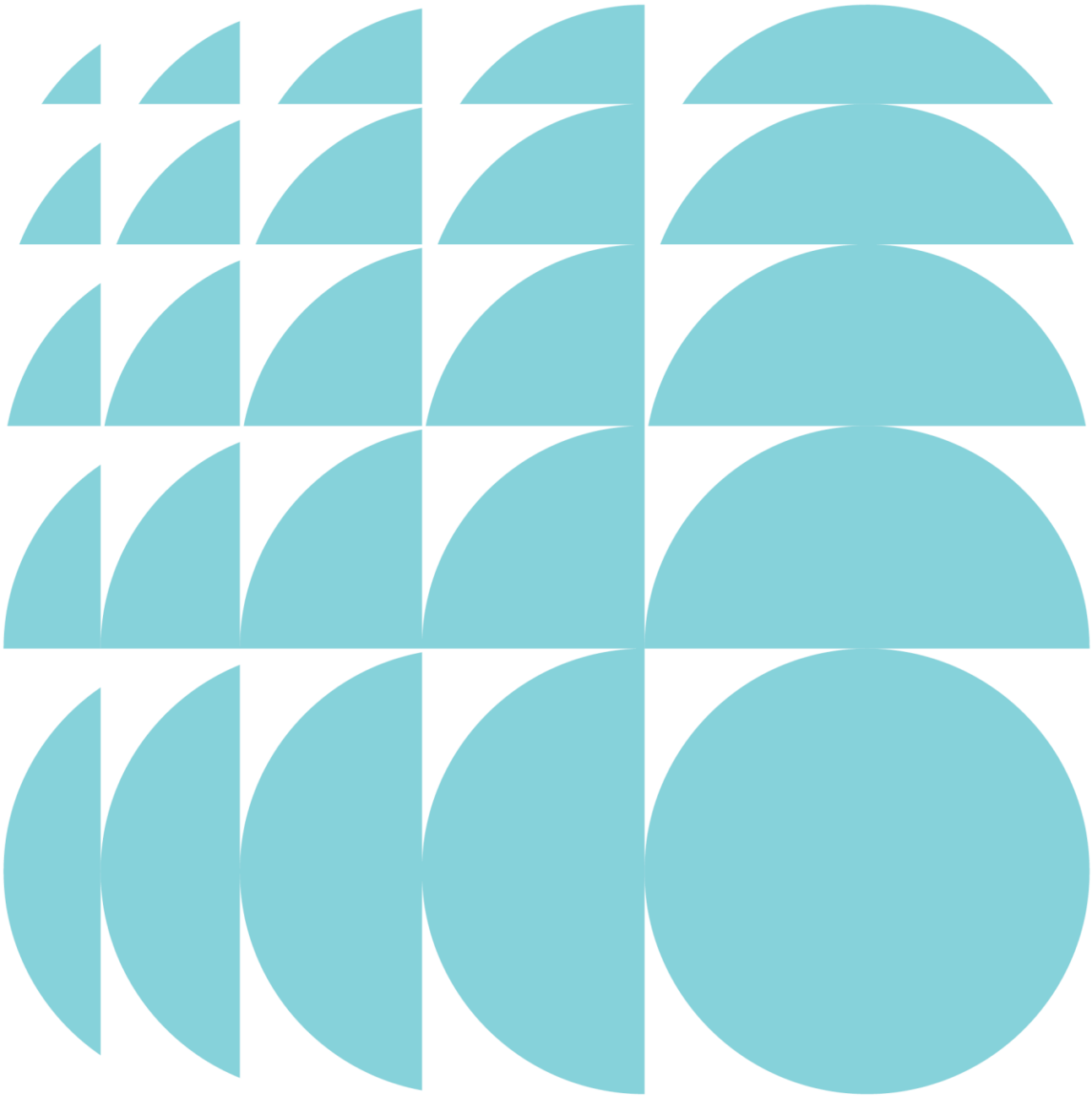
ETHOS URBAN

Statement of Environmental Effects

Stage 3C, Central Precinct
Integrated Housing and Subdivision

Submitted to Penrith City Council
On behalf of Lendlease Communities

27 August 2019 | 13170/17532



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1.0 Introduction

This Statement of Environmental Effects (SEE) is submitted to Penrith City Council (Council) in support of a Development Application (DA) for an integrated housing and subdivision development within Stage 3C of the Central Precinct, St Marys (the site).

The DA seeks approval for:

- The subdivision of Lot 1 DP 1248480 to create 61 allotments, in the following configuration:
  - 59 lots for future residential development, comprising 57 lots with integrated dwellings and two residential allotments for future development;
  - One lot for the purposes of a future public reserve acting as a pedestrian connection through to the Wianamatta Parkway;
  - Dedication of public residential roads; and
  - One residue lot for the future intersection of Stage 3C and the East West Connector Road.
- The construction of 57 dwellings, including;
  - 29 attached dwellings;
  - eight semi-detached townhouses; and
  - 20 'urban sleeve' dwellings.
- Site preparation and civil works, including
  - Regrading of the site and associated site stabilisation;
  - Provisions of utilities; and
  - The construction and connection of draining and stormwater systems.
- The subdivision and construction of three internal (local) roads; and
- Associated landscaping.

This SEE has been prepared by Ethos Urban on behalf of Lendlease Communities (Lendlease), and is based on the Dwelling Plans provided by Eden Brae Homes, Edgewater Homes and McDonald Jones Homes (included in **Appendix D**) and other supporting technical information appended to the report (see Table of Contents).

This report describes the site, its environs, the proposed development, and provides an assessment of the environmental impacts and identifies the steps to be taken to protect or lessen the potential impacts on the environment.

1.1 Concurrences and Referrals

This application requires referrals and concurrences with other State agencies and departments under the *Environmental Planning and Assessment Act 1979* (EP&A Act) and other Environmental Planning Instruments (EPIs), specifically as the the proposed development is 'integrated development' in accordance with Clause 91 of the EP&A Act. In addition to development consent, the development requires a bushfire safety authority issued by the Commissioner of the Rural Fire Service (RFS), in accordance with section 100B of the *Rural Fires Act 1997* (RFA 1997).

1.2 Background

The former Australian Defence Industries (ADI) site at St Marys (the St Marys site) was endorsed by the NSW Government for inclusion on the Urban Development Program (UDP) in 1993. With a total site area of 1,545

hectares, the St Marys site is located approximately 45km west of the Sydney CBD, 5km north-east of the Penrith City Centre and 15km west of the Blacktown City Centre, as shown in **Figure 1** below.

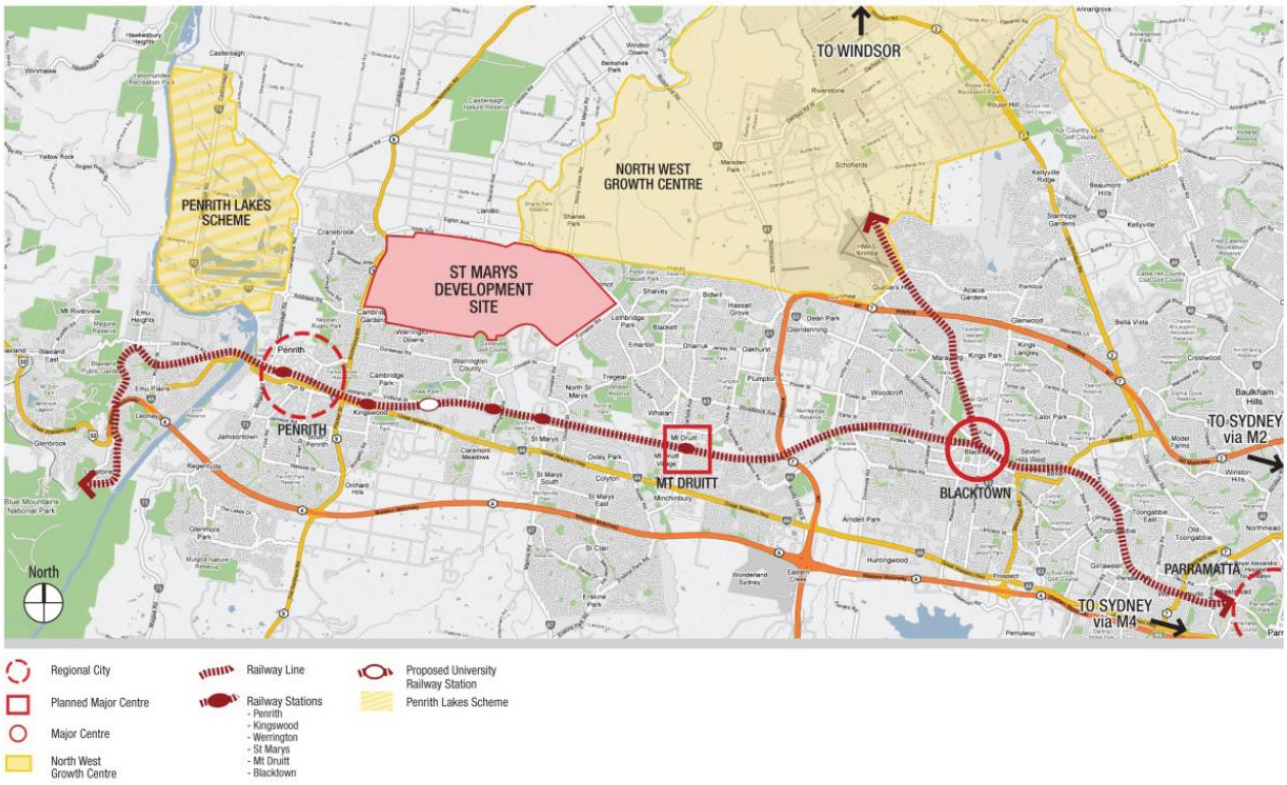


Figure 1 ADI St Marys Site Location Plan

Source: St Marys Central Precinct Concept Plan

Since 1993, the St Marys Site has been earmarked to provide housing for Sydney's growing population within an environmentally sustainable framework. Development of the site has been underway since 2004.

Following the St Marys site's inclusion on the UDP in 1993, it was agreed between Blacktown City Council (BCC) and Penrith City Council (PCC) (as the relevant local government authorities for the land) and the State Government that any rezoning of the St Marys site for urban development would occur via a Sydney Regional Environmental Plan (SREP) process.

Prior to preparing the SREP, in accordance with the provisions of the *Environmental Planning Assessment Act 1979*, a Regional Environmental Study (RES) was prepared.

The time between 1994 and 2000 reflects a period in which numerous and extensive investigations were undertaken into the environmental values and development capacity of the St Marys site. This period also involved input and consultation with BCC and PCC, relevant state agencies, and the general public. The first significant body of work involved preparing the RES, which was exhibited for public comment in October 1995, and finalised in May 1996. The RES investigated the key planning issues of:

- biodiversity;
- aboriginal heritage;
- decontamination;
- total water cycle management;
- transport:
- urban form;

- air quality; and
- business/employment development.

The RES concluded that the St Marys site was suitable for urban development, subject to further assessment of Aboriginal heritage, biodiversity, and flooding at the site. This additional information helped inform the joint State and local government Section 22 committee formed (under the EP&A Act) to determine areas which should be conserved for biodiversity and Aboriginal heritage purposes and areas suitable for urban development.

The SREP and accompanying Environmental Planning Strategy (EPS) for the St Marys site were made in 2001 to formally set in motion the achievement of sustainable urban development outcomes at the St Marys site.

1.2.1 Sydney Regional Environmental Plan No. 30 – St Marys

Sydney Regional Environmental Plan Number 30 is the main statutory planning framework document for the St Marys site. It contains planning principles, objectives, zoning and other provisions to control development.

At the time of the gazettal of SREP 30, the planning strategy for development of the St Marys site included:

- establishing a 630-hectare Regional Park;
- dedicating 48 hectares of regional open space for parks and passive and active recreation areas; and
- developing approximately 730 hectares of land for urban uses.

There have been two subsequent amendments to SREP 30, most noteworthy (from a biodiversity conservation perspective) was the increase in the area zoned for Regional Park (reflecting the Commonwealth Government's decision to conserve all land listed by the Australian Heritage Commission on the Register of the National Estate). This particular amendment resulted in the protection of a further 220 hectares of Cumberland Plain Woodland (CPW), bringing the area of land zoned as Regional Park to nearly 900 hectares. A third amendment is currently being assessed by the Department of Planning, Industry and Environment which seeks to rezone the employment land in the northern area of Central Precinct to urban.

The land set aside for urban development (outside of the future 900ha Regional Park) is included within one of six (6) development precincts established under SREP 30 (refer to **Figure 2**). The subject site is located within the development precinct referred to as 'Central Precinct'.

Figure 2 Overall Site Plan of the St Marys ADI Site

Source: Central Precinct Plan

Prior to consent being able to be granted for development within a precinct, SREP 30 requires that the Minister first declare land as a release area and following this a Precinct Plan is prepared and adopted for the precinct. In this regard, the Central (and Western) Precinct were declared release areas by the then Minister for Planning on 29 September 2006. These releases follow earlier declarations from the Minister for the release of other precincts, including the Eastern, North Dunheved and South Dunheved Precincts.

1.2.2 The Central Precinct Plan and Development Control Strategy

Upon gazettal of Amendment No.2 of SREP 30 in February 2009, the Central Precinct was zoned Urban in the southern part of the Precinct and Employment in the northern part of the Precinct. Land zoned Urban is intended to accommodate primarily residential uses, with limited non-residential uses such as local retail and commercial uses. The Employment zone is intended to accommodate primarily employment generating land uses which are compatible with surrounding development and which will complement established employment areas and retail and commercial centres in the Blacktown and Penrith Local Government Areas.

The original Central Precinct Plan and accompanying Development Control Strategy (DCS) were adopted by Penrith Council at its ordinary meeting on 23 March 2009. These are to guide the future development of the Central Precinct.

The Central Precinct Plan Amendment No.1 (CPP) was adopted by Council on 14 September 2018 and now supersedes the 2009 version. Amendment No.1 relocates the Village Centre character area to the central area of the Precinct to provide greater flexibility for the future development of the Village Centre through its relationship to the adjacent Regional Open Space.

Amendment No.2 of the CPP is also being considered by Penrith Council and seeks changes to the DCS component to provide housing typologies that better suit today's market requirements.

The CPP illustrates the way the Central Precinct is to be developed. The Framework Plan of the CPP is provided at **Figure 3**. As illustrated, the proposed development of the Central Precinct entails:

- employment and related uses in the northern part of the precinct;
- a Village Centre Character Area, comprising a mix of retail, commercial, community, open space and residential uses, in the central part of the precinct;

- predominantly residential development in the remainder of the precinct;
- construction of roads, including external connections to both the west and east, and stormwater infrastructure; and
- provision of local open space, riparian corridors, and stormwater basins.

This Stage 3C proposal seeks to contribute to the Village Centre Character Area, which is to be clearly defined by its mixed uses, including retail, commercial and residential components. The proposed integrated dwelling development is consistent with the intended outcomes of this Character Area through its walkable design that focuses on pedestrian movement to and from the adjacent Village Centre and Regional Open Space.

The built form designs proposed also utilise the Village Centre Character Area built form controls contained within the DCS to provide a variety of dwelling types that are considerate of their surrounds and location, while ensuring housing diversity that responds to current market trends and requirements.

