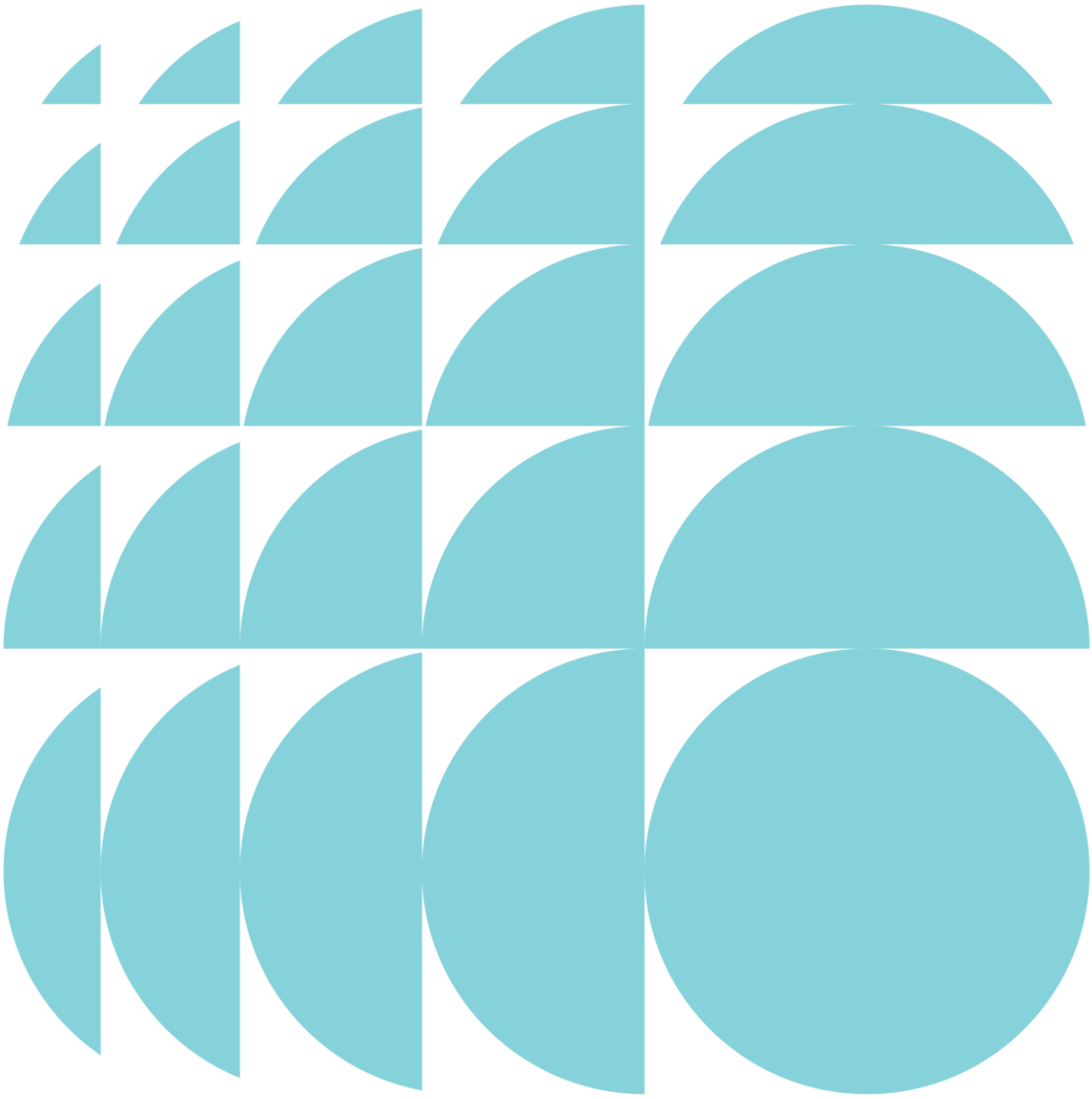
ETHOS URBAN

Statement of Environmental Effects
Central Precinct Stage 3B2

Stage 3B2 - Central Precinct
Subdivision and Civil Works

Submitted to Penrith City Council
On behalf of Maryland Development Company

22 September 2017 | 13070/17532



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1.0 Introduction

This Statement of Environmental Effects (SEE) is submitted to Penrith City Council in support of a Development Application (DA) for Subdivision and Civil Works for Stage 3B2 of Central Precinct, St Marys (herein referred to as 'Stage 3B2' or 'the site').

The DA seeks approval for:

- the subdivision of proposed Lot 4085 (under DA17/0491, known as future Lot 3082 under the modification to DA16/0113) in Lot 1003 in DP1215087, to create 4 residential 'superlots';
- boundary adjustments to allow for road widening to accommodate cycleway works at the intersection of Road 002 and the Wianamatta Parkway (Road 001) of Lots 1253 and 1309 in DP1215094 and Lot 1003 in DP1215087;
- consolidation of Lot 1253 and Lot 1309 on DP1215094 to provide for the development of the future Village Centre Park;
- design and construction of the proposed internal road network, including:
  - permanent local laneways, and the extension of the Wianamatta Parkway (Road 001) to the east; and
  - pedestrian footpaths and cycleways.
- provision of utility infrastructure such as stormwater drainage, sewerage, telecommunications and water;
- grading of the site for final residential lots, landscape shaping, boundary interfaces and roadway levels; and
- associated street tree planting.

The SEE has been prepared by Ethos Urban on behalf of Maryland Development Company (Lendlease), and is based on the Subdivision Drawings provided by RPS (see **Appendix A**) 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 a number of 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).

The proposed development is 'integrated development' in accordance with section 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). Please refer to **Sections 4.1.6** and **4.7** for further information.

The National Parks and Wildlife Service (NPWS) will be notified of the application. When development adjoins land within the Regional Park zone, as per Clause 44 (1)(a) of the *Sydney*

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Regional Environmental Plan No 30 – St Marys (SREP 30), a referral is required. However, the Stage 3B2 site is not directly adjoining land within the Regional Park zone and therefore no formal referral is required.

In accordance with Section 91 of the *Water Management Act 2000* (WMA 2000) a Controlled Activity Approval is required for works undertaken on 'waterfront land' within 40 metres of a water course. Stage 3B2 is located east of the existing riparian corridor; more than 40 metres from the centreline of the watercourse. As such, a Controlled Activity Approval is not required. Refer to **Section 4.1.5** for further discussion.

1.2 Pre-Lodgement Meeting

A pre-lodgement meeting (pre-DA) was held with Penrith Council on 17 May 2017 (PL17/0045) regarding this Stage 3B2 application, as well as Stages 4A, 4B, 3B1, 3C, and 3D. An application for Stages 4A & 4B was lodged with Penrith City Council on 9 June 2017 (DA17/0491), with an application for Stage 3B1 lodged on 25 July 2017 (DA17/0675). Stages 3C and 3D will be subject to future approvals. The relevant pre-DA matters are addressed in **Section 4.2** of this report.

It is also noted that an earlier pre-DA was held with Council on 11 November 2015 (PL15/0142) regarding an earlier Stage 3 proposal, which has since been separated into Stage 3A (DA16/0113, approved 30/12/2016), Stage 3B1 (DA17/0675, currently under assessment), and Stage 3B2 (subject of this DA).

1.3 Background

1.3.1 St Marys Site

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**.

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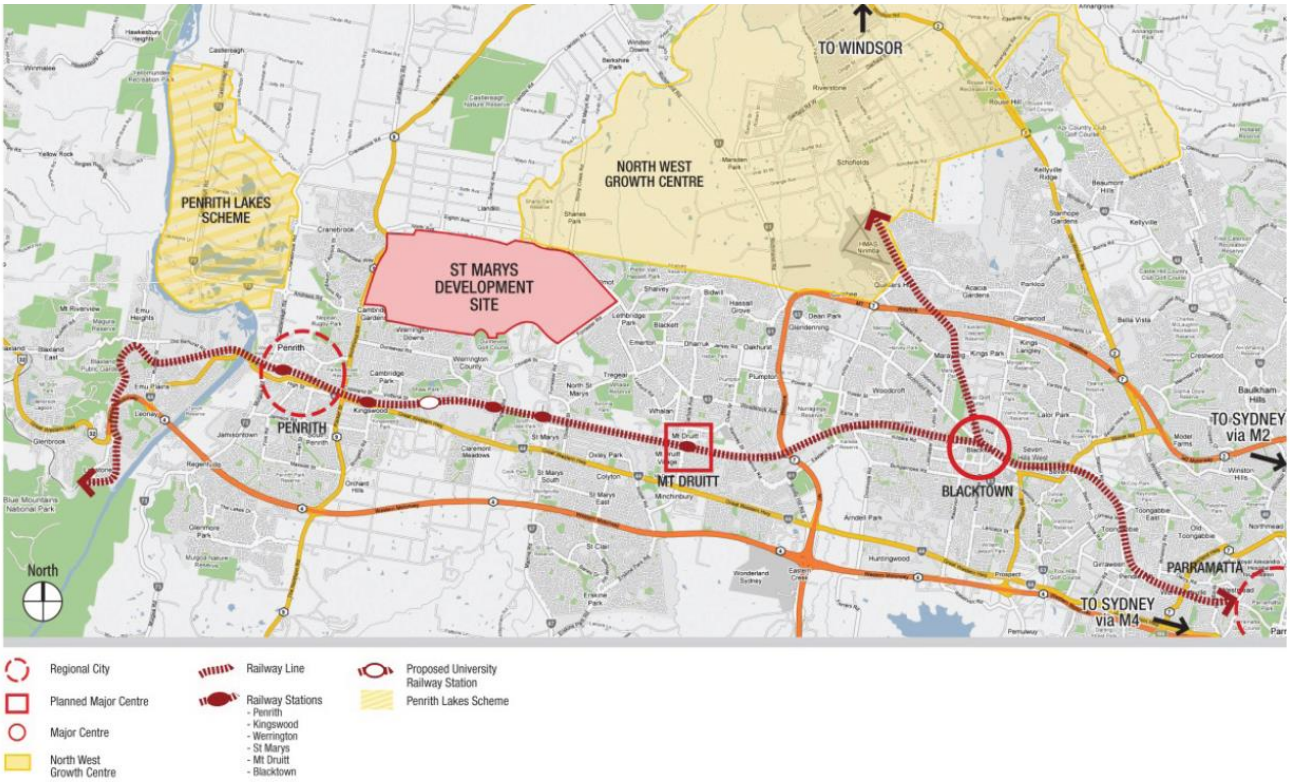

Figure 1 - ADI St Marys Site Location Plan

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;

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- 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.

1.3.2 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.

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'.

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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.

1.3.3 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 Central Precinct Plan (CPP) 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. Currently, Amendment No. 1 of the CPP is being considered by Penrith Council. This amendment seeks the relocation of the Village Centre character area to the central area of the Precinct. This will 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 changed to the DCS component to provide a wider variety of housing typologies.

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The CPP illustrates the way the Central Precinct is to be developed. The Framework Plan of the CPP, as proposed in Amendment No. 1, 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.

