involving the community in discussions about public domain and proposed community facilities; and
- establishing a framework for collaborating with local businesses, schools, service providers and peak bodies to deliver the social outcomes that are desired for Telopea.

Over time, this focus will turn to community building; ongoing detailed development applications communication to assist in managing construction activities; and services, programs, and activities to nurture a cohesive, supportive and healthy community.

Planning Framework

As the proposal is development carried out by or on behalf of the New South Wales Land and Housing Corporation for the purposes of the Housing Act 2001 and has a capital investment value of more than $100 million it is classified as SSD pursuant to Schedule 1, Clause 26 of *State Environmental Planning Policy (State and Regional Development) 2011*. The Minister for Planning, or their delegate, is the consent authority for the SSD DA and the application is lodged with the NSW Department of Planning, Industry and Environment (NSW DPIE) for assessment.

This EIS has been prepared in support of a SSDA for concept approval, in accordance with Division 4.4 of the EP&A Act, for the staged redevelopment of the Telopea CPA, as well as a detailed proposal for the first stage of development; Stage 1A. This EIS has comprehensively addressed the general and key issues relating to the proposed development and has included the plan and document requirements identified in the SEARs and in Schedule 2 of the EP&A Regulation.

Impact Assessment

The key issues for all components of the project identified in the SEARs have been assessed in detail, with specialist reports underpinning the key findings and recommendations identified in the Assessment of Environmental Impacts in Section 6. It has been demonstrated that for each of the likely impacts identified in the assessment of the key issues will either be positive or can be appropriately mitigated. In summary:

- In accordance with the BC Act, the proposal will not impose any adverse impact to ecological communities, habitat of threatened species, populations or ecological communities, or any significant species of fauna or flora.
- The residential development has been designed is in accordance with SEPP 65 and meets the design criteria of the ADG.
- The proposed development has taken measures to minimise any impacts on the rail corridor in accordance with ISEPP.
- An Environmental Management Plan and Asbestos Management Plan are proposed to ensure the site is suitable for the proposed development in accordance with SEPP 55.
- The proposed social housing units have been designed to be consistent with the design criteria set out in the ARH SEPP.
- In accordance with the Seniors Housing SEPP and the Education SEPP the proposal will deliver seniors housing and a childcare centre.
- The Stage 1A proposed development meets the BASIX requirements and the Sustainability Report outlines the environmental sustainability measures to be implemented across the precinct.
- The proposal is consistent with the PLEP 2011 land use zones for the site and will deliver the objectives for high density residential and mixed-use development and public recreation.
- The proposal generally complies with the PLEP 2011 height of building control that applies to the site and the development is supported by a Clause 4.6 Variation Request to exceed the height control in the Core area. The Clause 4.6 Variation Request provides a comprehensive justification that compliance with this part of the height control is unreasonable and unnecessary in the circumstances of the case as:
  - The objectives of the development standard including providing a transition in built form and land use intensity; minimising visual impact, disruption of views, loss of privacy and loss of solar access; reinforcing and respecting the character of the area; and maintaining satisfactory sky exposure and daylight to buildings and the public domain are achieved by the proposed development; and
  - There are sufficient environmental planning grounds to support the proposed development, in that the proposal does not result in any unacceptable impacts on amenity, or any heritage impacts and the proposed variation allows for the delivery of higher quality residential development, greater public open space and improved residential amenity.
- The proposal is consistent with the FSR provisions for the site in accordance with the PLEP 2011, the ARH SEPP and Seniors Housing SEPP.
- The proposed development does not affect the heritage significance or view from any heritage assets.
- In accordance with the PLEP 2011, the proposed development is acceptable in relation to flood impacts.
- The Concept Plan was development through a rigorous design process with consideration on the Design Excellence principles set within the PLEP 2011. Site-specific Design Guidelines have been developed to guide the ongoing architectural and urban design of the Telopea CPA. The Design Guidelines will ensure a high quality architectural and amenity outcome is achieved across the precinct. The Design Guidelines set out the vision for future development, as well as objectives and provisions in relation to built form, public domain, open space and trees, transport and parking and sustainability.
- The proposal is acceptable in relation to visual impacts and does not result in any significant negative visual effects or impacts on its visual catchment. The proposal will cause a substantial but positive change to the existing character of the site and the surroundings. The proposal is responsive to the visual opportunities and constraints of the site and its surroundings and appropriately responds to the character of adjacent land uses.

- The proposal has no unacceptable traffic impacts and provides for infrastructure upgrade works as required. The proposal promotes the use and accessibility of public transport through new pedestrian connections and the light rail plaza.
- With the mitigation measures proposed, the proposal will result in a moderate to high positive impact on the contribution of trees to local amenity and character.
- Subject to the mitigation measures proposed, the development will have an acceptable impact in relation to Aboriginal Cultural Heritage.
- Subject to the identified utilities augmentation requirements, there is sufficient capacity to service the proposed development.

Where further investigations are recommended in order to assess any mitigation measures required in relation the proposed development, these investigations will be undertaken as part of any future detailed applications, in accordance with the Concept Proposal.

Conclusion and Justification

Overall, the proposal sought within the SSD DA is considered appropriate for the site and warrants approval for the following reasons:

- The proposal is consistent with the strategic policy framework delivering a range of housing types and sizes to meet the needs of different households. The provision of social housing creates opportunities to directly combat homelessness and relieve housing stress for low income households. As part of the Growth Precinct, the proposal provides housing supply, choice and affordability, with access to jobs, services, retail offerings, community infrastructure and public transport in an identified urban renewal area. The strategic proposal for homes adjacent to the PLR will facilitate the delivery of a city shaping corridor and the 30-minute city vision, through locating residents close to major employment and education centres within the broader region.
- The design of the proposal has been carefully considered to minimise any impacts, with the primary design objective centred on the health and wellbeing of the community; creating a place which is open, inclusive and highly connected with a focus on green spaces and healthy living. The built form framework responds to the existing topography and character of Telopea, with proposed buildings designed to maximise pedestrian connections and the amenity of new and existing residents and the public domain. The design strategy promotes the retention of existing trees, with built form diversity through a mix of setbacks, human scaled podiums and street walls and architectural expression, to create a high quality mixed use and high density residential development.
- Alternatives considered would fail to maximise land use opportunities surrounding the new PLR and be inconsistent with the goals and directions of the policy framework that identify the site as a Growth Area. Alternative designs considered would impact on the ability to achieve the overall vision for Telopea, and the opportunity cost of not pursuing the urban renewal of the site would be significant, given the multitude opportunities for economic and social benefits to Greater Sydney.
- Frasers and LAHC have undertaken engagement with a range of stakeholders, informing the Concept Proposal and Stage 1A. Community feedback has been taken into consideration in the development of the design and proposed mitigation measures in relation to the strategy for the relocation of residents, the landscaping and accessibility of parks, green space and the public domain, residents' mobility and access through the site, retail offerings and strategy, transport access and parking, and construction and staging of the development.
- Opportunities and recommendations for Connecting with Country will be responded to in each of the future development phases for the Telopea CPA, alongside ongoing engagement with appropriate Indigenous stakeholders throughout the project.
- The staging strategy maintains a consistent tenure split between social and market dwellings as well as ensuring that the necessary infrastructure is delivered to service the relevant stages. Stage 1 is to be delivered from 2023 to 2029 including approximately 2,000 dwellings in areas closest to station; delivering community benefits and supporting the light rail project.

- Due to the size and scale of the Telopea CPA, other development in the area is unlikely to impact on the timeframes or mitigation measures outlined in this EIS. During the staged construction of this project, construction management and other associated impacts such as traffic and waste will be managed to align with the recommendations and proposed mitigation measures.

In accordance with Section 4.15 of the EP&A Act, the proposed development will:

- deliver social housing to support the welfare of the community;
- has been designed to ensure it responds to the term of the Masterplan and the character of the site and surrounding area;
- represents the first stage in the delivery of the Concept Pan, and as such supports the economic and orderly development of land;
- construct the road network of which portions will be dedicated to Council to create land for public purposes;
- incorporate biodiversity offset measures, tree protection, and replacement planting to conserve the natural environment;
- provide buildings that achieve a range of sustainability targets and measures established under the Concept Plan; and
- provide revitalised social housing to support those in need within Sydney.

The proposal will generate a highly positive social impact, particularly in the long term. Any identified negative impacts are proposed to be mitigated through implementation of appropriate management measures. Key social impacts include:

- Access to high quality social housing
- Access to high quality affordable housing
- Improved community facilities and access to high quality open space
- Access to new supermarket, food and beverage, and specialty retail
- A healthy built environment
- Improved public safety
- Community integration, belonging and connection
- Neighbourhood renewal.

This SSD is accompanied by a VPA for the provision of public infrastructure that supports the Concept Proposal as part of the overall renewal of Telopea. The proposed VPA includes additional infrastructure over and above the Telopea Masterplan that provides a public benefit including a neighbourhood park near hilltop park and arrival plaza; additional open space and public domain areas; and a contribution to Telopea Public School for a co-located community facility.

Overall, the proposal will have long-term positive economic, social, and environmental impacts for the local community, the Paramatta LGA and the Greater Sydney region. **In view of the above, we submit that the proposal is in the public interest and that the SSD DA should be approved subject to appropriate conditions.**

Figure 2 Telopea CPA Aerial Photomontage

Source: Bates Smart

1. INTRODUCTION

This Environmental Impact Statement (**EIS**) has been prepared on behalf of Frasers Property Telopea Developer Pty Ltd (**Frasers, the Proponent**) on behalf of Land and Housing Corporation (**LAHC**) in support of a State Significant Development application (**SSDA**) for concept approval, in accordance with Division 4.4 of the *Environmental Planning and Assessment Act 1979* (**EP&A Act**), for the staged redevelopment of the **'Telopea Concept Plan Area'** (**CPA**), as well as a detailed proposal for the first stage of development, known as **'Stage 1A'**.

This EIS has been prepared in response to Secretary's Environmental Assessment Requirements (**SEARs**) issued on 1 April 2021.

This report includes assessment of compliance with the statutory and strategic planning framework, and all other potential environmental impacts identified through the preparation of this SSDA. Further, this report has been prepared with consideration of the *draft Environmental Impact Assessment Guidance Series* released in June 2017 and the *Preparing an Environmental Impact Statement* Exhibition Draft released in December 2020. This EIS also provides an assessment of the proposal against the relevant considerations under Section 4.15 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

This EIS is structured in the following manner:

- An introduction to the project, including project objectives, project background and analysis of feasible alternatives;
- Identification of the strategic context of the site, including:
  - Analysis of the site and its surrounding context;
  - Identification of key strategic policies;
  - Analysis of cumulative impacts;
  - Identification of planning agreements associated with the project.
- A detailed description of the project;
- Identification of statutory planning policies relevant to the assessment and evaluation of the project;
- A summary of community engagement activities;
- Consideration of key planning issues relating to the proposed development, including a response to issues identified in the SEARs; and
- A comprehensive evaluation of the project.

This EIS should be read in conjunction with all supporting documentation appended to this report at Appendix A - Appendix QQ.

1.1. COMMUNITIES PLUS PROGRAM

Communities Plus is a government program which will facilitate non-government and private sector partnership to redevelop Land and Housing Corporation (**LAHC**) sites throughout metropolitan Sydney and regional NSW. Communities Plus is based on an asset management framework that leverages the value of the existing portfolio to accelerate supply. Communities Plus will redevelop LAHC land by engaging private sector developers and community housing providers to design, fund and build social, affordable, and private housing. As each development is completed, new social housing properties are handed over to LAHC as payment for the land making the program entirely self-funding.

Under Schedule 1, Clause 26 of the SSD SEPP:

> '*Development carried out by or on behalf of the New South Wales Land and Housing Corporation for the purposes of the Housing Act 2001 if the development has a capital investment value of more than $100 million.'*

The Telopea Concept Plan and Stage 1A will be carried out by Frasers on behalf of LAHC and meets the threshold for Stage Significant Development.

1.2. PROPOSED DEVELOPMENT OVERVIEW

In summary, the SSD DA seeks staged development consent for the Telopea CPA for:

- A Concept Proposal for development of the Telopea CPA in stages as described in the Concept Proposal below; and
- Stage 1 Section 4.22(4)(b) Works as described in Section 1.2.2 below.

1.2.1. Concept Proposal

The Concept Proposal sets out the maximum building envelopes and gross floor area (**GFA**) that can be accommodated across the CPA, and identifies the land uses and public infrastructure upgrades to be provided. The Concept proposal will establish the planning and development framework from which any future development application will be assessed against.

The Telopea Concept Plan Area has been identified as one of seven major sites to be delivered through the Communities Plus program. It will deliver approximately 740 social housing units and 256 affordable rental housing units, in addition to private dwellings, seniors living and other community and retail facilities.

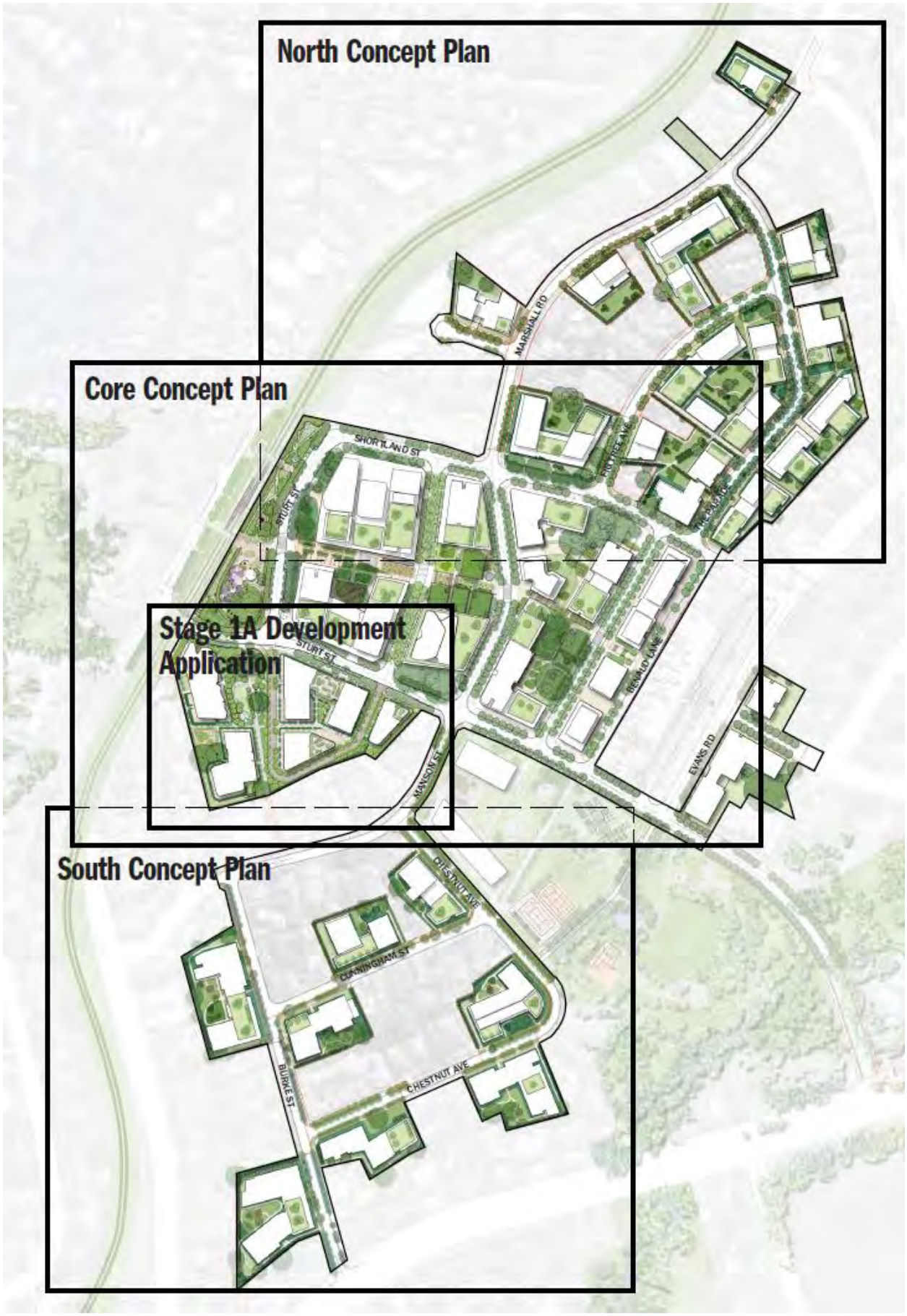
Pursuant to Section 4.22(1) of Division 4.4 of the EP&A Act, the Telopea CPA proposal seeks consent for:

- A mixed-use development including:
  - Approximately 4,700 dwellings, including a mix of social, affordable and market dwellings
  - Inclusion of a new retail precinct with a new supermarket, food and beverage, and speciality retail
  - Proposed childcare facility
  - Proposed combined library and community centre
  - Proposed combined Church, Residential Aged Care Facility (**RACF**) and Independent living unit's (**ILU**) facility
- Delivery of new public open space, including:
  - A new light rail plaza
  - Hill top park
  - Elyes pedestrian link
  - Open space associated with the proposed library
- Retention of existing significant trees
- Road and intersection upgrades
- Cycle way upgrades
- Upgrade of utility services

The Telopea CPA is divided into three precincts known as Core, North and East incorporating a total of 29 lots (refer Figure 3). The Concept proposal is further detailed in the Urban Design Report prepared by Bates Smart and Hassell.

In accordance with Section 4.22(4)(a) of the EP&A Act, further development application will be sought for the built form and detailed design of all stages of the development.

Figure 3 Telopea CPA – Precinct Plan



Source: Bates Smart and Hassell

1.2.2. Stage 1 Section 4.22(4)(b) Works

The first stage of works to be delivered (known as 'Stage 1A') is located within the Core precinct adjacent to the Parramatta Light Rail station. Development consent is sought under Section 4.22(4)(b) of the EP&A Act for the following development (**Section 4.22(4)(b) Works**) without the need for a further development consent:

- Site establishment works including demolition of all existing buildings and structures, tree removal, site preparation, excavation, and services augmentation.
- Construction of a new arrival plaza for the PLR known as 'Telopea Station Plaza' incorporating a hilltop park surrounding existing significant trees.
- Construction of the Sturt Street West extension over the PLR including Adderton Road intersection works and cycleway connection.
- Upgrade of Sturt and Shortland Streets including kerb realignment, new footpaths and verge landscaping, new indented parking bays, bus zones and pedestrian crossing.
- Construction of five residential buildings between 4 and 14 storeys in height with a shared basement, comprising a total of 443 studio, one-, two- and three-bedroom apartments.
- Construction of two basement levels with ingress/egress via Sturt Street and Winter Street comprising a total of 416 car parking spaces and 473 bicycle storage spaces, waste and loading facilities.
- Associated open space and landscaping works, including construction of a new public park and through site link, retention of existing significant trees, and ground and rooftop communal open space.
- Construction of a new publicly accessible mews street, providing access to the five residential buildings and new public park.
- Torrens Title Subdivision.

The Stage 1A proposal is further detailed in the Urban Design Report prepared by Plus Architecture (refer **Appendix J**) and Landscape Report prepared by Hassell (refer **Appendix K**).

Figure 4 Telopea Stage 1A Proposal

Source: Plus Architecture and Hassell

1.3. PROJECT OBJECTIVES

The landscape led Concept Plan approach aims to repair and reconnect the flora and fauna by implementing the following principles:

- **Repairing and Reconnecting**: The design aims to repair and reconnect the highly fragmented ecosystem using green infrastructure initiatives to create a biodiversity corridor between existing wildlife protection areas such as Vineyard Creek Reserve and Ponds Creek Reserve.
- **Creating a resilient place**: The design creates places for flora, fauna and people across green roofs, private and semi-private gardens, public plazas, tree lined streets, parks, connections to creek corridors, sports and recreation facilities as well as natural green spaces and community gardens.
- **The Green Grid – Building for the Future**: The design has been strategically planned with each 'grid' in mind; the recreational, ecological, hydrological and agricultural.

Through the integrated design of green infrastructure elements, the CPA is able to enhance the urban microclimate, air quality and water quality while reducing flood risk, ambient noise, carbon dioxide and urban heat island effect.

The project will investigate the opportunity to include a blackwater treatment plant that can irrigate the landscaped spaces and precinct street trees. This approach will enable the repaired and reconnected biodiversity corridor and green infrastructure to be resilient to climate change.

Through its renewal and revitalisation, Telopea will become a place of enhanced wellbeing: where natural systems are relinked and rehabilitated, where communities connect, where people have access to a range of activities, opportunities and pathways.

At the core of Telopea will be a mixed-use local centre, providing the foundation for a growing population and capitalising on government's investment in the public transport via the Parramatta Light Rail.

Telopea CPA has been configured with social and ecological resilience at the forefront. Telopea Square will be created around stands of existing Eucalypt, defining where new building clusters are located. Cross-streets and laneways stich the centre into surrounding neighbourhoods.

The following project objectives have been implemented through the development of the Concept Plan:

- **A green place**: Surrounding bushland corridors are connected by the generous Eyles Link spine – a collection of green spaces that support social and ecological systems
- **An accessible place**: Regional (light rail) and local (pedestrian/ cycle) connections run across flatter topographies, with local bus services looping the site, providing a well-integrated and accessible transport system.
- **An integrated place**: By considering an expanded site (including the existing church, library, school), greater community benefit can be delivered for Telopea's new and established residents.
- **A sustainable place**: Streets and spaces are the foundation for a neighbourhood-wide greywater system, with recycled water collected and used to irrigate landscape across the Telopea neighbourhood.
- **A social place**: Thoughtfully considered public spaces, buildings and programs, distributed throughout the entire site, support a cohesive but diverse community.

These project objectives are implemented through the public domain and built form frameworks, which provide key objectives which will be implemented through the concept design and future detailed design applications:

- **Streetscape hierarchy**: Telopea will have a network of logical and legible street connections with a focus on active and accessible movement
- **Public transport connections**: The Station Plaza brings together regional and local transport, including a new local shuttle bus for less mobile residents and visitors
- **Active transport**: The steep topography of the site is addressed by emphasising flatter cross-connections and creating better cycle connectivity (through on- and off-road paths and "pit stops" at the light rail, school and Sturt Park)

- **Open spaces**: Parks and plazas, productive gardens and green rooftops are distributed across the Telopea neighbourhood, with pedestrian linkages creating an integrated and connected network
- **Social spaces**: Spaces around the light rail station are activated by retail, commercial and community uses with a new church, library, recreation and community rooms distributed along the main central spine and parklands.

1.4. PROJECT HISTORY

1.4.1. Telopea Precinct Masterplan

The Telopea CPA forms part of the Telopea Precinct. A masterplan was prepared for Telopea Precinct and submitted by LAHC and Parramatta City Council to the Department of Planning, Industry and Environment (**DPIE**) to amend the *Parramatta Local Environmental Plan 2011*. The masterplan seeks to renew the precinct through redeveloping social housing to provide more homes and a greater housing mix along with an upgraded public domain and community facilities. The Telopea Precinct was divided into two stages:

- Stage 1: Rezoning of land within the masterplan area prepared and consulted upon by LAHC in partnership with Parramatta City Council which includes land in LAHC ownership and private sites.
- Stage 2: Investigation of opportunities for rezoning in other parts of the precinct.

Within the CPA area, there are around 486 existing dwellings with approximately 34% of the housing stock owned by LAHC, generally located in areas close to the station. The masterplan and associated statutory planning controls were exhibited from October to November 2017 and rezoned in August 2018.

Key components of the masterplan include:

- A mix of dwelling types focusing new development close to the future light rail stop;
- Allow heights up to 70m (approximately 22 storeys) with retail or community uses at ground level, adjacent to the future light rail stop; and
- New light rail stop entry plaza.

The Telopea CPA is currently owned by LAHC and comprises of 486 social housing dwellings. The redevelopment of the CPA is part of the NSW Communities Plus program, which seeks to deliver new communities where social housing blends with private and affordable housing with good access to transport, employment, improved community facilities and open space.

The Communities Plus program seeks to leverage the expertise and capacity of the private and non-government sectors. In December 2019, The Minister for Water, Property and Housing announced that Affinity Consortium, comprising Frasers and Hume Community Housing, was the successful proponent to develop the sites. The Concept and Stage 1 SSD DA represents the first step in the delivery of the planned redevelopment of the Telopea Precinct and will provide the first integrated social and market housing development on the site.

1.5. PRELIMINARY CONSULTATION

Frasers has undertaken extensive consultation with the local community, Parramatta City Council, NSW Government Agencies, utilities providers and other key stakeholders during the development of the concept proposal. A summary of the feedback is detailed within **Appendix MM**.

A detailed summary of consultation undertaken during the preparation of the EIS is outlined in **Section 5.**

Figure 5 Telopea Precinct Masterplan

Source: Land and Housing Corporation/ Parramatta City Council

1.6. FEASIBLE ALTERNATIVES

Under the provisions of *Environmental Planning and Assessment Regulation 2000*, Schedule 2, Clause 7 there is a requirement to analyse any feasible alternatives to the proposed manner of carrying out the development, including the consequences of not carrying out the development.

Frasers and LAHC identified project alternatives which were considered in respect to the identified need for the proposal. Each of these options is listed and discussed in the following table.

Table 1 Project Alternatives

Option	Assessment
Do Nothing	The 'do nothing' option (i.e. no development of the Site) is not a feasible option. Strategic planning undertaken by the NSW Government, City of Parramatta Council and LAHC in 2017 and the subsequent rezoning of land Telopea in December 2017 confirmed the importance of the light rail corridor and planned station precincts as a catalyst for the urban renewal of these areas to facilitate the delivery of the 30-minute cities vision and to accommodate the projected population growth. The 'do nothing' option would sacrifice years of strategic planning and community engagement and a genuine and exciting opportunity to create a vibrant and integrated high-density mixed-use precinct in The opportunity cost of not pursuing the urban renewal of the Site would be significant, given the multitude of benefits to Greater Sydney.
Alternative Location	This location has been chosen to replace existing housing stock within Telopea. The existing housing stock within the CPA was built in the 1960's and 1970's and mostly consists of units without facilities for older people or people with disabilities. Frasers on behalf of LAHC seek to realise the optimal development potential of its housing stock at Telopea, in line with the State Government's stated intention for the realisation of optimal uses of land in the immediate vicinity of major infrastructure. An alternative location is considered impractical and fails to meet the NSW Government's vision for the Telopea Precinct. This would fail in turn to maximises land use opportunities surrounding the new Parramatta Light Rail and be inconsistent with the goals and directions of the Greater Sydney Region Plan and Western District Plan that identify the site a growth area.
Alternative Design	The Concept Proposal has been subject to a rigorous design development process involving consideration of various options for the Site and overseen by the LAHC and Parramatta City Council. The proposed Masterplan has been designed to achieve design excellence on a significant scale and in a form to stimulate rejuvenation of the Telopea locality. As such, the site will be a catalyst for a high quality urban environmental design. An alternative design would impact on the ability to achieve the overall vision of Telopea.

Option	Assessment
The Proposal (preferred option)	It is considered that the redevelopment of the Telopea CPA and Stage 1A development presents as the most strategically viable of all the options. The proposal will: ▪ Provide a mixture of different housing types to suit the variety of needs across different demographic groups within the area. ▪ Introduces several different housing products including high quality social housing, which give opportunities for residents to move into an area, which has traditionally comprised of detached dwellings. ▪ Provides tenure blind design and ongoing commitment to programs fostering community integration enables all residents to connect to the precinct and form a community. ▪ Creates a mixed-use precinct including a full-size supermarket, new food and beverage specialty retail to give residents access to goods and services within walking distance. In addition, it enhances a sense of place through the activation of retail. ▪ Distributes open space to ensure every resident is within walking distance to a park. Overall, the CPA seeks to revitalise Telopea through delivering quality homes with access to goods and services. The proposed design will ensure residents will be able to enjoy well designed and accessible open space, community facilities, and services.

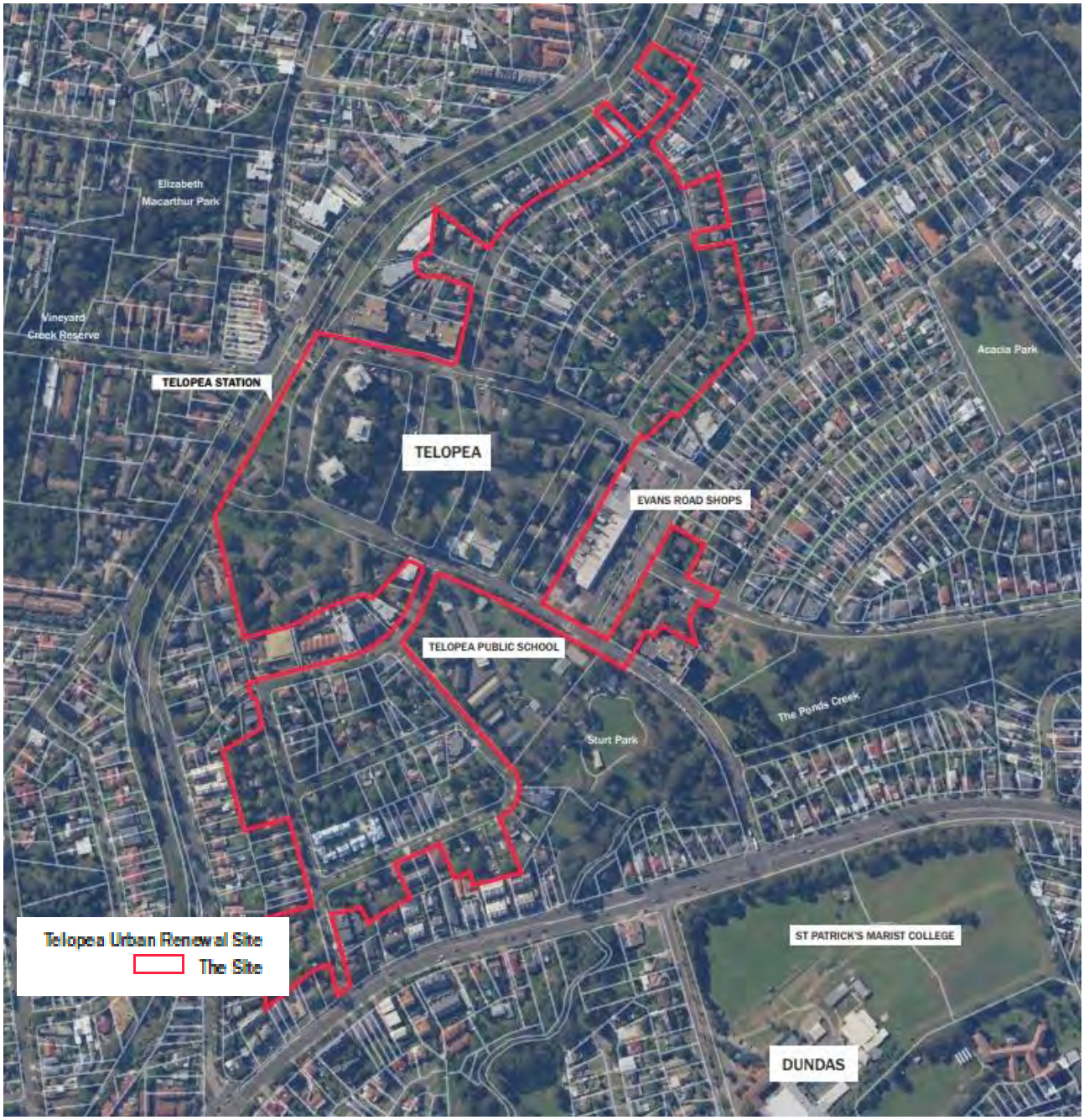
2. STRATEGIC CONTEXT

2.1. PROJECT AREA

2.1.1. Site Description

The Telopea CPA is approximately 13.4 hectares (**ha**) and comprises of 99 individual allotments as shown in Appendix C and **Figure 6**. It currently accommodates 486 social housing dwellings across a mix of single dwellings, townhouses, and 3-9 storey residential flat buildings. The CPA also currently accommodates a range of existing community facilities including Dundas Community Centre, Dundas Branch Library, Community Health Centre, Hope Connect Church and Telopea Christian Centre. The entire CPA is owned and managed by LAHC.

Figure 6 Telopea Concept Plan Area Lot Boundaries



Source: Land and Housing Corporation

2.1.2. Future Directions for Social Housing in NSW and Communities Plus Program

Future Directions for Social Housing in NSW (**Future Directions**), published in 2016, sets out the NSW Government's vision for social housing over the next 10 years. Future Directions is underpinned by three strategic priorities:

- More social housing;
- More opportunities, support and incentives to avoid and/or leave social housing; and
- A better social housing experience.

Achieving these strategic priorities will be measured against the following outcomes:

- Increase successful transitions out of social housing by 5%.
- Increase the proportion of young people who successfully move from specialist homelessness services to long term stable accommodation by 10%.

To deliver Future Directions, the NSW Government is collaborating with the private sector, not-for-profit sector and all levels of government. By 2025, Future Directions is seeking to transform the social housing system in NSW from one which is dominated by the public sector to a new system which is characterised by:

- Greater involvement of private and non-government partners in financing, owning and managing a significantly expanded stock of social and affordable housing assets;
- Expanded support in the private rental market, reducing demand on social housing and the social housing wait list;
- More competition and diversity in provision of tenancy management services through the expanded capacity and capability of community housing providers; and
- Housing assistance being seen as a pathway to independence and an enabler of improved social and economic participation for tenants living in vibrant and socio-economically diverse communities.

To achieve these goals, Future Directions has set the following strategies:

- Significant expansion and redevelopment of stock through partnership with private sector developers and finance;
- Transferring significant tenancy management responsibility to non-government housing providers; and
- "Wrap-around" services to support tenants, build their capabilities and take advantage of the economic opportunities in strengthening our economy.

Communities Plus is a government program which will facilitate non-government and private sector partnership to redevelop Land and Housing Corporation (**LAHC**) sites throughout metropolitan Sydney and regional NSW. Communities Plus is based on an asset management framework that leverages the value of the existing portfolio to accelerate supply. Communities Plus will redevelop LAHC land by engaging private sector developers and community housing providers to design, fund and build social, affordable and private housing. As each development is completed, new social housing properties are handed over to LAHC as payment for the land making the program entirely self-funding.

One of the actions for Future Directions is to *'increase redevelopment of Land and Housing Corporation properties to renew and grow supply'*, which will be achieved through Communities Plus. This action is guided by the following goals:

- Deliver redevelopment projects on LAHC sites throughout NSW through Communities Plus;
- Align redevelopment projects with Urban Growth priority renewal areas;
- Work with planning agencies and authorities to ensure appropriate rezoning is possible; and
- Ensure large redevelopment target of a 70:30 ratio of private to social housing to enable more integrated communities (generally with an increased number of social housing where practicable).

The Telopea CPA has been identified as one of seven major sites to be delivered through the Communities Plus program. It will deliver approximately 740 social housing units and 256 affordable rental housing units, in addition to private dwellings, seniors living and other community facilities.

2.1.3. Existing Development

The Telopea CPA is primarily residential in character and includes existing social housing owned by LAHC. A neighbourhood shopping centre known as the Waratah Shops is located in Benaud Place around 400m east of the Telopea Station. This shopping centre includes 17 local shops and an IGA supermarket.

Built form throughout Telopea varies considerably. At the top of the hill, three 9-storey towers, known as the three sisters, are set in expansive gardens with substantial trees. Stepping down the hill, irregularly placed three storey flat buildings are separated by expanses of lawn and mature trees. Outside the core, buildings are a mix of small residential flat buildings and one/two storey residential homes on Torrens title lots. At the base of the hill fronting Evans Road, a strip of two-storey retail shops provides local convenience amenity.

There have been new apartment buildings constructed since 2012 including two apartment buildings adjacent to the rail line north of the three towers which are five to six storeys. In addition, there is a six-storey apartment building on Sturt Street opposite of Sturt Park, and a four storey apartment building in Evans Road adjoining the Waratah Shops.

2.1.4. Surrounding Development Context

The Telopea CPA is located in the Parramatta Local Government Area (**LGA**) around 4 kilometres (**km**) north-east of the Parramatta Central Business District (**CBD**), 6km south-west of Macquarie Park Strategic Centre and 17km from Sydney CBD. The site is located within the Telopea Precinct which forms part of the Greater Parramatta to Olympic Park (**GPOP**) Growth Area.

The site is predominately within a residential area and includes a neighbourhood centre known as Waratah Shops. Surrounding development includes the following:

- **North:** mixture of residential land uses comprising of single-family dwellings to 5-6 storeys residential flat buildings.
- **South:** low density residential and Telopea Public School.
- **East:** Waratah Shops including an IGA Supermarket and Australia Post.
- **West:** Telopea Light Rail Station and light rail easement. Further west, land uses comprise of low density residential.

2.1.4.1. Open Space

There is a range of open space provided in the vicinity of the Telopea CPA including:

- Sturt Park is located adjacent to Sturt Road to the south of the Telopea Public School. It is approximately 3 ha and its facilities include paths, sport courts, children's play equipment and skate park;
- Acacia Park is located approximately 700m east of Telopea Station and is around 1.5 ha. It contains children's play equipment;
- Homelands Reserve is located north-west of Telopea Station and contains sporting fields and children's play equipment. It is approximately 2 ha;
- The Ponds Walk is a 6.6km track which runs alongside The Ponds Creek, which connects Carlingford to Rydalmere.
- There are three active outdoor sports and recreation facilities within 1km of the Telopea CPA including:
  - Dundas Park, which is 6.5 ha and is a major district-level sporting facilities;
  - Sir Thomas Mitchell Reserve, which is 3.9ha and is a major district level sporting facility; and
  - Upjohn Park, which is 14 ha and provides a large multi-purpose sporting and recreational space.

Figure 7 Existing built form in Telopea

Picture 1 View looking north at Telopea CPA Core

Picture 2 Three storey brick building stepping down the hill

Picture 3 Eyles Street from Wade Lane

Picture 4 Sturt Park Basketball Court

Picture 5 Telopea Public School

Source: Hassell/ Urbis

Picture 6 Dundas Branch Library and Community Facility

2.1.4.2. Social Infrastructure

There is a range of social and community infrastructure within or adjacent to the Telopea CPA including:

- Dundas Community Centre which includes the Dundas Valley Branch Library, community hall with capacity for 200 people, meeting rooms, community health service and offices leased by Dundas Area Neighbourhood Centre;
- Hume Community Learning Space, provided by community housing provider, offering rooms for courses and classes;
- Telopea Public School on a 2ha site; and
- Early childhood education and childcare facilities including:
  - Waratah Montessori Preschool on the Telopea Public School site; and
  - Sophie's Cottage Kindergarten.

In addition, the Dundas Community Health Service, co-located within Dundas Community Centre offers mental health support. Westmead Hospital and Cumberland Hospital are located within 4km of the Telopea CPA.

Figure 8 Site context map

Source: Urbis

2.1.4.3. Topography

A ridge line runs through Telopea CPA in the vicinity of the light rail easement, where land slopes to the east down to the Ponds Creek. The sloping topography of Telopea is amongst its most distinctive features. From the top of the hill, with an RL of approximately 61 metres, the site falls generally down to Evans Road at RL35m. This fall of 26 metres across 350 metres culminates in The Ponds Creek, which traverses through the bottom of Sturt Park.

2.1.4.4. Heritage

There are two registered Indigenous site within the Telopea Precinct area. They are identified as artefact scatters and generally located within:

- Near the northern boundary of Acacia Park and on Evans Road; and
- Within Sturt Park in connection with Iona Creek.

There is also one non-Indigenous heritage item listed as a local heritage item and is on the State Heritage Register (**SHR**), known as Redstone. Redstone is a residential dwelling designed by Walter Burley Griffin and was constructed in 1935.

2.1.4.5. Vegetation

Three types of vegetation have been identified within the Telopea Precinct area, including:

- Urban native/exotic and private land and areas of public domain;
- Alluvial Woodland within some part of Sturt Park. Alluvial Woodland is an Endangered Ecological Community (**EEC**) under the *Biodiversity Conservation Act 2016* (**BC Act**); and
- Areas of Blue Gum High Forest in private residential sites. Blue Gum Forest is a critically endangered ecological community (**CEEC**) under the BC Act.

The areas of Alluvial Woodland and Blue Gum Forest are identified as being of high ecological constraint. Hollow bearing trees have been identified generally near riparian corridors which can provide habitat for fauna. There is also significant vegetation within close vicinity to the CPA including the heritage listed Rapanea Community Forest.

2.1.4.6. Road Network

There are no State roads which run through Telopea CPA. The closest State roads are Pennant Hills Road to the north, Marsden Road to the east, Silverwater Road to the south and James Ruse Drive further west.

Kissing Point Road runs south of the CPA. Adderton Road provides a north-south route through the Telopea Precinct connecting to Pennant Hills Road and Kissing Point Road with a bridge over the rail line near the intersection with Winter Street. This is the only road crossing over the rail line within the vicinity of the Telopea CPA.

2.1.4.7. Public Transport

The PLR is a NSW Government major infrastructure project. Stage 1 from Westmead to Carlingford via Parramatta CBD and Camellia is currently underway with Transport for NSW converting the former T9 Carlingford Railway Line from heavy rail to light rail. Stage 1 covers 16 light rail stops which includes a stop at Telopea. The PLR is anticipated to open in 2023.

The light rail will improve access for residents of Telopea with better connections to jobs, hospitals, universities, entertainment hubs, and sport and leisure areas. The light rail service is planned to run from early morning through to late at night with services every eight and a half minutes throughout the day.

In addition to the future light rail, Telopea is serviced by three public bus routes:

- 513 route from Carlingford to Meadowbank Wharf
- 535 route from Carlingford to Parramatta
- 545 route from Macquarie Park to Parramatta

2.2. STRATEGIC POLICY FRAMEWORK

In accordance with the requirements of the SEARs, the proposal's consistency with the relevant strategic planning documents and policies is included in **Table 2** below.

Table 2 Strategic Policy Framework

Document	Aims Relevant to the Proposal	Strategic Alignment
NSW Premiers Priorities	***Reducing homelessness:*** *Reduce street homelessness across NSW by 50 per cent by 2025* ***Greener public spaces:*** *Increase the proportion of homes in urban areas within 10 minutes' walk of quality green, open and public space by 10 per cent by 2023* ***Greening our city:*** *Increase the tree canopy and green cover across Greater Sydney by planting one million trees by 2022.*	The redevelopment of the Telopea CPA supports a range of housing types and sizes to meet the needs of different households. A key component of this redevelopment is the provision of social housing. This creates opportunities to provide housing to directly combat homelessness and relieve housing stress for very low to low incomes households. In addition, the CPA improves outcomes to greener public spaces through the embellishment of existing parks, creation of new public spaces such as the Community hub, and creation of through site links. The Concept Plan has recognised the importance of preserving existing trees to support a mature tree canopy within the CPA. The strategic location of public and private open space across the CPA has enabled existing trees to be preserved for the continued enjoyment of Telopea residents.
A Metropolis of Three Cities – Greater Sydney Region Plan	***Objective 1:*** *Infrastructure supports the three cities* ***Objective 2:*** *Infrastructure aligns with forecast growth – growth infrastructure compact* ***Objective 3:*** *Infrastructure adapts to meet future needs* ***Objective 6:*** *Services and infrastructure meet communities' changing needs*	The Region Plan recognises urban renewal areas, such as Telopea, as an opportunity to meet the 30-minute city vision through locating residents close to major employment and education centres such as Parramatta CBD and Macquarie Park. The delivery of the PLR and redevelopment of services within the Telopea CPA, such as the library and community centre, open spaces and Telopea Public School reflects the infrastructure and services necessary for Telopea's existing and future residents.

Document	Aims Relevant to the Proposal	Strategic Alignment
	Objective 7: *Communities are healthy, resilient and socially connected* ***Objective 10:*** *Greater housing supply* ***Objective 11:*** *Housing is more diverse and affordable* ***Objective 12:*** *Great places that bring people together* ***Objective 14:*** *A Metropolis of Three Cities – integrated land use and transport creates walkable and 30-minute cities* ***Objective 19:*** *Greater Parramatta is stronger and better connected*	Telopea is identified within the Greater Parramatta Growth Area, which is a key area to support delivery of new homes within 30 minutes of employment, education, and green spaces. The Telopea CPA is one of 14 major sites identified for the Communities Plus program. Through this program, Frasers and LAHC have worked together to develop a range of housing products to support housing affordability and keep residents close to amenity including the following housing typologies: – Social Housing – Seniors Housing – Independent Living Units – Key Workers Housing – Market Rate – Residential Aged Care Facility The Concept Plan has been designed reflect the expectations of the 30 minute city and promote walkability across the precinct by providing a fine grain network of pedestrian paths and road network with direct access to the PLR.
	Objective 30: *Urban tree canopy cover is increased* ***Objective 31:*** *Public open space is accessible, protected and enhanced*	The Concept Plan has strategically located public and private open space to enable the retention of mature trees to support the urban tree canopy. In addition, additional trees are proposed along landscape boundaries and road reserves which further contribute to increasing the urban tree canopy within the Telopea CPA. All residents within the Concept Plan are within 400m walking distance to open space.
Central City District Plan	***Planning Priority C1:*** *Providing services and social infrastructure to meet people's changing needs* ***Planning Priority C2:*** *Fostering healthy, creative, culturally rich and socially connected communities* ***Planning Priority C5:*** *Providing housing supply, choice and affordability with access to jobs, services and public transport* ***Planning Priority C9:***	The District Plan's Structure Plan identifies Telopea as a local centre with opportunities for urban renewal building off opportunities created by the PLR. The proposal remains consistent with the Central City District Plan through the provision of housing supply, choice and affordability, with access to jobs, services and public transport in an identified area for urban renewal.

Document	Aims Relevant to the Proposal	Strategic Alignment
	Delivering integrated land use and transport planning and a 30-minute city ***Planning Priority C16**: Increasing urban tree canopy cover and delivering Green Grid connections* ***Planning Priority C17:** Delivering high quality open space*	
Future Transport 2056	Future Transport 2056 is built on the same vision of the 30-minute city, which it says will be underpinned by an integrated network of city-shaping, city-serving, and centre-servicing corridors. To support this vision, the plan envisions transport networks in the Central River City will be developed in order to support residents, sustainability and job growth in the District.	The plan identifies PLR as a transport corridor in the Central River City for providing improved connections from suburban residential areas to the Parramatta CBD and Westmead Precinct. The proposed development will facilitate the delivery of city shaping corridors through the extension of Sturt Street over the PLR. This will create 30-minute connections to and from the site to the broader region. It also strategically places homes adjacent to the PLR, which will provide a steady user base for this significant city-shaping infrastructure item.
City of Parramatta Local Strategic Planning Statement (LSPS)	***Planning Priority 3:** Advocate for improved public transport connectivity to Parramatta CBD from the surrounding district* ***Planning Priority 4:** Focus housing and employment growth in the GPOP and Strategic Centres, as well as staged housing release consistent with the Parramatta Local Housing Strategy* ***Planning Priority 6:** Provide for community infrastructure and recreation opportunities* ***Planning Priority 7:** Provide for a diversity of housing types and sizes to meet community needs into the future*	The LSPS Structure Plan identifies Telopea as a 'Growth Precinct'. Growth Precincts are identified in the LSPS for higher density growth, usually in combination with some minor retail and businesses services and have supporting infrastructure and facilities. The Telopea CPA reflects the sites role as a Growth Precinct and will provide additional dwellings, retail offerings and community infrastructure within the LGA.

Document	Aims Relevant to the Proposal	Strategic Alignment
	Planning Priority 8: *Incentivise affordable rental housing delivery and provide for permanent affordable housing* ***Planning Priority 10:*** *Improve active walking and cycling infrastructure and access to public and shared transport* ***Planning Priority 14:*** *Protect and enhance our trees and green infrastructure to improve liveability and ecological health*	
Interim Greater Parramatta Land Use and Infrastructure Implementation Plan	Telopea is identified as Next Generation Living from Camellia to Carlingford.	The vision of Next Generation Living is a mix of medium to high density housing types with nearby education, research, retail, recreation and entertainment facilities providing all the conveniences of 'inner city' living. The Telopea CPA responds to this vision by providing a mix of housing close to major infrastructure links such as the PLR.
Telopea Masterplan	The key principles for the planning of the precinct are to provide for: *A vibrant, cohesive community;* *More homes and greater housing mix to provide housing choice;* *More homes close to public transport, capitalising on the benefits of the future PLR;* *Improved connections and better access throughout the precinct;* *New and upgraded public spaces, community facilities and potential new town centre to meet the needs of the existing and new community; and* *Revitalisation of the whole of Telopea.*	The development of the Telopea Concept Plan and Stage 1A development have built upon the principles and built form structure set out in the Telopea Masterplan.

2.3. CUMULATIVE IMPACTS

Due to the size and scale of the Telopea CPA, other development in the area is unlikely to impact on the timeframes or mitigation measures outlined in this EIS. During the staged construction of this project construction management and other associated impacts such as traffic and waste will be managed to align with the recommendations and mitigation measures outlined in **Section 6** of this report and **Appendix NN**.

3. PROJECT DESCRIPTION

3.1. OVERVIEW

In summary, the SSD DA seeks staged development consent for the Telopea CPA for:

- A Concept Proposal for development of the Telopea CPA in stages as described in the Concept Proposal below; and
- Stage 1 Section 4.22(4)(b) Works as described in Section 3.6 below.

3.1.1. Concept Proposal

The Concept Proposal sets out the maximum building envelopes and gross floor area (**GFA**) that can be accommodated across the CPA, and identifies the land uses and public infrastructure upgrades to be provided. The Concept proposal will establish the planning and development framework from which any future development application will be assessed against.

The Telopea Concept Plan Area has been identified as one of seven major sites to be delivered through the Communities Plus program. It will deliver approximately 740 social housing units and 256 affordable rental housing units, in addition to private dwellings, seniors living and other community facilities.

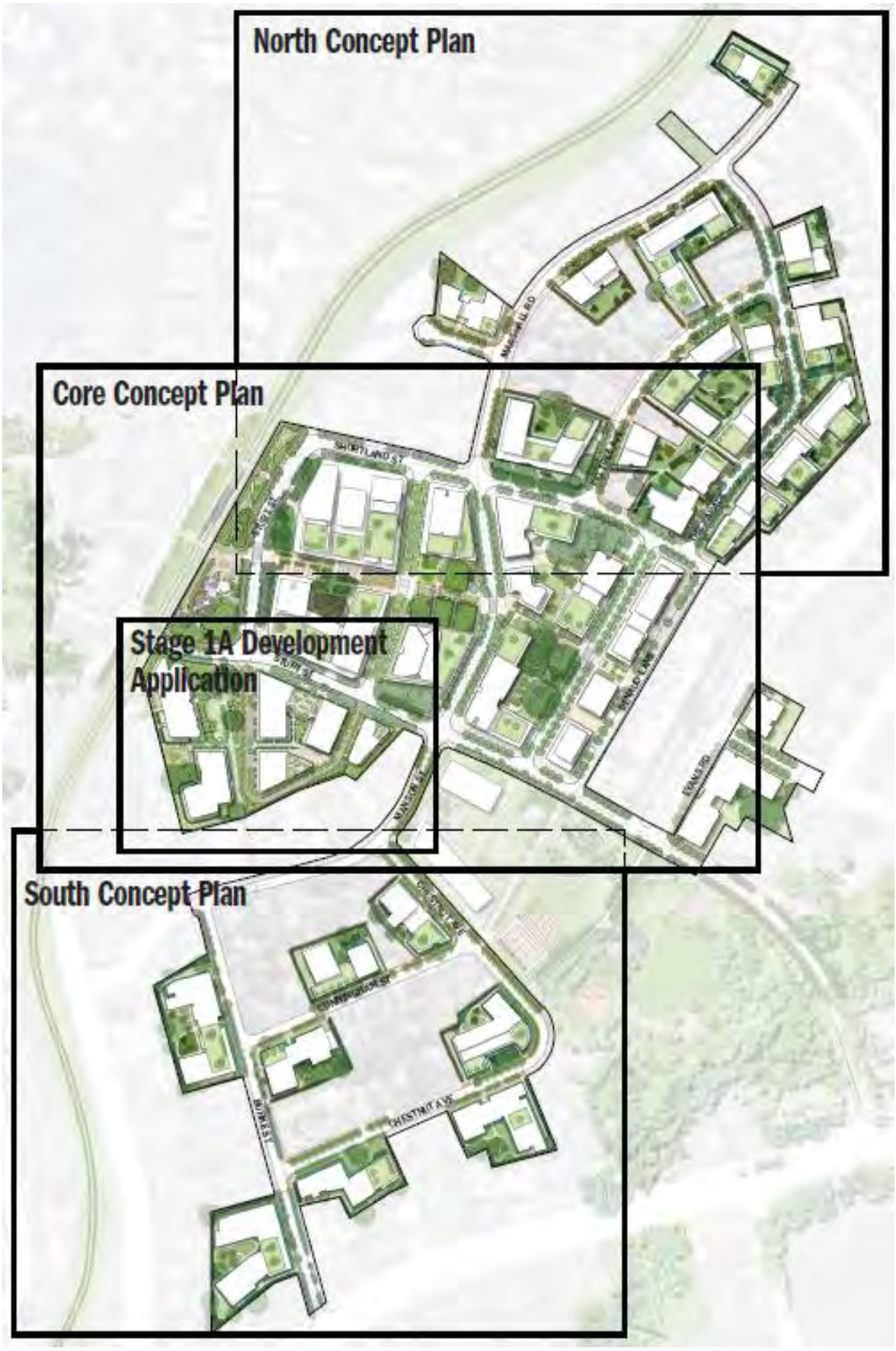
Pursuant to Section 4.22(1) of Division 4.4 of the EP&A Act. The Telopea CPA proposal seeks consent for:

- A mixed-use development including:
  - Approximately 4,700 dwellings, including a mix of social, affordable and market dwellings
  - Inclusion of a new retail precinct with a new supermarket, food and beverage, and speciality retail
  - Proposed childcare facility
  - Proposed combined library and community centre
  - Proposed combined Church, Residential Aged Care Facility (**RACF**) and Independent living unit's (**ILU**) facility
- Delivery of new public open space, including:
  - A new light rail plaza
  - Hill top park
  - Elyes pedestrian link
  - Open space associated with the proposed library
- Retention of existing significant trees
- Road and intersection upgrades
- Cycle way upgrades
- Upgrade of utility services

The Telopea CPA is divided into three precincts known as Core, North and East incorporating a total of 29 lots (refer Figure 9). The Concept proposal is further detailed in the Urban Design Report prepared by Bates Smart and Hassell.

In accordance with Section 4.22(4)(a) of the EP&A Act, further development applications will be prepared for the built form and detailed design of all stages of the development.

Figure 9 Concept Master Plan



Source: Bates Smart and Hassell

3.1.2. Land Use

To ensure the Concept Plan delivers a seamlessly integrated community of private, affordable, and social housing dwellings complemented by uses to support the future community, a range of land uses have been established. The Concept Plan is underpinned by the principle of tenure blindness, with no external indicators of tenure type in the design and layout of the community.

A detailed description of each land use is outlined below.

Table 3 Proposed Land Use across the CPA

Land Use	Description
Residential – Private Housing	Privately owned residential dwellings will be evenly dispersed in residential flat buildings across the site. The indicative designs for each block show that there will be approximately 3,704 private dwellings across the CPA.
Residential – Social Housing	Social housing is secure and affordable rental housing for people on low incomes with housing needs. It includes public, community and Aboriginal housing. The social housing provided will be in the form of community housing and managed by Hume Community Housing. There will be approximately 740 social housing dwellings (including ILUs) across the CPA.
Residential – Affordable Housing	Affordable housing is housing that is appropriate for the needs of a range of very low to moderate income households and priced so that these households are also able to meet other basic living costs such as food, clothing, transport, medical care, and education. As a rule of thumb, housing is usually considered affordable if it costs less than 30% of gross household income. Affordable housing will be managed by a community housing provider and will consist of 256 affordable housing dwellings.
Seniors Housing – Independent Living Units	Independent living units (ILUs) are *'dwellings provided for housing seniors or people with a disability, where private facilities for significant cooking, sleeping, and washing are included in the dwelling or part of the building, but where clothes washing facilities or other facilities for use in connection with the dwelling or part of the building may be provided on a shared basis*'. A mix of market and social ILUs will be provided.
Seniors Housing – Residential Aged Care Facility	A residential care facility is residential accommodation for seniors or people with a disability that includes— (a) meals and cleaning services, and (b) personal care or nursing care, or both, and (c) appropriate staffing, furniture, furnishings, and equipment for the provision of that accommodation and care, not being a dwelling, hostel, hospital, or psychiatric facility. This facility will be collocated with the church and market ILUs.

Land Use	Description
Community Facilities	A library and community centre will be provided at Block C3 in a two-storey podium with residential above. The library is accommodated in the northern half, with a continuous 'veranda' on the northern frontage opening on the canopy of three retained Tallow wood trees. The southern half of the podium is dedicated to the community centre.
Retail	Adjacent to the light rail station, a local retail centre is proposed within the ground floor podium of the core precinct. This precinct will provide a range of uses including but not limited to food and drink premises, health and medical services, supermarket, childcare and general retail premises. Alongside the station, it is proposed to accommodate a dining precinct with outdoor seating and food and beverage shops. The outdoor seating and food and beverage precinct wrap into a central square with casual seating, landscaping, community art, performance, and meeting places.
Open Space	Open space has been arranged across the site to provide a mix of public and communal open space at both ground and roof level. Consistent with the requirements of SEPP 65 and the ADG, the overall precinct provides >25% of the site as communal open space. Retained trees are located within deep soil zones in a mix of public open spaces, front setbacks, rear setbacks, and central courtyards. Description of the range of open spaces is provided in the Urban Design Report prepared by Bates Smart and Hassell enclosed in Appendix G.

Table 4 Proposed Land Use per development block

Development Block	Proposed Land Use(s)
Core Area	
C1	Retail Premises (including supermarket and food and drink premises) Residential Accommodation Health and Medical Services
C2	Retail Premises (including food and drink premises) Childcare Residential Accommodation Social Housing Affordable Housing Indoor Recreation Facility to allow for a range of uses such as children's play area, gymnasium, cinema, wellness centre, swimming pool and the like Commercial premises for offices and co-working spaces

Development Block	Proposed Land Use(s)
C3	Library Community Centre Residential Accommodation
C4	Church (place of public worship) Conference venue and function facilities Commercial premises for offices and co-working spaces Indoor recreation and entertainment facilities to allow for a range of uses such as children's play area, gymnasium, cinema, wellness centre, swimming pool and the like Community facility for uses such as a men's shed Retail premises (including food and drink premises) Residential accommodation including affordable housing and seniors housing to allow for residential aged care, independent living units and assisted living units Tourist and visitor accommodation Allied health
C5	Residential Accommodation Affordable Housing
C6	Residential Accommodation Social Housing
C7	Residential Accommodation Social Housing
C8	Residential Accommodation
C9 (Stage 1A)	Residential Accommodation
E1	Residential Accommodation
E2	Residential Accommodation
North Precinct	
N1	Social Housing
N2	Residential Accommodation
N3	Residential Accommodation
N4	Residential Accommodation

Development Block	Proposed Land Use(s)
N5	Residential Accommodation
N6	Residential Accommodation
N7	Residential Accommodation Social Housing
N8	Social Housing
N9	Residential Accommodation
N10	Residential Accommodation
South Precinct	
S1	Social Housing
S2	Residential Accommodation
S3	Residential Accommodation
S4	Residential Accommodation
S5	Affordable Housing
S6	Residential Accommodation
S7	Residential Accommodation
S8	Residential Accommodation

3.1.3. Staging Strategy and Project Timing

The Telopea CPA is divided into three precincts:

- Core;
- North; and
- South

The staging strategy maintains a consistent tenure split between social and market dwellings and to ensure that the necessary infrastructure comes online to service the relevant stages. Multi-core buildings ensure that different tenures can co-exist within the same tenure-blind buildings.

As illustrated in the Staging Plan (**Figure 10**) development will commence at the top of the hill, with Stage 1A including the station plaza, the new rail crossing, existing road upgrades and redevelopment of the Polding Place site. The remainder of the core will then be progressively developed moving down the hill in Stages 1B to 1F. The northern precinct will then be developed iteratively in Stages 2A and 2D. Stage 3A including lot S1, E1, and E2. The final stage 3B includes all of the southern precinct sites.

It is anticipated that Telopea will be progressively redeveloped over a period of 15-20 years.

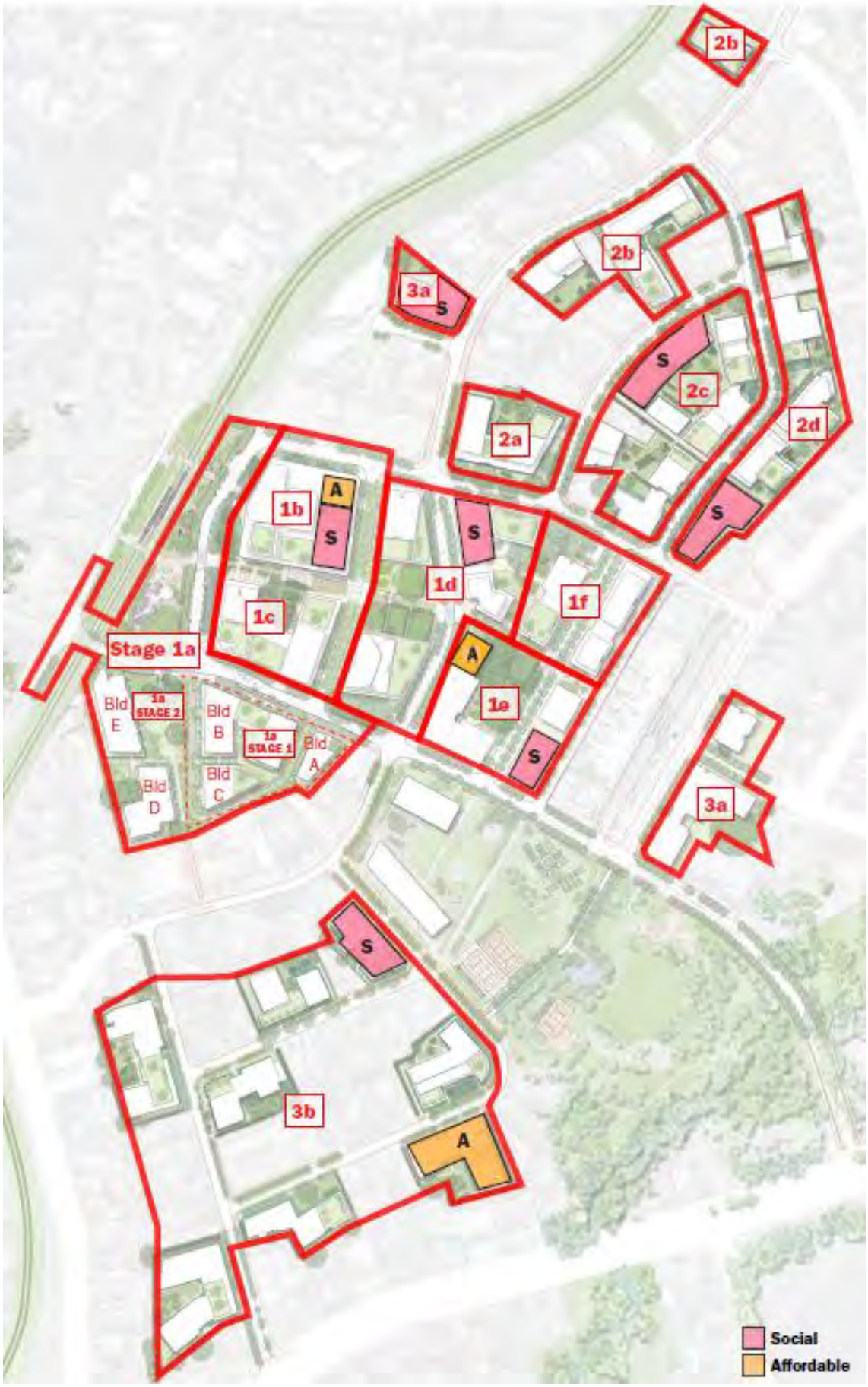
Depending on market conditions it is expected the redevelopment will occur in 3 Stages, outlined in **Table 5**.