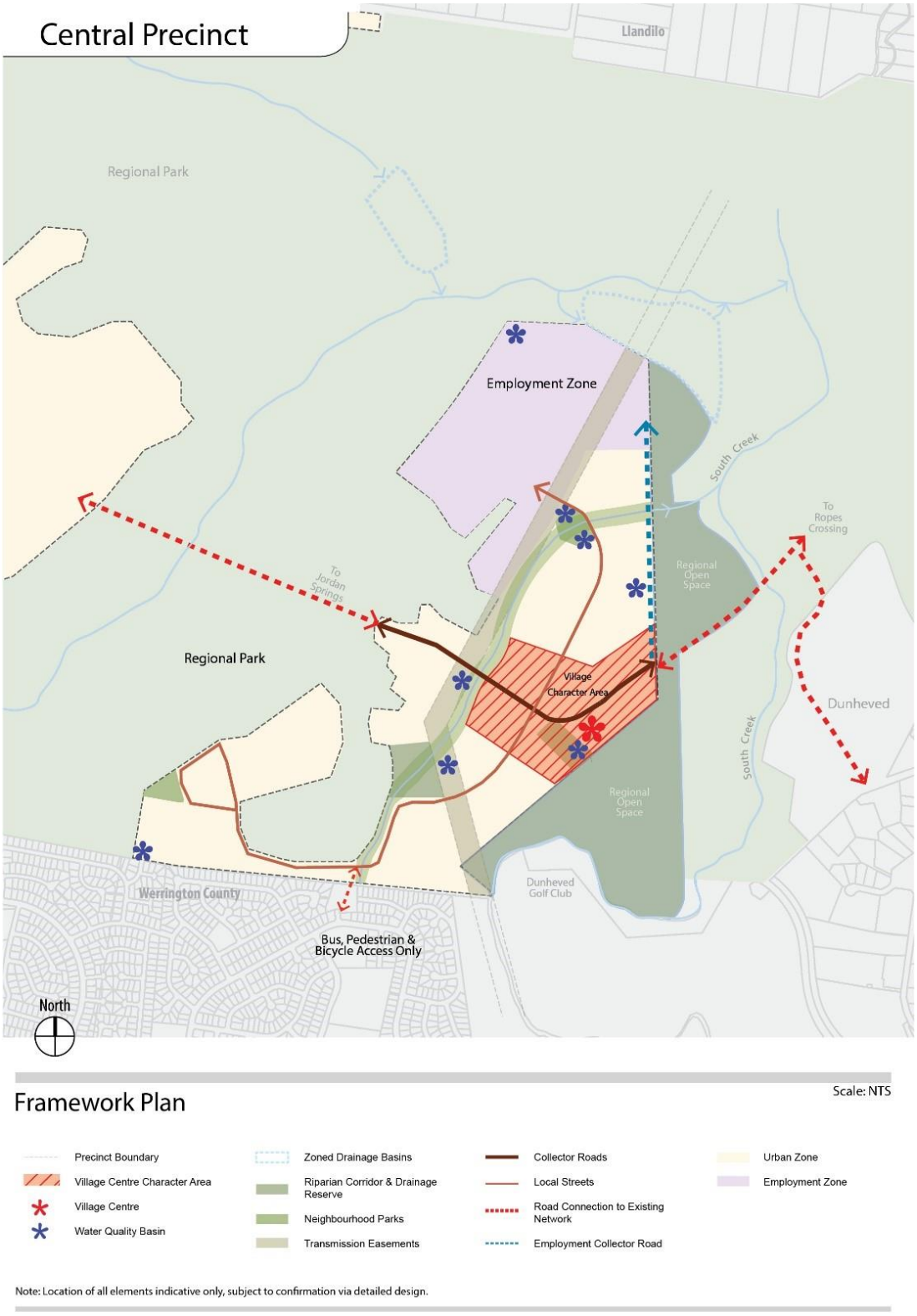


Figure 3 Amendment No. 1 to the Central Precinct Plan

Source: St Marys Central Precinct Plan – Amendment No. 1

1.2.3 Previous Applications

This DA should be considered within the context of the other key DA's for Central Precinct already lodged/approved by Council. Of particular importance to the subject DA are the following:

- Bulk Earth Works, Interim Stormwater Infrastructure, Landscaping, Tree Removal, and Environmental Management Works Including Realignment of an Existing Riparian Corridor. The application is classified as 'Designated Development' being a Waste Management Facility or Works - Landfilling which required determination by the NSW Joint Regional Planning Panel – DA14/1228, approved 20/8/2015;
- Subdivision of One Allotment into Five Allotments for the Future Regional Park, Central Precinct and Residue Lots – DA14/1429, approved 15/2/2016;
- Stage 1 Subdivision, the subdivision of Lot 1037 in DP1149525 to create 380 residential lots in 10 sub-stages and associated civil works and landscaping – DA15/0299, approved 19/11/2015;
- Stage 2 Subdivision, creation of 278 x Residential Torrens Title Lots, 4 x Residue Lots and Associated Road Construction, Drainage and Earthworks, Landscape Works and Bus Only Connection (Southern Boundary) – DA15/1216, approved 9/3/2016;
- Stage 3A Subdivision, creation of 79 x Torrens Title Residential Lots, 1 x Residue Lot and Associated Road Construction & Infrastructure Works - DA16/0113, approved 30/12/2016;
- Stage 4A & 4B Subdivision, creation of 142 x Torrens Title Residential Lots, 2 x Residue Lots and Associated Road Construction & Infrastructure Works - DA17/0491, approved 20/12/2017;
- Stage 3B1 Subdivision, creation of 53 x Torrens Title Residential Lots and Associated Landscape and Civil Works - DA17/0675, approved 27/11/2017;
- Stage 3B2 Subdivision, consolidation of 2 x Lots into 1 x Open Space Lot and Torrens Title Subdivision x 4 Residue Lots & Public Roads - DA17/0889, currently under assessment;
- Stage 5A Subdivision, subdivision into 119 x Residential Lots, 1 x Drainage Lot & Public Roads – DA17/0920, approved on 25/09/2018;
- Demolition of the East West Connector Road – DA17/0834, approved 21/2/2018;
- Site Remediation Works of Land Under Historical Material Stockpiles - DA16/0888, approved 7/11/2017;
- Stage 1 Blacktown Ropes Connector – Construction of approx. 1.5km of the East West Connector Road (West) and construction of a new Ropes Creek Bridge – DA-18-00559, approved on 20/6/2019;
- Stage 2 Blacktown Ropes Connector – Construction of approx. 670m of the East West Connector Road, 850m of the Dunheved Links Road, and construction of a new South Creek Bridge – DA-18-00561, lodged with Blacktown City Council on 29/3/2018;
- Stage 2 Blacktown Ropes Connector – Construction of East-West Connector Road (including South Creek Bridge and Dunheved Links Road) and bulk earthworks to regional open space – DA18/0221, lodged 8/3/2018;
- Stage 3 Links Road – Construction of part of Dunheved Links Road, and Links Road Intersection – DA18/0381, lodged 18/4/2018;
- Village Centre Park DA – Construction of Village Centre Park, which incorporates a kick-about area, village green, and bioretention basin – DA18/0587, lodged 13/6/2018; and
- Stage 3D Subdivision - Subdivision of Land to Create One (1) x Residue Lot for Future Village Centre and Construction of Public Road, Landscaping Works & Associated Infrastructure including Village Centre Concept Plan (Stage 3D), lodged 23/6/2018.

There have been several modification applications submitted to make the relevant changes to these approved DAs as the project has evolved.

Due to the large number of DAs for the project there have been a variety of stakeholder engagement processes undertaken. These include community information sessions, monthly meetings with Council officers and the required notification and advertising of lodged applications.

1.2.4 Commonwealth Approvals

The Commonwealth environmental assessment of the development of the St Marys site was completed under the (now repealed) *Commonwealth Environment Protection (Impact of Proposals) Act 1974* (*EPIP Act*) with certification provided under the *Environmental Reform (Consequential Provisions) Act 1999*.

As the St Marys project as a whole was assessed under the *EPIP Act*, no further assessment in relation to Commonwealth threatened species and ecological communities is required under the *Environment Protection & Biodiversity Conservation Act 1999* (EPBC Act).

In addition, the development of the St Marys site has previously been assessed by the Australian Heritage Commission pursuant to the requirements of the *Australian Heritage Commission Act 1975*.

1.3 Planning Agreements

A Planning Agreement was finalised between St Mary's Land Ltd and PCC in December 2006. Whilst this Planning Agreement principally related to the development of the South Dunheved Precinct, it also sets out traffic and transport contributions relating to the development of the Central and Western Precincts.

The Planning Agreement was updated in 2009 to include human services, open space and stormwater infrastructure contributions resulting from the development of the Central and Western precincts. The Planning Agreement was re-negotiated between Council and Lendlease as part of Amendment No.1 to the Precinct Plan.

An agreement has also been made between NPWS and Lendlease with regards to contributions towards various embellishments of the Regional Park. This agreement includes commitments with regards to fencing, access, and the urban/Regional Park interface. Upcoming works within the Regional Park include the provision of visitor facilities such as amenity blocks and picnic areas, and at-grade car parking spaces.

1.4 Pre-Lodgement Consultation

A pre-lodgement meeting was held with Council in early 2018 to discuss the concept for the Stage 3C development. Council provided a number of comments on the initial scheme which have been considered in the proposed design. A summary of these comments and the design responses is provided below.

Table 1 Penrith Council Pre-Lodgement Commentary

Council Comment	Design Response
Traffic and Engineering Matters	
Remove all pull-in bays from the internal road network – The road should be a standard road width.	The proposed roads have a road reserve width of 15.3-15.6m and a carriageway width of 8m. This is broadly consistent with *Local Street - L1* under the DCS, noting the 15.6m total road reserve. This variation is considered minor and only relates to a section of Road 027. Refer to **Section 3.5**. All pull-in bays have been removed.
Consider grouping garages & driveways together in order to maximise on street parking & landscaping opportunities.	The proposed development is supported by a Street Tree Plan (**Appendix H**) which shows the relationship of garages/driveway and street landscaping. Street parking is shown in the Civil Plans (**Appendix C**). Generally, the subdivision layout seeks to maximise street landscaping and street parking opportunities, while grouping garages and driveways where possible.
Driveways must be located 6m from the tangent point.	The majority of driveways comply with this control. However, Lot 3325 and 3331 have driveways within 6m of the tangent point. This is due to the highly constraint nature of the site and subdivision pattern, resulting in corner lots that are rear-loaded. This does however result in a better built form outcome and given the low speed nature of the road (that provides access for only 12 lots and is not intended to be a thoroughfare), is considered appropriate.

Council Comment	Design Response
Waste Collection	
Council provides a 3 bin service to each residential dwelling – as such a 2m x 1m bin presentation area shall be provided for each dwelling.	The proposed development is supported by a Street Tree Plan (**Appendix H**) which shows bin locations as being adequate for waste collection purposes.
Alternative arrangements may be considered - Any alternatives should be discussed with Council's Waste Team in consultation with the Planning Department to ensure other aspects of the development are not compromised.	Waste generated by the proposed residential development will be removed by Council, consistent with waste collection undertaken for residential dwellings within the broader Central Precinct. All pavements are 8m per the requirements of the DCS, consistent with the street typologies for the remainder of the Central Precinct.
Planning/UDRP Matters	
Council comment marked upon preliminary concept plan presented.	• Clustered street tree planting has been proposed at the end of the proposed pedestrian green link. • The need to avoid vehicular access to the main road, as well as rear yard fencing addressing this frontage has resulted in the rear loading of lots 3302 – 3323,which results in a non-standard interface. • Providing higher density development fronting the higher amenity Regional Open Space to the south-east provides a favourable outcome, noting that additional parking has also been proposed in this vicinity to make up for the lack of on street parking adjacent to the dwellings.
It is acknowledged that full compliance with solar access requirements may not be achieved across all lots. Where solar access is compromised, dwellings should be designed to maximise solar access opportunities with innovative floor plans and designs.	As shown in the Architectural Plans (**Appendix D**), dwellings have been designed to maximise solar access to living areas and/or private open space, by placing these areas at the most northern orientation of the lot. There is a strong focus on the provision of dominant glazing to the northern facades of dwellings where practical.
Edge treatments and corner articulation will be key to ensuring a varied streetscape - single story elements should be incorporated into end dwellings to soften a row of attached housing.	As shown in the Architectural Plans (**Appendix D**), dwellings feature a range of architectural frontages, subject to the lot size and dwelling type. This ensures appropriate design articulation. Importantly, dwelling designs are generally two storey in height, with some three storey appearances due to 'attic' spaces proposed to provide varied appearance on corner lots. The overall aesthetics of the design is consistent with the intended character outcomes for the Village Centre Character Area, reflective of the sites standing in the denser Village Centre area.
Consider the location & species of street trees & cluster together where possible to ensure a high quality landscape finish particularly where rear loaded garages are proposed.	The proposed development is supported by a Street Tree Plan (**Appendix H**) which shows the location of street trees adjacent rear-loaded garages. Street trees have been appropriately spaced throughout the streetscape to ensure lot access is maintained, and are planted in gaps between driveways and clustered in some areas where possible (e.g. near Lots 3359 and 3332-3339).
The proposed 'green corridors' should be densely planted with native species to reduce ongoing maintenance burdens to Council. Species should be selected based on the climatic conditions of the corridor.	Connection to surrounding bushland and regional open space (south of the site) through 'green corridors' is achieved through street and verge plantings. Plant species are selected for their appropriateness for an urban environment and proximity to native bushland. Detailed planting will be addressed at construction certificate stage.

An outcome of this initial consultation was the identification that the road typologies proposed required variations to the standard roads outlined in the DCS (refer to **Section 3.5**). This outcome is considered appropriate as it avoids the need for rear fencing to be focused on the main thoroughfare, ensuring a clear and amenable streetscape.

2.0 Site Analysis

2.1 Site Location and Context

The subject site is identified as Stage 3C of the Central Precinct (as illustrated in **Figure 4**). The Central Precinct is located approximately 2.9km to the east of the Jordan Springs Town Centre, 3.3km east of The Northern Road, and approximately 6km north-east of the Penrith City Centre. The Central Precinct is approximately 135ha.

The Stage 3C site is located towards the eastern extent of the Central Precinct and adjoins Stage 3B2 to the west, Stage 3D to the south, the Regional Open Space to the east, and Stage 5B to the north.

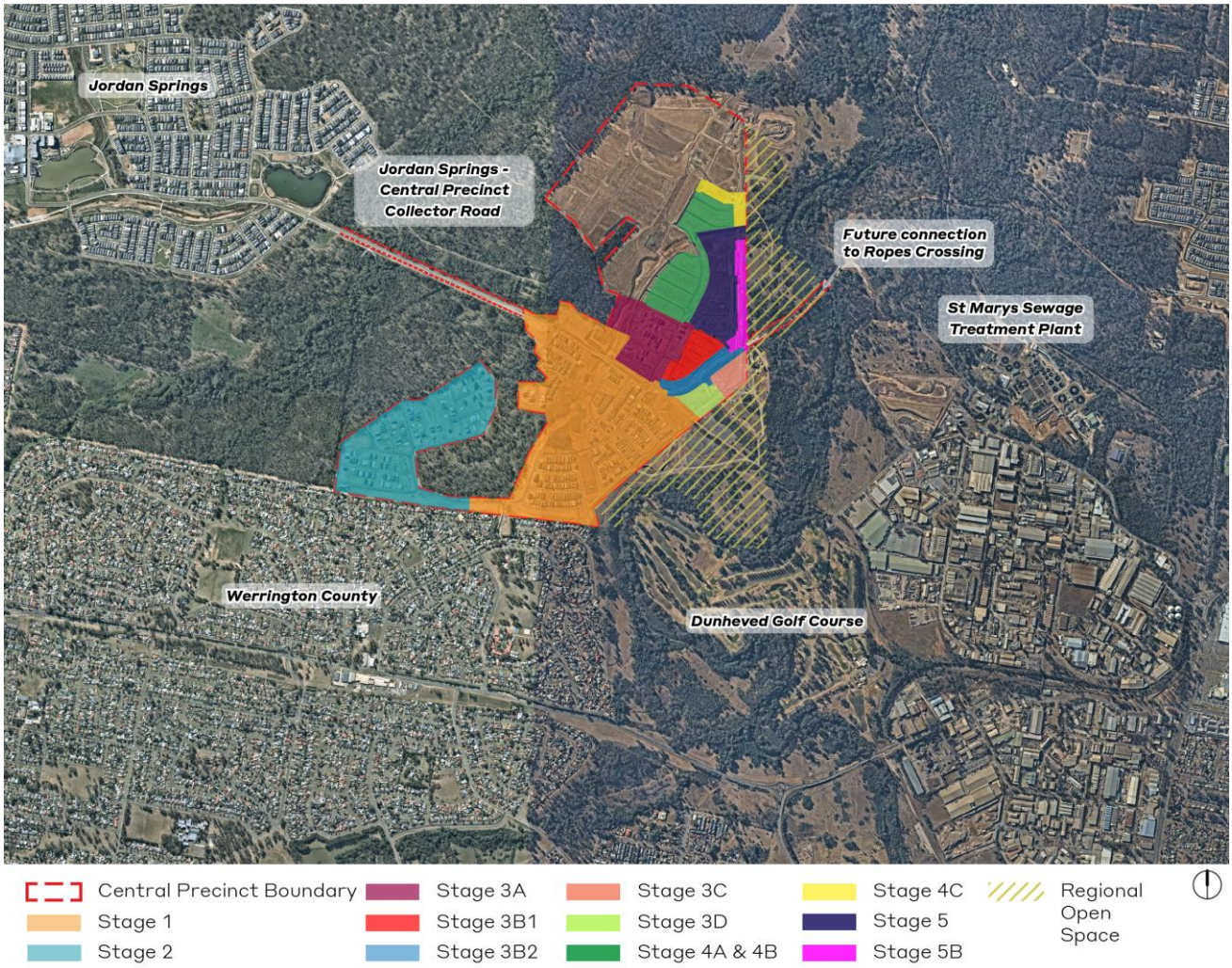


Figure 4 Stage 3C in the context of broader development within the Central Precinct

Source: Nearmap, Ethos Urban

2.2 Site Description

The site is legally described as Lot 1 DP 1248480 and is approximately 1.74ha in area (shown in **Figure 5**). The site is current accessed by Wianamatta Parkway to the north and an unnamed road to the south. The site is also located adjacent the intersection of Wianamatta Parkway and the future East-West Connector Road. The site is irregular in shape, forming a 'super lot' within the surrounding subdivision pattern of Torrens Title lots that are intended for the development of residential dwellings. The site was subject to clearing works as approved under D14/1228 and is therefore free of existing vegetation. The site features a slight change in level of approximately one metre from the eastern boundary up to the western boundary.