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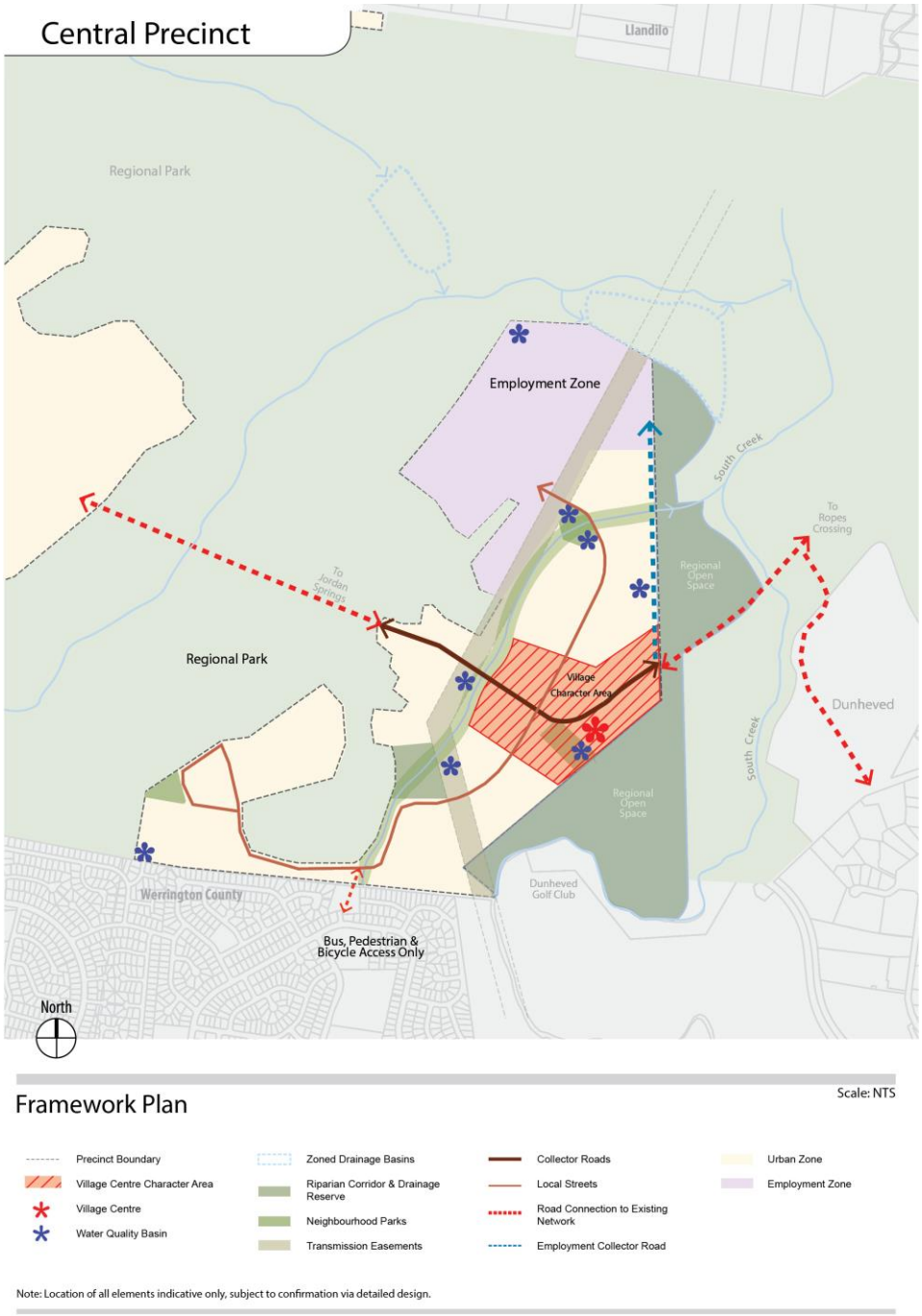

Figure 3 - Proposed Amendment No. 1 to the Central Precinct Plan

Source: St Marys Central Precinct Concept Plan – Amendment No. 1 (Proposed)

1.3.4 Previous DAs

This DA must 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

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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, currently under assessment;
- Stage 3B1 Subdivision, creation of 53 x Torrens Title Residential Lots and Associated Landscape and Civil Works - DA17/0675, currently under assessment;
- Demolition of the East West Connector Road – DA17/0834, lodged 7/9/2017; and
- Site Remediation Works of Land Under Historical Material Stockpiles - DA16/0888, lodged 30/08/2016, and currently under assessment.

There have been several Section 96 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 offices and the required notification and advertising of lodged applications.

1.3.5 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*.

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1.4 Planning Agreements

A Planning Agreement was finalised between St Mary's Land Ltd and PCC in December 2006. 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 is currently being reviewed by Penrith City Council and Lendlease as a result of the proposed CPP Amendment No. 1 to deal with changes to contributions.

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.

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2.0 Site Analysis

2.1 Site Location and Context

The site to which this application applies includes the Stage 3B2 area of the Central Precinct as shown at **Figure 4**. The Central Precinct is located approximately 2.9km to the east of the Jordan Springs Town Centre, and 3.3km east of The Northern Road and approximately 6km north-east of the Penrith City Centre. The Central Precincts urban footprint is approximately 135ha in area.

The Stage 3B2 site is located in the central portion of the Precinct and adjoins the current Stage 3A and 3B1 residential developments to the west, the future Town Centre (Stage 3C) to the south-east, the current Stage 1 residential development to the south west, and future residential development to the east.

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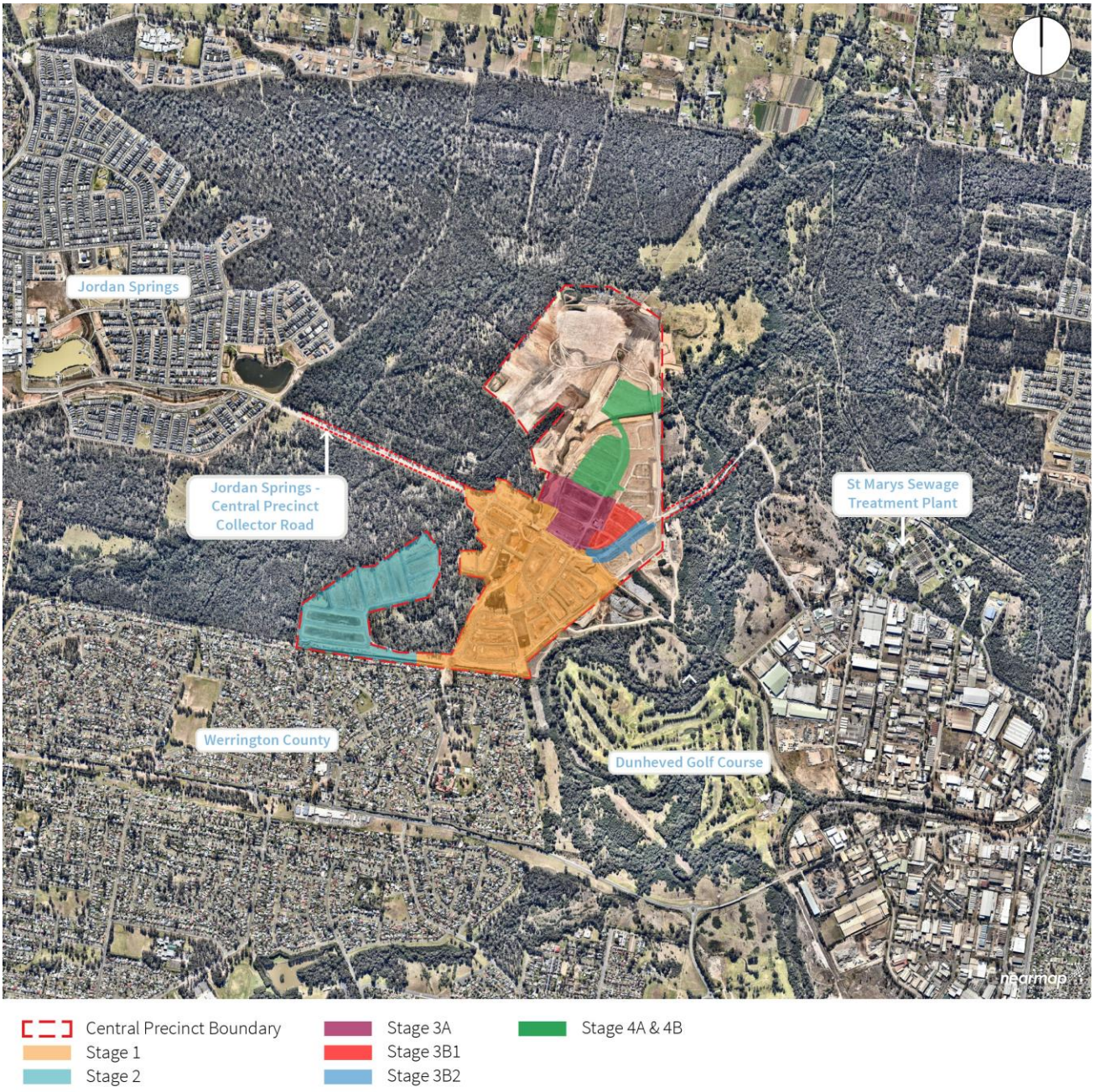

Figure 4 - The Stage 3B2 Site in the Context of the Broader Central Precinct Site, and Surrounding Development

Source: Nearmap

2.2 Site Description

The Stage 3B2 site is legally described as Lot 1003 DP1215087 and covers an area of approximately 2.2 hectares. The site is owned by St Marys Land Limited and is being developed by Lendlease (the applicant). St Marys Land Limited is a subsidiary of ComLand Limited. Maryland Development Company is the joint venture company that was established by ComLand and Lendlease to develop the larger St Marys Site.

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It is noted that the site was formerly known as part Lot 1037 DP1149525, however an earlier development application (DA14/1429) sought consent for the subdivision of this lot into five allotments for the future Regional Park, Central Precinct and residue lots. Consent was granted by Penrith Council on 15 February 2016. Since this time, several lot registrations under previous DAs (DA15/0299 for Stage 1, DA15/1216 for Stage 2 and DA16/0113 for Stage 3A) have either occurred or are due to occur shortly which have resulted in the larger residue lot (the balance of the Central Precinct area) changing in lot details.

2.3 Existing Site Conditions

At present, the Stage 3B2 site is generally flat with no vegetation following bulk earthworks completed under the Bulk Earthworks DA14/1228. The Civil Engineering Plans at **Appendix C** include an Existing Conditions Plan, which depicts the site conditions prior to the works of the Bulk Earthworks DA. An aerial photo of the site is shown at **Figure 5**.

The Bulk Earthworks DA was granted consent by the Joint Regional Planning Panel (JRPP) on 20 August 2015. This DA allowed Lendlease to clear, grade and import two million cubic metres of fill to the Central Precinct site. It also permitted the removal of all vegetation within the site, sparing minor sections within the future riparian corridor and local parks where possible. The existing (pre-bulk earthworks) soil profiles and vegetation will therefore be retained in some locations within the Central Precinct, allowing for the preservation of as much of the existing landscape character as possible.

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Figure 5 – The 3B2 site is located near the centre of the wider Central Precinct urban area

Source: Nearmap

2.3.1 Existing Utility Services & Easements

A TransGrid managed electrical main and associated 70m wide easement runs north-south through the Central Precinct urban area. This transmission line and easement is largely located in the western half of the precinct, and is approximately 250m away from the Stage 3B2 site at the closest point.

There were also two sewer mains (Jordan Springs Carrier and Werrington Carrier), which ran outside the site to the south – these have been relocated to new alignment further south.

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All of these services are shown on the Civil Engineering Drawings included at **Appendix C**. The easements and services will remain in situ with the development designed in consideration of their location and functionality.

2.3.2 Bushfire Hazard

Land within the Central Precinct, including that of the Stage 3B2 site, is largely classified as Bushfire Prone Land due to the proximity of large areas of unmanaged bushland within the adjacent Regional Park, and the future riparian corridor. Specific bushfire management, protection and mitigation strategies are included in the adopted CPP. These have been discussed further in the Bushfire Protection Assessment (BPA) included at **Appendix E**. Revision of the existing bushfire mapping may be required given the extent of clearing under DA14/1228.

2.3.3 Water & Drainage

A detailed analysis of the drainage characteristics of the Central Precinct site prior to development is contained in the Water, Soils & Infrastructure Report (2009) prepared by Jacobs SKM (SKM) that forms part of the CPP. This report 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) – which were provided to Council as part of the proposed CPP Amendment No. 1 and to reflect the design evolution of the site.

The Central Precinct is noted as being naturally flood prone across its eastern area, with the most recent revision of the report by SKM (July 2015) assessing that once filled the 1% 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.

The Bulk Earthworks DA works raise the ground levels of future lots so that they are at minimum 500mm above the predicted 1% AEP South Creek water surface profile. These works completed under the Bulk Earthworks DA ensure that the area of all proposed residential lots is above the 1% AEP water surface level.