Table 5 Proposed Staging

Stage	**Delivery**
Stage 1 (2023 – 2029)	Approximately 2,000 dwellings in areas closest to station Focus on delivering community benefit Supporting the light rail project Building community
Stage 2 (2029 – 2035)	Approximately 1,700 dwellings Focus on diversity of dwelling typologies Neighbourhood streetscapes
Stage 3 (2035 – 2038)	Approximately 1,000 dwellings Focusing on remaining small, development lots

The staging described in the staging strategy is of a general nature and does not reflect the final staging of development under the Concept Proposal. The proposed Stage 1 Section 4.22(4)(b) works will be carried out first and further development applications required for Stages 1, 2 to 3 in this staging strategy may be carried out in any order and any combination and may be combined or carried out simultaneously.

Figure 10 Telopea Staging Plan



Source: Bates Smart

3.1.4. Building Height

The Concept DA seeks approval for maximum heights for each development block generally consistent with the maximum height limits prescribed in the *Parramatta Local Environmental Plan 2011* (PLEP 2011). Some development blocks have multiple maximum heights where the LEP height limit varies across the block.

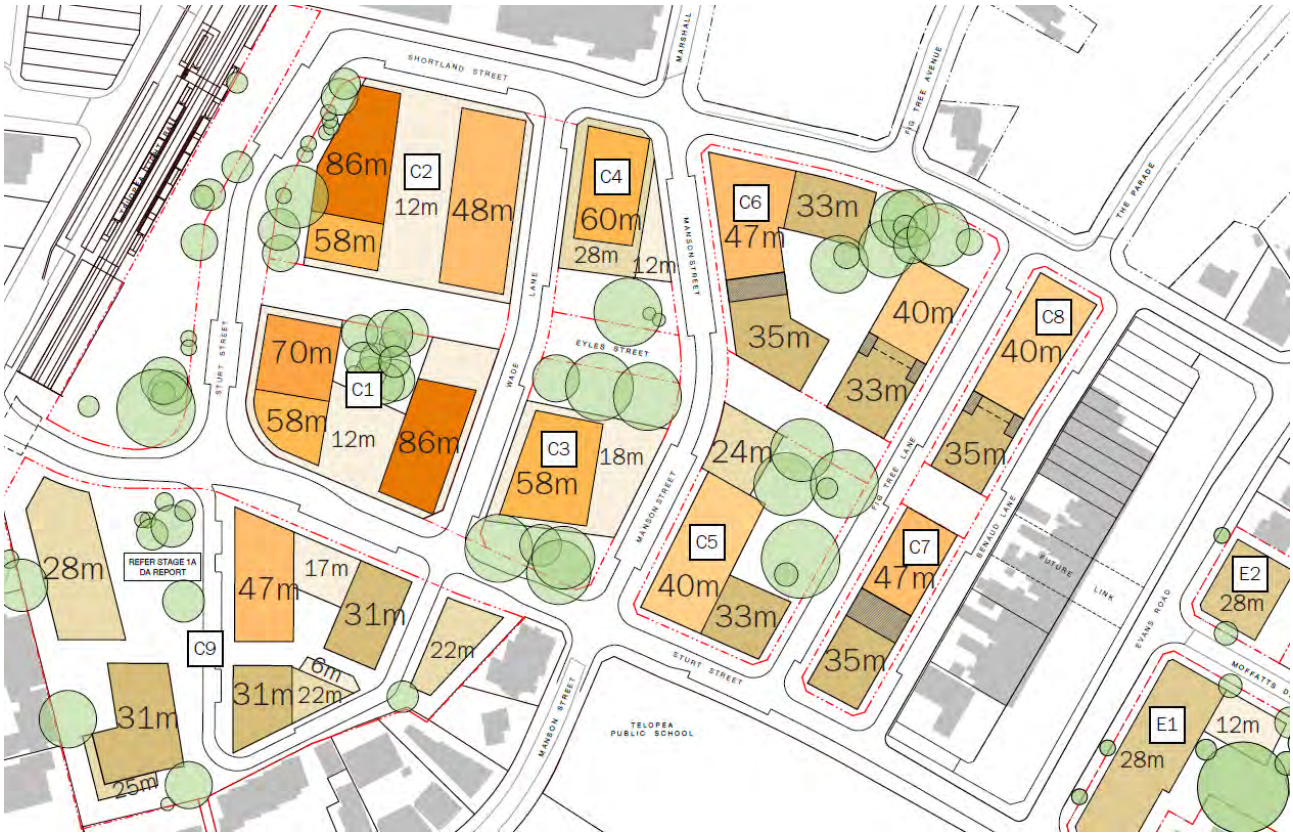
While the Concept Plan seeks maximum heights across each development block to allow for flexibility in the future siting of buildings, GFA controls and design guidelines also form part of the Concept Plan and will ensure an appropriate built form. A breakdown of the maximum height by each development block is provided in **Table 6**.

Table 6 Proposed Building Heights per development block

Development Block	Proposed Height of Building Envelope
Core Area	
C1	Part 70m / 86m
C2	Part 48m / 86m
C3	58m
C4	Part 28m / 60m
C5	Part 24m / 33m / 40m
C6	Part 33m / 35m / 40m / 47m
C7	Part 35m / 47m
C8	Part 35m / 40m
C9 (Stage 1A)	Part 22m / 28m / 31m / 33m / 47m
E1	28m
E2	28m
North Precinct	
N1	22m
N2	22m
N3	Part 25m / 28m
N4	22m
N5	Part 15m / 19m / 22m
N6	Part 22m / 28m
N7	Part 10.5m / 22m
N8	Part 19m / 28m
N9	Part 12m / 19m

Development Block	Proposed Height of Building Envelope
N10	19m
South Precinct	
S1	22m
S2	22m
S3	22m
S4	22m
S5	15m
S6	15m
S7	15m
S8	15m

Figure 11 Proposed Building Heights – Core Area



Source: Bates Smart

3.1.5. Gross Floor Area

To implement the range of proposed land uses across the CPA in an integrated development, a range of maximum and minimum GFAs have been established.

The proposed Concept Plan will have a maximum GFA of 391,940m^2 comprising:

- a maximum total residential 376,940m^2 including:
  - a minimum social housing GFA of 46,000m^2
  - a minimum affordable housing GFA of 13,400m^2
- a minimum non-residential GFA of 15,000m^2 including:
  - a maximum library and community centre GFA of 4,150m^2

To provide an appropriate level of flexibility in the detail design of the future buildings, a minimum and maximum GFA has been nominated for each development block. A breakdown of the GFA by each development block is provided in **Table 7**.

Table 7 Indicative GFA per development block

Development block	MIN per lot ~ - 10%	MAX per lot ~ +5%
S1	4,900	5,700
S2	6,400	7,500
S3	7,400	8,600
S4	6,500	7,600
S5	5,000	5,800
S6	4,100	4,800
S7	6,300	7,300
S8	6,500	7,600
C1 - C2	69,000	82,700
C3 – C8	98,800	115,300
C9 (Stage 1A)	35,900	41,900
E1	10,800	12,600
E2	3,900	4,500
N1	5,200	6,100
N2	3,300	3,900
N3	12,800	14,900
N4	4,300	5,600
N5	10,900	12,800

Development block	MIN per lot ~ - 10%	MAX per lot ~ +5%
N6 – N7	27,000	32,400
N8 – N9	19,100	22,300
N10	4,000	4,600
Total		**391,940**

3.1.6. Transport Network

The Telopea Concept Plan aims provides a network of logical and legible street connections with a focus on active and accessible movement. The Station Plaza brings together regional and local transport, including a new local shuttle bus for less mobile residents and visitors.

The Active Transport Strategy for the CPA aims to align with the vision set out in the City of Parramatta's *Parramatta Bike Plan 2017- 2037.* Proposed cycle links connect into the existing precinct network and provide paths as outlined in the plan.

In addition to the above, the steep topography of the site is addressed by emphasising the flatter cross-connections to create better cycle connectivity through new paths and "pit stops" at the light rail, Eyles Link and Sturt Park. Pit stops include cycle parking, repair stations, and opportunity for cycle rental stations.

Figure 12 Active Transport Plan

Source: Bates Smart and Hassell

3.2. CORE PRECINCT

The core of the Telopea masterplan area is made up of three parts:

- The Polding Place site, south west of Sturt Street;
- The core which is generally bounded by Sturt Street to the south and west, Shortland Street to the north and Benaud Lane to the east; and
- The eastern precinct which comprises two sites east of Evans road, either side of Moffats Drive.

For the purposes of this Concept DA, the individual lots have been consolidated into development parcels as follows (numbered from south to north, from west to east) (refer Figure 13):

- C1 and C2, west of existing Wade Street, comprise the upper core
- C3 and C4, between existing Wade Street and New Manson Street, comprise the middle core
- C5 and C6 include the Library and Church sites, and combined with C7 and C8 fronting Benaud Lane to form the lower core
- C9 is the Polding Place site which is considered 'Stage 1A' and is further described in **Section 3.6**.
- Lot E1 is on the southeast corner of Evans Road and Moffats Drive
- Lot E2 is on the northeast corner of Evans

The precinct provides significant public domain elements and is the key retail and landmark from Telopea Station. Open space creates clusters of three to four residential buildings located around these green spaces, activating surrounding streets and public spaces.

Figure 13 Telopea CPA Key Plan

Source: Bates Smart

3.2.1. Built Form

The Core Precinct has been developed to maximise ground level activation with retail, public and community uses activating the precinct.

New streets and laneways, stitch the Core Precinct into surrounding residential areas improving connectivity and defining individual development lots:

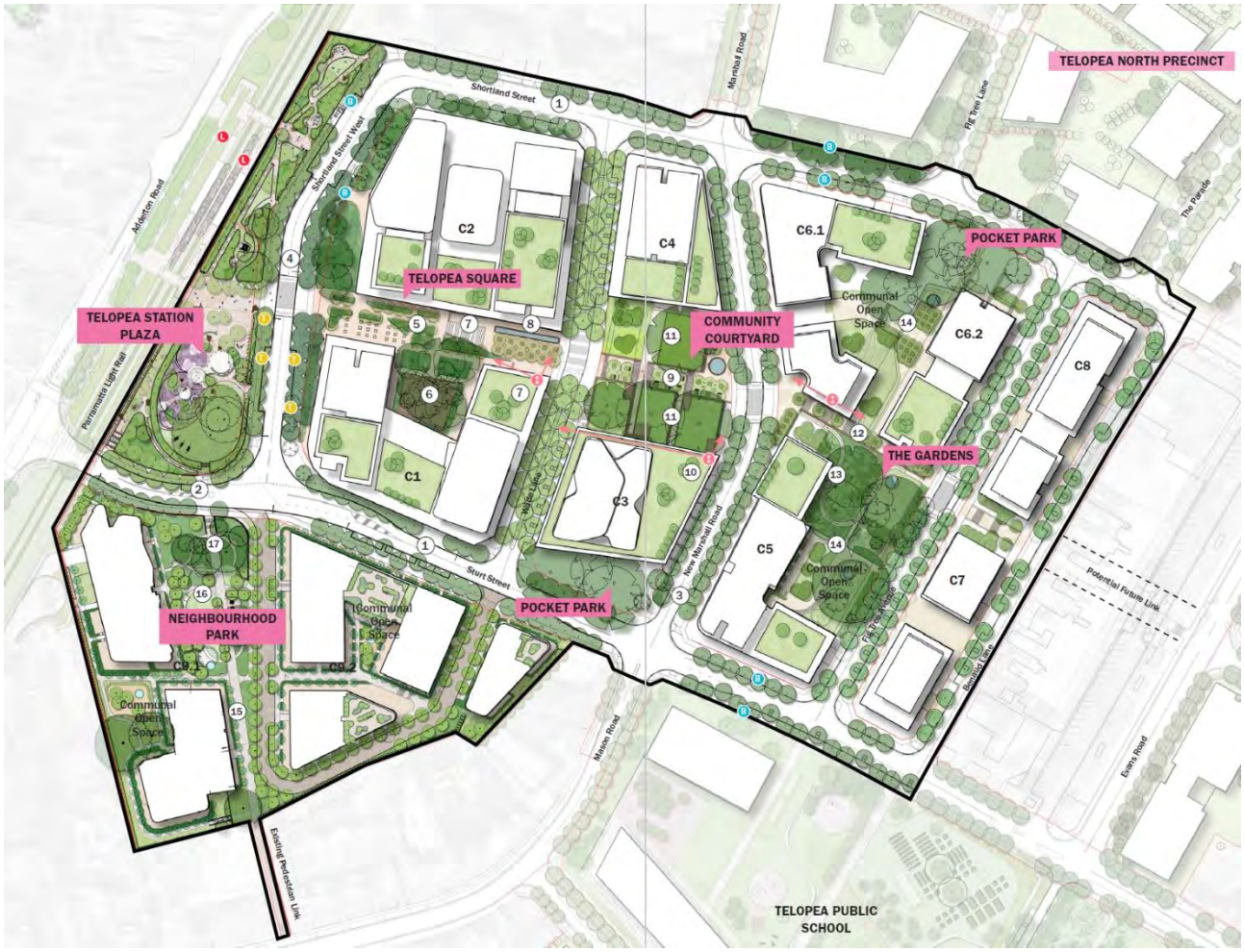
- The core is divided north-south by Eyles Street Link, a pedestrian street which includes steps, ramps and lifts to provide 24hour accessible routes to the top of the hill.
- In the east-west direction, the core is broken into four blocks by cross streets which follow the contours and connect into the existing street network to the north and south.
- From west to east, Wade Lane creates a retail street in the upper core. Manson Street is also proposed to be extended to connect to Marshall Road; and
- Fig Tree Lane splits the lower core into suitably sized development parcels.

Building footprints are further broken up to improve physical and visual connection to the established landscape and retained trees.

Building heights generally increase towards the top of the hill. The upper core generally proposes human scaled podium of 2-3 storeys, accommodating retail and community uses which provide active frontages to streets and open spaces. The lower core apartment buildings also express a two-storey scale with townhouse typologies fronting the streets and maximised passive surveillance. The CPA proposes two towers above the LEP height plane, to remove one high-rise tower from the Master Plan design and reduce the overall floorplates in the two tallest buildings. Upper core towers are also staggered to improve the silhouette on the skyline.

Tenure diversity adds to the mixed-use nature of the precinct. The CPA further breaks down the forms through upper floor setbacks, expressed street walls, tenure mix and varied architectural expression to create a precinct of genuine diversity. The planning approach is underpinned by the principle of tenure blindness, with no external indicators of tenure type in the design and layout of the community. The current staging strategy proposes C2.2B and C5.1A as affordable housing buildings, while blocks C2.2A, C6.1B and C7.1 are proposed as social housing buildings.

Figure 14 Core Precinct Concept Plan



Source: Bates Smart and Hassell

3.2.2. Local Centre

In the upper core adjacent to the light rail station, a local retail centre is proposed within a two-storey podium which steps down the hill. The retail centre is complemented by a range of community uses arranged around two public open spaces: Telopea Station Plaza, and Telopea Retail Square. Outdoor seating connected to a range of food and beverage tenancies wrap into the central square with casual seating, landscaping, community art, performance, and meeting places.

Vertical connections are provided to lower ground retail at Wade Lane level via stairs and escalators in the Eyles Link, and lifts which also serve level 1 retail and basement parking. The CPA proposes a range of uses including:

- Specialty retail in C1 and C2
- Childcare centre in C2
- Medical Centre and Pharmacy in C1
- Gym and Offices for the community housing provider at Level 1 of C2
- Supermarkets, retail loading and public parking under the C1/C2 podium at lower ground (Wade Lane) level
- Library & Community Centre in C3
- Church and Aged Care facility in C4

Figure 15 Telopea Local Centre

Picture 7 Photomontage of Local Centre

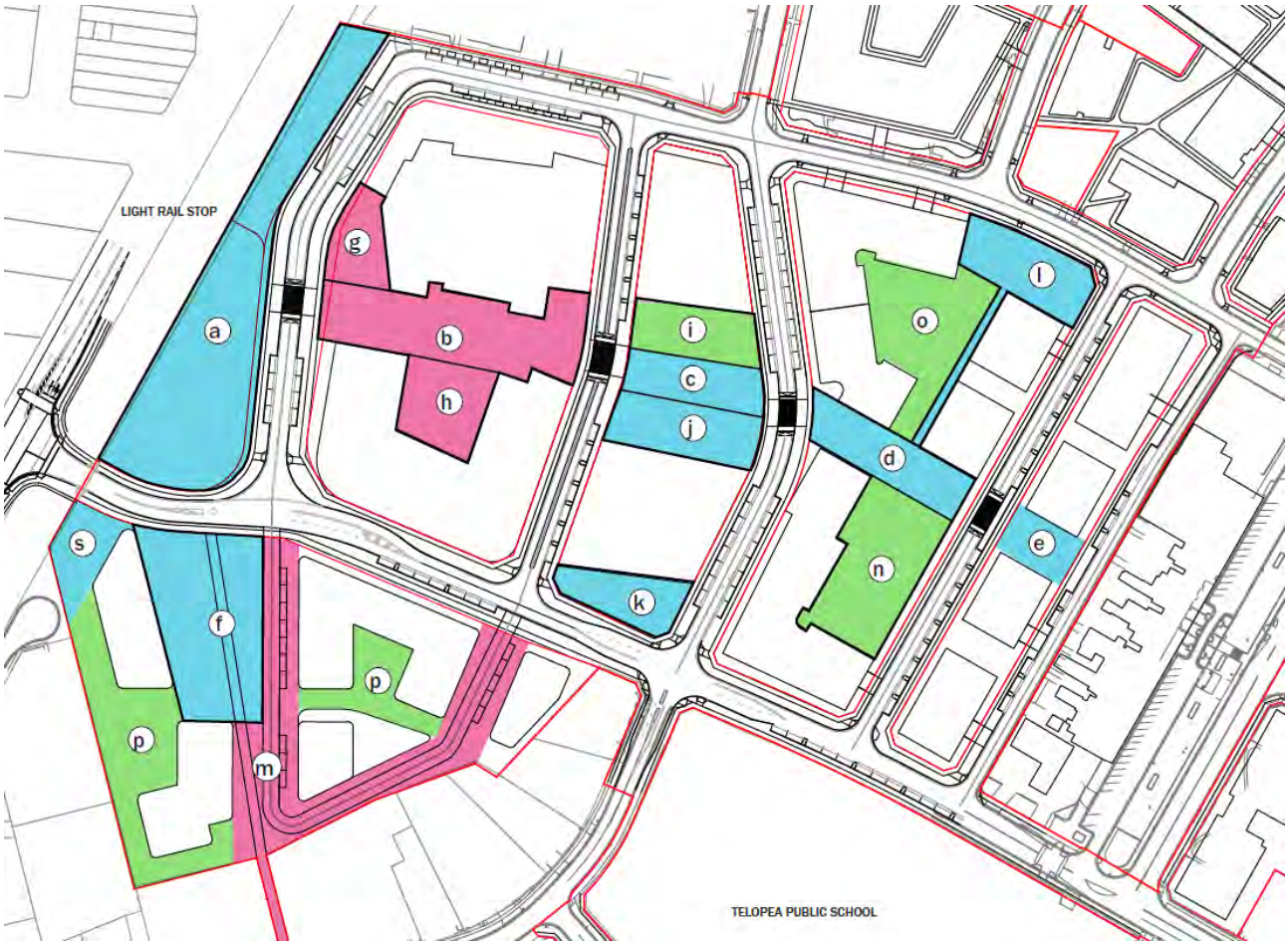
Picture 8 Mix of Uses within the Core Precinct

*Source: Bates Smart and **Hassell***

3.2.3. Public Domain and Open Space

The core accommodates a range of types of open space, all of which are arranged around retention of significant trees as shown in **Figure 16**. A mix of public spaces, communal gardens, and generous setbacks each contribute to retaining the bushland hillside character of the Telopea Centre. Landscape and Public Domain Concept Plans have been prepared by Hassell and is included in the Urban Design Report at **Appendix G**. A description of the range of open spaces provided are incorporated in Table 8 below. Further information is incorporated in the Urban Design Concept Plan prepared by Bates Smart and Hassell enclosed in **Appendix G.**

Figure 16 Open Space and Public Domain in the Core Precinct



LEGEND	Approximate area (m²)
Dedicated public open space	
a. Telopea Station Plaza	4650
c. Eyles Link - Community Courtyard	910
d. Eyles Link - The Gardens	1200
e. Eyles Link - The Gardens (south)	400
f. Neighbourhood Park	2440
k. Pocket Park	760
l. Pocket Park	1290
j. Library Courtyard	1070
s. Winter Street link	140

Privately owned publicly accessible open space	
b. Eyles Link, Telopea Square	1690
g. Telopea Square (north)	650
h. Telopea Square (south)	900
m. Mews and Manson Street link	2920
Private communal open space	
i. Eyles Link - Church Courtyard	750
n. The Gardens South	1200
o. The Gardens North	1700
p. Stage 1A West	1370
p. Stage 1A East	500

Source: Bates Smart and Hassell

Table 8 Public and Private Open Spaces

Description
Telopea Station Plaza Telopea Station Plaza is proposed to be a civic place and arrival plaza for the use of the residents and the public adjacent to the Telopea light rail station. It provides pedestrian connection to public transport including Telopea light rail station, and adjacent bus stop as well as kiss and ride services and ride share pickup. A community hub at the heart of the Telopea Station Plaza is a welcoming a destination for the whole neighbourhood. The multilevel playground will be the focal point for the Station Plaza. The open space is designed as an open and flexible community hub which allows for a diversity of activity.
Telopea Square Telopea Square is proposed to be a vibrant and active space lined with outdoor dining, retail and community use facilities. Pedestrian movement from the light rail stop through Eyles Link to open spaces and residential movement will ensure activation of the square.
Community Courtyard A community courtyard is proposed within the Eyles Link to provides landscape connections to the new library and church. Landscape links navigate between existing trees with platforms, landings and seating for community gatherings.
Neighbourhood Park The Neighbourhood Park aims to retain existing trees, forming a neighbourhood-scale public open space for both passive and active recreation. Three main entry points into the park are designed as key nodes into the park, ensuring connectivity to the centre and light rail station. Key elements of the neighbourhood park include an off-leash dog lawn, learn to cycle paths, nature trails and a picnic lawn.
Pocket Parks Telopea's pocket parks are located throughout the precinct to create cool places to dwell and create an attractive outlook to neighbouring residents. Existing Sydney Blue Gums are retained to support biodiversity, as well as groundcover planting to create a pleasant street frontage.
Ground floor Communal Open Space Ground floor communal open space or 'residential gardens' will generally be publicly accessible. The gardens and lawns support local biodiversity and create dynamic places for residents to connect to nature and as well as opportunities for passive recreation.
Roof top Communal Open Space A combination of publicly accessible and inaccessible rooftop gardens or 'biodiversity rooftops' are distributed across 50 per cent of the CPA's rooftops as communal open space for residents. Rooftops provide a range of uses including play lawns and gathering areas.

3.2.4. Public Art

The Concept Plan identifies a series of opportunities and approaches to providing high quality art projects in the public domain. Artworks will include integrated and innovative permanent pieces in a range of scales across the site.

The creative works will add meaning and activation in Telopea through giving voice to the community, addressing the rich cultural, historical and ecological context, and enhancing the unique sense of place. The following approaches have been identified in **Figure 29** below:

a) Country and culture: respond to Aboriginal culture and heritage, responsibility, appropriately and respectfully

b) Evening engagement: digital works add meaning and vibrancy to the new community

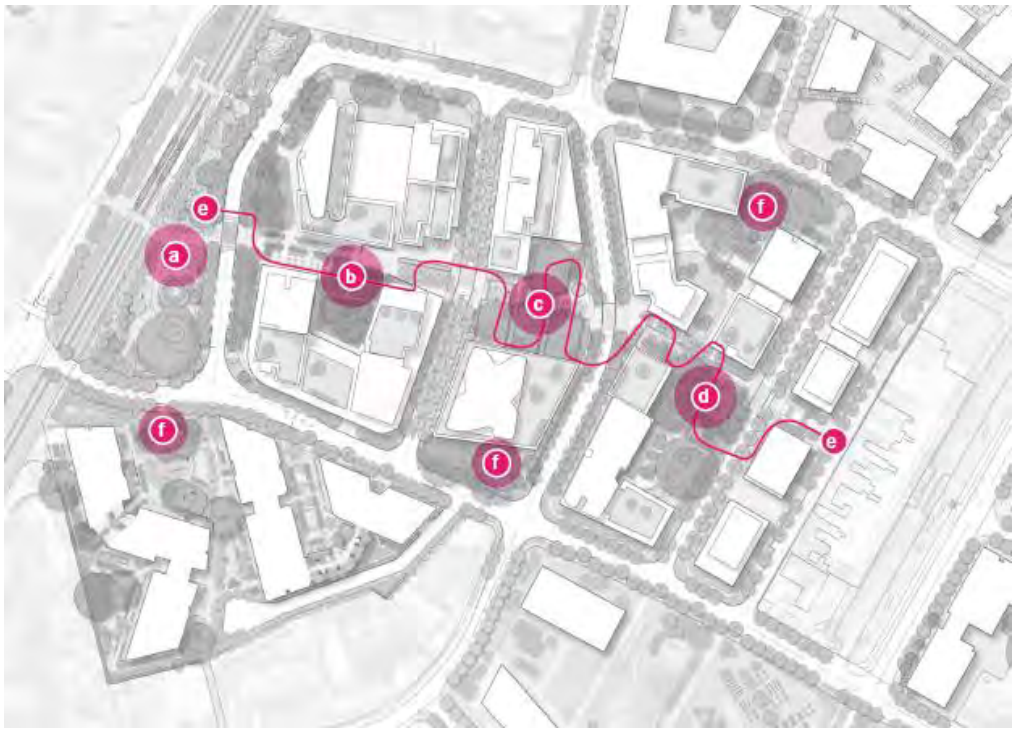
c) Connecting communities: opportunities to record stories from the community and create connections between people

d) Landscape character: integrated pieces referencing the environmental context

e) Special stories of place: placemaking pieces referencing the environmental context

f) Celebrate existing flora: art installations which celebrate existing landscape features such as Sydney Blue Gum trees.

Figure 17 Concept Public Art Locations

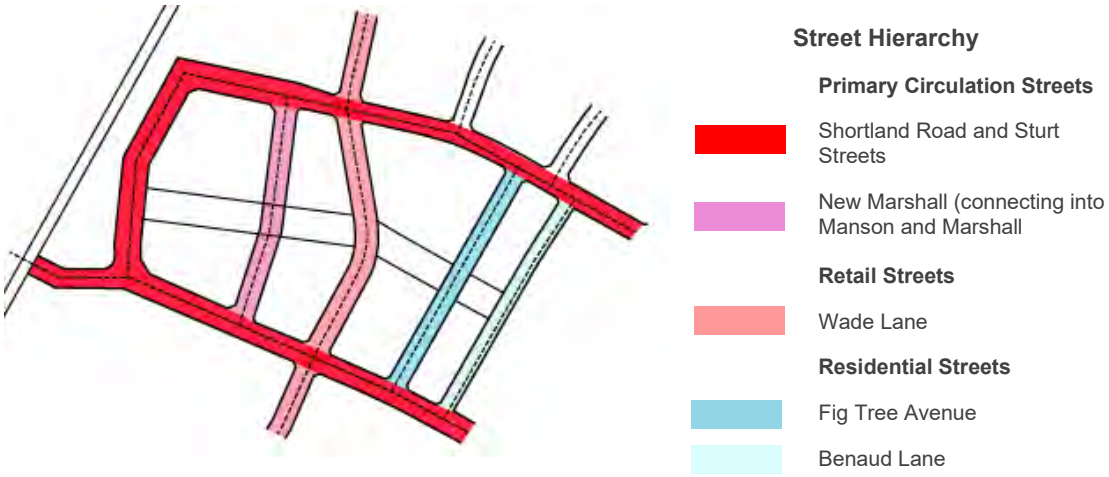


Source: Bates Smart and Hassell

3.2.5. Street Hierarchy

The core precinct provides a network of logical and legible street connections with a focus on active and accessible movement. The streets have been designed to allow easy access through and around the neighbourhood while providing generous tree and understorey planting. A clear road hierarchy each with its own unique character has been established across the site to strengthen wayfinding, sense of place and function as illustrated in **Figure 13**. A description of the key streets within the Core Precinct is included in **Table 5** below. Street sections for the key streets are also included in the Urban Design Report at **Appendix G**.

Figure 18 Core Precinct Street Hierarchy



Source: Bates Smart and Hassell

Table 9 Street Hierarchy

Street Hierarchy	Location	Width
Primary Circulation Streets Key perimeter roads linking the site to the surrounding road network. Aim to balance vehicular movements with the movement needs of pedestrian and cyclists to create a safe, permeable and attractive streetscape. Provide generous street tree planting along verges for connected canopies and shade	Shortland Road and Sturt Streets	20.5 metres
	New Marshall (connecting into Manson and Marshall	18.0 metres
Retail Street Provides on street parking for visitors to retail tenancies.	Wade Lane	16.6 metres
Residential Streets Servicing adjacent residential dwelling and act as a local pedestrian connector.	Fig Tree Avenue	14.9 metres
	Benaud Lane	12.0 metres

3.2.6. Site Access and Parking

The Concept Plan proposes all parking and majority of service vehicle loading areas are located in basements. Basement areas have been carefully balanced with deep soil zones to maximise retention of and opportunities for significant trees, as well as to provide efficient layouts which will minimise excavation.

Basements are connected to minimise the number of required service vehicle ramps. Final parking numbers and depth of basements will be confirmed at detailed development application stage. The proposed basement layouts incorporated into the Concept Plan ensure there are no basement areas under land which is to be dedicated to council.

3.3. NORTH PRECINCT CONCEPT

The North Precinct of the Telopea Masterplan is made up of eight fragmented landholding generally fronting Shortland Street, The Parade, Fig Tree Avenue, Field Place and Marshall Road. For the purposes of this Concept DA, the individual lots have been consolidated into development parcels as follows:

- N1 comprises 14-18 Field Place
- N2 comprises 33-35 Marshall Road
- N3 comprises 7-9 Shortland Street
- N4 comprises 16-20 Marshall Road
- N5 comprises 24-28 Marshall Road, 21-23 The Parade and 17-19 Fig Tree Avenue
- N6/N7 comprises 19-21 Shortland Street, 4-6 and 10-20 Fig Tree Avenue and 1-15 The Parade
- N8/N9 comprises 2-24 The Parade
- N10 comprises 28-32 The Parade

The eight development lots will largely define the new character of The Parade and Fig Tree Lane, and set the benchmark for future development on Marshall Road

3.3.1. Built Form

The North Precinct celebrates the sloping hillside and curved existing streets with open spaces and links designed around tree retention and connection to landscape. The extensive but fragmented landholding will set the standard for future development in the area. 3 storey townhouses and 5-8 storey apartment buildings will step and stagger down the hillside, maximising solar access and ensuring remnant sites can be easily developed**.**

Buildings generally rise to the LEP building heights, with massing reduced in key locations to minimise overshadowing of communal open spaces and neighbouring properties. The stepped forms and varied roof heights create opportunities for additional communal open spaces at roof level.

New buildings propose a 3m street setback to maximise the amount of deep soil available at the rear of each site with setbacks increased where necessary to ensure retention of significant trees. There are four locations where envelopes propose zero side setbacks where buildings are located directly adjacent to proposed built form. In each instance this is on the south side of an existing neighbour to minimise overshadowing impacts.

3.3.2. Public Domain and Open Space

Longer street blocks are made more permeable with three new through site links. N2 provides a pedestrian link connecting Sophie Street to the light rail corridor. N5 and N7 provide mid-block links connecting Fig Tree Avenue to Marshall Road and The Parade respectively.

New publicly accessible open spaces are proposed around retained trees at important nodes in the masterplan including:

- The corner of Shortland Street and Fig Tree Avenue;
- The corner of Fig Tree Avenue and The Parade; and
- The main bend in The Parade

The Public Domain Concept Plan for the North Precinct is incorporated in the Urban Design Report prepared by Bates Smart and Hassell enclosed in **Appendix G.** These outdoor spaces include a mix of community, edible and ornamental gardens as well as orchard style planting. Gardens and lawns support local biodiversity and create dynamic places to connect with nature. Open space has been arranged to provide a mix of public and communal open space at both ground and at roof level. Indicative open space for residential flat buildings is included in the Urban Design Report.

Figure 19 North Precinct Concept Plan

Picture 9 Fig Tree Avenue Mid Block Link
Source: Bates Smart and Hassell

Picture 10 North Precinct roof plan

3.3.3. Street Hierarchy

To provide a continuous network of footpaths and improved public domain, the following upgrades are proposed within the North Precinct:

- Existing overhead powerlines to be partially removed allowing for large trees on both street sides.
- New 1.5m footpaths adjacent to road reserve boundary
- Planted verges of street trees and groundcovers
- Existing kerb and carriageways retained.

Through site links are shared neighbourhood spaces, allowing for limited, low speed vehicle movements, parking for residential visitors , trees and landscaped areas These spaces will have flush kerb lines with landscape and paving delineating different areas for vehicular movement and parking.

3.3.4. Access and Parking

Basements have been arranged to avoid any conflicts with tree retention and maximise opportunity for deep soil zones, particularly at the rear of sites. Final parking number and depth of basements will be confirmed at detailed development applications stage.

3.4. SOUTH PRECINCT CONCEPT

The South Precinct of the Telopea Masterplan is made up of eight consolidated landholdings generally fronting Chestnut Avenue, Cunningham Street and Burke Street. For the purposes of this Concept DA, the individual lots have been consolidated into development parcels of between three and five lots as follows:

- S1 comprises 25-29 Chestnut Avenue
- S2 comprises 3-9 Cunningham Street
- S3 comprises 15-21 Chestnut Avenue
- S4 comprises 2-4 Cunningham Street and 10-12 Burke Street
- S5 comprises 14-20 Chestnut Avenue
- S6 comprises 2-6 Chestnut Avenue and 4 Burke Street
- S7 comprises 21-31 Burke Street
- S8 comprises 1-7 Burke Street

The eight development lots will set the standard for the rezoned precinct, defining a denser suburban character on over half the streetscape on Chestnut Avenue, Cunningham Street and Burke Street.

3.4.1. Built Form

The South Precinct proposes a range of multi-core low-rise residential buildings. Apartment buildings are arranged with multiple cores and regular entries to maximise street activation and passive surveillance. Most buildings propose 2-storey duplex apartments facing the street. Lobbies are provided as dual entry gateways providing a visual connection from the street to the centralised communal courtyards, reinforcing the site's connection to landscape.

Apartment buildings in a range of sizes define street wall buildings with rear and centralized communal open spaces accommodating retained trees in generous deep soil zones. Lots S3 and S6 have stepped front setbacks to ensure retention of significant trees. The stepped forms and varied roof heights create opportunities for additional communal open spaces at the roof level.

Tenures are mixed throughout the precinct, with social housing proposed in S1 and affordable housing in S5. While the indicative design scheme shows initial building layouts and core arrangements, these will be further developed during development of the Detailed Development Applications.

Figure 20 South Precinct Concept Plan

Picture 11 Render of South Precinct communal space

Picture 12 South Precinct roof plan

Source: Bates Smart and Hassell

3.4.2. Public Domain and Open Space

Regeneration of the south precinct will be enhanced by attractive garden settings surrounding the new apartment buildings. Multi-core buildings on S4, S5, S7 and S8 propose external lobby links as the primary entrance. Gated for security, the links provide an open-air connection and strong visual link to the centralised landscaped communal open space. New street tree planting and footpath upgrades will continue the garden setting to the street edge.

The Public Domain Concept Plan for the South Precinct is incorporated in the Urban Design Report prepared by Bates Smart and Hassell enclosed in **Appendix G.** Open space has been arranged to provide a mix of public and communal open space at both ground and at roof level. Indicative open space for residential flat buildings is included in the Urban Design Report.

3.4.3. Street Hierarchy

No changes are proposed to the existing street hierarchy of the South Precinct which is connected via local roads used generally by residents. To minimise pedestrian conflicts, driveways and crossovers are kept to a minimum with only one carpark entry per lot.

To provide a continuous network of footpaths and improved public domain, the following upgrades are proposed within the South Precinct:

- Existing overhead powerlines to be partially removed allowing for large trees on both street sides.
- New 1.5m footpaths adjacent to road reserve boundary
- Planted verges of street trees and groundcovers
- Existing kerb and carriageways retained.

3.4.4. Access and Parking

Basements have been arranged to avoid any conflicts with tree retention and maximise opportunity for deep soil zones, particularly at the rear of sites. Final parking number and depth of basements will be confirmed at detailed development applications stage.

3.5. DEVELOPMENT CONTRIBUTIONS AND PUBLIC BENEFITS

3.5.1. Preliminary

Council currently collects developer contributions from development occurring in the suburb of Telopea under two principle mechanisms:

- Parramatta Section 94A Contributions Plan 2011 (Amd 05) (Outside CBD) (s7.12 Plan), prepared in accordance with and enabling collection of contributions under s7.12 (formally s94A) of the EP&A Act; and
- Voluntary Planning Agreements (VPA) prepared in accordance with s7.4 (formally s93F) of the EP&A Act 1979.

An Infrastructure Service Delivery Plan was prepared by the Applicant which sets out the items of infrastructure proposed to support the Telopea CPA. The Infrastructure Service Delivery Plan identifies the items of public infrastructure that have public benefit for that supports the Telopea CPA as part of the overall renewal of Telopea.

The following were considered in the preparation of the Infrastructure Service Delivery Plan:

- Telopea Master Plan, prepared by Department of Planning Industry and Environment, Land and Housing Corporation (LAHC) and endorsed by Council;
- Telopea Urban Renewal rezoning;
- City of Parramatta Community Infrastructure Strategy (CIS); and
- City of Parramatta Voluntary Planning Agreement Policy (VPA Policy)

The public infrastructure includes the items identified in the Telopea Master Plan and at the rezoning stage with a Community and Social Infrastructure Needs Assessment, Traffic and Transport Assessment and Utility Infrastructure assessments. The Telopea Master Plan considered the capacity of existing infrastructure, and the ability to upgrade it to accommodate a growing population. In particular, the Master Plan considers roads, public transport, storm water, drainage and utilities infrastructure, public domain and open space and community infrastructure.

The rezoning included an analysis of infrastructure that will be required to support new development in the Telopea precinct resulting from the rezoning.

New infrastructure and infrastructure upgrades to support the renewal of the Telopea precinct, included:

- Integration of the new Parramatta Light Rail (PLR) stop at Telopea with new development;
- Upgrades to the regional and local road network;
- Upgrades to and provision of new pedestrian and cycle connections through the precinct;
- Upgrades to and provision of new social infrastructure including open space and other community facilities; and
- Upgrades to and provision of any new drainage infrastructure.

The Telopea precinct is located within the Greater Parramatta and Olympic Peninsula (GPOP) area, which has been identified by the Greater Sydney Commission as a new priority growth area in Sydney. The State government is investigating the application of a Special Infrastructure Contribution (SIC) for GPOP to assist in funding regional infrastructure upgrades.

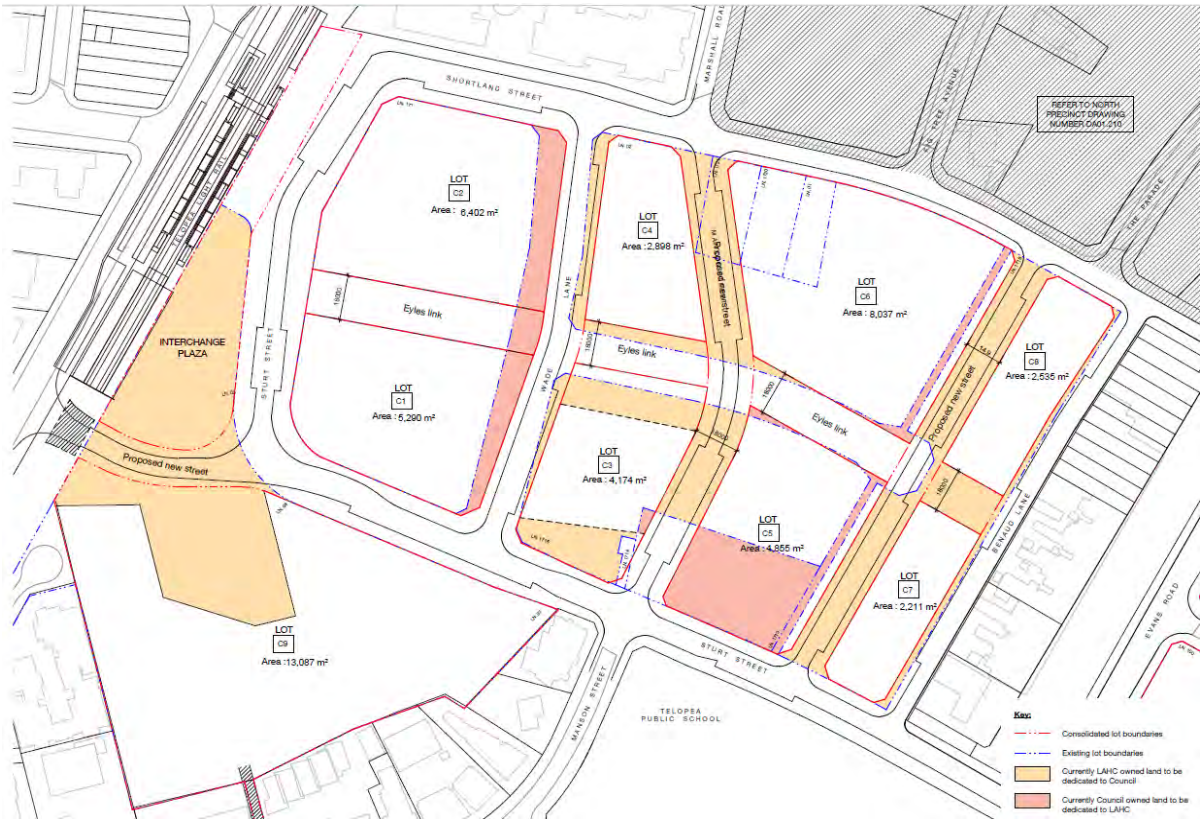
In addition to local development contributions, the NSW Government allocated $5 million via a Precinct Support Scheme (PSS) grant to fund local infrastructure upgrades in the Telopea precinct. Council has identified upgrades to Sturt Park and Acacia Park to support the rezoning of the Stage 1 area.

3.5.2. Land Swap

There is a requirement for a land swap between Council and LAHC to occur to facilitate the Telopea CPA redevelopment, including the initial Stage 1A works. Existing LAHC sites will be used for new open space, roads and pedestrian connections and existing Council pathways and roads are added to development sites.

The land swap required between LAHC and Council to achieve the masterplan objectives is illustrated in **Figure 21.** These areas generally offset each other, and no monetary contribution/ offset is required or proposed. The land swap is proposed to be formalised as part of the proposed VPA.

Figure 21 Draft Land swap



Source: Bates Smart]

3.5.3. Proposed Public Benefit Offer

The proposed mechanism to establish a framework for development contributions and public benefits associated with the Telopea CPA is a Voluntary Planning Agreement (VPA). Frasers have sought to enter a VPA with City of Parramatta, and initially put forward a draft public benefit offer on 29 June 2020. As this is the first and will be the most significant development in the Telopea Urban Renewal Area, Frasers proposes to deliver the following public benefit items, under a VPA with the City of Parramatta Council.

- Road Works
  - Wade Street (or New Marshall road) including Shortland and Marshall St intersection
  - Wade St, Sturt St, Manson St intersection
  - Sturt street upgrades (added street parking, upgraded footpaths and landscaping and bus and taxi zones)
  - Shortland street upgrades (added street parking, upgraded footpaths and landscaping)

- Eyles Street Link
- Light Rail Crossing (Sturt to Adderton)
- Adderton Road and Manson Street intersection upgrade
- Evans Street and Shortland Street intersection upgrade
- Public Domain
  - Cycleways
  - Pedestrian Links
  - New light rail arrival plaza
  - New hill top park
  - Community park (attached to library)
- Community Facilities
  - Multipurpose community centre

The proposed Telopea CPA includes additional infrastructure over and above the Telopea Master Plan that provides public benefit including:

- A neighbourhood park near hilltop park and arrival plaza;
- Additional open space and public domain areas within and adjacent to Eyles Street with the added benefit of Eyles street being converted from a road to a pedestrian civic space;
- A $5M contribution to Telopea Public School for any community facility that can be co-located on that land to help form the community hub nominated in the Master Plan; and
- Investigation of a blackwater recycling scheme which if feasible will provide recycled water for parks and street trees.

The proposed public infrastructure works that form the draft VPA will contribute $21,168,204 or 91% of the works identified and costed in the Telopea Master Plan. This amount excludes the $5M commitment to the Telopea Public School for co-located community facilities located on its land as well as the additional infrastructure to be delivered but not included in the Telopea Master Plan.

The total delivery proposed by Frasers of $36,660,704, or $29,265,704 including the library land value offset is some $5,927,500 above the total expected public benefit items in the Telopea Master Plan and excluding the $5M contribution to the school for co located facilities.

The proposed public infrastructure works described in this section of the EIS are incorporate into the Concept Plan and Stage 1A works, to be progressively delivered with the staged redevelopment of the Telopea CPA.

Consultation with Council has occurred since the draft VPA offer was submitted in mid-2020. Following agreement, a Final VPA offer and Draft VPA will be prepared and submitted to Council for endorsement.

In addition to the proposed public benefit items in the draft VPA offer, and Special Infrastructure Contributions (SIC) to be paid by Frasers in association with the development of the Land. It is also noted and acknowledged that Frasers will also be providing the following items as part of the Telopea Concept Plan, which although they do not form part of the draft VPA offer, will have significant public benefit:

- 256 Affordable housing dwellings that adds to housing diversity to be managed by CHPs as per the ARH SEPP;
- 740 social housing dwellings including 128 ILUs, that adds to housing diversity to be owned by LAHC and managed by a CHP;
- Residential Aged Care Facility with 80-90 market ILUs that adds to housing diversity and supplements the aged care sector;

- New Church that supports the local community culture, spirituality and provides additional social enterprise and outcomes for the community;
- Private childcare facility of 75 – 90 places
- New neighbourhood retail centre;
- Community housing provider office to provide support services for the local community;
- Tree retention and new tree planting, which was not contemplated to the extent proposed at the time of the Master Plan and rezoning;
- Undergrounding of selective existing overhead electrical to reduce visual clutter and improve streetscapes;
- Sustainability initiative, that are beyond current mandatory requirements:
  - 50% green roofs
  - 50% solar PV roofs
  - 6 star rated green star community
  - 5 star rated buildings
  - 100% carbon neutral in operation

3.6. STAGE 1 SECTION 4.22(4)(B) WORKS

3.6.1. Overview

The first stage of works to be delivered (known as 'Stage 1A') is located within the Core precinct adjacent to the Parramatta Light Rail station. The design strategy proposes increased density supported by the improved public transport connectivity of the light rail.

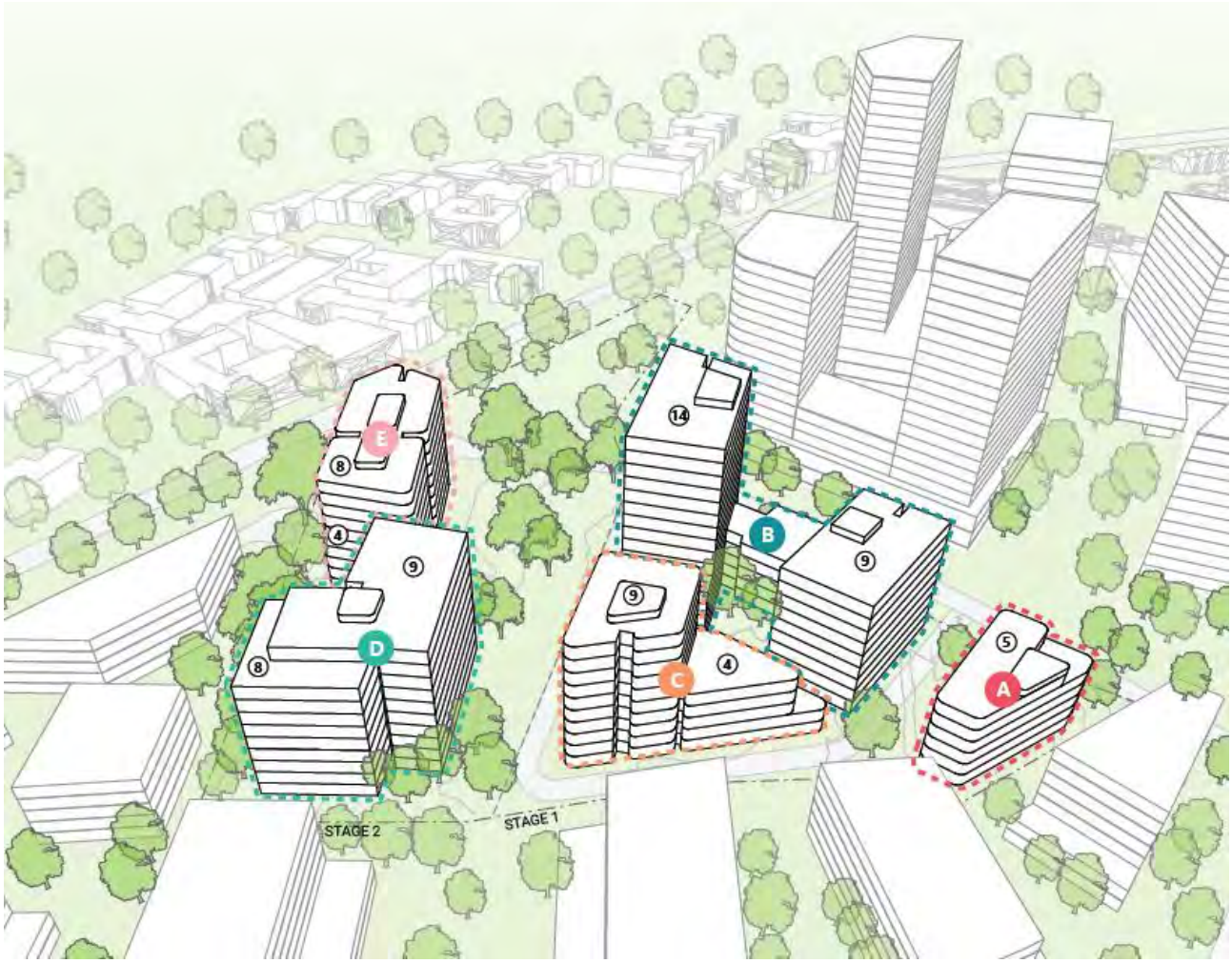
The proposal ensures that the planning framework is aligned with anticipated growth and meets the needs of the local community. The Stage 1A proposal is consistent with the intent of the overall masterplan concept and public domain strategy which includes providing public amenity and connectivity within the Stage 1A urban design proposal, this approach will enhance the experience of the overall Town Centre.

Development consent is sought under Section 4.22(4)(b) of the EP&A Act for the following development (**Section 4.22(4)(b) Works**) without the need for a further development consent:

- Site establishment works including demolition of all existing buildings and structures, tree removal, site preparation, excavation, and services augmentation.
- Construction of a new arrival plaza for the PLR known as 'Telopea Station Plaza' incorporating a hilltop park surrounding existing significant trees.
- Construction of the Sturt Street West extension over the PLR including Adderton Road intersection works and cycleway connection.
- Upgrade of Sturt and Shortland Streets including kerb realignment, new footpaths and verge landscaping, new indented parking bays, bus zones and pedestrian crossing.
- Construction of five residential buildings between 4 and 14 storeys in height with a shared basement, comprising a total of 443 studio, one-, two- and three-bedroom apartments.
- Construction of two basement levels with ingress/egress via Sturt Street and Winter Street comprising a total of 416 car parking spaces and 473 bicycle storage spaces, waste and loading facilities.
- Associated open space and landscaping works, including construction of a new public park and through site link, retention of existing significant trees, and ground and rooftop communal open space.
- Construction of a new publicly accessible mews street, providing access to the five residential buildings and new public park.

- Torrens Title Subdivision.

Figure 22 Stage 1A Built Form



Source: Plus Architecture

The key numerical overview of the development is described below.

Table 10 Numeric Overview of Proposal

Element	**Combined**
GFA	36,528m^2
Maximum Height	Refer **Table 11**
Car Parking Spaces	416
Bicycle Storage Spaces	473
Motorbike Parking Spaces	83
Communal Open Space	5,612m²
Public Open Space	3,536m²
Deep soil zone	3,907m²

Element	Combined
Residential Apartments	**443**
Studio	3
1 Bedroom	150
1 Bedroom + Study	6
2 Bedroom	225
2 Bedroom + Study	17
3 Bedroom	42

Table 11 Numeric Overview of Stage 1A Buildings

Building	Proposed Maximum Building Height	Proposed Maximum GFA	Apartments
A	20.58m (5 storeys)	1,942m^2	22
B	West - 45.58m (14 storeys) East - 30.88m (4-9 storeys)	14,763m^2	175
C	31.90m (4-9 storeys)	3,894m^2	55
D	32.12m (4-9 storeys)	8,274m^2	99
E	30.13m 94-8 storeys)	7,574m^2	92

3.6.2. Design Principles

As generally described within the Design Report prepared by Plus Architecture included at **Appendix I**, the following design principles have guided the design development of Stage 1A:

- Establish a well-connected public domain and permeable urban fabric which breaks down the perceived building mass creating a strong sense of openness and connection to the existing natural landscape.
- To create range of built form which respect the character of Telopea by maintaining most of the significant trees.
- Establish building expression which clearly responds to the human scale and manages the topography changes throughout the precinct.
- Create a dynamic sequence of spaces defined by both the existing trees, the built form and level changes to create a place which is connected and promotes interaction within the community.
- Create an architectural expression based on material and textures reflecting the character of Telopea and it's unique Blue Gum forest.
- Create an environment and public amenity which can sustain increased density of living well-crafted buildings which within the overall masterplan create a variety of architectural expression and experience.

Through a process of careful consideration of these objectives, the outcome is a well-balanced design solution in which both built form and the natural setting of the place are in harmony. The clusters of important existing trees on the site naturally define a range of spaces which setup a hierarchy of space and mark the public link through the heart of the site. The proposed buildings frame these spaces and allow the residents to engage with these pockets of landscape which also help to blend the new proposed development within its existing setting. The proposal anticipates the future context of increased density both south as well as north and aims to help transition the scale to the 22 storey towers opposite the light rail stop which will mark Telopea.

3.6.3. Site Establishment

Site establishment works include tree protection and removal, demolition of existing buildings and basement excavation. A Preliminary Construction Management Plan (Preliminary CMP) has been prepared by Frasers Property Australia's Telopea Project Management Team (**Appendix KK**). This report provides a preliminary assessment of the proposed construction processes and methodology, site safety procedures and environmental management issues to be undertaken by the Principal Contractor/s engaged by Frasers Property to construct Telopea Stage 1A.

Once the building contractor is appointed and prior to issuing a construction certificate a Construction Management Plan to detail the full range of actions and staging of construction will be undertaken. Aiming to ameliorate potential impacts on the relevant stakeholders whilst maintaining a safe, productive, and efficient construction site. It is anticipated that construction works will be undertaken in two stages.

3.6.4. Residential Built Form

The proposed building form and positioning within the site is based on a range of key design drivers which form part of the general masterplan strategy. The building footprint carefully considers retention of the existing trees on the site, as well as clusters of significant trees which establish character both within the site and to the edges of the site relating to the existing context. The proposed building footprints are divided to allow for the retention and expansion of the already existing public pedestrian link which runs through the centre of the site connecting the southern precinct to the light rail plaza and station to the north.

The proportions of various building forms establish a series of zones which clearly frame the public and communal spaces created. The proposed loop access road aligns with the existing surrounding road network and establishes a clear relationship to the future built form to the north of Sturt Street. The length of the built form and articulation is proposed to create a well-balanced composition which moves through the existing landscape and naturally defines each external open space. The proposed buildings are varied in their scale and form to create a natural variety of building typologies, through core configurations, form and architectural language.

The proposal seeks to maintain building separation for both privacy and acoustic treatment. The design creates generous public and communal spaces between buildings to create gathering spaces for the community.

The following key built form principles support the proposed design:

- Alignment of the built form with Core Area building positions
- Variety of built form, building scale and length
- Consideration of footprint and built form connections
- Consideration of orientation and solar access.

3.6.5. Materials and Finishes

Stage 1A uses a range of materials which are textural, warm and provide depth to the overall composition of buildings to ensure diversity across the site and avoid monotonous facades. Key design elements include:

- The proposal is set within a lush landscape setting. The lower levels of the development create the opportunity to add to the dynamic and natural environment using textures, warmth, and landscape planters to conceptually extend the natural environment into the built form.
- The collection of open spaces is planted with palettes which reinforce their use. The neighbourhood and pocket parks are planted out with distinctly native species. Robust species suitable for the high intensity use with lots of textural variation and interest are located within through-site links, while gardens and communal open spaces are adorned with pops of colour and seasonal delight.
- The proposal proposes a brick base which changes in its expression across the site to support the variety of buildings proposed. The rhythm, detailing and expression changes to create sufficient variety as part of the public experience while passing through the site.
- The proposal creates a variety of architectural expression across the 5 proposed buildings. While the buildings share some of the materials, they are all unique and different while being part of a family with a shared base and ground plane. The variety of and articulation of the architecture will help establish a sense of orientation and creates interest as a backdrop to the public domain.

Overall Stage 1A include a range of materials which are textural, warm and provide depth to the overall composition of the buildings to ensure diversity across the site and avoid monotonous facades.

Figure 23 Photomontage of Stage 1A from Sturt Street

Source: Plus Architecture

Figure 24 Photomontage of Stage 1A Public Park

Source: Plus Architecture

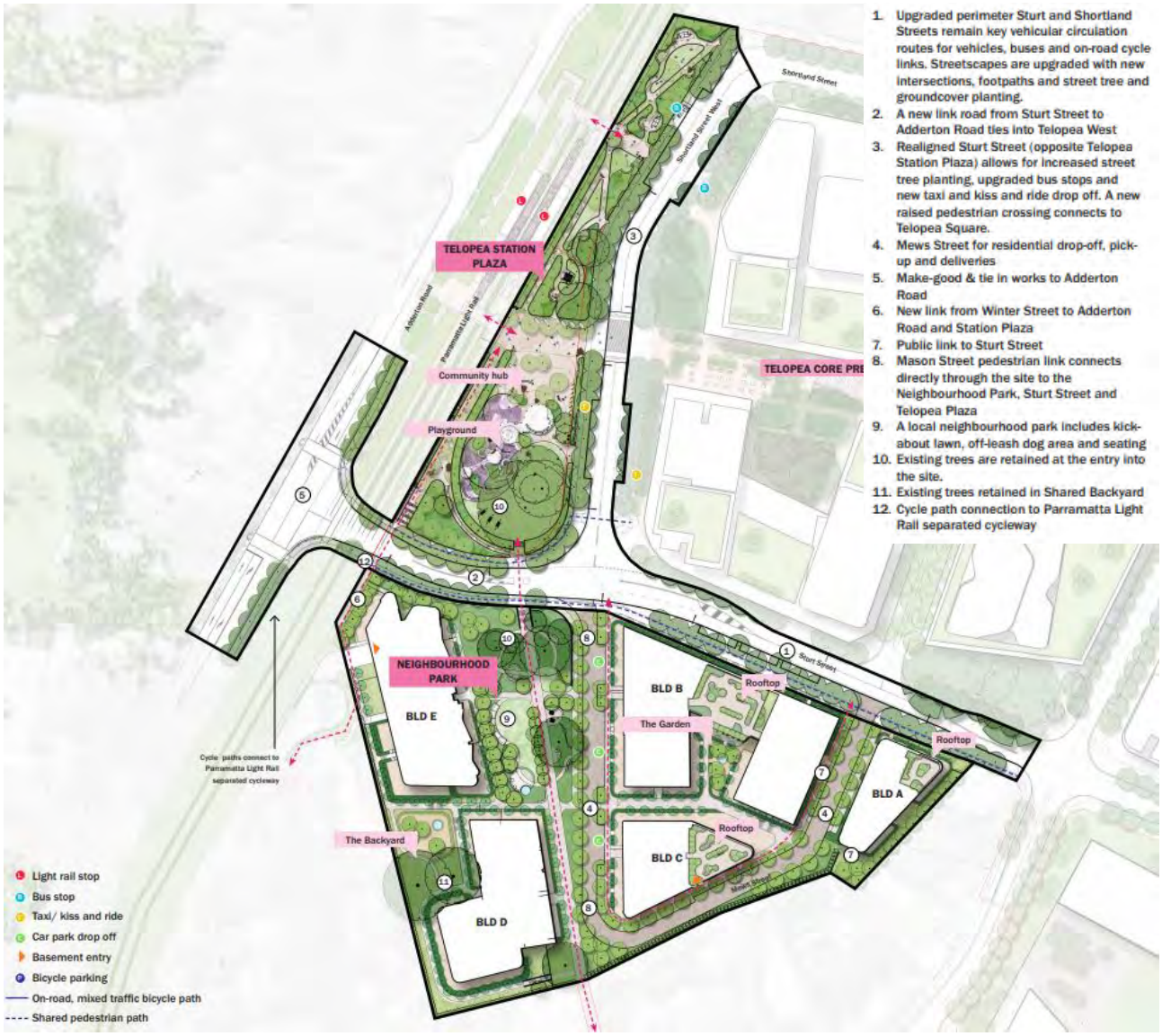
3.6.6. Landscape Character

The proposal integrates the architecture and landscaping into a sympathetic balance in which the existing landscape character, topography and trees help to shape and define the built form and architecture. The architecture and building composition define a network of landscaped areas which enhance the clusters of existing trees. The neighbourhood park, new road, public link and communal open spaces are well defined by the built form and allow for a variety of uses and programming. Design variety within each open space is proposed to balance the existing trees with new proposed planting, seating and gardens. The layered landscaped edges help to further define the separation between the private gardens and the communal or public areas.

This landscape design provides for intuitive pedestrian movement through the landscaped ground plane. The neighbourhood park connects to the public link which is located through the heart of the development and uses some of the key existing trees to guide the public through a variety of spaces.

Stage 1A delivers a variety of landscaped public and communal open spaces for the enjoyment of residents and the public. Telopea Station Plaza, the Neighbourhood Park, communal open space gardens and green rooftops are distributed across the Telopea Stage 1A precinct, with pedestrian linkages creating an integrated and connected network as illustrated in Figure 25.