Figure 5 Aerial photograph identifying the extent of the subject site

Source: Nearmap, Ethos Urban

2.3 Existing Development

As a result of the civil and earthworks approved under the Stage 3 subdivision (DA16/0113), the site is currently vacant land for the purposes of future residential development. Services, utilities and footpaths are also proposed to be provided to the site boundary prior to delivery of the stage. Previous bulk earthworks have been completed on the site as per the approved DA14/1228.

2.4 Existing Site Condition

2.4.1 Utility

Existing provisions of electricity, water, sewerage and telecommunication services have been implemented throughout the staged development of the Central Precinct. Given its development status, Stage 3C is not currently connected to these services. Connection to these services for the purpose of facilitating future residential development is sought under this application.

2.4.2 Bushfire Hazard

Land within the Central Precinct, including the Stage 3C site, is classified as Bushfire Prone Land (Vegetation Category 1 and 2), due to the fact that the bushfire mapping has not been updated since the completion of the clearing and bulk earthworks under DA14/1228. The adjacent Regional Open Space will be managed bushland upon its full development. Specific bushfire management, protection and mitigation strategies were adopted in the development of the CPP. Bushfire is further addressed in **Section 4.7**.

2.4.3 Water & Drainage

The drainage characteristics of the Central Precinct site (prior to its development) was analysed as part of the Water, Soils & Infrastructure Report (2009) prepared by Jacobs SKM (SKM). This report forms part of the CPP,and has been supported by two subsequent reports prepared by Cardno – the Jordan Springs East Precinct Stormwater Quality Management Report (January 2017) and the Central Precinct Stormwater Detention Strategy (January 2017). These reports were approved by Council as part of the CPP Amendment No. 1 and reflect the design evolution of the site.

The Central Precinct is naturally flood prone within its eastern extents, with the most recent revision of the report by SKM (July 2015) assessing that once filled, the 1% Annual Exceedance Probability (AEP) water surface profile gradually rises from 19.4m AHD at the northern extent of the Central Precinct to 21.0m AHD at the southern extents of the Precinct.

Bulk earthworks raised the ground levels of future lots so that they achieve a minimum 500mm level above the predicted 1% AEP South Creek water surface profile. These works ensure that the area of all proposed residential lots is above the 1% AEP water surface level.

Additionally, the bulk earthworks as approved under DA14/1228 incorporated interim stormwater infrastructure and environmental management works, including the realignment of the existing drainage corridor identified on the 1:25,000 topographic maps.

2.4.4 Contamination

The greater St Marys site underwent remediation over the period from 1993 to 1999, with several Site Audit Statements (SAS) issued to confirm this.

Site Audit Statements KJL 118-EW7,8,9,12,RipD2&E and KJL118-EW6.1/6.2 and D1 Residential

These SASs relate to areas of Central Precinct covering Stages 3B1, 3B2, 3C, 3D, 4A, 4B, & 5, and Stages 1, 3A, 3B1, 3B2, 4A, & 3D, respectively. These SASs certify that the entirety of the Stage 3C area is now suitable for the development use of *"residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry."*

2.4.5 Soils and Ground Water

Extensive groundwater and salinity investigations have been carried out across the St Marys site over the years. A summary and review of the previous studies and investigations relevant to the Central Precinct was undertaken by SKM. These studies supported the formation of the CPP. A further review of the site geology and soils was undertaken by Cardno as part of their Salinity Assessment Review, which applied to the whole of the Central Precinct site. This review was included in the Stage 3A subdivision application (DA16/0113).

In summary, the Central Precinct has the following subsurface conditions:

- quaternary aged deposits of fine grain sand, silt and clay is located along the banks to the east and northern boundary of the Central Precinct site. The alluvial clays are highly silty and of medium plasticity;
- the site is underlain by Triassic Bringelly Shale (from the Wianamatta Group) in the western part of the site;
- the site comprises two alluvial soil landscape types – Luddenham soils (moderate salinity potential) and South Creek soils (high salinity potential);
- two groundwater-bearing systems are present within the St Marys site being the shallow (regolith (soil) and deep (fractured shale bedrock) aquifers;
- apparent electrical conductivity (ECa) was identified to be generally low in the in areas adjacent to lower parts of the site and higher conductivities beneath more elevated ground;
- soil analysis shows that the clays are of generally low to moderate salinity in the top 1m; and
- shallow groundwater of low salinity occurs at depths of 3 – 6m (noting these depths are from the natural surface and Stage 3C has been filled by approximately 2.5 to 4.5m under DA14/1228).

2.4.6 Heritage

Aboriginal Heritage

Extensive archaeological studies have been prepared across the St Marys site since 1994, including the preparation of a Strategic Management Model (SMM). Subsequent investigations have identified thousands of artefacts across the entire St Marys Development Site, including the Central Precinct.

An Archaeological Assessment of Indigenous Heritage Values in the Central Precinct (Jo McDonald, 2008) forms part of the adopted CPP. Four salvage excavation management areas within the Central Precinct have already been identified as requiring archaeological salvage works prior to development taking place (CP1, CP3, CP4, and CP6). Permits allowing testing and salvage excavations of Aboriginal objects or places on the site have been issued by the OEH under section 90 of the National Parks and Wildlife Act 1974 (NPW Act) (AHIP No. C0000362) and works are being undertaken in accordance with this Aboriginal Heritage Impact Permit (AHIP). Previous advice by GML provided in earlier DAs (dated 10 December 2014 and 11 September 2015 relating to the Stage 1 DA15/0299 and Stage 2 DA15/1216) outlines that all Aboriginal heritage management works within the Central Precinct are complete and development works may proceed in the area.

Non-indigenous Heritage

There are no areas or items of non-indigenous heritage identified within the Stage 3C site. The nearest non-indigenous heritage items or area is recognised as Site 3, which is located within the Brick Kiln Park, approximately 650m to the west of the site.

2.4.7 Access

The Jordan Springs – Central Precinct Connector Road was approved by the JRPP on 19 November 2015 as part of the Stage 1 subdivision works. The Connector Road runs west-east through the middle of Central Precinct, including a section immediately adjacent to the northern boundary of Stage 3C, and provides a connection through to the Northern Road. Vehicular access between the Connector Road and Stage 3C will be provided directly from proposed Roads 27 and 28 (refer to the Civil Plans at **Appendix C**). The main access to the Stage 3C site is from the Wianamatta Parkway to the west.

Access to the site via Ropes Crossing to the east along the existing east-west roadway is also to be made available to the public (also known as Ropes Crossing – Central Precinct Connector Road). This roadway is identified in SREP30 as a link road between the precincts across the St Marys site but currently is not publicly accessible. Development applications have been lodged for the delivery of this road, with the Stage 1 segment from the Dunheved Links Road to Ropes Crossing being approved, and the Stage 2 and 3 segments through Dunheved and to the Central Precinct anticipated to be approved shortly.

A bus-only connection through to Werrington will provide public transport connectivity, constructed as part of the now completed Stage 2 Subdivision works (DA15/1216).

2.5 Surrounding Development

North and South

To the north-west of the site is the proposed Stage 3B2 residential subdivision (DA17/0889), with areas of further residential development as part of the Central Precinct development beyond. Further north is the Regional Park and the existing suburb of Llandilo. To the area to the south of the site is an area of Regional Open Space. Beyond this is the Dunheved Golf Club.

East and West

To the east of the site is Regional Open Space. Further to the east is South Creek and Wianamatta Regional Park. Beyond this are the Dunheved Precincts and the St Marys Sewage Treatment Plant, St Marys Water Recycling Plant and Sydney Water Maintenance Depot. Further beyond is the suburb of Ropes Crossing, which contains around 6,000 residents in 2,200 homes, a public primary school, a sporting field, and a village centre with a variety of shops, including a supermarket. Ropes Crossing is also part of the St Marys ADI Site.

To the south-west of the site is Stage 3D (DA18/0620) for the future Village Centre, currently under assessment. Further to the west is Wianamatta Regional Park. The Park will be dedicated to the NPWS. Beyond the Regional Park is the Jordan Springs development, a new suburb which following completion will contain 2,500 new dwellings. Jordan Springs forms part of the St Marys ADI Site redevelopment.

3.0 Description of Proposed Development

The Stage 3C proposal seeks to provide a variety of housing choice within the Central Precinct, in a location adjacent to a future village centre, enabling residents easy access to everyday conveniences. The proposal will contribute to the activation of the Village Centre area by ensuring pedestrian and active transport connections through the site, while connecting the Stage 3C area to the adjacent Regional Open Space and broader Regional Park.

Specifically, this DA seeks approval for:

- The subdivision of Lot 1 DP 1248480 to create 61 allotments, in the following configuration:
  - 59 lots for future residential development, comprising 57 lots with integrated dwellings and two residential allotments for future development;
  - One lot for the purposes of a future public reserve acting as a pedestrian connection through to the Wianamatta Parkway;
  - Dedication of public residential roads; and
  - One residue lot for the future intersection of Stage 3C and the East West Connector Road.
- The construction of 57 dwellings, including;
  - 29 attached dwellings;
  - eight semi-detached townhouses; and
  - 20 ‘urban sleeve’ dwellings.
- Site preparation and civil works, including
  - Regrading of the site and associated site stabilisation;
  - Provisions of utilities; and
  - The construction and connection of draining and stormwater systems.
- The subdivision and construction of three internal (local) roads; and
- Associated landscaping.

It is proposed that subdivision will occur prior to the construction of the proposed dwellings. Subdivision Plans prepared by RPS are included in **Appendix A**. Architectural plans illustrating the proposed dwellings are included in **Appendix D** and Civil Plans are included in **Appendix C**.

3.1 Subdivision and Lot Mix

The proposed development includes the creation of 61 allotments, primarily for the purposes of residential development with one lot for a future public reserve and one residue lot.

The proposed subdivision will be delivered as a single stage of works. A summary of the proposed lots is detailed in **Table 2** and shown in **Figure 6-7**. The majority of lots will be used for residential development, however:

- Lot 3360 is a residue lot, with its use subject to a separate application; and
- Lot 3361 will be dedicated to Council for the purposes of a public reserve.

Residential lots are generally regular in shape, following the style of lots intended for residential development seen throughout the broader Central Precinct.

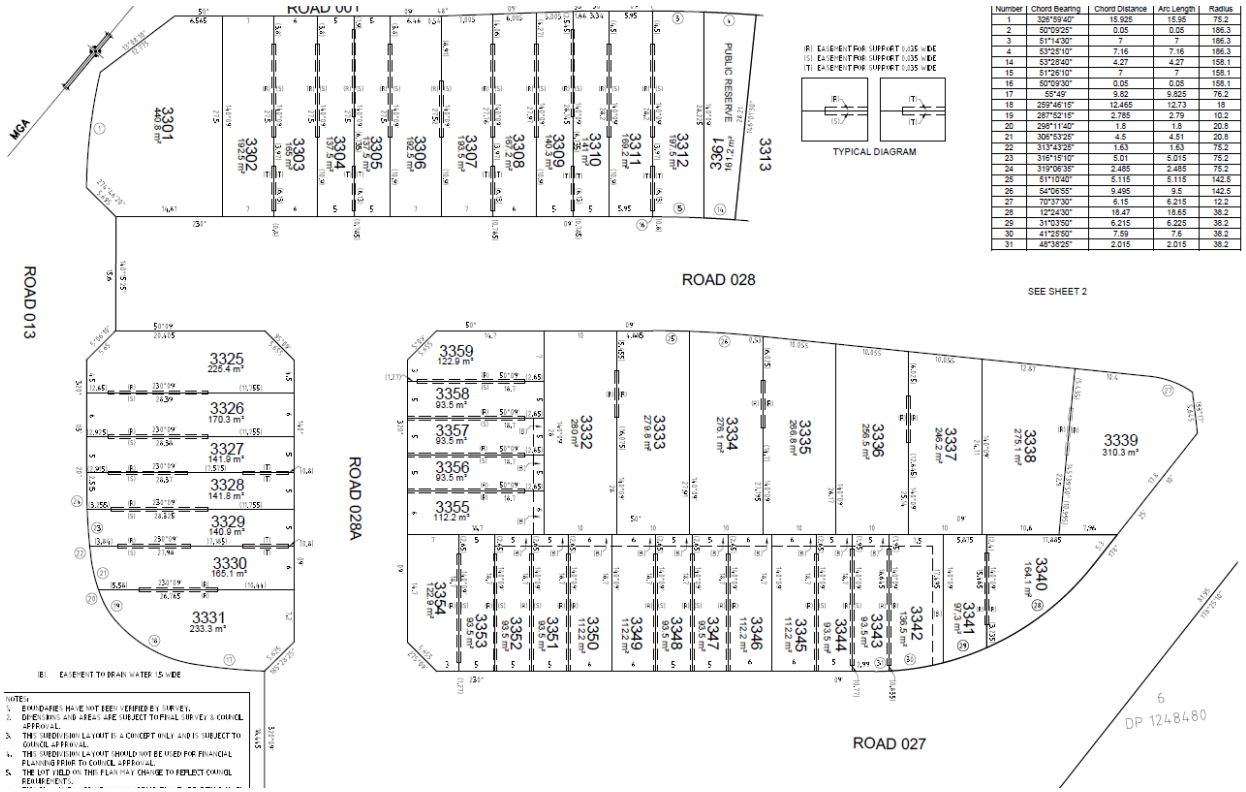


Figure 6 Proposed Subdivision Layout (west)