The Civil Engineering & Infrastructure Report at **Appendix B** describes the existing water and drainage systems following the Bulk Earthworks DA (DA14/1228). That DA contains interim stormwater infrastructure and environmental management works including the realignment of the existing drainage corridor identified on the 1:25,000 topographic maps.

2.3.4 Contamination

The St Marys Development Site was broadly remediated over the period from 1993 to 1999, with validation reports prepared and several Site Audit Statements (SAS) issued to qualify this. The Contamination Management Plan (CMP) was prepared by JBS&G and submitted as part of DA15/0299, and the Specific Remedial Action Plan (SRAP) report prepared by JBS&G and submitted as part of DA16/0888 outlines that there are two SASs applying to the whole of the Stage 3B2 site (SASs CHK001/1 and CHK001/6). CHK001/1 is issued for the highest possible land use (being residential land use) across the entire Central Precinct site excluding those areas relating to existing structures and stockpiles, which are covered under CHK001/6, and CHK001/7. CHK001/6 is issued for continued commercial/industrial use.

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Site Audit Statement CHK001/1 St Marys Site

This SAS identified the St Marys Development site as being suitable for residential development, including for vegetable garden and poultry use – the highest level of clearance available. The only condition other than excluding the areas covered by other statements (being Ropes Crossing and areas under existing structures on site) was that an appropriate CMP be developed. The CMP is to be implemented throughout the life of the development at Central Precinct and has been reviewed by a site auditor. The majority of the Stage 3B2 subdivision area has been signed off under this SAS, which has determined that the area is suitable for residential uses including vegetable garden and poultry, and also for open spaces and parks (amongst other uses). If any unexpected areas of concern are uncovered during the works, the approved CMP, CRS, and SRAP outline the protocol to be undertaken, as per the process approved under the Stage 1 subdivision (DA15/0299), and submitted under the Site Remediation Works (DA16/0888), including the procedure for remediation, if required.

Site Audit Statement CHK001/6 St Marys Site

This SAS relates to a number of buildings, hard stand areas, roads, and stockpiles which exist across the St Marys Development Site. As well as the requirement for an appropriate management plan, there is a condition that when the facilities are removed, the soils beneath them shall be tested for ordinance and for chemical contamination. In accordance with the SAS and DA14/0411 and DA14/1228 new site audit statements for these areas are required in accordance with NSW EPA guidelines. A number of SAS have been issued including areas within Stages 1 and 2. Stage 3B2 forms part of EW7.

2.3.5 Soil & 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 within their Water, Soil and Infrastructure Report (2009) forming part 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 previous 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.

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2.3.6 Access

Once completed, it is proposed that access for the site will be via Jordan Springs to the west and Ropes Crossing to the east, with an estimated east/west travel split of 55/45 in the AM Peak, and 53/47 in the PM Peak, in the ultimate scenario (refer to the TIA at **Appendix F**).

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 within the southern portion of Stage 3B2. Vehicular access between the Connector Road and the Stage 3B2 subdivision will be provided from Lanes 001 and 002, then via several roads which connect to the Connector Road, namely Roads 002, 021, 013, 022, and 023. The lanes run west-east and are included in this application, and all roads run north-south, with Road 002 approved as part of the adjacent Stage 3A subdivision, and the other roads partially included in this application (refer to the Civil Plans at **Appendix C** for further information).

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 as a link road between the precincts across the St Marys Development Site but is not publicly accessible at present. DAs were recently lodged with Blacktown and Penrith Councils for this connection, and it is anticipated to be open prior to the development of the Stage 3B2 lots (the connection is programmed for delivery in December 2018). The Connector Road is now known as the Wianamatta Parkway.

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

2.3.7 Heritage

Aboriginal Heritage

Extensive archaeological studies have been prepared across the St Marys Development 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 across 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 currently being undertaken in accordance with this Aboriginal Heritage Impact Permit (AHIP). Previous advice by GML provided in earlier DAs outlines that all Aboriginal heritage management works within the Stage 3B2 subdivision area are complete and development works may proceed in the area.

European Heritage

There are no areas or items of European heritage identified as being within the area affected by this Stage 3B2 residential subdivision. The nearest European heritage items or areas are recognised as Site 3, which is located within the Stage 1 area of Central Precinct, and Site 2, located within the

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southern section of the Regional Open Space area of Central Precinct, and the adjoining Regional Park.

2.4 Surrounding Development

North

To the north of the site is the proposed Stage 3B1 residential subdivision (DA17/0675), with areas for future residential development as part of the Central Precinct development beyond. Further north is the existing suburb of Llandilo.

West

To the west the site is bordered by the proposed Stage 3B1 subdivision (discussed above), and the approved Stage 3A residential subdivision, with Stage 2 beyond across the Riparian Corridor. 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 upon completion will contain around 6,500 residents in 2,500 homes. Jordan Springs forms part of the St Marys ADI Site redevelopment.

East

To the east of the site is future residential development and an area of 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. Beyond this 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 site.

South

To the area to the south of the site is the future Town Centre (subject to future approvals) and areas of open space. Beyond this are the approved Stage 1 and Stage 2 residential subdivision areas and the Dunheved Golf Club.

2.5 Site Opportunities and Constraints

The main planning and design opportunities presented by the site are that it:

- is zoned for residential development;
- is of a suitable size to accommodate development;
- will be above the predicted 1% Annual Exceedance Probability (AEP) for the South Creek water surface profile, following the works approved under the Bulk Earthworks DA (DA14/1228);
- is adjacent to the future Central Precinct Village Centre and with access to the existing Jordan Springs Town Centre (located approximately 2.8km to the west of site);
- has utility services available to support development;
- is close to planned high quality open space areas within the future Regional Open Space, and the nearby Regional Park; and
- has subsoil conditions suitable for development.

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The Stage 3B2 site is unusual in that it is not impacted by any APZs, in that sufficient distances are provided to potential bushfire hazards. The opportunities and constraints applying to the site have been addressed by the proposal, which is described in the subsequent chapters of this report.

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3.0 Description of Proposed Development

This application seeks approval for the following development:

- the subdivision of proposed Lot 4085 (under DA17/0491, known as future Lot 3082 under the modification to DA16/0113) in Lot 1003 in DP1215087, to create 4 residential 'superlots';
- boundary adjustments to allow for road widening to accommodate cycleway works at the intersection of Road 002 and the Wianamatta Parkway (Road 001) of Lots 1253 and 1309 in DP1215094 and Lot 1003 in DP1215087;
- consolidation of Lot 1253 and Lot 1309 on DP1215094 to provide for the development of the future Village Centre Park;
- design and construction of the proposed internal road network, including:
  - permanent local laneways, and the extension of the Wianamatta Parkway (Road 001) to the east; and
  - pedestrian footpaths and cycleways.
- provision of utility infrastructure such as stormwater drainage, sewerage, telecommunications and water;
- grading of the site for final residential lots, landscape shaping, boundary interfaces and roadway levels; and
- associated street tree planting.

Subdivision Plans prepared by RPS are included at Appendix A. Civil Engineering Plans showing the Stage 3B2 subdivision site within the context of the overall future structure of the Central Precinct are provided at **Appendix C**.

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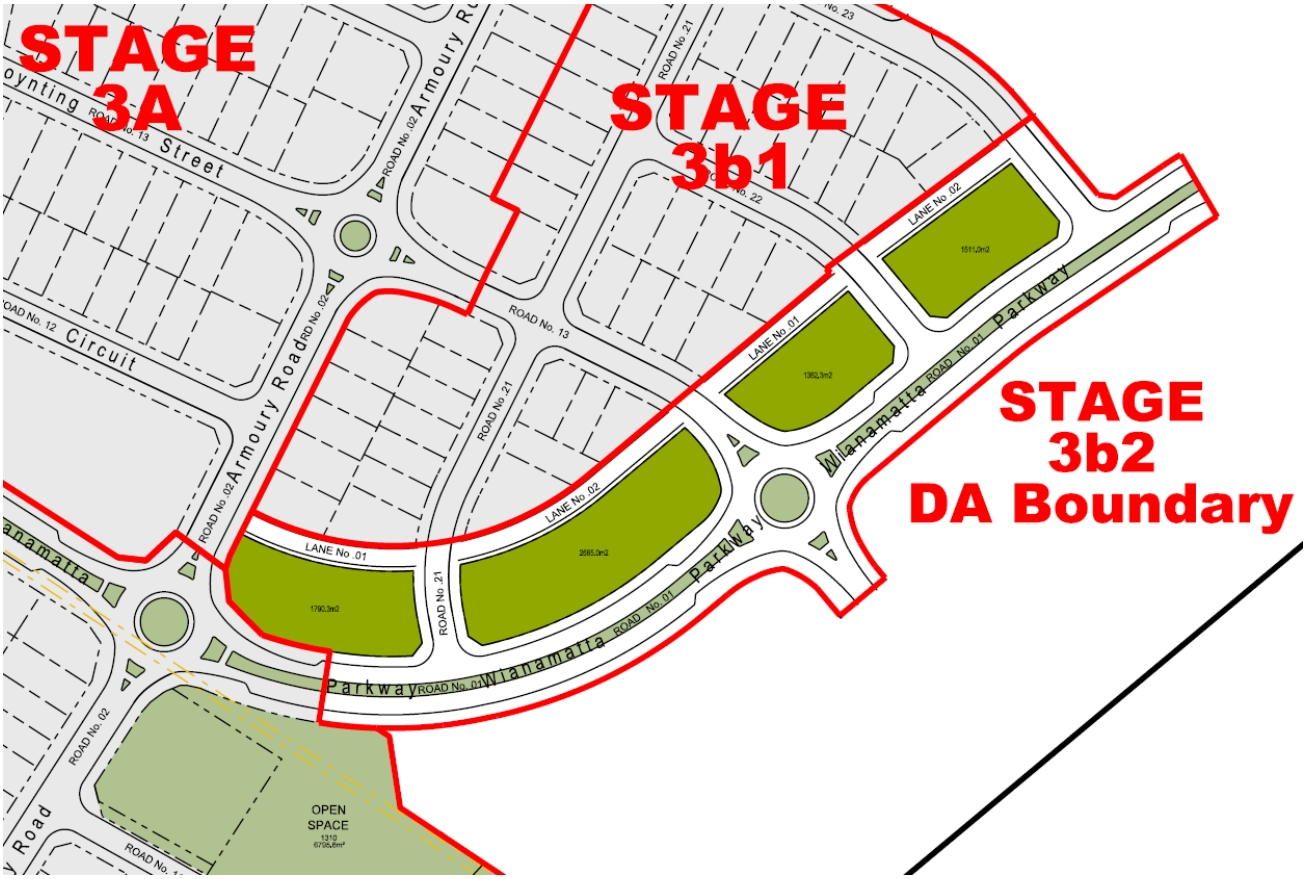

Figure 6 - The Proposed Stage 3B2 Subdivision Layout

Source: Lendlease

3.1 Subdivision and Lot Mix

The propose subdivision will create four residential superlots. Any subsequent development on these lots will be subject to separate future DAs. The area of each proposed lot is shown on the Subdivision Plans at **Appendix A**. The development, embellishment and/or use of these lots will be the subject of separate future applications, as necessary.

The proposed residential subdivision has been designed to meet the subdivision layout principles at Section 4.4 of the adopted CPP. The subdivision has designed each lot so it may be built upon in accordance with the controls for the siting and design of housing contained within the CPP.

Lot Consolidation

Existing Lots 1253 in DP1215094 and 1309 in DP1215096 are also to be consolidated to create a 7,640m2 lot, part of the future Village Centre Park. These two lots were created under DA15/0299 (Stage 1) and approved by Council, with the original intention to provide a childcare facility. Due to changes in market conditions this is no longer occurring and the site will now form part of the Village Centre Park. This consolidation is to allow for the future Village Centre Park to be developed and transferred to Council at a later date, subject to future applications.