Figure 25 Stage 1A Infrastructure Upgrade



Source: Hassell and Bates Smart

3.6.7. Access and Parking

Pedestrian access will be available directly from Sturt Street, as well as via entry points from the Neighbourhood Park, residential communal open space to the west and via the private access road to the east.

Vehicle access to the Stage 1A Site will be available from 2 locations, Mews Street and Winter Street. Mews Street has been designed to enable two-way movements along the eastern portion to/from the site entrance and one-way northbound movements along the western portion with vehicles only permitted to exit to the left at Sturt Street.

Given the connectivity between the basement parking areas, the distribution of trips to each driveway will be largely based on trip distribution to/from the local and sub-regional road network.

The basement will accommodate a total of 416 car parking spaces comprising 372 residential car parking spaces and 44 residential visitor car parking spaces. Stage 1A also incorporates 2 on-street car share spaces for the use of residents and the public.

Stage 1A provides two loading and servicing areas service areas accessed via Mews Street and Winter Street. The Mews Street loading dock would be the primary servicing area, provides access to service bays capable of accommodating Heavy Rigid Vehicles (HRV). Waste management would be solely undertaken via the Mews Street service area.

Winter Street would provide access to a smaller service area catering for vehicles up to and including a Small Rigid Vehicle (SRV); this service area is provided to reduce the distance between residential dwellings across the western part of Stage 1A and to accommodate general requirements such as removalists and smaller delivery vehicles.

3.6.8. Public Infrastructure

The following public infrastructure upgrades will be delivered as part of Stage 1A works to accommodate the expected increase in vehicular trip generation.

Station Plaza

Stage 1A incorporates the Telopea Station Plaza which will incorporate the following public infrastructure:

- A central transport interchange, with light rail, bus stops, taxi, kiss & ride, ride share and personal mobility rental stations (e-bikes, segways and scooters);
- A transport customer service kiosk;
- A community hub and flexible open space for events (social enterprise markets, community festivals); and
- Multiple open spaces with seating, games (chess, table tennis) between new and existing trees and planting.

Sturt Street (west extension)/ Adderton Road Link

A new extension of Sturt Street (termed Sturt Street (west extension)/ Adderton Road Link) will be constructed across the rail line between Adderton Road and Sturt Street to the immediate north-west of the Stage 1A residential site. This will provide an important and immediate connection between the Telopea Core and Adderton Road, which in turn provides key access to the north (Pennant Hills Road) and south (Kissing Point Road).

Adderton Road and Sturt Road West Signals

The intersection of Adderton Road and Sturt Street (west extension) will be upgraded to provide a signalised intersection.

Sturt Street (north)

The portion of Sturt Street adjacent to Station Plaza (termed (Sturt Street North) will be upgraded through to Shortland Street. The upgrade includes new shared paths on both sides of the road, on-street drop-off, car share and bus bays and a central pedestrian crossing linking the Telopea Core's green corridor with Station Plaza and Telopea Station.

The Stage 1A works will extend to a point just to the south of Shortland Street, the upgrade of which will be undertaken at a future time and necessarily be the subject of a separate application.

Sturt Street

Sturt Street between Sturt Street North and Manson Street will also be upgraded as part of Stage 1A, and will provide the same profile as Sturt Street North. The Stage 1A works will extend to a point just to the west of the intersection of Sturt Street & Manson Street & New Marshall Road; the upgrade of this intersection (and Sturt Street east of Manson Street) will be undertaken at a future time and necessarily be the subject of a separate application.

Mews Street

Stage 1A includes a new private road. Mews Street, which will connect Stage 1A to Sturt Street. Mews Street proposes a two-way carriageway for the eastern portion and a one-way northbound carriageway for the western portion.

Adderton Road and Winter Street

Parramatta Council have requested that as part of the Stage 1A proposal, movements at the intersection of Adderton Road & Winter Street be restricted to left in/left out only. t is noted that internal residential access is available through the Stage 1A site, and that as such these restricted movements are still provided for efficiently via the Stage 1A access point via Mews Street, Sturt Street and then the broader internal network.

The streets of the Telopea are where the daily life of the residents of will play out. The streets have been designed to allow easy access through and around the neighbourhood while providing generous tree and understorey planting, but also to allow incidental moments to occur. Street furniture will be carefully curated to take advantage of views, adjacent building uses and to allow for conversation, gathering and individual use.

Further detail of the proposed infrastructure upgrades is provided in the Stage 1A Civil Plans at Appendix CC.

3.6.9. Subdivision

The Stage 1A residential building site will be created through the registration of a Plan of Subdivision as illustrated indicatively in **Figure 26**.

Figure 26 Draft Plan of Subdivision

Source: LTS

4. STATUTORY PLANNING CONTEXT

4.1. OVERVIEW

In accordance with the SEARs, the following statutory planning policies have been considered in the assessment of the proposal:

- *Environmental Protection and Biodiversity Conservation Act 1999* (Cth)
- *Environmental Planning and Assessment Act 1979*
- *Environmental Planning and Assessment Regulations 2000*
- *Biodiversity Conservation Act 2016*
- *State Environmental Planning Policy (State and Regional Development) 2011*
- *State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development*
- *State Environmental Planning Policy (Infrastructure) 2007*
- *State Environmental Planning Policy No. 55 – Remediation of Land*
- *State Environmental Planning Policy (Affordable Rental Housing) 2009*
- *State Environmental Planning Policy (Housing for Senior or People with Disabilities) 2004*
- *State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017*
- *State Environmental Planning Policy (Education Establishments and Child Care Facilities) 2017*
- *Parramatta Local Environmental Plan 2011*
- *Parramatta Development Control Plan*
- *Draft Telopea Development Control Plan 2020*

4.2. ENVIRONMENTAL PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

Environmental Protection and Biodiversity Conservation Act 1999 (**EPBC Act**) was enacted to protect and manage nationally and internationally (migratory) flora, fauna, and ecological communities, defined in the Act as matters of National Environmental Significance (**MNES**).

A Biodiversity Assessment (**Appendix U**) has been undertaken by ACS Environmental which states that the proposed development will occur in areas which have no ecological conservation value in relation to the register of the EPBC Act.

4.3. ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979

Environmental Planning & Assessment Act 1979 (**EP&A Act**) provides the principal legislative framework for environmental planning in NSW and include provisions to ensure that proposals that have the potential to impact the environment are subject to detailed assessment and provide opportunity for public involvement.

The proposed development has been assessed in accordance with the matters of consideration listed in Section 4.15 of the EP&A Act, in particular:

- It delivers social housing to support the welfare of the community.
- It has been designed to ensure it responds to the term of the Masterplan and the character of the site and surrounding area.
- It represents the first stage in the delivery of the Concept Pan, and as such supports the economic and orderly development of land.
- It will construct the road network of which portions will be dedicated to Council to create land for public purposes.

- It will incorporate biodiversity offset measures, tree protection, and replacement planting to conserve the natural environment.
- It will provide buildings that achieve a range of sustainability targets and measures established under the Concept Plan.
- It will provide revitalised social housing to support those in need within Sydney.

Further this application has been made pursuant to Section 4.24 of the EP&A Act, which states that while a Concept Plan remains in force, any further detailed application in respect to the site cannot be inconsistent with the consent for Concept Proposal. The Stage 1A development has been made with reference to the concurrent Telopea Concept Plan and is consistent with, and pursuant to, the Telopea Concept Plan. This is discussed further in **Section 6** below.

4.4. ENVIRONMENTAL PLANNING AND ASSESSMENT REGULATION 2000

This EIS has addressed specification criteria within clause 6 and 7 of Schedule 2 in the *Environmental Planning and Assessment Regulation 2000* (**EP&A Reg**). As required by Clause 7(1)(d)(v) of Schedule 2, the following additional approvals will be required in order to permit the proposed development to occur are detailed below.

Table 12 Approvals required under EP&A Reg

Act	Approval Required
Legislation that does not apply to State Significant Development	
Coastal Protection Act 1979	N/A
Fisheries Management Act 1994	N/A
Heritage Act 1977	N/A
National Parks and Wildlife Act 1974	N/A
Native Vegetation Act 2003	N/A
Rural Fires Act 1997	N/A
Water Management Act 2000	N/A
Legislations that must be applied consistently	
Fisheries Management Act 1994	No
Mine Subsidence Compensation Act 1961	No
Mining Act 1992	No
Petroleum (Onshore) Act 1991	No
Protection of the Environment Operations Act 1997	No
Roads Act 1993	The provision of new public roads will require consent under Section 138.
Pipelines Act 1957	No

4.5. BIODIVERSITY CONSERVATION ACT 2016

Biodiversity Conservation Act 2016 (**BC Act)** seeks to maintain a healthy, productive, and resilient environment of the greatest well-being of the community, now and into the future, consistent with the principles of ecologically sustainable development.

The DPIE Bionet Atlas of NSW Wildlife database 2020 recorded 33 species of terrestrial and avifauna as threatened under the BC Act within a 5km radius of the subject site. A Biodiversity Assessment (**Appendix U**) has been undertaken by ACS Environmental which states:

- The proposed development will occur in areas which have no ecological conservation value in relation to the register of the BC Act.
- There are no areas of natural bushland area proposed for development.
- The subject land is not marked on the Biodiversity Values Map as containing any significant biodiversity value.
- The proposed development does not impact on any areas of natural bushland.
- No threatened species (both flora and fauna) would be significantly impacted by the proposed development of the subject land.
- The areas historically cleared of vegetation does not conform to the definition of a natural ecological community as it has been extensively cleared, developed and managed, and supports a high cover of exotic grass and exotic herbaceous weed species, as well as an assemblage of mostly non-locally occurring canopy species.

As such, the development based on threatened species occurrence is considered not to trigger the biodiversity offsets scheme. In addition, concurrence to the Secretary of DPIE and a species impact statement is not required.

4.6. STATE ENVIRONMENTAL PLANNING POLICY (STATE AND REGIONAL DEVELOPMENT) 2011

State Environmental Planning Policy (State and Regional Development) 2011 (**SRD SEPP**) identifies development types that are of State significance, or infrastructure types that are of State or critical significance.

Under Schedule 1, Clause 26 of the SSD SEPP, '*Development carried out by or on behalf of the New South Wales Land and Housing Corporation for the purposes of the Housing Act 2001 if the development has a capital investment value of more than $100 million.'*

The Telopea Concept Plan and Stage 1A will be carried out by Frasers on behalf of LAHC. As the proposed CPA will have a capital investment value of $1,841,544,794 and Stage 1A totals $180,252,675 (refer **Appendix B**) the proposal meets the threshold for Stage Significant Development.

4.7. STATE ENVIRONMENTAL PLANNING POLICY NO 65 – DESIGN QUALITY OF RESIDENTIAL APARTMENT DEVELOPMENT

State Environmental Planning Policy No. 65 – Design Quality of Residential Apartment Development (**SEPP 65**) aims to improve the design and quality of residential apartment development in New South Wales.

The overall design guidelines which form part of the Concept Master Plan prepared by Bates Smart and Hassell are consistent with the design guidelines of the ADG and demonstrates that the development on the site is capable of compliance with the design criteria recommended by the Apartment Design Guide (**ADG**)

A detailed SEPP 65 assessment has been completed by Plus Architecture for the residential components of Stage 1A (refer to **Appendix G**) as summarised below:

- **Minimum apartment size**: All apartments meet the minimum requirements of the ADG.
- **Solar access**: A total of 334 apartments (or 75.4%) meet the ADG two-hour solar access thresholds between 9am and 3pm at mid-winter. The proposal also ensures a number of apartments receive adequate sunlight from 8am to 9am and between 3pm and 4pmand 3pm. The scheme ensures there are less than 15% of total apartments with a south facing aspect which receive no solar access.
- **Natural ventilation**: A total of 238 (61.5%) achieve the ADG recommendation for natural cross ventilation.
- **Building separation:** The proposal seeks to maintain building separation for both privacy and acoustic treatment. As a result it creates generous public and communal spaces emerging between to create gathering spaces for the community.

  The proposed built form is compliant with the boundary setback in accordance with the ADG. In addition to the setback, the building is articulated to create a sense of scale by breaking down the overall form with combination of contrasting material and texture.

  While the proposal does not achieve strict compliance with the numeric controls for internal building separation, appropriate visual privacy outcomes are achieved through the positioning of privacy screens to habitable rooms and balconies where necessary. The proposed privacy treatments are considered to be consistent with the relevant design guidance of the ADG.
- **Communal open space**: The proposal achieves greater than 25% of the site area as communal open space. The proposed communal open spaces will receive more than 50% of direct sunlight for a minimum of 2 hours on 21 June. The built form carefully considers the solar access to the public open space within the site. The space is positioned along the northern part of the site and 87% of the open space area receives solar access for 2 hours between 9am and 3pm in Mid-Winter.

  Roof level communal space is also provided on Buildings A, B and C to provide additional opportunities for residents.
- **Deep soil zone:** The ADG requires 7% of the site or 595m^2 minimum as deep soil area. Public open space and communal open space within Stage 1A is intended to support large scale planting, providing for a deep soil zone within the site.
- **Private open space:** All apartments' private open space (**POS**) areas exceed the minimum ADG area and depth requirements recommended for balconies. All balconies are integrated into the building design and respond individually to their location, orientation, and address privacy and/or bulk and scale concerns on that basis. All balconies will be designed to be compliant with regards to safety.
- **Storage:** Apartments are provided with storage facilities meeting or exceeding the ADG criteria.

4.8. STATE ENVIRONMENTAL PLANNING POLICY (INFRASTRUCTURE) 2007

The *State Environmental Planning Policy (Infrastructure) 2007* (**ISEPP**) aims to facilitate the efficient delivery of infrastructure across the State by –

(a) Improving regulatory certainty and efficiency through a consistent planning regime for infrastructure and the provision of services,

(b) Providing greater flexibility in the location of infrastructure and service facilities,

(c) Allowing for the efficient development, redevelopment or disposal of surplus government owned land,

(d) Identifying the environmental assessment category into which different types of infrastructure and service development fall (including identifying certain development of minimal environmental impact as exempt development),

(e) Identifying matters to be considered in the assessment of development adjacent to particular types of infrastructure development,

(f) Providing for consultation with relevant public authorities about certain development during the assessment process or prior to development commencing, and

(g) Providing opportunities for infrastructure to demonstrate good design outcomes.

Clauses 84 – 88 provides guidance on development in or adjacent to rail corridors and interim rail corridors. The Telopea CPA is adjacent to the PLR and proposes a road overpass that will connect the CPA to residential land to the west. The proposed Concept Plan and Stage 1A development have taken measures to minimise any impacts on the rail corridor (refer **Appendix OO)**.

4.9. STATE ENVIRONMENTAL PLANNING POLICY NO. 55 – REMEDIATION OF LAND

The *State Environmental Planning Policy No. 55 – Remediation of Land* (**SEPP 55**) provides for a State-wide planning approach to the remediation of contaminated land.

Preliminary Contamination (**Appendix Z**) Investigations have been undertaken which conclude that the CPA development lots can be made suitable for the proposed land uses, subject to implementation of an Environmental Management Plan and Asbestos Management Plan for the appropriate management of any small scale contamination issues in accordance with NSW EPA guidance as appropriate prior to commencement of future final construction activities.

Detailed Contamination Investigations were undertaken for the Stage 1A development which conclude there is currently a Moderate 1 risk to human receptors in identified areas of the site due to bonded asbestos (ACM) present both on the ground surface and within shallow soils. Following the recommendations of the DSI and removal of these ACMs, the land would be considered Low Risk and suitable for the proposed low density residential, high density residential and recreational, open space land use.

Refer **Section 6.12** for further discussion.

4.10. STATE ENVIRONMENTAL PLANNING POLICY (AFFORDABLE RENTAL HOUSING) 2009

The *State Environmental Planning Policy (Affordable Rental Housing) 2009* (**ARH SEPP**) sets out the standard for development and maintenance of affordable rental housing in NSW.

The Telopea CPA will deliver 740 social housing units on the site, which have been designed to be consistent with the design criteria set out in Division 1 and Division 5 of the ARH SEPP.

Division 1 of the ARH SEPP applies to the development that is permitted with consent under an environmental planning instrument, is located on a site that does not contain a heritage item, and where all or part of the development is within an accessible area. The proposed development is permissible with consent under the PLEP 2011 in the B4 Mixed Use and R4 High Density Residential zones. It is not affected by a heritage item and is located within 500m of the Telopea Light Rail Station.

Clause 13 of the ARH SEPP permits a floor space ratio (**FSR**) bonus if at least 20% of the GFA of the development is to be used for affordable housing. Under the ARH SEPP, the term 'affordable housing' includes social housing.

The key provisions of the ARH SEPP have been considered in the preparation of this SSD DA and are addressed in **Table 13** below.

Table 13 Assessment against the ARH SEPP

Provision	Assessment
Division 1 – In fill affordable housing	
Clause 13 – Floor Space Ratio	The proposal incorporates a minimum social housing GFA of 46,000 m2 and a minimum affordable housing GFA of 13,400 m2. Based on the total floorspace provision, a bonus FSR applies to the proposed development which is addressed in **Table 17.**
Clause 14 – Standards that cannot be used to refuse consent	The following standards for the Concept Plan and Stage 1A Development set minimum standards that the consent authority cannot be used to refuse consent.

Provision	Assessment
	Site Area: The Concept Masterplan site area (134,532 m^2) and Stage 1A site area (20,594m^2). **Landscaped Area:** At least 30% of the site will be landscaped including overall improvements to the public domain. **Deep soil:** 15% of the site will be provided as deep soil zone, with a minimum of 3 metres or more. Deep soil planting is distributed evenly throughout the site, including at the rear, side, and centre. **Solar Access:** The Concept Plan is capable of achieving 70% of dwellings receiving the required solar access for 3 hours mid-winter. **Car Parking rates:** Adequate parking can be provided within the basements of the Concept Plan and Stage 1A to satisfy car parking rates of the ARH SEPP. **Dwelling Sizes:** The Stage 1A development Architectural Plans (**Appendix I**) demonstrate that future dwellings will be capable of compliance with the required dwelling sizes, which are generally consistent with the requirements of the ADG.
Clause 16 – Continued application of SEPP 65	SEPP 65 applies to the Stage 1A Development as it is development for the purposes of a residential flat building. Compliance with SEPP 65 is set out in **Section 4.7**.
Clause 16A Character of local area	The existing Telopea CPA has been used as social and affordable housing for approximately 30 years. The proposed redevelopment of the site is permissible with consent under the PLEP 2011 and is consistent with the strategic vision for Telopea Planned Precinct and Greater Parramatta Growth Area, where homes are located within 30 minutes to employment.
Clause 17 – Must be used for affordable housing for 10 years	The affordable and social housing component of the development will be used as such for at least 10 years.

4.11. STATE ENVIRONMENTAL PLANNING POLICY (HOUSING FOR SENIORS OR PEOPLE WITH DISABILITY) 2004

The *State Environmental Planning Policy (Housing for Seniors or People with Disability) 2004* (**Seniors Housing SEPP**) aims to encourage the provision of housing (including residential care facilities) that will –

(h) Increase the supply and diversity of residences that meet the needs of seniors or people with a disability, and

(i) Make efficient use of existing infrastructure and services, and

(j) Be of good design.

Block C3 and C4 of the Concept Plan are intended to provide seniors housing including ILUs. The fit out and operation of the residential care facility will be subject to a separate future development application and will incorporate an assessment of the relevant provisions of the Seniors Housing SEPP including Clause 45 for vertical villages.

4.12. STATE ENVIRONMENTAL PLANNING POLICY (EDUCATIONAL ESTABLISHMENTS AND CHILD CARE FACILITIES) 2017

State Environmental Planning Policy (Educational Establishments and Child Care Facilities) 2017 (**Education SEPP**) aims to facilitate the effective delivery of educational establishments and early education and car facilities across the State. The Concept Plan incorporates a centre-based childcare in Building C2. The fit out and operation of the childcare centre will be subject to a separate future development application.

4.13. STATE ENVIRONMENTAL PLANNING POLICY (BUILDING SUSTAINABILITY INDEX: BASIX) 2004

BASIX applies to all residential dwelling types (Class 1, 2 and Part 4) and is an integral part of the development application process in NSW, implemented under the EP&A Regulation and State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 (the BASIX SEPP).

The Basix SEPP does not apply to the Concept rather subsequent applications for the construction of buildings within the CPA will need to demonstrate design principles and objectives consistent with BASIX requirements.

An assessment of Stage 1A against BASIX is provided at **Appendix FF** and summarised below. A Sustainability Report (**Appendix FF**) has been prepared outlining the sustainable measures to be implemented across the precinct.

Water

The Water section of BASIX aims to reduce the potable water consumption of all new residential developments. The benchmark is 90,340 litres of water per person per year (or 247 litres per person per day), which was the average potable water consumption of a pre-BASIX home. The current specification demonstrates a 15% improvement on the minimum BASIX water requirements.

Thermal Comfort

A detailed assessment utilising National House Energy Rating Scheme (NatHERS) accredited software is required in order to verify compliance with the BASIX Thermal Comfort requirements.

The Telopea project has achieved an average star rating of 7.5 stars across the project. This equates to a 50% percentage improvement on the maximum allowable thermal comfort score in BASIX for this climate zone.

Energy

The Energy section of BASIX aims to reduce the greenhouse gas (GHG) emissions of all new residential dwellings. The benchmark is 3,292 kilograms of carbon dioxide per person per year, which was the average for pre-BASIX homes. The current specification demonstrates a 28% improvement on the minimum BASIX energy requirements.

4.14. DRAFT STATE ENVIRONMENTAL PLANNING POLICY (HOUSING DIVERSITY)

As part of the broader strategic approach to diversifying housing products in NSW, the State Government released an Explanation of Intended Effects (**EIE**) for a new *State Environmental Planning Policy (Housing SEPP)* in July 2020.

The Housing SEPP EIE included proposed new provisions for social and affordable housing, student accommodation, co-living accommodation, housing for seniors. On 18 December 2020, the first set of changes to housing policies were made to facilitate the delivery of social and affordable housing by the Land and Housing Corporation.

Notably, a number of amendments are proposed to the ARH and the Seniors Housing SEPPs to support the delivery of Social Housing and in respect of LAHC developments on government owned land including:

- Facilitating the redevelopment of government-owned land for two storey residential development, that may comprise elements of social, affordable and private housing, by increasing the number of dwellings in a development that LAHC can self-assess from 20 to 60.
- Extending density bonuses and car parking concessions, that currently apply under the ARHSEPP and Seniors SEPP, to all components, including the private housing components, of a residential development undertaken by or on behalf of LAHC.
- Clarifying that LAHC can carry out any type of residential accommodation, including manor houses and terraces, that is permissible under an EPI.
- Extending the density bonus for in-fill affordable housing under Division 1 of the ARHSEPP to include more land outside the Sydney region.
- Allowing LAHC to self-assess applications for subdivision of government-owned land.
- Streamlining assessment of LAHC projects by simplifying the pathway for major projects to become SSD under the SRD SEPP.

Once the legislation is publicly exhibited, it will become a matter for consideration of future detailed DAs for built form proposed under the Telopea Concept Plan.

4.15. PARRAMATTA LOCAL ENVIRONMENTAL PLAN 2011

The *Parramatta Local Environmental Plan 2011* (**PLEP 2011**) is the principal environmental planning instrument (**EPI**) for the Telopea Concept Plan and Stage 1A development. The following sections outlines the PLEP 2011 controls and its application to the Concept Plan and Stage 1A development.

4.15.1. Land Use Zone

The CPA is located across a variety of zones including:

- R4 High Density Residential
- B4 Mixed Use
- RE1 Public Recreation

The applicable land use zone to each site is identified in **Table 14**.

Table 14 Proposed Land Uses

Development Block	Land Use Zone	Proposed Land Use(s)
Core Area		
C1	B4 Mixed Use Zone	Retail Premises (including supermarket and food and drink premises) Residential Accommodation Health and Medical Services
C2	B4 Mixed Use Zone	Retail Premises (including food and drink premises) Childcare Residential Accommodation Social Housing Affordable Housing Indoor Recreation Facility to allow for a range of uses such as children's play area, gymnasium, cinema, wellness centre, swimming pool and the like Commercial premises for offices and co-working spaces
C3	Part B4 Mixed Use Zone Part R4 High Density Residential	Library Community Centre Residential Accommodation
C4	Part B4 Mixed Use Zone	Church (place of public worship) Conference venue and function facilities Commercial premises for offices and co-working spaces

Development Block	Land Use Zone	Proposed Land Use(s)
	Part R4 High Density Residential	Indoor recreation and entertainment facilities to allow for a range of uses such as children's play area, gymnasium, cinema, wellness centre, swimming pool and the like Community facility for uses such as a men's shed Retail premises (including food and drink premises) Residential accommodation including affordable housing and seniors housing to allow for residential aged care, independent living units and assisted living units Tourist and visitor accommodation Allied health
C5	R4 High Density Residential	Residential Accommodation Affordable Housing
C6	R4 High Density Residential	Residential Accommodation Social Housing
C7	R4 High Density Residential	Residential Accommodation Social Housing
C8	R4 High Density Residential	Residential Accommodation
C9 (Stage 1A)	R4 High Density Residential	Residential Accommodation
E1	R4 High Density Residential	Residential Accommodation
E2	R4 High Density Residential	Residential Accommodation
North Precinct		
N1	R4 High Density Residential	Social Housing
N2	R4 High Density Residential	Residential Accommodation
N3	R4 High Density Residential	Residential Accommodation
N4	R4 High Density Residential	Residential Accommodation

Development Block	Land Use Zone	Proposed Land Use(s)
N5	R4 High Density Residential	Residential Accommodation
N6	R4 High Density Residential	Residential Accommodation
N7	R4 High Density Residential	Residential Accommodation Social Housing
N8	R4 High Density Residential	Social Housing
N9	R4 High Density Residential	Residential Accommodation
N10	R4 High Density Residential	Residential Accommodation
South Precinct		
S1	R4 High Density Residential	Social Housing
S2	R4 High Density Residential	Residential Accommodation
S3	R4 High Density Residential	Residential Accommodation
S4	R4 High Density Residential	Residential Accommodation
S5	R4 High Density Residential	Affordable Housing
S6	R4 High Density Residential	Residential Accommodation
S7	R4 High Density Residential	Residential Accommodation
S8	R4 High Density Residential	Residential Accommodation

The Concept Plan seeks consent for a range of uses, including retail and residential in the B4 Mixed Use, and a variety of high and medium density housing typologies in the R4 High Density Residential. In addition, the Concept Plan proposes to accommodate a childcare centre, medical centre, library, community centre, church, and aged care facility. All permissible with consent in the respective zone that applies to each lot.

The Stage 1A development is partially zoned R4 High Density Residential and RE1 Public Recreation. The detailed Stage 1A development seeks consent for two *'residential flat buildings'* which are permissible with consent under the R4 High Density Residential zone in the PLEP 2011.

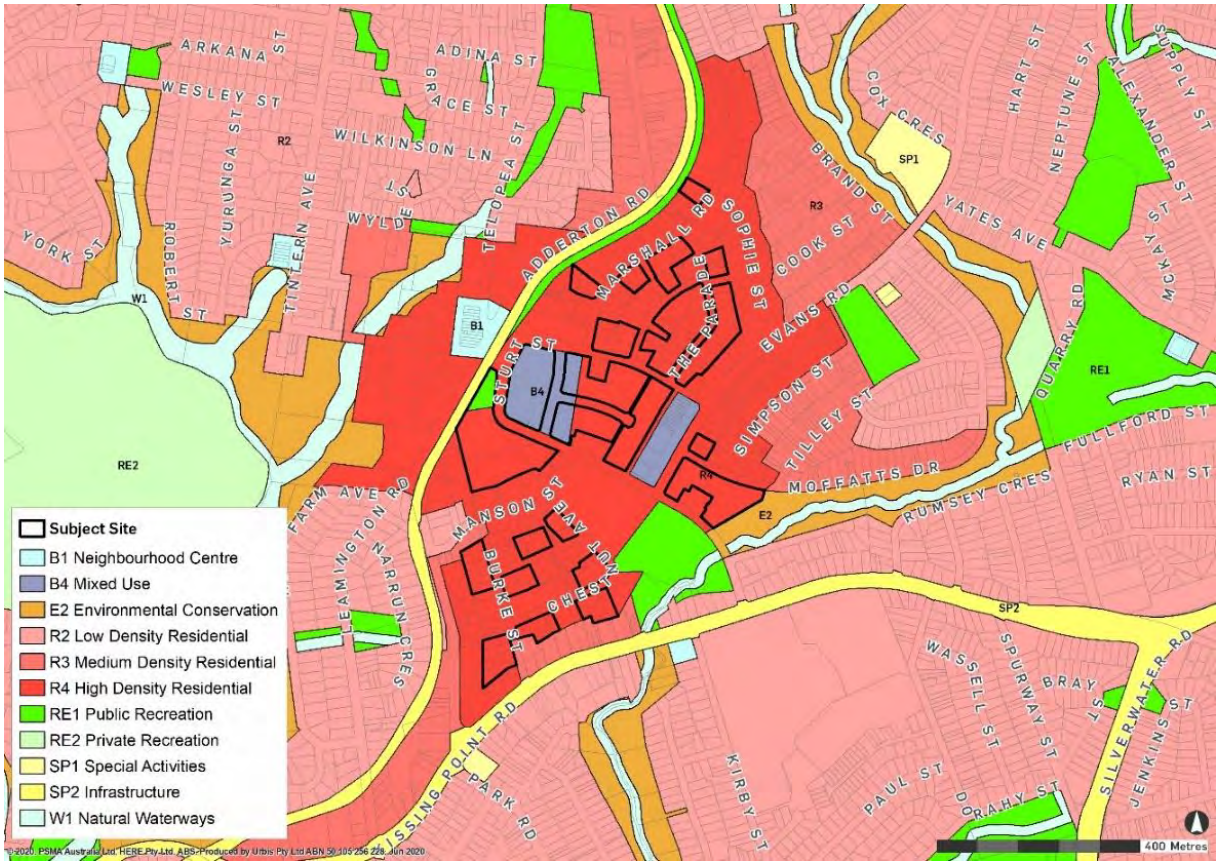
The RE1 Public Recreation zoned land in the Stage 1A development forms part of the light rail arrival plaza, hilltop park, and community hub. All defined as *'recreational area',* which is permissible with consent under the PLEP 2011.

The Sturt Street extension across the PLR to Adderton Road is defined as *'roads'* under the PLEP 2011. A road is permissible with consent under the R4 High Density and RE1 Public Recreation zones.

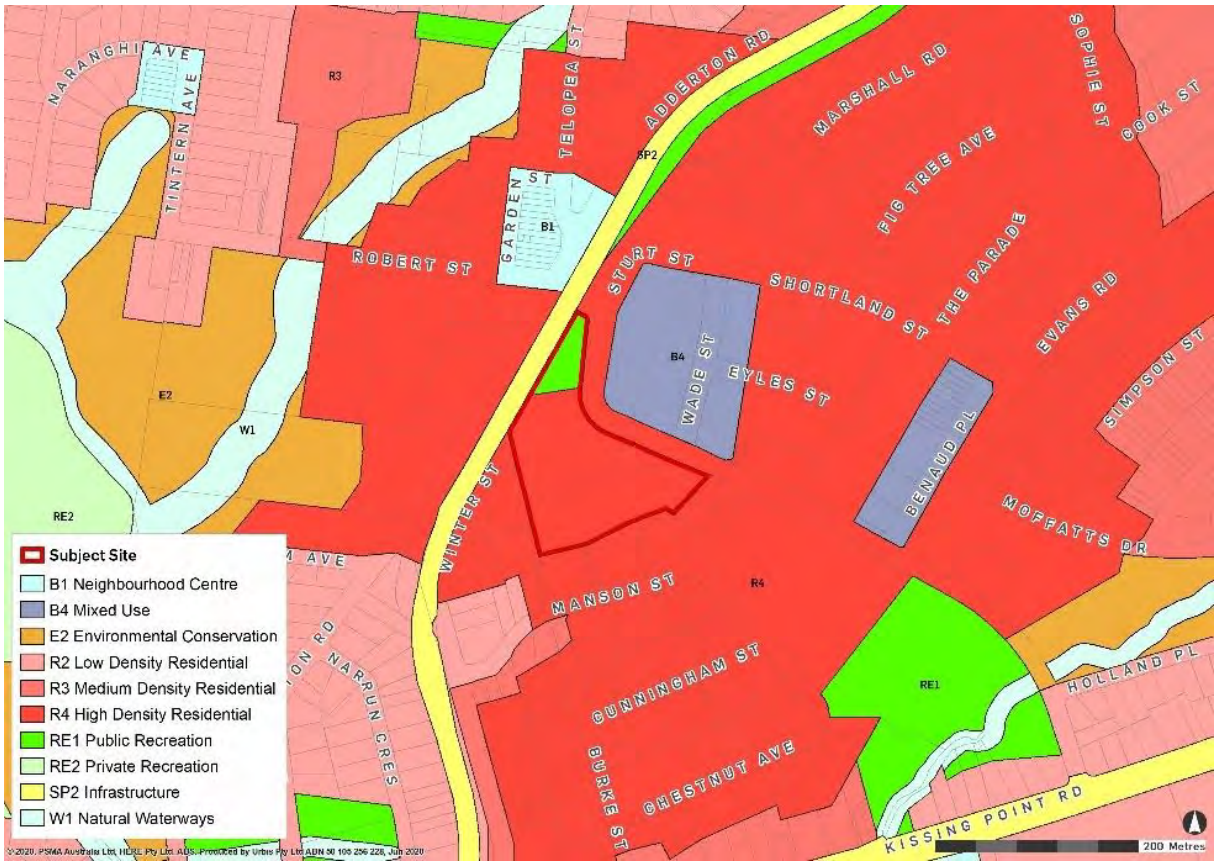
The Concept Plan and Stage 1A development remain consistent with the zones' objectives as it:

- Provides high quality residential accommodation to support the needs of the Telopea community;
- Creates opportunities to revitalise existing community facilities and provide additional public amenity to Telopea via pedestrian links, activation of ground plane, and addition of more public open space;
- Encourages retail and residential accommodation opportunities within proximity to public transport being the Telopea Light Rail Station and an intensity of land use suitable for the site;
- Provides additional active uses through retail along the ground plan opening up to public open space, such as the Light Rail Arrival Plaza; and
- The proposal will not result in unreasonable adverse amenity impacts on existing and future developments established under the Telopea Precinct.

Figure 27 Land Use Zoning



Picture 13 Concept Plan Area – Zoning



Picture 14 Stage 1A Development - Zoning

4.15.2. Height

Clause 4.3 of the PLEP sets maximum heights for buildings in the Telopea CPA as shown in **Figure 28** and listed in **Table 15**. In addition, Clause 6.16 allows buildings within the area identified as Area B to exceed the maximum height identified for that land by 5 metres, but only if the consent authority is satisfied that the building will have retail premises, business premises or community facilities on any ground level.

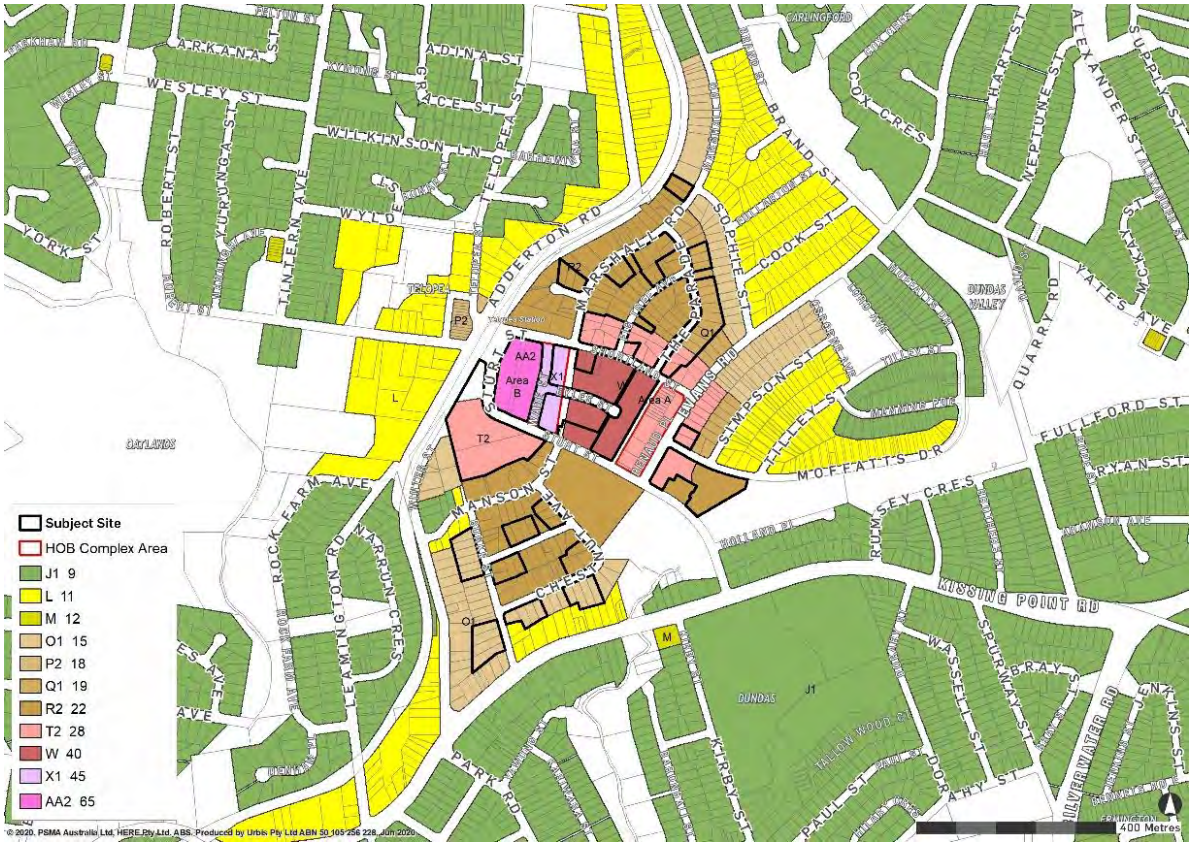
Building heights are proposed generally in accordance with Clause 4.3 and Clause 6.16 of the PLEP, with the exception of four buildings within Stage 1A and six buildings in the Core Area. A request to vary the height of building standard has been prepared in accordance with Clause 4.6 of the PLEP and is included at **Appendix N** and **Appendix O**.

Table 15 Concept Building Heights

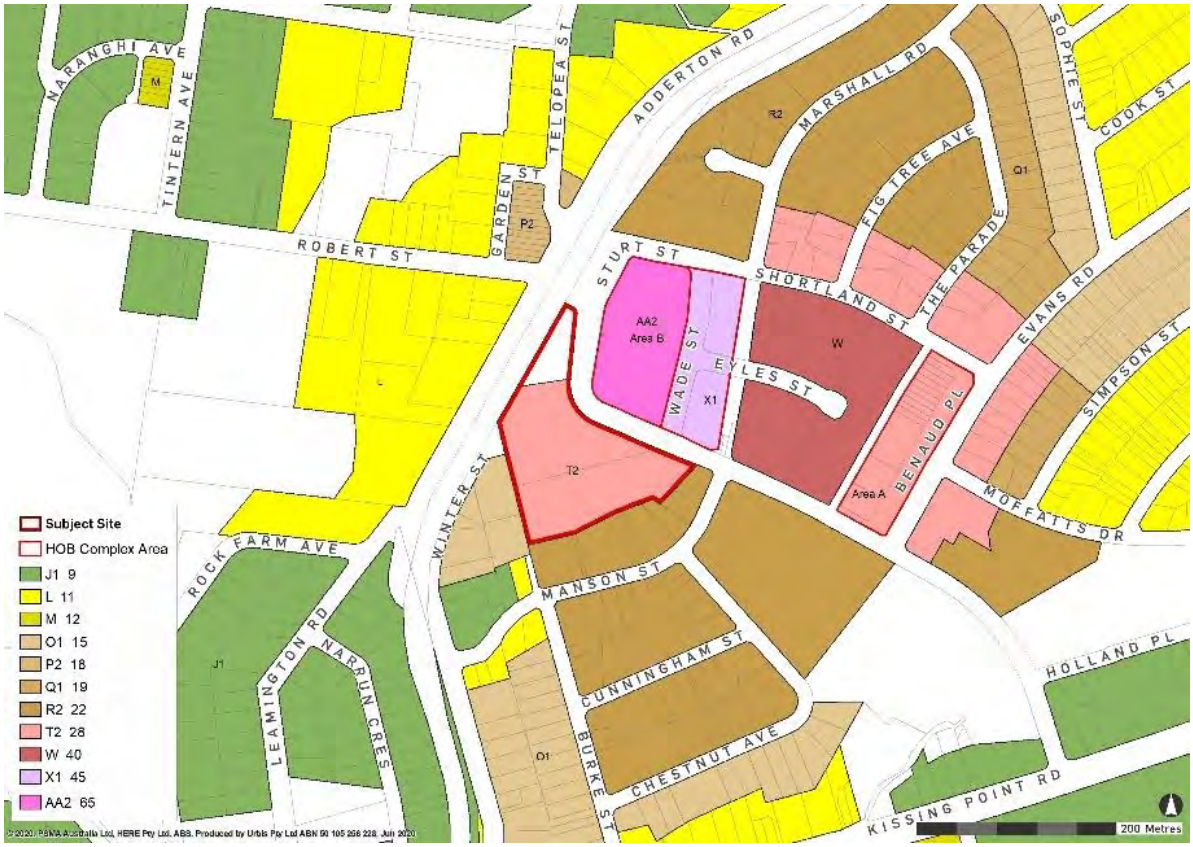
Development Block	PLEP 2011 Permissible Height	Proposed Height of Building Envelope
Core Area		
C1	70m	Part 70m / 86m
C2	70m	Part 48m / 86m
C3	50m	58m
C4	50m	Part 28m / 60m
C5	40m	Part 24m / 33m / 40m
C6	40m	Part 33m / 35m / 40m / 47m
C7	40m	Part 35m / 47m
C8	40m	Part 35m / 40m
C9 (Stage 1A)	28m	Part 22m / 28m / 31m / 33m / 47m
E1	28m	28m
E2	28m	28m
North Precinct		
N1	22m	22m
N2	22m	22m
N3	28m	Part 25m / 28m
N4	22m	22m
N5	22m	Part 15m / 19m / 22m
N6	28m	Part 22m / 28m
N7	22m	Part 10.5m / 22m
N8	28m	Part 19m / 28m

Development Block	PLEP 2011 Permissible Height	Proposed Height of Building Envelope
N9	22m	Part 12m / 19m
N10	22m	19m
South Precinct		
S1	22m	22m
S2	22m	22m
S3	22m	22m
S4	22m	22m
S5	15m	15m
S6	15m	15m
S7	15m	15m
S8	15m	15m

Figure 28 Height of Buildings



Picture 15 Concept Plan Area - Height



Picture 16 Stage 1A development – Height

Source: NSW Legislation

4.15.3. Floor Space Ratio

Clause 4.4 of PLEP sets maximum floor space ratios for development in the Telopea CPA as shown at **Table 17** and **Figure 29**. In addition, **Clause 6.17** allows:

- Development within the area identified as within “Area B” on the Floor Space Ratio Map (which encompasses the upper Core area of the CPA – Blocks C1-C4) to exceed the maximum floor space ratio shown for the land, but only if the consent authority is satisfied that the additional floor space will be used for *community facilities*.
- A floor space ratio of 2:1 for sites with an area of at least 2,000 squares and identified as within “Area C” on the Floor Space Ratio Map (which encompasses the North and South Precincts of the CPA).

Pursuant to Clause 13 of the ARH SEPP and Clause 45 of the Seniors Housing SEPP, a floor space ratio (FSR) bonus is permitted as the land owned by the Land and Housing Corporation and includes provision for affordable and seniors housing. This ‘bonus’ FSR has been dispersed across the site with the total FSR and GFA remaining compliant with the relevant floor space requirements under PLEP, ARH SEPP and Seniors Housing SEPP.

Table 16 – Summary of proposed Gross Floor Area

Summary of Gross Floor Area (GFA)	**(m²)**
Base GFA	311,379
Affordable Bonus (ARH SEPP)	73,577.72
Seniors Bonus (Seniors Housing SEPP)	2,533.24
Community use GFA (PLEP Clause 6.17)	4,450
TOTAL	**391,940**

The Stage 1A (C9) development has a base FSR of 1.7:1 with an additional 9,075m² permissible under the ARH SEPP. The proposed FSR of 1.77:1 remains compliant with the permissible FSR for the site.

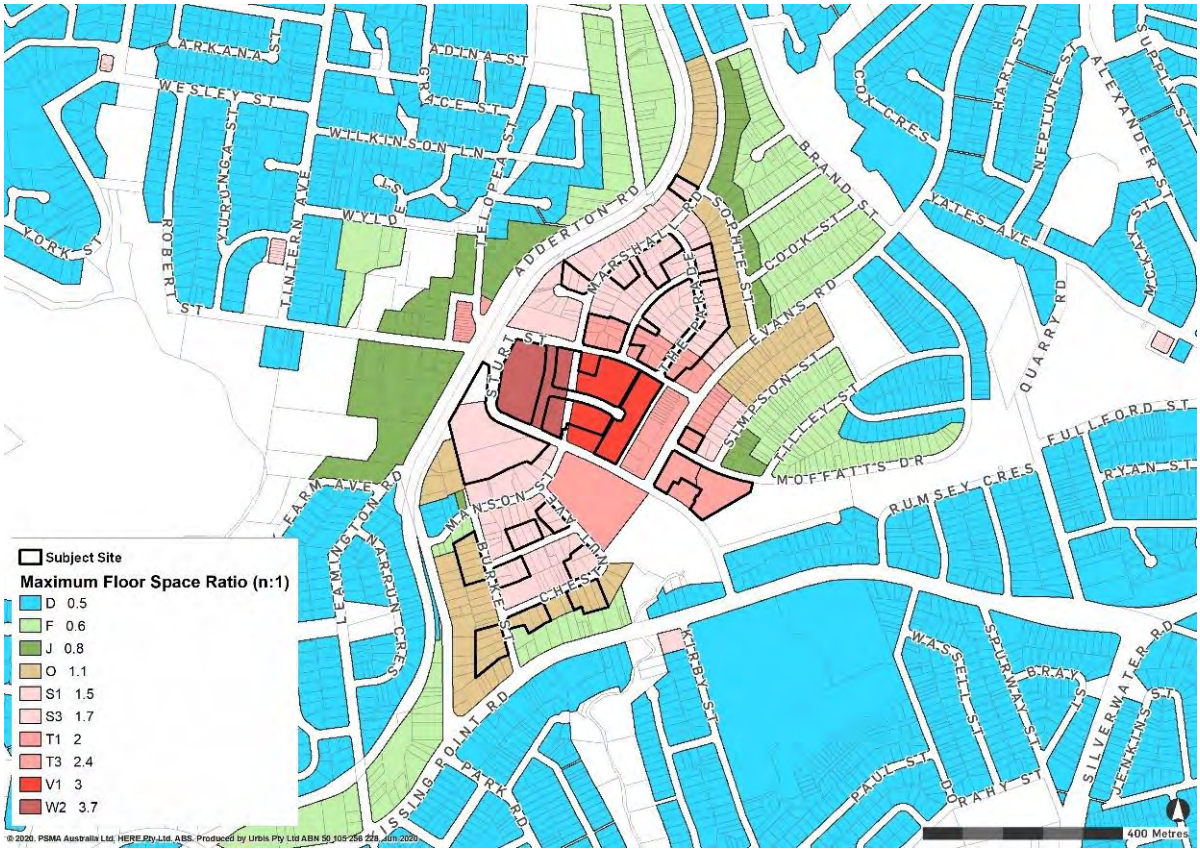
To provide an appropriate level of flexibility in the detail design of the future buildings, a minimum and maximum GFA has been nominated for each development block. The proposed maximum GFA of 391,940m², comprising a maximum total residential of 376,940m² and a minimum non-residential GFA of 15,000m² is not to be exceeded.

Table 17 Concept Floor Space Ratio

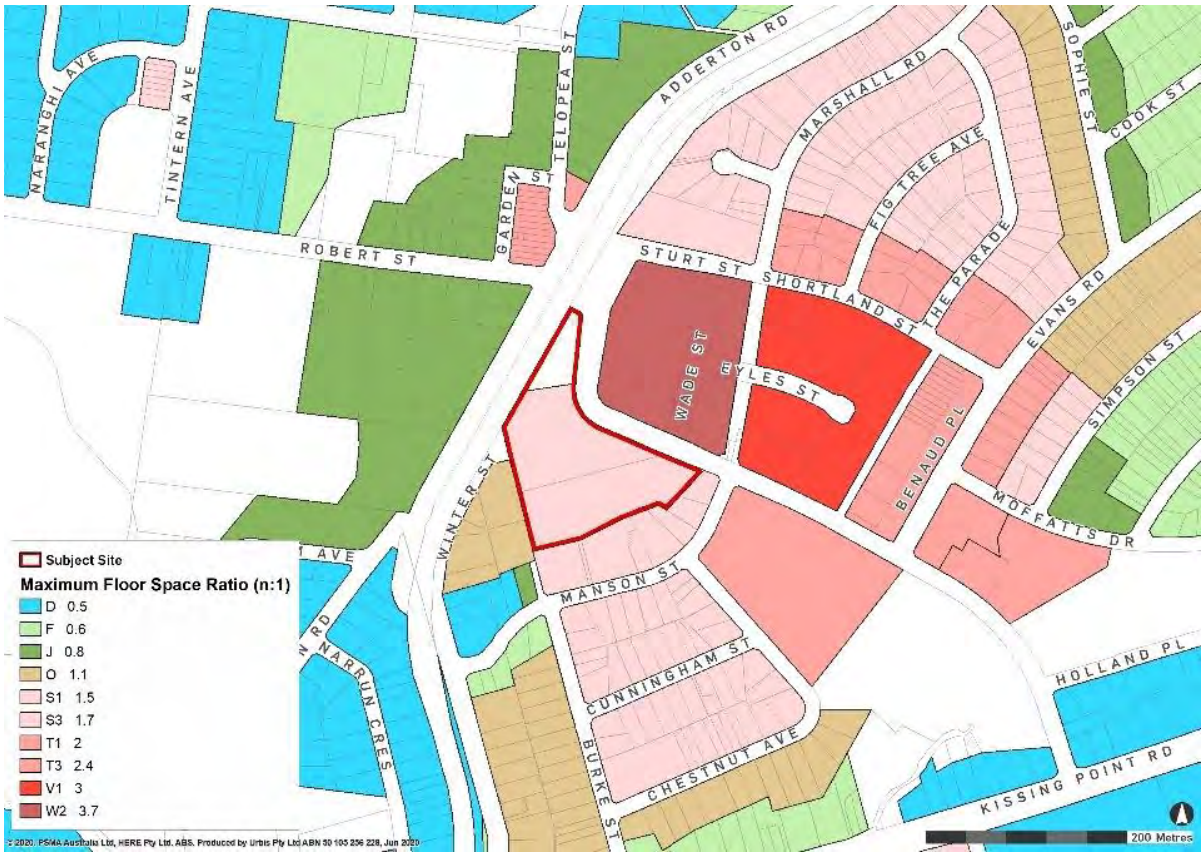
Development block	Site area (m²)	Base GFA (m²)	Bonus GFA (SEPP) (m²)	Allowable GFA (m²)	Indicative scheme (m²)	MIN per lot ~ -10% (m²)	MAX per lot ~ +5% (m²)
Core							
C1 – C2	11,898	59,366.50	17,249.60	76,616	C1 36,951 C2 45,435	69,000	82,700
C3 – C8	31,210	90,156.14	19,638.17	109,794	C3 16,150 C4 16,266 C5 18,637 C6 34,495 C7 11,360 C8 12,742	98,800	115,300
C9 (Stage 1A)	20594	30,855.00	9,075.00	39,930	36,510	35,900	41,900
East							
E1	4141	9,938.40	2,070.50	12,009	*11,475*	10,800	12,600
E2	1489	3,573.60	744.50	4,318	*4,216*	3,900	4,500
South							
S1	2,099	4,408.48	1,049.64	5,458	*5,577*	4,900	5,700
S2	2,744	5,762.90	1,372.12	7,135	*6,751*	6,400	7,500

S3	3,168	6,652.56	1,583.94	8,237	*7,744*	7,400	8,600
S4	2,782	5,842.57	1,391.09	7,234	*6,818*	6,500	7,600
S5	3,471	3,818.54	1,735.70	5,554	*5,744*	5,000	5,800
S6	2,877	3,164.72	1,438.51	4,603	*4,645*	4,100	4,800
S7	4,363	4,799.25	2,181.48	6,981	*7,160*	6,300	7,300
S8	4,527	4,980.09	2,263.68	7,244	*7,524*	6,500	7,600
North							
N1	2232	4,687.33	1,116.03	5,803	*5,312*	5,200	6,100
N2	1676	2,848.57	837.81	3,686	*3,906*	3,300	3,900
N3	4894	11,745.84	2,447.05	14,193	*14,499*	12,800	14,900
N4	2055	4,315.53	1,027.51	5,343	*4,439*	4,300	5,600
N5	4679	9,826.14	2,339.56	12,166	*11,373*	10,900	12,800
N6 – N7	11053	24,436.35	5,526.41	29,963	*N6 13,552* *N7 18,656*	27,000	32,400
N8 – N9	8941	16,792.96	4,470.45	21,263	*N8 7,544* *N9 12,385*	19,100	22,300
N10	2004	3,407.53	1,002.22	4,410	*4,075*	4,000	4,600
Total	**132,898.55**	**311,379.00**	**80,560.96**	**391,940**	***391,940***	**391,940**	

Figure 29 Floor Space Ratio



Picture 17 Concept Plan Area - FSR



Picture 18 Stage 1A development - FSR

4.15.4. Additional LEP Consideration

The following table assesses the compliance of the proposed development with other relevant clauses in the PLEP 2012.

Table 18 Parramatta LEP Compliance Table

Provision	Comment
Heritage Conservation (Clause 5.10)	There are no listed heritage items present on the Telopea CPA or Stage 1A development. The proposed development does not affect the heritage significance or view from the Redstone House, south-west of the CPA. Further detail on heritage impact, refer to Section 6.
Acid Sulfate Soils (Clause 6.1)	Development consent is required for the carrying out of work within 500 metres of adjacent Class 1,2,3 or 4 land that is below 5 metres Australian Height Datum and by which the water table is likely to be lowered below 1 metre Australian Height Datum on adjacent 1,2,3 or 4 land. The Telopea CPA and Stage 1A development is identified as Class 5 under the Acid Sulfate Soils map. It is not within 500 metres of Class 1,2,3 or 4 land. Therefore, it does not require an Acid Sulfate Soil Management Plan for the proposed works.
Earthworks (Clause 6.2)	Before granting development consent for earthworks, the consent authority must consider the following matters – ▪ the likely disruption of, or any detrimental effect on, existing drainage patterns and soil stability in the locality, ▪ the effect of the proposed development on the likely future use or redevelopment of the land, ▪ the quality of fill or the soil to be excavated, or both, ▪ the effect of the proposed development on the existing and likely amenity of adjoining properties, ▪ the source of any fill material and the destination of any excavated material, ▪ the likelihood of disturbing relics, ▪ the proximity to and potential for adverse impacts on any watercourse, drinking water catchment or environmentally sensitive area. The Geotechnical Assessment (**Appendix Y**) confirms that earthworks can be undertaken on the site subject to appropriate engineering standards. Section 6.10 discusses geotechnical considerations and the impacts of the proposed development in further detail.
Flood Planning (Clause 6.3)	Development consent must not grant development on land unless it is satisfied that the development – ▪ is comparable with the flood hazard of the land, and ▪ is not likely to significantly adversely affect flood behaviour resulting in detrimental increases in the potential flood affectation of other development or properties, and ▪ incorporates appropriate measures to manage risk of life from flood, and

Provision	Comment
	▪ is not likely to significantly adversely affect the environment or cause avoidable erosion, siltation, destruction or riparian vegetation or a reduction in the stability of river banks or watercourses, and ▪ is not likely to result in unsustainable social and economic costs to the community as a consequence of flooding. A Flood Impact Assessment (**Appendix DD**) confirms that the CPA is not affected by the 1:100-year flood event and therefore suitable for development. **Section 6.15** discusses flood impact consideration on the proposed development in further detail.
Biodiversity Protection (Clause 6.4)	Before determining a development application, the consent authority must consider any adverse impact of the proposed development on the following: • native ecological communities, • the habitat of any threatened species, populations, or ecological community, • regionally significant species of fauna and flora or habitat, • habitat elements providing connectivity. A Biodiversity Assessment (**Appendix U**) confirms that the CPA does not impose any adverse impact to ecological communities, habitat of threatened species, populations or ecological communities, or any significant species of fauna or flora. **Section 0** discusses flood impact consideration on the proposed development in further detail.
Design Excellence (Clause 6.12)	The provisions of Clause 6.12 of the PLEP 2011 have been considered in the preparation of the Telopea Design Excellence Strategy (refer **Appendix PP**) and the proposed process for delivery of design excellence across the Telopea CPA. The Telopea Design Excellence Strategy outlines the principles and procedures that will be followed during each stage of the Concept Masterplan delivery program. This will ensure that the architectural and urban design of future development stages achieves design excellence and positively contributes to the broader Telopea Precinct and Parramatta Local Government Area. The Strategy more specifically articulates the proposed design excellence process and demonstrates how design excellence will be achieved during this stage of the development. The Strategy is based on the following six principles: 1. Establishment of site-specific Design Guidelines, to guide the future development of the precinct and ensure a high quality architectural and amenity outcome is achieved. 2. Incorporation of Connecting with Country requirements (as recommended by The Fulcrum Agency), including ongoing engagement with appropriate Aboriginal stakeholders throughout the project. 3. Establishment of a robust process to select the Design Team for each site, ensuring appropriate experience in designing and delivering design excellence, and encouraging design diversity and visual interest across the precinct.

Provision	Comment
	4. Undertake Design Excellence Competitions for four strategically important sites. 5. Undertake a process of Design Review with the NSW Government Architect, Parramatta City Council, and other relevant stakeholders during the preparation of detailed development applications. 6. Ensure Design Integrity is maintained throughout the design process.
Development requiring the preparation of a development control plan (Clause 6.18)	The Telopea Precinct is identified on the 'Key Site Map' and requires the preparation of a site-specific development control plan. A Draft Development Control Plan (DCP) for the Telopea Precinct has been prepared by Parramatta Council and was placed on public exhibition on Wednesday 19 May. It is noted that there are inconsistencies between the exhibited Draft DCP for the Telopea Precinct and the Telopea Concept Plan and associated draft Voluntary Planning Agreement. Many of these inconsistencies were also identified in the Draft City of Parramatta (Outside CBD) Development Contributions Plan. These inconsistencies primarily relate to the movement network (including roads, intersections, bicycle, and pedestrian connections) within the Core area of the Telopea Precinct. For example, we note throughout the draft DCP Eyles Street is shown as a road with vehicle access. This is contrary to the Telopea Concept Plan and associated draft Voluntary Planning Agreement which has been presented and discussed with Council on multiple occasions. It is our view that these inconsistencies should be rectified prior to the finalisation and endorsement of the draft DCP.
Arrangements for designated State public infrastructure (Clause 8.1)	The Telopea Precinct is identified on the 'intensive urban development area map'. Clause 8.1 requires that new residential development within the precinct contribute to the provision of designated State public infrastructure. This clause applies as an interim measure until the Greater Parramatta Special Infrastructure Contribution (SIC) or equivalent comes into force. In the absence of formal SIC or equivalent, Frasers have provided a without prejudice letter of offer to the *NSW Department of Planning, Industry and Environment* to formally commence negotiation of a State Voluntary Planning Agreement (SVPA2021-220) to provide satisfactory arrangements for the provision of State public infrastructure for the Communities Plus Telopea CPA.

4.16. DEVELOPMENT CONTROL PLANS

As required by Clause 6.18 of the PLEP 2011, a site-specific development control plan has been prepared for the Telopea Precinct by Parramatta Council.

Clause 11 of the State and Regional Development SEPP states that development control plans (whether made before or after the commencement of this Policy) do not apply to State Significant Development. As such, there is no requirement for assessment of the proposal against the Parramatta Development Control Plan 2011 or the draft Telopea Development Control Plan 2020 (Telopea DCP) for this SSDA.

In accordance with Section 4.22 of the EP&A Act, a Concept DA can be made to establish the concept proposal for the development of a site to which separate and future detailed proposal (such as Stage 1A development) must adhere. A Concept DA may also be undertaken in lieu of the preparation of a site-specific DCP in accordance with Section 4.23 of the EP&A Act and is considered as an alternative and improved outcome to the Telopea DCP.

5. COMMUNITY ENGAGEMENT

Frasers and LAHC have undertaken engagement with a range of stakeholders, to discuss planning controls for the site and to inform the current SSD Concept and Stage 1A built form. Frasers is committed to continued meaningful engagement with stakeholders who have an interest in the development. To inform the SSDA, Frasers has sought to ensure the interests of stakeholders are identified and addressed through a range of consultation activities. This Section describes the consultation undertaken to date, and that proposed during the detailed design and delivery of the project.

5.1. ENGAGEMENT FRAMEWORK

A large body of literature notes the importance of genuine and meaningful engagement as the foundation of enduring and effective urban renewal. At Telopea practical and collaborative engagement will underpin the success of the redevelopment. This will need to be focused on and address the needs of:

- Existing tenants
- Surrounding residents
- Agencies and authorities including the City of Parramatta; and
- Local community based organisations and service providers.

Proactive and early consultation will work to:

- meet statutory engagement requirements along with those of the NSW Government and also fulfil Frasers commitment to consulting on all their projects.
- increase awareness of:
  - the existing approved LEP within the project will be delivered
  - the objectives of Communities Plus and the importance of delivering more social and affordable housing in the context of mixed housing communities
  - making the most of significant government investment in the light rail by appropriately placed housing in proximity to new public transport infrastructure
- identify community issues and potential solutions prior to plans being finalised.
- assist the community to constructively navigate the renewal process and build a sense of confidence and excitement about Telopea's future.
- create the community partnerships to support the renewal effort and the various social programs that will be developed to support social housing residents and promote integration of existing and new communities.
- develop relationships with returning and incoming social housing residents well before occupation.

A range of engagement tools and techniques will be used to ensure the community and stakeholders can be informed about the project as it progresses and have an opportunity to provide input at the appropriate times as Telopea is created over a 15-20 year time horizon. Initially engagement will focus on:

- refining the project vision and supporting high level planning applications
- involving the community in discussions about public domain and proposed community facilities
- establishing a framework for collaborating with local businesses, schools, service providers and peak bodies to deliver the social outcomes that are desired for Telopea.

Over time, this focus will turn to:

- community building
- ongoing detailed development applications
- communication to assist in managing construction activities
- services, programs and activities to nurture a cohesive, supportive and healthy community.

5.1.1. Key Stakeholders

Telopea is a project of metropolitan significance and has a diverse set of stakeholders. The following sections outline key stakeholders with which engagement will be targeted.