Source: RPS

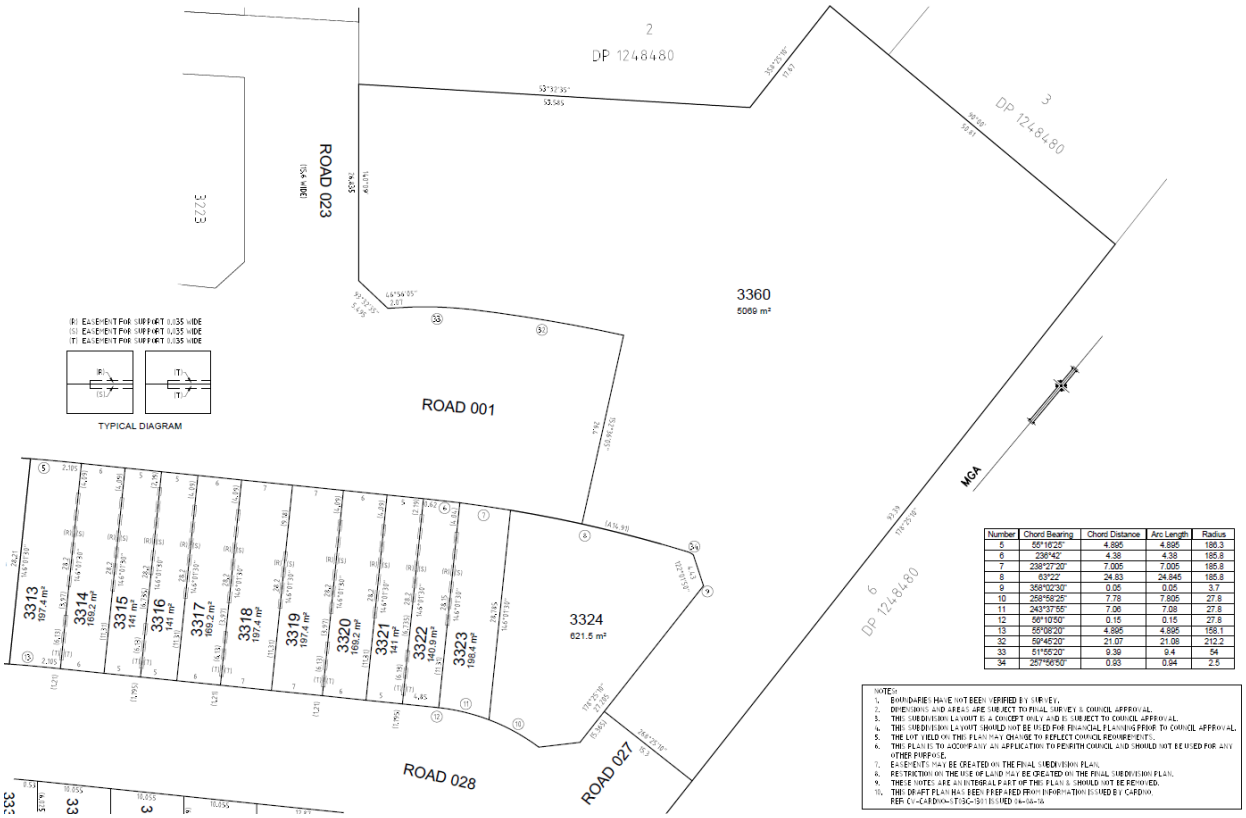


Figure 7 Proposed Subdivision Layout (east)

Source: RPS

Table 2 Summary of Lots 3301-3359

Lot	Area (m^2)	Typical Frontage (m)	Typical Lot Depth (m)	Frontage Orientation	Vehicle Access
3301	440.80	14.61	27.50	Road 001	Road 028
3302	192.50	7.00	27.50	Road 001	Road 028
3303	165.00	6.00	27.50	Road 001	Road 028
3304	137.50	5.00	27.50	Road 001	Road 028
3305	137.50	5.00	27.50	Road 001	Road 028
3306	192.50	7.00	27.52	Road 001	Road 028
3307	193.50	7.01	27.76	Road 001	Road 028
3308	167.20	6.01	27.97	Road 001	Road 028
3309	140.30	5.01	28.15	Road 001	Road 028
3310	141.00	5.00	28.20	Road 001	Road 028
3311	162.20	6.00	28.20	Road 001	Road 028
3312	197.50	7.00	28.23	Road 001	Road 028
3313	197.40	7.00	28.20	Road 001	Road 028
3314	169.20	6.00	28.20	Road 001	Road 028
3315	141.00	5.00	28.20	Road 001	Road 028
3316	141.00	5.00	28.20	Road 001	Road 028
3317	169.20	6.00	28.20	Road 001	Road 028
3318	197.40	7.00	28.20	Road 001	Road 028
3319	197.40	7.00	28.20	Road 001	Road 028
3320	169.20	6.00	28.20	Road 001	Road 028
3321	141.00	5.00	28.20	Road 001	Road 028
3322	140.90	5.00	28.15	Road 001	Road 028
3323	198.40	7.01	28.79	Road 001	Road 028
3324	596.30	21.11	28.79	Road 001	Road 028

Lot	Area (m^2)	Typical Frontage (m)	Typical Lot Depth (m)	Frontage Orientation	Vehicle Access
3325	225.40	4.50	28.39	Road 013	Road 028A
3326	170.30	6.00	28.39	Road 013	Road 028A
3327	141.90	5.00	28.38	Road 013	Road 028A
3328	141.80	5.00	28.38	Road 013	Road 028A
3329	104.90	5.01	28.33	Road 013	Road 028A
3330	165.10	6.13	27.98	Road 013	Road 028A
3331	233.30	4.60	26.77	Road 013	Road 028A
3332	280.00	10.00	28.00	Road 028	Road 028
3333	279.80	10.00	28.00	Road 028	Road 028
3334	276.10	10.53	27.19	Road 028	Road 028
3335	266.80	10.05	26.17	Road 028	Road 028
3336	256.50	10.05	25.14	Road 028	Road 028
3337	246.20	10.05	25.14	Road 028	Road 028
3338	275.10	12.87	24.11	Road 028	Road 028
3339	310.30	10.40	22.90	Road 028	Road 028
3340	164.10	26.36	15.47	Road 027	Road 027
3341	97.30	6.21	20.40	Road 027	Road 027
3342	136.50	5.04	18.60	Road 027	Road 027
3343	93.50	5.00	18.60	Road 027	Road 027
3344	93.50	6.00	18.70	Road 027	Road 027
3345	112.20	6.00	18.70	Road 027	Road 027
3346	112.20	5.00	18.70	Road 027	Road 027
3347	93.50	5.00	18.70	Road 027	Road 027
3348	93.50	5.00	18.70	Road 027	Road 027
3349	112.20	6.00	18.70	Road 027	Road 027

Lot	Area (m^2)	Typical Frontage (m)	Typical Lot Depth (m)	Frontage Orientation	Vehicle Access
3350	112.20	6.00	18.70	Road 027	Road 027
3351	93.50	5.00	18.70	Road 027	Road 027
3352	93.50	5.00	18.70	Road 027	Road 027
3353	93.50	5.00	18.70	Road 027	Road 027
3354	122.90	3.00	18.70	Road 027	Road 027
3355	112.20	6.00	18.70	Road 028A	Road 028A
3356	93.50	5.00	18.70	Road 028A	Road 028A
3357	93.50	5.00	18.70	Road 028A	Road 028A
3358	93.50	5.00	18.70	Road 028A	Road 028A
3359	112.90	3.00	18.70	Road 028A	Road 028A
3360	5069.0	N/A	N/A	Road 001	N/A
3361	161.20	4.27	28.10	Road 001	Road 028

3.2 Residential Dwellings

The proposed development incorporates the construction of 57 residential dwellings. Future residential development on Lots 3301 and 3324 will be subject to a separate application. Given the variety of lots sizes proposed, the proposed dwellings will incorporate a mix of attached and semi-detached styles. Further, Lots 3340-3359 are the 'urban sleeve' type permitted in the Village Centre Character Area, consistent with the provisions of the CPP and DCS (see **Section 4.4**). The proposed dwellings are shown in the Architectural Plans (**Appendix D**).

These 'urban sleeve' dwelling types provide a variety of housing choice within the Village Centre Character Area, reinforced by the close proximity to the future Village Centre and the intention for smaller product that is more suited to a walkable neighbourhood and responds to current market trends.

3.2.1 Built Form

The proposed dwellings are of contemporary architectural style, consistent with residential development seen throughout the broader Central Precinct. Dwellings are generally two storeys in height, excluding lots 3325 and 3331 which feature a third storey attic component.

All dwellings feature garage parking, excluding Lots 3325 and 3331 which feature parking spaces within the lot. Lots 3302-3323 and 3325-3331 are rear loading, while the remaining lots integrate garages within their primary frontage. Visualisations of the character and style of part of the Stage 3C development are shown in **Figure 8-10**.

Figure 8 Visualisation of Lots 3313-3318

Source: McDonald Jones

Figure 9 Visualisation of Lots 3323-3319

Source: McDonald Jones

Figure 10 Visualisation of Lots 3325-3331 – noting the third-level attic

Source: McDonald Jones

3.2.2 Landscaping

Each of the proposed integrated housing lots features private open space. The proposed development is supported by Landscape Plans, included in **Appendix E**. Landscaping schemes for each dwelling vary depending on the size of private open space and its orientation, however generally incorporates a grassed area and garden beds. Some sections of private open space are paved patios. An example landscape design is shown in **Figure 11**.

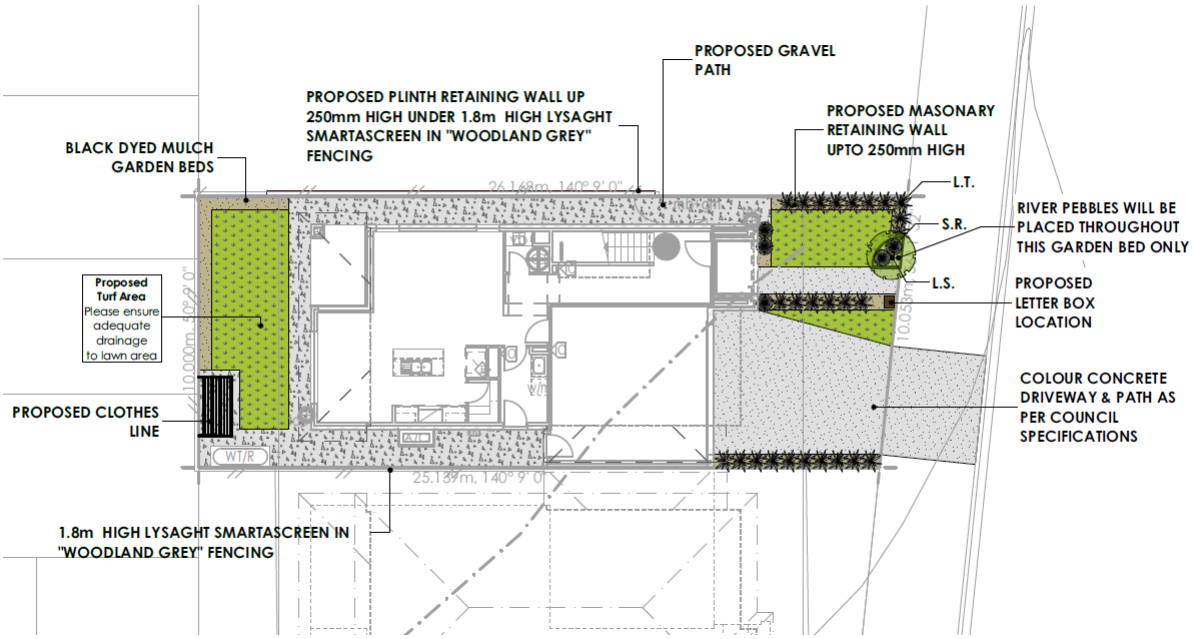


Figure 11 Landscape scheme for Lots 3336

Source: Eden Brae

3.2.3 Housing diversity

Lot 3303, 3308, 3311, 3314, 3317, 3320, 3326 and 3330 feature a 'Fonzie' style studio unit above the proposed garage. These studios are associated with the primary dwelling and include a fourth bedroom, home office, bathroom and kitchenette. Studios are intended to provide greater housing diversity by catering to larger families. Access to the studios is through the main dwelling garage, with no independent external access provided. Studios are not provided with a standalone car space, rather share the garage with the main dwelling. Studios are shown in **Figure 12-14**.

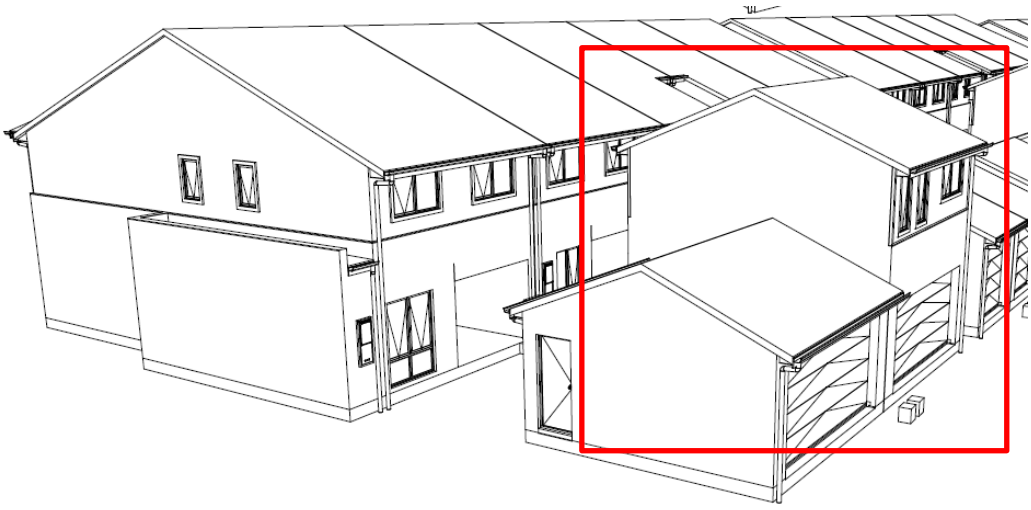


Figure 12 Studio (identified in red) in relation to the primary dwelling, shown for Lot 3303

Source: Eden Brae

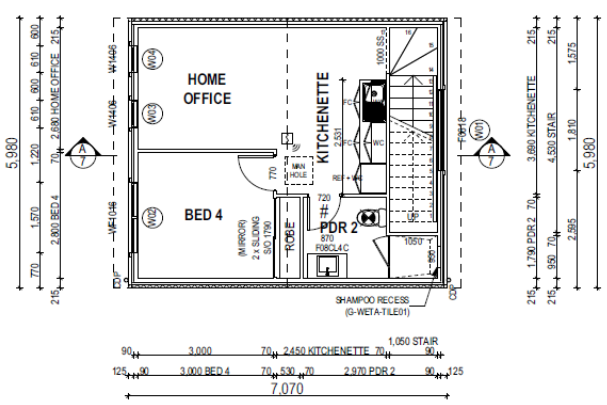
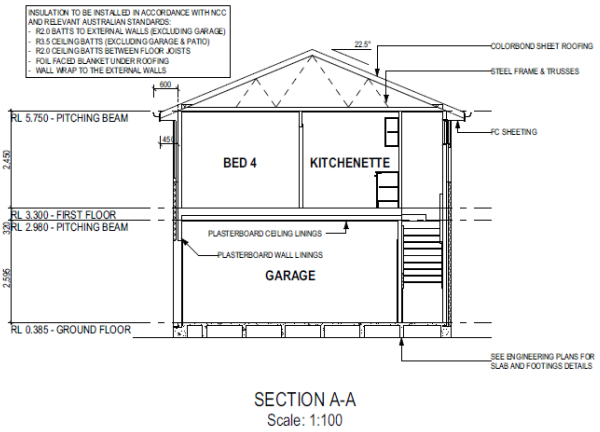


Figure 13 Upper level floor plan of studio

Source: Eden Brae



SECTION A-A
Scale: 1:100

Figure 14 Section showing access to upper level studio from below the garage

Source: Eden Brae

3.3 Site Grading

Civil Engineering Plans prepared by Cardno illustrating the final levels of the site are included at **Appendix C**, and details of Earthworks and Grading is included in Section 4 of the Civil Engineering and Infrastructure Report at **Appendix B**.

Since the submission and approval of the Bulk Earthworks DA (DA14/1228), further refinement of the road and lot layout have required minor adjustments to the finished surface levels within Stage 3C. Details regarding these minor adjustments are included in the Civil Report at **Appendix B**.

The site is proposed to be graded with a gentle descent of approximately 1m (from AHD 22.5 to 21.5) from the western to the southern extent of the site.

3.4 Stormwater

The proposed stormwater management strategy for Stage 3C is shown in the Civil Engineering Plans at **Appendix C** and described in the Civil Engineering & Infrastructure Report at **Appendix B**. The strategy includes the construction of a piped drainage network, the drainage corridor (riparian corridor) located in Stages 1, 3, and 4, and seven water quality basins located strategically across the Central Precinct. The stormwater drainage network has been designed to safely convey major and minor flows to basins or open channels before discharging from the Precinct into South Creek.

The required size and orientation of these drainage systems ensure that post development flows do not have an adverse impact on downstream watercourses following filling from the site. The drainage strategy also takes into account the future development pattern of the Central Precinct and addresses temporary measures that may be required to facilitate construction.

The area of Stage 3C will be treated by a gross pollutant trap, bypassing basins, per the regional approach to water quality.

3.4.1 Utilities

The proposed development incorporates provisions of utilities/services required to facilitate future residential development. This includes connections to electricity, gas, potable water, sewage and telecommunications.

3.5 Road Network and Access

The proposed development involves the creation of new roads which will connect to the existing road network within the broader Central Precinct. The proposed road network will connect to Wianamatta Parkway to the north of Stage 3C and the continuation of Poynting Street to the west of Stage 3C, as shown in **Figure 15**. The proposed roads are detailed below.