Boundary Adjustments

Boundary adjustments are proposed to accommodate road widening at the intersection of Road 001 and Road 002 due to the required provision of cycleways. These adjustments affect Lot 1253 in

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DP1215094, Lot 1309 in DP1215096, and Lot 1003 in DP1215087 as per the Subdivision Plans at **Appendix A**.

These adjustments result in a decrease in the lot areas by a total of approximately 40.2m^2.

3.2 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 3B2. Details regarding these minor adjustments are included in the Civil Report at **Appendix B**.

The site is proposed to be graded with a gentle rise of 3.5m (from AHD 21.5 to 25) from the north-east to the south-west extents of the site.

No public domain landscaping (other than street tree and verge planting) is proposed under this DA.

3.3 Access and Movement

3.3.1 Road Hierarchy and Design

Central Precinct

The Central Precinct Street Hierarchy shows the indicative road layout for the entire Central Precinct. The road system consists of a Connector Road (Road 001, known as the Wianamatta Parkway) which crosses the centre of the precinct (east-west). Road 002 (Armoury Road) joins into Road 001 at a roundabout in a north-south direction. Connectivity into Stage 3B2 is via local roads through Stage 3B1 and the adjoining approved Stage 3A, and the Wianamatta Parkway.

Road Widening at Road 001 and Road 002

As outlined above, the DA also involves the adjustment of the existing boundaries of the roundabout at Road 001 and Road 002. This is due to the need to accommodate cycleways around these curves, which requires a larger road reserve area. These adjustments affect Lot 1253 in DP1215094, Lot 1309 in DP1215096, and Lot 1003 in DP1215087 as per the Subdivision Plans at **Appendix A**.

These adjustments result in the increase in the road area by a total of approximately 40.2m^2.

Stage 3B2

The proposed road layout is shown in the Civil Engineering Plans at **Appendix C**. Several new permanent roads are proposed to be constructed within the proposed subdivision layout. The proposed layout and road typologies are shown below in **Figure 7**. As noted above Stage 3B2 will be accessed via local roads from the Connector Road (also known as Wianamatta Parkway) and from Road 002 in the adjacent Stage 3A subdivision, which is a 'L3 Local Street Possible Bus Route' type. These two roads have taken into account the need for access by two design vehicles – a 14.5m bus and a 12.5m SU truck.

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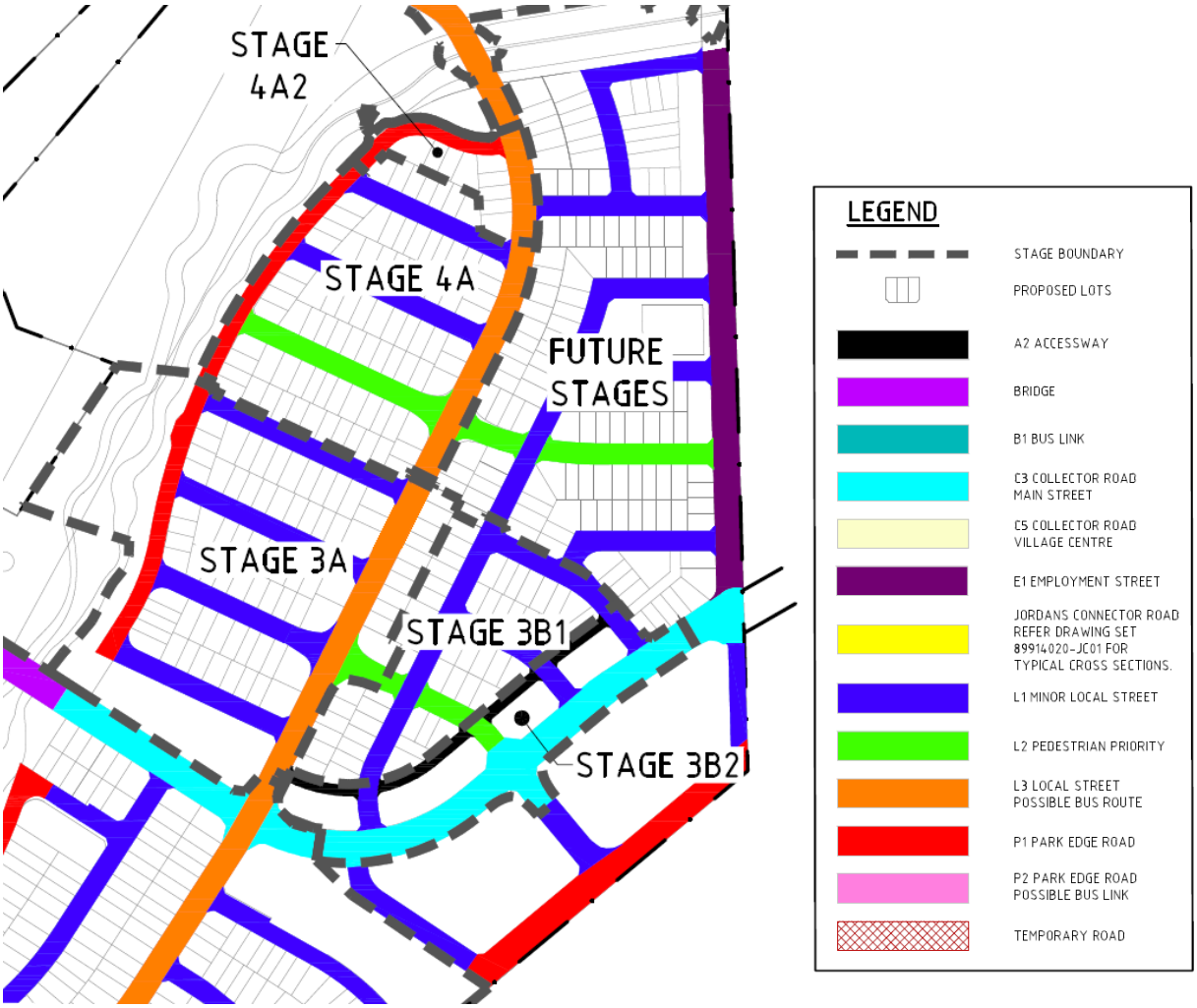

Figure 7 - Proposed Road Hierarchy for Stage 3B2

Source: Cardno

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

An overview of the proposed road type and design is provided in **Table 1** and Section 5 of the Civil Engineering and Infrastructure Report included at **Appendix B**.

Table 1 - Proposed Road Network Details

Road Type	Road Reserve Width	Pavement Width	Kerb Type
A2 Accessway	8.50 m	6.00 m	No kerb and gutter – crossfall to the centre of road
L1 Minor Local Street	15.60 m	8.00 m	Kerb and gutter on both sides
L2 Pedestrian Priority	16.60 m	8.00 m	Kerb and gutter on both sides

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Road Type	Road Reserve Width	Pavement Width	Kerb Type
C3 Collector Road Main Street	24.00 m	16.00 m	Kerb and gutter on both sides

Variation in Road Typology Measurements

It is noted that the verge widths for the proposed A2 Accessway is slightly different to that contemplated for this road type in both the CPP and CPP Amendment No. 1 – the road as prepared, and how it varies from that contemplated in the CPP and CPP Amendment No. 1 are shown in **Table 2** below. The road as proposed is shown below at **Figure 8** and in the Civil Engineering Plans at **Appendix C**. It is noted that the proposed A2 Accessway has the same total reserve width as the A1 Accessway, being 8.5m.

Table 2 – Comparison between A2 Accessway types

Accessway		Travel Lanes	Median	On-street Cycle Lane No.	Parking	Carriage-way Width	Verge Width	Total Reserve	Footpath
Existing CPP Road Typology	A2 Accessway parking one side (parkland)	3.5	0	0	2.5	*6*	*3.5* (2.5 + 1m)	9.5m	0
Proposed DA Road Typology	A2* Accessway (no parking reversed crossfall)	3.0	0	0	0	*6*	*2.5* (1.5 + 1m)	8.5m	0
Proposed Variation		**-0.5m, however travel now two ways in two lanes**	**N/A**	**N/A**	**-2.5m**	***0***	***-1.0m***	**-1.0m**	**N/A**

Source: JBA (CPP & CPP Amendment No. 1) and Cardno (Civil Engineering Plans (**Appendix C**)

These variations are due to design development to increase the depth of the superlots (which will become integrated dwellings, subject to future applications and approvals), and create a laneway which is capable of being accessed by a Austroads 12.5m SU Truck, for residential garbage collection. The swept path analysis for this vehicle type on the proposed laneway demonstrates its feasibility and is included in the Civil Engineering Plans at **Appendix C**. This proposed variation has been preliminarily discussed with Council, who have indicated in-principal approval with the proposed approach (via email on 6 September 2017). Additionally, the proposed A2 Accessway incorporates a one metre setback to garages to allow for the easy movement of waste vehicles. Any future dwellings along the laneways that proposed a 'Fonzie flat' will have pedestrian access along the laneway.

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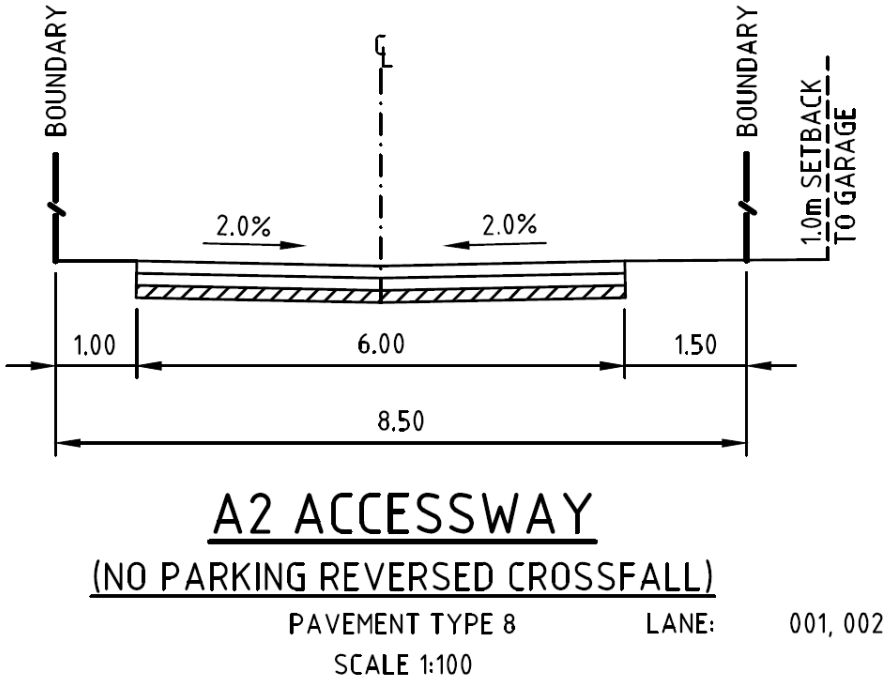

Figure 8 – A2 Accessway Road Type (Modified) as proposed for Stage 3B2

Source: Cardno

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.

3.4 Landscaping

The Bulk Earthworks DA (DA14/1228) gained approval for the clearing of all vegetation on the site. These works have since been undertaken.

The proposal seeks approval for road reserve landscaping including street tree planting. The proposed tree species are outlined within the Street Tree Plan included at **Appendix J**. The proposed species and street tree layouts are consistent with those of the previously approved Central Precinct stages.

As outlined in the Landscape Masterplan, proposed street tree planting locations and species 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;

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- 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, and aim to support the goals of ecologically sustainable development identified under Section 4.8 of the CPP.

3.5 Stormwater Management

The proposed stormwater management strategy for Stage 3B2 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.

Drainage Corridor

The CPP Framework Plan identifies the establishment of a drainage corridor through the centre of the Central Precinct which will consolidate existing poorly defined channels across the site into one riparian corridor and also serve as the main drainage corridor to convey stormwater from the south to South Creek in the north-east of the site. The corridor will serve as both a key drainage system and, once embellished, as a riparian corridor for the whole of Central Precinct. The drainage corridor will be supplemented by a number of detention basins spread throughout the Central Precinct site, which will assist in improving stormwater quality and managing peak flows.