Key Government Agencies:

- Department of Community Services and Justice
- Parramatta Light Rail
- DPIE
- Department of Education
- Government Architect of New South Wales

Key Community Stakeholders include:

- Social housing residents to be relocated
- Social housing residents wanting to return
- The Church of Christ
- Telopea Public School Community
- Community Centre Stakeholders
- Residents in Telopea Dundas and Dundas Valley
- Local Businesses
- Waratah Shopping Centre
- Telopea shops (various)
- Local CALD community
- Prospective PLR customers

Key Community organisations/ standing bodies:

- Telopea Connect - Interagency Group (agency and community)
- Community garden group
- Dundas Valley residents action group

Key Utility Providers:

- RMS / TfNSW
- Ausgrid
- Jemena
- Telcos & NBN
- Sydney Water

5.1.2. Engagement Activities

A summary of the proposed engagement framework is outlined in **Table 19** below.

Table 19 Summary of Planned Community Engagement Activities

Phase	Engagement Activities	Purpose
Pre-lodgement engagement		
Phase 1: June - July 2020 *(Launch and Engagement Inception)*	▪ Ongoing workshops and meetings with City of Paramatta to evolve the current scheme and negotiate key aspects such as VPA and inclusion of Council owned facilities ▪ Scope out thoughts on placemaking and community initiatives ▪ Develop and lunch website and commence quarterly newsletter – distributed locally and online ▪ Support work of LAHC relocations team	▪ Build relationships and communication channels ▪ Raise awareness of project and forthcoming lodgement later in 2020 ▪ Establish channels of communication
Phase 2: August 2020 – July 2021 *(Detailed Planning for overall SSDA)*	▪ Ongoing consultation with Council staff and agencies ▪ Brief local MPs, Mayor and ward Councillors on project prior to application being lodged.	▪ Introduce team and project ▪ Ensure local decision makers and leaders are well informed prior to scheme going public ▪ Provide information about relocation process and social outcomes framework ▪ Ensure plans respond to Agency and Council needs prior to being lodged.
Post lodgement engagement		
Phase 3:	▪ Revised collateral and events to support broader public engagement and the exhibition process	▪ Provide readily accessible information to support formal exhibition
Exhibition of SSDA	▪ Newsletter ▪ Website updates ▪ Presentations to local stakeholder groups and standing bodies including the Telopea Connect group ▪ Neighbour and retailer briefings and information sessions to support exhibition of SSDA ▪ Information pop ups within precinct to support exhibition of both applications ▪ Activities with LAHC residents such as tours of Riverwood to show benefits of housing renewal and build ownership and excitement.	▪ Ensure ready access to team to explain scheme and rationale underpinning proposed plans ▪ Understand community issues and where possible respond to these as part of response to submissions ▪ Build community understanding of what is being proposed ▪ Establish working relationships to flesh out long term designs for public domain etc ▪ Build awareness of the benefits of locating new development close to improved transport infrastructure.

Phase	Engagement Activities	Purpose
Ongoing Planning to late 2022	▪ Revised collateral and events to support broader public engagement and the exhibition of DAs: – Twice yearly newsletter and website updates – Information sessions to support exhibition of DAs for particular buildings ▪ Updates to Council and local MPs ▪ Workshops with Telopea Connect and local service providers to inform the Social Housing Outcomes Plan and develop partnerships to underpin future implementation of the plan ▪ Pop ups and community workshops to develop detailed designs for open spaces and community facilities etc ▪ Ongoing activities with LAHC residents such as tours of Riverwood to show benefits of housing renewal and potential involvement of residents in design of communal spaces within social housing buildings ▪ Work with TAFE to support roll out of "Participation in Construction Program"	▪ Promote community involvement and ownership over those aspects of the design that can be influenced by stakeholder input i.e. communal spaces, community facilities and public domain and parks ▪ Support exhibition of detailed DAs for initial buildings ▪ Develop broad based partnerships with community service providers and Ryde TAFE to underpin the SHOP
Construction and Progressive Occupation		
Phase 4: 2023 – 2028 *Construction commences* *Progressive residential and commercial occupation from 2025*	▪ Construction community relations activities such as newsletters and enquiries line ▪ Key stakeholder briefings to support exhibition of any subsequent DAs ▪ Pop Ups and/or information sessions to support exhibition of each DA ▪ Ongoing engagement around detailed design of public domain design, public art, wayfinding and community programs ▪ Interim activations i.e. celebration of: – opening of the Light Rail (and implement wayfinding program), – return of first social housing residents – opening of retail and community facilities ▪ Updates to Council and local MPs	▪ Ensure community is fully informed about construction activities and there are responsive channels for receiving and resolving enquiries and complaints ▪ There are ongoing opportunities for community members to be informed of and comment upon modifications to plans and approvals ▪ Community building activities are incorporated into ongoing engagement ▪ Build community and project ownership through celebrations of achievements

Phase	Engagement Activities	Purpose
	▪ Highlight initiatives such as "Participation in Construction"	
Phase 5: *Occupation and Operation*	▪ Implement community welcome and integration program ▪ Community building events and community development initiatives ▪ Creation of a precinct online portal for residents, businesses workers and visitors.	▪ Community building activities and events are incorporated into ongoing engagement ▪ With support of the place team the community starts to take ownership of the future of Telopea.

5.1.3. Engagement Techniques

Project website

- Essential for enabling the Frasers Hume Housing and LAHC to communicate and receive information about this major urban renewal project in a COVID environment
- In initial stages the website will have a primarily community consultation function to:
  - hold the community steady as support preparation of the SSDA
  - Provide detailed information to support broad participation in the exhibition process
- Eventually following exhibition and approvals the website will pivot to support community relations during construction and then community building.
- Detail of content, branding and positioning to be determined in discussion with LAHC
- Will provide high level information on project but be also highly visual and could include renders and CGIs
- Will focus on:
  - placemaking
  - design principles
  - Future retail offer etc
  - Equitable integration of a range of housing types and tenures
- Consider online information session capability
- Will not contain any interactive online forums - all feedback will be received via feedback form emailed directly to engagement team

Contact points - project email and 1800 number

- Provide ready point of access for project queries from the community
- Direct them to appropriate sources of information
- Later will be used for community relations during construction
- Contacts will be logged

Project newsletter

- Raise awareness of project and update people on planning process and project vision
- Highlight opportunities about how to get involved and stay in touch
- Highlight key benefits deriving from the renewal of Telopea

- Direct people to project website
- Notify of forthcoming engagement
- Quarterly or twice yearly depending on stage and intensity of the project

Briefings of existing organisations such as the:

- Local MPs and Ward Councillors
- Telopea Tenants Advisory Group
- Telopea Connect
- Valley Residents Action Group
- others

Develop collateral and events to support the LAHC relocations team and Hume Housing:

- Work with and inform social housing residents of the renewal process
- Ensure opportunities for staff and residents to stay actively involved

Informal Community Information Sessions or Pop Ups at key points in the planning and exhibition process.

- Raise awareness of project
- Ensure informed submissions
- Test community sentiment

In place community workshops:

- to design parks and public spaces
- seek input to community facilities design etc

5.2. COMMUNITY ENGAGEMENT OUTCOMES

As outlined within the Community Consultation and Engagement Summary and Responses Report prepared by Elton Consulting (**Appendix M**) to support the preparation of the Concept Plan for Telopea and the Development Application for the first area of development, Frasers have undertaken series of community engagement initiatives. Including:

- TRED on 5 March 2020
- Hope connect presentation on 26 February 2020
- Hope connect presentation on 9 June 2020
- Telopea Connect presentation 30 June 2020 (NSW police in attendance)

In addition to the above Frasers held a series of online webinars (as detailed in **Table 20**) to provide stakeholders and the community with an overview of the proposed redevelopment of the site and seek feedback prior to lodging plans with the DPIE.

Table 20 Community engagement webinar details

Date	Group	Number of Participants
Wednesday 11 March 2021 (3:30 – 4:30pm)	General Community	13
Wednesday 11 March 2021 (5:30 – 6:30pm)	General Community	12
Saturday 13 March 2021 (1pm – 2pm)	General Community	15
Thursday 25 March	Telopea Connections & CDAT (NSW police in attendance)	9

The webinars were comprised of a presentation by Frasers followed by a time for questions and comments from participants. Representatives from LAHC and the DJC were also on hand to provide additional details on the process for relocation and NSW Government objectives for renewal.

Invitations for the community webinar were distributed to over 2,000 households and businesses throughout Telopea and surrounding areas and for the Wednesday afternoon session, the Dundas Area Neighbourhood Centre made their facilities available for any local people who did not have access to the internet.

Key themes which came out of these sessions are summarised in **Table 21** below.

Table 21 Key community engagement themes

Community Concern	Frasers Response
Relocation of residents	
There was a great deal of interest in the relocation process with several questions regarding: - the timing of when residents in different development areas would be relocated - whether it would be possible to relocate earlier due to age or illness - whether or not there would be an option to move back into Telopea once the renewal has been completed - would there be an option for existing residents to remain instead of relocating - if it was possible for residents to choose where they could relocate to.	Relocations are managed by Land and Housing Corporation and Department of Communities and Justice in accordance with their relocations policy. The first stage of redevelopment is planned to occur in areas where existing residents have already been advised and commenced relocating. NSW Housing residents with queries about relocation should speak with their housing officer.

Community Concern	Frasers Response
Parks and green space	
The approach to retaining existing trees and designing the redevelopment around a series of green spaces was strongly supported. Suggestions included: - making sure the parks and open spaces are fully accessible - that footpaths in the northern and southern precincts are fully landscaped as they are replaced.	Parks will comply with accessibility requirements and will be constructed in front of properties as they are redeveloped. Footpath improvements will also include street trees.
Mobility and access	
A key issue within the community was the step topography from Evans Street to the Light Rail and whether community members who may be less mobile can readily traverse the site. Detailed feedback included: - access to higher grounds and amenities via lifts for less abled community members - the importance of improving footpaths throughout the complete renewal area - nature strips are sometimes left overgrown and people must walk on the road which is dangerous and discourages walking - while outside the development area, Adderton Road and Roberts Street need pedestrian improvements - more through site links need to be created wherever possible in the northern and southern development areas - roads and streets should be sufficiently wide to readily accommodate bus services - queuing areas will need to be provided for bus services - planning needs to consider improved provision of public transport services linking Telopea to the east of the city as the light rail will primarily serve commuters wanting to head west to Parramatta.	The design of the new open space and pedestrian spine through the centre of the site incorporates ramps and lifting to provide for varying ranges of mobility to the light rail and new retail. Key streets will be wide enough to accommodate buses. The Concept Plan envisages a number of through site links to facilitate direct access throughout the redevelopment area. Footpaths and street scape upgrades will be provided throughout the redevelopment area.

Community Concern	Frasers Response
Shops and businesses in Telopea	
There was support for additional retail in the area to cater for both current and future needs. Feedback included: - what would happen to the existing shops and businesses in Telopea and whether they would continue to provide quality services in the face of potential future competition - the need for better supermarkets and amenities to cater for the growing population in Telopea - additional medical services are needed within the area.	Frasers' proposal includes a new retail centre and will include a full line supermarket. There will be space within the new retail centre for a pharmacy and consulting rooms, should an operator wish to locate here. The existing shops are outside of the land holdings owned by LAHC. This land was re-zoned but the ultimate outcome for these shops is in the hands of the current owners.
Traffic and access	
Commentary around this topic focused on some existing traffic problems in the area and the capacity within the network for additional traffic generated by the redevelopment. Feedback included: - improved roads and infrastructure will be required to respond to the increasing population in Telopea - concerns around loss of parking along Adderton Road and the light rail plaza section of Sturt Street - even with the existing levels of traffic, it is sometimes difficult for residents to drive out of their driveways into Adderton Road and the redevelopment may heighten this problem - the potential for congestion around the new light rail crossing into Adderton Road - the safety of local streets if there is more traffic - there should be adequate provision for carparking within all apartment buildings, this should also include visitor carparking.	Car parking will be provided in accordance with relevant guidelines and policies. As a sustainable community, Frasers will be encouraging use of active and public transport. Road, footpath and intersection upgrades are planned as part of the redevelopment.

Community Concern	Frasers Response
Timeframes	
Some reservations were expressed about the length of the development timeframe and that residents will be living with construction and change for a long time. Points raised included: - uncertainty for housing residents as to when they would be relocated - how development in the northern and southern precincts would be integrated with neighbouring properties - living with amenity impacts from ongoing construction over such a long timeframe.	Any tenants required to relocate for future stages will be advised six months in advance. Frasers will work with the community to ensure they remain informed about the project at all stages. In undertaking construction, Frasers will be following best industry practises to minimise impacts of existing residents and will require our contractors to prepare Construction Management Plans for each project to mitigate the impacts of our activities on surrounding residents.

5.3. AUTHORITY ENGAGEMENT OUTCOMES

Frasers has consulted with key stakeholders during the development of the concept proposal, through several meetings and other correspondence as outlined below. A detailed response to the feedback received is provided at **Appendix MM**.

Government Architect of NSW through the State Design Review Panel (SDRP):

- SDRP session #1 - 1 April 2021
- SDRP session #2 - 16 June 2021

Parramatta City Council

- 6 March 2020 – Full day workshop with various council teams to brief council on the proposed project.
- 27 March 2020 – Response to all council feedback issued, including comments on DCP.
- 25 May 2020 – Urban design workshop held with Council.
- 28 May 2020 – Further DCP comments issued to Council.
- 5 June 2020 – Urban design workshop held with Council.
- 19 June 2020 - Urban design workshop held with Council.
- 29 June 2020 – Initial VPA offer submitted.
- 1 July 2020 – Urban design workshop held with Council.
- 2 July 2020 – Sustainability workshop held with Council.
- 6 August 2020 – Project catch up meeting held with Council.
- 13 August 2020 – Further DCP commentary issued to Council.
- 4 September 2020 – VPA status updated request issued to Council.
- 9 December 2020 – VPA meeting help with council, agreed to hold monthly meetings to progress.
- 27 January 2021 – First monthly meeting held. Council provided initial feedback on VPA., Frasers to prepare and issue ISDP to council for consideration.
- 23 February 2021 – DRAFT Infrastructure Services Delivery Plan (ISDP) issued to council for review.

- 26 February 2021 – Draft valuation for Dundas library issued to Council.
- 19 March 2021 – FPA issued masterplan drawings to council for review of core, particularly library site.
- 25 March 2021 – FPA issues draft station plaza designs.
- 27 March 2021 – FPA issued draft neighbourhood park designs.
- 7 April 2021 – VPA meeting held.
- 8 April 2021 – Council valuation for library received.
- 14 May 2021 – council feedback on ISDP and FPA valuation received.
- 3 June 2021 – Frasers provided response to Council's valuations questions and raised concerns with the Council's valuers disregard to contributions, remediation, site area and incorrect site comparisons.
- 14 June 2021 – Frasers provided a complete response to council queries and comments on the ISDP.
- 8 July 2021 – DPIE provided feedback from council on the ISDP/VPA.
- 12 July 2021 – Frasers provided response to DPIE.
- 28 July 2021 – Frasers met with Council on the ISDP/VPA.

Transport for NSW + Parramatta Light Rail (PLR)

- 5 March 2021 – General consultation with PLR.
- 16 March 2021 - General consultation to discussed proposed works.
- 25 March 2021 – co-ordination meeting of works with PLR.
- 13 July 2021 - Meeting to discuss SIDRA modelling inputs.

5.4. CONNECTING WITH COUNTRY

GA NSW's "Connecting with Country DRAFT Framework" (Connecting with Country) is an invitation to the property industry to rethink, reimagine and reshape its practice. It is a call to developers, architects and built environment professionals to take seriously the call by Aboriginal communities to embrace the possibilities for design innovation by putting Country at the forefront of design thinking.

The Fulcrum Agency (tFA) have reviewed the Telopea Masterplan to find design opportunities that meet the Connecting with Country principles. To begin consultation with appropriate Aboriginal stakeholders Urbis has compiled Registered Aboriginal Parties and engaged as part of the Aboriginal Cultural Heritage Assessment (see **Section 6.9** for further discussion on the ACHA).

5.4.1. Telopea Design Considerations

While significant scope still exists within the Governance and Process of Telopea to engage fully with Traditional Custodians, opportunities to embed Traditional Custodian input, influence and guidance in the current built form design response are limited. The overall master-planning, built form design and public realm had largely been developed prior to tFA's review, or the release of the Connecting with Country DRAFT Framework. As such tFA has focused this review on aspects of the design that have not yet been fully resolved and are likely to still yield fruitful discussions with Traditional Custodians and Aboriginal community groups. These areas are primarily within the public domain and include landscaping (hard and soft), land management, public art, elevational composition, and the broader public domain narrative.

Landscape Narratives

The relevant Design Reports successfully outline the landscape design approach, leveraging pre-contact forest and historical agricultural development of the landscape into a narrative of its new role in the public domain. The project could benefit from overlaying a consideration of pre and post contact Aboriginal history and culture over the site. This could be incorporated to give further depth to the public domain narrative.

Recommendations

- Seek Aboriginal knowledge of land management practices in the remediation of riparian area around Shrimptons Creek and species selection.
- Talk with Aboriginal knowledge-holders to understand historical narratives of site to overlay on landscape plan.
- This narrative could inform species selection, hardscape materials, wayfinding and public art.
- Seek intersections of Aboriginal and non-Aboriginal narratives to inform landscape

Caring for Country

Large scale developments offer great opportunities for embedding longer-term approaches to care and maintenance of landscape and the public realm. These moments can be shared and facilitated by local Aboriginal people, providing opportunities to fulfill cultural responsibilities to Country.

Recommendations

- Engage Aboriginal community groups for the cultivation and maintenance of community gardens.
- Engage Aboriginal contractors for maintenance of publicly accessible private open spaces.
- Seek Aboriginal stakeholder input in to how to manage cultural practice spaces.
- Look for opportunities to use local materials and colour palettes in buildings and hard landscaping

Foreground Contemporary Aboriginal Culture in Public Spaces

There are many aspects of contemporary Aboriginal Culture that Traditional Custodians and other Aboriginal Stakeholders might want to foreground within the project.

These might be quiet spaces for Yarning, facilities that promote walking Country or natural auditoriums for dance, music, and official ceremonies, such as Welcome to Country and Smoking Ceremonies. There are still many opportunities within the design of the public domain that could incorporate these facilities.

Recommendations

- Implement strategies and design features that present Aboriginal culture as a living, thriving culture with enduring links to its past.
- Engage with Traditional Custodians to understand how contemporary and traditional culture can be expressed in the public spaces at Telopea. This could include fire pits, Yarning Circles, dance grounds, Welcome to Country and/or Smoking Ceremony facilities. The small scale and reflective design intent of The Gardens could be suitable locations.
- Explore opportunities for a dance circle or small auditorium and stage might be beneficial to the project. The active and vibrant intent of the Plaza Square, surrounded by retail and community buildings might be leveraged for small cultural events

Aboriginal Art

Aboriginal art offers an entry point into an engagement with and understanding of Aboriginal culture and knowledge. Art is a readily accessible form of expression and understanding and is commonplace in many contemporary Australian contexts. While typically non-Aboriginal people are typically more familiar with the Western Desert dot painting style, Aboriginal art finds its expression in many forms and styles.

These forms should be explored by engaging Aboriginal artists in the production of public art.

Recommendations

- Collaborate with Aboriginal artists and furniture makers to identify opportunities to incorporate art into landscape and the public realm
- Seek different forms of expression for different scales and contexts. Art at the Plaza Square, The Gardens, the Community Courtyard and various parks might find different expression based on their contexts

- Enact minimum percentages of aboriginal art procurement across the project. Engage with Aboriginal stakeholders to establish a minimum percentage
- Engage an Aboriginal art coordinator to provide an overall strategy to the procurement of Aboriginal art across the project
- Look for opportunities to embellish building facades with designs by Aboriginal artists

Wayfinding and Placenames

The incorporation of Aboriginal placenames and Dharug words into the space may offer a reminder to residents and visitors of the enduring relationship between site and Country. It will also be seen as a sign of respect, acknowledgement, and acceptance of the Traditional Custodians of this land.

Recommendations

- Facilitate discussions with Traditional Custodians to foreground Dharug words and narratives that can be incorporated into placenames for the Telopea project.
- Seek opportunities for dual-naming of places and spaces within the Telopea development.
- Be particularly sensitive to Aboriginal engagement protocols and Aboriginal intellectual property.

Economic Opportunities

A range of income generating possibilities present themselves within the spatial responses identified above. These range from the commissioning of artists, engagement of specialist knowledge-holders, Aboriginal businesses, construction jobs and ongoing maintenance and management.

Recommendations

- Public art commissions for Aboriginal artists
- Engage local Aboriginal knowledge-holders in determining use of language and naming in signage and interpretive material
- Engage Aboriginal owned businesses for Landscape maintenance contracts
- Leverage relationships with the housing providers (Hume at Telopea) to understand tenant need in development of future housing typologies, i.e. culturally appropriate housing
- Consider the entirety of the socio-economic spectrum
- Commit to fair fees for service in the engagement of Aboriginal consultants and community representatives

6. ASSESSMENT OF IMPACTS

6.1. BUILT FORM AND DESIGN EXCELLENCE

6.1.1. Design Excellence Strategy

A Design Excellence Strategy (**Appendix PP**) has been prepared by Urbis setting out the principles and procedures that will be followed during each stage of the Concept Masterplan delivery program to achieve Design Excellence. The Design Excellence Strategy has been developed in consultation with the SDRP and GANSW, including having regard to the seven objectives for good design of the built environment identified in *Better Placed* (GANSW, 2017). To deliver on these objectives, a combination of proven techniques is proposed, with a clear and iterative process enabling the exchange of ideas between the Affinity Consortium team and independent design experts. The Strategy will ensure that the architectural and urban design of future development stages achieves design excellence and positively contributes to the broader Telopea Precinct and Parramatta LGA.

The Strategy specifically articulates the proposed design excellence process and demonstrates how design excellence will be achieved during each stage of the development. Taking into account the provisions of the PLEP 2011, the Strategy is based on the following six principles:

1. Establishment of site-specific **Design Guidelines**, to guide the future development of the precinct and ensure a high quality architectural and amenity outcome is achieved.
2. Incorporation of **Connecting with Country** requirements (as recommended by The Fulcrum Agency, **Appendix LL**), including ongoing engagement with appropriate Aboriginal stakeholders throughout the project.
3. Establishment of a robust process to select the **Design Team** for each site, ensuring appropriate experience in designing and delivering design excellence, and encouraging design diversity and visual interest across the precinct.
4. Undertake **Design Excellence Competitions** for four strategically important sites, including:
   - Buildings C1 and C2 and Telopea Square (Core site)
   - Building C3 (future Council Library site)
   - One stage within the North Precinct (location to be determined)
   - One stage within the South Precinct (location to be determined)
5. Undertake a process of **Design Review** with the NSW Government Architect, Parramatta City Council, and other relevant stakeholders during the preparation of detailed development applications.
6. Ensure **Design Integrity** is maintained throughout the design process.

6.1.2. Design Guidelines

Bates Smart and Hassell have developed site-specific **Design Guidelines** to guide the architectural and urban design of the Telopea CPA (see **Appendix H**). The Design Guidelines have been established to ensure a high quality architectural and amenity outcome is achieved across the Telopea CPA. Specific design principles and objectives have been developed for the site including those relevant to Stage 1A. The Design Guidelines set out the vision for the future development, as well as objectives and provisions in relation to built form, public domain, open space and trees, transport and parking and sustainability.

The Design Guidelines will be used as part of the evaluation and assessment process to determine whether future development of the precinct achieves design excellence. The Design Guidelines have been developed to shape development and deliver design excellence with the following key objectives:

(a) To ensure architectural diversity is achieved.

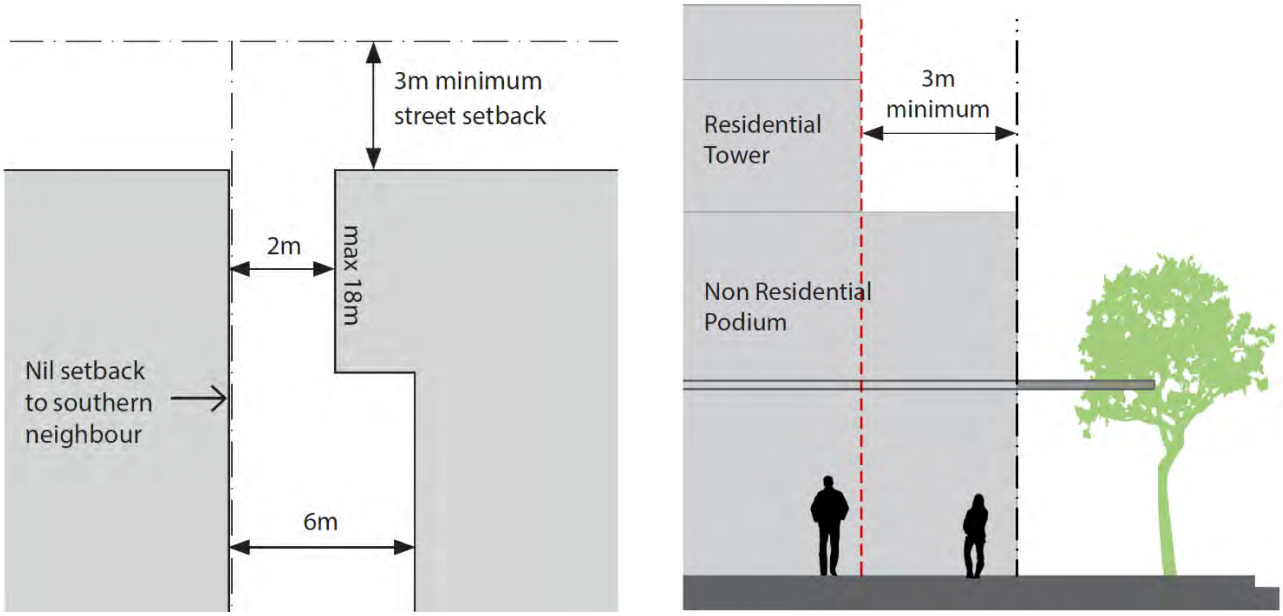
(b) To achieve a high standard of architectural and urban design, materials and detailing appropriate to the building type and location.

(c) To ensure the form and external appearance of the buildings improve the quality and amenity of the public domain.

(d) To deliver excellence and integration of landscape design.

The key Design Guidelines in relation to built form relate to building setbacks, massing, and articulation; seeking to encourage an urban form which works with the topography, addresses streets, maximises solar access and creation of views. The Design Guidelines seek to provide buildings that positively contribute to the physical definition of the public domain and to ensure that the built form enables a healthy environment for landscaping and street trees.

Figure 30 Telopea CPA Design Guidelines – built form principles



Source: Bates Smart

The Design Guidelines are specific to the Telopea CPA and ensure a high-quality design and amenity outcome is achieved for the future residents and adjoining development. Their application during design development and assessment of future development stages will safeguard the delivery of an excellent and coherent vision for the precinct.

6.1.3. Residential Amenity

The Concept Proposal has been designed to achieve a high level of residential amenity in accordance with the nine principles of SEPP 65 and the design criteria recommended by the Apartment Design Guide. The Indicative Design Scheme (see **Appendix G & F**) has been prepared to demonstrate that the proposed building envelopes are capable of accommodating buildings that can achieve the required design criteria. Consideration of the key ADG Design Criteria relevant to the Concept Plan is provided below. An assessment of the Proposal against all the objectives and design criteria and guidance in the ADG has been prepared by Bates Smart and included at **Appendix G**.

Building Separation and Visual Privacy

ADG Design Criteria 3F Visual Privacy recommends building separation distances to maintain visual privacy. The Indicative Design Scheme demonstrates that the recommended building separation distances can be achieved between all indicative residential buildings. Envelopes for upper core towers are 24m apart. Lower core perimeter and slab blocks are arranged with 18-24m between primary faces. Where less than 24m, buildings on one side will be set back above level 8 to achieve ADG compliance. Where breaks in perimeter blocks are proposed, a gap of 12m will allow secondary windows to open onto the side elevation. The proposed building separation is shown in **Figure 31** below.

Figure 31 Core area building separation distances

Source: Bates Smart

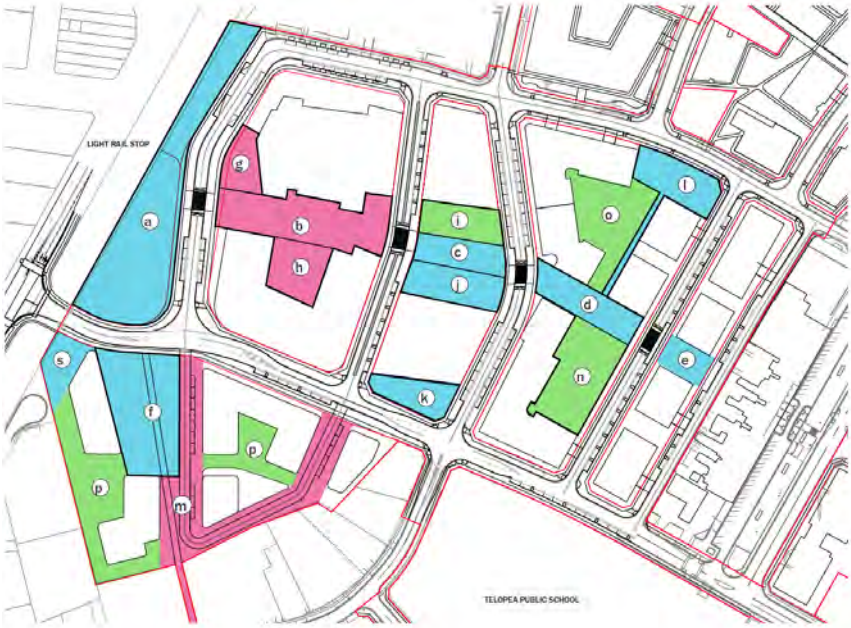
Solar Access

ADG Design Criteria 4A-1 Solar Access requires that living rooms and private open spaces of at least 70% of apartments receive a minimum of 2 hours direct sunlight between 9am and 3pm on 21 June. Buildings have been arranged to maximise opportunities for solar amenity in accordance with the ADG. Compliance has been assessed on a building by building and lot by lot basis with 75% of apartments receiving the recommended solar access, as demonstrated in the solar access studies undertaken by Bates Smart (see **Appendix G**). The ADG also recommends that no more than 15% of apartments should receive no direct sunlight between 9am and 3pm at midwinter. The Indicative Design demonstrates the scheme is capable of complying with this requirement.

Communal and Public Open Space

ADG Design Criteria 3D-1 Communal and Public Open Space recommends that 25% of the site is provided as communal open space and that 50% of the principal usable part of the communal open space receives a minimum of 2 hours direct sunlight between 9am and 3pm on 21st June. Communal open space provision will exceed 25% of the site (**Figure 32**) and the Solar Access diagrams prepared by Bates Smart (**Appendix G**) show that at least 50% of the principal usable part of the communal open space receives direct sunlight between 9am and 3pm on 21st June.

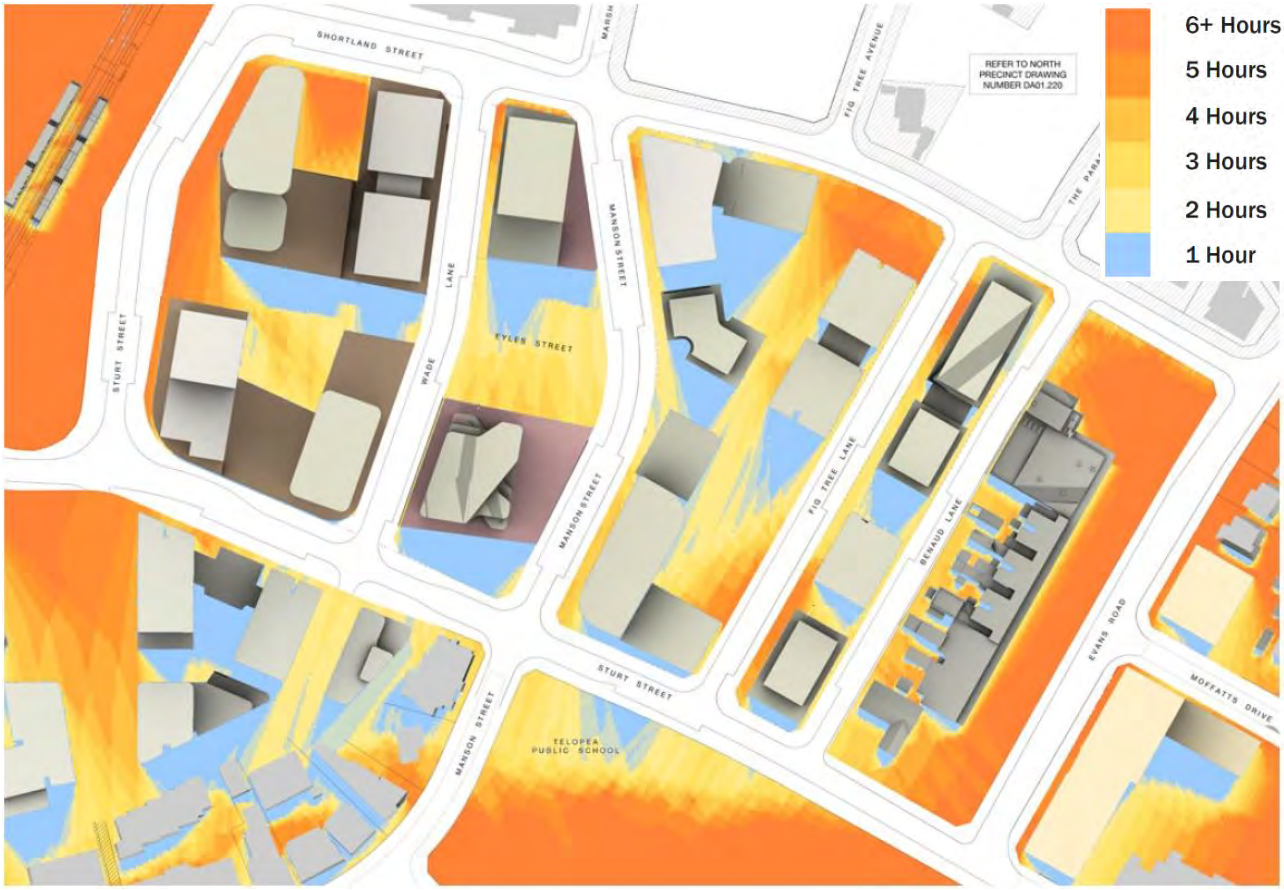
Figure 32 Core area public open space provision



LEGEND	Approximate area (m²)
Dedicated public open space	
a. Telopea Station Plaza	4650
c. Eyles Link - Community Courtyard	910
d. Eyles Link - The Gardens	1200
e. Eyles Link - The Gardens (south)	400
f. Neighbourhood Park	2440
k. Pocket Park	760
l. Pocket Park	1290
j. Library Courtyard	1070
s. Winter Street link	140
Privately owned publicly accessible open space	
b. Eyles Link, Telopea Square	1690
g. Telopea Square (north)	650
h. Telopea Square (south)	900
m. Mews and Manson Street link	2920
Private communal open space	
i. Eyles Link - Church Courtyard	750
n. The Gardens South	1200
o. The Gardens North	1700
p. Stage 1A West	1370
p. Stage 1A East	500

Source: Bates Smart and Hassell

Figure 33 Indicative design scheme, public domain solar access, 21 June, 9am – 3pm



Source: Bates Smart

Deep Soil Zones

ADG Design Criteria 3D-1 Deep Soil Zones requires deep soil zones suitable for healthy plant and tree growth; improving residential amenity and promoting management of water and air quality. Consistent with the ADG, greater than 15% of the site area is provided as deep soil with a minimum dimension of 6m, and greater than 23% of the site area is provided as deep soil with a minimum dimension of 4m.

Natural Cross Ventilation

ADG Design Criteria 4B-3 Natural Ventilation requires that at least 60% of apartments are naturally cross ventilated in the first nine storeys of the building, with apartments at ten storeys or greater deemed to be cross ventilated only if any enclosure of the balconies at these levels allows adequate natural ventilation and cannot be fully enclosed. The Indicative Design demonstrates the scheme is capable of complying with this requirement.

Overshadowing

ADG Design Criteria 3B-2 Overshadowing seeks to minimise overshadowing of neighbouring properties during mid-winter and requires that a minimum of 4 hours solar access is retained to solar collectors on neighbouring buildings. In accordance with the ADG, solar access shadow diagrams have been prepared by Bates Smart (**Appendix G**). Shadow diagrams have been prepared for hourly intervals from 9am to 3pm for 21st June, representing the greatest overshadowing impact through the year. The shadow diagrams compare the shadow cast by existing development at the site, shadow cast by a building height compliant with the PLEP 2011, shadow cast by the proposed Concept Masterplan building envelopes, and shadow cast by the indicative design scheme.

The shadow diagrams show that for the majority of time, the shadows cast by the proposed building envelopes are equal to or less than the shadows that would be cast by PLEP 2011 compliant building heights. These shadows are cast within the Telopea precinct redevelopment area.

Between 1pm and 3pm on 21st June, the proposed building envelopes cast shadow beyond that cast by a PLEP 2011 compliant building height. At 1pm and 2pm additional shadow is cast over a portion of the Telopea Public School site and at 3pm additional shadow is cast over a northern portion of Sturt Park (see **Figure 34** below). It is noted that in both cases, the additional overshadowing is only to a small portion of the school and park sites.

In relation to Telopea Public School, the additional overshadowing at 1pm occurs at the western corner on the school site in an area which is already shaded by mature trees and at 2pm the additional overshadowing mainly occurs to existing school buildings and an area of car parking. The additional overshadowing does not occur to the main areas of the school grounds during recess or lunchtime break periods.

In relation to Sturt Park, the additional overshadowing occurs towards the northern boundary of the park to an area which is already partially shaded by mature trees. The main grassed area of the park will continue to receive full solar access.

The additional overshadowing has a relatively minor impact on the use of the school and park, with the overshadowing reducing in the Spring and Autumn months and being at its minimum in Summer. Given that the vast majority of the school and park areas will not be affected by additional overshadowing and that the additional overshadowing only occurs for a couple of hours over the day, it is considered that this is acceptable, particularly given the resultant new additional public spaces that will be delivered as part of the Concept Proposal.

Figure 34 Shadow diagrams for the Concept Proposal on 21st June from 1pm-3pm

Source: Bates Smart

6.1.4. Isolated Lot Study

An Isolated Lot Study has been prepared by Bates Smart and is included at **Appendix RR**. The built form analysis demonstrates that the isolated lots in the North and South Precincts can be developed in accordance with the height of buildings and floor space ratio provisions of the PLEP 2011 and achieve compliance with the Apartment Design Guide.

The SSD application seeks consent for a Concept proposal for the redevelopment of the LAHC owned land within the Telopea Precinct. The lots in question are adjacent to the future Stage 2b, 2c, and 3b, which are expected to be delivered between 2032-2037 (subject to planning approvals and market conditions). As such, efforts have not been made to acquire these lots. If efforts are made, they will be done so at the appropriate time. Given the staging and timeframes envisaged, it is likely that these owners may choose to pursue redevelopment of their lots ahead of the LAHC / Frasers development program.

It is our view that consolidation of these sites is not necessary, as the Isolated Lot Study demonstrates that orderly and economic use and development of the separate sites can be achieved. Urbis is satisfied that the future redevelopment of sites adjoining Stages 2b, 2c, and 3b could give rise to a pattern of 22m (6-storey) high development, if not uniformly at least with sufficient incidence to ensure that the development of the Concept Plan sites will not be left as orphans protruding above a lower consistent streetscape.

It is acknowledged that it may be necessary, at some future time in the redevelopment cycle, for the consent authority to consider whether amalgamation of the sites adjacent to Stages 2b, 2c, and 3b is feasible (per the Planning Principle established in *Karavellas v Sutherland Shire Council*). However, the Concept SSD application is able to be assessed and determined.

6.2. VISUAL IMPACT

A Visual Impact Assessment (**Appendix P**) has been prepared by Urbis to assess the visual changes and impacts of the proposed CPA future built form on the site and its surrounds. The analysis of the potential visual impacts of the Concept Proposal and Stage 1A Development has been carried out along conventional lines for visual assessment of built developments including the *Guidelines for Landscape and Visual Impacts Assessment 3rd edition*, published by the Landscape Institute and Institute of Environmental Management and Assessment (GLVIA) and included:

- Identification of representative locations with the identified visual catchment that may potentially be impacted by the development with regard to visual quality.
- Identification of critical viewpoints toward the development site.
- Preparation of locationally accurate computer-generated photomontages from key critical viewpoints. These photomontages have been prepared in accordance with the *NSW Land and Environment Court Guidelines for Use of Photomontages.*
- Assessment of the likely visual impacts in the context of relevant subjective 'weighting' factors:
  - Consider additional factors that influence the level of visual effects by adding 'weight' to each to arrive at a level of visual impacts for example;
  - Consider visual effects in the context of Physical Absorption Capacity (PAC), Compatibility with particular features for example with heritage items, desired future character, an existing concept approval or with maritime features.
  - Consider the proposed development in the context of the relevant regulatory framework for example SEARs, SEPPs, LEPs and DCPs etc.
  - Consider mitigation strategies if appropriate for example ameliorative planting, earthworks or alternate massing of a proposed development.
  - Identify residual visual impacts.

The above approach is consistent with the process adopted by NSW RMS' in Guideline for landscape character and visual impact assessment – Environmental impact assessment practice note EIA-NO4 (December 2018). The process is generally accepted as appropriate for visual impact assessment in NSW.

6.2.1. Existing Condition

Urbis conducted fieldwork in June 2020 to identify key viewpoints surrounding and within the site. The potential visual catchment is mapped and shown in Figure 35. The external visibility of existing parts of the site was initially determined using view shed using GIS technology. GIS mapping, which included analysis of the underlying topography within the CPA site and the selected heights of the tallest proposed buildings on the site, were used as general indicators of the extent of the potential visual catchment.

Figure 35 Visual Catchment

Source: Urbis

The tallest built forms within the Core precinct including proposed building envelopes at for C1.1 and C2.1 will be 86 metres in height. The height of the built forms proposed, steps down in height from the future light rail station towards and transitions to the east to lower built forms for example up to 47 metres in height for buildings C5, C6, C7 and C8 buildings which are adjacent to the existing Waratah Shopping Centre.

The potential total visual catchment is the theoretical area within which the proposal may be visible and, in this regard, theoretically, the visual catchment is larger than the area within which there would be discernible visual effects of the proposal. The visibility of any proposed development varies depending on constraints on visibility such as the blocking effects of intervening built form, vegetation or topography.

The potential visual catchment of the proposed development was broadly determined via a desktop review of the subject site using 3D aerial imagery, maps, client supplied information and was subsequently confirmed during fieldwork observations from publicly accessible viewpoints.

The Urbis methodology identifies objective information about the existing visual environment, quantifies and analyses the extent of visual effects on those baseline characteristics and unlike other methods, considers the importance of additional layers of information such as view place sensitivity or compatibility with visual character.

Critical viewpoints within the identified view catchment have been selected through a process of analysis of the visibility diagrams to identify representative viewpoints that would:

- Be likely to be subject to changes in views as a result of the development
- Be sensitive to these changes to views as a result of the expectations of viewers. In this regard, a typical hierarchy in sensitivity has been assumed. Recreational areas are considered to have higher sensitivity to change than industrial or employment areas. Views from roads are considered to have high sensitivity if they are close to the development site or if the views are on an axis to the site.

Selected viewpoints are identified in Figure 36 below.

Figure 36 Key viewpoints

Source: Urbis

6.2.2. CPA Visual Impact Assessment

The visual impact of the proposed CPA building envelopes has been assessed from the identified key views in the following sections. Comparison of the visual effects of the proposed building envelopes and permissible envelopes has been illustrated. The proposed building envelopes shown as white blocks sit within the permissible envelopes shown as orange outlines.

View 04: Acacia Park Open Space

This view is characterised by foreground residential development and a horizon predominantly formed by tree canopy above which existing towers at 29, 31 and 33 Sturt Street are visible. Other tall forms located in Parramatta are visible in the wider visual context to the south-west.

Figure 37 VIA View 4

Picture 19 View 4 - existing

Picture 20 View 4 - proposed

Source: Urbis/ Virtual Ideas

Visual Impact:

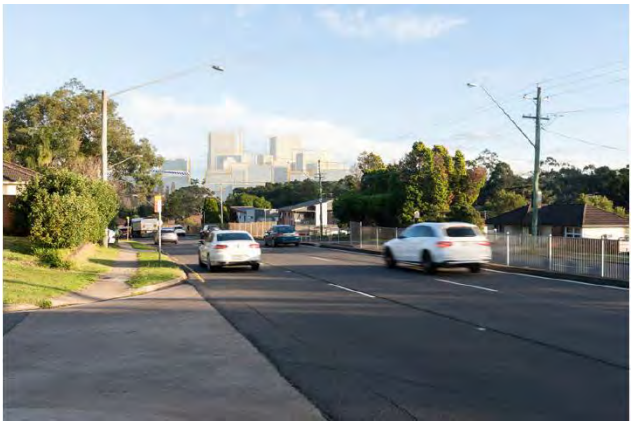
- The tallest forms proposed in the Core introduce a novel feature into the view and horizon above the tree canopy. The towers are tall, slim and spatially separated forms where the upper parts of towers predominantly block areas of open sky. The built forms are clustered together to occupy part of the wider distant horizon and do not block scenic views to highly valued items, icons, heritage items or other sensitive areas. The built forms proposed are not dissimilar in character or height to those that are present in the wider visual context.
- The proposed reference scheme shown as white blocks sit within the proposed envelopes shown as orange outlines. The height and bulk of the proposed built forms are in all cases, narrower and lower compared to the proposed envelopes. The tallest forms are massed centrally on the site so as to create a visual transition of height to the south, east and north.
- The visual effects of the proposed development are therefore clustered so that the stepped transition and variety of heights of the built forms to the east, reduces the horizontal extent of visual effects, creates articulation and visual interest, and adds some degree of visual permeability into the site. The level of permeability will likely increase with further, fine-grained development of individual buildings at DA stage. Additional built form sought above LEP height controls does not block views to scenic features and predominantly blocks views of open sky.

View 18 – Bus Stop at Intersection of Dorahy Street and Kissing Point Road

Street poles with lighting and electricity infrastructure, fencing and signage associated with the road carriageway dominate the foreground view. Distant views are afforded by the six-lane Kissing Point Road. Vegetative cover in the distance forms the horizon with the sky with building nestled in between, including the existing towers at 29, 31 and 33 Sturt Street.

Figure 38 VIA View 18

Picture 21 View 18 - existing



Picture 22 View 18 - proposed

Source: Urbis/Virtual Ideas

Visual Impact:

- The building envelopes of C1 and C2 extend above vegetation into sky when viewed from this location, with lower forms clustered around, introducing a novel feature into the view and horizon above the tree canopy. The proposed development will not block scenic views to highly valued items such as iconic, heritage items or other sensitive areas.
- The height and bulk of the proposed built forms are in all cases, narrower and lower compared to the proposed envelopes. The tallest forms are at the rear of the view, with height decreasing towards this viewpoint. The wide spatial separation between the two tallest tower forms is filled with open sky and as such the visual permeability helps to reduce the perception of bulk and scale of the proposal. The built form in the foreground aligns with the upper limits of the tree canopy. Additional built form sought above LEP height controls does not block views to scenic features and predominantly blocks views of open sky.

View 22 – Centre of Homelands Reserve

A row of mature trees sit on the horizon at the boundary of the park. The existing towers at 29, 31 and 33 Sturt Street are visible in breaks in the vegetation at a medium distance view, but the towers sit at a lower overall height than the trees.

Figure 39 VIA View 22

Picture 23 View 22 - existing

Picture 24 View 22 - proposed

Source: Urbis/ Virtual Ideas

Visual Impact:

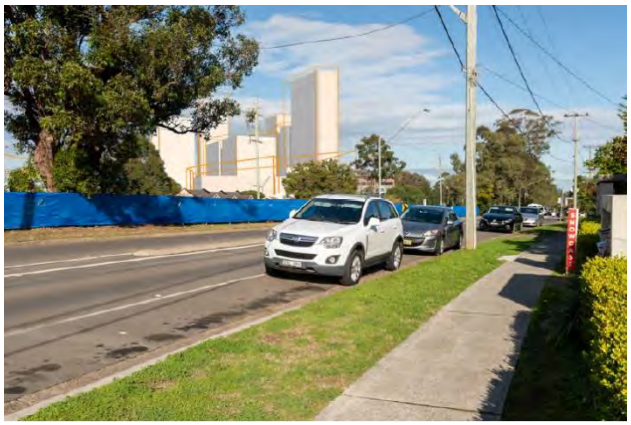
- The upper sections of building envelopes of C1 and C2 are visible above and in between the tree canopy. Scenic views outside of Homeland Park are prevented by vegetation and therefore there are no significant views impacted.
- Comparison of visual effects of proposed building envelopes and permissible envelopes - The height and bulk of the proposed built forms are in all cases, narrower and lower compared to the proposed envelopes. The extent of the building envelope visible is low, given the intervening vegetation. The built form visible is permeable, with views though the Concept Plan Area possible.

View 25 – Adjacent to 91-93 Adderton Road

Various features are visible in this view with no focal point. The view is characterised by the road and rail infrastructure, The existing towers at 29, 31 and 33 Sturt Street are visible in the background behind vegetation.

Figure 40 VIA View 25

Picture 25 View 25 - existing



Picture 26 View 25 - proposed

Source: Urbis/ Virtual Ideas

Visual impact:

- The building envelopes of C1, C2, and C4 are highly visible given that these are the northern most and C1 and C2.1 are greatest in height. The proposal introduces novel built forms into the mid-ground composition predominantly blocking areas of sky above a foreground of residential development including existing Sturt Street towers. The cluster of new built forms would be visible from moving, viewing situations and for short periods of time.
- The height and bulk of the proposed built forms are in all cases, narrower and lower compared to the proposed envelopes. The built form in the foreground of this view is within the proposed envelope by a significant margin. The lower height of C2.2 in comparison to the taller surrounding built form reduces the perception of bulk of the proposed development and allows for greater visual permeability. The visual effects of the proposal are reduced due to the stepped transition and variety of heights of the built forms to the east, which reduces the horizontal extent of visual effects, creates articulation and visual interest, and adds some degree of visual permeability into the site. Additional built form sought above LEP height controls does not block views to scenic features and predominantly blocks views of open sky.

View 27 - Telopea Street at intersection with Adderton Road

The foreground of this view is characterised by dense medium to tall vegetation which runs parallel to the rail corridor. Residential towers including 33 Sturt Street are highly visible in this close view. Parts of the towers are screened by the established vegetation along the rail corridor.

Figure 41 VIA View 27

Picture 27 View 27 - existing

Picture 28 View 27 - proposed

Source: Urbis/ Virtual Ideas

Visual Impact:

- The envelopes of C1.1 and C2.1 are highly visible and extend above existing heights, blocking only parts of open sky, and does not block any significant views of landscapes or buildings.
- Comparison of visual effects of proposed building envelopes and permissible envelopes - The height and bulk of the proposed built forms are in all cases, narrower and lower compared to the proposed envelopes. The tallest forms that occupy the foreground, blocks views to other built forms proposed and more broadly into the site. A stepped transition in height to the south, reduces the horizontal extent of visual effects, and creates articulation and visual interest. Additional built form sought above LEP height controls does not block views to scenic features and predominantly blocks views of open sky.

View 38 – Sturt Park adjacent to the amenities facing north

This canopied / enclosed view is formed predominantly by vegetation - managed grass and scattered large trees. A playground and Telopea Public School is visible in the medium view and the very top of the existing towers at 29, 31 and 33 Sturt Street are visible in the background.

Figure 42 VIA View 38

Picture 29 View 38 - existing

Picture 30 View 38 - proposed

Source: Urbis/ Virtual Ideas

Visual Impact:

- A cluster of building envelopes fill the spaces visible between and behind the vegetation on the edge of Sturt Park. The building envelopes will block some areas of sky but will not block any views to scenic features or highly valued items or compositions.
- Comparison of visual effects of proposed building envelopes and permissible envelopes - The height and bulk of the proposed built forms are in all cases, narrower and lower compared to the proposed envelopes. The tallest forms are at the rear of the view and then step down in height in tandem with the underlying topography, towards the park. The extent of the building envelope visible is reduced by intervening vegetation.
- Permeability is low, however the varying heights and massing of the built form diverging from the centre creates articulation and visual interest. The proposed development is highly compatible with the desired future character of the area and additional built form sought above LEP height controls does not block views to scenic features and predominantly blocks views of open sky.

View 40 – Moffats Drive facing north west

Axial view along Moffatts Drive towards the Waratah Shopping Centre. There is no visibility of existing residential buildings in the core master plan area, which are concealed by the shopping centre and mature vegetation behind.

Figure 43 VIA View 40

Picture 31 View 40 - existing

Picture 32 View 40 - proposed

Source: Urbis/ Virtual Ideas

Visual Impact:

- Buildings C7.2 and C8 are visible behind the Waratah Shopping Centre and the view is framed by new envelopes located either side of Moffatts Drive. In this view, C4 at 60 metres, and C2.1 at 86 metres, are partly visible, being impeded by C8. Building C7.2 blocks views to proposed development including C1.1 and 1.2 at 86 metres. These buildings will extend into the skyline but will not impact any significant views.
- Comparison of visual effects of proposed building envelopes and permissible envelopes - The height and bulk of the proposed built forms are in all cases, narrower and lower compared to the proposed envelopes.
- The tallest forms are at the rear of the view but visibility is partly blocked by foreground envelopes. Visual permeability is low. The additional 2 storeys sought above LEP height controls in this view does not block views to scenic features and predominantly blocks views of open sky.

View 41 – View west from Evans St opposite Shortland Street

This view composition is predominantly characterised by low built forms including retail and residential development and the open spaces formed by roads. The background is characterised by vegetation which forms the horizon with the sky.

Figure 44 VIA View 41

Picture 33 View 41 – existing

Picture 34 View 41 – proposed

Source: Urbis/ Virtual Ideas

Visual Impact:

- The east elevation of Building C8 introduces a novel tall form into the mid-ground composition, which blocks views into the site and to other built forms proposed including views of C4, C2.1 and C2.2. The building will extend into the skyline but will not impact any significant views.
- The height and bulk of the proposed built forms are in all cases, narrower and lower compared to the proposed envelopes. The tallest proposed built forms are blocked from view by the proposed shorter built form in the foreground. The proposed development will block proposed buildings, existing vegetation and in upward views to upper parts of the envelope, areas of open sky. The propsal is highly compatible with the future desire character of the area.

View 43 – Axial view south from adjacent to 28 Marshall Road

Axial view along Marshall Road. This residential street view is characterised by low height streetscape vegetation, medium density 3 storey residential development to the west, and individual low density residential development along the east and lower side. The residential apartment building at 1 Shortland Street is visible in the background at the focal point of this view.

Figure 45 VIA View 43

Picture 35 View 43 - existing

Picture 36 View 43 - proposed

Source: Urbis/ Virtual Ideas

Visual Impacts:

- The centrally located narrow tower form of C2.1 will introduce a new focal point to this view above foreground built form and vegetation. This solitary tower form and lower foreground buildings introduce a greater scale and height of built form across the site than currently exist. Notwithstanding the proposed development does not block views to scenic or highly valued items or views, and predominantly blocks access to existing residential development, some vegetation and areas of open sky.
- The height and bulk of the proposed built forms are in all cases, narrower and lower compared to the proposed envelopes. Foreground envelopes block some views to the tallest buildings in the background. Visual permeability is provided by envelopes according with streetscape layout. The proposed development will block only small areas of open sky and existing buildings and is highly compatible with the future desired character of the area.

Views 44, 45 and 46 are discussed in the following section which focuses on the Stage 1A built form.

6.2.3. Stage 1A Visual Impact Assessment

The VIA undertaken by Urbis includes an assessment of the visual impact of the five residential flat buildings proposed within Stage 1A.

The proposed development appears to respond favourably to the topography and features of the site by retaining the wide spatial separation between built forms and much of the visually significant and mature vegetation.

View 44 – 2 Manson Street near Addison Street

This focal view includes a foreground composition of roadway and intervening vegetation including the boundary hedges and canopy trees of Redstone. The view includes electricity infrastructure and a background horizon formed by vegetation. The State heritage listed item Redstone (The Winter House) is not visible in this view.

Figure 46 VIA View 44

Picture 37 View 44 - existing

Picture 38 View 44 - proposed

Source: Urbis/ Virtual Ideas

Visual Impact:

- Parts of the proposed built forms in the Masterplan Core area and in the Stage 1A DA will be visible in the background of the view. The upper floors proposed in the Stage 1A DA buildings are partly screened by mature vegetation. The remainder of the tower and parts of the lower built forms are partly screened by street tree vegetation.
- Long horizontal windows with black framing provide visual interest and help to reduce the perception of the bulk of the form. The buildings will not block any scenic or important features and are spatially well separated from Redstone so that its visual curtilage and heritage values are not dominated.
- The level of visual effects are contemplated in the adopted Concept Masterplan and LEP height controls. The controls allow for significant change to the composition and character of existing views in line with the transition of central Telopea to a new high-density community. The LEP height controls breached have little to no additional impacts and the proposed development will block only glimpses of open sky.

View 45 – Entrance to 12 Sturt Street facing south

The existing view includes three storey residential flat buildings that are spatially well separated within a garden setting that is characterised by mature trees and low grass mounds.

Figure 47 VIA View 45

Picture 39 View 45 - existing

Picture 40 View 45 - proposed

Source: Urbis/ Virtual Ideas

Visual Impact:

- The proposed Stage 1A buildings will introduce contemporary buildings of larger bulk and scale into the foreground than currently occupy the site. The buildings are spatially well separated by large areas of existing open space that includes mature vegetation. Foreground and street tree vegetation that is proposed as shown, will in time provide partial screening in close views to lower parts of the buildings.
- The proposed landscape treatment such as paving, walls and seating areas as well as ornamental planting, will provide significant positive visual amenity benefits to the streetscape and visual context. The space between buildings allows for visual and physical permeability into the site.
- The height and scale of the buildings is partly reduced by the use of fine grained architectural detailing including; inset balconies, separated vertical masses and a variety of architectural treatments and colours which provides articulation and visual interest. We note that ornamental planting associated with internal courtyards will also contribute to the 'green' open spaces that are visible and will augment the positive visual amenity of existing mature, retained vegetation.
- The Stage 1A buildings will not block any scenic or important features and will predominantly block areas of open sky. The level of visual effects of the proposed development are contemplated in the adopted Concept Masterplan and LEP height controls. The LEP height controls breached have little to no additional impacts.

View 46 – North west corner of Wade Street and Sturt Street facing west

The view is characterised by a foreground of carriageway, street tree vegetation and three-storey residential flat buildings.

Figure 48 VIA View 46

Picture 41 View 46 - existing

Picture 42 View 46 - proposed

Source: Urbis/ Virtual Ideas

Visual Impact:

- The proposed Stage 1A buildings will introduce contemporary built forms of larger bulk and scale to the foreground than currently occupy the site. The height and scale of the building is partly reduced by the use of fine grained architectural detailing including; inset balconies, separated vertical masses and a variety of architectural treatments and colours, which combine to create articulation and visual interest.
- Foreground and street tree vegetation that is proposed as shown, will in time provide partial screening in close views to lower parts of the buildings. The proposed landscape treatment such as paving, walls and seating areas as well as ornamental planting, will provide significant positive visual amenity benefits to the streetscape and visual context.
- The Stage 1A buildings will not block any scenic or important features and will predominantly block areas of existing vegetation and open sky. The level of visual effects of the proposed development are contemplated in the adopted Concept Master plan and LEP height controls. The Stage 1A buildings will not block any scenic or important features and will predominantly block areas of open sky.
- The level of visual effects of the proposed development are contemplated in the adopted Concept Master plan and LEP height controls. The LEP height controls breached have little to no additional impacts.

Conclusion

The VIA of the Stage 1A development on key views is outlined in **Table 22** below and can be summarised as Low - Moderate. c

Table 22 Stage 1A VIA

	View 44	**View 45**	**View 46**
Rating of visual effects of proposed development on baseline factors *(negligible, minor, moderate, severe, devastating)*			
Visual Character	Minor	Moderate - severe	Severe
Scenic Quality of View	Minor	Minor - moderate	Moderate
View Composition	Minor	Moderate - severe	Severe
Viewing Level	Minor	Negligible	Minor
Viewing Period	Minor	Minor - moderate	Minor
Viewing Distance	Minor	Moderate - severe	Severe

	View 44	View 45	View 46
View Loss and View Blocking Effects	Minor	Minor	Minor
Rating of visual effects on variable weighting factors *(low, medium or high)*			
Public Domain View Place Sensitivity	Medium	Medium	Medium
Visual Absorption Capacity	High	Low	Low
Compatibility (with Masterplan and LEP)	High	High	High
Overall rating of significance of visual impact	Low	Medium	Medium

Source: Urbis

The VIA concluded that with regard to the potential visual impacts, the proposal is acceptable and does not result in any significant negative visual effects or impacts on the immediate 'effective' visual catchment based on the views modelled.

- The proposal will cause an obvious but positive visual change to the existing character of the site and the surroundings. We consider such changes to be highly compatible with the emerging and desired future character of the locality and wider visual context, which will undergo significant transformation to higher density and will include taller built forms.
- The proposal is responsive to the visual opportunities and constraints of the subject site and its surroundings and appropriately responds to the character of adjacent land uses. The development includes wide setbacks between the residential flat buildings and appropriate setbacks from surrounding residential areas and public open spaces.
- The arrangement of the built forms proposed includes appropriate visual and physical linkages to existing or approved developments and open spaces. This combination has the potential to create a high-quality suburban, residential environment.
- The proposed development is supported on visual impacts grounds.
- The additional height sought in relation to Stage 1A proposed reference scheme as indicated by areas of white massing above the blue dotted line, does not cause any significant visual effects, does not block access to scenic or important views, or generate any significant visual impacts.

Mitigation Measures

Physical Absorption Capacity (PAC) refers to the extent to which the existing visual environment can reduce or eliminate the perception of the visibility of the proposed redevelopment.

Design and mitigation factors are also important to determining the PAC. Appropriate colours, materials, building forms, line, geometry, textures, scale, character and appearance of buildings and other structures are relevant to increasing PAC and decreasing prominence.

6.3. SOCIAL NEEDS

The Social Needs Assessment has been prepared by Urbis (**Appendix Q**) to help inform the social infrastructure requirements of the Concept Plan Area. The Social Needs Assessment is guided by the directions of the City of Parramatta Community Infrastructure Strategy that outlines social infrastructure and open space priorities for the LGA, including specific needs for High Growth Areas including Telopea. Strategy to ensure the recommendations are robust and in line with the broader strategic direction.

This assessment defines social infrastructure as:

- Community and cultural facilities, including libraries, community centres, artist studios and performance spaces.
- Open space and recreational facilities.
- Childcare facilities.
- Education facilities.
- Health facilities.

6.3.1. Existing Social Infrastructure

The Social Needs Assessment mapped all social infrastructure within 400m (walking distance) and a 2km radius from the site to understand the existing level of provision and supply as summarised in the following sections.

Community and Cultural Facilities

The site has good access to community facilities with one within walking distance and five within 2km radius (illustrated in **Figure 49**), however, these facilities are generally in poor building condition and not fit for purpose. Community facilities in the Concept Plan include the Dundas Community Centre. A community facility which includes a 200 people main hall, meeting rooms and craft room and office space. It also includes the Dundas Branch Library and community health centre run by the Western Sydney Local Health District.