Stage 3C proposes a new road cross section more appropriate to the character of the Village Centre area (Village Centre Local Street V7, V8 and V9), and while this road typology is not identified within the current CPP, due to the nature of the Village Centre site and its future intended uses, it is deemed appropriate to manage traffic speeds, provide parking, and ensure efficient access to and from the adjacent Regional Open Space. This particular typology proposes three separate components subject to the road alignment abutting the Regional Open Space boundary.

These non-standard street and lane typologies are a result of site constraints with the design of the subdivision layout, however provide for a clearly defined street network, and allow for housing to front the main boulevard of Stage 3C, rather than rear fencing. This provides a more appealing streetscape and allows for street tree planting to be provided at more frequent intervals along the street frontage.

Table 3 Proposed Road Network Details

Road Type	Road Reserve Width	Pavement Width	Kerb Type	Road Numbers
L1 Minor Local Street	15.6m	8m	Kerb and gutter	28. 28A
V7 Village Centre	18.4m	8m	Kerb and gutter	027 (CH301-325, CH385-425, CH467-478)
V8 Village Centre	18.4m	13.6m (90 degree parking one side, 5.6m)	Kerb and gutter one side, dish drain between carriageway and parking, kerb only	027 (CH 325-385)
V9 Village Centre	15.3m	10.5m (parallel parking one side, 2.5m)	Kerb and gutter one side, dish drain between carriageway and parking, kerb only	027 (CH425-467)

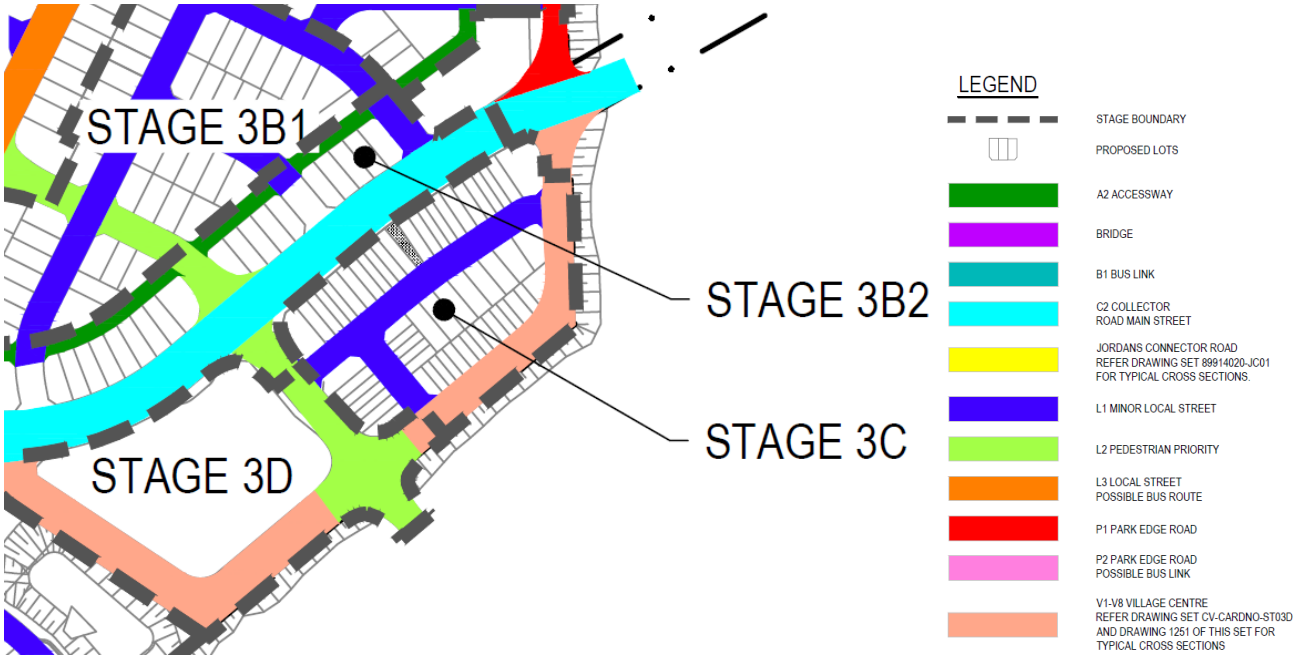


Figure 15 Proposed road hierarchy for Stage 3C

Source: Cardno

The proposed roads have been designed based on the road typologies described in the CPP and *the Design Guidelines for Engineering Works for Subdivisions and Developments*, November 2013 by Penrith City Council, with the variations as described above for the Village Centre road typologies. The local roads for which consent is sought by this DA will be dedicated to Council as public roads.

Evacuation and Emergency Access Route

The evacuation and emergency access route in the south of Stage 2 will allow for flood evacuation and emergency vehicle access between Central Precinct and Henry Lawson Avenue. The proposed route was approved as part of the Stage 2 DA (DA15/1216). The road will be single lane with no passing bay. Services will be located along the carriageway. The Jordan Springs Connector Road provides evacuation to the west in the event of an emergency and, once open (subject to future approvals), the Ropes Crossing Connector Road will provide evacuation to the east.

The Concept Plan and the Landscape Masterplan (previously provided) show the proposed footpaths, cycle route and bus route networks throughout the Central Precinct and the way the site connects with those networks.

3.6 Landscaping

The proposed development incorporates provisions of street landscaping associated with the proposed roads. Street landscaping will consist of street trees and low-lying plantings, consist with plant selection seen throughout the Central Precinct. The proposed street tree species and placement have been selected to:

- create legibility throughout the Precinct and the street hierarchy;
- provide a variety in the palette, with feature trees used to highlight street blisters and junctions;
- complement the proposed land uses and buildings within Central Precinct in terms of size and scale of the tree species;
- assist with solar access and shade during certain months and according to the north-south or east-west orientation of streets;
- form a consistent tree avenue with a street tree in the verge for most residential lots; and

- consider public safety and the need to avoid hazards that may result from leaf and branch drop or obstacles in vehicular sight lines.

The proposed trees are consistent with the CPP Street Tree Planting objectives and controls in Section 5.3.4 of the CPP, supporting ecologically sustainable development as identified under Section 4.8 of the CPP.

Minor landscaping works in the pedestrian connection through to the Wianamatta Parkway are proposed, including footpaths, turf and associated tree planting.

3.7 Contamination Management

Site Audit Statements KJL 118-EW7,8,9,12,RipD2&E and KJL118-EW6.1/6.2 and D1 Residential have been issued, confirming that the Stage 3C site is appropriate for residential uses. If there are unexpected finds of contaminated material these will be managed per the process contained within the approved Contamination Management Plan.

3.8 Waste Management

An identification of the materials involved in the proposed development of this subdivision, the estimated volume of said materials, and proposed measures to maximise material reuse and recycling and minimise waste (where relevant) are set out in the Civil Waste Management Plan included at **Appendix J**. The proposed development is supported by Residential Waste Management Plans, included in **Appendix K**. Generally, residential waste will be managed by Council, consistent with the broader Central Precinct.

3.9 Construction Management

Construction activities would be undertaken between 7:00am and 6:00pm Monday to Friday and 8:00am to 1:00pm Saturday. No work is to take place on Sunday or public holidays. Any construction work outside of these hours will be subject to prior consultation with PCC and Roads and Maritime Services.

Peak truck movements into and out of the site is envisaged to occur during the initial minor earthworks stage with the following daily truck movements expected:

- Approximately 20 passenger vehicles/ small tippers/ medium heavy rigid vehicles arriving to site each morning and departing each afternoon.
- Approximately two delivery vehicles (i.e. Truck and Dog trailers or similar) arriving and departing per hour during construction hours.

Access for construction will be via Jordan Springs Boulevarde, Lakeside Parade and the Wianamatta Parkway to the west. This is not considered to have a significant impact on traffic, due to the low volumes of construction traffic required for Stage 3C. Further details on construction management will be provided in a Construction Management Plan to be completed prior to the commencement of works.

3.10 Construction Staging

The construction of the development will occur in a staged manner. Accordingly, it is requested that the consent be drafted to enable the staged issue of construction certificates (including built form), occupation certificates and subdivision certificates.

Further, it is recommended that the conditions be drafted to enable the release of the subdivision certificates prior to the issue of an occupation certificate, enabling the registration process to commence with Land Registry Services in advance of the completion of each dwelling, so that the settlement is not unnecessarily delayed.

This approach has been supported by Council in previous medium density housing development applications (DA18/0156 in Stage 1), through allowing lot registration to occur prior to the construction of dwellings to facilitate timely delivery of the project.

Any risks associated with the early release of the subdivision certificates are mitigated by the fact that the underlying subdivision, the road network, services infrastructure and this development proposal are all being managed and constructed by the proponent.

4.0 Assessment of Environmental Impacts

This section considers the planning issues relevant to the proposed development and provides an assessment of the relevant matters prescribed in section 4.15(1) of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The following legislation, strategies and planning instruments relevant to the proposed development include:

- *State Environmental Planning Policy No. 55 – Remediation of Land* (SEPP 55);
- *Sydney Regional Environmental Plan No. 30 – St Marys* (SREP 30);
- St Marys Environmental Planning Strategy 2000 (2006 Update) (St Marys EPS); and
- Central Precinct Plan and Development Control Strategy 2009

The proposed development's consistency and compliance with these plans and policies is detailed below.

4.1 State Regional Environmental Plan No 30 – St Marys

State Regional Environmental Plan No 30 – St Marys (SREP 30) is the primary statutory planning instruments that is applicable to the site. The proposed development is consistent with the performance objectives as detailed in Part 5 (clauses 21-35) of the SREP in that it:

- is in accordance with the ecologically sustainable development of the land, as prescribed by the CPP;
- will not result in impacts to air quality, with appropriate management measures to be incorporated during construction consistent with those currently in operation across the site;
- is confined to the Urban Zone, ensuring the conservation significance of the Regional Park is protected;
- has had appropriate consents and approvals to disturb Indigenous heritage items obtained and these works completed to allow for development to occur;
- represents the staged creation of a new residential community within the Central Precinct which will be serviced by a full range of both hard and soft infrastructure;
- ensures the future dwellings within the proposed subdivision will have convenient access to a range of open space, recreation areas and riparian corridor;
- will utilises the interim and long-term Stormwater Management Strategies to ensure appropriate water cycle management in relation to the proposal;
- the road layout of the proposed subdivision is consistent with the design and street hierarchy established within the CPP, and is highly integrated with the approved surrounding road network;
- the proposal contributes towards the provision of an attractive and safe built environment which satisfies a diverse range of community needs;
- the development supports the provision of a range of building types and forms within the Central Precinct, ensuring a wide range of choice in housing; and
- the subdivision layout ensures an appropriate delineation of private and public spaces.

Stage 3C is zoned 'urban' in accordance with Clause 36 of SREP 30. The proposal is consistent with the objectives for the Urban Zone set out in Clause 40 (1) of SREP 30, as it will ensure that the zone is primarily used for residential purposes and associated facilities.

The proposal is also compliant with Clause 40 (2) of the SREP, which establishes that 'housing', 'roads' and 'drains' are permissible, subject to consent.

Clause 20 of SREP 30 requires the consent authority to take the relevant Precinct Plan into account when assessing the proposed development, being Amendment No.1. As per the precedent set in *Stockland Development Pty Ltd v Manly Council* (2004) 136 LG ERA 254, Council is entitled to consider the draft CPP Amendment No.2 considering a development application for land in Central Precinct.

4.2 Stage Environmental Planning Policy Np. 55 – Remediation of Land (SEPP 55)

SEPP 55 requires that a consent authority must not consent to the carrying out of any development on land unless it has considered whether the land is contaminated. The Stage 3C site was incorporated within broader site investigations undertaken by Cardno. Accordingly, Site Audit Statement (SAS) KJL118-EW78912 confirms that the Stage 3C site is suitable for the following use;

> *residential with accessible soil, including garden (minimal home-grown produce contributing less than 10% fruit and vegetable intake), excluding poultry;*

In accordance with Clause 7 of SEPP 55, the site is suitable for the future intended use.

4.3 St Marys Environmental Planning Strategy 2000 (2006 Update)

The St Marys Environmental Planning Strategy (EPS) establishes guidelines and strategies for the future development of land under SREP 30, specifically in relation to matters of conservation, cultural heritage, water cycle and soils, transport, urban form, energy and waste, human services, employment and contamination.

Section 8 in the EPS identifies the urban form objectives for the St. Marys site. In accordance with these objectives, the proposal will result in development that is integrated with the existing and future adjoining community.

4.4 Central Precinct Plan and Development Control Strategy

An assessment of the proposal's consistency with the Central Precinct - Precinct Plan, prepared in accordance with SREP 30, is detailed in **Table 4**. The proposed works will allow for the orderly and efficient development of the Central Precinct in line with the aims and objectives of the Central Precinct - Precinct Plan.

Table 4 Central Precinct – Precinct Plan

Objective	Assessment
Land uses, densities and dwelling types	The proposed works are consistent with development in which the land is zoned and facilitates the development of dwellings of appropriate densities and types.
Development Phasing (Stage 3)	The proposed works will facilitate residential development appropriate to the dwelling target of at least 15 dwellings per hectare for the Urban Zone, and between 345-435 dwelling within the Stage 3 area.
Conservation of natural values	As the proposed works will occur on land that is already cleared, the proposed subdivision and associated civil works are in line with the broader conservation of natural value throughout the Central Precinct.
Character Area	The proposed works are consistent with the objectives of the Village Centre Character Area and facilitates development in-line with the objectives of the Village Centre area, in that it will: • Result in a subdivision pattern and dwellings that is consistent with the overall dwelling density of Stage 3; • Result in a subdivision pattern that allows for the proposed dwellings to be within a walkable distance from local employment opportunities, services, public transport and open space; • Provide dwelling stock which is directly accessible from the ground level; and • Contribute to landscaping within the overall Village Centre Character Area, including the planting of high-quality street trees.

4.4.1 Development Control Strategy

An assessment of the proposal's consistency with Part 5 of the Central Precinct – Development Control Strategy (DCS) is detailed in **Table 5** below.

Table 5 Central Precinct – Development Control Strategy

Objective	Assessment
Subdivision Layout	While there are no Subdivision Layout Principles specifically applicable to the Village Centre Character Area, the proposed subdivision is generally consistent with the Subdivision Layout Principles applicable to the Urban Zone in that it will: • The proposed subdivision pattern conforms to the desired outcomes for the Character Area and will provide predominantly for attached dwellings of an appropriate density; • Result in the development of land for residential purposes in accordance with the Framework Plan; • Provide a subdivision pattern that supports housing diversity and mix within neighbourhoods; • Provide lots that are consistent with the Residential Development Controls as per Table 4 of the Central Precinct Development Control Strategy • Establish housing diversity by providing a mix of lot sizes.
Future Character of the Village Centre Character Area	The proposed residential dwellings are generally consistent with the desired future character of Village Centre Character Area. Specifically, the proposed development will: • Facilitate residential development that will benefit from a walkable Village Centre; • Facilitate residential development that is accessible from the ground level, maintaining optimal accessibility; • Facilitate residential development that is within proximity of public transport services; • Supporting the achievement of the dwelling density target for the Central Precinct, through providing a range of dwelling diversity in lot sizes; and • Ensuring the development connects with the external road network.

The proposed development seeks consent for 57 dwellings through the integrated housing pathway. Table 4 (Residential Development Controls) of the DCS identifies that integrated housing is generally found in the Village Centre Zone Character Area. Integrated housing is recognised as being able to deliver greater housing choice and contribute to more affordable housing stock.

The proposal's consistency with the integrated housing criteria is detailed in **Table 6**.

Table 6 Integrated Housing Criteria

Criteria	Assessment
Integrated housing is most suitable for corner lots in order to create a built form that positively addresses both street frontages.	While the majority of dwellings proposed are not located on corner lots, the integrated housing as proposed demonstrates that dwellings positively address both street frontages, where applicable and reduce the impact of rear fencing facing roadways.
Integrated housing is most suitable for lots oriented north-south on an east-west street to maximise solar access to living areas and private open space.	The proposed integrated housing responds to the orientation of the subdivision layout through maximising solar access where practical, noting the Stage 3C location in close proximity to the Regional Open Space and future Village Centre and Village Centre Park. Private open space and living areas are located within each proposed dwelling and lot to maximise solar access, noting the general east-west alignment of the main streets as proposed.
There should be consistency in architectural language between the dwellings, however, identical repetition of elevations is to be avoided.	As shown in the Architectural Plans (included in **Appendix D**) a variety of dwelling facades are proposed. This ensures that repetition of architectural styles are avoided.
All frontages to the street should be articulated with a variety of design elements such as windows, balconies and verandahs, and adequate landscape treatment provided	As shown in the Architectural and Landscape Plans (included in **Appendix D** and **Appendix E,** respectively) the proposed design of dwellings incorporates a variety of architectural elements include windows, balconies and landscape treatments.