The area of Stage 3B2 will drain to Basin E (located in Stage 5, to the north east of this stage) via overland flow paths during construction, and permanent stormwater pipes on completion (to be provided as part of Stage 5 civil works, subject to approval for that stage).

The Bulk Earthworks DA (DA14/1228) approved temporary stormwater management measures for future stages which will continue through the subdivision works, with the permanent drainage measures to be constructed as part of future subdivision staging and associated approvals.

3.6 Contamination Management

While the SASs issued for the Central Precinct do not identify any areas of concern within the Stage 3B2 site area, any unexpected finds will be managed in accordance with the process outlined in DA16/0888 and the Specific Remedial Action Plan (SRAP) (Rev 4, 16 June 2017), submitted as part of a Request for Further Information for that DA. Refer to **Appendix M** for the Auditor's advice

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relating to that SRAP. DA16/0888 seeks approval for remediation works across the entire northern part of the Central Precinct site, and is currently being assessed by Council. A Conceptual Remedial Strategy (CRS) for Stages 3 to 5 of Central Precinct (and hence for this Stage 3B2 site) was also submitted as part of the approved Stage 3A subdivision application (DA16/0113).

Remediation works within Stage 3B2 will be required for areas which fell under the former road/hard stand areas that are now becoming residential land, as this land was verified for commercial/industrial uses under CHK001/6. Whilst the commercial/industrial rating is appropriate for the land which will remain under a road surface (this time as part of the Connector Road), the areas which are becoming residential will need to be remediated to a standard for residential uses. Beyond this, the only other remediation work that would need to occur is if there are unexpected finds of contaminated material (as outlined in the CMP). In both cases, the strategies proposed by JBS&G provides an outline of the necessary steps for remediation.

The scope of the CRS and SRAP includes:

- an outline of the previous uses and the past remedial strategy investigations on the site;
- an outline of the areas and contaminants of concern that may require remediation (with the areas under former sealed roads and buildings covered in the SRAP);
- an assessment of the potential remedial options and the preferred option;
- potential remedial approach and strategy;
- scope of remediation works;
- a definition of the validation sampling, analytical and quality plan to demonstrate successful remediation of the site;
- the internal material tracking and stockpiling procedures for handling of any materials generated by remedial works; and
- the occupational health and safety (OHS) and environmental management plans for the remediation and validation works.

The actions of the CRS and SRAP aim to make the site suitable for the intended land uses on site. The proposed preferred remedial strategy is outlined in CRS as:

- excavation and offsite disposal of any identified asbestos fibre contaminated material;
- excavation and offside disposal of any identified metals, explosives, pesticides, Polychlorinated Biphenyls (PCBs), Total Petroleum Hydrocarbons (TPHs) and Polycyclic aromatic hydrocarbons (PAH) contaminated material; and
- excavate and hand pick the bonded asbestos containing material (ACM) contaminated soils for reuse in subsurface areas (under roads and/or open space) following validation. Bonded ACM fragments removed during the handpicking process will be disposed offsite to a suitable licenced facility.

It should be noted that there are no 'cap and containment' measures being proposed to remediate the site. Any material placed will be validated as suitable to remain onsite in accordance with the CRS and SRAP.

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Further detail on the proposed remediation strategy and past investigations were provided to Council as part of the approved Stage 1 Subdivision (DA15/0299) and the under-assessment Site Remediation Works (DA16/0888).

3.7 Utility Services

Consultation with relevant utilities service providers was undertaken in the preparation of the CPP (documentation of which is provided at Appendix F of the CPP) and by the applicant in relation to previous DAs for the subdivision of the Central Precinct for urban and employment land uses. From these consultations, it is concluded that the site is serviceable with potable water, gas, sewer, electricity, and telecommunications, subject to extensions/augmentation of utilities infrastructure as part of the future development of the Central Precinct. Further detail is included in the Civil Infrastructure and Engineering Report at **Appendix B**.

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 Waste Management Plan included at **Appendix I**.

3.9 Construction Management

Construction activities would be undertaken between 7:00am and 7:00pm Monday to Friday and 8am to 6pm Saturday and Sunday. It is noted that these hours proposed are greater than those proposed for earlier stages – this increase is to allow for the efficient construction of this stage, noting that its location and distance from the nearest residential dwellings (approximately 600m (minimum) from stage boundary to nearest property line at Werrington County, and 1.6km stage boundary to nearest property boundary in Jordan Springs) means that construction impacts on residents will be negligible.

Any construction work outside of these hours will be subject to prior consultation with PCC and Roads and Maritime Services. The Stage 3B2 works are estimated to be undertaken over a six-month period and are envisaged to commence from November 2017.

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:

- 16 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 department per hour during construction hours.

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, access for construction will be via the Jordan Springs Boulevarde, Lakeside Parade and the Jordan Springs Connector Road (also known as 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 3B2. The Bulk Earthworks activities have concluded for the Central Precinct, and as such there will not be an accumulation of

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construction impacts caused by several activities occurring at the same time. Cumulative impacts of the construction traffic are assessed in **Section 4.11** of this report.

Further details on construction management have been provided in a preliminary Construction Traffic Management Plan (CTMP), included at **Appendix L**. A detailed CTMP, including Traffic Control Plans if required, will be prepared and implemented by the principle contractor prior to and during works on site.

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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 79C(1) of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

4.1 Compliance with Relevant Strategic and Statutory Plans and Policies

4.1.1 SREP 30 – St Marys

The proposed development is consistent with the Performance Objectives set out in the clauses 22 to 35 of SREP 30 for the following reasons:

- the proposed development is in accordance with the ecologically sustainable development of the land, as prescribed by the CPP;
- the proposed subdivision works will not result in impacts to air quality above those of the assessed Bulk Earthworks under DA14/1228, with appropriate management measures to be incorporated during construction consistent with those currently in operation across the site;
- proposed works are confined to the Urban Zone, ensuring the conservation significance of the Regional Park is protected;
- appropriate consents and approvals to disturb Indigenous heritage items have been obtained to allow for development to occur;
- the proposal represents the next stage in creating a new residential community within the Central Precinct, which will be serviced by a full range of both hard and soft infrastructure;
- the future dwellings within the proposed subdivision will have convenient access to a range of open space and recreation areas, including the regional open space which is located to the east of the subdivision stage, and local parks;
- the interim and long term Stormwater Management Strategies ensure appropriate water cycle management in relation to the proposal;
- the road layout of the proposed subdivision is generally consistent with the design intent and desired street hierarchy outlined within the CPP, and will integrate with the approved and proposed 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 3B2 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.

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Clause 20 of the SREP requires the consent authority to take the relevant Precinct Plan into account when assessing the proposed development. Additionally, it is noted that CPP Amendment No. 1 has been publicly exhibited by Council. Accordingly, and as per the precedent set in *Stockland Development Pty Ltd v Manly Council* (2004) 136 LG ERA 254, Council is entitled to also take into account the draft CPP amendment when considering a development application for land in Central Precinct. The development of Stage 3B2 is consistent with the CPP Amendment No. 1 (which proposed the relocation of the Village Centre and its associated character area). Refer to **Section 4.1.3** for further discussion.

4.1.2 St Marys Environmental Planning Strategy 2000 (St Marys EPS)

The St Marys EPS contains performance objectives for future development of the St Mary's site (i.e. the area covered by SREP 30). In order to adopt a precinct plan for the St Mary's site, Council must ensure such a plan is consistent with the aims and objectives of the St Marys EPS. The proposed development is consistent with the CPP, with residential development envisaged within the Urban Zone.

The consistency of this DA with the aims and performance objectives of the EPS has therefore been addressed by Council in its consideration and subsequent adoption of the CPP in relation to:

- conservation (particularly in relation to the conservation of natural values within a Regional Park);
- cultural heritage;
- transport;
- urban form;
- energy and waste;
- potential impacts to flora and fauna;
- human services;
- soil salinity; and
- contamination.

Performance objectives for water and soils (as set out in Section 6 of the St Marys EPS) will be satisfied through the implementation of measures set out in the Stormwater Management Plan (included in the Civil Report at **Appendix B**) and implementation of recommendations within the Salinity Review (**Appendix H**).

The Waste Management Plan at **Appendix I** will promote the minimisation of waste and maximisation of reuse and recycling both on and off site as far as practicable, consistent with performance objectives for energy and waste set out in Section 9 of the EPS.

4.1.3 Central Precinct Plan

It is considered that the proposed Stage 3B2 works are generally consistent with the current CPP and are consistent with the CPP Amendment No.1 currently under assessment by Council in that they will be:

- providing a subdivision pattern that will provide for attached dwellings, conforming to the desired outcomes for both the Urban Area/Neighbourhood (as per CPP) and Village Centre Character Areas (as per CPP Amendment No. 1);

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- by developing land for residential purposes in accordance with the Framework Plan;
- providing a subdivision pattern that supports housing diversity and mix within neighbourhoods;
- supporting the establishment of a well-connected street network, allowing for high levels of permeability for pedestrians, cyclists and motorists;
- creating a legible street hierarchy that supports the future character and expected volumes of traffic;
- promoting ease of movement and walkability through short and well-connected block lengths;
- providing landscape treatments that support the neighbourhood identity and ensures that the landscape character dominates the street;
- designing a road layout that provides sufficient space for street planting, landscape treatments, and paths;
- supporting the achievement of the dwelling density target for the Central Precinct, through providing lots suitable for integrated dwellings;
- ensuring the development connects with the external road network; and
- designing a street network in accordance with the adopted street types.

Amendment No.2 is currently with Council and seeks changes to Part 5 of the CPP.

Development Control Strategy

The proposed development is generally consistent with the controls in the DCS of the CPP Amendment No.1, and the current CPP with regards to:

- the street types, including widths of carriage ways and verges to be constructed within the site (see detail at Section 3.3.1);
- street planting which maintains adequate lines of sight for vehicles and pedestrians and is durable and suited to the road environment and which include endemic native species; and
- provision of lot sizes which can accommodate residential housing generally consistent with the built form housing controls in Section 5B of the current CPP and the CPP Amendment No.1.

As above, the CPP Amendment No.1 is anticipated to be approved shortly, and provides a variety of changes from the current CPP in response to market demand and housing affordability and diversity. Amendment No.2 seeks changes to the DCS to allow for appropriate lot size and mix to be consistent with current market and affordability demands and proposes changes to housing typologies.

4.1.4 State Environmental Planning Policy 55 – Remediation of Land

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 site is either suitable for the proposed uses, or will be made suitable, in accordance with Clause 7 of SEPP 55, as documented within SASs CHK001/1 and CHK001/6. The consent authority must be

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satisfied that the land is suitable in its contaminated state (or will be suitable, after remediation) for the purpose for which the proposed development is to be carried out. Any remediation works required would be classified as Category 1 Remediation Work, with consent approved under DA16/0888. They would be carried out in accordance with the CMP, CRS, and SRAP discussed in **Section 3.6**, and included with previous DAs, and the preferred method for remediation of the site (if required).

4.1.5 Water Management Act 2000

In accordance with Section 91 of the *Water Management Act 2000* (WMA 2000) a Controlled Activity Approval is required for works undertaken on 'waterfront land' within 40 metres of a water course. Stage 3B2 is located east of the existing riparian corridor; more than 40 metres from the centreline of the watercourse. As such, a Controlled Activity Approval is not required.

Despite this, the proposed subdivision is in accordance with the CPP and recommendations outlined by the then Office of Water (now NSW Department of Primary Industries: Water) as part of the precinct planning process. Further, these works, in the broader context of the Central Precinct, will assist with ensuring appropriate outcomes are achieved with respect to water quality and quantity objectives, and in terms of improving the natural values of the site. Appropriate measures will also be carried out to ensure potential impacts on the water course during construction are minimised.

4.1.6 Rural Fires Act 1997

The subject site is identified as bushfire prone land. A Bushfire Safety Authority from the RFS is therefore required in relation to the proposed development (subdivision), in accordance with Section 100B of the *Rural Fires Act 1997*, Clause 44 of the *Rural Fires Regulation 2013* and '*Planning for Bush Fire Protection 2006*' (RFS 2006). See **Section 4.7** for assessment.