The Dundas Community Centre and Library has a gross area of 1,800 m^2. It has been identified in Council's Draft Community Infrastructure Strategy as requiring improvements to the quality of the facility and promotion of availability. The Strategy outlines any development occurring as part of the redevelopment of Telopea must support the continuity of the services provided at Dundas Community Centre, which has capacity to host up to 200 guests. The Strategy identifies a poor perception of safety, lack of flexible multi-purpose space and a small facility size for the Dundas Branch Library.

A variety of community support services are available within 2km of the CPA, including the Dundas Area Youth Service, Telopea Family Support Service, Hume Community Spaces and Telopea Schools as Community Centres Project. Religious facilities including Hope Connect Church and Telopea Christian Centre are also within the CPA.

Figure 49 Existing Community Facilities

Source: Urbis

Open Space and Recreational Facilities

There is currently 3.8 ha of open space within the CPA including Sturt Park and Acacia Park. Two community gardens are also located in the CPA including Telopea Community Garden and Telopea Public School Community Garden.

A further 62 hectares of open space (RE1 Public Recreation and RE2 Private Recreation zoned lands) are located within 2km including Dundas Park, Homelands Reserve, Sir Thomas Mitchell Reserve, Cox Park and Peggy Womersley Reserve. All these sports grounds have been identified within the City of Parramatta Council draft Community Infrastructure Strategy for upgrades and embellishment including the potential for one new full sized sports field and one new half size sports field in Sir Thomas Mitchell Reserve.

There is significant natural areas within 2km of the site including Vineyard Creek Service and Balaka Falls. These have not been included in the 62ha total.

Figure 50 Existing Open Space and Recreational Facilities

Source: Urbis

Child care facilities

There are 16 child care facilities within 2km of the site. The closest facilities are Green Trees Early Learning Centre and Sophie's Cottage Kindergarten which are located within the CPA. The total number of approved child care places within 2km is 906.

Child care vacancies are relatively high within 2km of the site. Half of the child care centres had vacancies Monday to Friday. Green Trees Early Learning Centre, Papillo Early Learning Dundas Valley, Yates Avenue Public School Preschool and Carlingford West Kindergarten did not have any vacancies. All of the centre offered places for children up to the age of five except for Telopea Rainbow Family Day Care, Dundas Public School OOSH and Carlingford West OOSH which accepted children up to 12 years.

Figure 51 Child Care Facilities

Source: Urbis

Health facilities

There are three health facilities located within walking distance to the site and three within a 2km radius. The Dundas Community Health Centre is situated within the CPA and is co-located with the Dundas Community Centre. It offers a range of health care services available to the local community including mental health services. Dundas Valley Medical Centre and Telopea Early Childhood Health Centre are also located within the CPA.

There is one hospital, Allowah's Children Hospital, located within 2km which provides medical and allied health care to children with disabilities and health needs. The closest hospitals to the site and are accessible to the general public include:

- Cumberland Hospital – 3km
- Ryde Hospital – 5.7km
- Westmead Hospital – 9.2km
- Auburn Hospital – 10.2km
- Blacktown Hospital – 15.9km

Figure 52 Existing health facilities

Source: Urbis

6.3.2. Social Infrastructure Requirements

Key considerations for social infrastructure need in Telopea are based on the analysis of likely future population characteristics and existing infrastructure provision. Key considerations for future infrastructure requirements are the following:

- As there will be an increased number of vulnerable people living in the area, social infrastructure will need to be safe, accessible and welcoming with good access to support services.
- Social infrastructure will need to cater to a diverse community, including people of different life stages, people from diverse cultural backgrounds and people from both low- and higher-income households.
- Social infrastructure should also provide opportunities to support community cohesion and connections between the diverse communities including the existing and established communities and the incoming population.
- While the site generally has good access to community facilities, these facilities are generally in poor building condition with poor visual prominence, low integration with other services and a lack of universal access.
- Existing parks in Telopea are mainly located within the lower parts of the neighbourhood so improving access and opportunities for passive recreation across the precinct will be important (particularly given the steep topography of the site).
- Facilities and open space will need to support the needs of higher density living including spaces for social gathering and recreation as well as being easily accessible and of a high quality.

Community facilities and libraries

While the site has good access to community facilities, these facilities are in poor condition and not fit for purpose. Based on the community facility benchmark of 80m^2 per 1,000 people, the project population (11,280 people) would generate demand for around 900m^2 of community centre space and 780 m^2 of library space. However, when these benchmarks are applied to the broader suburb population project of 17,600 people, this would generate a demand for approximately 2,500m^2 of combined community centre and library space.

The Concept Plan currently includes a new fit for purpose multipurpose community centre (floor space up to approximately 4,150m2) combined with a branch library. This would enable the facility to function as a District level facility, servicing multiple suburbs and communities.

It is recommended that the combined library and community centre proposed for the site include meeting rooms, exhibition and performance and space to accommodate the existing services including the Dundas Community Health Centre.

Rooftop recreation space should also be considered as a way to incorporate active recreation opportunities on site.

Open space and recreation

The site has a high proportion of open space within 2km, including Sturt Park and Acacia Park which are in the CPA. However, safety concerns, poor lighting and lack of pedestrian pathways have been identified as barriers to the use of Sturt and Acacia Parks. Better connections to local and regional open space are also required. Active recreational facilities within 2km include Dundas Park/Curtis Oval, Homelands Reserve, Sir Thomas Mitchell Reserve, Cox Park and Peggy Womersley Reserve. All these facilities have been identified for upgrades and improvements including the addition of new sports grounds.

Performance criteria outlined in the NSW Government Architect's Draft Open Space for Recreation Guide that have relevance for this assessment include:

- Desirable minimum size of a local parks to be 3000 m^2 (in high density areas, parks may be as small as 1,500m2 where more efficient provision does not exist or opportunities for re-use of small spaces arise).
- Quantity of open space should be considered in terms of the number of opportunities available for active and passive recreation with a variety of spaces that cater to different demands and age groups.
- For a high-density neighbourhood, residents must be within:
  - A 2-3 minute walk/ 200m walking distance to open space
  - A maximum of 25 minute walk/ 2km proximity to any district park that provides a range of activities.
  - 10 minute walking or 800m (400m preference for high density areas) to linear open space.
  - Within 20 minutes safe walking or 2km to district level organised sport and recreation spaces such as field sports, outdoor court sports, indoor sports, aquatic sports spaces.
  - A maximum of 30 minutes travel time on public transport or by vehicle to regional open space.

The Concept Plan includes a diversity of open spaces, well distributed across the site, with a total of 4.1ha additional open space proposed including:

- 12,860sqm of dedicated public open space including Telopea Station Plaza, Eyles Link Community Courtyard, Eyles Link The Gardens, Neighbourhood Park, Pocket Park, Library Courtyard, Winter Street connection.
- 6,160sqm of privately owned publicly accessible open space including Eyles Link Telopea Square, Telopea Square North and South, Pocket Park, Mews and Manson Street Link and Eyles Link Church Courtyard.
- 22,194sqm of private communal ground floor and rooftop open space.

The combination of this new open space with the existing 3.8ha already within the site provides more than 7.9 ha of open space within the CPA.

A total of 7.9ha of open space for a population of 11,280 means a ratio of around 0.7ha per 1,000 people – just under Council's guide for 1ha per 1,000 people. However, the community will also have access to the significant open space network within 2km of the site (more than 62ha). There are also significant natural areas within 2km of the site including Vineyard Creek Reserve and Balaka Falls. These have not been included in the 7.9ha total.

The Concept Plan also include publicly accessible neighbourhood parks greater than the recommended 1,500 m^2 for high density areas and a variety of spaces that cater to different demands and age groups. The majority of residents are also within 400 metres walking distance to open space.

To meet some of the demand for recreational facilities on site, a shared use arrangement is recommended for the sports grounds located on the Telopea Public School site. Council and Department of Education have confirmed they both support this initiative.

The community will also benefit from the upgraded planned for Dundas Park, Homelands Reserve, Sir Thomas Mitchell Reserve, Cox Park and Peggy Womersley Reserve.

There is also an opportunity to explore provision of an indoor recreation facility on the school site to be explored through consultation with the Department of Education.

Education facilities

The Concept Plan population will generate approximately 609 primary school students (5-11 years) and approximately 400 high school students (12-17 years). However, the broader suburb projected population of 17,600 people is likely to generate demand from approximately 950 primary and 625 secondary school students by 2036.

Maximum government school enrolment numbers outlined by School Infrastructure NSW are 1,000 students for primary schools and 2,000 students for secondary schools. The 2019 enrolments for Telopea Public School were 80 students, suggesting the school is currently under-utilised and could accommodate future growth.

James Ruse Agricultural School, Cumberland High School and St Patrick's Marist College are high schools are all within 2km and Marsden High School, Tara Anglican School for Girls and The Kings School are also within 5km of the site. There are upgrades planned for Cumberland High School. It is likely these schools will be able to accommodate demand for high schools. The future population will also benefit from the nearby tertiary education facilities including Western Sydney University, Charles Sturt University Parramatta Campus, Macquarie University, Macquarie Community College, English Language Centre Meadowbank and the Northern Sydney Institute TAFE Ryde Campus.

The NSW Department of Education have confirmed they are open to shared use arrangements and collocated opportunities for complementary facilities on the school site. Compatible co-located uses could include child and family health facilities, child care and OSCH facilities or indoor recreation facilities. There are also opportunities for shared use of the school's sports fields and potentially the community gardens. Telopea Public School would also benefit from the new library and community centre facilities proposed as part of the Concept Plan.

Health facilities

There are three health facilities located within walking distance to the site including Dundas Community Health Centre, Dundas Valley Medical Centre and the Telopea Early Childhood Health Centre.

Cumberland Hospital, Ryde Hospital, Westmead Hospital and Auburn Hospital are all within approximately 10km of the site. The planned Westmead Precinct which is approximately 9km away involves a $3 billion upgrade and expansion of the precinct's health services, education and medical research facilities. It is likely these acute care services will be sufficient to meet the needs of the new population generated by the development.

The existing Dundas Community Health Centre is small and would benefit from being relocated and potentially integrated as part of the proposed multipurpose community centre.

Based on a national benchmark of one general practitioner per 1,000 people, the development may also be able to support around 11 general practitioners. Some of the need for general practitioners may be absorbed by the existing surrounding medical practices, but there is also likely to be demand for additional medical services.

According to the Royal Australian College of General Practitioners the average clinic size in 2019 was approximately six GPs. Based on this, it is estimated the development could support at least one large medical practice.

The Concept Plan also includes provision for a medical precinct as part of the retail offering of around 900 m^2 (plus 300 m^2 for adjoining pharmacy) which could provide a range of medical services on site. Two other medical centres are currently located within 2km of the site and the provision of additional medical services will largely left to market forces once demand can be demonstrated.

Childcare facilities

The proportion of children aged 0 to 4 years is likely to be around 7.2% of the population which equates to 812 children. This equates to a demand for approximately 270 – 330 Long Day Care places.

Assuming that a contemporary childcare centre can provide for between 90 to 120 childcare places, this equate to the need for approximately three new childcare centres. The Concept Plan includes the provision of a private child care facility providing between 75 – 90 childcare places.

Around half of the childcare centres within 2km of the site advertised vacancies Monday to Friday which may be able to absorb much of the remaining demand. However, vacancy numbers do fluctuate and demand is difficult to predict particularly in a 20 year + timeframe. Additional demand not absorbed by existing centres is likely to be provided by the private sector once demand can be demonstrated. It is not necessary that precise requirements for childcare are identified at the concept master plan stage as childcare centres are a permitted use within residential areas and do not require land to be designated at the master planning stage. The GFA allocated for commercial uses in the Concept Plan could cater for a childcare in permissible zoning.

6.3.3. Conclusion

The CPA will see a significant population increase which will result in an increase demand in social infrastructure. While there is an increase, the forecasted population both in the CPA and surrounding suburb will be accommodated by new social infrastructure proposed within the CPA. Therefore, the proposed development sufficiently responds to the social needs within the CPA and surrounding area.

6.4. SOCIAL IMPACT

A Social Impact Assessment (SIA) has been prepared by Urbis (**Appendix R**) to identify and analyse the potential positive and negative social impacts associated with the proposal. The SIA includes a detailed and independent study to outline social impacts, identify mitigation measures, and provide recommendations in accordance with professional standards and statutory obligations.

Based on the assessment in the SIA, the key social impacts of the proposal are:

- **Access to high quality social housing:** the provision of additional social housing to Telopea will generate a very high positive long-term impact for households on the waitlist for social housing in the Parramatta/Baulkham Hills allocation zone.
- **Access to high quality affordable housing:** the provision of additional affordable housing to Telopea will generate a very high positive long-term impact for many households, including those currently experience housing stress, as well as key workers living in the region.
- **Improved community facilities and access to high quality open space:** the new library and community centre, provision of additional open space and a new childcare facility are expected to have a positive impact on the community. The new library and community facility will replace the currently outdated buildings that are not fit for purpose. The additional open space proposed throughout the precinct will provide incoming residents and visitors with additional opportunities for passive recreation.
- **Access to new supermarket, food and beverage, and specialty retail:** the proposed full-sized supermarket, new food and beverage and specialty retail proposed is expected to have a positive impact on the community. The services will support the needs of incoming residents, as well as enhance a sense of place through the activation of retail and food and beverage uses.

- **Healthy built environment:** the Concept Plan embeds healthy built environment principles in its design and is expected to have a positive impact on the community. Currently, the topography of Telopea is steep and can be difficult to navigate. Eyles Pedestrian Link will provide residents and visitors with good connections throughout the Concept Plan. Other uses including the publicly accessible gym, cycleways and learn to cycle area will provide recreational opportunities for residents and the public and support health and wellbeing.
- **Crime and public safety:** the Concept Plan incorporates the four CPTED principles of surveillance, access control, territorial reinforcement and space and activity management. It is expected that the design of the Concept Plan will help improve perceptions of safety in the area, thereby resulting in a positive impact for the community.
- **Community integration, belonging and connection:** the proposal will initially have a short to medium term negative impact on community integration, belonging and connection for existing social housing residents and some residents of private market housing. Existing residents are likely to initially experience anxiousness and concern as the neighbourhood they are deeply familiar will experience significant change over the next 20 years. These impacts can be mitigated by the delivery of a comprehensive program of community programs and activities, tenure blind design and ongoing commitment to fostering community integration. Following mitigation it is likely the delivery of the Concept Plan will have a medium to long term positive impact on community belonging and connections.
- **Neighbourhood change:** the delivery of the Concept Plan will result in urban renewal of Telopea, causing long-term neighbourhood change. Neighbourhood renewal is likely to have a short to medium negative impact on many tenants due to feelings of stress, fear, anxiety and loss associated with this significant change in their lives, created and symbolised by changes to their physical environment. Market housing residents are also likely to experience construction fatigue and potential stress as a result of potential disturbance to their day to day activities over an extended period. If well managed, with transparent and ongoing engagement and communications, neighbourhood change over the long term is likely to reduce location related stigma and result in an overall positive impact for the community.
- **Relocation of existing residents:** the proposal will initially have a negative impact in the short to medium term as existing residents will be relocated to accommodate the development of the Concept Plan. Moving can be a stressful experience for most households. Research shows relocation can be particularly stressful due to tenants' previous experiences of insecure and unstable housing. The design and implementation of best practice Relocation Plans at each stage of the relocation process will be essential in mitigating the impacts of relocation. This is likely to reduce negative impacts and create a neutral to positive overall experience for relocated tenants in the long term.

Each of the key impacts are discussed in further detail in the SIA and the following sections of the EIS.

Based on this assessment and the implementation of recommendations, it is likely the proposal will generate a highly positive social impact, particularly in the long term. The negative impacts expected for community integration, belonging and connection, neighbourhood change and the relocation of existing residents can be mitigated through implementation of appropriate management measures provided in the recommendations outlined in the following sections.

6.4.1. Access to High Quality Social Housing

Existing Conditions

The CPA currently contains 486 social housing dwellings, most of which are managed by the NSW Department of Communities and Justice (DCJ). The social housing dwellings in Telopea are a mix of high-density towers, three to four storey medium density buildings on larger blocks and detached cottages. The dwellings are generally run down and nearing the end of their lifecycle, with some evidence of property damage and vandalism.

Telopea is in the Parramatta/Baulkham Hills allocation zone for social housing. As of 30 June 2019, 1,970 households were on the waitlist for social housing within this allocation zone and an additional 127 households were on the waitlist as priority applicants. There was an expected waiting time of 5 to 10 years for a one or three bedroom apartment in this allocation zone and over 10 years waiting time for a two bedroom apartment and a four or more bedroom apartment.

Impact of proposal

The Concept Plan proposes the creation of a minimum of 740 social housing dwellings, an increase of at least 254 dwellings. These additional dwellings will be made available to applicants on the NSW Housing Register, which is the social housing waitlist managed by DCJ and used by all managers of social housing, including community housing providers (CHPs).

This provision of access to high quality social housing aligns with the vision for Telopea identified in the Local Character Statement, which outlines the need for a mix of different types of homes to provide affordable housing choices for the whole community.

Social housing delivered as part of this proposal will be managed by Hume Community Housing, a Tier 1 community housing provider which in 2018-19, Hume had an overall tenant satisfaction rate of 81%. This compares with an industry benchmark of 75% satisfaction.

The provision of 740 new, high-quality social housing dwellings will provide an increased supply of social housing in the Parramatta/Baulkham Hills allocation zone. This will help meet the current waitlist demand of 2,097 households. The new social housing dwellings will improve on current social housing building condition, delivering a positive outcome for the Telopea community.

Mitigation Measures/ Recommendations

The implementation of the Concept Plan will result in new housing designed and constructed to contemporary standards and managed by an experienced community housing provider. Based on this assessment, access to high quality social housing is likely to have a high long-term positive impact on the community. The following mitigation measures and recommendations will assist in minimising impact on existing and future tenants:

- Ensure housing design takes a ‘tenure blind’ approach, with no external indicators of tenure type in the design and layout of buildings and open space.
- Management of social housing by Hume Community Housing, a long standing Tier 1 Community Housing Provider with high tenant satisfaction rates.

6.4.2. Access to High Quality Affordable Housing

Existing Conditions

The CPA currently contains 76 affordable housing dwellings in an apartment building on Shortland Street managed by Hume Housing.

Households in Telopea are experiencing rental stress, with 20.4% of households paying more than 30% of their household income on rental repayments. This suggests that housing is unaffordable for one fifth of households living in Telopea. This proportion is particularly concerning as the 22.9% Telopea residents living in social housing should not be paying more than 30% of their income in rent.

Housing for key workers is also becoming increasingly difficult to find in many parts of Sydney.

In 2016 19.6% of Telopea residents worked in key worker industries including education and training and health care and social assistance. In 2014 id population estimated there were 17,360 key workers in the Parramatta LGA, representing 14.6% of all jobs in the LGA. Due to the large cluster of health care services in the area, the largest number of key workers were nurses (5,115).

Impact of the proposal

The proposal will create an additional 256 affordable housing dwellings in Telopea, providing essential housing for key workers and households experiencing rental stress. This aligns with City of Parramatta’s strategic vision to provide permanent affordable housing in Parramatta LGA.

Affordable housing delivered as part of this proposal will also be managed by Hume Community Housing an experienced manager of affordable housing, with a thorough and publicly available allocations policy. The policy includes important safeguards for affordable housing tenants, such as providing adjustment periods over two years for tenants whose incomes exceed eligibility thresholds.

Mitigation Measures/ Recommendations

The implementation of the Concept Plan will result in new housing designed and constructed to contemporary standards and managed by an experienced community housing provider. Based on this assessment, access to high quality affordable housing is likely to have a high long-term positive impact on the community. The following additional mitigation measures and recommendations will assist in minimising impact on access to affordable housing:

- Hume Community Housing's current affordable housing policy could be further strengthened by committing to providing tenants with support to find alternative private market rental housing if their income exceeds thresholds for more than two years.

6.4.3. Improved Community Facilities and Access to High Quality Open Space

Existing Conditions

The CPA includes the Dundas Library and Dundas Community Centre, both facilities are outdated and unable to meet the contemporary needs of the growing population.

There are currently two childcare facilities located within the CPA with another 14 childcare facilities located within 2km from the site. The main park within the CPA is Sturt Park, which provides 2ha of open space, including sporting fields and informal recreational spaces. Acacia Park is situated just outside the CPA and provides a fenced playground.

Two community gardens are located within the CPA. Telopea Community Garden is supported by NSW Housing and Dundas Area Neighbourhood Centre and the Telopea Public School Community Garden is operated by the school.

Impact of proposal

The proposal will provide a combined regional library and community centre in Telopea of up to 4,150m^2 GFA, which will replace the existing Dundas Library and Community Centre. The Social Needs Assessment found that the incoming population will generate the need for approximately 2,500m^2 of combined community centre and library space, and therefore the proposed delivery of the new library and community centre is expected to meet this demand.

The Social Needs Assessment prepared by Urbis found that the incoming population is likely to generate a need for 25 to 300 long day care places for children aged up to four years. Typically, a contemporary childcare centre can provide 90 to 120 childcare places. This need therefore equates to two to three additional childcare centres. The proposal includes a childcare facility with 120 places to help meet the demand of the incoming population. Additional demand is likely to be absorbed by capacity at existing centres and other facilities provided by the private sector once demand can be demonstrated. The Social Needs Assessment found that the incoming population is likely to generate demand for 213 OSCH places. This could possibly be absorbed by the three existing facilities within 2km of the site.

The proposal will deliver a range of open spaces across the site with a total of 12,860sqm of public open space proposed, including Telopea Station Plaza, a Neighbourhood Park, Library Courtyard and pocket parks and gardens. An additional 6,160sqm of privately owned publicly accessible space is also proposed including Telopea Square, Church Courtyard and pockets parks.

The Concept Plan includes 22,194sqm of communal open space for residents of apartment buildings. It also retains the Telopea Community Garden, located at the western periphery of the Concept Plan, adjacent a residential building.

The Social Needs Assessment analysed the open space provided as part of the Concept Plan. The assessment found that the Concept Plan will provide 0.7ha of open space per 1,000 people, which is under the City's guide of 1ha of public parks per 1,000 people. However, the community will have improved access with new pedestrian and cycle ways to a significant open space network available within 2km of the site, totalling 62ha.

The Social Needs Assessment also found that most residents will be within 400m walking distance of open space. It therefore concludes that the open space provided as part of the Concept Plan, in addition to existing open space, is acceptable.

Mitigation Measures/ Recommendations

Based on this assessment, improved community facilities and access to high quality open space is likely to have a high long term positive impact on the community. The following mitigation measures and recommendations will assist in minimising impact on community facilities and open space:

- Provision of a new regional level library and community centre
- Provision of a childcare facility in the CPA to help meet future demand for childcare.
- Inclusion of a range of public open space areas.
- Where possible, existing trees are to be retained in open space to maintain the bushland character of the area.
- Develop and deliver a welcome program for the new library and community centre with the City of Parramatta to encourage all new residents to access and feel comfortable in these facilities.
- Develop and deliver a community outreach program associated with the new library and community centre in collaboration with the City of Parramatta.

6.4.4. Access to new supermarket, food and beverage and speciality retail providers

Existing Conditions

The CPA currently includes a small local retail strip along Benaud Place containing a small IGA, takeaway food retailers, a liquor store and news agency. This retail strip provides essential services to the existing community. The buildings in this retail strip are generally run down and reaching the end of their lifecycle.

Engagement undertaken to inform the development of the Telopea Precinct Masterplan demonstrated community support for upgraded retail uses and the location of shops near the light rail and plaza.

Impact of proposal

The proposal includes new retail offerings to the north-west of the CPA. This includes a new supermarket, food and beverage retailers and speciality retail, such as hair and nail salons. These retail and food uses are well located at the light rail station and are generally located on the ground floor. The provision of multiple food and beverage services will likely activate this section of the CPA, especially at night time.

The existing IGA in Telopea is unlikely to be able to support the needs of the future population. The provision of a full-sized supermarket and fresh food marketplace will provide future residents with enhanced food services.

The Community Pavilion, located at the core of the CPA, will include a café with bench seating set under the tree canopy and booth style seating. The design of this space in expected to enhance community gathering and foster a sense of place.

The inclusion of speciality retail and food and beverage businesses aligns with the City's identification of Telopea as a local centre that should be a focal point for the community.

Mitigation Measures/ Recommendations

Based on this assessment, access to a new supermarket, food and beverage, and speciality retail providers is likely to have a positive long-term impact on the community. The following mitigation measures and recommendations will assist in minimising impact on retail:

- Co-location of the new supermarket, food and beverage, and speciality retail with other services including proposed medical centre, childcare centre and gym.
- Provision of a pedestrian only retail strip (Eyles Street) to enhance safety of pedestrians when accessing retail services.
- Encourage or require the building manager of future retail and food and beverage tenancies to implement a Plan of Management. This should include details such as opening hours, safety and security measures, noise management and patron capacity.

6.4.5. Healthy Built Environment

Existing Conditions

Telopea currently has an established bushland character. Existing open space areas including Sturt Park and Acacia Park provide some healthy built environment elements, including short walking paths, playgrounds, an informal basketball court and skate park. There are also formal active recreation facilities within 2km of the site including Dundas Park and Curtis Oval, Homelands Reserve, Sir Thomas Mitchell Reserve, Cox Park and Peggy Womersley Reserves.

All these facilities have also been identified in City of Parramatta's Draft Community Infrastructure Strategy for upgrades and embellishment, including the potential for one new full-sized sports field in Cox Park and potential for one new full size sports field and one new half size sports field in Sir Thomas Mitchell Reserve.

Currently, the local community only has access to IGA for major fresh food produce. Other food choices in Telopea are takeaway services such as takeaway pizza, fish and chips and a patisserie.

Impact of the proposal

A core principle of the Concept Plan design is encouraging active transport opportunities. This is demonstrated particularly in the design of Eyles Street, a new pedestrian thoroughfare which acts as the spine of the Concept Plan. Eyles Street is oriented roughly east-west from a high elevation at the future Telopea Light Rail Station to the lower elevation at Bernard Lane. To assist residents navigate the topography, Eyles Street includes wide stairs and ramps to provide accessible pathways from top to bottom, as well as lifts and escalators.

Surrounding streets and laneways have also been designed to balance the needs of pedestrians, cyclists and vehicles to create a safe, attractive and comfortable pedestrian experience. This includes providing defined and separated pedestrian footpaths with tree plantings, as well as awnings and street furniture to enable pause points for pedestrians. The Concept Plan has also been designed to maintain established and significant street trees throughout the area. This includes mature eucalypts fronting Eyes Street and Sturt Street.

Some informal outdoor recreation features are proposed for residents and visitors to the area. This includes a dedicated learn to cycle area, playgrounds including a vertical playground, and outdoor games. A gym is also proposed, which will be a commercially operated facility that will require paid membership.

The Concept Plan is expected to include an expanded range of food choices. This includes a food and beverage precinct with a full-size supermarket and fresh food marketplace supported by other speciality food and beverage (such as cafes and restaurants). This is likely to include healthier food options for residents.

Mitigation Measures/ Recommendations

The design of the CPA is likely to have a positive long term impact on the health of the existing and future community. The following mitigation measures and recommendations will assist in minimising impact on a healthy built environment:

- Inclusion of pedestrian-only through site links, well defined footpaths and separate cycle areas
- Provision of bike parking stations at the future light rail station to encourage active transport use.
- Retention of significant street trees throughout the CPA.
- Expanded access to healthy food choices including a full sized supermarket, fresh food marketplace and speciality food and beverage retailers.
- Work closely with the City of Parramatta on the design of public space and streetscapes to enable ongoing maintenance to a high standard.
- Consider recommendations from the Social Needs Assessment including:
  - Developing a shared use arrangement for the sports grounds on the Telopea School site
  - Exploring potential provision of an indoor recreation facility on the Telopea Public School site
  - Providing better accessibility to existing active recreation within 2km of the CPA.

6.4.6. Crime and public safety

Existing Conditions

The existing buildings in Telopea show evidence of urban decline, reaching the end of their lifecycle. This includes the existing Dundas Community Centre and Library, which is a dated building and no longer fit for purpose. The building was designed with an under-croft area, and adjacent a laneway with little evidence of appropriate lighting, and opportunities for concealment and entrapment.

The Crime Prevention Through Environmental Design (CPTED) report prepared by Urbis provides an overview of the crime profile based on crime data from the Bureau of Crime Statistics and Research (BOCSAR). The data shows that the CPA is in a BOCSAR hotspot for 'domestic assault', 'non-domestic assault', 'break and enter dwelling', 'motor vehicle theft', 'malicious damage to property' and 'steal from dwelling'. The two-year crime trends show all crime types are stable in Telopea, except for 'steal from motor vehicle' which is up by 148%.

Engagement with the community undertaken in 2016 to inform the Masterplan identified key issues around safety. The community felt that Telopea was unsafe at night time and there was a high level of anti-social behaviour in the community. The community felt that more retail uses and opportunities for community gathering could help enhance feelings of safety in Telopea.

Impact of the proposal

The Concept Plan has been carefully considered to enhance public safety. The CPTED report prepared by Urbis provides an assessment of the proposal against the four CPTED principles of surveillance, access control, territorial reinforcement and space and activity management. This is discussed in further detail in **Section 6.5**

The delivery of the Concept Plan over the next 20 years will enhance the public domain and likely increase feelings of public safety, especially at night time. Access control measures have been considered, including private access for vehicle accessing residential basement parking. This will reduce the likeliness of crime related to 'theft from motor vehicle' which is the only crime type that has increased over the past two years in Telopea.

Mitigation Measures/ Recommendations

The design of the CPA is likely to reduce opportunities for crime and have a positive long term impact on the community's perceptions of safety. The following mitigation measures and recommendations will assist in minimising impact on a crime and public safety:

- Car parking access control measures to enhance vehicle safety.
- Inclusion of a range of retail uses to enable activity at different times of the day.
- Incorporation of lighting and landscaping throughout the CPA including private, communal and public spaces.
- Implementation of recommendations provided in the CPTED report.
- Undertake ongoing engagement with residents throughout the redevelopment to stay informed about community safety issues.

6.4.7. Community integration, belonging and connection

Existing Conditions

Telopea is currently a mixed tenure community. At the last Census in 2016, some 59% of households were purchasing their homes, 23% lived in private market housing and 23% lived in social and affordable housing. Community connections are supported by programs and services offered at existing community facilities in Telopea, such as the Dundas Area Neighbourhood Centre, Dundas Area Youth Service, Telopea Family Support Service and Hume Community Learning Space. Access to many of these spaces is provided free or at reduced hire rates for local residents and community groups.

Hume Community Housing have an existing Social Club available to all tenants for $1 per week. The Social Club enables tenants to go on up to four outings per year such as Jamberoo, the Easter Show, Sydney Aquarium or Maritime Museum. Hume Community Housing also schedule regular Block Meetings to give tenants opportunities to share information and bring up any key issues. Hume also offers a Community Space for tenant use at its existing properties on Shortland Street.

Impact of proposal

The proposal will retain a mix of housing tenures in Telopea, and includes private market, social and affordable housing. Engagement undertaken to inform the development of the Telopea Precinct Masterplan demonstrated community support for the mix of social and private housing to improve morale, culture and self-esteem of social housing residents.

The proposed Concept Plan demonstrates this 'tenure blind' approach. It does not allocate specific blocks, buildings, facilities or spaces to a particular housing tenure and provides the same design quality for public, communal and private domains across the area. Access to communal open spaces is open to all residents of buildings fronting those spaces.

However, even with tenure blind design that mixed tenure communities require ongoing programs to develop a strong sense of community. As outlined above, several new community facilities and open spaces will be provided as part of the Concept Plan. This will provide the opportunity for individuals and groups to directly participate in community activities, whether through programmed services and events or by providing multifunctional spaces which can be booked by individuals or groups.

The redevelopment of Telopea is likely to cause some initial concerns, particularly from long-term residents who may experience feelings of anxiousness as a result of the change to the neighbourhood they are deeply familiar with.

Mitigation Measures/ Recommendations

It is likely the delivery of the Concept Plan will have a short to medium term negative impact on community integration, belonging and connections. These impacts can be mitigated by the delivery of a comprehensive program of community programs and activities.

With tenure blind design and an ongoing commitment to programs fostering community integration, there is potential to for the delivery of the Concept Plan to have a medium to long term positive impact on community belonging and connections. The following mitigation measures and recommendations will assist in minimising impact on a community integration, belonging and connection:

- The proposed design of market, social and affordable housing tenures takes a 'tenure blind' approach with no external indicators of tenure type in the design and layout of buildings and open space.
- Inclusion of public gathering and dwell spaces throughout the CPA, such as the Telopea Station arrival plaza, Telopea Square, community gardens, neighbourhood park, pocket parks and community pavilion.
- New and improved community centre and library at the core of the CPA that will interface with the publicly accessible open space.
- Undertake ongoing comprehensive engagement with Telopea residents and community groups to understand how the delivery of the Concept Plan is impacting community integration, belonging and connection and inform the design of activities and programs.
- Incorporate temporary and 'meanwhile' uses to support the existing community and maintain community connections during the delivery of the Concept Plan.
- Develop and deliver welcome programs for all new and returning residents.
- Continue to provide concessional rates for hire of spaces within community facilities, so they are affordable for all local residents and community groups.

6.4.8. Neighbourhood change

Existing Conditions

The 2016 ABS Census data showed that in 2016 almost half of the Telopea population (2,418 people or 47.8%) were located at the same address as five years ago (2011).

Residential, retail and community buildings in Telopea show evidence of urban decline, with some building damage including graffiti and broken windows. Engagement undertaken to inform the Telopea Precinct Masterplan in 2016 demonstrated that the community was supportive of the need for renewal to occur in Telopea. One of the top three things community members liked about the Masterplan was that it will bring change and broad support for Telopea. There was also some concern expressed about overdevelopment and a potential oversupply of apartments.

Impact of the proposal

The Concept Plan proposal will result in substantial change to Telopea over an estimated 20 year timeframe. Research demonstrates that neighbourhood change of the scale proposed at Telopea can have a range of positive and negative impacts.

Concentration of social housing in an area can result in location-related stigma. This stigmatisation often causes judgement and stereotyping of individuals and groups who live in social housing. Urban renewal can help reduce stigma by introducing mixed communities to change perceptions of an area's reputation. Research found that residents can experience less location-related stigma in mixed communities due to increased access to opportunities, such as employment, education and training, improved community services and enhanced opportunities for social participation with people of different cultural and socio-economic backgrounds.

Research has been conducted by Shelter NSW, Tenant's Union of NSW and City Futures Research Centre UNSW on urban renewal implications for tenants. This research found that urban renewal can have disruptive impacts on tenants, as for most, it will involve significant losses including their physical home, friendships and community support services. This can be especially difficult for long term tenants who believed that their social housing home would be provided for life. The renewal process can exacerbate pre-existing health and social problems and is likely to increase feelings of stress, fear, anxiety, grief, loss and trauma. It is therefore crucial that there are strong social and community support services available for tenants to support them through this time.

The research conducted by Shelter NSW et al found there are positive aspects to neighbourhood change. This includes increased opportunities for tenants to pursue new skills, training, employment, volunteering and community leadership. Projects that are planned so that most existing tenants can return and stay in the area can also help alleviate negative feelings towards urban renewal, particularly loss of neighbourhood identity and friendships. New and improved community facilities and environmental assets such as open space, trees and landscaping, as well as retention of trees, are some other potential positive aspects to urban renewal. The research found that it is also important to honour the social history of the place to make tenants feel comfortable when they return to their community.

It is expected that the redevelopment will occur in three stages from 2023 – 2038. Stage 1 (2023-2029) will include the largest scale of residential dwellings with approximately 2,100 dwellings. Following with approximately 1,600 dwellings in Stage 2 (2029-2035) and 1,00 dwellings in Stage 3 (2035 – 2038). The research above focuses on social housing tenants. Market housing residents will also feel the impacts of neighbourhood change of the scale proposed at Telopea. Staging renewal can have positive implications for the community, as parts of the CPA will remain accessible, while construction occurs in other areas. However, the projected timeframe may also result in feelings of construction fatigue and potential stress resulting from continued disturbance to day to day activities such as changing traffic conditions, noise and visual impacts of construction vehicles and sites. This is likely to be felt by residents who can move in at the finalisation of Stage 1 in 2029, however will live with Stage 2 and Stage 2 construction activities for up to ten years.

Mitigation Measures/ Recommendations

Neighbourhood renewal is likely to have a short to medium negative impact on many tenants due to feelings of stress, fear, anxiety and loss associated with this significant change in their lives, created and symbolised by changes to their physical environment. Market housing residents are likely to experience construction fatigue and potential stress as a result of potential disturbance to their day to day activities over an extended period.

If well managed, with transparent and ongoing engagement and communications, neighbourhood change over the long term is likely to reduce location related stigma and result in an overall positive impact for the community. The following mitigation measures and recommendations will assist in minimising impact on a neighbourhood change:

- Stage 1 of the redevelopment process focuses on delivery the largest number of residential dwellings, delivering community benefit and supporting the PLR. This will enable the provision of transport and community services are provided before Stages 2 and 3 which focus on delivering the remaining residential dwellings.
- Preparation of a quarterly community newsletter to be distributed locally and online through the project website.
- Hume Housing has an existing Tenants Voice Committee that meets regularly to discuss improvements on services, manage social events, support new tenants through the social housing process and take part in the NSW Housing Federation Tenants Group.
- Undertake ongoing long-term and genuine engagement with residents throughout the urban renewal process.
- Distribution of project information regularly and through a range of community building activities, such as street meetings, community events and BBQs.
- Consider inclusion of public art, library and community centre installations and other initiatives that honour the social history and community values to the Telopea community.
- Consider implementation of creative hoarding to improve visual impacts on construction sites.
- Consider commissioning an oral history of Telopea, prior to construction works commencing, to document resident memories and associations.

6.4.9. Relocation of existing residents

Existing Conditions

There are currently 264 households living in social housing in the CPA. To facilitate the development of the proposal, existing social housing tenants will need to be temporarily or permanently relocated.

As part of engagement undertaken to inform the development of the Telopea Precinct Masterplan, existing social housing tenants expressed concern about the relocation process and being able to return to Telopea. Tenants also expressed concerns that pets would not be allowed in new apartments.

Impact of the proposal

208 social housing dwellings will require relocation to enable Stage 1 of the redevelopment. Temporary relocation for an extended period is likely to cause feelings of stress for many tenants. The renewal process can also result in adverse impacts for tenants related to loss of choice and control over their relocation area and replacement homes, control in timing of the relocation process and the packing and moving process.

In addition, many social housing tenants have previous experiences of insecure and unstable housing. Relocation may be particularly likely to create feelings of fear and anxiety for these tenants.

Ongoing research by the UNSW City Futures Research Centre is considering the experiences of Bonnyrigg residents during the renewal of social housing in the suburb over 15 years. A first tranche of research findings has shown that factors such as being unable to take pets to their new home, losing their garden, or feeling that expenditure made in their previous property was not considered shaped resident impressions of the renewal process. The staged approach of the Bonnyrigg renewal meant that most residents only needed to temporarily relocate on-site in Bonnyrigg, lessening the distress that some may have experienced were they to relocate off-site.

The City Futures research also indicated that maintaining transparency and communication with residents should be paramount in renewal processes. The research found that transparency needed to be maintained even during periods of uncertainty, so the community could feel included rather than having a renewal imposed on them.

Mitigation Measures/ Recommendations

The relocation of tenants will likely have a short to medium term negative impact. Implementation of a considered Tenant Relocation Strategy during the relocation process, including comprehensive communications, will be crucial in minimising stress and anxiety for tenants and mitigating the impacts of relocation. This is likely to reduce the negative impacts in the short to medium term and create a neutral to positive overall experience for relocated tenants in the long term. The following mitigation measures and recommendations will assist in minimising impact on a relocation of tenants:

- Pre-lodgement engagement undertaken by Elton Consulting including:
  - Ongoing workshops and meetings with City of Parramatta
  - Preparation of a quarterly community newsletter to be distributed locally and online through the project website
  - Supporting the work of LAHC relocation team
- Preparation of an Engagement Plan that outline future engagement activities to be undertaken through the post-lodgement exhibition period and Stage 1A construction period (2023 - 2028)
- LAHC to cover all reasonable moving costs including move costs and service connection fees
- Experienced case workers will assist tenants to find new dwelling with consideration for their personal needs
- Implement the Stage 1A Relocation Plan
- Develop and deliver a detailed Tenant Relocation Strategy, in close collaboration with existing tenants.
- Where possible, relocate tenants once only or within Telopea, and provide tenants with choice about whether they relocate back to Telopea following construction
- Develop ways to make new housing and relocation processes pet friendly.

6.5. CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

A Crime Prevention Through Environmental Design (**CPTED**) Report has been prepared by Urbis (**Appendix S**) detailing how CPTED principles have been embedded in the CPA and Stage 1A detailed built form. The CPTED Report also makes recommendations to be considered as part of the future detailed design of buildings and the public domain to be undertaken in future stages.

The Master Plan seeks to revitalise the Telopea Precinct through the redevelopment of LAHC's social housing assets, as well as sites under private ownership, to deliver an integrated community with upgraded public domain and community facilities – and to capitalise on access to the new Parramatta Light Rail network.

A site visit was conducted by Urbis on the morning of 9 April 2020. The site visit was used to understand existing activity around the site and the interface between surrounding land uses. This site visit was undertaken during the COVID-19 lockdown, and therefore observations may not be reflective of true pedestrian and vehicle activity.

The discussion below sets out a detailed assessment of the overall Concept Plan against the key CPTED principles of surveillance, access control, territorial reinforcement and space and activity management. The assessment has been undertaken against the Concept Plan and Stage1A drawings.

6.5.1. Surveillance

Places that are well supervised through natural, mechanical or organised surveillance are less likely to attract criminal behaviour. Important considerations for natural surveillance are building orientation and location, well designed spaces, landscaping and lighting. Technical surveillance is achieved through measures such as CCTV whilst organised surveillance is achieved through measures such as security guards.

Surveillance is an important consideration as it can make people feel safe when they are able to see and interact with others. Crimes are less likely to occur in places that are well supervised. BOSCAR crime data indicates that the site is in a hotspot for 'non-domestic assault', 'break and enter dwelling', 'motor vehicle theft', 'malicious damage to property' and 'steal from dwelling'. The use of surveillance will therefore be important to reduce the likeliness of these types of crimes from occurring.

Assessment

The design rationale of the Concept Plan has carefully considered the location and orientation of buildings to enhance natural surveillance opportunities. The Parramatta DCP recommends that buildings in the Telopea Masterplan are to provide an interface with Telopea Railway Station (now the future Light Rail Station) and the design of buildings adjoining through block connections and laneways are to ensure overlooking of such spaces to promote safety. The proposal aligns with the Parramatta DCP provisions as retail uses are proposed at the ground floors of buildings opposite the future light rail station, separated by Sturt Street and the community pavilion. The building orientation of retail spaces facing the community pavilion will encourage activation of this space, enhancing natural surveillance opportunities of the station.

At the core of the Concept Plan is Eyles Street, which is a pedestrian link passing roughly east-west through the site. Buildings are adjoined on either side of Eyles Street with natural surveillance opportunities provided over the community uses, retail spaces and open space. Communal and public areas of open space are generally focused at the core of the precinct and overlook laneways and streets to further enhance passive surveillance opportunities. The inclusion of multiple gathering areas increases legitimate use of space, increasing opportunities for natural surveillance. The built form of residential buildings is broken up by areas of open space, landscaping and pedestrian walkways. This minimises long, blank walls, increases visibility across the site and minimises opportunities for blind spots.

Recommendations:

- Implement lighting throughout the CPA, with particular consideration for Eyles Street and public spaces.
- Implement CCTV at retail uses, Telopea Station Plaza, Telopea Square and community facilities.
- When finalising built form design, avoid the use of extended blank walls and include windows and architectural treatments to break up the built form.
- Develop and implement a maintenance schedule for landscaping to maintain clear sightlines throughout the CPA.

6.5.2. Access Control

Access control involves the designing of spaces to control who enters and prevent unauthorised access. Important crime prevention considerations for access control includes way-finding measures, desire-lines and the provision of formal and informal routes. Natural design measures include building configuration, definition of formal and informal pathways, landscaping, fencing and gardens. Implementation of security hardware, such as swipe cards and on-site security officers, are technical and formal considerations for access control.

The BOSCAR crime data shows the site is in a hotspot for 'steal from dwelling' and 'break and enter dwelling'. The Concept Plan proposal also includes multiple land uses and areas of both public and private space. Implementation of appropriate access control measures will be important to define public and private access across the site and reduce likeliness of 'steal from dwelling' and 'break and enter dwelling' types of crimes from occurring.

Assessment

The design of the Concept Plan centralises pedestrian movement and access to publicly accessible spaces through Eyles Street. The design of this pedestrian thoroughfare demonstrates good design layout that passively directs site users from one location to another. While this is not the only street available for pedestrians moving throughout the CPA, it has been designed to focus pedestrian movement and minimise access points.

Separate access points are proposed for public and private uses throughout the CPA. Generally, access points for publicly accessible areas are oriented towards street frontages to enable clear sightlines for pedestrians. Residential lobbies are generally well designed and minimise long corridors to access lifts. The exception to this is the residential lobby at the corner of Shortland and Sturt Streets. The long and narrow corridor to access the residential lifts may limit passive surveillance opportunities and present opportunities for concealment.

The proposal includes a commercial gym that is intended to be available for general membership. It is understood that the future operator of the gym would implement access control measures such as member swipe cards.

The entrance to the library and community centre is setback from the façade of the building fronting New Marshall Road. This may present opportunities for entrapment and concealment.

The proposal incorporates the use of gardens and landscaping at residential areas, which acts as a natural design access control measure by formalising the residential buildings as private areas. Street trees and landscaping are also used throughout the precinct to define formal and informal pathways.

Recommendations:

- Implement access controls to residential buildings, such as intercoms, keys or swipe cards
- When finalising the design for the residential buildings, consider the location of entry and exit points to ensure they are easily visible form the street and avoid the use of long narrow corridors.
- Consider design of vehicle entry and exit points and potential safety measures to minimise conflicts between pedestrian and vehicles.

6.5.3. Territorial Reinforcement

Territorial reinforcement is defined by the way in which a community demonstrates ownership over a space. Places that feel owned and cared for are likely to be used, revisited and protected. People who have a sense of guardianship over a space are more likely to protect it and intervene in crime, compared with passing strangers.

Using actual and symbolic boundary markers, spatial legibility and environmental cues are ways to connect people and encourage communal responsibility over spaces – particularly public areas and facilities. BOSCAR data indicates the site is in a hotspot for ‘malicious damage to property’ and therefore enhancing territorial reinforcement will be important in reducing the likeliness of this crime from occurring.

Assessment

The Parramatta DCP recommends that the Telopea Masterplan is to have buildings that are designed to create streetscapes that are characterised by clearly defined edges and corners and inclusion of architectural treatments that are interesting and relate well to pedestrian activity at ground floor level.

The existing buildings (residential, retail and community) within the Telopea Masterplan are generally aged, with evidence of building damage and urban decay. This can create perceptions that the area is not well cared for, reducing community ownership over spaces. The proposal will improve the current site condition by providing new built form and landscaping.

As recommended in the DCP, buildings in the Concept Plan have been designed to clearly define edges and corners. This provides soft boundary markers and spatial legibility of streets and buildings.

The street design uses different pavement materials and colours to differentiate between pedestrian and vehicle pathways to enhance spatial legibility of spaces. For example, Marshall Street, Fig Tree Avenue and Benaud Place are designated as neighbourhood streets and laneways that incorporate separated and elevated seating areas with covered awnings. This provides the community with comfortable public spaces to sit and meet, providing a sense of ownership over the streets. This aligns with the Parramatta DCP requirement to include architectural treatments that relate well to pedestrian activity on the ground floor.

The library and community building has an open design and adjoins a veranda and the event terraces. The design demonstrates good territorial reinforcement as it creates a welcoming space that encourages social connection. Telopea Plaza is designed as the entry from the light rail station to the CPA. The plaza includes a community pavilion and flexible space for events such as community markets and festivals. Telopea Square is another community space that incorporates design elements such as informal dining areas, waterplay and covered canopy areas that will create a destination point for residents and visitors. The use of the two spaces for these community events will enhance community ownership over this space.

Other community uses also proposed, including a residential garden with resident outdoor kitchen, dog park and men's shed. These places encourage social connection and are likely to result in territorial ownership by residents.

There are a range of public open space and communal open space areas proposed. At a Concept Plan level, it can be difficult to distinguish between the public and communal open space areas. This should be considered when finalising the design at later detailed design stages.

Recommendations:

- Implement clear signage to establish territoriality and support wayfinding throughout the area.
- Consider using different pavement patterns or colours to clearly define public and private areas. The use of low walls or other site features could also be considered.
- Provide an adequate number of waste bins in public spaces to encourage cleanliness and upkeep of these spaces.
- Implement lighting along the boundaries of public spaces to provide pedestrians with constant boundary markers at night.
- Implement public art that incorporates community values or site history to further create a sense of community ownership.

6.5.4. Space and Activity Management

Space and activity management involves monitoring site usage, managing site cleanliness, and repairing vandalism and broken physical elements to decrease fear of crime. Spaces that are regularly used by the community are less likely to be vandalised.

Good space and activity management also considers the location of types of uses to enhance the activation and use of places. As BOSCAR crime data shows that the site is in a hotspot for 'malicious damage to property' and as there are various uses proposed throughout the site, space and activity management are important to consider in the design of the Concept Plan.

Assessment

The existing area layout features a retail strip along Benaud Street at the eastern extent of the Concept Plan. Dundas Library and Neighbourhood Centre are located on Sturt Street and Wade Lane. The Telopea Christian Centre is located on Shortland Street.

The proposal intends to relocate the library and community centre building so that it is further setback from Sturt Street and further to the west, with new street frontage to Wade Street. This location is in a central location between the retail hub and predominantly residential uses to the east and close to the pedestrian through site link. This location will also maintain ease of access from Telopea Public School on the opposite side of Sturt Street.

The concentration of retail uses will also shift from Benaud Street to Sturt Street on the opposite side of the light rail station and Telopea Plaza. The co-location of retail spaces (including a supermarket), childcare, office spaces and the medical spaces at the western extent of the CPA will encourage ground floor activation adjacent to the light rail station. Co-locating these types of uses, which will be accessed very regularly by local residents, will enhance the activation of this location.

The change to the site layout demonstrates better space and activity management as the location of different types of uses will better respond to site topography and accessibility.

The design of the Concept Plan demonstrates good space activity management by separating public and private spaces and co-locating uses that are more likely to be accessed in conjunction with one another.

Recommendations:

- Work closely with the City of Parramatta on the design of public spaces and streetscapes and select durable landscaping materials to enable ongoing maintenance to a high standard.
- Work closely with the Land and Housing Corporation and Hume Housing on the design of social and affordable housing and select durable building materials to enable ongoing maintenance to a high standard. This should include the design and landscaping materials selection for communal open spaces.
- Prepare and implement of a Plan of Management for the library and community centre and future building manager/s of retail, office and medical spaces. This should include strategies for regular cleaning schedules and monitoring of the site including the veranda terrace and open space directly adjacent.

6.5.5. Stage 1A Assessment

Entry and exit points

The proposal incorporates CPTED principles including the design of residential buildings in prominent positions that provide clear sightlines to the public green and adjoining streets and surrounding buildings. The residential buildings provide multiple, centrally located lift lobbies with CCTV and swipe access control measures. There are some long corridors proposed from lift lobbies to residential apartments that could have potential for entrapment or concealment opportunities.

External layout

The proposal incorporates CPTED principles in the design of the external layout by providing well defined pedestrian connections from the future light rail station to open space and residential buildings. Buildings are well designed so that passive surveillance is provided over the communal garden areas, public green and through site links. The upgrade of Sturt Street will define this location as a key central transport interchange with pedestrian, vehicle and bicycle connections. Safe access has been considered with the inclusion of a raised platform crossing along Sturt Street to provide pedestrians with safe access from the light rail to residences and open space.

The design includes intentional choice of materials that aim to provide human scale to the development. Darker brick is proposed for the first two storeys to ground the building in its setting, enhancing ownership of the area.

Landscaping

The proposal incorporates CPTED principles related to landscaping, including the design of layered landscape edges to define separation between private gardens, communal areas and public areas and the incorporation of planter boxes at communal rooftop edges to enhance sense of ownership over these spaces. Furniture is also proposed in public and communal to help activate and enhance ownership over key areas of open space.

Car parking

The proposal includes CPTED principles related to car parking including the provision of separate vehicle and pedestrian entries to residential buildings and multiple centrally located lift lobbies from the basement with direct sightlines to parking areas. Adaptable parking spaces are located close to main lobbies, providing ease of access to residential areas and on ground directional signage arrows are provided to guide vehicle movement throughout the carpark.

Recommendations:

- Provide access control measures (i.e resident swipe access) at each of the ground floor lift entry and exit locations to help prevent unauthorised access and reduce opportunities for theft.
- Implement signage at lift lobby entry and exit points that provides apartment numbers accessible from the lift lobby. This will assist with visitor wayfinding and prevent loitering.
- Consider wayfinding signage with consideration for culturally inclusive language to clearly define public and private open space at the ground floor level.

- Implementing directional signage indicating where other locations are within this Concept Plan Area should also be considered (i.e. the station, retail tenancies and community facilities). This signage may need to be updated as new stages of the Concept Plan Area are delivered.
- Implement signage at the bike parking areas adjacent the light rail station to remind users to lock their bikes to minimise opportunities for theft. Consider architectural treatments such as an awning over this area also to help establish territorial reinforcement and enhance perceptions of safety.
- Consider implementation of additional safety measures (i.e. mirrors or light/noise sensors) at vehicle entry and exit points to the car park to help with pedestrian safety.
- Encourage future building managers and the community housing provider to include a maintenance plan or schedule for landscaping as part of a plan of management or building management plan so that trees and planting throughout the site are well managed and continue to enhance the built form.

6.5.6. Conclusion

Concept Plan

The assessment for the Concept Plan found that the proposal incorporates CPTED principles throughout the concept design. This includes good building site orientation to enhance natural surveillance opportunities and clear sightlines and pathways to various access points across the site. The incorporation of design elements in key community gathering spaces enhances territorial reinforcement and public and private spaces are appropriately located demonstrating good space and activity management.

The recommendations provided will enhance the proposal. Some recommendations made will help reduce potential CPTED risk areas identified in the assessment, including pedestrian safety during the evening, maintain clear sightlines throughout the precinct and managing pedestrian and vehicle interaction.

Stage 1A

The assessment for the Stage 1A plans found that the proposal is well designed to incorporate CPTED principles. This includes the provision of passive surveillance opportunities, good building orientation towards street frontages and areas of public open space, easily accessible entry and exit points and separation of pedestrian and vehicle entrances. Extensive landscaping is proposed throughout the site to enhance the sense of place for residents and the public. Landscaping is used to define footpaths and separate key communal, private and public spaces.

The recommendations provided for the Stage 1A plans will generally enhance the proposal. Some recommendations made will help reduce potential CPTED risk areas identified in the assessment including managing access control measures for private and public areas, pedestrian and vehicle safety and maintaining clear sightlines through appropriate management of landscaping.

Overall

The Concept Plan and Stage 1A designs demonstrate good CPTED principles, as summarised above. It is considered that with the implementation of recommendations, the proposed development will demonstrate good CPTED principles and therefore warrant approval.

6.6. TRAFFIC AND TRANSPORT

A Transport Assessment has been prepared by Ason Group (**Appendix T**), which provides an assessment of the relevant access, traffic and parking needs to support the Concept Plan and Stage 1A development. The assessment has considered the following:

- Existing and future base transport conditions;
- Existing and future public and active transport services and infrastructure;
- Future peak vehicular trip generation, and the potential impact of those trips on the local and sub-regional road network;
- Parking requirements and provision; and
- A high-level assessment of access, car parking and servicing areas and facilities.

The CPA and Stage 1A traffic assessments reference a number of transport assessments which were instrumental in providing for the broader Telopea Precinct's Rezoning Approval in 2018.

Key documents in this regard include:

- Telopea Urban Renewal Master Plan Traffic and Transport Assessment 2017, prepared by GTA Consultants (Telopea Precinct TTA);
- Telopea Priority Estate - Transport Study, Calibration and Validation Report 2017, prepared by Jacobs (Jacobs Report); and
- Telopea Stage 1 Master Plan Traffic and Transport Assessment Addendum (Draft) 2017, prepared by GTA Consultants (Telopea Precinct TTA Addendum).

Ason Group's assessment of future traffic conditions has specifically drawn on the above reports to ensure that the components of the CPA and Stage 1A (specifically land uses, yields, road network access and road network upgrades) are consistent with those detailed and assessed previously.

Given the Rezoning Approval, it is Ason Group's opinion that if the traffic characteristics of Stage 1A and the Telopea CPA are not substantially different to those previously assessed, and the suite of recommended road network upgrades etc unchanged, then it is inherently the case that the relative 'impacts' of the development of the Telopea CPA are supportable on traffic and transport grounds.

6.6.1. Concept Plan Area

Public Transport

Parramatta Light Rail (PLR) will provide a station at Telopea immediately adjacent to the Telopea Core. The PLR is the primary catalyst for the broader redevelopment of the CPA. In addition to the light rail service, existing bus routes will be retained. All key roads and intersections will be designed to accommodate bus movements appropriately. New bus stops and set down zones will be provided in Sturt Street immediately adjacent to Telopea Station to maximise the potential for multi-modal public (and active) transport trips.

Active Transport

The road network across the Telopea Core Precinct has specifically been revised to maximise green space and provide direct and accessible active transport connections between all part of the Telopea CPA and Telopea Station.

New pedestrian crossings will be provided in Sturt Street between the Green Link and Telopea Station in what will be a shared space, while signalised pedestrian crossings will be provided at all new signalised intersections.

Road profiles across the CPA provide for shared paths and/or on-road cycleways, ensuring safe and direct access between all parts of the CPA and the Parramatta Light Rail Active Transport Corridor. It is also anticipated that End of Journey facilities will be provided near Telopea Station and in close proximity to the retail, community and recreation attractors. Further details of these facilities would be provided in future development applications for individual sites across the CPA.

Existing Traffic

Key roads within the CPA include:

- **Shortland Street:** Local road that runs east-west between Sturt Street and Evans Road respectively.
- **Sturt Street:** Local collector road that runs south from Shortland Street and then south-east to Kissing Point Road.
- **Evans Road:** Collector road which runs north-south from Pennant Hills Road to Sturt Street.
- **Marshall Street:** Local road which runs north-south from Hamilton Avenue to Shortland Street
- **Manson Street:** Local road that generally runs north-south between Sturt Street and Adderton Road respectively.
- **Adderton Road:** Collector road which runs north-south between Pennant Hills Road and Kissing Point Road respectively.
- **Pennant Hills Road:** Arterial road (A28) which runs north-south from the M1 Motorway at Wahroonga to Church Street, Parramatta.
- **Kissing Point Road:** Arterial road which runs east-west between Silverwater Road and James Ruse Drive.

The Precinct TTA provides SIDRA outputs for operation of the key intersections in 2016, including both local and key external intersections are summarised in **Table 23** below (results highlighted red indicate intersection operating at or above capacity).

Table 23 Precinct TTA 2016 Current Intersection Operational Performance

	Level of Service		**Degree of Saturation**		**Average Delays**	
Peak Period	AM	PM	AM	PM	AM	PM
Pennant Hill Road & Adderton Road	B	B	**1.2**	**0.99**	26	22
Pennant Hills Road & Coleman Avenue	A	A	0.78	0.69	14	13
Pennant Hills Road & Evans Road	**E**	**E**	0.91	0.86	**66**	**58**
Kissing Point Road & Sturt Street	B	A	0.73	0.94	16	14
Kissing Point Road & Adderton Road	B	B	0.81	0.91	27	25
Adderton Road & Manson Street	B	C	0.36	0.40	18	17
Sturt Street & Manson Street	A	A	0.00	0.01	6	6
Sturt Street & Evans Road	A	A	0.40	0.21	5	6
Evans Road & Shortland Street	B	A	0.27	0.14	11	6

Source: Precinct TTA

The local intersections within the Telopea Precinct and most external intersections were found to operate at an appropriate Level of Service (LOS), though delays and capacity constraints are evident on some Pennant Hills Road intersections.

2036 traffic volumes and subsequent intersection performance was calculated using 2016 and 2036 Strategic Traffic Forecasting Models provided by TfNSW, and linear growth. **Table 24** summarises the base 2036 intersection performance.

Table 24 Precinct TTA 2036 Base Intersection Operational Performance (without Concept Plan)

	Level of Service		**Degree of Saturation**		**Average Delays**	
Peak Period	AM	PM	AM	PM	AM	PM
Pennant Hill Road & Adderton Road	B	D	0.82	0.96	17	47
Pennant Hills Road & Coleman Avenue	C	A	0.93	0.77	39	5
Pennant Hills Road & Evans Road	B	A	0.82	0.67	18	8
Pennant Hills Road & Marsden Road	C	B	0.88	0.89	31	28
Kissing Point Road & Sturt Street	B	A	0.83	0.77	22	13
Kissing Point Road & Adderton Road	F	F	1.08	1.08	117	77
Kissing Point Road & Park Road	F	F	1.09	1.16	72	90
Kissing Point Road & Silverwater Road	C	E	0.81	1.08	29	65
Kissing Point Road & Quarry Road	B	A	0.70	0.52	21	15
Kissing Point Road & Stewart Road	B	F	0.79	1.20	23	114

Source: Precinct TTA Addendum

A number of the key intersections (external to the Telopea CPA) were determined to operate at or over capacity under 2036 Base conditions, and as such require upgrades to provide for future base traffic volumes regardless of the development of the Telopea CPA. These intersections are located along Pennant Hills Road and Kissing Point Road and are described in detail within the Transport Assessment (**Appendix T**).

Further to the upgrade recommendations detailed in the Precinct TTA Addendum, subsequent discussions were held between LAHC, TfNSW and Roads & Maritime in regard to some of the upgrade recommendations.

As a result of these discussions, TfNSW and Roads & Maritime (RMS) commissioned GTA to undertake additional analysis of a number of intersections to determine whether some of the upgrades previously recommended in the Precinct TTA Addendum (to provide for the Telopea Precinct) were required.

As a result, revisions to the intersection upgrades, and to the responsible parties for those upgrades, were then agreed with TfNSW and Roads & Maritime. These changes include the following:

- Kissing Point Road and Adderton Road: Upgrade works at this intersection would be funded by a Special Infrastructure Contribution (SIC) and undertaken by TfNSW.
- Kissing Point Road and Sturt Street: Upgrade works at this intersection will be undertaken by Transport for NSW, with no additional upgrades required specifically to accommodate the Precinct.
- Sturt Street and Evans Road: the upgrade of this intersection will be undertaken by Parramatta City Council. It is anticipated that a single lane roundabout will be provided, though this is subject to the detailed design of Telopea Core Precinct.

In addition, Roads & Maritime provided the following advice (20 October 2018) in regard to the intersection of Pennant Hills Road & Evans Road:

> *"Traffic Control Signals and associated civil works (within the existing road corridors) shall be installed at the existing intersection of Pennant Hills Road/Evans Road/Lloyds Avenue on road safety grounds with the design and construction undertaken to Roads and Maritime's requirements. The geometric design and trigger point for this intersection upgrade linked to development yield (social housing components exempted) will need to be agreed between Roads and Maritime and LAHC in due course as part of any satisfactory arrangements [sic] provisions."*

The funding mechanism for these works is expected to also comprise a Special Infrastructure Contribution; the broader upgrade at this intersection (i.e. outside of the existing carriageways, would remain the responsibility of TfNSW and RMS).