Studio units are proposed on Lot 3303, 3308, 3311, 3314, 3317, 3320, 3326 and 3330. Accordingly, the proposal's consistency with the studio unit criteria is detailed in **Table 7**.

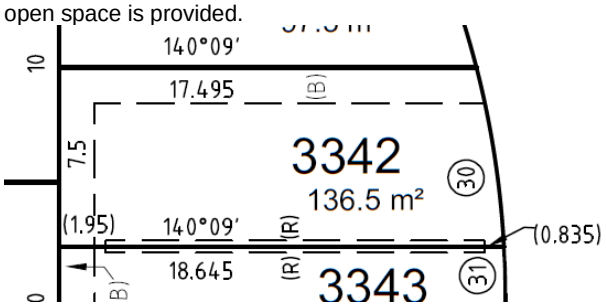
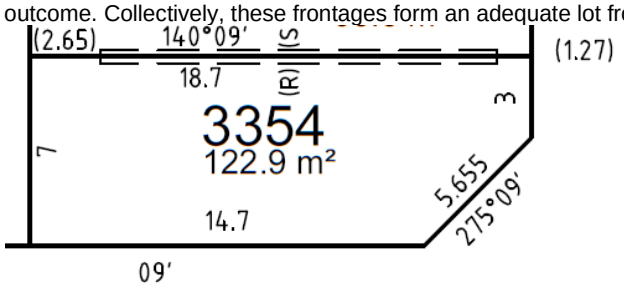
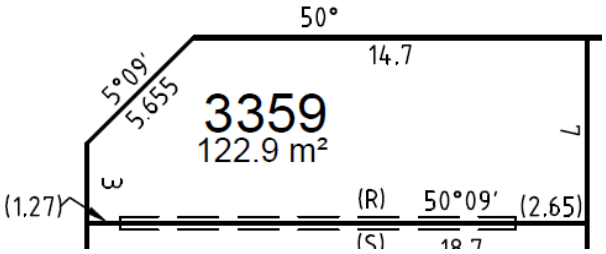
Table 7 Studio housing criteria

Criteria	Assessment
Provide a varied elevation where attached	The design of studio units incorporates fenestration which differentiates the elevation, where attached.
Have a minimum size of 45m^2, but contain no more than 1 bedroom	The proposed studios contain only one bedroom, a total floor space of 84.56m^2 including the garage.
Have 25m^2 of private open space	Private open space is shared with the primary dwelling and complies with the relevant controls as specified by the DCS, noting the error contained within the DCS relating to the private open space area. This is to be rectified as part of Amendment No.2.
Provide 1 car space	The proposed studio units are located above a double garage and share this with the main dwelling.
Be a maximum of 1 floor above garage	The proposed studio units are one level above the garage
Meet BCA standards	The proposed studio units are capable of complying with the applicable BCA Standards.

Table 4 of the DCS provides the applicable development standards for residential development within the Central Precinct The proposal development's consistency with the Residential Development Controls as stated in Table 4 of the DCS is detailed included in **Appendix M**. The proposed dwellings are largely compliant with the applicable development standards. Where the proposal seeks minor variations to these standards, **Table 8** details this variation and its justification. Importantly, integrated dwelling allows for each proposal to be assessed on its merits to provide the best design and amenity outcome, and therefore these variations are considered appropriate given the context of the site and its location adjacent to the Village Centre and Regional Open Space.

Table 8 Proposed variation to development standards as specified in Table 4 of the DCS

Lots	Variation	Justification
3325	*Typical Frontage*	The lot features a street frontage of 4.5m, where the minimum for this type of development is 5m. This is the result of Lot 3325 being a corner lot that is splayed in this location. The proposed variation is considered appropriate in this circumstance given the intended flexibility of the control and the shape of the lot. Additionally, the width of the lot (8.5m) provides the opportunity for a suitable built form to be provided, as proposed.
3331	*Typical Frontage* *Secondary Setback*	The minimum frontage for the proposed allotment under the DCS is 5m, however given the curvature of this lot boundary (resulting in a varied lot frontage width fronting the Village Centre to the west) the lot frontage distance is highly variable. Notwithstanding, the lot frontage at the rear of the site (with the driveway entrance to the lot) is 7.2m, compliant with the control. The perceived variation is appropriate given the curved nature of the lot boundary and its corner lot arrangement. The secondary setback is 1m, where 1.5m is required. This is due to the curved site boundary and rectangular building design.
3340	*Allotment Size* *Typical Frontage*	This lot exceeds the allotment size range (80-120m^2) and typical frontage (5-10m) for its development type, with a proposed lot size of 164.1m^2 and frontage of 26.36m. This variation is considered appropriate in this circumstance as it provides benefits to amenity as a greater area of private open space is provided on the site.
3342	*Allotment Size*	This lot (136.5m^2) exceeds the allotment size range (80-120m^2), which responds to an inter-allotment drainage easement (B) to service Lots 3341 to 3358 that discharges through Lot 3342 along its side boundary (as shown in the below image). As development above this easement is not feasible, a larger lot size allows for a standard built form product to be provided on the site, consistent with development on adjacent lots. This is considered to benefit amenity as a greater area of private

Lots	Variation	Justification
		open space is provided. 
3354	*Typical Frontage*	The lot features a typical frontage of 3m, where the minimum for this type of development is 5m. However, it is noted that this is a corner lot, with a splayed frontage of 5.655m and the variation in this situation is considered appropriate based on the actual width of the lot being 7m, which results in an appropriate built form outcome. Collectively, these frontages form an adequate lot frontage (see image). 
3359	*Typical Frontage*	The lot features a typical frontage of 3m, where the minimum for this type of development is 5m. However, it is noted that this is a corner lot, with a splayed frontage of 5.655m and the variation in this situation is considered appropriate based on the actual width of the lot being 7m, which results in an appropriate built form outcome. Collectively, these frontages form an adequate lot frontage (see image). 
3341 through to 3359	*Typical Lot Depth*	These lots exceed the typical lot depth for their development type by between 4.4m and 0.7m. While these lot depths result in a deeper lot, this results in a built form being positioned further forward on the allotment and allowing for sufficient private open space to be provided at the rear of the lot..

As detailed in the above table, the proposed variations are minor and will have a negligible impact on the amenity of dwellings and their surrounds. Therefore, it is recommended that Council assess the proposed integrated housing on its merit. It is noted that the proposed integrated housing is consistent with the vision for the Village Centre as established in the CPP.

The DCS also identifies criteria in respect of residential amenity. A summary of the proposal's consistency with these criteria is detailed in **Table 9**.

Table 9 General Housing Siting and Design Controls of the DCS

Criteria	Assessment
5.7.2 Landscaping	
• Trees planted on the north side of private open space areas and habitable rooms are encouraged to be deciduous. • A minimum of one tree is to be provided where possible within the front setback area of every residential allotment.	The proposed development is supported by Landscape Plans, included in **Appendix E**. The Landscape Plans illustrate the use of trees, shrubs and groundcover throughout the private open space and landscaped areas at the front of each lot. The

Criteria	Assessment
This may include existing trees that are to be retained within the front setback area. • Planting of vegetation at the front of higher density development must consider the need for passive surveillance. Excessively dense vegetation that creates a visual barrier should be avoided. • A Landscape Plan is to be lodged with all DAs for dwellings, and is to provide the following details: – the location of any existing trees on the property, specifying those to be – retained and those to be removed. – the position of each shrub and tree species proposed to be planted. • Each plant is to be identified by a code referring to a plant schedule on the plan.	proposed landscaping scheme includes trees at both the front and rear of each lot in line with the requirements of the DCS.
5.7.3 Visual and Acoustic Privacy	
• Direct overlooking of main habitable areas and private open space should be minimised through building layout, window and balcony location and design, and the use of screening devices, including landscaping. • As far as practicable the windows of habitable rooms shall be screened or adequately separated from walkways, footpaths, communal areas, driveways, windows of other dwellings and balconies above. Courtyard walls, walls of the building, screen walls and the like are an acceptable method of screening of windows. • Where overlooking of habitable rooms and private open space cannot be avoided, additional visual privacy may be achieved by: – offsetting adjacent windows; – fixed window screens; – providing sill heights of at least 1.5 m above floor level; or – providing fixed obscure glazing. • The design of attached dwellings must minimise the opportunity for sound transmission through the building structure, with particular attention given to protecting bedrooms and living areas. • Living areas and service equipment must be located away from bedrooms of neighbouring dwellings. • In attached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia. • Noise sensitive areas are to be located away from noise emitting sources.	The layout and orientation of habitable rooms and private open space are illustrated in the Architectural Plans, included in **Appendix D**. As the proposed dwellings are two-to-three storeys in height, bedrooms and living areas/garages are adequately separated by a change in level. As the proposed lots and dwellings result in a use that is consistent with the surrounds, the proposal will not result in undue noise impacts.
5.7.4 Fences and walls	
• Front fences and walls must not be higher than 1.5 metres. • The design and materials of front fences and walls is to be compatible with the desired character of the streetscape. • Side and back fences and walls can be built up to 1.8 metres in height to achieve privacy for the rear yard.	As illustrated in the Architectural Plans (**Appendix D**) the proposed front fencing has a maximum height of 1200mm, while rear fencing is 1800mm high.
5.7.5 Garages	
• Garages should not take up more than 50 percent of the building frontage for lots 12 m wide or less, unless the dwelling type is integrated housing.	The layout and orientation of garages are illustrated in the Architectural Plans, included in **Appendix D**.

Criteria	Assessment
• Materials and colours should blend the garage doors into the main building. • For 2 storey dwellings, rooms with windows or balconies should be built above garages where possible. • Garages are to be limited to a maximum capacity of two cars, with tandem garages permitted. • Garages are to be set back behind the front most element of the house and fully integrated into the front facade.	As the proposed development incorporates integrated housing, some garages exceed 50% of the building's frontage, as permitted under this provision. Generally, garages are set back further than the setback control (where the DCS controls require greater garage setback).
5.7.6 Safety	
• Dwellings should be designed to overlook streets and other public or communal areas to provide casual surveillance. Living areas, windows, access ways and balconies should be arranged to overlook recreation areas and other public areas. • For residential dwellings, roller shutters are not be used on doors and windows facing the street. Security railings must be designed to complement the architecture of the building. • Pedestrian and communal areas are to have sufficient lighting to ensure a high level of safety. These areas must be designed to minimise opportunities for concealment. • All developments are to incorporate the principles of Crime Prevention Through Environmental Design, in accordance with Penrith City DCP 2006. When assessing applications, Council must give consideration to Planning NSW guidelines for Crime Prevention and the Assessment of Development Applications. • Avoid the creation of areas for concealment and blank walls facing the street.	The layout and orientation of dwellings is illustrated in the Architectural Plans, included in **Appendix D**. The proposed dwellings maintain sightlines to the street allowing for passive surveillance to the public domain. The proposed dwellings do not include roller shutters or any building element that will result in reduced opportunities for natural surveillance. Considering the increased surveillance opportunities created by the proposed development and the absence of unnecessary concealment and entrapment opportunities, the proposed lots and dwellings are consistent with the principles of Crime Prevention Through Environmental Design (CPTED).
5.7.7 Solar Access	
• Areas of private outdoor space should receive at least 3 hours of sunlight between 9am and 3pm at the winter solstice. • Dwellings should also be designed to avoid overshadowing of adjacent properties and to protect sunlight access to any habitable room or private outdoor living space of adjacent buildings to less than 4 hours between 9am and 3pm at the winter solstice (21 June).	The proposed development is supported by Solar Analysis Diagrams included in **Appendix D**. The orientation of the proposed integrated housing seeks to maximise solar access to private open space. Where three hours of sunlight to private open space cannot be achieved, the design of integrated housing features living areas with northern orientations as a means of maximising solar amenity to each dwelling. North facing glazing is also proposed.
5.7.8 Energy and Water Efficiency	
• BASIX Certificate is to accompany DAs for new dwellings. • The design of dwellings should minimise heat loss and the absorption of heat through measures such as the use of insulation in walls and roofs. • The design of dwellings should minimise heat loss and the absorption of heat by limiting the size of windows on the western facades of buildings. • Dwellings should be designed to allow cross ventilation, where appropriate, by positioning windows and doors opposite each other within rooms and providing fans and alternative forms of mechanical ventilation (other than air conditioners). • Dwellings should be designed to face living spaces to the north, sleeping areas to the east or south, and utility areas to the west or south. • Dwellings should be designed with north facing windows. • Dwelling design should consider shading of north, east and west facing windows through use of elements such as shading devices, including eaves, verandahs, pergolas; and	In accordance with *State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004*, BASIX certificates have been provided in support of the proposed development, included in **Appendix F**. The BASIX certificates demonstrate that the proposed integrated housing is capable of complying with the required criteria.

Criteria	Assessment
• Dwellings should utilise energy efficient fixtures such as solar hot water systems or star rated appliances. • Dwellings should be designed so that: – hot water systems are located as close as possible to wet areas; – wet areas are clustered to minimise pipe runs; – external clothes drying areas are provided, with access to sunlight and breezes; and – reflective or light coloured materials are used and/or dwellings are painted in light colours. • Rainwater tanks are to provided on lots greater than 400 square metres, subject to agreement being reached with the Department of Planning that the provision of recycled water to the Precinct obviates the need for the installation of rainwater tanks.	
5.7.9 Servicing	
• Development must demonstrate that the design takes into account waste storage and collection without reducing the amenity of the dwelling or neighbouring lots.	The proposed development is supported by a Residential Waste Management Plan, included in **Appendix K.** The plan details waste management practises during the construction phase of the proposed development. Following occupancy of the residential dwellings, management of domestic waste will be undertaken by Council contractors in line with waste management in the broader Central Precinct. The Street Tree Plan at **Appendix XXX** identifies bin locations for each dwelling.
5.7.10 Adaptability	
• Residential dwellings shall be designed with key design features that may achieve: – -direct access; – spaces for car parking; – adequate access and circulation widths; and – main facilities at ground floor level.	The layout and orientation of dwellings is illustrated in the Architectural Plans, included in **Appendix D**. The proposed dwellings have been designed to accommodate adaptability, featuring direct access, appropriate provisions of car parking and adequate access and circulation provisions. The proposed dwellings feature living areas and amenity on the ground floor. On street car parking is provided around the perimeter of the Stage 3C area.

4.4.2 Penrith Development Control Plan 2014

In respect of SREP 30 and the Central Precinct Plan 2009 which informs development controls relevant to subdivision and the construction of dwellings within the Central Precinct, the Penrith Development Control Plan 2014 (PDCP) does not apply to the Central Precinct in relation to development controls. However, the PDCP does provide guidance relating to civil works (earthworks and retaining walls) and development on sites that experience a slope. Assessment of the proposed civil work as per the Pre-DA meeting comments are detailed in **Table 10**.

Table 10 Summary of applicable development controls as specified in the PDCP

Provision	Assessment	Compliance
2.2.18 Fences and Retaining Walls		
1. Be sympathetic to the natural setting and character in form, materials and colour.	The proposed fencing (shown in the Architectural Plans, included in **Appendix D**) features a palisade style fence of 1.2m in height and solid Colorbond fence of 1.8m in height. These fencing styles suit the contemporary design of the dwelling and are consistent with fencing seen throughout the broader Central Precinct.	Y
2. Maximise natural surveillance from the street to the building and from the building to the street.	Palisade style fencing allows for appropriate visibility and surveillance to each dwellings respective street frontage.	Y
3. Be structurally adequate, in accordance with the Building Code of	The proposed fencing is of a standard type and style, capable of achieving compliance with the relevant provisions of the BCA.	Y

Provision	Assessment	Compliance
Australia, and meets the Dividing Fences Act.		
12. Retaining walls: a) generally should be no taller than 500mm; b) should not cut through roots of any tree required by Council to be preserved; c) should be separated from any associated fence by a planter-bed at least 500mm wide, minimising the apparent overall height of fencing; d) should provide drainage for any associated planter-bed; e) should be separated from any driveway by a landscaped verge at least 500mm wide, to prevent impact damage from vehicles.	Retaining walls for Lots 3332-3339 are 250mm in height as shown in the Civil Plans (**Appendix C**).	Y
4.1. Site Stability and Earthworks		
4) Limitations on Earthworks a) Earthworks to create a building platform shall not be undertaken where excavation and/or filling would exceed 1m from the existing natural ground level of the site.	The Stage 3C site has been the subject of bulk earthworks as approved under a previous application. No major excavation or site levelling is proposed under this application.	Y

Section 2.1.3 of PDCP prescribes controls for residential development on sloping lands, however bulk earthworks for the Stage 3C Site have been completed under DA14/1228. While minor site levelling is associated with the construction of roads and residential lots, the proposed development does not warrant an assessment of compliance against these provisions.