4.2 Pre-DA Advice

A Pre-DA meeting was held with Council officers on 17 May 2017 (reference: PL17/0045) to discuss the proposed development. Following this meeting, advice was provided by Council, dated 25 May 2017, and included at **Appendix K**. **Table 3** below provides a summary and/or reference to sections of this report where the relevant issues are addressed. It is noted that since this time the proposed design has evolved and as such several Council comments may not be applicable.

Table 3 - Pre-DA Issues and Outcomes Summary

Pre-DA Issues and Outcomes	Comment
Planning	
The concept subdivision plans rely on Council's adoption of amendments to the precinct plan and development control strategy as the current location of the approved village centre conflicts with the plan subdivision pattern tabled at the meeting. As the draft amendment seeks to relocate the village centre south, this is required to be adopted by Council prior to any	It is noted that Council are able to approve a development, despite its inconsistency with the CPP, as Clause 20(2)(a) of SREP 30 requires only that Council considers the CPP, and there is no requirement that compliance with the CPP be achieved to allow approval to occur. It is also noted that since CPP Amendment No. 1 has been publicly exhibited by Council, Council is

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Pre-DA Issues and Outcomes	Comment
determination of the proposed subdivision stages.	entitled to also take into account the draft CPP amendment when considering a DA for land in Central Precinct, as per the precedent set in *Stockland Development Pty Ltd v Manly Council (2004) 136 LG ERA 254.*
Discussion during the pre-lodgement meeting also referenced an intention to include further amendments to the precinct plan than just the village centre, that would necessitate re-exhibition. This needs to be verified with Council's City Planning Team as this is not understood to be the agreed course of action to resolve the current Precinct Plan amendments and resolution of Council concerning traffic modelling and Voluntary Planning Agreements revisions.	Noted. Amendment No. 2 of the CPP was submitted to Council in May 2017 which sought changes to lot mix and housing typologies outlined in Part 5 Development Control Strategy.
The proposal relies upon a realignment of the service road that would link to the zoned employment land. The relocated service road is the subject of a current modification application to Stage 3A which needs to be determined ahead of any reliance on this for the current application. This amendment also requires reflection within the proposed amendments to the Precinct Plan as the appropriateness of this alternate vehicle route is critical in the consideration of the staging and road hierarchy / network from a strategic planning context.	Noted, however both the current and proposed service road is outside of the land covered by Stage 3B2. Additionally, the modification DA16/0113.01 was granted approval on 20 June 2017 and changed the type of roundabout at the intersection of Road 002 and Road 013 to accommodate a 14m bus along Road 002.
The proposed lot mix is understood to be a significant variation to the current lot mix indications within the adopted DCS. While this can be considered as a variation to the DCS through a development application, justification is required that not only responds to sale demand, but also housing diversity, affordability, urban design and the suitability of lot size coupled with lot orientation.	This proposal is for 4 superlots, which will be later developed and subdivided by separate, future DA/s. These future application/s will include a consideration of the impacts on the total lot mix of Central Precinct.
The proposal is understood to adjoin the transmission easement but not encroachment the easement. The proposal would be referred to Transgrid as an adjoining / interested land owner but if works are proposed within the easements, agreement in writing to those works is required prior to lodgement of the application.	This stage does not adjoin the TransGrid easement.

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The proposal would be nominated integrated development requiring concurrent from the NSW Officer of Water and Rural Fire Service. Comments will also be sought from Roads and Maritime Services and potentially from Sydney Water.	Noted. Please see **Section 4.1.5** above, which outlines that, given the location of Stage 3B2, referral for concurrence to the NSW Office of Water is not required.
The location of building envelopes on the plans will be critical in considering lot size suitability, sight lines, driveway locations, easement requirements and built to boundary capability.	This proposal is for 4 superlots, which will be later developed under separate, future DA/s. These future application/s will include details on these matters.
Any intended dual occupancy or granny flat development potential should be identified on the building envelope plans.	Noted for future applications for the later development of these superlots.
The road widths and hierarchy should be consistent with the requirements outlined within the DCS and road as approved within preceding stages.	The proposed roads have been designed generally in accordance with the road typologies described in the CPP (as outlined further in **Section 3.3.1**) and the *Design Guidelines for Engineering Works for Subdivisions and Developments, November 2013* by Penrith City Council.
All drainage, water sensitive urban design and storage design is to be consistent with the adopted Precinct Plan and supporting stormwater management strategies. Any reliance on the draft precinct plan and a supporting revised stormwater drainage strategy should be clearly outlined within the application.	The proposal is consistent with the provisions of the CPP (and supporting documents) regarding stormwater management and drainage, and previously approved DAs. Refer to the Civil Engineering & Infrastructure Report (**Appendix B**) and the Civil Engineering Plans at (**Appendix C**).
The plans should indicate the location, size and intersection for the planned relocated service road to ensure that any subdivision approval does not inhibit this delivery in future stages.	As discussed above, this proposed relocated road is outside of Stage 3B2.
The delivery of the east / west connector road to Ropes Crossing also requires address in the application(s) given the proposal seeks to provide further housing density with one access arrangement into the precinct (from Jordan Springs).	The provision of the future Central Precinct – Ropes Crossing Connector Road will occur prior to the development of the Stage 3B2 lots. This matter is addressed in the Traffic Impact Assessment.
Street tree planting is to be indicated and should be consistent with the species list adopted for the precinct. Any planting intended within compacted soils must include details which are	Noted. Refer to the street tree plans attached.

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consistent with previous tree planting reports regarding soil suitability.	
The provisions of SEPP 55 and SREP 20 must be addressed with respect to contamination and any remediation requirements. This includes resolution of outstanding information required for the assessment and determination of DA16/0888.	Additional information as requested for DA16/0888 has been provided to Council which will address these contamination and remediation requirements.
Council discourages BAL construction ratings in excess of BAL 29 and as such the subdivisions should provide perimeter roads and sufficient lot depths / widths to negate the need for BAL 40 or Flame Zone construction.	No BAL ratings are required for the Stage 3B2 site due to the location and separation of the site from potential bushfire hazards.
The proposed mix of lot widths and driveway locations must detail and ensure that sufficient space / separation is provided for on street car parking, street tree planting, bin presentation and kerb side collection (waste vehicle access).	This will be addressed in future applications for the development of each of the superlots.
Engineering - General	
Council's engineering requirements for subdivisions and developments, including policies and specifications listed herein, can be located on Council's website at the following link: http://www.penrithcity.nsw.gov.au/Our-Services/Planning-andDevelopment/Engineering-Requirements-for-Subdivisions-andDevelopments/	Noted.
All engineering works must be designed and constructed in accordance with Council's *Guidelines for Engineering Works for Subdivisions and Developments - Part 1- Design* and Council's *Engineering Construction Specification for Civil Works*.	The proposed works have been designed in accordance with *Council's Guidelines for Engineering Works for Subdivisions and Developments - Part 1- Design*, and as noted on the Civil Engineering Plans at **Appendix C**, all works will be constructed in accordance with Council's *Engineering Construction Specification for Civil Works*.
Engineering – Stormwater	
Stormwater drainage for the site must be in accordance with the following: – Council's Development Control Plan,	The proposal is consistent with the Soils, Groundwater and Salinity Management Strategy for Central Precinct, which was adopted by Council as part of the CPP.

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Pre-DA Issues and Outcomes	Comment
– *Stormwater Drainage for Building Developments (Working Draft)* policy, and – *Water Sensitive Urban Design Policy* and *Technical Guidelines*.	
A stormwater concept plan, accompanied by a supporting report and calculations, shall be submitted with the application	A stormwater concept plan and supporting documentation can be found in the Civil Engineering Plans at **Appendix C** and the Civil Engineering & Infrastructure Report at **Appendix B**.
The application shall demonstrate that downstream stormwater systems have adequate capacity to accommodate stormwater flows generated from the development. This may require the provision of on-site detention to reduce stormwater flows or upgrade of stormwater infrastructure to increase capacity.	This information is included in the Soils, Groundwater and Salinity Management Strategy for Central Precinct, which was adopted by Council as part of the CPP. This application is consistent with this strategy, including through the future provision of bio-retention basins. It is noted that no permanent basins proposed under the Strategy are within the Stage 3B2 area. However, the Stormwater Detention Strategy Report, submitted to Council as part of the CPP Amendment No. 1 package, notes the creation of a temporary basin as part of the Stage 4 works (previously submitted to Council as DA17/0491), to assist in managing flows in the interim, until the permanent basins are constructed.
A water sensitive urban design strategy prepared by a suitably qualified person is to be provided for the site. The strategy shall address water conservation, water quality, water quantity, and operation and maintenance.	Refer to the Civil Engineering Report.
The location of all temporary sediment basins is to be shown on plans.	Refer to the Civil Engineering Plans.
Traffic Management	
The application shall be supported by a traffic report prepared by a suitably qualified person addressing, but not limited to, traffic generation, access, car parking, and manoeuvring. The traffic report shall address traffic volumes from the proposed rezoning of the employment lands.	Please refer to the Traffic Impact Assessment prepared by WSP and included at **Appendix F**.
Council will permit construction of a temporary road in a two coat seal for garbage truck access.	Noted.

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The internal roads of the subdivision shall be designed to ensure adequate access and turning paths are provided for Council's waste collection vehicles.	The Civil Engineering & Infrastructure Report (**Appendix B**) states "The road layout for Stage 3B2 of Jordan Springs East has taken into to account two design vehicles as follows: – 14.5 m bus along roads designated as a bus route under the Central Precinct Concept Plan – 12.5 m SU Truck along all other internal roads."
The application shall be supported by turning paths for the adopted design vehicle for all traffic facilities in accordance with Austroads.	As stated in the Civil Engineering and Infrastructure Report at **Appendix B**, the following design vehicles were used, with their parameters taken from the *Guide to Road Design*, Austroads, 2006: – 14.5 m bus along roads designated as a bus route under the Central Precinct Concept Plan – 12.5 m SU Truck along all other internal roads.
The indicative location of the proposed industrial road along the eastern perimeter is to be shown on plans. Plans shall consider two scenarios – one with access to the employment lands, and one with access to future residential lands (pending rezoning). The road to the employment lands shall be designed as an Employment Street as per Appendix C of the current adopted Precinct Plan and Development Control Strategy.	Noted. Addressed as part of the Stage 4 application currently under assessment by Council (DA17/0491).
The indicative location of all intersections with future stages is to be shown including proposed intersection treatments.	The road layout of the adjacent future town centre area has not been confirmed, and as such indicative connection points cannot be proposed as part of this DA. Future DAs will include connection points.
The location of all cycle ways are to be shown.	Refer to the relevant design plans.
The indicative locations of bus routes and bus stops is to be shown. Consideration is to be given to the proposed rezoning of the employment lands to residential.	Refer to the relevant design plans.
A Stage 2 Road Safety Audit is to be submitted with the application.	A Road Safety Audit has been completed, and is attached at **Appendix G**.

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Subdivision Works	
The application is to be accompanied by a subdivision concept plan.	Please find the Subdivision Plans attached at **Appendix A**, and supplemented by the Urban Design Plans at **Appendix J**.
The subdivision layout shall be in general accordance with the Precinct Plan and Development Control Strategy.	The proposed subdivision is generally consistent with the CPP and the DCS.

4.3 Subdivision Design

4.3.1 Yield & Density

The adopted CPP requires each residential stage subdivision to indicate the total number of dwellings proposed in the subdivision, the cumulative dwelling yield of all proposed and approved subdivisions, and the proposed dwelling density for the subdivision. The Stage 3B2, through the provision of superlots for future subdivision, therefore increases the proportion of larger lots temporarily. It is acknowledged that the proposed density across the wider Central Precinct urban area is greater than the density target under the CPP and SREP 30 of 15 dwellings per hectare.

In accordance with the site's Village Centre character under the CPP Amendment No.1, the superlots will allow for a variety of housing typologies (likely through an integrated housing pathway) to be developed under future applications. This will ensure the subdivision provides a diverse range of housing and a mix to support choice, affordability, and adaptability.