Traffic Generation

The provision of significant public and active transport services and infrastructure, as well as the provision of retail, educational, community and recreational facilities within the Telopea CPA, means that there is potential to reduce the private vehicle trip generation of future Telopea CPA residents, employees, and visitors.

The mode split targets set within the CPA profiles a number of benchmark suburbs that provide similar residential land use mix and access to public and active transport. The mode split targets are outlined in **Figure 53** below.

Figure 53: Mode Split Targets

Travel Mode	Car Driver	Car Passenger	Rail	Bus	Cycling	Walk	Work at Home/ Did Not Work
Existing	62.7%	3.6%	16.1%	4.3%	0.7%	1.1%	11.3%
Target	45%	6%	27%	6%	2%	3%	11%

Source: Ason Group

A breakdown of the residential trip rates is summarised in **Figure 54**.

Figure 54 Residential Trip Generation

Concept Plan Component	Dwellings	Peak Hour Trip Rate	Peak Hour Trips
Market Dwelling	3505	0.25	876
Affordable Dwellings	259	0.12	31
Social Dwellings	740	0.04	30
Total			937

Source: Ason Group

The Concept Plan provides 7,785m^2 of retail space which would generate the following trips in AM and PM peak hour:

- 136 vehicle trips in the AM peak hour; and
- 272 vehicle trips in the PM peak hour.

The overwhelming majority of community and recreational trips are anticipated to be internal trips.

The Telopea Precinct rezoning (Precinct TTA Addendum) assigned a total of 1,571 and 1,693 vehicle trips in the AM and PM peak hours respectively. The rezoning modelling did not assume the significant investment in public transport, including the PLR, which resulted in a higher dependence on private vehicles.

By comparison, the Transport Assessment undertaken by Ason indicates that the Telopea CPA further to the Concept Plan would generate some 1,073 and 1,221 vehicle trips in the AM and PM peak hours, respectively. In both peak hours, this represents a reduction from the trips assigned in the Precinct TTA Addendum of approximately 30%.

Proposed Road Network

Forecast traffic volumes following completion of the CPA are outlined in **Table 25** 2036 Base + Telopea Precinct Intersection Operational Performance. These results are based on the road network upgrades required to accommodate Base 2036 traffic volumes and the additional road network upgrades required to accommodate the additional traffic volumes generate by the Telopea Precinct.

Table 25 2036 Base + Telopea Precinct Intersection Operational Performance

	Level of Service		**Degree of Saturation**		**Average Delays**	
Peak Period	AM	PM	AM	PM	AM	PM
Pennant Hill Road & Adderton Road	B	D	0.84	0.97	21	46
Pennant Hills Road & Coleman Avenue	D	A	0.98	0.76	50	6
Pennant Hills Road & Evans Road	C	A	0.95	0.79	32	10
Pennant Hills Road & Marsden Road	C	B	0.9	0.86	32	27
Kissing Point Road & Sturt Street	C	B	0.86	0.76	33	14
Kissing Point Road & Adderton Road	F	E	1.10	1.06	138	66
Kissing Point Road & Park Road	F	F	1.10	1.25	76	152
Kissing Point Road & Silverwater Road	C	F	0.97	>1.50	36	>180
Kissing Point Road & Quarry Road	B	B	0.85	0.75	24	20
Kissing Point Road & Stewart Road	C	F	0.95	1.32	30	170

Source: Precinct TTA Addendum

As illustrated in **Table 25** a number of the key intersections were determined to operate at or over capacity under 2036 Base + Telopea Precinct conditions even further to the upgrades required (by others) to accommodate the 2036 Base traffic volumes alone. In response, the Precinct TTA Addendum details the additional upgrades required across the road network to appropriately accommodate the Precinct traffic volumes.

These upgrades are summarised in **Table 26**, while intersection layouts are provided in Appendix A of the Traffic Assessment (**Appendix T**). As per the comments of Roads & Maritime in regard to the Pennant Hills Road & Evans Road intersection, it is anticipated that the trigger point for all upgrades will be linked to the staged development of the Telopea CPA, and necessarily be agreed with Roads & Maritime and Council.

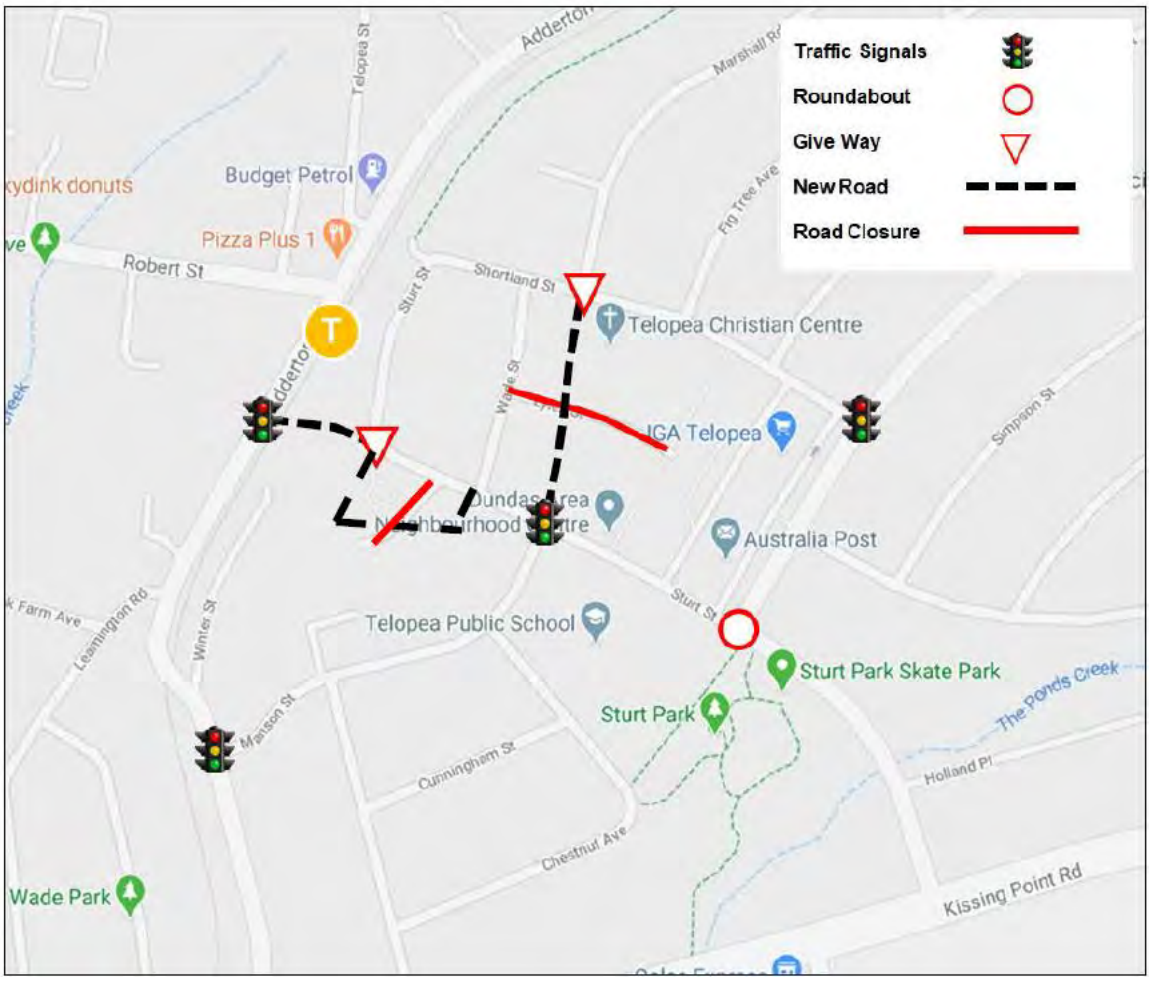
Table 26 2036 Base + Telopea Precinct Road Network Upgrades

Intersection	Required Upgrades	Control	Trigger	Funding
Pennant Hills Rd & Adderton Rd	- Increase length of the turn bay in Adderton Road (south) from 80m to 100m	Signals	Dwelling Numbers	SIC
Kissing Point Rd & Sturt St	- Additional 150m right turn lane in Kissing Point Rd (east approach) - Additional 100m departure lane in Sturt St	Signals	Dwelling Numbers	TfNSW
Adderton Rd & New Link Road	- New three leg signalised intersection - 1 lane approach on New Link Road and Adderton Road (south approach) - Separated 100m left turn lane in Adderton Road (north approach) • - 45m right turn bay in Adderton Road (south approach)	Signals	Dwelling Numbers	Precinct
Adderton Road & Winter Street	- Left turn only	Priority	Stage 1A	Precinct
Adderton Rd & Manson St	- New traffic signals - Additional 55m through lane in Adderton Road northbound - Additional 40m through lane in Adderton Rd southbound - Additional 40m right turn bays on each approach	Signals	Dwelling Numbers	Precinct
Manson St & Sturt St	- New traffic signals - Convert to 4 leg intersection - Additional 40m right turn bays on each approach	Signals	Dwelling Numbers	Precinct
Sturt St & Evans St*	- New single lane roundabout (subject to Town Centre design)	Roundabout	Dwelling Numbers	Council
Evans St & Shortland St	- New traffic signals - 45m right turn bays on western and northern approaches	Signals	Dwelling Numbers	Precinct

Source: Ason Group **Roundabout completed by Council in 2020/2021 financial year*

The Concept Plan provides for the repurposing of existing roads within the CPA as outlined in **Table 26** above and illustrated in **Figure 55** below.

Figure 55 Concept Plan Road Network Changes



Source: Ason Group

The internal road network and intersection controls proposed in the Concept Plan are essentially the same as those assessed/proposed in the Precinct TTA Addendum, with the addition of a new private road which will provide access to the subject site (Mews Street).

The upgrade of the intersection of Sturt Street & Evans Road (a roundabout) was constructed by Council in the 2020/2021 financial year.

Traffic Mitigation Measures

The Telopea Precinct rezoning traffic modelling identifies four intersections which would operate at a LOS F, which would require significant upgrades to the road network. However since this modelling has occurred, the NSW Government has committed significant investment in public transport through the delivery of the PLR. A review of the trip mode split and trip generation rates suggest an adoption of similar transport oriented developments across Sydney. With this adoption, the following traffic implications and mitigation measures have been determined:

- The trip generation of the Telopea CPA further to the Concept Plan is expected to be significantly less than assigned in the Precinct TTA Addendum.
- There is no information to suggest that the trip distribution of the Telopea CPA would be different to that determined in the Precinct TTA Addendum.
- There is no proposed reduction to the suite of road network upgrades recommended in the Precinct TTA Addendum and subsequent GTA modelling undertaken for TfNSW and Roads & Maritime.

- The proposed revisions to the design of the intersection of Adderton Road & Manson Street have no impact on the operation of the intersection as reported in the Precinct TTA Addendum.
- The updated modelling of Adderton Road & New Link Road has comparable intersection performance as reported in the Precinct TTA Addendum.
- The proposed restrictions to right turn movements to and from Winter Street at Adderton Road would have no impact on the general distribution of trips as assigned in the Precinct TTA Addendum.

As a result, the development of the Telopea CPA in line with the Concept Plan would at worst result in the same (inherently approved) road network operations; however, with specific consideration of residential vehicle trip rates, it is expected that the trip generation of the Telopea CPA would actually be some 30% lower than assigned in the Precinct TTA Addendum. This suggests that the road network and key intersections will operate with significantly less delay than determined in the Precinct TTA Addendum further to the proposal upgrades.

In summary therefore, Ason Group has determined that the Concept Plan development proposal for the Telopea CPA is entirely supportable further to traffic considerations.

Conclusion

The traffic and transport assessment provides the following conclusions:

- The Concept Plan provides for development of the Proposal in line with previous reports and strategies supporting the original Rezoning Approval, and moreover development that is consistent with the Telopea CPA components assessed in the Precinct TTA Addendum.
- The Site is provided with excellent access to public and active transport services and infrastructure, further enhanced by the suite of pedestrian and cycle infrastructure, and the provision of bus capable roads, provided for in the Concept Plan.
- The Concept Plan provides for significant retail, community, and recreational facilities within the Telopea CPA, which will result in the internalisation of trips and therefore the generation of fewer external vehicle trips for the day-to-day requirements of the future residential population.
- The Telopea CPA is anticipated to generate some 30% fewer vehicle trips in the peak periods than assigned in the Precinct TTA Addendum, upon which the Rezoning Approval was based with respect traffic and transport considerations. This results from consideration of reduced residential trip generation rates approved by TfNSW and Roads & Maritime for similar sites, the fact that all dwellings are within 800m walking distance of Telopea Station, the use of maximum parking rates, and recognition of the significantly lower trip generation of affordable and social housing.
- Notwithstanding, the Concept Plan provides for significant new internal and interface road network infrastructure to support the future traffic demands of the Telopea CPA that is consistent with the road network infrastructure recommendations in the Precinct TTA Addendum and subsequent TfNSW and Roads & Maritime analysis.
- Given these factors, it can only be concluded that the road network will operate at an appropriate level of service further to the development of the Proposal.
- Parking requirements for the Telopea CPA will generally meet the rates determined in the final Telopea DCP. A reduction in residential visitor parking requirements, and the provision of a proportion of residential visitor parking on-street as proposed in the Concept Plan, is certainly justified considering the potential for shared use of the retail and community parking given the different peak demand periods for that parking.
- The design of access driveways, parking and servicing areas will be the subject of future detailed Development Applications for individual sites within the Telopea CPA and would necessarily be required to provide compliance with the appropriate Australian Standards.
- The external design elements (Mews Street, Intersection upgrades and road reconfigurations) have been designed by the projects Civil team and as such, have not been included in the aforementioned assessment.

Therefore, it is concluded that the development of the CPA is supportable further to traffic and transport considerations.

6.6.2. Stage 1A

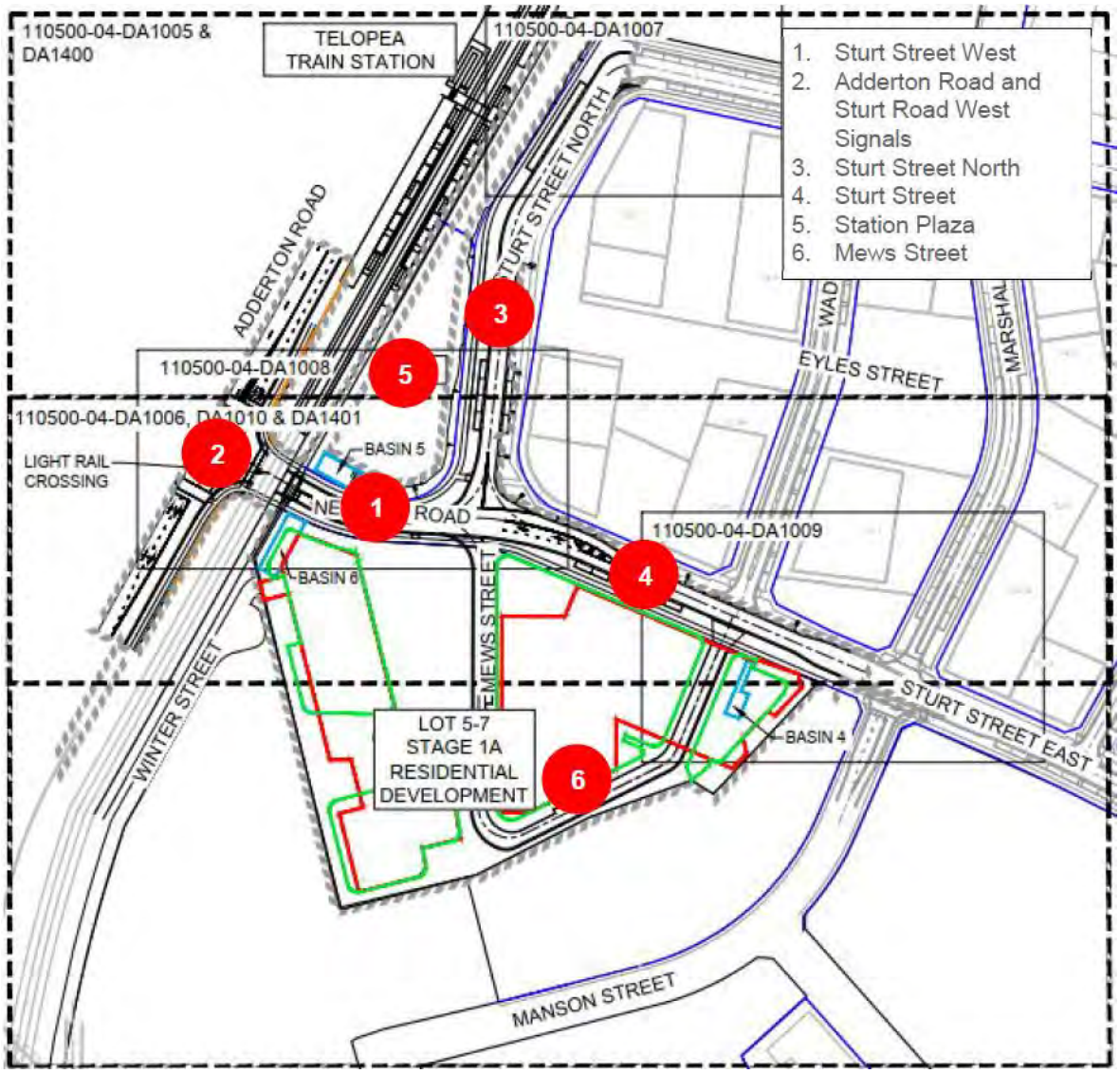
Public Infrastructure

As discussed in **Section 3.6.8,** Stage 1A includes a range of public infrastructure upgrades. These are all designed generally in accordance with the Precinct TTA Addendum recommendations and will deliver the first stage of the CPA road and pedestrian infrastructure upgrades described in **Section 6.6.1**.

Stage 1A will see the construction of key pieces of public infrastructure as outlined in **Figure 56**, including:

- The upgrade of Sturt Street between Evans Road and a new road connection across the rail line to Marshall Road.
- The signalisation of the intersection of Adderton Road & Sturt Street.
- The upgrade of Sturt Street adjacent to Station Plaza.
- Station Plaza and associated community infrastructure.
- Mews Street, a new private road connecting to Sturt Street providing fully directional access at its eastern connection and a left-out only at its western connection.

Figure 56 Stage 1A key public infrastructure upgrades



Source: Ason

Each of these key infrastructure upgrades are discussed in further detail within the Traffic Assessment and within **Section 6.6.**

Access

Vehicle access to the Stage 1A Site will be available from 2 locations, Mews Street and Winter Street. Mews Street has been designed to enable two-way movements along the eastern portion to/from the site entrance and one-way northbound movements along the western portion with vehicles only permitted to exit to the left at Sturt Street.

Movements at the internal intersection of Mews Street and the basement driveway will be prioritised to the basement driveway. Convex mirrors and appropriate signage will also be installed to further enhance safety.

Given the connectivity between the basement parking areas, the distribution of trips to each driveway would be largely based on trip distribution to/from the local and sub-regional road network. Further, the location of the private road in relation to the future signalised intersection of Sturt Street & Manson Road suggests the potential for movements at the eastern intersection of Sturt Street and Mews Street to be fully directional and left out only at the western intersection.

A determination in this regard would be further examined as part of the future design of the Sturt Street & Manson Road intersection, but equally would be unlikely to result in any significant changes in trip distribution to those previously determined in the Precinct TTA Addendum.

Pedestrian access to the Stage 1A Site would be available directly from Sturt Street, as well as via entry points from the Neighbourhood Park and Residential Garden to the west of the Stage 1A Site and via the private access road.

Parking

Stage 1A will provide both car and bicycle parking in general accordance with the draft Telopea DCP. Stage 1A will provide a total of 416 on-site car parking spaces, including 372 residential car parking spaces and 44 visitor car parking spaces.

Given the significant amount of new on-street parking that will be delivered as part of the Concept Plan, and particularly parking within the Telopea Core and provided by Stage1A works, the remaining 23 visitor car parking spaces are to be provided on-street.

The analysis indicates that there will be more than enough on-street parking provided to meet the residential visitor parking demand, and indeed extra capacity to meet visitor parking demands generated by adaptable and social housing (for which a visitor parking rate does not apply).

With specific reference to Stage 1A, the upgrade of Sturt Street adjacent to the site will provide 29 on-street parking spaces, 2 of which will be designated as car share spaces. As such, the 23 visitor spaces shortfall is easily capable of being accommodated on-street.

Servicing

Stage 1A provides 2 service areas. The private road service area (accessed via Sturt Street) would be the primary servicing area, and further to the utilisation of a turntable provides access to service bays capable of accommodating vehicles up to and including a Heavy Rigid Vehicle (HRV) as required in the Parramatta DCP Waste Management Plan for residential developments over 5 storeys. Waste management would be solely undertaken via the Mews Street service area.

Winter Street would provide access to a smaller service area catering for vehicles up to and including a Small Rigid Vehicle (SRV); this service area is provided to reduce the distance between residential dwellings across the western part of Stage 1A and to accommodate general requirements such as removalists and smaller delivery vehicles.

Conclusion

In summary:

- Stage 1A provides for the first development within the Telopea CPA in line with the Concept Plan, and moreover in line with previous reports and strategies supporting the original Rezoning Approval, and the Telopea CPA components assessed in the Precinct TTA Addendum.
- The Stage 1A Site is provided with excellent access to public and active transport services and infrastructure, further enhanced by the suite of pedestrian and cycle infrastructure, and the provision of bus capable roads, provided for in the Concept Plan.
- It is concluded that the road network will operate at an appropriate level of service further to the development of Stage 1A.
- Parking requirements for Stage 1A have been determined with reference to the Draft Telopea DCP submission prepared by Urbis and the Draft Telopea DCP.
- All Stage 1A access driveways, parking and servicing areas have been designed with reference to the appropriate Australian Standards and that compliance with these Standards would be provided as a standard Condition of Consent in any future approval, which would allow for any minor revisions to the Stage 1A Site plans.

6.7. ARBORICULTURAL IMPACTS

Naturally Trees has completed two Arboricultural Impact Assessments, one for Stages 2 and 3 of the CPA (**Appendix V.1**) and one for Stage 1 including Stage 1A (**Appendix V.2**). The AIA's provide an analysis of the impact of the proposed development on trees with additional guidance on appropriate management and protective measures for trees to be retained.

The Stage 2 and 3 AIA assessed 519 trees located within 5m of the proposed North and South Precinct proposal. The Stage 1 AIA assessed 392 trees located within 5m of the proposed Core Precinct. Trees comprise various tree species, including some which may represent former natural species assemblages, some which include non-locally occurring native species and some exotic ornamental species.

Early engagement with the project Arborist and ongoing detailed consultation has ensured tree retention is maximised across the CPA and Stage 1A built form. The Concept Plan retains all of the 'AA' rated trees to define new landscaped spaces and retains most of the 'A' rated trees in existing front side and rear setbacks. Basements have been arranged to ensure that the layout does not encroach more than 10% into the tree protection zone of any of the significant trees allowing them to be successfully retained.

Core Precinct (including Stage 1A)

The Stage 1 AIA includes both the Stage 1A works for which consent is sought within this EIS as well as the broader Core Precinct as illustrated in Figure 57.

Core – 167 high category trees and 92 low category trees will be lost within the Core Precinct. An additional 32 trees may be negatively impacted if appropriate mitigation is not undertaken.

Stage 1A – 46 high category and 49 low category trees will be lost for the Stage 1A proposal. An additional 6 trees may be negatively impacted if appropriate mitigation is not undertaken.

49 trees have been categorised with the highest priority (AA). The majority of these have been prioritised for retention and anchor a range of proposed new landscaped spaces.

Figure 57 Core significant trees

Source: Bates Smart and Hassell

Figure 58 illustrates tree retention and removal associated with the Stage 1A residential built form. The AA significant trees located within the centre of the Stage1A site have been retained within the proposed Public open space.

Figure 58 Stage 1A Residential built form Tree Retention

Source: Plus Architecture

North Precinct

Figure 59 illustrates the trees identified by the arborist as "Important trees suitable for retention for more than 10 years and worthy of being a material constraint". Of these, 9 have been categorised as AA and are given the highest priority for retention. The north precinct concept retains all of the 'AA' rated trees to define new landscaped spaces and retains most of the 'A' rated trees in existing front side and rear setbacks.

Figure 59 North Precinct – tree removal and retention

Picture 43 North - significant trees

Picture 44 North - trees retained

Source: Hassell

South Precinct

Within the south precinct concept four AA significant trees were identified (Figure 60). The majority of these (three out of four) have been prioritised for retention. T479 and T506, located in the front gardens of existing dwellings, have specifically informed the proposed apartment building envelopes.

Figure 60 South Precinct – tree removal and retention

Picture 45 South - significant trees

Picture 46 South - trees retained

Source: Hassell

A comprehensive landscaping scheme to mitigate the unavoidable loss of trees has been prepared which will along with the recommendations for tree retention within the Arborist report will result in a moderate to high positive impact on the contribution of trees to local amenity and character.

Mitigation Measures

Section 4 of each AIA contains an Arboricultural Method Statement which sets out management and protection details that must be implemented to ensure successful tree retention. Compliance with this statement and *AS4970-2009 Protection of trees on development sites* is required during site establishment and all subsequent demolition and construction works.

6.8. BIODIVERSITY

ACS Environmental have prepared a Biodiversity Assessment (**Appendix U**) covering the Core Area of the CPA including the Stage 1A area. The Stage 1A site is mostly covered by existing housing with managed lawn and garden areas dominated by exotic grass and herbaceous weed species. The land has been historically cleared of all former ecological forested communities which possibly included Blue Gum High Forest and Sydney Turpentine Ironbark Forest (as illustrated in the 1943 aerial of site at **Figure 61**).

The broader Telopea locality consists of established residential development with bushland retained mainly along creek and drainage line corridors, comprising mainly alluvial vegetation assemblages.

Figure 61 1943 Aerial Photograph of Stage 1A

Source: ACS Environmental from SixMaps

6.8.1. Flora

Comprehensive surveys of the Core Precinct including the Stage 1A area were undertaken on foot to identify the existence of extant flora populations present. As the subject land is largely cleared, highly structurally and floristically modified, derived vegetation, quadrant-based (20 x 50m) methodology was only able to be undertaken in one area. The Core Precinct area was delineated into 15 sections based on populations of tree species that comprised relatively discrete compositions. Sections within the Stage1A area are outlined in **Table 27** below.

Table 27 Flora Surveys

Area	Location	Dominant Tree Species
4	On railway side of Sturt Street *(within proposed Telopea Plaza)*	Mainly Weeping Bottlebrush to 6m tall, Broad-leaved Paperbark to 7m tall, Swamp Mahogany to 10m tall.
8	Group of trees to west of SW corner of Sturt Street *(within proposed Telopea Plaza)*	Spotted Gum to 28m tall, Blackbutt to 30m tall.

Area	Location	Dominant Tree Species
9	Group of trees to the south of Group 8 at SW corner of Sturt Street *(within proposed Neighbourhood Park and Sturt Street Extension)*	Spotted Gum to 26m tall, Brush Box to 14m tall, 1 individual of Wallangarra White Gum to 20m and 1 individual of Narrow-leaved Black Peppermint to 18m.
10	Group of trees to south of Group 9 at western end of Polding Place *(within Stage 1A residential site)*	Hills Fig to 16m, Thin-leaved Stringybark to 20m tall, Weeping Bottlebrush to 7m tall.
11	Group of trees southern side of Polding Place *(within Stage 1A residential site)*	Spotted Gum, Weeping Bottlebrush to 7m tall, River Oak to 10m tall
12	Group of trees opposite Wade Street and south east of Polding Place *(within Stage 1A residential site)*	Weeping Bottlebrush to 6m, Liquid Ambar to 14m tall and Red Ironbark to 16m tall.

Source: ACS Environmental

It is recommended that future landscaping across the above areas utilises species representative of Sydney Turpentine Ironbark Forest.

DPIE Atlas of NSW Wildlife (Bionet) database records for an area of 5km radius around the subject site, indicate that 15 flora species of conservation significance have been recorded in the last 20 years. Six of these species are listed as endangered and nine as vulnerable under the BC Act. In addition, five are listed as vulnerable and one critically endangered under the Commonwealth EPBC Act.

For all of these species, the cleared, managed and highly modified residential landscaped areas of the subject site, with managed lawn-scapes, is unsuitable for the occurrence of any threatened species.

A review was undertaken of recorded sightings of 5 of the most recorded threatened flora species within a 5km radius of the subject site within the last 20 years (DPIE Bionet Atlas 2020). None of the threatened flora species, or any other threatened flora species, occurs or was expected to occur at or in the vicinity of the site.

The local PCT has been mapped by OEH (2016) as Urban Natives and Exotics, a non-natural ecological community. More recent mapping by DPIE (2020) indicates that no distinct recognisable PCT occurs within the site.

Aerial mapping and ground-truthing indicate that the proposed site has no ecological conservation value in relation to registers of the BC Act 2016 and the EPBC Act 1999.

Ground truthing has identified that larger more mature canopy trees such as Sydney Blue Gum and Blackbutt have high habitat value in regard to foraging and nesting habitat (for avifauna and microchiropterans) as evidenced by nests and hollows observed in some of the more mature individuals. See **Section 6.7** for further discussion on Aboricultural Impacts.

6.8.2. Fauna

DPIE Atlas of NSW Wildlife (Bionet) database recorded thirty-three (33) species of terrestrial and avifauna listed as threatened under the *Biodiversity Conservation Act 2016* (BC Act) within a 5km radius of the subject site. Five of these species are listed as endangered with the remainder designated as vulnerable. Five species are listed as vulnerable and five as endangered under the EPBC Act as outlined in Table 7 of the Flora and Fauna Report (**Appendix U**).

Due to the highly modified habitat and high residential activity no threatened fauna species are considered likely to occur in the locality.

The recorded threatened fauna distribution indicate that The Powerful Owl and the Grey-headed Flying Fox are commonly recorded across the locality. The Powerful Owl may occasionally forage within the area if prey species are in abundance but the site survey did not find this to be the case. The Grey-headed Flying Fox was not sighted during the survey and as the impacted area is relatively small with the retention of a significant number of trees this species will not be compromised by the proposed development.

A fauna survey was undertaken in accordance with the Draft Guidelines for Threatened Species Assessment under Part 3A (DEC and DPI). A dedicated ground search was undertaken as was a census of extant birds. Threatened species were not recorded in the surveys but with the potential to be present as indicated by habitat.

The extensive areas of managed exotic grassland provide poor habitat but may provide some food resources for seed foraging avifauna. Canopy trees may provide sheltering and seasonal food resources for avifauna, arboreal species and the Grey-headed Flying Fox. A few small and medium sized hollows for species of parrots and other birds or microbats were recorded within the study area. Some large stick nests were recorded during this survey. The developed areas have no habitat features that may provide safe foraging and potential shelter for small terrestrial fauna species such as mice and the Black Rat.

Table 6 of the Flora and Fauna Report (**Appendix U**) outlines the fauna recorded or expected to occur within the site. Of the bird species observed or expected to occur, most were species that prefer a grassland habitat. There were no dominate species among the birds with each occupying selective niches. The Common Brushtail Possum and Ring-tail Possum are expected to occur within the extensive tree canopy area that occur within the housing complex.

The proposal to develop the currently cleared and managed areas of the subject land is not considered to compromise any of the species life cycles in relation to foraging, roosting and breeding opportunities. Several hollows were recorded within the subject site, and it is recommended that replacement habitat is provided as part of the proposal in the installation of small and medium sized nest boxes and bat boxes affixed to suitable retained trees occurring within the CPA Area.

The proposed development is considered by ACS Environmental to comply with the desired criteria in relation to The Parramatta Council LEP (2011) and Parramatta DCP (2011). The development would be highly unlikely to have an adverse effect on the life cycle of any individual threatened flora or fauna species or their respective habitat. It is considered that for potential impacts to any threatened ecological communities or threatened flora or fauna, concurrence form the Director General of the DPIE is not required nor is a Species Impact Statement necessary for the proposed development.

6.8.3. Biodiversity Assessment Method (BAM)

Offset Scheme Thresholds

There is no area of potential natural bushland occurring at the subject site that is proposed to be impacted.

Biodiversity Values Map

The Biodiversity Values Map (BV Map) identifies land with high biodiversity value, as defined by the *Biodiversity Conservation Regulation 2017*. The Biodiversity Offsets Scheme applies to all local developments, major projects or the clearing of native vegetation where the State Environmental Planning Policy (Vegetation in Non-Rural Areas) 2017 applies. Any of these will require entry into the Biodiversity Offsets Scheme if they occur on land mapped on the BV Map. The site as indicated by a blue dot on the extract of the BV Map in **Figure 62** is not identified as containing significant biodiversity value.

Figure 62 BV Map Extract

Source: ACS Environmental

A formal Biodiversity Development Assessment Report is not required. The Vegetation Integrity of the areas to be developed will be approaching zero and no offsets are deemed necessary for this development.

Threatened Species, Populations and or/ Ecological Communities

No threatened flora or fauna species, and no extent or elements of any natural threatened ecological community occur within the subject land, and none will be impacted either directly or indirectly.

A clump of individuals of Sydney Blue Gums occurring in the north-eastern section of a discrete group of trees identified as Group 2 (with the Core Precinct of the CPA not Stage 1A) occupies an area of 20 x 20m.

Even though this copse of trees had been planted in a landscape plan, it was conferred to the most likely PCT that may have occurred in the locality before clearing as PCT No. 1281 (Sydney Turpentine Ironbark Forest). As such, this area was quantitated by BAM analysis to acquire a measure of Vegetation Integrity (BAM 2017) of 3.3.

As the Vegetation Integrity Index (VI) is <15 for this derived TEC, the index is too low to acquire a biodiversity offset cost for this small patch of planted Sydney Blue Gums (BAM 2017), which mostly occur as a monoculture in association with canopy species which do not occur locally.

There is no potential for this group of landscaped canopy trees to provide habitat for any threatened fauna species, nor would any threatened flora species potentially disperse into this managed curtilage.

It is considered that there is no requirement for providing an offset value for the loss of these derived, non-locally occurring canopy species, save for the potential replacement of these individuals with canopy species more representative of such ecological communities such as Sydney Turpentine Ironbark forest (STIF) or Blue Gum High Forest (BGHF) which may have occurred in the locality before clearing.

As such, it is considered that no significant impacts would occur to any threatened species or to the extent of distribution of any threatened ecological community in the locality.

Mitigation Measures

The former habitat of Sydney Turpentine Ironbark Forest and possibly Blue Gum High Forest should be enhanced by the incorporation of landscape plantings including native species which are diagnostically positive for these ecological communities.

6.9. ABORIGINAL CULTURAL HERITAGE

Urbis have prepared an Aboriginal Cultural Heritage Assessment Report (**ACHAR**) (**Appendix W**) encompassing both the Stage 1A works and the broader CPA in accordance with the following guidelines:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines);
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (the Assessment Guidelines);
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010); and
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter).

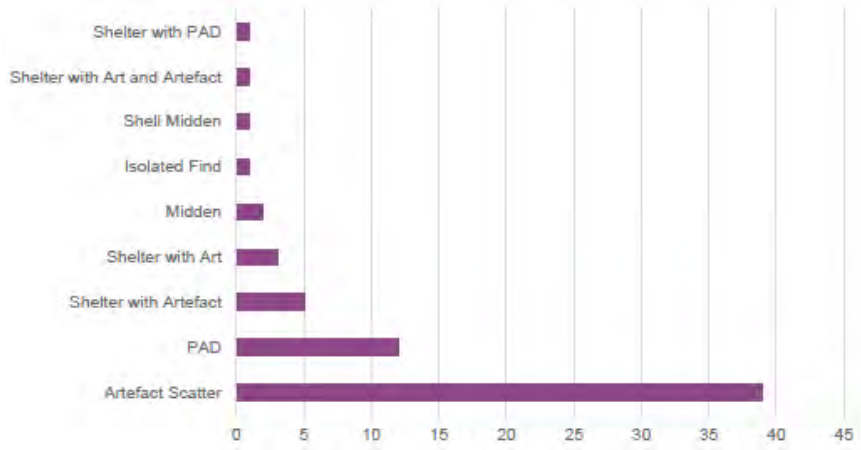
6.9.1. Archaeological Context

The Parramatta region falls within the traditional lands of the *Burramattagal* (*Boromedega*l) people, a Darug speaking clan. Burramattagal is believed to be derived from the Aboriginal word for 'place where the eels lie down', referring to the Parramatta River (City of Parramatta, 2019). The Darug people occupied the land from Parramatta to the lower Blue Mountains. The subject area is within the Dundas Valley, which was occupied by a different clan of the Darug people, the *Wallumedegal* (*Wallumettagal)* people. The Wallumettagal occupied the land from the north bank of the Parramatta River, westward from the Lane cove River and were the closest neighbours of the Burramattagal. The name '*Wallumettagal* is believed to be derived from the word *Wallumai,* meaning snapper fish, and *matta*, meaning place of water.

The Aboriginal Heritage Information Management System (**AHIMS**) database comprises previously registered Aboriginal archaeological objects and cultural heritage places in NSW and it is managed by the DPIE under Section 90Q of the *National Parks and Wildlife Act 1974* (**NPW Act**).

A search of the AHIMS database was carried out on 16th April 2020 (CSID: 497529). The search covering 6km squared (6.8km east-west by 6.1km north-south) identified a total of 67 Aboriginal objects and 0 Aboriginal places. Two of the identified Aboriginal objects were subsequently identified on the site cards as not a site and have been excluded from the below analysis. Aboriginal objects are the official terminology in AHIMS for Aboriginal archaeological sites.

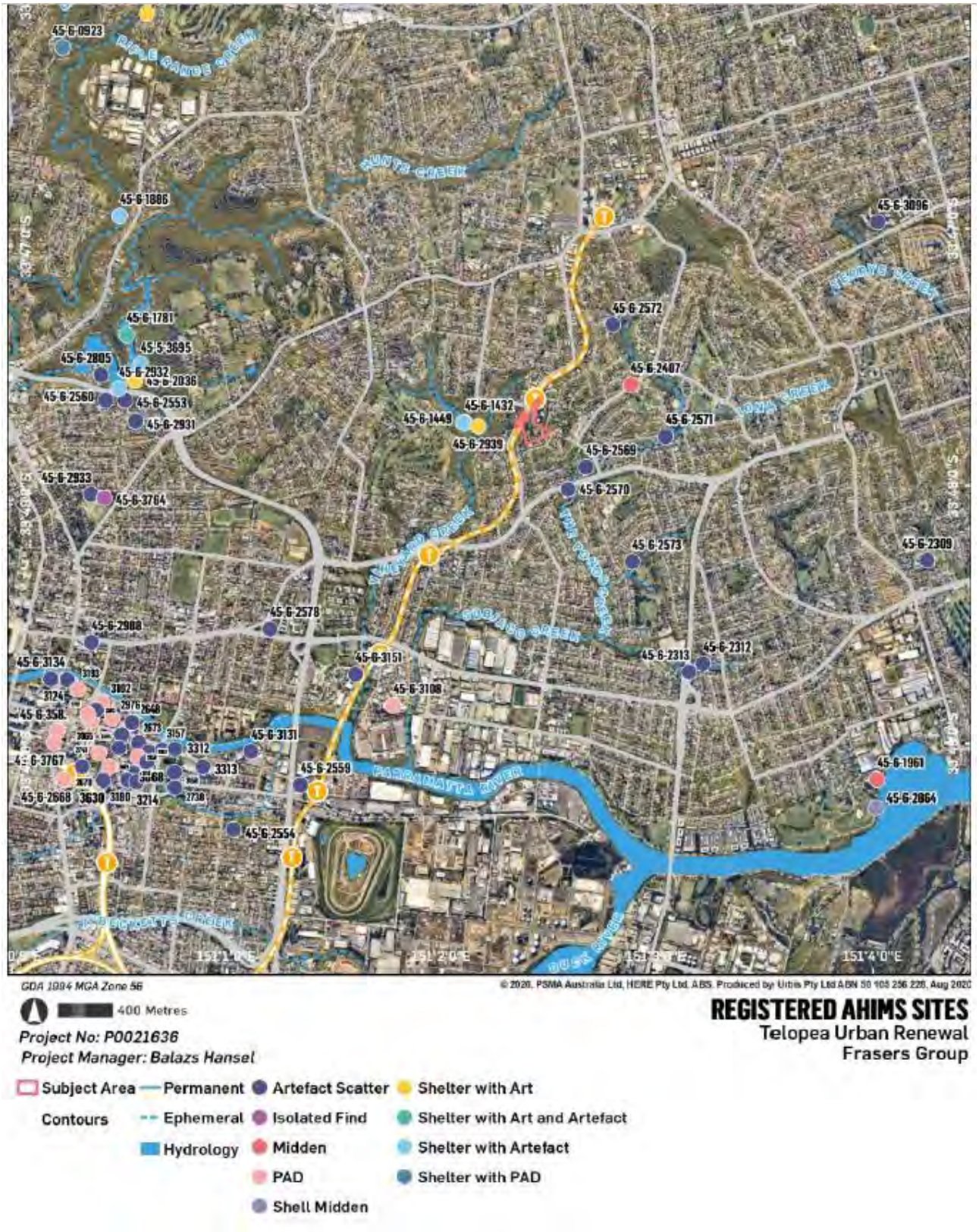
Figure 63 Results of AHIMS search



Source: Urbis

Figure 63 above illustrates the breakdown of site types within the search area whilst Figure 64 below identifies the spatial location of sites across the search area. The search did not identify any sites within or in close proximity to the CPA. The nearest correctly registered sites are all associated with creeks in the area reinforcing the generic predictive model for the Cumberland Plain, which suggests that Aboriginal objects are anticipated to occur in higher frequency and density within 200m of high order streams.

Figure 64 Spatial location of AHIMS results



Source: Urbis

In 2017, Urbis conducted a preliminary Heritage and Archaeological Assessment for the Telopea Masterplan project. This assessment was intended to provide preliminary conclusions regarding opportunities and constraints for built heritage, historical and Aboriginal archaeology to inform the design process for the masterplan. This assessment was desktop based and considered the whole of the Telopea area, inclusive of the current subject area.

There were two Aboriginal sites registered on AHIMS within the 2017 study area, and nine in close proximity. The Urbis 2017 assessment recommended for further investigation within the subject area in the form of at minimum a due diligence assessment. The current assessment responds to this recommendation.

The development of facilities within the subject area has caused substantial levels of ground disturbance. This is demonstrated through the analysis of historic aerials. The combination of the impacts of historical land use have significantly changed the original environment with no original, undisturbed part of the subject area able to be identified from the historical aerial photographs (dating from 1930).

Figure 65 Ground Disturbance

Source: Urbis

The conclusions from the summary of the AHIMS results, previous reports and predictive modelling are the following:

- No Aboriginal objects and/or places are recorded within or in close proximity to the subject area.
- Disturbance resulting from European occupation reduces the potential for intact soil profiles to remain within urban sites. In shallow soils profiles, this is likely to lower archaeological potential.
- The impacts of historical land use (vegetation clearance, c.1940-50s residential construction, c.1960s Housing Commission development) have significantly changed the original environment of the majority of the subject area. A small portion in the north-western corner of the subject area shows only low to moderate levels of disturbance from the available data. This portion of the subject area is the gentle hillslope running down to the west from the rear of the small house visible in the 1960's aerial to the property boundary abutting the rail corridor. This is the portion of the subject area earmarked for future test excavation.
- While intact natural soils may be present within urban environments, they may not necessarily contain Aboriginal archaeological objects as landscape factors play a decisive role in Aboriginal utilisation of the land prior to European occupation.
- Within the regional context of the subject area, registered Aboriginal sites tend to be located along waterways and where sandstone outcrops occur.
- The dominant site type within the region is artefact scatters, but those sites are typically recorded in the within 200m of water ways and unlikely to occur within the subject area.
- There are no landscape features within or in proximity to the subject area that are associated with high potential for aboriginal objections.
- The archaeological predictive model identified low potential for the Aboriginal archaeological sites types within the subject area.

6.9.2. Consultation Process

Consultation in line with the Consultation Requirements (DECCW 2010) is a formal requirement where a Proponent is aware that their development activity has the potential to harm Aboriginal objects or places. The DPC also recommends that these requirements be used when the certainty of harm is not yet established but a Proponent has, through some formal development mechanism, been required to undertake a cultural heritage assessment to establish the potential harm their proposal may have on Aboriginal objects and places.

Consultation for this assessment, has been undertaken in accordance with the Consultation Requirements as these meet the fundamental tenants of the 2004 consultation requirements (NSW Department of Environment and Conservation [DEC] 2004), while meeting current industry standards for community consultation.

The Consultation Requirements outline a four-stage consultation process. The following outlines the process and results of the consultation conducted during this assessment to ascertain and reflect the Aboriginal cultural heritage values of the subject area.

Stage 1 – Notification of project proposal and registration of interest.

A total of 61 Aboriginal groups and individuals with an interest in the subject area were identified and contacted via email on 18th May 2020 or by post on 20th May 2020 (depending on the method identified by each group), to notify them of the proposed project.

A total of 19 groups registered interested in the project as a result of this phase within the nominated 14 day timeframe.

An advertisement was placed in a local newspaper, The Koori Mail on 20 May 2020 providing 14 days to register an interest in the proposed project. Two responses were received from the newspaper advertisement.

Stage 2 – Presentation of information about the proposed project.

An Information Pack which included a brief introduction to the project, the project location, and AHIMS search result to provide understanding of the registered cultural sites in the local area, was sent to registered Aboriginal parties via email on 18 June 2020. Request for response to the Information Packet was set to 16 July 2020.

The Information Pack was prepared as a combination of Stage 2 and 3 of the Consultation Guidelines, and included the following information:

- Project overview, location and purpose.
- Proposed works.
- Brief environmental and historical background.
- Notification of the site inspection.
- Protocol of gathering information on cultural heritage significance.
- Request for comment on methodology and recommendations for site investigation, and request for any cultural information the respondent wished to share.

Stage 3 - Gathering information about the cultural significance.

Stage 3 is concerned with gathering feedback on a project, proposed methodologies, and obtaining any cultural information that registered Aboriginal parties wish to share. This may include ethno-historical information, or identification of significant sites or places in the local area. Seven responses were received to the Stage 2 and 3 Information Pack.

Four provided support for the ACHA and Methodology put forward, five expressed interest in future field work and one requested test excavations.

Phil Khan of Kamilaroi Yankuntjatjara Working Group provided the following comment on 6 July 2020

"This area is highly significant to the Aboriginal People of the past & present as it is surrounded by small creek lines that run into Parramatta River like Ponds Ck & Vinyard Ck. Your saying there is no registered site within the subject area & we acknowledge this but this is why we need to investigate by test excavations, all the land around Parramatta has been altered in one way or other by removing all the trees flattening the land but all of that there is still untouched soil that will have Aboriginal artefacts in it. So if we don't look now then all our culture heritage will be lost & that is not what we want, so lets excavate, there could also be burials."

Urbis Response

"Based on the precautionary principle, best practice and feedback received from other RAP groups during the survey a short test excavation program shall be recommended to test our assumptions. Particularly as this is the first ACHA for the Telopea Renewal Project we want to develop a robust understanding of any potential archaeological resource and clearly determine the level of previous disturbance."

Site inspections with the RAPS was conducted in three separate groups on 31 July 2020.

Surface visibility within the subject area was extremely low due to complete grass cover over the majority of the subject area's open space. No internal access was required, however, close inspection of the perimeter of each structure on site was conducted. Inspection of the central courtyard where the c.1940-50s house previously stood was inspected and shown to exhibit extremely modified ground surface in the form of contoured mounding. Inspection of the gentle hillslope in the western portion of the subject area showed some evidence of subsurface utilities but predominantly showed a gentle, potentially lightly modified natural landform. The road corridors as well as the exposed eastern section of the light-rail were inspected with the rail corridor revealing moderately deep red and grey basal clays with a shallow topsoil.

RAP comments received during or following the Stage 3 site inspection and meeting are detailed in Table 13 of the ACHA. In general the RAPs thought it would be appropriate to undertake test excavation in the north western portion of the subject area to determine level of disturbance/ determine if any remnant topsoil remains.

Urbis agree that the archaeological potential within the subject area, from all available evidence, is considered to be low. Based on the precautionary principle, best practice and feedback received from other RAP groups during the survey a short test excavation program shall be recommended to test our assumptions. Particularly as this is the first ACHA for the Telopea Renewal Project we want to develop a robust understanding of any potential archaeological resource and clearly determine the level of previous disturbance.

Stage 4 – Review of draft cultural heritage assessment report.

The aim of Stage 4 is to prepare and finalise an ACHAR with input from registered Aboriginal parties.

This Draft ACHAR was sent to registered Aboriginal parties via email on the 14th August 2020 with comment on the Draft ACHAR requested prior to 11th September 2020. It is noted that the time allowed for comment should reflect the size and complexity of the project.

No responses were received on the Stage 4 Draft ACHA from any RAPs.

Additional – review of Draft ACHA

Frasers (the proponent) notified Urbis that substantial changes have been proposed to the building envelopes to respond to comments provided by the State Design Review Panel and Council. The ACHAR has been amended to include proposed changes.

This amended Draft ACHAR was sent to registered Aboriginal parties via email on the 2nd July 2021 with comment on the Draft ACHAR requested prior to 30th July 2021, providing 28 days for review and comment.

6.9.3. Assessment of Significance

Assessment of Cultural Heritage Significance

An assessment of cultural heritage significance and values incorporates a range of values which may vary for different individual groups and may relate to both the natural and cultural characteristics of places or sites. Cultural significance and Aboriginal cultural views can only be determined by the Aboriginal community using their own knowledge of the area and any sites present, and their own value system. All Aboriginal heritage evidence tends to have some contemporary significance to Aboriginal people, because it represents an important tangible link to their past and to the landscape.

Consultation with members of the local Aboriginal community (project RAPs) was undertaken to identify the level of spiritual/cultural significance of the subject area and its components. In acknowledgment that the Aboriginal community themselves are in the best position to identify levels of cultural significance, the project RAPs were invited to provide comment and input into this ACHAR and to the assessment of cultural heritage significance and values presented therein.

Comments received from the representatives of the project RAPs indicate that the subject area as part of the wider Telopea/Parramatta region is highly significant to the Aboriginal People of the past and present. The subject area is a ridgeline surrounded by small creek lines that run into Parramatta River like Ponds Creek and Vineyard Creek that run into Parramatta River.

The concept of intergenerational equity comes through strongly in statements such as the one from Phil Khan (KYWG) that "…all the land around Parramatta has been altered in one way or other by removing all the trees flattening the land but all of that there is still untouched soil that will have Aboriginal artefacts in it. So if we don't look now then all our culture heritage will be lost and that is not what we want, so let's excavate..." It is clear though the consultation for this project that there is a strong belief by many RAPs that the bigger cultural and archaeological picture is being missed when focus is only given to a small subject area/portion of the wider landscape. Only through excavating in areas that may appear to be highly disturbed can we accurately determine the level of historical impact.

It is clear though the consultation for this project that there is a strong belief by many RAPs that the bigger cultural and archaeological picture is being missed when project focus is only given to a small subject area/portion of the wider landscape. Only through excavating in areas that may appear to be highly disturbed can we accurately determine the level of historical impact.

Numerous RAPs (DCAC, KYWG and Freeman & Marx) have emphasised the importance of sympathetic landscape, urban and interior design that allow for the interpretation and engagement with Country by Aboriginal and non-Aboriginal people.

Assessment of Scientific (Archaeological) Significance

In accordance with the Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW, and in consultation with representatives of the local Aboriginal community, the following assessment of the scientific (archaeological) significance of identified sites within the subject area has been prepared.

This assessment has determined that Aboriginal sites have previously tended to be identified adjacent to permanent water such as Parramatta River. Geotechnical investigation, site survey, analysis of historical aerials and utility schematics suggest that the majority of the subject area has been exposed to high levels of disturbance. A small portion of westerly sloping upper hillslope presents the only portion of the subject area that may not have been completely impacted by the construction of the current community estate and contains low to moderate archaeological potential (refer to Figure 19 for disturbance mapping).

It is determined by this ACHAR that the subject area contains low to moderate archaeological potential for subsurface Aboriginal archaeological deposits with low associated scientific significance. However, following the precautionary principle, best practice and feedback received from RAPs during the consultation process for this assessment it is recommended that a short test excavation program shall be undertaken to test the above assumptions.

6.9.4. Impact Assessment

Stage 1A Subject Area – the Focus of this Assessment

This assessment has established that the current subject area does not contain any previously identified Aboriginal sites.

It has been determined by this ACHAR that the subject area contains low to moderate archaeological potential for subsurface Aboriginal archaeological deposits with low associated scientific significance. However, following the precautionary principle, best practice and feedback received from RAPs during the consultation process it is recommended that a short test excavation program shall be undertaken to test the above assumptions.

Likely Impacted Values

The level of archaeological potential of subsurface Aboriginal objects and archaeological resources that still may exist within the subject area can only be further assessed by archaeological test excavation.

These potential Aboriginal objects and/or sites may represent various scale camping events and Aboriginal utilisation of the land in the form of hearths and/or stone artefacts.

Consideration of Inter-generational Equity - Cumulative Impact Assessment

As the ACHA identified that further investigation is needed in the form of subsurface archaeological test excavation, the principles of the IGE can only be partially assessed at this stage and further information will be provided following the archaeological test excavation.

This assessment has established that the current subject area does not contain any previously identified Aboriginal sites.

It has been determined by this ACHAR that the subject area contains low to moderate archaeological potential for subsurface Aboriginal archaeological deposits with low associated scientific significance. However, following the precautionary principle, best practice and feedback received from RAPs during the consultation process it is recommended that a short test excavation program shall be undertaken to test the above assumptions.

6.9.5. Avoiding and Minimising Harm

The nature, extent and level of harm (indirect or direct) cannot be identified at this stage due to the lack of sufficient information on the presence or absence of subsurface archaeological resources within the subject area. The ACHA concluded that there is potential for subsurface Aboriginal objects and archaeological resources within the underlaying soil landscape and recommends additional investigation in the form of archaeological test excavations. This test excavation is to establish the presence/absence and extent of subsurface archaeological resources that may be present within the subject area.

The nature and complexity of mitigation measures to avoid and/or minimise harm to any Aboriginal objects and archaeological resources that might be identified will be provided in context of the nature, extent and significance of those any resources uncovered during the proposed test excavation program.

Conclusion

The Aboriginal Cultural Heritage Assessment Report (ACHAR) concluded that:

- No Aboriginal objects and/or places are recorded within or in close proximity to the subject area.
- Disturbance resulting from European occupation reduces the potential for intact soil profiles to remain within urban sites. In shallow soils profiles, this is likely to lower archaeological potential.
- The impacts of historical land use (vegetation clearance, c.1940-50s residential construction, c.1960s Housing Commission development, highly developed rail and road corridors) have significantly changed the original environment of the majority of the subject area. A small portion in the north-western corner of the subject area shows only low to moderate levels of disturbance from the available data. This portion of the subject area is the gentle hillslope running down to the west from the rear of the small house visible in the 1960's aerial to the property boundary abutting the rail corridor. This is the portion of the subject area earmarked for future test excavation.
- While intact natural soils may be present within urban environments, they may not necessarily contain Aboriginal archaeological objects as landscape factors play a decisive role in Aboriginal utilisation of the land prior to European occupation.
- Within the regional context of the subject area, registered Aboriginal sites tend to be located along waterways and where sandstone outcrops occur.
- The dominant site type within the region is artefact scatters, but those sites are typically recorded in the within 200m of water ways and unlikely to occur within the subject area.
- There are no landscape features within or in proximity to the subject area that are associated with high potential for aboriginal objects.
- The archaeological predictive model identified low to moderate potential for the Aboriginal archaeological sites within the subject area.
- Despite this ACHAR determining that the subject area contains low to moderate archaeological potential for subsurface Aboriginal archaeological deposits, following the precautionary principle, best practice and feedback received from RAPs, it is recommended that a short test excavation program shall be undertaken to test the above assumptions.

Mitigation Measures

The ACHA states the following recommendations are to be implemented:

<u>Recommendation 1 – Archaeological Test Excavation</u>

Archaeological test excavation must be carried out in a small portion in the north-western corner of the subject area which shows only low to moderate levels of disturbance from the available data. This portion of the subject area is the gentle hillslope running down to the west from the rear of the small house visible in the 1960's aerial to the property boundary abutting the rail corridor. An Archaeological Research Design (ARD) and Methodology should be prepared for the sub-surface investigation of the identified landscape features and their potential for retaining Aboriginal objects and archaeological resources. The purpose of the archaeological test excavation is to confirm the presence or absence and potential extent of Aboriginal objects and archaeological resources within the subject area.

The archaeological test excavation must be undertaken according to the developed ARD and with the participation of the nominated Aboriginal RAPs and appropriately qualified archaeologists. The ARD must be developed in line with the Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010) (the Code of Practice).

NOTE: The timing of the test excavation is to be in parallel with demolition of the existing buildings and must be completed before the construction of the proposed Stage 1A development.

The results of the test excavations must be incorporated into the ACHAR or addendum document and supplied to the project RAPs for comment in accordance with Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Department of Environment, Climate Change and Water (DECCW), 2010) (the Consultation Guidelines).

Recommendation 2 – Aboriginal Cultural Heritage Induction

It is recommended that induction materials be prepared for inclusion in site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites to be aware of (i.e. artefact scatters or concentrations of shells that could be middens), obligations under the NPW Act, and the requirements of an archaeological finds' procedure (refer below). This should be prepared for the project and included in any site management plans.

The induction material may be paper based, included in any hard copy site management documents; or electronic, such as "PowerPoint" for any face to face site inductions.

Recommendation 3 – Archaeological Chance Find Procedure

Although considered highly unlikely, should any archaeological deposits be uncovered during any site works, a procedure must be implemented. The following steps must be carried out:

1. All works stop in the vicinity of the find. The find must not be moved 'out of the way' without assessment.
2. Site supervisor, or another nominated site representative must contact either the project archaeologist (if relevant) or DPC to contact a suitably qualified archaeologist.
3. The nominated archaeologist examines the find, provides a preliminary assessment of significance, records the item and decides on appropriate management, in conjunction with the RAPs for the project. Such management may require further consultation with DPC, preparation of a research design and archaeological investigation/salvage methodology and preparation of AHIMS Site Card.
4. Depending on the significance of the find, reassessment of the archaeological potential of the subject area may be required, and further archaeological investigation undertaken.
5. Reporting may need to be prepared regarding the find and approved management strategies. Any such documentation should be appended to this ACHAR and revised accordingly.
6. Works in the vicinity of the find can only recommence upon relevant approvals from DPC.

Recommendation 4 – Human Remains Procedure

In the unlikely event that human remains are uncovered during any site works, the following must be undertaken:

7. All works within the vicinity of the find immediately stop.
8. Site supervisor or other nominated manager must notify the NSW Police and DPC.
9. The find must be assessed by the NSW Police, and may include the assistance of a qualified forensic anthropologist.
10. Management recommendations are to be formulated by the Police, DPC and site representatives.
11. Works are not to recommence until the find has been appropriately managed.

Recommendation 5 – RAP consultation

A copy of the final ACHA must be provided to all project RAPs. Ongoing consultation with RAPs should occur as the project progresses, to ensure ongoing communication about the project and key milestones, and to ensure the consultation process does not lapse, particularly with regard to consultation should the CFP be enacted.

6.10. HERITAGE

Urbis have prepared a Heritage impact Statement (HIS) (**Appendix X**) to provide an assessment of the heritage impact of the Masterplan and the detailed Stage 1A works.

The HIS was prepared in accordance with the NSW Heritage Division guidelines 'Assessing Heritage Significance', and 'Statements of Heritage Impact'. The philosophy and process adopted is that guided by the Australia ICOMOS Burra Charter 1999 (revised 2013).

The subject sites which form the CPA contain a variety of public housing typologies dating from the late twentieth century. These dwellings are typical for their period and function and are not unique or exemplar architectural examples of the kind. There are no listed heritage items within the subject sites.

The Concept Proposal and the detailed design Stage 1A proposed works have both been prepared with consideration for the appropriate management of the heritage values of the area, in particular, the sympathetic response to the vicinity heritage item (item number O1795) known as Redstone at 34 Adderton Road, to the south of the Stage 1A subject site (illustrated in **Figure 66**).

Figure 66 Extract of Parramatta LEP Heritage Map illustrating CPA outlined in blue and Stage 1A shaded

Source: NSW Legislation

This vicinity heritage item is being wholly retained within its existing setting and the Concept Proposal and the detailed design Stage 1A proposed works will have no adverse heritage impacts on the significance of the heritage item. The proposal is physically and visually separated from the heritage item, and future development in accordance with the Concept Proposal will not detract from the existing setting and streetscape of the heritage item.

The overall scale and form of the detailed design for Stage 1A provides for a stepped building form concentrating the bulk of the bulk to the centre and north of the site, away from the Redstone heritage item which is located to the south. This sympathetic response ensures that the immediate setting and visual context of the Redstone heritage item is as protected as possible while much needed urban renewal and densification is undertaken closer to the Telopea neighbourhood centre and railway station.

The subject sites contain a range of public housing typologies including single dwellings, two-to-three storey walk ups and high-rise residential flat buildings. These dwelling types are common both within the precinct itself, as well as within the wider local area and NSW generally. These buildings are generally representative of the standardised housing typologies that were used by the Housing Commission. They are also representative of the historical approach to public housing adopted by the NSW Housing Commission as well as the subsequent evolution of public housing typologies over time. As highly common buildings within both the local area and NSW that are of a standard typology, they do not have any identified individual heritage significance. The existing buildings within the subject sites do not need to be retained on heritage grounds. There will be no adverse heritage impacts as a result of their removal.

As part of the broader Telopea estate, the dwellings may have a degree of contributory social significance, which would be particularly derived from their habitation by long-term tenants (if present) and the associations that these tenants have formed with the building stock. However, outside of this relatively localised group of people, there is no evidence to suggest that these dwellings have any strong or special associations with the wider community, nor do they appear to be held in any particular regard or esteem by the wider community. There is currently little evidence available to suggest that the loss of these dwellings would result in a sense of loss for the wider community. It is, however, acknowledged that the loss of these dwellings may have an impact on existing or former longer-term tenants of the Telopea estate. It is noted that the potential social significance of these dwellings has not been assessed on the basis of input from relevant community or social groups or organisations.

Overall the Concept Proposal and the detailed design for Stage 1A is considered to provide a compatible response to the character and significance of the Telopea region, and will not result in adverse heritage impacts to the vicinity Redstone heritage item to the south west. The Concept Proposal and the detailed design Stage 1A proposed works are acceptable from a heritage perspective and are recommended for approval on built heritage grounds.

The Concept Proposal and detailed design Stage 1A works have the potential to impact potentially state and locally significant archaeological resources. Further research is required to ascertain the likelihood for those remains to be retained in situ and to conclusively determine the significance of potential archaeological resources

Mitigation Measures

Prior to the commencement of ground disturbance works at the site, a detailed Historical Archaeological Impact Assessment (HAIA) should be prepared to assess and mitigate impact to archaeologically significant relics. Any invasive archaeological methodologies, such as excavation, will be required to occur following demolition of the existing properties and may include archaeological monitoring or test/salvage excavation. Invasive archaeological methodologies should be undertaken in accordance with an Historical Archaeological Research Design (HARD).