4.5 Surrounding Amenity

The proposed subdivision and construction of associated dwellings are consistent with that in the immediate surrounds and with the future character of urban residential areas within the Central Precinct. Accordingly, the proposed development will have a negligible effect on the amenity of surrounding development.

4.6 Biodiversity

The Bulk Earthworks DA (DA14/1228) approved by the JRPP authorised the removal of all vegetation within the Central Precinct. A Species Impact Statement (SIS) was submitted with this application, which applies to the Stage 3B2 site. It is considered unnecessary to resubmit this report as the vegetation within the Central Precinct has been removed under DA14/1228.

4.6.1 Mitigation Measures

Extensive mitigation measures will be implemented across the Central Precinct (including the Stage 3C site) to minimise the impacts from future urban development on the Regional Park, located west of the site. This includes the protection and conservation of approximately 900ha of the high-quality native vegetation within the Regional Park. Impacts resulting from the development of the Central Precinct will be offset by conservation works within the Regional Park and by a series of strategies for the management of weeds, feral animals, macro fauna and bushfire in the Central Precinct.

The provision of the future riparian corridor through Stages 1, 3, 4 and 5 sites, and the surrounding open space and street landscaping within Stages 1, 2, 3, 4 and 5 will also provide a connection of tree canopies for foraging bats and birds, while also maintaining the diversity of the plant species of the locality.

Given that the subject site has already been cleared of vegetation under DA14/1228, It is considered that the proposed development will have no impacts on the flora and fauna within the site or the Regional Park. Accordingly, no further assessment of the ecological impacts of the proposal is required in relation to the development of the subject land.

4.7 Bushfire

The subject site is identified as bushfire prone land under Council's Bushfire Prone Land Map. A Bushfire Safety Authority from the RFS is therefore required in relation to the proposed development, in accordance with Section 100B of the *Rural Fires Act 1997* (RFA), Clause 44 of the *Rural Fires Regulation 2008 and 'Planning for Bush Fire Protection 2006'* (RFS 2006) (PBP).

A Bushfire Protection Assessment (BPA) in support of the proposed development has been prepared by EcoLogical and include in **Appendix G**. The assessment considered the site in the context of broader development within the Central Precinct and existing fire protection measures in place.

It is noted that provisions for bushfire protection for residential subdivision have been previously considered at precinct planning stage, as detailed within 'Bushfire Protection Assessment – St Marys Western and Central Precincts' prepared by BES (2009). This assessment has informed the development of the CPP.

The assessment undertaken by EcoLogical notes land clearing associated with the construction of the future Regional Open Space is evident in the areas immediately south-east of the Stage 3C site. This land clearing involves the regular 'slashing' of vegetation as part of ongoing fire mitigation measures. Accordingly, it is unlikely for the former vegetation to return within this area.

Informed by the site, its existing and future conditions, the assessment applies a temporary asset protection zone (APZ) of 100m from the south and east boundaries of the subject site. The temporary APZ is a measure to mitigate existing bushfire risk to the site. Following the future development of the Regional Open Space, this temporary APZ will become redundant. Given this context, the temporary APZ is wholly contained outside of the Stage 3C site, as shown in **Figure 16**. Additionally, the temporary APZ is not intended to be formally created unless the current maintenance regime changes in terms of the management of the Regional Open Space.

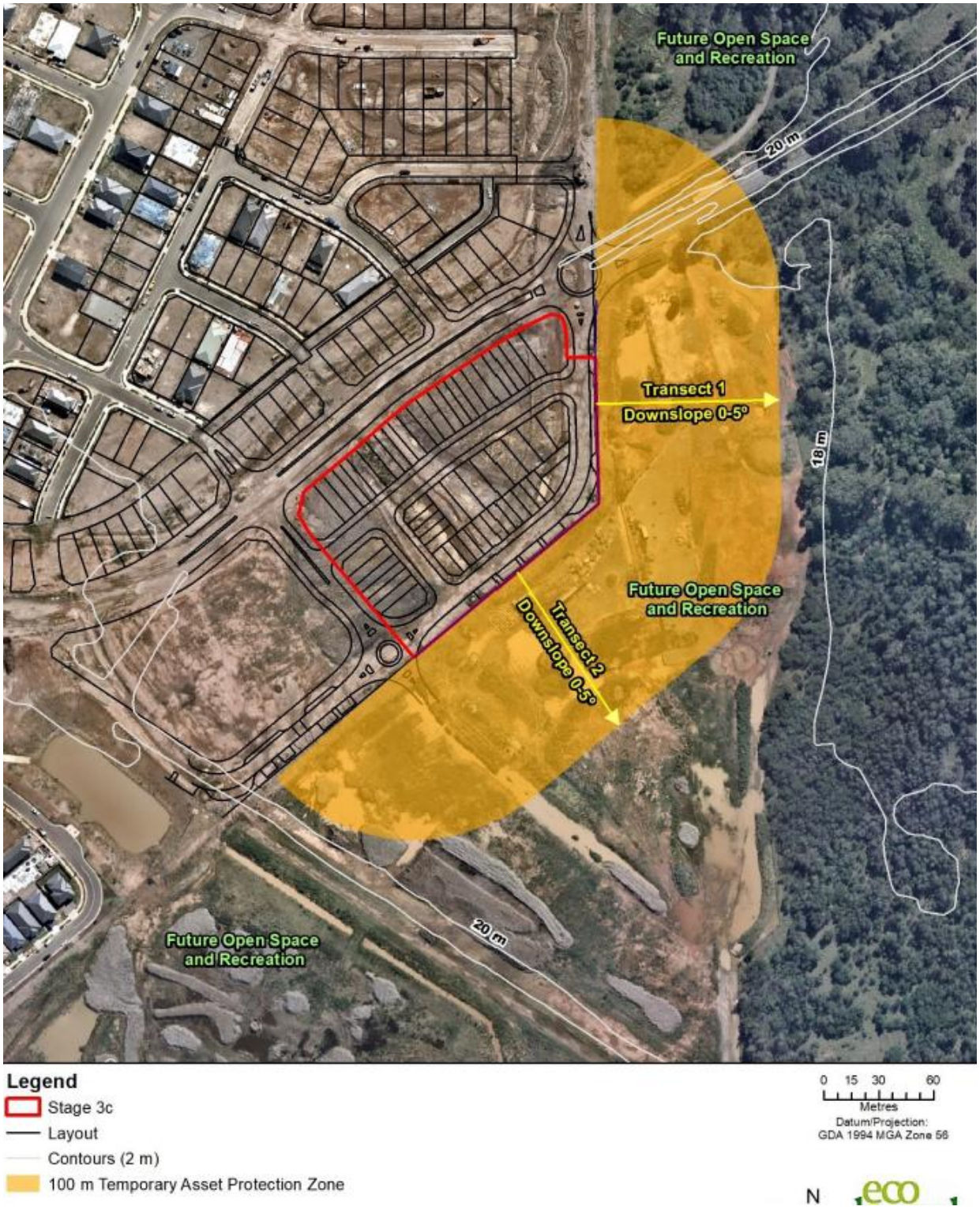


Figure 16 Bushfire hazard assessment and Asset Protection Zones (APZ)

Source: EcoLogical

The designation of the temporary APZ that is wholly contained outside of the subject site means that the construction of dwellings on the Stage 3C site is not required to be affected by a Bushfire Attack Level (BAL) relating to building specifications. Accordingly, a BAL-LOW rating is applied to the dwellings within the Stage 3C site. BAL-LOW is based on insufficient risk to warrant specific bushfire construction standards. Further, the proposed roads and provisions of utilities are adequate in their ability to service the site and fire mitigation measures.

4.8 Heritage

Indigenous Heritage

An Aboriginal Archaeological Assessment has been undertaken by Godden Mackay Logan (GML) Heritage Consultants in relation to the Central Precinct site. This assessment has been considered in the assessment of previous DAs for works within the Central Precinct. It outlines the heritage management works for the Central Precinct with reference to the site as being post Bulk Earthworks. The assessment outlines the extensive studies and investigations previously undertaken on the St Marys site and the status of the Aboriginal heritage management works within the Precinct under the AHIP (#C0000362).

As noted in **Section 2.4.6** an AHIP (#C0000362) was issued by DECCW under Section 90 of the *National Parks and Wildlife Act 1974* which covers the site, including all archaeological sites located across the Central Precinct.

Stage 3C contains only areas of Management Zone 3, identified as 'Community Collection (Low Archaeological Potential). All Aboriginal heritage management works within the site area are complete including salvage excavation and community collection of artefacts in accordance with Conditions 11-14 of the AHIP. Additionally, surface collection of artefacts by the Aboriginal community was undertaken during top soil stripping under the BEW DA (DA14/1228). Subsequently, no heritage works are required during the subdivision works associated with Stage 3D as part of this DA.

Non-Indigenous Heritage

As noted in **Section 2.4.6**, no archaeological or heritage items of non-indigenous origins are located within the Stage 3C site. Accordingly, no further investigations have been undertaken in respect of impacts on non-indigenous heritage value.

4.9 Traffic and Access

A Traffic Impact Assessment (TIA) and Concept Design Road Safety Audit (RSA) have been prepared by WSP and are included in **Appendix H** and **Appendix I**, respectively. The TIA assesses the anticipated traffic implications of the proposed development with regards to pedestrian and bicycle requirements, traffic generation and impacts on the surrounding road network.

The following section provides an assessment of the traffic impacts of the development during the construction and operational phases of the development, based on the above reports.

Traffic Generation

The TIA notes that Stage 3C proposes the development of 59 low density residential lots which are expected to generate approximately 45 (using a trip generation rate per dwelling of 0.76) and 57 (0.97) trips in the weekday AM and PM peak hours respectively. The traffic generation is expected to be from residential lots only.

Using a trip distribution of 20/80 in/out during the AM peak and 80/20 in/out in the PM peak, the traffic generation for the precinct (being approved Stages 1, 2, 3A, 4A/4B, 3B1/3B2 and 5A, and committed Lot 3001, Stages 3D, 5B, 4C and proposed Stage 3C) results in the following traffic movements.

Table 11 Inbound/outbound trips within Central Precinct

Peak	Inbound	Outbound	Total
AM Peak	192	769	961
PM Peak	976	243	1,219

Source: WSP

Trip distribution is likely to align with the trip distribution found in the ultimate year of the development, being 55% and 53% from the Central Precinct to be distributed to the East West Connector Road to the east in the AM and PM peak respectively.

The impact of Stage 3C on internal Central Precinct intersections has been modelled and is considered to be satisfactory, in particular the intersection of Road 1 (Wianamatta Parkway) and Road 2 (Armoury Road), the key east-west and north-south carriageways in the precinct.

The intersection of Road 1 (Wianamatta Parkway) and Road 13 (the western boundary road of the Stage 3C site, known as Poynting Avenue) has also been modelled and determined to be operating satisfactorily. The intersection is intended to be signalised with two westbound lanes and one eastbound lane along the Wianamatta Parkway. In particular the intersection operates at a Level of Service 'A' rating during the AM peak and 'B' during the PM peak, with all approved and proposed stages traffic movements with all trips from approved Stages 1, 2, 3A, 3B1/3B2, 4A/B and 5A, committed Lot 3001, 3D, 5B and 4C and proposed Stage 3C, with the East West Connector Road being operational.

Table 12 Intersection of Road 1 and Road 13 performance summary

	AM Peak	PM Peak
Total Volume	1,127 vehicles	1,297 vehicles
Degree of Saturation	0.434	0.640
Average Delay	11.6 seconds	17.0 seconds
Level of Service	A	B
95% back of queue	27.6m (Road 1 west approach)	47.2m (Road 1 east approach)

Source: WSP

Internal Road Network and Subdivision Layout

The Stage 3C internal road network includes the provision of local streets. The TIA confirms that the proposed road types are appropriate for their intended functions. Stage 3C will be serviced by internal roads which connect to Road 1 (the Connector Road known as Wianamatta Parkway) and Road 13, which runs along the western boundary of the precinct.

The proposed rear-loaded dwelling designs (Lots 3302 to 3323 and 3325 to 3331) are currently setback 0.9m from the boundary, providing for 1.8m to the footpath, and Lots 3355 to 3358 and 3341 to 3353 are setback 0.5m from the boundary, resulting in 1.4m distance to the proposed 1.5m wide footpath. This results in reduced sightline distances along the proposed laneway for pedestrian movement under AS2890.1. It is requested that Council consider this intended variation given the intended low speed environment, and that the garage setbacks are in accordance with the DCS controls, per the compliance assessment at **Appendix M** (0.9m for rear loaded integrated dwellings and 0.5m for urban sleeve dwellings).

External Road Network

The Jordan Springs – Central Precinct Connector Road, as proposed and approved as part of the Stage 1 subdivision DA (15/0299), conveys traffic from Central Precinct through Jordan Springs to The Northern Road.

Subject to determination of current development applications with Council, the Central Precinct is also proposed to be connected with Ropes Crossing to the east and Dunheved to the south east via the Ropes Crossing - Central Precinct Connector Road. The construction and opening of the Connector Road will vastly change trip distribution for the Precinct, where 55% and 53% of trips are made towards the east in the respective AM and PM peak.

4.9.1 Concept Design

The RSA included at **Appendix I** provides a Concept Design Road Safety Audit of the proposed development. The RSA gives a formal examination of the future road performance with regards to crash potentials and safety.

Key elements identified and examined in the RSA include:

- Road alignments;
- Curve radii;
- Pedestrian and cyclist infrastructure; and
- GPT access.

The risk matrix provided in the RSA assesses each of these elements within the proposed Stage 3C in terms of likelihood (ranging from highly probable to improbable) and severity (measured from major to minor) of a resultant crash. The matrix then assigns a value to that level of risk, ranging from 'high to 'low'.

The audit identified two high risk and three medium risk safety issues relating to the proposed road design. These issues relate a number of matters as outlined below in **Table 13**:

Table 13 – Key Identified Road Safety Issues and Designer Responses

Issue Location and Rating	Issue Description	Designer Response
Road alignment of Road 027 Rating: Medium	Parking is permitted on the inside of the curve for northbound vehicles (on Road 027). A parked car in this area restricts the visibility of oncoming southbound traffic. There increases the likelihood of head on collisions due to northbound vehicles manoeuvring to avoid parked cars, turning into the path of oncoming traffic. This is compounded by the narrow road width (8 m) which would need to allow for parked cars and two-way articulation.	'No parking' signs are to be provided.
Road alignment of Road 027 Rating: Medium	Lot 3340 is located on the inside curve for northbound vehicles (on Road 027). This provides poor sight distance for egress increasing the likelihood of vehicle collisions. AS2890.1 CL3.2.4 requires 45 m sight distance for a 50 km/h design speed. Approximately 30 m is provided at this location without the sight envelop crossing future private property.	Horizontal curve radius in accordance with Penrith City Council design guidelines. 'No stopping' signs to be provided.
Radius of horizontal curve of Road 027 Rating: Medium	There is a sharp, 46 m radius horizontal curve on Road 027 (CH384.565– CH426.097). It is assumed that there is adverse crossfall in this location. This radius is likely to increase the likelihood of collisions due to northbound vehicles understeering the corner and colliding with oncoming traffic. Austroad Guide to Road Design Part 3 Section 7.states a minimum radius of 60 m is required for 3% super elevation and a design speed of 50 km/h.	Horizontal curve radius in accordance with Penrith City Council design guidelines. As agreed with Penrith City Council, superelevation is not required on local streets given the low speed environment.
Corner of Roads 028A and 028 Pedestrian/cyclist infrastructure Rating: Medium	Where Road 028A intersects with Road 028, no provision of pram ramp has been made. This would result in access difficulty for less abled people or even tripping over.	An opportunity for pedestrian crossing is to be provided through the provision of a pram ramp.
Adjacent to the 90-degree angle parking Pedestrian/cyclist infrastructure Rating: Medium	The path adjacent to the angle parking is narrow. Whilst this path is not dedicated for footpath use, pedestrians, particularly people in wheelchairs or with prams may find it difficult to access the parked vehicles. Any tow bar that overhangs this narrow path also could lead to pedestrian tripping overs. There is 1 in 6 batter adjacent to the path which appears not to	Pedestrian paths are to be provided within the regional open space as part of a separate package of works.