Character Areas

The Stage 3B2 subdivision is located within the future Village Centre Character Area as proposed under the current CPP Amendment No.1. The subdivision is consistent with the principles of the CPP as it will:

- Allow for future subdivision of a variety of lot sizes;
- accommodate a variety of dwelling typologies;
- provide tree-lined streets; and
- creates strong visual and physical links to regional park.

4.3.2 Safety

This DA is for subdivision, site grading, and construction of roads, street landscaping and drainage infrastructure. Details of future built form and the way it addresses the principles of Crime Prevention Through Environmental Design (CPTED) will be addressed in subsequent applications for the construction of buildings and open spaces, noting that the CPTED principles apply to this subdivision DA, with no hidden areas which can lead to anti-social behaviour being proposed.

Further, it is important to note that the proposed subdivision has been designed to facilitate the development of the site in a manner that can achieve safety in its design. The proposal considers such principles, through:

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- street designs that provide safe, well-lit pedestrian routes;
- providing appropriate lighting and well-lit paths on street kerbs;
- subdivision patterns that establish permeable and walkable neighbourhoods; and
- landscaping that allows for view corridors and clear sight lines.

4.4 Streetscape and Public Domain

The proposed development has been assessed with regard to the Landscape and Open Space Strategy, which forms part of the approved CPP and Amendment No.1. The proposal is considered consistent with the Strategy in that it:

- supports the even distribution of open space (including the future Regional Park) which is within five minutes' walk of dwelling lots;
- effectively integrates landscaping and subdivision layout with that of proposed stormwater works;
- effectively uses view lines and setbacks from the surrounding Regional Park to visually enhance future adjoining development;
- uses native vegetation to assist in efficient water use;
- enhances and ecologically supports existing native vegetation within and adjoining the site, particularly that of the nearby Regional Park; and
- promotes 'quality' open space and recreation experiences rather than quantity only.

4.5 Ecology

The Bulk Earthworks DA (DA14/1228) approved by the JRPP assumes 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.

The mitigation measures discussed later in this section, regarding direct and indirect impacts of the development are relevant for this application and the ongoing development of the Central Precinct in general. These are included within the assessment of this application.

4.5.1 Mitigation Measures

Whole of Central Precinct, including Stage 3B2

Extensive mitigation measures will be implemented across the Central Precinct to minimise the impacts from future urban development on the Regional Park. Foremost amongst these is the protection and conservation of approximately 900ha of the highest quality native vegetation within the Regional Park. Impacts resulting from the development of the Central Precinct will be offset by the major conservation outcome of the Regional Park and by a series of management strategies to be implemented for 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, and surrounding open space vegetation and street green space within Stages 1, 2, 3, 4 and 5 (with some trees being

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retained in Stage 2) will also provide some canopy connection and foraging resources for bats and birds, while also maintaining the genetic diversity of the plant species of the locality.

It is considered that the proposal will have no impacts on the flora and fauna within the site nor the Regional Park, given that the subject site has already been cleared of vegetation under DA14/1228. Accordingly, no further assessment of the ecological impacts of the proposal is required in relation to the development of the subject land.

4.6 Contamination

As discussed in the CPP, and above at **Section 2.3.4** and **Section 4.1.4**, the St Marys Precinct has been subject to extensive investigation and, where necessary, remediation, throughout the 1990s. The Environmental Protection Agency (EPA) has been involved throughout this process and an EPA-accredited Site Auditor issued SASs for the St Marys site. Whilst the majority of the Stage 3B2 site was signed off as suitable for residential use under SAS CHK001/1, there is an area which was formally covered by a bitumen road, and unable to be assessed under CHK001/1 (due to being inaccessible at the time).

This area was later assessed under CHK001/6, and signed off as suitable for commercial/industrial use. The parts of this area which will become residential land as part of Stage 3B2 will be remediated in accordance with the below listed documents, to allow for validation for residential use (for which an Interim Advice has been prepared by the Auditor).

Land which is to be under the section of the Connector Road included in this application will be validated as suitable for commercial/industrial, considered an appropriate level for the intended use of this land and consistent with the proposed approach under DA15/0299.05 for the Connector Road within Stage 1J.

Sampling Analysis and Quality Plan (Prepared by JBS&G – Rev 4, 12 November 2015)

This provides a strategy for the remediation of the remaining unaudited areas of the site, being the areas previously beneath buildings, hard stand areas and roads.

The SAQP outlines the method of remediation and validation of the site. This includes the investigation and assessment criteria for remediation of the site prior to development of the area and for the preparation of an Environmental Site Assessment and Site Audit Statement of the areas requiring remediation. The SAQP has been reviewed and approved by the Site Auditor.

Conceptual Remedial Strategies, prepared by JBS&G

The CRSs provides the framework for the remediation of the site including undertaking remedial works, documenting the remedial works and validating the site. The CRSs for the overall Central Precinct site are split into two documents; Conceptual Remedial Strategy Stages 1-2 (Rev 1, 26 March 2015) and Conceptual Remedial Strategy Stages 3-5 (Rev 0, 29 April 2015).

The Stage 3B2 site falls within the Stage 3, 4, and 5 Auditable Area Stages, as stated in the relevant CRS document. The majority of the site (covered by CHK001/1) is considered suitable for the intended land use, and will not require any further remediation work. The areas of the site which are under former road/hard stand areas were cleared for commercial/industrial uses – those areas under the Connector Road will not require any further remediation work, as this classification is appropriate for the use of the land for a road, while that which was formerly under road/hard stand areas which is now becoming residential will be appropriately remediated, using the process established in the relevant CRSs, so that it may be appropriate for residential uses.

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Specific Remedial Action Plan, prepared by JBS&G (Rev 4, 16 June 2017)

The SRAP follows on from the CRSs, and provides the framework for the remediation of the remaining areas of the site, including undertaking remedial works, documenting the remedial works and validating the site.

The SRAP has been reviewed by a NSW EPA Accredited Contaminated Site Auditor and an Interim Audit Advice issued stating that the SRAP is suitable for implementation of remedial works required at the site. This review (for Rev 4 of the SRAP) is attached – the SRAP was previously provided to Council as part of DA16/0888.

Contamination Management Plan, prepared by JBS&G (Rev B, 5 March 2015)

The CMP applies to parts of the overall Central Precinct site already remediated, audited and declared suitable for its intended land uses. It provides a framework for identifying and addressing any discovery of chemical contamination or potentially explosive ordnance to ensure a safe working environment for workers during development and to avoid unacceptable impact on the natural environment.

The CMP provides a plan that site workers can be inducted into and a flow chart illustrating lines of action and responsibility should any unexpected finds occur.

The approaches in the CMP are intended for use only during the site preparation phase of development, during which structures may be demolished and disposed of, land levels may be altered, and redundant infrastructure is removed and new infrastructure is installed.

The CMP includes an Unexpected Finds Protocol which provides clear guidance on the safe and appropriate actions in the event of encountering potential chemical or explosive ordnance contamination during site development works.

4.7 Bushfire

The subject site is identified as bushfire prone land. A Bushfire Safety Authority from the RFS is therefore required in relation to the proposed development (subdivision), in accordance with Section 100B of the *Rural Fires Act 1997*, Clause 44 of the *Rural Fires Regulation 2013* and '*Planning for Bush Fire Protection 2006*' (PBP) (RFS 2006).

Bushfire Protection Assessment

A Bushfire Protection Assessment (BPA) has been prepared by EcoLogical Australia and is included at **Appendix E**. The BPA has been prepared in response to the requirements contained in the Bushfire Protection Assessment – St Marys Western and Central Precincts' report prepared by BES (2009), which forms part of the CPP.

It is noted in the BPA that the separation distances provided within the proposal exceed both the PBP and AS 3959-2009 minimum requirements regarding the width of Asset Protection Zones (APZ) and as such no APZs are required.

Additionally, based on the existing arrangements and separation distances of the Stage 3B2 subdivision area from the nearest bushfire hazard, there are no BAL ratings or applicable construction standards.

4.8 Heritage

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4.8.1 Indigenous

An Aboriginal Archaeological Assessment has been undertaken by Godden Mackay Logan (GML) Heritage Consultants in relation to the Central Precinct site, as submitted with previous DAs. 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 amount of 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 2.3.7** an AHIP (#C0000362) has been 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 3B2 contains only areas of Management Zone 3, identified as 'Community Collection (Low Archaeological Potential) and Management Zone 4, identified as 'No Action Required'. 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 3B2 as part of this DA.

4.8.2 European

As detailed in **Section 2.3.7**, no archaeological or European heritage items located within Stage 3B2. As such, no assessment of European heritage is warranted as part of this DA.

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 at **Appendix F** and **Appendix G**, respectively. The TIA assesses the anticipated traffic implications of the proposed development with regards to pedestrian and bicycle requirements, traffic generation, site suitability and access, and transport impacts on the surrounding road network. The RSA identifies potential safety risks for road users, and proposes for consideration measures to eliminate or reduce these risks.

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

4.9.1 Traffic Impacts

The TIA (refer to **Appendix F**) evaluates the anticipated transport implications of the proposed development in the context of the cumulative impacts from the previously approved stages of Central Precinct. The report provides an assessment of the subdivision layout & road typologies, trip forecasting, internal intersection operation and road capacity of the surrounding road network.

The report concludes that proposed Stage 3B2 works provide an appropriate road typology layout, and will not affect the levels of service internally and externally of the Precinct, nor will it have an impact on the road network, given that the proposal is for superlots, which are considered to be non-traffic generating.

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Traffic Generation

The TIA notes that, given the proposal is for superlots, these are assumed to be non-traffic generating lots at this stage. Any future application to develop these lots will include a TIA, which will identify the traffic generation of the proposed development.

As such, the cumulative trip generation for the stages in Central Precinct approved and currently under assessment (consisting of Stages 1, 2, 3A, 4A, 4B, 3B1, and 3B2) is unchanged from the most recent application (for Stage 3B1), at approximately 749 trips per AM Peak, and 955 trips per PM Peak.

Internal Road Network and Subdivision Layout

The Stage 3B2 internal road network includes the provision of local streets, and part of the Connector Road. The TIA confirms that the proposed road types are appropriate for their intended functions. Stage 3B2 will be serviced by internal roads which connect to 'Road 001' (the Connector Road) and 'Road 002' (collector road north-south).

External Road Network

The Jordan Springs – Central Precinct Connector Road, as proposed and approved as part of the Stage 1 Subdivision DA (15/0299), will convey traffic from Central Precinct through Jordan Springs to The Northern Road. Subject to future council approvals the Central Precinct will be connected via road to Ropes Crossing in 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. The East-West Connector Road is anticipated to be open to traffic by the end of 2018, prior to the development of Stage 3B2.

As mentioned above, the proposal is for superlots only, which are considered non-traffic generating (future applications for development of these lots will include their own TIA). Accordingly, there will be no impact on traffic volumes within the broader external road networks from that contemplated in Stage 3B1, where key roads and intersections were determined to operate at a satisfactory level (refer to the TIA at **Appendix F** for further information).

4.9.2 Concept Design

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

Key elements identified and examined in the RSA include:

- path grades, widths and quality;
- kerb ramps and transitions;
- pedestrian crossings, facilities and protection;
- raised thresholds;
- sight distance and visibility;
- vehicle turning paths;
- readability of alignment and intersections;

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- intersection layout and geometry; and
- drainage and landscaping considerations.

The risk matrix provided in the RSA assesses each of these elements within the proposed Stage 3B2 in terms of likelihood (ranging from frequent to improbable) and severity (measured from catastrophic to limited) of a resultant crash. The matrix then assigns a value to that level of risk, ranging from 'Intolerable' to 'Low'.

The audit identified two high risk and one low risk safety issues relating to the proposed road design. These issues relate to pedestrian desire lines (high), warning signage for cyclists and pedestrians (high) and an indented parking bay (low).