6.11. GEOTECHNICAL

JK Geotechnics have undertaken a desktop geotechnical assessment (**Appendix Y**) of the CPA including review of previous investigations, to assess the likely subsurface conditions and provide recommendations on geotechnical issues to assist with planning and concept design.

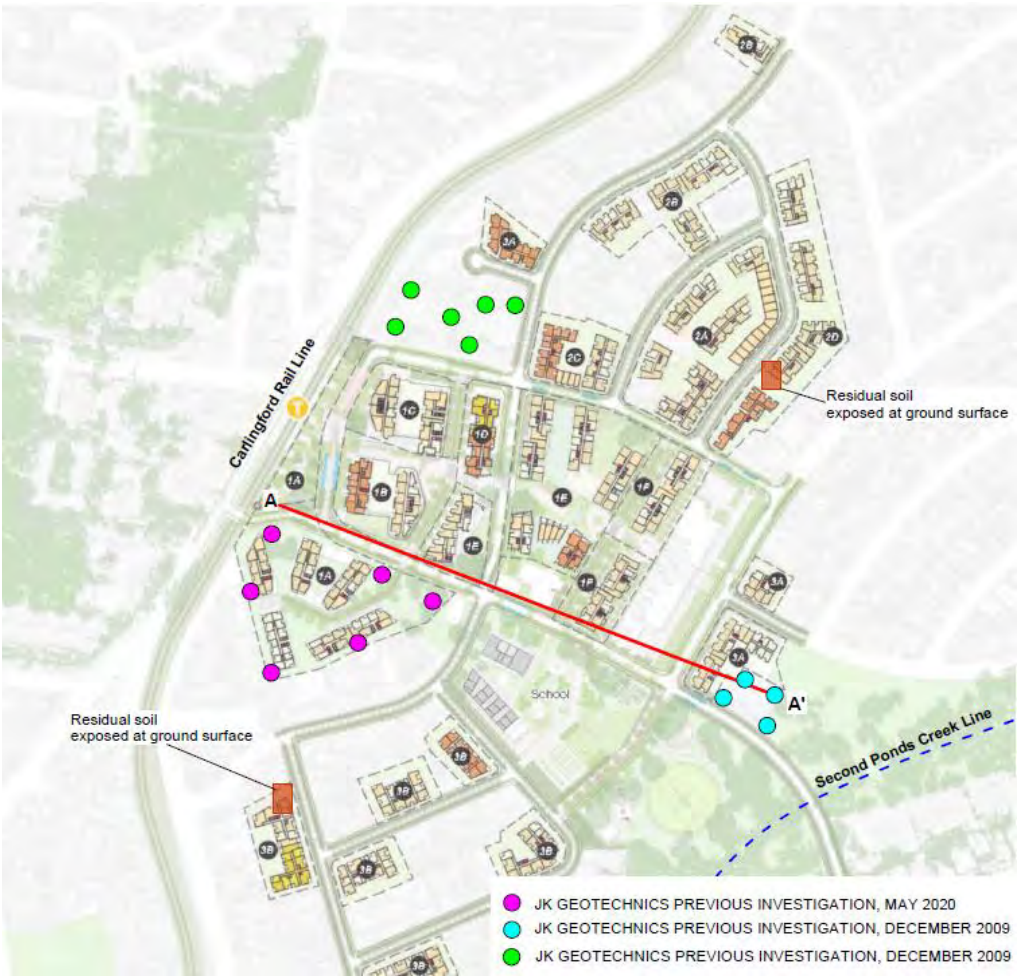
Additional fieldwork and geotechnical investigations were undertaken in relation to Stage 1A (**Appendix Y**) to determine the subsurface conditions and provide recommendations on excavation, groundwater, retention and footing design.

The CPA lies within undulating topography with overall southern to south-eastern facing slopes which fall at between 5° and 10° in some areas, though the upper western areas were relatively flat. The western parts of the site are more elevated with slopes falling to the lower eastern and southern areas.

Reference to the Sydney 1:100 000 Geological Series Sheet indicates that the majority of the site is mapped to be underlain by Ashfield Shale of the Wianamatta Group, but immediately to the east is the boundary with the underlying Hawkesbury Sandstone which underlies the parkland around Second Ponds Creek.

Figure 67 below illustrates the location of bore holes undertaken in two 2009 investigations and the more recent investigations in the Stage 1A area. The subsurface conditions below the site are expected to comprise predominantly shallow fill covering predominantly residual silty clay soils which in turn overlie siltstone and sandstone bedrock.

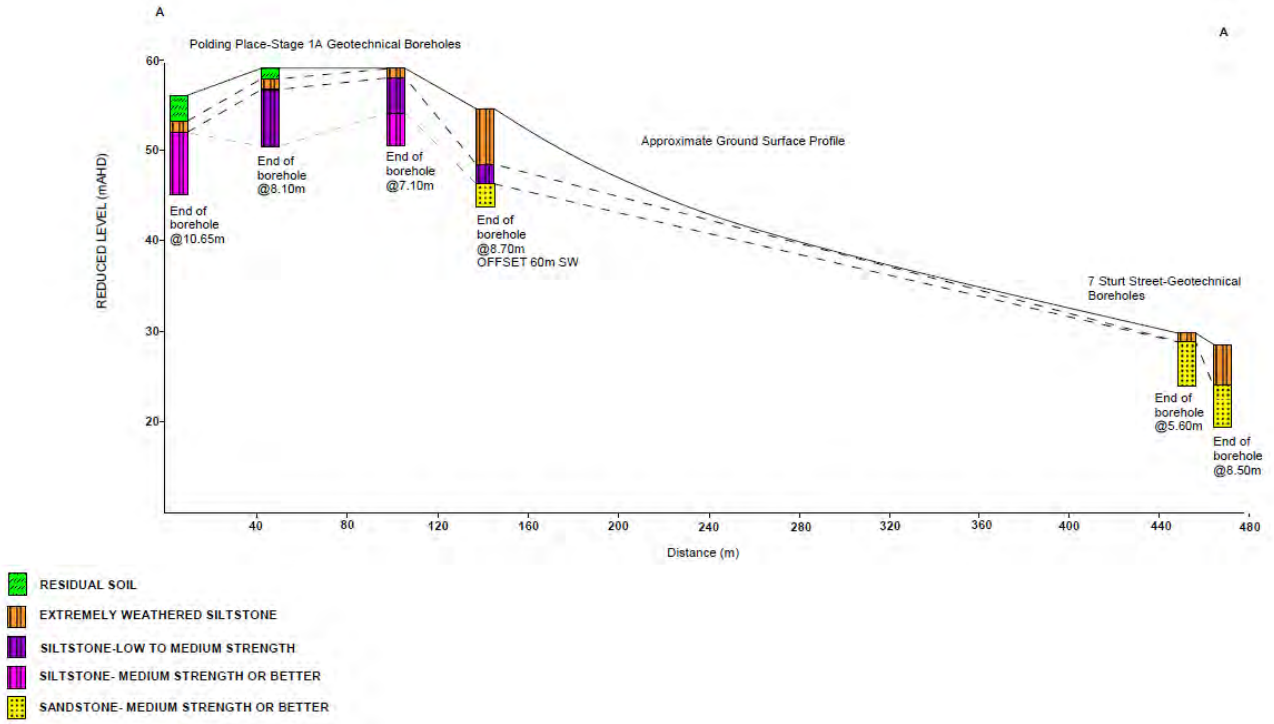
Figure 67 Subsurface investigations



Source: JK Geotechnics

Figure 68 presents a graphical cross section showing the anticipated ground conditions.

Figure 68 Ground Surface Profile



Source: JK Geotechnics

From the results of the Telopea Stage 1A investigation and the 1 to 5 Shortland Street investigation which were located over the upper (western) portions of the site weathered siltstone is expected to be encountered at depths ranging from about 2m to 4m over sandstone bedrock at depths ranging from 8m to 10m.

Over the lower (southern and eastern) portions of the site the previous investigation (No. 7 Sturt Street) revealed a thin layer of siltstone over sandstone bedrock which is expected to be typical of these portions of the site. However, towards the Second Ponds Creek line, the surface of the bedrock may be deeper due to previous erosion of the weathered bedrock.

CPA Masterplan Geotechnical Recommendations

Based on the above inferred subsurface profile the main geotechnical issues for future development within the CPA include:

- **Dilapidation surveys**: Prior to the start of excavation, dilapidation surveys should be carried out on the adjoining properties which lie within a distance equal to twice the depth of excavation.
- **Excavation**: Excavation to the proposed depths of up to 9m is expected to encounter clayey fill, residual silty clay and weathered siltstone and sandstone bedrock. Excavation of the soils and upper rock of up to very low strength should be achievable using conventional excavation equipment. Ripping of higher strength bands may be necessary if they are encountered within weaker rock.

  Excavation of rock of low strength or higher strength, will require assistance with rock excavation equipment, such as hydraulic rock hammers, ripping hooks, rotary grinders or rock saws. Reference should be made to the Vibration Emission Design Goals sheet for acceptable limits of transmitted vibrations. Where the transmitted vibrations are excessive it would be necessary to change to less vibration emitting equipment.
- **Groundwater**: Due to the variable groundwater levels measured within the wells (between RL53.5m and RL51.8m), measured groundwater levels are likely to comprise seepage flowing through the rock rather than a standing groundwater level, at least in the shallower basements and in the more elevated parts of the site. However, information on groundwater levels should be obtained as part of the detailed geotechnical investigation and wells should be installed within boreholes and the groundwater levels monitored.

- **Retention**: Suitable retention systems will depend on the proposed basement depth and set-back distances from adjoining properties. For basements which extend up to or close to the site boundaries, full depth retention systems will need to be installed prior to the start of excavation.

  Detailed shoring wall design parameters are to be provided following site-specific geotechnical investigations

- **Footings**: Following bulk excavations weathered sandstone or siltstone will generally be encountered at bulk excavation level. Therefore, it is recommended that the buildings are supported on the underlying siltstone and sandstone bedrock to provide uniform support and reduce the risk of differential movements. Pad/strip footings founded within the siltstone and sandstone would be appropriate. Where above ground portions of the buildings extend outside the basement excavation the use of piles may be required so that the footings are founded within bedrock below the zone of influence of the basement excavation.

  The allowable bearing pressure for footings founded within siltstone and sandstone would commence at 700kPa for siltstone and sandstone of at least very low strength, but higher bearing pressures are expected to be possible if medium or high strength siltstone and sandstone is encountered, which will depend partly on the depth of excavation.

- **Basement Floor Slabs**: The basement slabs are likely be cast on weathered siltstone and sandstone bedrock. Following completion of the bulk excavation, we recommend that the subgrade be inspected by a geotechnical engineer to assess the suitability of the subgrade to support the basement floor slabs. The design of the basement floor slabs should incorporate a subbase layer of DGB20, or other approved durable granular material compacted to at least 100% Standard Dry Density (SMDD). This will act as a separate/debonding layer from the weathered rock subgrade and will also reduce the risk of pumping of fines at slab joints. Sand layers should not be used below trafficable slabs.

  Drainage may be required below the basement slab and the subbase layer may be used as a drainage layer if free draining and durable gravel is used. Alternatively, a grid of subsoil drains could be constructed below the slab. The drainage system should divert the collected water into sumps containing automatic pumps to remove the collected seepage to the stormwater system. The hydraulic consultant should inspect the completed excavation to confirm that the designed drainage system is adequate for the actual seepage flows.

- **Nearby railway line**: the railway line (Carlingford Line) is located on the north-western and western sides of the site, with current works being carried out on the rail line as part of the upgrade to the Telopea Light Rail scheme.

  Application will need to be given to the asset owners (Sydney Trains) for any development which is in proximity to the rail corridor. Sydney Trains may require finite element analysis of the possible movements affecting the rail infrastructure where parts of the development may be positioned within 25m of the rail corridor. Sydney Trains may also require monitoring to be carried out during construction, but the extent of this will be dependent on the results of the modelling.

Overall, JK Geotechnics consider that the site is geotechnically suitable for the proposed developments and will be comparable to other similar developments constructed within nearby sites.

CPA Mitigation Measures

A detailed geotechnical investigation of each development area must be carried out to determine the actual subsurface conditions. The final scope of the geotechnical investigation should be determined once the final layout of the proposed buildings are known so the borehole locations can be targeted to suit the building layout.

Due to the expected size of the buildings all boreholes should involve the core drilling of the bedrock in order to optimise bearing pressures for the design of footings.

Information on groundwater levels should also be obtained and as part of the geotechnical investigation wells should be installed within boreholes and the groundwater levels monitored. Information on the groundwater levels will be particularly important as it is likely that the basements will extend to the groundwater table as well as encountering some seepage from the soil/bedrock interface.

A waste classification will need to be assigned to any soil excavated from the site prior to offsite disposal. Subject to the appropriate testing, material can be classified as Virgin Excavated Natural Material (VENM), General Solid, Restricted Solid or Hazardous Waste. If contamination is encountered, then substantial further testing (and associated delays) should be expected. To mitigate any issues, recommendations are to address this issue prior to commencement of excavation on site.

Stage 1A Detailed Assessment

Boreholes BH1 to BH8 as illustrated in **Figure 69** were drilled to total depths ranging from 6.90m to 10.65m below the existing ground surface. The boreholes were auger drilled to depths ranging from 4.10m to 7.60m and were then continued using diamond coring techniques using an NMLC core barrel with water flush to depths between 6.9m and 10.65m.

Figure 69 Borehole locations

Source: JK Geotechnics

Groundwater observations were made during and on completion of drilling. Groundwater monitoring wells were installed within BH1 and BH4 on completion of drilling and a return visit was made to the site to measure the groundwater levels on 29 April 2020. No longer-term monitoring of groundwater levels was carried out.

The borehole logs are contained within the Geotechnical Investigation (**Appendix Y**) together with a set of explanatory notes, which describe the investigation techniques, and their limitations, and define the logging terms and symbols used.

Selected samples were returned to Soil Test Services Pty Ltd (STS) and Envirolab Services Pty Ltd, both NATA accredited laboratories, for testing to determine moisture contents, point load strength index values, pH, sulphate content, chloride content and resistivity. The results of the laboratory testing are summarised in the Geotechnical Investigation.

In summary, the boreholes encountered surface fill covering residual silty clay that graded into weathered siltstone and then sandstone bedrock at shallow to moderate depths. Further comments on the subsurface conditions encountered are provided below:

- **Fill** was encountered in all boreholes to depths ranging from 0.2m to 1.2m. The fill comprised silty clay, with inclusions of ash, and sandstone/ironstone gravel.
- **Residual silty clay** was encountered below the fill in all boreholes apart from BH3, which encountered extremely weathered siltstone. The residual silty clay was assessed to be of medium to high plasticity and generally hard strength.
- **Weathered sandstone and siltstone bedrock** were encountered at depths ranging from 1.7m to 4.2m, with the level of the surface of the rock falling towards the south and west from about RL58.5m in BH3 to about RL52.6m in BH7.
- **Groundwater** seepage was encountered within BH1 and BH7 at depths of 1.2m and 4.4m during auger drilling, the remaining boreholes measured as dry on completion of auger drilling. Thereafter, the use of water for core drilling limited further meaningful measurements of groundwater levels. The groundwater levels were measured within the monitoring wells installed within BH1 and BH4 on the 29 April 2020 and showed groundwater at depths of 2.6m and 3m, respectively.

Stage 1A Geotechnical Recommendations

In addition to the general recommendations outlined above for the CPA the following recommendations are based on the subsurface profile and proposed for the Stage 1A development:

- **Excavation**: Excavation of the soils will be achievable using conventional excavation equipment, such as the buckets of hydraulic excavators. Some of the upper weathered siltstone may also be able to be excavated using such equipment.

  Excavation of the rock of low strength or higher strength will require assistance using rock excavation equipment. It may be found that such rock excavation equipment will be required to break through bands of higher strength rock and then the weaker bands being able to be removed using the excavator bucket.

  Hydraulic rock hammers must be used with care due to the risk of damage to the adjacent structures from the vibrations generated by such equipment. If hydraulic rock hammers are used the vibrations transmitted to the adjoining properties to the south and north should be quantitatively monitored at all times during rock hammer use. Reference should be made to the Vibration Emission Design Goals sheet for acceptable limits of transmitted vibrations.

- **Groundwater**: Groundwater was encountered within the wells installed in BH1 and BH4 at levels between RL53.5m and RL51.8m, which is above the proposed lowest basement at RL49.4m. Due to the variability in levels within the wells it is expected that the groundwater measured comprises seepage flowing above and through the weathered rock and collecting within the wells. Therefore, during construction it is expected that any seepage that does occur within the excavation may occur at various locations within the site and may emerge at variable depths within the rock profile. The seepage would tend to occur along the soil/rock interface and through bedding partings and joints within the rock profile.

  During construction any such seepage that does occur should be able to be controlled using conventional sump and pumps techniques. In the long term, drainage should be provided behind all retaining walls and possibly below the basement slab. The completed excavation should also be inspected by the hydraulic consultant to confirm that the designed drainage system is adequate for the actual seepage flows.

- **Retention**: Where space permits temporary batters through the clayey soils and poor-quality siltstone and sandstone bedrock (such as over the northern sides of the excavation) may be formed. Where adopted all surcharge loads such as stockpiles, traffic loads etc must be kept well clear of the crest of the batters. Where permanent batters are adopted they should be formed as per the recommendations of the Geotechnical report.

  Where space does not allow for the formation of batters and excavation will extend below adjoining properties a retention system will need to be installed prior to the commencement of excavation. Such a retention system may comprise soldier pile walls with shotcrete infill panels, as per the recommendations of the Geotechnical report.

- **Footings**: Since siltstone or sandstone bedrock will be encountered within the excavation the use of pad or strip footings founded within the rock will be appropriate. If any above ground portions of the building extend outside of the basement footprint these portions should be supported on piles founded within the rock below a line drawn up at 45º from the base of the excavation so that additional loads are not placed on the basement walls, unless the walls have been designed for such loads.

  The rock encountered within the boreholes was found to be variable with bands of very low to low strength rock in amongst rock of medium to high strength. Therefore, the footings will need to be designed for an allowable bearing pressure appropriate for the lower strength rock and not the medium to high strength sandstone, unless a closer spaced grid of boreholes enables the rock quality to be more accurately characterised. It is recommended that the design of the footings be based on an allowable end bearing pressure (AEBP) of no more than 1200kPa.

  The footing excavations should be inspected by a geotechnical engineer to confirm that the appropriate foundation material has been encountered.

- **Basement Slab**: The subgrade at bulk excavation level will comprise weathered siltstone. As recommended above, drainage will need to be provided below the basement slab either as a closely spaced grid of subsoil drains or a gravel blanket. The drainage will need to be connected to a permanent fail-safe pump out system, which is fitted with automatic level controls to avoid flooding.

  The basement slab should be designed with a subbase layer of at least 100mm thickness of crushed rock to RMS QA specification 3051 (2013) unbound base material (or other approved good quality and durable fine crushed rock), which is compacted to at least 100% of Standard Maximum Dry Density (SMDD) if a continuous drainage blanket is not adopted. This subbase layer will provide a separation between the siltstone/sandstone subgrade and the slab and provide a uniform base for the slab.

Stage 1A Mitigation Measures

- Groundwater seepage/level monitoring or assessment.
- Shoring pile inspections.
- Progressive inspections of the excavation to check for the presence of adversely orientated defects.
- Site Inspection at bulk excavation level to refine areas which may be appropriate for high bearing pressures
- Geotechnical inspection of all footing excavations and pile drilling.
- Additional cored boreholes where bearing pressures are to be more than 1,200kPa.

6.12. CONTAMINATION

A Preliminary Contamination Assessment (Preliminary Site investigation (PSI)) (**Appendix Z**) was prepared by Environmental Earth Sciences (EES) for the CPA to address the requirements of SEPP 55 and demonstrate the suitability of the site for the development having regard to the Site's geotechnical characteristics including erosion potential subsidence, salinity and acid sulfate soils.

This report is based on a desktop review of potential contamination including a review of available site investigation reports, more general site history and regional condition information and a site inspection to evaluate the potential for contamination concerns at the Site. The PSI relates to Stages 1A, 1B, 1C, 1D, 1E, 1F, 2A, 2B, 2C, 2D, 3A, and 3B as illustrated in **Figure 70** below.

Figure 70 PSI - Concept Plan Areas

Source: EES

A Detailed Contamination Assessment (Detailed Site Investigation (DSI)) (**Appendix Z**) was prepared by EES Sciences for the Stage1A site. A description of the CPA and Stage1A sites areas is provided in Section 4 of each report and includes consideration of topography, soils and geology, and hydrology.

A site inspection was conducted from publicly accessible places within the CPA on 3 April 2020 with key observations and risk rating summarised in **Table 28** below. Further detail is provided in Section 6.2 of the PSI (**Appendix Z**).

As the majority of the properties and adjoining structures were constructed between 1955 and 1975, several of the roofs appear to be constructed with asbestos-containing materials (ACM). No indication of underground fuel tanks was observed on site. No breather pipes, fill points or bunded areas were noted.

Table 28 PSI results

CPA Area	Site Observations	Risk Rating
Recreational are of Stage 1A	There are five large residential properties in Stage 1A with grass covered areas and concrete pavements with trace brick noted on the surface (Plate 3). Building and demolition material consisting of brick, concrete, ACM was observed in the northern grassland area. ACM is also noted in the roof of at least one of the residential properties.	Low
Stage 1B and 1C	Stage 1B and 1C consists of three high density residential properties with water feature in western area and raised grassland area to the west of 33 Sturt Street residential complex.	Low
Stage 1D, 1E and 1F	Stages 1D, 1E and 1F consist of several high density residential properties.	1D – Moderate 1 1E – part Moderate 1, part Low 1F – Low
Stage 2A	Stage 2A contains residential properties with broken windows and deteriorated paint on the outer walls. A foul odour was noted from surface water present along south eastern area of Stage 2A. The properties at Stage 2A were constructed between 1955 and 1965 and several of the properties were constructed using ACM.	Part Low, part Moderate 1 and part High (Lot 293).
Stage 2B	Stage 2B is comprised of two areas – one area west of Marshall Road with properties constructed prior to 1955 and currently overgrown with long grass, and a second area south of Marshall Road. The properties at Stage 2B were constructed between 1955 and 1965 and several of the properties were constructed using ACM.	Part Low, part Moderate 1 and part High (Lot 245).
Stage 2C	Stage 2C consists of high density properties and single storey residential properties overgrown with long grass constructed between 1955 and 1965. All buildings within Stage 2C were constructed using ACM building materials.	Part Low and part Moderate 1

CPA Area	Site Observations	Risk Rating
Stage 2D	Stage 2D is east of The Parade. There is an empty lot in the southern end of Stage 2D that is fenced off and anthropogenic material was noted under the tree. There is a further empty lot in the north of Stage 2D and the majority of the properties contain suspected ACM building materials.	Part Low, part Moderate 1 and part High (Lot 312).
Stage 3A	Stage 3A is comprised of two areas – one area north of Field Place with one property fenced off and overgrown with long grass. ACM was observed in the building structures. The second area of Stage 3A is north of Sturt Street and north and south of Moffatts Drive and consists of high density residential properties. During the Environmental Earth Sciences (2019) investigation, two groundwater boreholes were installed in this area.	Part Low, part Moderate 1 and part High (Lot 228).
Stage 3B	Stage 3B is located south of Manson Street and to the West of Telopea Public School and Sturt Park and consists of single storey residential buildings, some with fencing and overgrown with grass and several with suspected ACM observed in the building structures. Properties on Stage 3B were constructed prior to 1955.	Part Low, part Moderate 1 and part High (Lot 121).

Source: Environmental Earth Sciences

Based on the scope of the PSI undertaken it is concluded that due to redevelopment in recent years, whereby some properties were demolished and the lots remain vacant and some lots are now occupied with high density residential properties, there is the probably of building and demolition material, including asbestos, remaining on the surface due to poor demolition practices. As the majority of the CPA is currently occupied, there is the risk of hydrocarbon leaks and spills from vehicles parked onsite.

The potential acid sulfate soils (PASS) risk maps published by the Parramatta Local Environmental Plan 2012 (LEP) states that the site is located on land of Class 5 acid sulfate soils risk. Typically, acid sulfate soils are not found in areas identified as Class 5. The site is also not within 500m of Class 1, 2, 3 or 4 risk and therefore, if dewatering is required in the proposed development, the surrounding land is not expected to be at risk of the effects of acid sulfate soils.

Salinity is considered low risk onsite due to information presented in the Glenhaven Hydrogeological Landscape (HGL) information sheet, sourced from the interactive website eSPADE (accessed 23 April 2020) from the NSW Office of Environment & Heritage.

Recommendations/ Mitigation Measures CPA

- A Construction Environmental Management Plan (CEMP) and an Asbestos Management Plan (AMP) is required to ensure safe demolition of properties containing asbestos containing material (ACM) in accordance with the following guidelines:
  - Safe Work Australia (2019) - How to Manage and Control Asbestos in the Workplace.
  - Safe Work Australia (2019) - How to Safely Remove Asbestos Code of Practice.
  - Safe Work NSW (2014) - Managing Asbestos in or on Soil.
  - National Occupational Health and Safety Commission (2005) - Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres [NOHSC:3003 (2005)].

– Western Australia Department of Health (WA DoH) (2009) - Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (WA DoH, 2009).

– WA DoH (2018) - Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia – Summary Update (WA DoH, 2018).

– National Environment Protection Council (NEPC) (2013) – National Environment Protection (Assessment of Site Contamination) Amendment Measure No.,1 2013 (ASC NEPM, 2013).

As a minimum, a Class B Asbestos Licence holder is recommended for the removal of bonded asbestos. If friable asbestos / asbestos fines are observed during excavation works, a Class A Asbestos Licence holder is required during excavation works to provide air quality monitoring and clearance certificates following removal of asbestos impacted material.

Due to the age of the buildings in the area, there is a potential for lead paint contamination of surface soils surrounding the residential properties. It should be noted that waste contaminated with lead (including lead paint waste) from residential premises is preclassified as 'general solid waste (non-putrescible)' by the NSW Environmental Protection Agency (EPA) (2014) Waste Classification Guidelines - Part 1: Classifying Waste (NSW EPA, 2014).

During any proposed redevelopment there is a potential for unexpected subsurface finds (as is the case for any site), and consequently Environmental Earth Sciences recommends that these occurrences can be managed accordingly by preparation of an Environmental Management Plan (EMP) or similar management document. This would include procedures for:

- management of soil including environmental controls for mitigation of erosion, sedimentation, dust generation;
- excavation management;
- onsite / off-site soil material tracking;
- soil / spoil stockpile management;
- procedures for soil disposal and waste classification in accordance with NSW EPA (2014) - Waste Classification Guidelines (if required);
- Unexpected Findings Protocol (UFP) procedure for managing instances where gross contamination and/or hazardous materials are encountered, with appropriate consideration of WH&S controls for mitigating risk to construction workers.

Detailed Site Investigation Stage1A

A site walkover of the Stage 1A area was undertaken by EES on 3 April 2020. Surrounding the five main buildings onsite was mainly vegetation of grasses and trees and foot paths and clothes lines for the occupants of the residential buildings. One large grassed area was observed in the centre of site, with grassed mounds and pathways to the central-eastern portion of this.

In the northern portion of site there was a fenced off area with overgrown grass and one brick wall in poor condition, on the Sturt Street side. Behind the brick wall was identified fill material with building rubble inclusions. Fragments of potential asbestos-containing material (PACM) were noted amongst the building rubble, alongside brick, tiles and concrete. The northern boundary of site backed onto a Transport for NSW worksite for the new Parramatta light rail. This area was mainly public grassed parkland.

An intrusive soil investigation was undertaken by EES on 6 April 2020. In accordance with the *NSW EPA Sampling Design Guidelines* (1995) for a site of approximately 2.1 ha it is recommended that 31 soils sampled are to be collected to detect a contamination hotspot of 30.5 m diameter with 95% confidence. Three sampling locations were previously investigated by Environmental Earth Sciences in 2019 (ID: BH1, BH2 and BH3), therefore, 28 primary samples (ID: 1 - 28) were required for the 2020 sampling event to comply with the Sampling Design Guidelines. **Figure 71** below outlines the sampling locations from both sampling events.

Figure 71 Contamination borehole locations

Source: EES

Based on the scope of the DSI undertaken over the Stage1A area including intrusive investigation and laboratory analysis the following contaminated site features were observed (illustrated in **Figure 71** above):

- Asbestos containing material (ACM) was located on the ground surface and within stockpiled fill material in the northern fenced off area of site. Building rubble located here is likely due to the demolition of two historic buildings noted in aerial photographs.
- Poor quality fill including the presence of bonded ACM was encountered in the southwestern corner of site up to 0.5 m depth (ID: 12).

EES consider there to be a Moderate 1 risk to human receptors in identified areas of the site due to bonded asbestos present both on the ground surface and within shallow soils.

Recommendations/ Mitigation Measures Stage 1A

It is recommended that prior to the proposed development works, surficial ACMs be removed by a suitably licensed contractor. As part of the development works, the poor quality fill material in southwest of the site area will require excavation and assessed for either onsite reuse or offsite disposal. Following the removal of these ACMs, the land would be considered Low Risk and suitable for the proposed low density residential, high density residential and recreational, open space land use.

EES does not envisage that further detailed environmental assessment is required to delineate identified contamination, however it is recommended that an Asbestos Management Plan (AMP) is prepared for the removal of the ACM impacted fill material in both the northern portion of site and the south-western corner.

Following this an inspection and validation of surrounding residual soils prior to development works to ensure bonded fragments are removed from both areas.

There is a potential for unexpected subsurface finds (as is the case for any site), and consequently EES recommends that management procedures be implemented:

- Procedures for soil disposal and waste classification in accordance with NSW EPA (2014) - Waste Classification Guidelines;
- Unexpected Findings Protocol (UFP) procedure for managing instances where gross contamination and/or hazardous materials are encountered, with appropriate consideration of WH&S controls for mitigating risk to construction workers.

6.13. ELECTROLYSIS

Corrosion Control Engineering have prepared an Electrolysis Report (**Appendix OO**) outlining the results of electrolysis testing and outlining protective measures to ensure all structures are designed, constructed and maintained so as to avoid any damage which may occur as a result of stray electrical currents, electromagnetic effects and the like from railway and future light rail operations.

Most of the DC current to power the electric trains returns to the railway substations via the rail lines. However, some leaks to ground (stray traction current) and in returning to the substation via this path can be picked up (and discharged) from buried metallic structures, leading to possible electrolysis type corrosion problems. The problems can be significant if:

- The metallic structures are sufficiently large or long enough and close to the electrified railway lines.
- The stray traction current leakages to soil are of sufficient frequency and magnitude.

Based on the site testing, the present stray traction currents at the proposed development site presents a minor (low risk) corrosion hazard to on-ground and in-ground metallic structures. It should be noted that stray traction current effects at the proposed development site will almost certainly change with time, and could become a significantly higher corrosion hazard.

The in-ground stray traction, causing voltage fluctuation on the development site, was monitored by data logging voltage gradients and potentials over an approximate 4-hour period as outlined within the Electrolysis Report.

Based on the site testing and review of the development drawings Corrosion Control Engineering have recommended the following conservative protective measures to mitigate against long term stray current corrosion, at on-ground and in-ground metallic structures:

7. The installation of heavy plastic membrane (e.g. Fortecon) under (or behind) all reinforced concrete slabs, permanent retaining walls, permanent anchors, piers/piles, and metallic posts/bollards to electrically isolate from soil and stray currents. An alternative to the use of heavy plastic membrane is to use high strength (minimum 32 MPa), high cover (minimum 50 mm) concrete to effectively prevent/limit soil moisture penetrating through to the steel.
8. The use of plastic, rather than metallic, in-ground pipework and tanks where possible. In the event buried metallic pipework and/or cables are installed within the site, installation within sealed non-metallic conduit is recommended.

In addition to the above, in order to comply with the TfNSW standard ‘THRCI 12051 ST: Development Near Rail Tunnels, Version 2.0, section 9.2.1’, Corrosion Control Engineering recommend installation of basement rebar test points to allow for future electrolysis testing of the basement rebar post-construction. This can be achieved via welded test studs that protrude from the basement walls, at approximately knee-high level. CCE recommend 2-off rebar test points be installed per basement level, with one at each end of the basement level.

6.14. UTILITY SERVICES

A Utility Servicing Assessment (**Appendix AA**) has been prepared by J Wyndham Prince (JWP) to identify the existing capacity of the site to service the development proposed and any augmentation requirements for utilities, including arrangements for electrical network requirements, telecommunications, gas, and water (drinking water and wastewater). There is no non-drinking i.e. recycled water systems in the area.

The utilities in the CPA were identified based on information received from Dial Before You Dig (DBYD), site inspection, utility authority database information, and enquiry with the utility authority.

The development schedule currently has a total of 4,700 units (dwellings) currently estimated across the redevelopment. The existing number of units (dwellings) is 486. In broad terms this represents increase of about 4,214 units though it needs to be appreciated that this may change as the development outcome is further refined.

A summary of the anticipated utility augmentation required is outlined in **Table 29** below, with further discussion on each utility in the following sections.

Table 29 Summary of Utility Augmentation

Utility	Can the CPA be serviced by existing network?	Summary of network upgrade/ augmentation required	Other network considerations
Sewerage Sydney Water	Mostly Yes except for the core area to Evans Rd and a small part of the South precinct.	Network amplification and expansion for core area to Evans Rd. Potential amplification for part of the South precinct.	Sydney Water feasibility assessment guidance. Specific design requirements. Potential additional network upgrades or changes from network age, existing alignment clashes and maintaining existing services
Potable Water Sydney Water	No for core precinct. Partly yes for north. Yes for east. Partly yes for south.	Upgrades (or replacement) of watermains are needed especially for the core precinct. Lead-in trunk watermain required for overall supply particularly to core	Early planning of lead-in works. Sydney Water feasibility assessment guidance. Specific design requirements. Potential additional network upgrades or changes from network age, existing alignment clashes and maintaining existing services.
Electricity Endeavour Energy	No for the core precinct, Mostly yes for much of the north, south and possibly east but existing supply will be exceeded	4 x 11kV lead-in feeders required. Chamber substations in buildings. Undergrounding of existing overhead networks in nominated locations.	Early planning of lead-in works. Endeavour Energy specific design requirements. New streetlighting.

Utility	Can the CPA be serviced by existing network?	Summary of network upgrade/ augmentation required	Other network considerations
Gas Jemena	Mostly yes.	Some mains augmentation and new connection lines.	Temporary disconnection of existing service at buildings to be demolished and redeveloped.
NBN NBN Co	Yes	Some realignments in the core area and minor network refinements. Possible extra backhaul for capacity to the core.	None foreseen. Possible use or incorporation of Optus hybrid fibre network as part of NBN.
Telecoms Telstra	Copper wire network use mostly not required due to NBN. Limited fibre network available in part of core.	Possible use or incorporation of part of Telstra fibre network as part of NBN.	Connection to key Telstra equipment to be retained. Preservation of required sections of Telstra conduits.
Telecoms Optus	Yes	Undergrounding of existing overhead networks.	Early planning for undergrounding works to avoid utilities congestion in road verges.

Source: JWP

6.14.1. Sewer

The site is serviced by a reticulated sewerage system, with the large majority of the subject site falling within the sewer catchment area that discharges to the south to the major trunk sewerage network (a DN450mm Reinforced Concrete sewer carrier) at the intersection of Kissing Point Road and the southern limit of Sturt Park.

The reticulation sewerage network consists of DN150mm, DN225mm and DN300mm Vitrified Clay pipes, generally laid within privately owned land. The reticulation sewerage network and sewer carrier were laid circa 1958, with some reticulation sewers remediated with an internal lining.

The preliminary analysis of the proposed discharge loadings on the existing network was conducted to determine ability of the system to accept the additional loading generated by the development. Although the outcome as per summary initially reflects that the existing system may be optimised through size changes, other constraints are deemed to influence the network optimisation such as:

- the age and condition of the existing sewerage network;
- alignment of the existing sewerage network, some realignments will be needed;
- maintaining service to upstream properties and catchments while developing precincts;
- natural topography
- other existing utility services and stormwater infrastructure

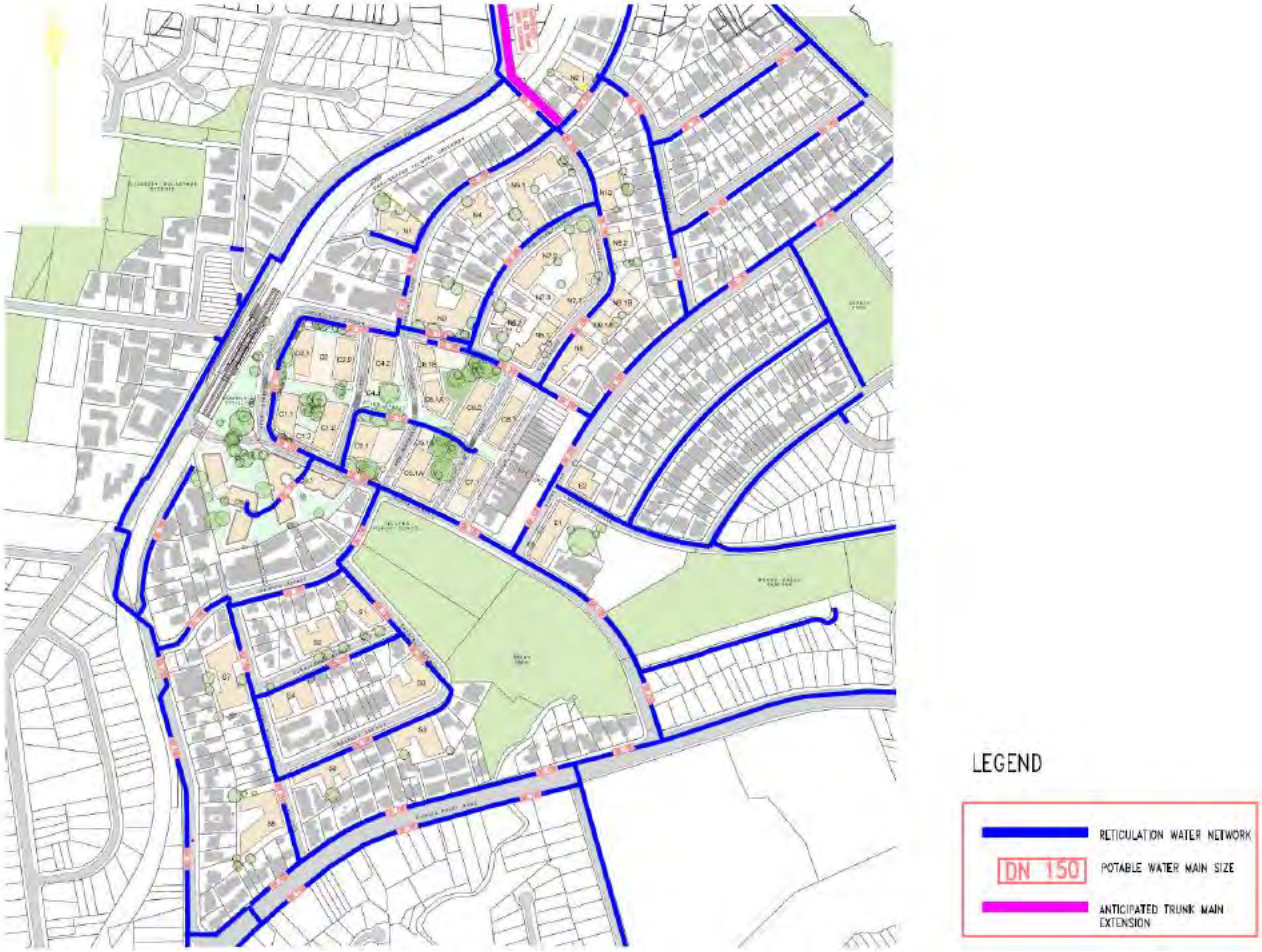
Further assessment of the proposed internal development loadings on downstream systems external to the site boundaries would be undertaken by Sydney Water following a concept consent for redevelopment. Sydney Water have been provided with the anticipated loadings to assess the capacity of external carrier network infrastructure and to identify remedial works and or amplification to their system.

A feasibility application was lodged with Sydney Water Corporation on 25 May 2020. Sydney Water normally have 60 days in which to respond, however with a feasibility and a project of this size and complexity there is no set time limit. It is expected that the outcome of the feasibility will be a platform for further discussion and planning to supply sections of new system within the precincts and or upgrades that meet Sydney Water Corporation's design criteria for sewerage systems.

6.14.2. Potable Water

The potable water reticulation network consists of DN100mm, DN150mm, DN200mm and DN250mm Cast Iron Cement Lined (CICL) pipes, generally laid 2.6m from the property line within public footpath area (illustrated in **Figure 72**). The reticulation water network was laid circa 1956, with some reticulation laid as early as 1911. The potable water supply is from the Mobbs Hill water reservoir located some 2km to the North East at the intersection of Pennant Hills Road and Marsden Road.

Figure 72 Potable water reticulation network



Source: JWP

A modelling analysis by a hydraulic engineer on the existing network will determine ability of the system to accept the additional loading generated by the development. Upgrade to the existing reticulation network will be required by the developer. There would be some potential subsidy from Sydney Water due to broader area benefits. Although future detail modelling will determine sizing requirements there are other constraints deemed to influence network upgrades such as:

- the age and condition of the existing potable water network;
- alignment of the existing potable water network;
- maintaining service to adjacent properties while developing precincts & upsizing of mains; and
- other existing utility services and stormwater infrastructure.

It is also anticipated that a DN450mm or potentially a DN375mm trunk lead-in main will be required to be from an existing DN500 main at the intersection of Adderton Road and Homelands Avenue or possibly from the DN600mm main slightly further north along Adderton Road (illustrated in **Figure 72**).

With the lead-in watermain there are two options to allow for crossing the Parramatta light rail line via:

- The northern end of the site at the bend in Adderton Rd connecting to Marshall Rd. Favourable level differences exist at this location. The lead-in would then continue down Marshall Rd to the core precinct.
- The new link road between Adderton Rd and Sturt St. This is a slightly longer route with additional constraints at traffic control signals.

In both options an opportunity exists with early works to plan for and construct a services culvert under the rail line due to the construction program for Parramatta light rail.

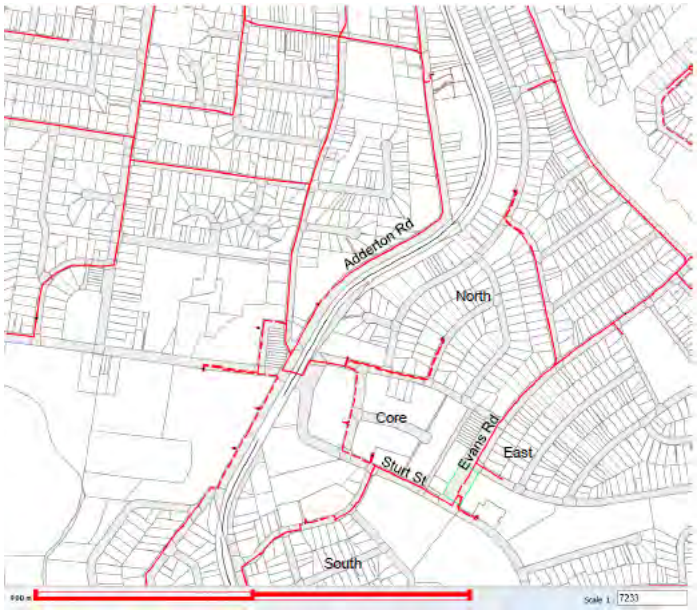
Multi storey buildings normally require booster systems as they are too tall to be supplied by normal pressure in the reticulated mains. The detail of boosters required would be determined at time of Section 73 application to Sydney Water.

Further assessment of the proposed internal development loadings on existing systems will need to be undertaken following the feasibility assessment response from Sydney Water. Sydney Water have been provided with the anticipated loadings to assess the capacity of their network infrastructure and to initially identify remedial works and or amplification to their system.

6.14.3. Electricity

The existing area is supplied from the Endeavour Energy 11kV Zone Substation called Dundas Zone Substation. Dundas Zone Substation is located in Jenkins Road, Carlingford which is approximately 1km north of the proposed development.

Figure 73 Electricity high voltage reticulation



Source: Endeavour Energy GIS System

As illustrated in **Figure 73** above the site is fed from a mixture of aerial and underground 11kV HV cables (the dashed red lines represent underground cable and the solid represents aerial).

There are approximately seven existing pad mount substations and pole mounted transformers in the area, however some of these may be removed during the redevelopment.

There are three existing feeders serving the area, two from the Dundas Zone substation and one from Rydalmere Zone Substation. One feeder from Dundas runs as an aerial feeder along Adderton Road, the second one runs aerial along Brand Street from the north. The feeder from Rydalmere enters from the south.

Additionally, there is an aerial transmission line running through the site, generally along Brand Street Fullarton Street, Sophie Street, Evans Road and Sturt Street down to Kissing Point Road.

As part of the redevelopment, existing overhead electricity would be placed underground where possible, Figure 74 indicates the proposed extent for undergrounding of existing aerial services.

Figure 74 Extent of powerlines to be undergrounded

Source: JWP]

Figure 75 Undergrounding of existing overhead electricity lines

Picture 47 Existing overhead powerlines

Picture 48 Indicative underground powerlines

Source: JWP

Undergrounding the transmission line will be a significant exercise and is required to be designed by a specialist designer registered with Endeavour Energy for overhead transmission design. Where new streets are constructed and where existing cables are relocated underground, it is envisaged that the streetscape would be improved with the installation of smart poles and more decorative style of light poles, as illustrated in **Figure 75** above.

Due to the number of units proposed for the development, four (4) new 11kV high voltage feeders will be required and installed in a staged manner over the construction of the development and installed underground from the Dundas Zone Substation which is located 1km north of the site.

The installation of the feeders would be staged as follows:

- Stage 1 – install pit and pipe conduits underground from Dundas Zone substation. Conduits would have capacity for 4 x 11kV feeders, however only 1 x 11kV feeder cable would be installed.
- Next Stage – run additional 3 x 11kV feeders in the spare conduits when required.

The route to the site is complicated due to having to cross the existing railway line. **Figure 76** indicates two options for the feeder routes. It may be possible to amend the blue coloured route to enter the site via the new link road between Adderton Rd and Sturt St. It also should be noted that as this is a new development, Endeavour Energy will more than likely insist the new feeders are installed underground their entire length.

Figure 76 High voltage feeder routes

Source: JWP

Initially, parts of the north, south and possibly east can be serviced from the existing HV network. Later, extra supply will be needed subject to staging. Very early work with the core redevelopment can be supplied from existing supply but this is expected to be exceeded quickly and hence the first of 4 new 11kV feeders will need to be brought in for the first significant stage of core redevelopment. The other 3 feeders would follow depending on staging.

A technical review request has been submitted to Endeavour Energy to confirm the required 11kV feeders for the site.

6.14.4. Gas

A DBYD search was undertaken and it was found that low pressure (210kPa) nylon gas lines exist in and around much of the site. The plans show:

- a 110mm dia main along the north side Kissing Point Rd, east of Sturt St
- 75mm dia mains along the eastern side of Bourke St, south side of Manson St between Bourke St & Sturt St, part of the northern side of Sturt St, all of Evans Rd, and Kissing Point Rd west of Sturt St.
- a 50mm dia main along part of Bernaud Lane
- 32mm dia mains along Chestnut Ave, Cunningham St, Wade St, Shortland St, Figtree Ave, The Parade, Marshall Rd, Moffatts Drive, Tilley St, Simpson St, Sophie St, and part of Adderton Rd

Jemena advised in May 2020 that natural gas services are available within the CPA and could be extended to supply any proposed development in the CPA depending upon its commercial viability.

Natural gas infrastructure exists in the majority of streets nominated in the CPA. It is currently sized according to the existing building densities and an anticipated natural gas network amplification will be required to specifically support the Core area adjacent to future Telopea Light Rail Station. Additional network may be required along the new extension of Marshall Rd and Wade Lane subject to building hydraulic design considerations.

Jemena is working to develop a network strategy which will support the CPA and would be completed following a Concept consent for the redevelopment.

Based on the preliminary advice from Jemena, gas supply and reticulation to the CPA is not envisaged to present a constraint. Some amplification of mains will be required depending on the gas needs in buildings. Also, existing gas connections will need to be temporarily decommissioned at time of demolition of existing buildings. New connections could then be made where needed.

6.14.5. Communications

National Broadband Network (NBN)

A DBYD search was undertaken and it was found that that the Masterplan area has substantial NBN network coverage consisting of fibre along roads and most likely some copper network into building areas.

JWP has provided the following advice based on DBYD information and NBN experience from other projects:

- In part of the core area the existing network alignment clashes with the Masterplan. These lines would be relocated where there is a clash and, in some cases, redundant lines removed.
- Some new cable alignments would be constructed such as along new Marshall Rd, and part way along the new link road over the light rail line between Sturt St and Adderton Rd.
- If additional cable capacity is required these could be hauled in from the nearest high capacity fibre connection node which could be on Adderton Rd, Kissing Point Rd or Pennant Hills Rd. The backhaul lead-in routes would be determined at time of application to NBN Co. It is expected that capacity increases could be provided incrementally over time especially for the staged redevelopment of the core area.
- Some minor reconfiguration of the network connections in conduits in roads may be necessary to provide additional capacity for core area especially in the more higher density section adjacent to Telopea light rail station.

- As the NBN network may use existing Telstra pits it is possible that some pits may need replacement due to asbestos concerns. This is a detail and cost issue that is resolved at time of construction.

Based on the DBYD information, extent of existing network coverage and the relatively small network changes needed for NBN over the Masterplan area, the site can be easily serviced.

Telstra

A DBYD search was undertaken and it was found that that the area has an extensive Telstra network of copper cabling. The network covers all parts of the redevelopment and for a long time operated as a component of the key telecommunications network for the suburb of Telopea.

There is a limited extent of Telstra fibre optic cabling in the core area and with some extension to the south.

A small section of Pipe Networks (TPG) cabling exists in the Telstra conduit on the northern side of Sturt St only in the area near the present Dundas Branch Library and Community Centre.

Much of the old cooper network is now superseded by the NBN. Subject to future acceptance from Telstra, much of the old copper cabling could be removed at time of redevelopment. The fibre optic network is still in operation and would likely need to be retained if it cannot be replaced by or incorporated within NBN services. Fibre connections to key Telstra equipment in the core and south areas would need to be retained. Some service relocation would be required where there is a clash with new building envelopes. Details of relocations would be resolved after a Concept consent for the redevelopment is obtained.

Next to the intersection with Sturt St and Manson St there is Telstra equipment on a high steel pole. This pole may need to be removed and the equipment placed on top of a new building. There is also equipment in a cabinet in Sturt Park next to Chestnut Ave which may need to be retained. These equipment items can be resolved at a future time with Telstra as part of staged works.

The Pipe Networks cable small section and any buildings connections would be managed closer to time of redevelopment construction planning.

Telstra provides full mobile coverage of the Telopea area and currently the area is serviced by 4G. Fifth generation (5G) services are being progressively rolled out and is expected to be soon available in the Telopea area. Mobile coverage especially 5G is partly an alternative to cable networks. In some cases, Telstra's 5G network could be a viable alternative to NBN services.

Optus

An extensive overhead Optus network is present on electricity poles. An update with Optus was requested in May 2020 who advised the network components were:

- main fibre running through part of the centre of the site – all of which is overhead
- an overhead hybrid fibre cable network for most of the Masterplan area except for some gaps in the core. The hybrid is a mix of fibre and coaxial cables.
- a large number of overhead property connections throughout the north and south areas and part of the core. These connect to the hybrid network.

In the core, north and east areas, part of the south area the existing overhead electricity network will be placed underground. As a consequence, the existing overhead Optus network will need to be also placed underground. Optus has advised the network undergrounding can be provided and saw no impediments. Early planning is needed as some road verges could become congested with utilities.

New service connections to the Optus network could be potentially achieved if not covered by NBN. Use of the Optus hybrid fibre network to be considered as part of NBN services.

Optus provides full mobile coverage of the Telopea area with next generation 5G services becoming progressively available. Mobile coverage is partly an alternative to cable networks.

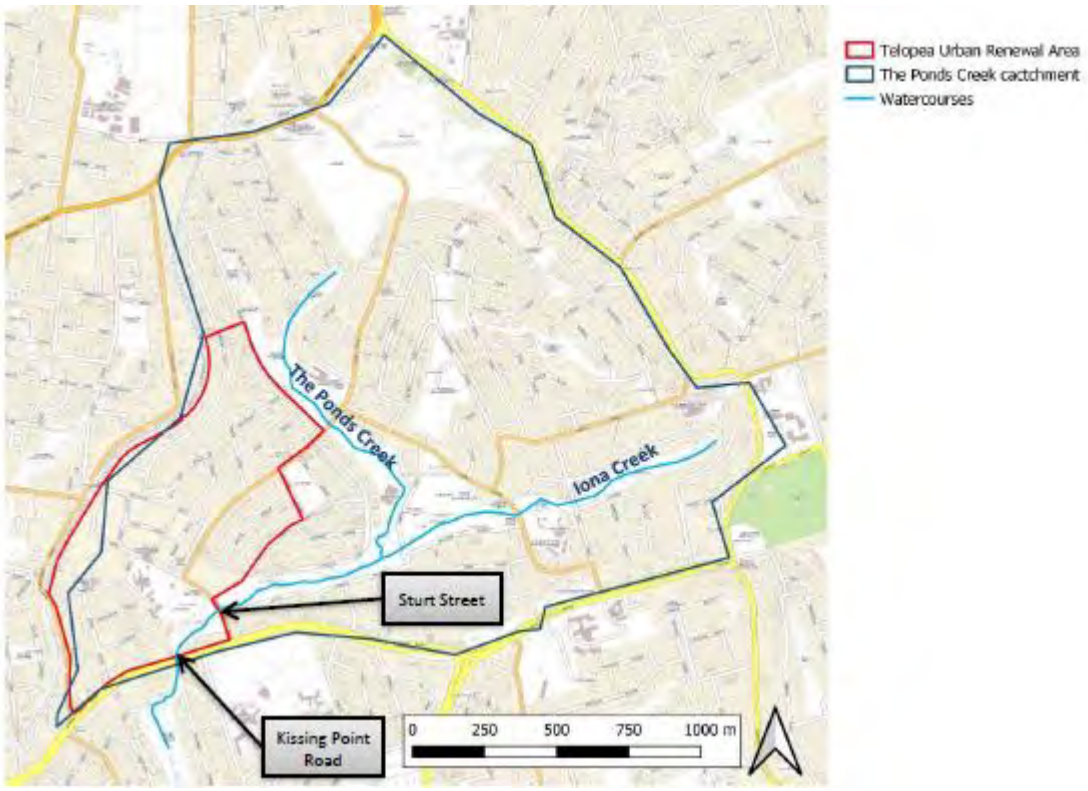
A significant Optus cable network is available for most of the CPA which can be augmented and placed underground. New cable connections capability is also available. No concerns are foreseen from Optus with servicing for Telopea redevelopment. Details of cable changes would be resolved at time of application following Concept consent for the redevelopment.

6.15. FLOODING

BG&E have prepared a Flood Assessment (**Appendix DD**) which considers the flood risks associated with the redevelopment of the CPA. The assessment focuses on mainstream flooding, namely from the nearby The Ponds Creek. As Stage 1A is located away from The Ponds Creek it is not subject to mainstream flooding and is not considered in detail within the assessment.

The Ponds Creek flows to the east of the Telopea CPA as shown in Figure 77. The Ponds Creek catchment to the bridge at Kissing Point Road has an area of 3.3 km². East of Brand Street the creek flows from northwest to southeast through a dedicated reserve and meets Iona Creek downstream of Quarry Road. The creek then flows east to west and crosses below Sturt Street to Sturt Park. At Sturt Park, The Ponds Creek meanders towards the south, below Kissing Pint Road and towards Marri Badoo Reserve at the rear of residential properties.

Figure 77 The Ponds Creek Catchment



Source: BG&E

Flood Modelling Methodology

Whilst previous flood assessments have been undertaken, to ensure the recent Australian Rainfall and Runoff (ARR) 2019 updates are appropriately captured, a new XP-RAFTS hydrology model and TUFLOW hydraulic flood model were developed.

The XP-RAFTS hydrology model showed the 45 minute storm as critical at the Kissing Point Road crossing and the 30 minute storm as critical at the Sturt Street crossing. This indicates that the critical storm duration (the duration which produced the highest peak flows for a given probability event) lies between 30 and 45 minutes.

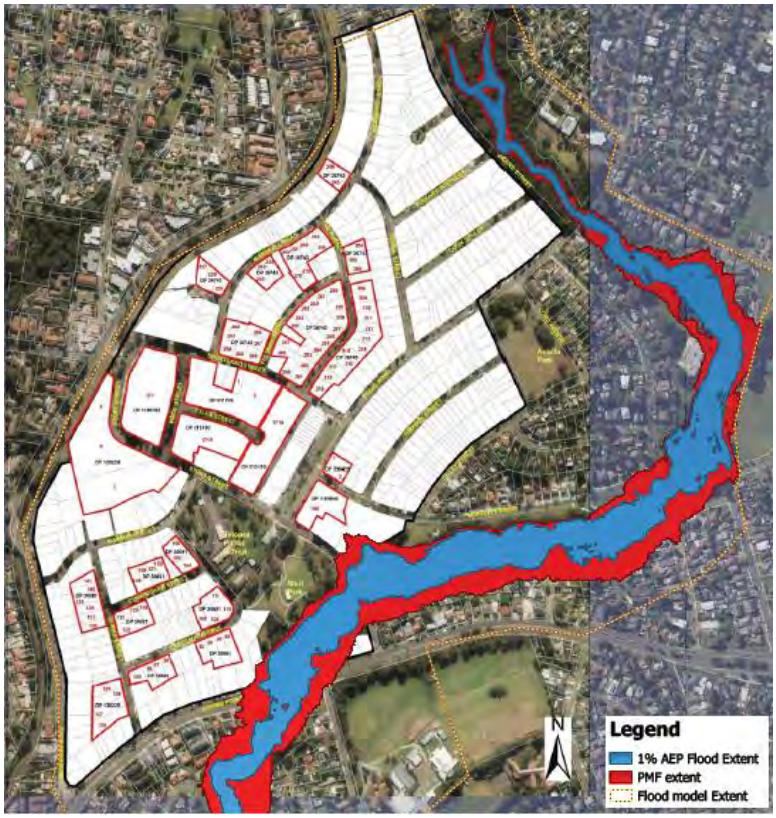
A TUFLOW model was developed to define flood levels relevant to the site. Using the hydrographs established in the hydrology assessment, TUFLOW allows for the 2-dimensional assessment of flood flows over a surface (DEM) and outputs flood levels, depths, velocities and other flood behaviour characteristics.

Two structures being box culverts associated with vehicular crossings have been included in the model at Sturt Street and at Kissing Point Road.

Flood Behaviour

Flood maps generated for the 1% Annual Exceedance Probability (AEP) and Probably Maximum Flood (PMF) are shown in Figure 78 below. Whilst some properties in the southern portion of the Telopea Urban Renewal Area are affected by the PMF flood event no properties within the Telopea CPA are affected by the 1% AEP or PMF.

Figure 78 The Ponds Creek Flood Extent (1% AEP and PMF)



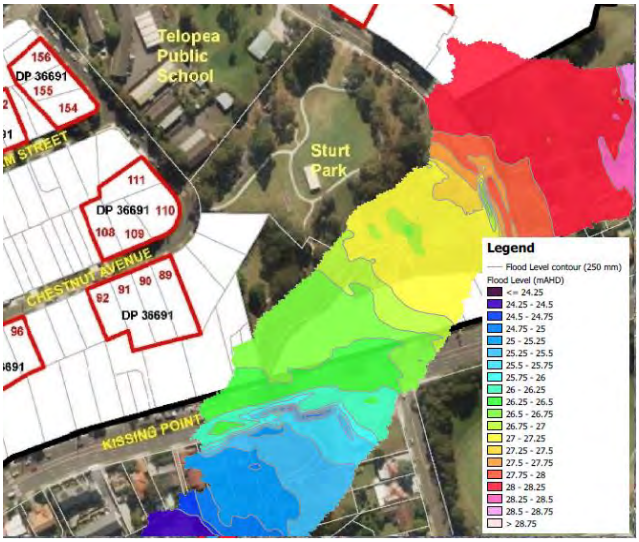
Source: BG&E

Flood Levels

Flood levels for the 1% AEP and PMF are presented in Figure 79 below. The flood extents do not encroach onto lots identifies as part of the Telopea CPA, however, as noted above do affect lots within the Urban Renewal area. At both Sturt Street and Kissing Point Road crossings of The Ponds Creek, the limited capacity of the culverts to convey the 1% AEP flow causes afflux on the upstream side of the culvert before overtopping the roads.

Figure 79 The Ponds Creek Flood Levels (1% AEP and PMF)

Picture 49 1% AEP Flood Levels



Picture 50 PMF Flood Levels

Source: BG&E

Whilst no lots within the CPA are impacted by the 1% AEP or PMF, properties on Chestnut Avenue and Kissing Point Road are subject to flood levels as follows:

- Chestnut Avenue (Lots 89, 90, 91 and 92 on DP 36691)
  - 1% AEP = 25.3 mAHD
  - PMF = 26.7 mAHD
- Kissing Point Road (Lot 100 on DP 1169946):
  - 1% AEP = 25.3 to 25.5 mAHD
  - PMF = 26.7 to 27.0 mAHD
- A 500mm freeboard is applied to the 1%AEP to determine the required flood planning level.
- **Flood Hazards**

Flood hazard for the 1% AEP and PMF based on the ARR 2019 and Australia Institute for Disaster Resilience Guidelines is illustrated in Figure 80.

During the PMF the hazard on Sturt Street exceeds H3 and is therefore considered as unsafe for vehicles and people. At Kissing Point Road, the hazard is up to H3 and is also considered unsafe for vehicles and people. Alternative access to the Urban Renewal area and CPA is available via alternative routes should the Sturt Street crossing of The Ponds Creek be closed.

Figure 80 The Ponds Creek – Flood Hazard (1% AEP and PMF)

Picture 51 1% AEP Hazard

Picture 52 PMF Hazard

Source: BG&E

Flood Impact Assessment

Paramatta DCP 2011 stipulates that *filling of land up to 1:100 Average Recurrence Interval (ARI) (or flood storage area if determined) is not permitted. Filling of and above 1:100 ARI up to the Probable Maximum Flood (PMF) (or in flood fringe) must not adversely impact upon flood behaviour.*

The proposed CPA and Stage 1A are located outside of the modelled flood levels and there will be no impact on the existing flood behaviour of The Ponds Creek. Should there be any changes to surface levels within the flood extent as a result of future proposed work (not part of this SSDA) further flooding assessment would be required to ensure there are no adverse increase in flood behaviour as a result.

Parramatta DCP 2011 aims to prevent any intensification development in high flood risk precincts or floodway's. A floodway is defined in the Floodplain Development Manual and associated Floodplain Risk Management Guideline as areas of high velocity and depth where the flood hazard is high. As the proposed lots which comprise the Telopea CPA are located out of the 1% AEP flood extent they are not affected by floodway areas.