Issue Location and Rating	Issue Description	Designer Response
	be protected by any barrier. Pedestrians could fall off the batter may lead to injuries.	
Road 027 Pedestrian/cyclist Infrastructure Rating: Medium	No allocation for disabled parking or pram ramps have been provided for on street parking provisions. This area is designated as Village centre which may make access for people with disabilities difficult. AS2890 CL4.5.1 states that a proportion of all parking should be allocated for people with disabilities.	Parking for people with disabilities is to be provided as part of the adjacent Stage 3D works.
GPT maintenance access area Heavy vehicle infrastructure Rating: Medium	The GPT maintenance bay is located at the road curve where driver's sight line to the approaching traffic from the north may be limited. This could result in vehicular collisions involving service vehicles.	Drivers sights lines are unobstructed.
The southern end of Road 028 Pedestrian/cyclist Infrastructure Rating: Medium	There is no signposting to indicate the start of the shared path, facing north. Pedestrians along the footpaths of Road 028 who are not aware of the cyclists' presence, may not be able to safely transition onto the shared path. This could lead to cyclists colliding with pedestrians.	Signage to be added.

Source: WSP, Cardno

4.10 Water Cycle Management

The proposed development is supported by a Civil Engineering Report, prepared by Cardno and included in **Appendix B**. The report links the broader civil engineering works undertaken for the broader Central Precinct to those proposed within this application.

The proposed stormwater drainage systems takes into account the regional objectives required by SREP 30 for the Central and Western Precincts. Clause 28 (2) of SREP 30 requires that:

> *The use of the land to which this plan applies is to incorporate stormwater management measures that ensure there is no net adverse impact upon the water quality (nutrients and suspended solids) in South Creek and Hawkesbury-Nepean catchments.*

The regional stormwater strategy prepared by SKM was endorsed with the CPP and incorporates strategically located basins within the Regional Park. Further to this, the Jordan Springs East Precinct Stormwater Quality Management Report (January 2017) by Cardno, which was submitted to Council in March 2017, outlines the strategy for stormwater quality for the entire Central Precinct, and is compliant with the objectives of both SREP30 and Council's DCP.

The key components of the stormwater quality management strategy are shown at **Figure 17** below, and include:

- rainwater tanks on each residential lot;
- seven bio-retention basins;
- Gross Pollutant Traps within each urban catchment; and
- the riparian corridor which runs through the Central Precinct site.

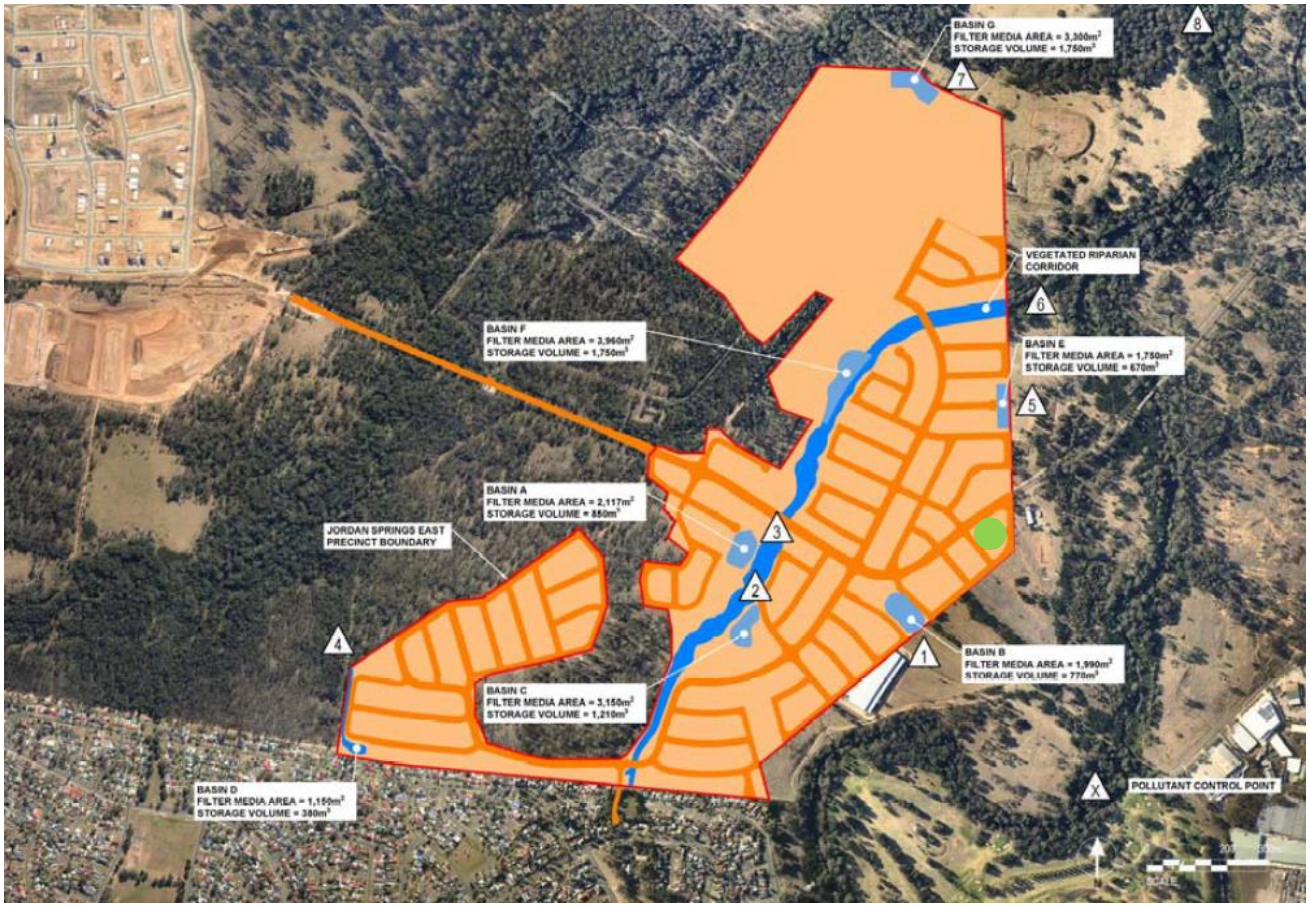


Figure 17 Central Precinct Stormwater Quality Management Strategy, Stage 3C shown with green dot

Source: Cardno

To determine the future effectiveness of this strategy, MUSIC modelling was undertaken to assess the strategy's stormwater treatment effectiveness a completion. The results of this modelling are summarised below in **Table 14**, and show that the strategy will meet and exceed the targets set in the Penrith Council DCP.

Table 14 Stormwater Quality Treatment Modelled Effectiveness

Pollutant	Council DCP Pollutant Reduction Target	Modelled Pollution Reduction
Gross Pollutants	90%	98%
Total Suspended Solids	85%	87%
Total Phosphorus	60%	63%
Total Nitrogen	45%	48%

Source: Cardno

The stormwater quality management infrastructure proposed for Stage 3C is largely consistent with the overall strategy. Stage 3C includes the following measures:

- Rainwater tanks on all residential lots; and
- Connection to a proposed Gross Pollutant Trap.

The majority of treatment of stormwater runoff from Stage 3C will be offset via the overall precinct scheme. The stage is proposed to drain to a GPT which treats gross pollutants prior to discharge into the Regional Open Space. Treatment for this stage has been offset and accounted for within the precinct water quality plan. The results of modelling, as documented in the precinct water quality report, demonstrate the adequacy of the treatment capacity of the proposed scheme to cater for this bypass.

Given the consistency of the proposed development with the management strategies incorporated within the CPP, the proposed development is considered to be appropriate with regard to water management.

4.10.1 Salinity

Salinity in the Central Precinct has been well documented. A review of previous salinity investigations undertaken and reports prepared by others for the Central Precinct has been undertaken by Cardno (refer to **Appendix B**). A summary of Cardno's review of the investigations is provided within **Table 15** below.

Table 15 Central Precinct Salinity Review Summary of Results

Investigation	Result
Electromagnetic Induction (EMI) Survey	Non-saline to slightly saline profile in the Central Precinct (with the exception of moderate saline anomalies)
Soil Salinity	Salinity publications indicates that the soils on the site are potentially moderately saline, with areas of high salinity potentially present on site generally following the South Creek east-west tending tributary located north of the site. Electrical Conductivity testing reveals that at a depth of 0.25m: • About 19% of the results were non-saline; • About 54% of the results were slightly saline; • About 27 % of the results were moderately saline.
Soil Ph	Majority of soils are residual in nature and are not expected to be acidic.
Dispersive Soil	It is expected that the soils are susceptible to erosion. This dispersion potential can be ameliorated by regimented compaction and moisture control during fill placement.
Regional Hydrogeology & Groundwater Salinity	Groundwater on site is moderately saline.

Source: Cardno

Cardno conclude that based on the investigations undertaken to date, the moderately saline conditions encountered on site are typical of the area in general. Further, the Bulk Earthworks DA (DA14/1228) involved the placement of a fill platform over the Stage 3C site, and as such minimal disturbance of the underlying saline soils is expected as a result of subsequent development.

The Cardno letter at **Appendix B** provides recommendations for the placement of fill, and regarding the development of Stage 3C, outlines a number of construction requirements for areas with salinity potential which should be implemented in the proposed landscaping, stormwater and drainage of the site. These measures aim to reduce rainwater infiltration in locations where recharging of the water table is likely to result in saline minerals rising up through the soil, including:

- landscaping, such as:
  - the use of salt tolerant species where planting is required in discharge areas;
  - the use of low water requiring species in gardens and landscaping;
  - use of irrigation systems which are carefully designed to prevent over watering, and appropriate maintenance of those systems to minimise the potential for leaks;
  - in landscaped areas, the use of mulching to minimise evaporation and reduce irrigation requirements; and
  - the use of non-saline soils in landscaped areas.
- stormwater and drainage considerations, including designing:
  - the slope of exposed/open concrete slabs and surrounding areas to minimise ponding and the potential for increased infiltration;
  - drainage systems to minimise leakage and infiltration; and
  - to maintain natural drainage patterns at the site where possible.

Cardno further outline that future buildings and underground services will be predominantly placed within the imported fill material and subject to importation of suitable material, salinity, aggressivity, and sodicity is not expected to impose risk to these structures. Additional precautionary measures are also proposed for the development of structures which will be adopted and implemented where necessary as part of the proposed development and ultimate construction of future buildings.

4.11 Construction Management

Prior to works being undertaken, the construction contractor will prepare a detailed Construction Management Plan (CMP). The CMP for the civil works will address matters such as traffic and pedestrian management, noise and vibration, and construction waste.

Construction Hours

It is proposed for construction hours to be in accordance with standard working hours as defined by the Environment Protection Authority. This would result in the working hours across the Stage 3D site as being:

- Monday to Friday: 7am to 6pm;
- Saturday: 8am to 1pm; and
- No work on Sundays or public holidays.

Any construction work outside of these hours will be subject to prior consultation with PCC and Roads and Maritime Services.

Erosion and Sediment Control

Measures to be implemented include the establishment of a temporary sediment basin within the adjacent Village Centre Park site. This arrangement is proposed to continue as part of the Stage 3C works. Additional temporary basins may be incorporated within the stages where required.

In line with the above, several control measures are proposed as part of the Stage 3C works, including silt fences, inlet sediment traps, stabilised site entry, and sandbag sediment traps. The full details of the proposed measures are shown on the erosion and sedimentation control plans and diagrams contained within the Civil Engineering Plans at **Appendix C**.

It is considered that the proposed development, through the mitigation measures proposed in the Civil Engineering Plans at **Appendix C**, will be appropriately managed to reduce potential for adverse impacts on the site and downstream water courses.

Waste Management

The WMP that accompanies this DA (**Appendix J**) will ensure that reuse and recycling of construction materials is maximised both on and off the site and that waste is minimised as far as practicable.

Construction Traffic Management

As the construction of this stage is expected to occur at the same time as the construction of the Central Precinct – Ropes Crossing Connector Road, construction traffic will instead access the Stage 3D site via Jordan Springs Boulevard and Lakeside Parade in Jordan Springs, and entering the Precinct from the west. Associated traffic impacts on the surrounding road network and local area during construction will be minimised through a range of measures such as site inductions, site inspections and record keeping, and the enforcement of driver protocols, vehicle access and truck routes.

A detailed Construction Traffic Management Plan (CTMP) will be submitted as part of the CMP prior to the commencement of works. The CTMP will adequately address potential impacts associated with the proposed construction, and ensure that the surrounding road network can satisfactorily accommodate the additional temporary construction vehicle movements to and from the site.

Noise and Vibration, Dust and Air Quality

Appropriate mitigation measures will be implemented to manage any potential impacts from noise, vibration, dust and air quality. A Construction Environmental Management Plan will be prepared as part of construction certificate documentation.

Stage 3C is also situated approximately 750m from the nearest residential area outside of the Central Precinct itself and impacts from these construction activities are not anticipated to affect those out-of-site properties.

4.12 Social and Economic Impact

The proposed development of urban land for future residential will provide further housing within the region that is well connected to community services, public transport, parks and open spaces.

Further, the proposed development will support several construction jobs as well as longer term economic benefits associated with an immediate catchment for the adjacent Village Centre commercial tenancies, and flow on effects from establishing a new residential community, in accordance with the long-term strategic planning objectives for the site.

Housing stock and product availability is a key issue in today's property market, and Central Precinct seeks to provide a variety of housing types more suited to the needs of the market. The proposed integrated dwellings proposed to be built on the lot in Stage 3C seek to address this housing affordability issue and provide opportunities for the community to enter into the property market.

4.13 Site Suitability and the Public Interest

As illustrated in the Civil Drawings prepared by Cardno (**Appendix C**) and Architectural Plans (**Appendix D**), the site is capable of accommodating residential development. Given the proposed development is generally consistent with the objectives and controls for land zoned 'Urban' as specified in the Central Precinct - Precinct Plan and Development Control Strategy, the proposed development is considered suitable for the subject site.

The proposed development is entirely appropriate in that:

- it is/will be adequately serviced by roads, utilities and stormwater infrastructure, as proposed/approved by various DAs lodged/approved with Council;
- the proposed development is generally consistent with and supports the intended outcomes of the CPP and the CPP Amendments No.1 and No. 2;
- required site preparation works have been undertaken to make the site suitable with regards to demolition of structures and land clearing, bulk earthworks to prevent flooding, and existing and construction of supporting infrastructure;
- the works will support the built form and public domain objectives for the Central Precinct;
- the site is zoned to accommodate the proposal in accordance with SREP30; and
- it will help to stimulate the housing market in the local and regional area of Penrith.

The proposal is considered to be in the public interest as it:

- will provide a diversity of housing choice and promote affordability in a market at the peak of the property cycle within the Central Precinct;
- contribute additional housing stock within the Central Precinct;
- will be located within proximity of amenity, facilities and public transport; and
- is consistent with the desired future character of the Central Precinct.

5.0 Conclusion

The proposed Stage 3C subdivision and integrated dwelling development is consistent with the aims, objectives and planning strategies for the St Marys site set out in SREP 30, the St Marys EPS and the CPP (Amendments No. 1 and No. 2).

The proposed development facilitates the ongoing development of the Central Precinct and the provision of residential development. In doing so, it will deliver substantial economic and social benefits, including providing additional housing diversity and choice for the Penrith area.

The impacts of the proposed development have been assessed throughout this report and by specialist consultant studies. This assessment demonstrates that the proposed development adequately considers the environmental, cultural heritage, water cycle & soils, transport & access, contamination, and bushfire matters. Based on this assessment, the proposed development will not result in adverse impacts in relation to these considerations.

Considering the merits of the proposal, and in absence of any significant adverse environmental, social or economic impacts, we respectfully request that the proposed development be approved subject to appropriate conditions of consent, as required.