A pedestrian desire walking line may potentially exist from the future adjacent commercial Village Centre to the south-west of Road 001 and Road 013. This may introduce mid-block crossing activities on Road 001, with no formalised crossings provided. There is an increased risk of a vehicle and pedestrian incident due to the demand generated by the Village Centre for pedestrian movements and no pedestrian crossing provision. It is however expected that most pedestrians north of Road 001 will use the crossings near to Road 022. The addition of another crossing mid-block may introduce sightline issues for pedestrian's due to the proposed landscaped median.

A shared path at the intersection of Road 013 and Road 001 crosses the south and west approach on the roundabout. No warning signage is proposed for vehicles to watch for cyclists or pedestrians, and no warning signage for cyclists to watch for vehicles. This has an increased likelihood of an incident due to a lack of awareness by motorists and cyclists alike. The signage proposed is however consistent with previously designed and approved roundabouts within the Central Precinct.

An indented parking bay for kerbside parking between Road 021 and 022 on Road 001 may impact on sightlines for vehicles moving along Road 001. A lack of on-street parking restriction on Road 001 due to the demand for parking adjacent to the Village Centre may result in non-compliances with parking requirements. No stopping signage is to be implemented to ensure an adequate sightline distance is provided.

In addition, the audit identified a further five 'note only' items relating to pavement design, lighting details, landscaping, access to adjacent superlots and a lack of splays near laneway intersections. Vehicular access to the superlots is to be from the rear laneways as proposed. Any of the future rear loaded lots that propose a 'Fonzie' flat is provided with pedestrian access via the laneways. The laneways are not anticipated to be used as a general pedestrian thoroughfare. Further discussion is provided within the RSA (refer to **Appendix G**).

4.10 Water Cycle Management

A Soils, Groundwater and Salinity Management Strategy for the Central Precinct was adopted by Council as part of the CPP. The implementation of the measures set out in the Civil Engineering & Infrastructure Report (refer to **Appendix B**) and the Engineering Plans at **Appendix C** will ensure the proposal is consistent with the CPP, specifically:

- appropriate sediment and erosion controls measures will be implemented during the construction and earthworks phase of development. These measures will be in accordance with Landcom's Managing Urban Stormwater: Soil and Conservation ('The Blue Book') and the requirements of Council; and
- post development flows will be consistent with the CPP water cycle management provisions.

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A letter provided to Council in January 2015 demonstrated that there was no adverse impact arising from the wider Central Precinct development on downstream properties/waterbodies, which includes the Stage 3B2 site.

4.10.1 Water Quality

The proposed Stormwater Strategy 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 9** 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.

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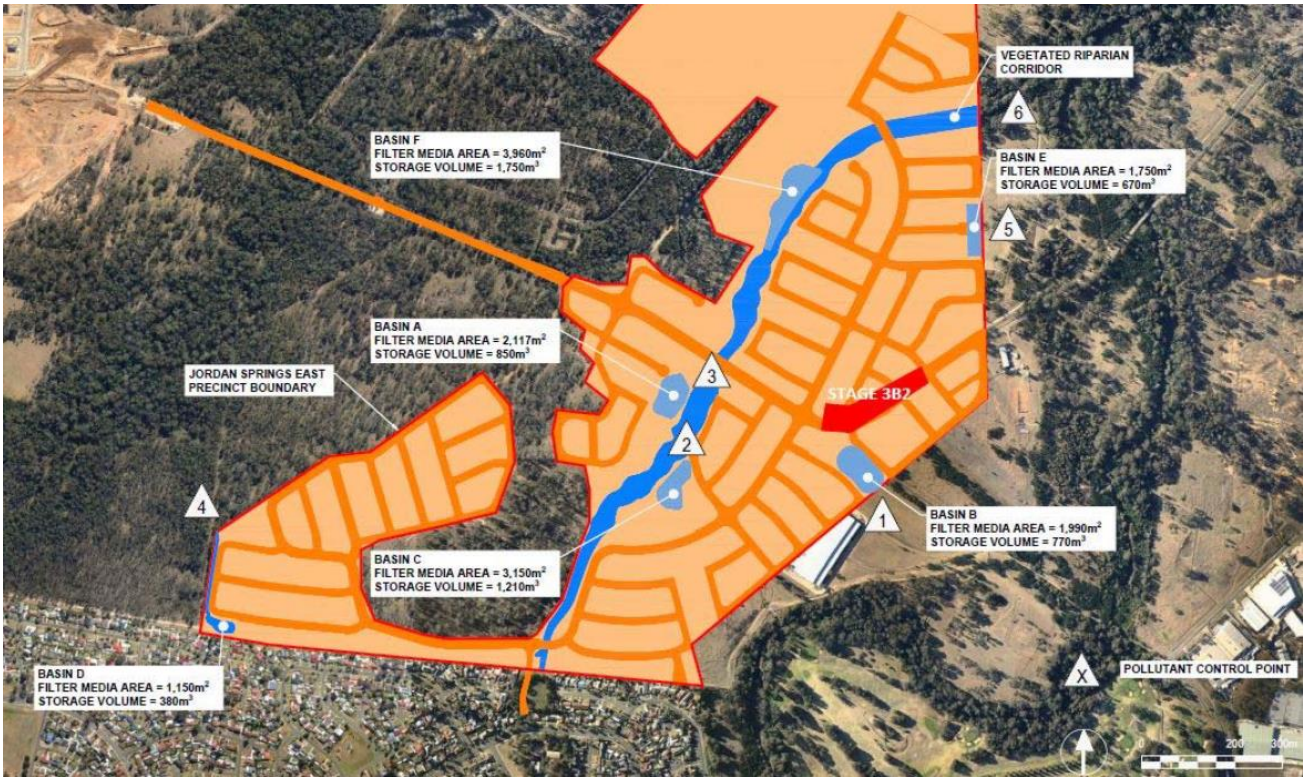

Figure 9 - Central Precinct Stormwater Quality Management Strategy

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 4**, and show that the strategy will meet and exceed the targets set in the Penrith Council DCP.

Table 4 - 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 3B2 is consistent with the overall strategy. Rainwater tanks are proposed on all future residential lots created upon further development of the superlots (subject to future approvals). Treatment of stormwater runoff will occur in Bio-retention Basin E (refer to **Figure 9**). At present Basin E functions as a sediment basin. A temporary channel is proposed to convey runoff to Basin E until a permanent stormwater pipe connection is provided as part of the Stage 5 civil works.

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4.10.2 Water Quantity

The stormwater drainage network has been designed to comply with Council and industry engineering standards with the objective of safely conveying major and minor flows to basins or open channels before discharging into a suitable downstream watercourse. The Civil Engineering & Infrastructure Report at **Appendix B** provides an outline of the stormwater strategy and water quantity management.

Stormwater pits have been located in suitable locations within the road geometry, maintaining a general maximum flow width of 2.5m from the face of the kerb during the design storm event. Where possible overland flow paths have been (subject to preliminary design) designed to accommodate the 1% AEP storm through maintaining velocity-depth products of 0.4m2/s or less and a maximum depth equal to or less than 300mm. Where these parameters are exceeded, risk management strategies commensurate to the potential risk will be developed through the preparation of detailed design documentation.

Cardno have adopted the Bureau of Meteorology Intensity-Frequency-Duration coefficients to assess the design of the road layout and ability of the site to drain. The assessment concludes that there is suitable capacity within the proposed stormwater management strategy to accommodate the internal and external overland flows and drain the site appropriately.

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.

4.10.3 Erosion and Sediment Control

As part of the Bulk Earthworks DA (DA14/1228), a number of erosion and sediment control measures were implemented, which will be continued as the works associated with the Bulk Earthworks DA continue. These measures included the establishment of a temporary sediment basin within the central corridor. This arrangement is proposed to continue as part of the Stage 3B2 works. Additional temporary basins may be incorporated within the stages where required.

Additional mitigation measures currently in effect on site under the Bulk Earthworks DA include:

- utilisation of a paved temporary construction entry/exit point off Links Road during construction to prevent the most heavily travelled routes from becoming a source of sediment and dust;
- temporary drains and diversion banks designed to maintain non-erosive velocities and direct runoff to temporary sediment trapping structures or divert clean runoff to stabilised outlets;
- filters located at all downstream locations of disturbed areas;
- runoff from disturbed areas diverted to temporary sediment basins located at strategic locations across the site;
- progressive re-vegetation during construction staging to stabilise disturbed areas; and
- stockpiling of material with diversion banks upstream of stockpiles to prevent the stockpiled material being washed away.

In line with the above, several control measures are proposed as part of the Stage 3B2 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**.

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It is considered that the proposed development, through continuing to meet the standards and undertake the mitigation measures proposed under the Bulk Earthworks DA (DA14/1228) and those 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.

4.10.4 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 H**). A summary of Cardno's review of the investigations is provided within **Table 5** below.

Table 5 - 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 potential 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 3B2 site, and as such minimal disturbance of the underlying saline soils is expected as a result of subsequent development.

Where excavation of the site soils is proposed, Cardno outline that there is a risk of reversing or mixing the soil profile if due care is not undertaken. Negative impacts on the salinity profile can be caused through increasing the salinity from slightly saline to moderately saline. This can be mitigated though coordination of the excavation and placement of in-situ material of moderate salinity with the excavation of non-saline to slightly saline material of similar consistency and origin from other areas of the site at similar depths.

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The Cardno letter at **Appendix H** provides recommendations for the placement of fill, and regarding the development of Stage 3B2, 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 residential structures 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 residential structures which will be adopted and implemented where necessary as part of the proposed development and ultimate construction of future dwellings.

4.11 Construction Management

Prior to works being undertaken, the site 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 working hours to permit work on Saturdays and Sundays, and increase weekday working hours from 7am to 7pm above standard working hours as defined by the Environment Protection Authority. This would result in the working hours across the Stage 3B2 site as being:

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

The Stage 3B2 site is located approximately 800m from the nearest residential dwelling to the south of the site, and 1.6km from the nearest residential dwelling to the west. The location of the construction works is considered remote enough to reduce any construction noise and dust impacts

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on neighbouring residents. Furthermore, heavy vehicle movements will be limited where possible on weekends, especially Sundays to reduce traffic impacts.

Development within the Central Precinct residential areas near to the southern Werrington County residents will be limited to house construction only outside the scope of this application.

Waste Management

The WMP that accompanies this DA (**Appendix I**) 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 3B2 site via Jordan Springs Boulevard and Lakeside Parade in Jordan Springs, and entering the Precinct from the west. Given the low construction traffic required for Stage 3B2 (refer to **Section 3.9** above), it is considered the roads and intersection along this access route would accommodate these volumes and continue to operate within their capabilities. 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 preliminary Construction Traffic Management Plan (CTMP) has been prepared (**Appendix L**). The CTMP addresses 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

The Bulk Earthworks DA (DA14/1228) as approved outlines several mitigation measures to reduce noise, vibration, dust and air quality impacts as a result of construction at the site. These measures will be carried through and modified as required to reflect the works required for Stage 3B2 to ensure any possible impacts are mitigated. A Construction Environmental Management Plan will be prepared as part of construction certificate documentation.

4.12 Site Suitability

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 CCP and the proposed CPP Amendment No.1;
- 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;
- appropriate works and protocols are being undertaken to make the site suitable with regards to contamination and remediation;
- the works will support the built form and public domain objectives for the Central Precinct;

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- the site is zoned to accommodate the proposal in accordance with SREP 30; and
- it will help to stimulate the housing and employment markets in the local and regional area of Penrith.

4.13 Social and Economic Issues

The proposed development of urban land for future residential purposes (subject to future development applications & approvals) will provide further housing choice within the region and 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 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, to be built on the lots in Stage 3B2 seek to address this housing affordability issue and provide opportunities for the community to enter into the property market.

4.14 Public Interest

The proposal is generally consistent with the current CPP, which has been formally exhibited and subsequently adopted by Council. The proposal is also consistent with the proposed changes to the CPP under Amendment No. 1, which has been placed on public exhibition and is currently being reviewed by Council. The proposed development, through the provision of new housing and the resulting increase in population, will also support and stimulate economic activity in the local area.

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5.0 Conclusion

The proposed Stage 3B2 subdivision 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 (Amendment No. 1).

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

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