While the lots of the proposed Telopea CPA are located away from the 1% AEP and PMF flood extents, a 500 mm freeboard is required when determining the Flood Planning Level. The applicable flood planning levels for properties on Chestnut Avenue are 25.8 mAHD (1% AEP) and 27.2 mAHD (PMF). The lowest elevation within the Telopea CPA for lots on Chestnut Drive is about 28.5 mAHD. This level is some 3 m above the Flood Planning Level and no further flood controls in relation to flooding from The Ponds Creek are anticipated. For future redevelopment of flood affected lots on Kissing Point Road (not part of this SSD DA), flood planning controls will need to be considered.

Mitigation Measures

- Future development on Lot 100 on DP 1169946 on Kissing Point Road will require additional flood investigations and be subject to a flood planning level (including freeboard).
- Any changes to surface levels within the flood extent as a result of future proposed work (not part of this SSD DA) will require further flooding assessment to ensure there is no adverse increase in flood behaviour as a result.

6.16. STORMWATER AND DRAINAGE

JWP have prepared an Integrated Water Management Plan (**Appendix EE**) addressing the water quality and water quantity measures required to achieve Parramatta City Councils water management objectives. The Integrated Water Management Plan address both the Stage 1A development and the roads proposed within the core precinct of the CPA as outlined in **Figure 81**.

JWP have undertaken a preliminary hydraulic assessment to inform the DA drainage design with further hydraulic assessments to form part of the Construction Certificate and detailed design of subsequent precincts of the CPA.

Figure 81 Stormwater Assessment Site Area

Source: JWP

The following studies and control documents have been considered in the development of the Integrated Water Management Plan:

- *Parramatta Development Control Plan*, City of Parramatta Council, 2011
- Development Engineering Design Guidelines, City of Parramatta Council, June 2018
- On-site Stormwater Detention Handbook, Upper Parramatta River Catchment Trust (UPRCT), Fourth Edition December 2005

The On-site Detention (OSD) requirements for the Telopea CPA have been determined based on Council's Development Engineering Guidelines and the UPRCT On-site Stormwater Detention Handbook. The Telopea CPA is situated outside the UPRCT catchment area and therefore, the site is subject to the requirements for new development outside the catchment. The Telopea CPA is located in the Subiaco/Ponds Creek catchment and is therefore subject to the requirements of **Table 30**.

Table 30 Permissible Site Reference Discharge (SRD) and Site Storage Requirement (SSR)

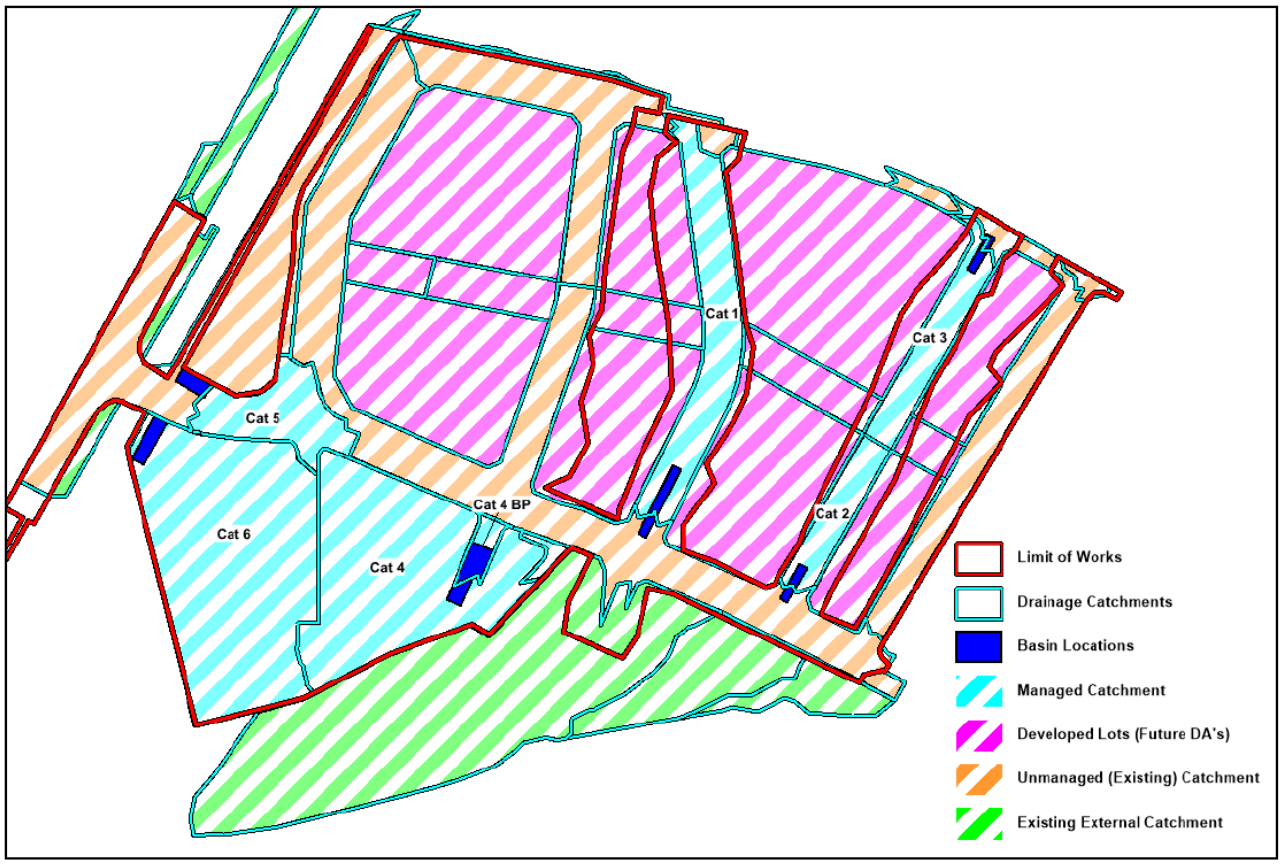
Catchment	**SRD** L/s/ha	**SSR** M3/ha	**SRD** L/s/ha	**SSR** M3/ha
Subiaco Creek	40	284	150	438

Source: Development Engineering Design Guidelines

The UPRCT OSD calculation sheet provided by Council has been utilised to inform the detention requirements for each catchment.

Sub-catchments in the subject area have been delineated based on the site grading development application (DA) design for the Telopea Masterplan. These catchments are illustrated in **Figure 82** below.

Figure 82 OSD Catchments



Source: JWP

OSD devices have been proposed for the newly proposed roads and Stage 1A as illustrated in **Figure 82** above. Future modelling will be required to confirm OSD required to confirm OSD requirements for the core lot parcels within the limit of works and external to Stage 1A.

The site storage requirements to ensure peak flow management for each of the managed catchments is shown in **Table 31**.

Table 31: Total Site Storage Requirements (SSR)

Basin/ Catchment ID	Catchment Area (ha)	Total SSR (m³)
1	0.33	143
2	0.11	50
3	0.16	68
4	0.67	317
4 (by pass)	0.05	
5	0.18	80
6	0.88	384

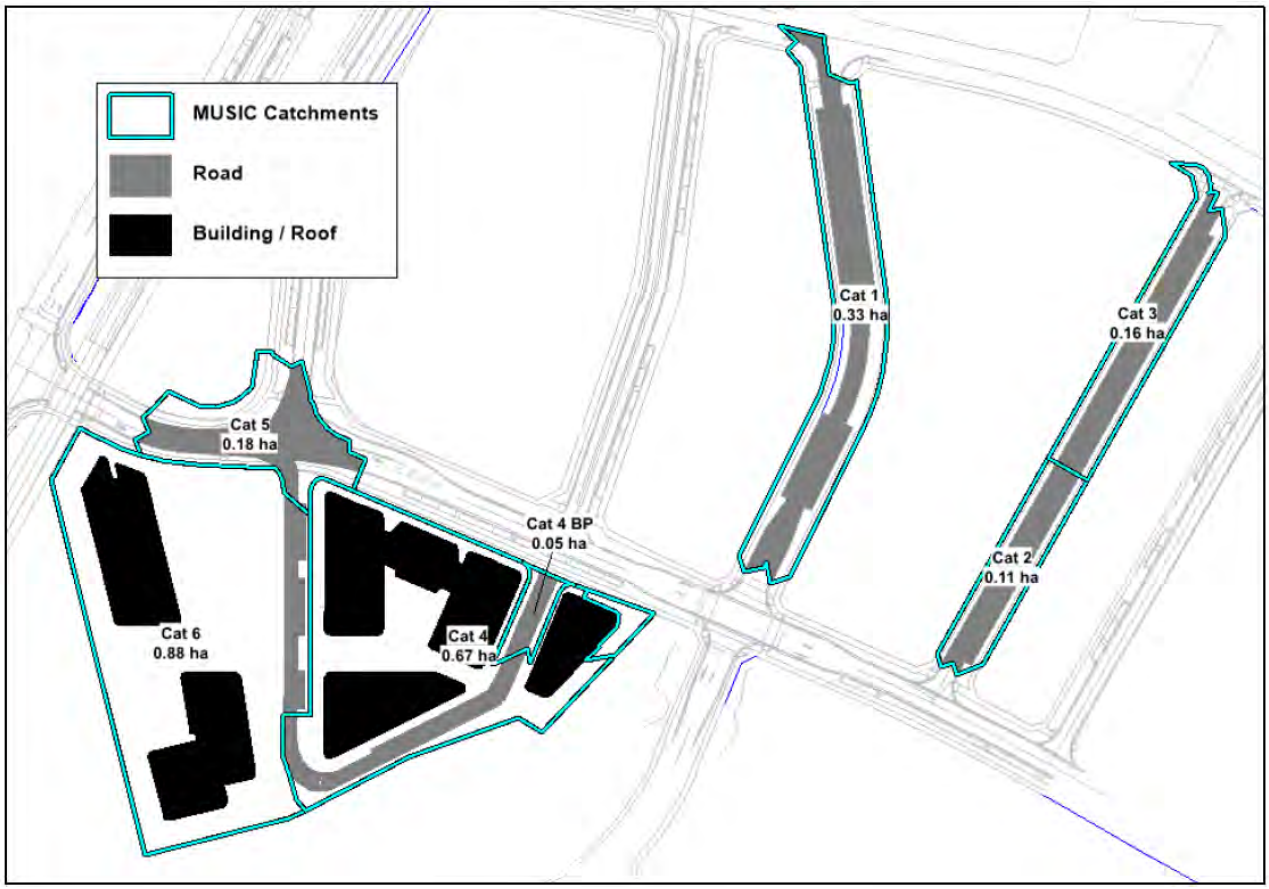
Source: JWP

Stormwater quality

Stormwater quality analysis was undertaken using the Model for Urban Stormwater Improvement Conceptualisation (MUSIC) Version 6.3. The MUSIC modelling was undertaken to demonstrate that the stormwater management system proposed will deliver the required pollutant reduction targets specified in Council's current guidelines.

Parramatta City Council requires the use of the 'NSW MUSIC Modelling Guidelines' (BMT, 2015) in the development of MUSIC models to represent the generation of various pollutants by different land uses in support of the future development. The MUSIC model layout is show in **Figure 83** below.

Figure 83 MUSIC Catchments



Source: JWP

The proposed treatment train consists of:

- Catchment 1 (Basin 1) − 21 x 690 mm high StormFilter™ Cartridges
- Catchment 2 (Basin 2) − 7 x 690 mm high StormFilter™ Cartridges
- Catchment 3 (Basin 3) − 10 x 690 mm high StormFilter™ Cartridges
- Catchment 4 (Basin 4) − 6 x 690 mm high StormFilter™ Cartridges − 8 x OceanGuards® (pit filter inserts) (2 of which are proposed in the bypassing catchment)
- Catchment 5 (Basin 5) − 11 x 690 mm high StormFilter™ Cartridges
- Catchment 6 (Basin 6) − 7 x 690 mm high StormFilter™ Cartridges − 12 x OceanGuards® (pit filter inserts)

Each treatment device has been designed to achieve the necessary pollutant reductions in isolation. It is noted that the driving pollutant is different across different catchments which has resulted in the water quality solution exceeding the required pollutant reductions.

A small portion of catchment downstream of Basin 4 (Cat 4 BP) has been assumed to bypass the device. This is compensated for within the treatment measures proposed in Catchment 4 (StormFilter cartridges and OceanGuard pit inserts).

Table 32 Pollutant Load Targets and Reductions

Pollutant	**Target Reduction Required by Parramatta Council**	**Total Reduction Achieved**
Total Suspended Solids (TSS)	85%	88.6%
88.5Total Phosphorus (TP)	60%	69.8%
Total Nitrogen (TN)	45%	47.1%
Gross Pollutants (GP)	90%	100%

Source: JWP

Mitigation Measures:

- Six (6) detention basins will be located throughout the site to deliver the site discharge and storage requirements as outlined in the Upper Parramatta River Catchment Trust (UPRCT) Handbook (4th ed., 2005).
- StormFilter™ chambers containing 690 mm high Psorb cartridges will be co-located in each of the basins in order to deliver Council's stormwater pollutant reduction requirements.
- OceanGuard® pit filter inserts will be located throughout each of the Stage 1A development parcels to manage the anticipated gross pollutants.

The proposed Integrated Water Management Plan is consistent with Parramatta City Council's requirements and provides a means to ensure the environmental outcome can be achieved, sets the formwork for its construction and allows for the granting of a development consent.

6.17. ECOLOGICALLY SUSTAINABLE DEVELOPMENT

The Telopea Sustainability Report included at **Appendix FF**, has been prepared by Frasers to explore a range of sustainability strategies, and outline examples of best practice sustainability building principles that will be delivered as part for the Concept Plan and Stage 1A development. A key outcome of the redevelopment of the site will be to deliver a more sustainable community than it presently provides, in line with Fraser's standing as the foremost provider of Green Star communities in Australia.

The key sustainability commitments for the Telopea CPA include:

- 5 Star Green Star Design and As Built v1.1, as the minimum for all buildings;
- 6 Star Green Star Communities v1, for the Telopea CPA;
- a 'Real Utilities' integrated infrastructure solution; and
- a WELL Community certification for the CPA.

These commitments will be achieved across the staging and delivery of the development, drawing on the various strategies in the design and operation of the CPA. These initiatives address the management and maintenance of buildings, the selection of construction materials, demand for resources such as water and power, the use of sustainable modes of transport, impacts to the local ecosystem, emissions, and general community wellbeing.

Integral Group Consulting Engineers have undertaken a peer review of the Telopea Sustainability Report prepared by Frasers against the Sustainability Benchmarks identified within the Telopea PDA.

This peer review or Expert Sustainability Certificate is included at Appendix QQ and confirms that the requirements of the Sustainability Plan have been (and continue to be) complied within the CPA and Stage 1A SSD DA packages. Subject to the implementation of the stated initiatives within the report that correspond with the stated benchmarks and these scorecards the benchmark commitments can be considered to achieved for this stage of design.

The proposed initiatives are discussed in further detail below.

Management

Telopea will utilise practices and processes that support best practice sustainability outcomes throughout the different phases of a project's design, construction and ongoing operation. These practices will include exploring:

- A comprehensive Occupants User Manual
- Building Operations – namely Performance, Commissioning and Tuning
- Building Specific Climate Resilience Strategies

Indoor Environmental Quality

Through initiatives that enhance the comfort and well-being of occupants, Telopea CPA will look to address issues such as air quality, thermal comfort and acoustic comfort including:

- Thermal comfort via NatHERS and BASIX commitments
- Visual comfort via extensive landscaping and visual connection
- Indoor Air Quality via ventilation and the provision of outdoor air to apartments

Energy

Built form at Telopea will be designed and constructed to reduce overall greenhouse emissions from operations by addressing energy demand and reduction, use efficiency and generation from alternative sources. Multiple proposed initiatives will be investigated to address this including, but not limited to:

- Commitments around NatHERS and BASIX targets for all residential buildings
- Commitments around NABERS Energy and NABERS Water for all non-residential uses

- Inclusion of an integrated infrastructure solution (Real Utilities)
- Efficient buildings systems and Carbon Neutrality in operations

Transport

Telopea will look to reduce the dependency of private car use as an important means of reducing overall greenhouse gas emissions, as well as encouraging the provision of alternative forms of transportation. Some initiatives being explore include:

- Provision of car sharing facilities for residents
- Extensive end of trip facilities for residents
- Provisions for future Electric Vehicle infrastructure

Water

Built form at Telopea will aim to reduce the consumption of potable water through measures such as the incorporation of water efficient fixtures and building systems and water re-use. Some of these initiatives may be achieved through:

- Commitments around NABERS and BASIX targets for all residential buildings

Materials

Telopea will aim to address the consumption of resources for the project, by encouraging the selection of low-impact materials. Areas of investigation to support this include:

- Utilisation of sustainable materials
- 1% construction waste to landfill

Land Use and Ecology

A key focus of Telopea is to reduce the negative impacts on the sites' ecological value as a result of the development through retention of existing trees and maximising deep soil zones.

Emissions

Telopea aims to reduce its environmental impacts from 'point source' pollution and reduce their effects on the atmosphere, watercourse and native animals through the following:

- Ensuring Water Sensitive Urban Design (**WSUD**) principles are applied throughout the precinct
- Reducing the impacts of light pollution from up-lighting

Innovation

Implementation of innovative practices, processes and strategies that promote sustainability in the built environment will occur throughout the lifetime of the development ensuring Telopea is recognised as one of the most progressive projects in the country. A number of innovative concepts currently being explored on the project include:

- Transparent financial reporting on sustainability initiatives
- Nominal to no cost heating for social housing residents
- Carbon Neutral buildings in operations
- A strong focus on community health and wellbeing

The SSD DA confirms the commitment to achieving best practice sustainability strategies. It demonstrates that there are opportunities to implement best-practice sustainable building principles and improve the environmental performance of the community.

6.18. BCA AND ACCESSIBILITY

Building Code of Australia Assessment

A review of the Stage 1A buildings against the applicable requirements of the BCA has been undertaken by City Plan (**Appendix GG**).

Based on the assessment, the following non-compliance's with the deemed-to-satisfy (DtS) provisions of the BCA, in relation to the proposed residential building work, have been identified and are proposed to be dealt by justification against the performance requirements of the BCA in accordance with BCA Clause A2.2.

Table 33 BCA non-compliances

BCA Clause	Performance Solution
C2.14 – Smoke separation in Public corridors in Class 2	Public corridors within the residential portion of the building are generally separated by smoke proof walls at 40m intervals however the following areas exceed 40m and are proposed to be addressed via a fire engineered performance solution; Tower B - Upper ground floor Approx. 54m. Tower D - Upper ground floor Approx. 46m. Tower E - Upper ground floor Approx. 55m.
C1.1 – 3.6 Roof lights	Roof lights are not permitted to be located less than 3 m from another roof light in the adjoining SOU. Tower B - Distance between Roof lights are measured 2.10m being less than 3m. This is proposed to be Performance Justified.
D1.2 – Number of exits	The proposed development is generally provided with two exits to all areas with the exception of the following areas which is proposed to be performance justified: Basement 01 - Fire Pump Room (B01) Tower A - The lobby areas (LG -L2) Tower E - Unit E.LG.01 (LG)
D1.4 – Exit travel distance	The Deemed to Satisfy (DtS) provisions of the BCA require exit travel distances in the carpark areas to be no more than 20m to a point of choice (POC) and no more than 40m in total. The following areas within the basement design have extended travel distances that exceed DtS limits and will be principally justified by Performance Justification. Basement 02 - Main DB – Approx. 25.5m to POC - Access ramp between the east & west carpark – Approx. 47.5 m to Exit - Storage cage - Approx. 26m to POC Basement 01 - Storage room – Approx. 24m to POC - Storage cage – Approx. 22 m to POC

BCA Clause	Performance Solution
	- Access ramp between the east & west carpark – Approx. 47.5 m to Exit - Supply air room - Approx. 23m to POC The DtS provisions of the BCA require exit travel distances in the residential areas to be no greater than 6m from a unit to a point of choice (POC) or a single exit and area not within SOU are required to be no more than 20m to an exit or POC. The following areas below exceed the DtS limits and will be principally justified by performance justification: Tower A - B02 - Approx. 6.4m to POC - LG – L2 Approx. 8.3m to Exit Tower B - LG Approx. 9.1m to POC - UG Approx. 11.6m to POC - L1- L2 Approx. 11.2m to POC - L3- L13 Approx. 11m to POC Tower C - L1- L3 Approx. 10.8m to POC - L4 (Communal) Approx. 29m to POC Tower D - LG Approx. 8.3m to POC - UG Approx. 11m to POC - L1- L8 Approx. 10.8m to POC Tower E - L1- L7 Approx. 10.2m to POC
D1.5 – Distance between alternate exits	Exits that are required to serve as alternative means of egress must not be more than 45m apart in a residential building and not more than 60m in all other parts. The distance between alternative exits generally comply with the maximum DtS distances above with the exception of the following areas that are proposed to be Performance Justified: Basement 02 - Access ramp between the east & west carpark – Approx. 65 m between alternate exits Basement 01

BCA Clause	Performance Solution
	- Access ramp between the east & west carpark – Approx. 65 m between alternate exits Lower Ground - Access ramp between the east & west carpark – Approx. 63 m between alternate exits - Fire stairs between the North & South of the carpark – Approx. 62 m between alternate exits Exits required as alternative means of egress must be located not less than 9m apart and located so that the alternative paths of travel do not converge such that they become less than 6m apart. The following distances between exits are proposed to be addressed via a fire engineered performance solution: Tower C - The fire isolated exits serving tower C – Approx. 8.7m in lieu of 9m.
D1.7 – Travel via fire isolated exits	The DtS provisions of the BCA requires a fire-isolated stairway (FIS) or fire-isolated ramp to provide independent egress from each storey served and discharge directly, or by way of its own fire isolated passageway to a road or open space or into a covered area that is open for at least 1/3 of its perimeter and has an unobstructed height of not less than 3m and provides an unimpeded path of travel to a road or open space of not more than 6m. A performance solution is proposed to permit FIS discharge into covered area that is not open to 1/3 of its perimeter: Tower D - FIS discharge in covered area approx. 3.21m open in lieu of 5.13m (LG) Tower E - FIS discharge in covered area approx. 2.10m open in lieu of 2.52m (LG) Where a path of travel from the point of discharge of a fire-isolated exit necessitates passing within 6 m of any part of an external wall of the same building, measured horizontally at right angles to the path of travel, that part of the wall must have an FRL of not less than 60/60/60 and any openings protected internally in accordance with C3.4, for a distance of 3m above or below, as appropriate, the level of the path of travel, or for the height of the wall, whichever is the lesser. The discharge of the following exits requires occupants to pass part of the external wall which must have an FRL of not less than 60/60/60 and any openings protected internally in accordance with C3.4. The following walls and openings are located within 6m of the discharge pathway. A performance-based solution is proposed to justify DtS non-compliance: Tower B

BCA Clause	Performance Solution
	- 6 x FS exits with discharge at UG varies between 0.65m - 6m Tower D - 3 x FS exits with discharge at LG Approx. Tower E - 2 x FS exits with discharge at LG Approx. 1.10m
D1.10 – Discharge from exits	Discharge point of alternative exits must be located as far apart as practical. The following exits are not located as far apart as practical. Performance justification is required. Tower B - The two residential stairs (western) are located adjacent to each other (UG). - The two residential stairs (eastern) are located adjacent to each other (UG). Tower C - The two residential stairs are located adjacent to each other (LG).
Spec E1.3 – Fire Hydrants	A fire hydrant system must be provided in accordance with this clause to serve the whole building and must also be installed in accordance with AS 2419.1. Where internal hydrants are provided, they must only serve the storey in which they are located. There are currently a few fire hydrant pump rooms located in different locations across Basement 02 and Basement 01. Further design development is required at Construction Certificate stage. The fire hydrant booster is located adjacent the entry to Tower A and is not located within sight of the main entrance into the building and not facing the street, noting that there are multiple pedestrian entries. A Performance Solution is required to justify this technical noncompliance.
Spec E1.5 – Fire Sprinkler systems	The Deemed to Satisfy provisions of the BCA requires sprinkler valves to be in a secure room or enclosure which has direct egress to a road or open space. If the sprinkler valves are proposed to be located in the fire pump room located in the basement, this design will need to be addressed via a fire engineered performance solution.
Spec E1.5 – Fire Control Centres	The effective height of the united building is over 50m. A fire control room is required in accordance with Specification E1.8. There is a technical non-compliance as the fire control room is in Tower A and is not located from the front entrance of the building given there are multiple entries. Performance justification will need to address this.

Source: CityPlan

The BCA Report concludes that the design as proposed is capable of complying with the BCA and will be subject to construction documentation that will provide appropriate details to demonstrate compliance.

This report has identified areas of non-compliance with the deemed-to-satisfy provisions as outlined above and indicates the design intent to demonstrate compliance with the Performance Requirements of the BCA.

Where compliance with the Deemed to Satisfy provisions of the BCA cannot be achieved, an alternative solution will be developed prior to the issue of a Construction Certificate. The proposed design is considered to be capable of complying and compliance with the BCA is not deemed to have any likely significant impacts on the current design.

Fire Safety Assessment

A Fire Engineering Statement has been prepared by Affinity Fire Engineering and is provided at **Appendix GG**. Affinity Fire Engineering conclude that the Telopea CPA design is considered to not compromise the expected fire safety strategy, fire brigade intervention or conformance with the building regulations from a fire engineering perspective.

Affinity Fire Engineering's review of the Stage 1A building design concludes that the design incorporates features that have been identified to not meet the prescriptive Deemed-to-Satisfy (DtS) provisions of the BCA as detailed in **Table 33** above. As a result of the design not conforming to the DtS provisions of the BCA, the building solution applied shall be performance based rather than wholly prescriptively based design.

Accessibility Assessment

An Accessibility Report has been prepared by Wall to wall design consulting and is provided at **Appendix GG**. The report has been developed to ensure that ingress and egress, paths of travel, circulation areas and sanitary facilities comply with the relevant statutory guidelines including:

- Disability (Access to Premises – Buildings) Standards 2010;
- The NCC, Volume 1, Edition 2019, inclusive of NCC variations;
- Australian Standards – AS1428.1-2009, AS1735.12, AS/NZS2890.6-2009, AS/NZS1428.4.1 and AS4299-1995;

The proposed design is considered to be capable of complying with the relevant Australian Standard and compliance with these standards is not deemed to have any likely significant impacts on the current design.

Mitigation Measures

The detailed design of the development must ensure that the proposal complies with the applicable requirements of the BCA or appropriate alternative solutions should be developed and verified by a qualified BCA Consultant and the Access Consultant.

6.19. NOISE

White Noise Acoustics has been engaged to undertake a Noise Impact Assessment (**Appendix HH**) of the proposed Stage 1A residential development located at Telopea.

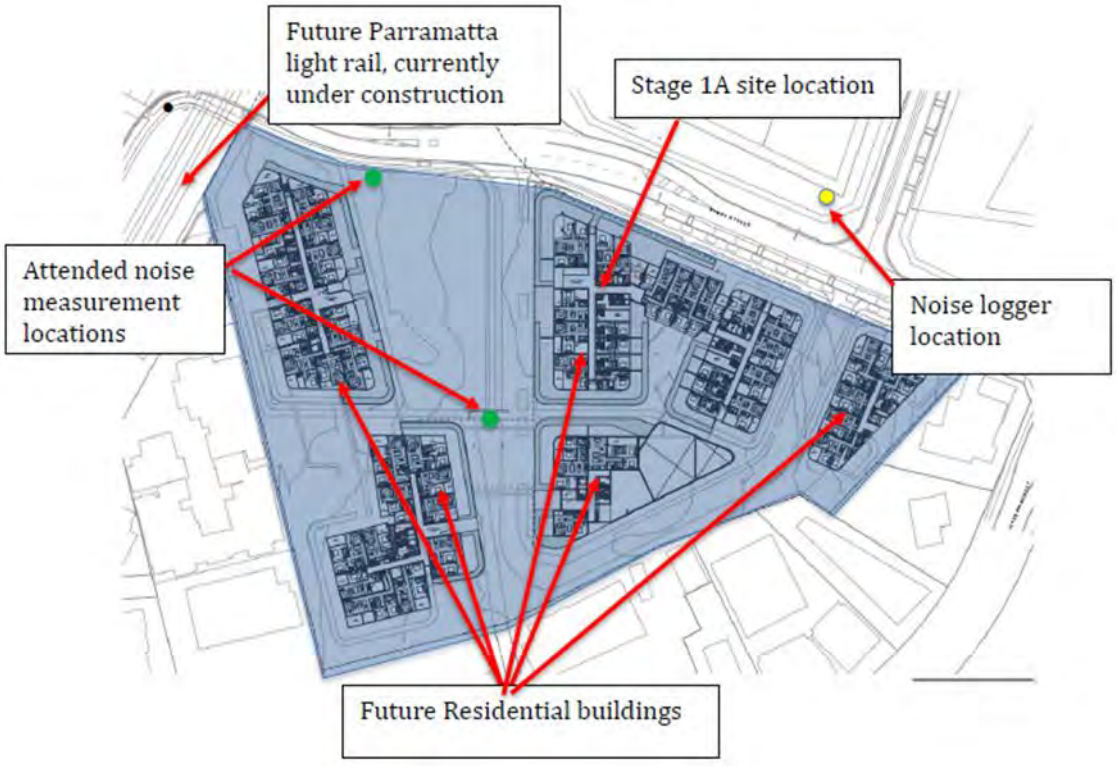
This assessment includes the acoustic investigation into the potential for noise impacts from the operation of the completed project as well as potential noise impacts from noise sources within the vicinity of the site which predominantly includes traffic noise on surrounding roadways and noise from the future operation of the railway line to the west of the site.

The site is located on roadways which are not defined as a busy road carrying over 40,000 Annual Average Daily Traffic (AADT) number, nor carries over 20,000 AADT as defined in Map 15 of the RTA's Traffic Volume Maps for Noise Assessment for Buildings on Land Adjacent to Busy Roads.

An attended noise survey of the site was undertaken to characterise the existing acoustic environment within the vicinity of the site. The survey included attended noise level measurements at the site, during various times of the day on the 4th April, 2020 as well as long term unattended noise logging which was undertaken between the 27th March and the 3rd April, 2020.

The noise logger was located to the north east of the site as detailed in **Figure 84**, the logger was positioned such that it was in a free field location and façade corrects were not required to be applied within the existing vegetate area.

Figure 84 Noise Logger Locations



Source: White Noise Acoustics

The attended and unattended noise locations were selected to obtain suitable noise levels for the assessment of background noise levels (L90 (t)) as well as the impact from traffic movements (Leq(t)). The results of the acoustic survey are detailed in the tables below which have been used as the basis of this assessment.

Table 34 Attended noise survey results

Measurement Location	**Time of Measurement**	**Recorded Noise level** Leq	**Background Noise Level** LA90, 15min dB(A)
Attended noise measurement - north	Day time	59 Leq, 5min dB(A)	49
Attended noise measurement - south	Day time	58 Leq, 15min dB(A)	48

Source: White Noise Acoustic

Table 35 Noise logger survey results

Measurement Location	**Time of Measurement**	**Maximum Repeatable** LAeq, 15min dB(A)	**Representable Background noise Level (RBL)** LAeq, 15min dB(A)
North east of site *(see **Figure 84** above)*	Day	51	45
	Evening	43	40
	Night	40	37

Source: White Noise Acoustic

Internal Noise Level Criteria

Internal noise levels within the future residential occupancies have been based on the relevant noise levels as detailed within both the Australian Standard *AS2107:2000 Acoustics - Recommended design sound levels and reverberation times for building interiors* and the requirements of the *Department of Planning Development Near Rail Corridor and Busy Roads – Interim Guideline* (DNRCBR) as detailed in **Table 36.**

Table 36 Design Recommended Internal Sound Levels DPIE and AS2107:2016

Type of Occupancy/ Activity	**Design sound level maximum**
Apartment common areas (e.g. foyer, lift lobby)	55 LAeq 15 min
Residential – Living areas	40 LAeq 24 hour
Residential – Sleeping areas (night time)	35 LAeq 9 hour[1]
Toilets	55 LAeq 15 min
Note 1: The relevant time period for bedrooms include the period from 10pm to 7am	

Source: White Noise Acoustic

Vibration Criteria

The potential for vibration impact from the operation of the future light rail located to the north of the site has been assessed for tactile vibration impact. As the proposed light rail is to be an above ground line and not within a tunnel the requirements for ground borne vibration is not required to be assessed based on the DNRCBR.

Vibration effects relating specifically to the human comfort aspects of the project are taken from the guideline titled *"Assessing Vibration – A Technical Guideline"* (AVTG). The AVTG recommends that habitable rooms should comply with the criteria therein which is in line with the requirements of British Standard *BS 6472:1992 "Evaluation of Human Exposure to Vibration in Buildings (1Hz to 80Hz)"*.

Table 37 Intermittent vibration impacts criteria (m/s1.75) 1 Hz-80 Hz, Vibration Dose Values (VDV)

Location	**Daytime Preferred Values**	**Daytime Maximum Values**	**Night-time Preferred Values**	**Night-time Maximum Values**
Residences	0.20	0.40	0.13	0.26

Source: White Noise Acoustics

As part of the assessment of the potential noise and vibration impacts of the future light rail which is to be located to the north of the site and is not operational at this time, the operational Sydney Light Rail in Haymarket (at a representative location of approximately 20m) has been used as a representative source.

The assessment included attended vibration measurements conducted on the 11th October, 2019 between 4pm and 4.45pm. Obtained vibration levels included a number of light rail passbys, including a period of 45 min which have been used to determine the period vibration exposure for the daytime and night-time periods Vibration Dose Values (VDV).

Table 38 Calculated VDV

Location	**Period**	**Criteria VDV m/s1.75** *(as per preferred VDV in **Table 37**)*	**Calculated VDV** (using loggers in Haymarket)
Future Residential Dwellings	Daytime	0.20	0.05
	Night-time	0.13	0.02

Source: White Noise Acoustics

Based on the results of the assessment of tactile vibration no additional acoustic treatment (or building vibration isolation) is required to comply with the relevant standards and ensure a suitable acoustic amenity for future occupants of the development.

Environmental Noise Intrusion Assessment

Internal noise levels within the future areas of the development will result from the noise intrusion into the building through the external façade including glass, masonry and other façade elements.

The recommended acoustic constructions to the buildings external façade glass elements are detailed in the table below to ensure the recommended internal noise levels detailed above are achieved, with the façade building openings closed.

Table 39 External Glass Acoustic Requirements (all levels)

Façade Orientation	Room Type	Recommended Glass Construction	Minimum Façade Acoustic Performance[1]
Facing west directly towards future light rail	Bedrooms	10.38mm Laminated	Rw 35
	Living Rooms	6.38mm Laminated	Rw 30
	Wet areas	6mm Float/ Toughened	Rw 28
All other orientations	Bedrooms	6.38mm Laminated	Rw 30
	Living Rooms	6.38mm Laminated	Rw 30
	Wet areas	6mm Float/ Toughened	Rw 28
Note 1: The acoustic performance of the external façade includes the installed glazing and frame including but not limited to the façade systems, seals and frame. All external glazing systems are required to be installed using acoustic bulb seals.			

Source: White Noise Acoustic

The recommended glass constructions detailed in **Table 39** above include those required to ensure the acoustic requirements of the project are achieved. Thicker glazing may be required to achieve other project requirements such as structural, thermal, safety or other requirements and is to be advised by others.

Other recommendations

- The proposed external building elements including masonry or concrete external walls and roof are acoustically acceptable without additional acoustic treatment.
- Any lightweight external pasteboard walls should be constructed from a construction with a minimum acoustic performance of Rw 50.
- All openings and penetrations are required to be acoustically treated such that the performance of the building construction is not compromised.

External Noise Emission Assessment

The NSW Environmental Protection Authority (EPA) Noise Policy for Industry (NPI), previously Industrial Noise Policy, details noise criteria for the control of noise generated from the operation of developments and the potential for impact on surrounding receivers.

Noise levels used in the assessment of noise emission from the site have been based on the noise level survey conducted at the site and the noise level criteria summarised in the table below. The criteria are nominated for the purpose of determining the operational noise limits for the operation of the site including mechanical plant associated with the development which can potentially affect noise sensitive receivers and operational noise levels from the future tenancies.

For each assessment period, the lower (i.e. the more stringent) of the amenity or intrusive criteria are adopted. The calculated *Project Amenity Noise Level* includes either the Recommended Amenity Noise Level minus 5 dB(A) plus 3 dB(A) (for a 15minum period) or the measured existing Leq noise level – 10 dB if this is greater as determined by the NPfI.

Based on the requirements of the EPA the resulting noise emissions criteria from the operation of services on the site are detailed in the table below.

Table 40 External Noise Level Criteria in Accordance with the NSW NPI

Location	Time of Day	Project Amenity Noise Level LAeq, period[1]	Measured LA90, 15 min (RBL)[2] (dBA)	Measured LAeq, period Noise Level (dBA)	Intrusive LAeq, 15 min Criterion for New Sources (dBA)
Suburban Residences	Day	53	45	51	**46**
	Evening	**43**	40	43	45
	Night[4]	**38**	37	40	42

Note1: Project Amenity Noise Levels corresponding to "Sub Urban" areas, recommended noise levels.

Note 2: LA90 Background Noise or Rating Background Level

Note 3: Project Noise Trigger Levels

Note 4: Noise from the operation of residential condensers are to be inaudible within a neighbouring residential premises

Source: White Noise Acoustics

Recommendations

Mechanical Services Equipment – All future plant and equipment are to be acoustically treated to ensure the noise levels at all surrounding receivers comply with noise emission criteria detailed within the Noise Impact Assessment. Experience with similar projects indicated that it is both possible and practical to treat all mechanical equipment such that the relevant noise levels are achieved. Examples of the possible acoustic treatments to mechanical equipment includes the following:

- Basement Supply and Exhaust Fans – location of fans within the building and treated using internally lined ductwork or acoustic silencers.
- General supply and exhaust fans – general exhaust and supply fans such as toilet, kitchen, lobby and other small mechanical fans can be acoustically treated using acoustic flex ducting or internal lined ducting.
- Air conditioning equipment – The location of contenders within designated plant areas on roof tops, within the basement or individual equipment located on balconies will be acceptable providing noise levels are reviewed and approved prior to installation.
- Details of the required mechanical services equipment and acoustic treatments to ensure the relevant noise level criteria is achieved will be provided as part of the CC submission of the project.
- Garage Doors should include panel lift or sliding doors with smooth operation. The tracks should include guides such that metal on metal contact does not occur.
- All motorised carpark access doors are required to be vibration isolated from the building structure such that internal noise levels within any habitable areas does not exceed 30 dB(A). Where possible roller doors should include panel lift or sliding doors.

6.20. WIND

SLR has undertaken a Qualitative Wind Assessment of the proposed CPA (**Appendix JJ.1**) and Stage 1A (**Appendix JJ.2**) works.

On the basis of long-term wind records obtained from Bureau of Meteorology stations at Bankstown Airport and Sydney Kingsford Smith Airport, the project site has local winds characteristics closer to Bankstown Airport than Sydney (KS) Airport, given Parramatta and Telopea's distance inland from the coast. Accordingly, key prevailing wind directions of interest are the northeast, southeast and south for summer and mainly west quadrant winds for winter.

Table 41 Standard Local Government Wind Acceptability Criteria

Type of Criteria	Limiting Gust Wind Speed Occurring Once Per Year	Activity Concerned
Safety	24 m/s	Knockdown in Isolated Areas
	23 m/s	Knockdown in Public Access Areas
Comfort	16 m/s	Comfortable Walking
	13 m/s	Standing, Waiting, Window Shopping
	10 m/s	Dining in Outdoor Restaurant

Source: SLR

Existing street level wind conditions in the vicinity of the site could be close to or greater than the 16 m/s "walking comfort" criterion for some prevailing wind directions, resulting from channelling of winds along aligning streets. The surrounding built environment which consists of dense low-level residential development provides generous wind shielding to the majority of prevailing wind directions.

Northeast Winds - Lower level shielding is provided to the northeast, consisting predominantly of low-level residential housing and existing scattered vegetation along surrounding streets. Northeast winds are generally mild and the potential for exceedance of the 16 m/s criterion along pedestrian pathways is small, i.e. occurrences, if any, are likely to be very infrequent. However, there is some potential that wind channelling could occur through the corridor presented along Adderton Road/light rail line and along Evans Road, this could result in some exceedances being recorded around the site.

Southerly Winds - Low level shielding to the south is generous and should provide shielding to the majority of the site and neighbouring pedestrian areas. Similar to winds from the northeast, there remains some risk for channelling of winds along streets throughout the masterplan area, which could result in exceedances of the 16 m/s along the western site boundary.

Westerly Winds - There is currently dense vegetation provided west of the site and combining this with the neighbouring residential development, provides significant shielding to the existing site. Exceedances of the 16 m/s criterion are considered to be minimal, i.e. occurrences, if any, are likely to be very infrequent and localised to streets running west to east.

Upper Level Winds - Existing upper level wind conditions at the site are likely to exceed the 10 m/s "outdoor eating" comfort criterion for some prevailing wind directions at elevations above the height limits of surrounding buildings.

In terms of the future wind environment with the proposed development, the following features of the development are noted as being of most significance:

- The proposed building heights will generally have a positive impact on adverse wind conditions, particularly throughout the Central precinct, with taller western towers serving to shelter eastern buildings from adverse wind conditions.
- The winds along the surrounding footpaths should remain at similar levels providing appropriate landscaping is employed.

- The proposed masterplan should retain the current emphasis on preserving existing trees and landscaping wherever possible.
- Horizontal and vertical wind breaks are recommended for specified building entries, to protect against potential downwash and channelling winds.
- Vertical windbreaks to the through site link and retail street of the proposed site. The wind shielding proposed is to be a mix of landscaping and wind screens, with the full extent of required shielding to be assessed further during the development application stage of respective masterplan lots.
- Façade setbacks and horizontal windbreaks are proposed to certain buildings to mitigate downwash wind impacting surrounding pedestrian pathways.
- Wind mitigations are recommended to identified balconies from level 4 and above. SLR recommends that all proposed balconies be provided with only a single open aspect.
- Specific wind amelioration recommendations are outlined in detail within Section 6 of the Wind Assessment prepared for the CPA.

Stage 1A Wind Assessment

SLR has worked with the project team throughout the design process and addressed potential wind concerns, with appropriate design measures incorporated and reflected in architectural drawings and development documentation.

Recommendations for wind break features are made in areas where winds are expected to approach or exceed 10 m/s, 13 m/s or 16 m/s depending on the designated use for the corresponding area as outlined in **Table 42**

Table 42 Stage 1A Recommended Wind Mitigation

Location of interest	Wind impact potential	Windbreak treatment recommendation
Level 2 Communal Open Space	**Moderate-High** Winds could be above 10 m/s for NE, S and SE wind directions	**Mitigation Required:** SLR requires that vertical windbreaks in the form of balustrade, planter, balustrade+planter, wind screens or other practical wind shielding be installed to the perimeter of the communal open space. Windbreaks should be 1.8m in height minimum. Landscaping is recommended throughout the communal open area.
Level 4 Communal Open Space	**Moderate - High** Winds could be above 10 m/s for NE, S and SE wind directions.	**Mitigation Required:** SLR requires that vertical windbreaks in the form of balustrade, planter, balustrade and planter, wind screens or other practical wind shielding be installed to the perimeter of the communal open space. Windbreaks should be 1.8m in height minimum. Landscaping is recommended throughout the communal open area.
Upper Level Balconies	**High** Winds could be above 10 m/s for all prevailing wind directions.	**Mitigation Required:** For levels 4 and above SLR requires that corner and balconies with multiple open aspects be converted to nested balconies with a single open aspect, this can be achieved using full height balustrade, wing walls, wind screens or other practical shielding. The extent of required shielding can be further quantified during the detailed design stage of the project.

Source: SLR

In terms of the future wind environment with the proposed development, the following features of the development are noted as being of most significance:

- The winds along the surrounding footpaths should remain at similar levels providing appropriate landscaping is employed as shown on plans.
- Landscaping is to be retained as planned throughout the site to mitigate potential downwash and channelling impacts throughout the development.
- Vertical windbreaks are proposed to the upper level communal open space as a result of adverse upper level wind conditions.
- Wind mitigations are recommended to be incorporated to identified balconies from level 4 and above.

6.21. WASTE MANAGEMENT

A Waste Management Plan (WMP) has been prepared by SLR Consulting Australia (SLR) (**Appendix II**) addressing the waste generated from the demolition, construction and operational stages of the Stage 1A development.

The objectives of this WMP are as follows:

- Identify potential waste types likely to be generated during the construction and operational phases of the Project;
- Provide advice on how identified waste should be handled, identified, processed, disposed of, reused or recycled in accordance with Council requirements, relevant Australian codes and standards and better practice waste minimisation principles;
- Encourage waste avoidance and minimisation through advice on design, ordering and planning; and
- Help implement safe and practical options for waste collection from the Project by Council or private waste servicing contractors.

6.21.1. Demolition and Construction

The NSW *Waste and Sustainable Materials Strategy 2041* has set 80% average recovery rate from all waste streams by 2030. Analysis of total construction and demolition waste recovery rates in 2019-2020 were 77%.

The following waste minimisation measures will assist the Project to meet these targets. Waste reporting and audits can be used to determine the actual percentage of waste that have been recycled during the construction and site preparation stage of the Project.

In order to calculate the waste generated from the removal of the existing structures, SLR has used the 'Blocks of flats' demolition waste generation rates from Appendix A of *The Hills Development Control Plan 2012* for estimating the type and quantities of waste generated from the demolition activities. The waste generation rates and subsequent estimates for demolition are provided in **Table 43** and for construction in **Table 44**.

Table 43 Demolition Waste Generation

Generation Rate / Estimate	**Floor Area**	**Waste Type and Quantities (m^3)**						
		Timber	Gyprock	Concrete	Brick	Metal	Roof tiles	Other
Waste Generation Rate	1,000m^3	22	22	813	655	9	33	26
Waste Generation Estimate	1,950m^3	45	45	1590	1280	20	65	55

Source: SLR

In accordance with Council's Guidelines records of the waste volumes recycled, reused or removed off-site are to be maintained. Details of how this waste will be re-used, recycled or disposed of and the name and contact details for each receiving waste facility are required. Dockets or receipts verifying recycling and/or disposal in accordance with the WMP must be kept and presented to Council when required.

Where possible, all disassembled materials should be sold for reuse. Where not possible, parts will be sent for recycling and reused off-site. Delivery of items to an appropriately licenced landfill is to be considered as a last resort. For reuse and recycling recommendations for all potential waste streams and their management methods see Table 2 of the WMP.

Should the Development's excavation work encounter asbestos-contaminated materials, other contaminated materials or unexpected finds, the contractor should refer to its relevant site management plan.

All excavated spoil should be classified by an appropriately experienced environmental consultant and separated into contaminated materials, if any, uncontaminated fill, ENM or VENM.

Table 44 Construction Waste Generation

Rate / Estimate	**Floor Area**	**Waste Type and Quantities (m³)**						
		Timber	Gyprock	Concrete	Brick	Metal	Sand or Soil	Other
Waste Generation Rate	1,000m³	0.7	1.3	6.7	3.2	1.3	28.7	0.6
Building 9.1	38,832m³	30	55	265	125	55	1115	25
Building 9.2	36,598m³	30	50	250	120	50	1055	25
Total	75,430m³	60	105	515	245	105	2170	50

Source: SLR

Waste Avoidance

The WMP has been prepared in line with the waste management hierarchy and objectives of the *Waste Avoidance and Resource Recovery Act 2001*. Specific objectives of the *Waste Avoidance and Resource Recovery Act 2001* include:

- encouraging efficient use of resources;
- minimising the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste;
- ensuring industry and the community share responsibility in reducing/dealing with waste, and;
- efficiently funding of waste/resource management planning, programs and service delivery.

The waste management hierarchy comprises the following principles, from most to least preferable:

- Waste avoidance, prevention or reduction of waste generation. Achievable through better design and purchasing choices.
- Waste reuse, reuse without substantially changing the form of the waste.
- Waste recycling, treatment of waste that is no longer usable in its current form to produce new products.
- Energy recovery, processing of residual waste materials to recover energy.
- Waste treatment reduce potential environmental, health and safety risks.

- Waste disposal, in a manner that causes the least harm to the natural environment.

The WMP outlines how each of the above principles can be achieved throughout the demolition and construction phases of the development. Effective management of construction materials and construction and demolition waste, including options for reuse and recycling where applicable and practicable, will be conducted. Only waste that cannot be cost effectively reused or recycled are to be sent to landfill or appropriate disposal facilities.

Contaminated or Hazardous Waste Management

During the site preparation and construction phases, SLR recommends that a qualified and certified contractor is engaged to remove all contaminated or hazardous materials, for example, asbestos, and dispose of all contaminated or hazardous waste at an appropriately licenced facility.

All asbestos and other hazardous waste must be handled according to appropriate legislation and regulation including the Work Health and Safety Regulation 2017.

In accordance with Council's DCP, hazardous waste management at the site may require a licence from the EPA and approval from Council. If hazardous waste is identified for removal, Council and NSW EPA are to be consulted prior to undertaking any hazardous waste removal. Hazardous or intractable waste arising from the demolition process shall be removed and disposed of in accordance with the requirements of SafeWork NSW and the EPA, and with the provisions of the Work Health and safety Act 2011, NSW Protection of the Environment and Operations Act 1997 (NSW) and the NSW Department of Environment and Climate Change Environmental Guidelines; Assessment, Classification and Management of Liquid and Non Liquid Waste (1999).

6.21.2. Operational

The waste management performance of new development should contribute to NSW State targets for recycling outlined in the NSW Waste Avoidance and Resource Recovery Strategy 2014-21. A target is set of 80% average recovery rate from all waste streams by 2030. It is anticipated that the waste minimisation measures outlined within the WMP will ensure the project meets the state's targets. Waste reporting and audits can be used to determine the actual percentage of waste that are being, or have been, recycled during operation.

Requirements for waste management in the development are based on Council's Waste Management Guidelines for New Development Applications 2016, which are based on Parramatta Council's DCP 2011, and current best practice waste management.

To calculate the estimate operational waste quantities likely to be generated by this development the following assumptions were made:

- Council's standard waste generation rates as outlined in the DCP of:
  - 80 litres per unit per week for general garbage
  - 40 litres per unit per week for comingled recycling.
- Common bin supplier size dimensions for 660 L bins for both garbage and recycling. This is the preferred size of bin as advised through consultation with Council's waste team.
- A collection frequency of once per week for both garbage and recycling.

To allow for safe and easy movement of bins into and out of the bin storage area, the bin storage area is to provide a floor area of at least 150% of the total minimum bin GFA. This can also act as a contingency in the event of spikes in waste generation.

Table 45 illustrates the waste generation estimates across the proposed buildings (building A, B – west, B – east, C, D and E), each of which is broken into 3 sections (a, b and c). Assuming the use of 660 L bins, a minimum of 54 will be required for garbage and 27 for recyclables, making a total of 81 bins for the development.

Table 45 Operational Waste Generation

Building	Number of units	Residential total per week (L)		Number of 660L bins		Total bin storage area (m²)	Minimum chute room area required
		Garbage	Recycling	Garbage	Recycling		
9.1a	22	1,760	880	3	2	141.50	7.0
9.1b	110	8,800	4,400	14	7		32.6
9.1c	65	5,200	2,600	8	4		21.2
9.2a	55	4,400	2,200	7	4		16.3
9.2b	99	7,920	3,960	12	6		27.9
9.2c	91	7,280	3,640	12	6		27.9
Total	442	35,360	17,680	54	27		

Source: SLR

Based on the number of units and Council requirements a bulky waste storage area of 90.4m² minimum is required bringing the total residential waste storage requirement for the development to 231.9m²

There is an area of 182m² allocated to the waste holding room and garbage room on Basement 02. This is adequate to store the estimated quantities of waste and recycling and provides enough additional area for storage of bulky waste that tenants may want to dispose of.

Each building will feature six garbage chutes, one each in buildings A, B – west, B – east, C, D and E. The garbage chutes will run through all floors for residents to place the appropriate material. Garbage will be collected in 660 L wheeled bins located in a dedicated room at the base of the chutes. A 240 L recycling bin will be positioned next to each chute door on each floor for the disposal of recyclables.

Recycling bins and any other waste stored in the interim bulky waste storage areas will be taken from each floor by cleaners or facilities management staff to the waste holding room and the communal bulky waste storage room.

Mitigation Measures

The WMP will be reviewed and updated:

- To remain consistent with waste and landfill regulations and guidelines;
- If changes are made to site waste and recycling management, or;
- To take advantage of new technologies, innovations and methodologies for waste or recycling management.

Should the Development's excavation work encounter asbestos-contaminated materials, other contaminated materials or unexpected finds, the contractor should refer to its relevant site management plan.

All excavated spoil should be classified by an appropriately experienced environmental consultant and separated into contaminated materials, if any, uncontaminated fill, ENM or VENM.

6.22. CONSTRUCTION MANAGEMENT PLAN

A Preliminary Construction Management Plan (Preliminary CMP) has been prepared by Frasers Property Australia's Telopea Project Management Team. This report is to provide a preliminary assessment of the proposed construction processes and methodology, site safety procedures and environmental management issues to be undertaken by the Principal Contractor/s engaged by Frasers Property to construct Telopea Stage1A.

In summary the Preliminary CMP provides assessment on:

- Site safety and public safety
- Hours of work
- Construction management inclusive of:
  - Noise management;
  - Air quality management;
  - Noise, vibration and dust controls;
  - Stormwater and erosion controls;
  - Site accommodation;
  - Waste management;
  - Traffic management;
  - Pedestrian management;
  - Site access;
  - Scaffolding.

Once the building contractor is appointed and prior to issuing a construction certificate a Construction Management Plan to detail the full range of actions and staging of construction will be undertaken. Aiming to ameliorate potential impacts on the relevant stakeholders whilst maintaining a safe, productive and efficient construction site.

Mitigation Measures

The CMP will be a responsive document which continues to be refined throughout the detailed design, builder procurement, demolition and construction phases of the proposed development.

7. PROJECT JUSTIFICATION, EVALUATION AND CONCLUSION

This EIS has been prepared in support of a SSDA for concept approval, in accordance with Division 4.4 of the EP&A Act, for the staged redevelopment of the Telopea CPA, as well as a detailed proposal for the first stage of development; Stage 1A. This EIS has comprehensively addressed the general and key issues relating to the proposed development and has included the plan and document requirements identified in the SEARs and in Schedule 2 of the EP&A Regulation.

The SSDA seeks approval for a mixed-use development of approximately 4,700 dwellings in a mix of social, affordable and market tenures, a new retail precinct, childcare facility, library and community centre, church, residential aged care facility and independent living units, as well as public space in the form of the new light rail plaza, parks, new pedestrian links and open space.

The proposal is consistent with the strategic policy framework delivering a range of housing types and sizes to meet the needs of different households. The provision of social housing creates opportunities to directly combat homelessness and relieve housing stress for low income households. As part of the Growth Precinct, the proposal provides housing supply, choice and affordability, with access to jobs, services, retail offerings, community infrastructure and public transport in an identified urban renewal area. The strategic proposal for homes adjacent to the PLR will facilitate the delivery of a city shaping corridor and the 30-minute city vision, through locating residents close to major employment and education centres within the broader region.

The design of the proposal has been carefully considered to minimise any impacts, with the primary design objective centred on the health and wellbeing of the community; creating a place which is open, inclusive and highly connected with a focus on green spaces and healthy living. The built form framework responds to the existing topography and character of Telopea, with proposed buildings designed to maximise pedestrian connections and the amenity of new and existing residents and the public domain. The design strategy promotes the retention of existing trees, with built form diversity through a mix of setbacks, human scaled podiums and street walls and architectural expression, to create a high quality mixed use and high density residential development.

Alternatives considered would fail to maximise land use opportunities surrounding the new PLR and be inconsistent with the goals and directions of the policy framework that identify the site as a Growth Area. Alternative designs considered would impact on the ability to achieve the overall vision for Telopea, and the opportunity cost of not pursuing the urban renewal of the site would be significant, given the multitude opportunities for economic and social benefits to Greater Sydney.

Frasers and LAHC have undertaken engagement with a range of stakeholders, informing the Concept Proposal and Stage 1A. Community feedback has been taken into consideration in the development of the design and proposed mitigation measures in relation to the strategy for the relocation of residents, the landscaping and accessibility of parks, green space and the public domain, residents' mobility and access through the site, retail offerings and strategy, transport access and parking, and construction and staging of the development.

Opportunities and recommendations for Connecting with Country will be responded to in each of the future development phases for the Telopea CPA, alongside ongoing engagement with appropriate Indigenous stakeholders throughout the project.

The staging strategy maintains a consistent tenure split between social and market dwellings as well as ensuring that the necessary infrastructure is delivered to service the relevant stages. Stage 1 is to be delivered from 2023 to 2029 including approximately 2,100 dwellings in areas closest to station; delivering community benefits and supporting the light rail project.

Due to the size and scale of the Telopea CPA, other development in the area is unlikely to impact on the timeframes or mitigation measures outlined in this EIS. During the staged construction of this project, construction management and other associated impacts such as traffic and waste will be managed to align with the recommendations and proposed mitigation measures.

In accordance with Section 4.15 of the EP&A Act, the proposed development will:

- deliver social housing to support the welfare of the community;
- has been designed to ensure it responds to the term of the Masterplan and the character of the site and surrounding area;
- represents the first stage in the delivery of the Concept Pan, and as such supports the economic and orderly development of land;
- construct the road network of which portions will be dedicated to Council to create land for public purposes;
- incorporate biodiversity offset measures, tree protection, and replacement planting to conserve the natural environment;
- provide buildings that achieve a range of sustainability targets and measures established under the Concept Plan; and
- provide revitalised social housing to support those in need within Sydney.

Overall the proposal is considered appropriate for the site and warrants approval from the Minister for Planning for the following reasons:

- In accordance with the BC Act, the proposal will not impose any adverse impact to ecological communities, habitat of threatened species, populations or ecological communities, or any significant species of fauna or flora.
- The residential development has been designed is in accordance with SEPP 65 and meets the design criteria of the ADG.
- The proposed development has taken measures to minimise any impacts on the rail corridor in accordance with ISEPP.
- An Environmental Management Plan and Asbestos Management Plan are proposed to ensure the site is suitable for the proposed development in accordance with SEPP 55.
- The proposed social housing units have been designed to be consistent with the design criteria set out in the ARH SEPP.
- In accordance with the Seniors Housing SEPP and the Education SEPP the proposal will deliver seniors housing and a childcare centre.
- The Stage 1A proposed development meets the BASIX requirements and the Sustainability Report outlines the environmental sustainability measures to be implemented across the precinct.
- The proposal is consistent with the PLEP 2011 land use zones for the site and will deliver the objectives for high density residential and mixed use development and public recreation.
- The proposal generally complies with the PLEP 2011 height of building control that applies to the site and the development is supported by a Clause 4.6 Variation Request to exceed the height control in the Core area. The Clause 4.6 Variation Request provides a comprehensive justification that compliance with this part of the height control is unreasonable and unnecessary in the circumstances of the case as:
  - The objectives of the development standard including providing a transition in built form and land use intensity; minimising visual impact, disruption of views, loss of privacy and loss of solar access; reinforcing and respecting the character of the area; and maintaining satisfactory sky exposure and daylight to buildings and the public domain are achieved by the proposed development; and
  - There are sufficient environmental planning grounds to support the proposed development, in that the proposal does not result in any unacceptable impacts on amenity, or any heritage impacts and the proposed variation allows for the delivery of higher quality residential development, greater public open space and improved residential amenity.

- The proposal is consistent with the FSR provisions for the site in accordance with the PLEP 2011, the ARH SEPP and Seniors Housing SEPP.
- The proposed development does not affect the heritage significance or view from any heritage assets.
- In accordance with the PLEP 2011, the proposed development is acceptable in relation to flood impacts.
- The Concept Plan was development through a rigorous design process with consideration on the Design Excellence principles set within the PLEP 2011. Site-specific Design Guidelines have been developed to guide the ongoing architectural and urban design of the Telopea CPA. The Design Guidelines will ensure a high quality architectural and amenity outcome is achieved across the precinct. The Design Guidelines set out the vision for future development, as well as objectives and provisions in relation to built form, public domain, open space and trees, transport and parking and sustainability.
- The proposal is acceptable in relation to visual impacts and does not result in any significant negative visual effects or impacts on its visual catchment. The proposal will cause a substantial but positive change to the existing character of the site and the surroundings. The proposal is responsive to the visual opportunities and constraints of the site and its surroundings and appropriately responds to the character of adjacent land uses.
- The proposal has no unacceptable traffic impacts and provides for infrastructure upgrade works as required. The proposal promotes the use and accessibility of public transport through new pedestrian connections and the light rail plaza.
- With the mitigation measures proposed, the proposal will result in a moderate to high positive impact on the contribution of trees to local amenity and character.
- Subject to the mitigation measures proposed, the development will have an acceptable impact in relation to Aboriginal Cultural Heritage.
- Subject to the identified utilities augmentation requirements, there is sufficient capacity to service the proposed development.

Where further investigations are recommended in order to assess any mitigation measures required in relation the proposed development, these investigations will be undertaken as part of any future detailed applications, in accordance with the Concept Proposal.

The proposal will generate a highly positive social impact, particularly in the long term. Any identified negative impacts are proposed to be mitigated through implementation of appropriate management measures. Key social impacts include:

- Access to high quality social housing
- Access to high quality affordable housing
- Improved community facilities and access to high quality open space
- Access to new supermarket, food and beverage, and specialty retail
- A healthy built environment
- Improved public safety
- Community integration, belonging and connection
- Neighbourhood renewal.

This SSD is accompanied by a VPA for the provision of public infrastructure that supports the Concept Proposal as part of the overall renewal of Telopea. The proposed VPA includes additional infrastructure over and above the Telopea Masterplan that provides a public benefit including a neighbourhood park near hilltop park and arrival plaza; additional open space and public domain areas; and a contribution to Telopea Public School for a co-located community facility.

Frasers is committed to continued meaningful engagement with stakeholders and the community. A range of engagement tools and techniques will be used to ensure the community can be informed about the project as it progresses and have an opportunity to provide input at the appropriate times as Telopea is created over the 15-20 year timeframe. Initially communications and engagement will focus on:

- refining the project vision and supporting high level planning applications;
- involving the community in discussions about public domain and proposed community facilities; and
- establishing a framework for collaborating with local businesses, schools, service providers and peak bodies to deliver the social outcomes that are desired for Telopea.

Over time, this focus will turn to community building; ongoing detailed development applications communication to assist in managing construction activities; and services, programs, and activities to nurture a cohesive, supportive and healthy community.

Overall, the proposal will have long-term positive economic, social, and environmental impacts for the local community, the Paramatta LGA and the Greater Sydney region. In view of the above, we submit that the proposal is in the public interest and that the SSDA should be approved subject to appropriate conditions.

DISCLAIMER

This report is dated 20 July 2021 and incorporates information and events up to that date only and excludes any information arising, or event occurring, after that date which may affect the validity of Urbis Pty Ltd **(Urbis)** opinion in this report. Urbis prepared this report on the instructions, and for the benefit only, of Fraser Property Developer Telopea Pty Ltd **(Instructing Party)** for the purpose of State Significant Development Application **(Purpose)** and not for any other purpose or use. To the extent permitted by applicable law, Urbis expressly disclaims all liability, whether direct or indirect, to the Instructing Party which relies or purports to rely on this report for any purpose other than the Purpose, and to any other person which relies or purports to rely on this report for any purpose whatsoever (including the Purpose).

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