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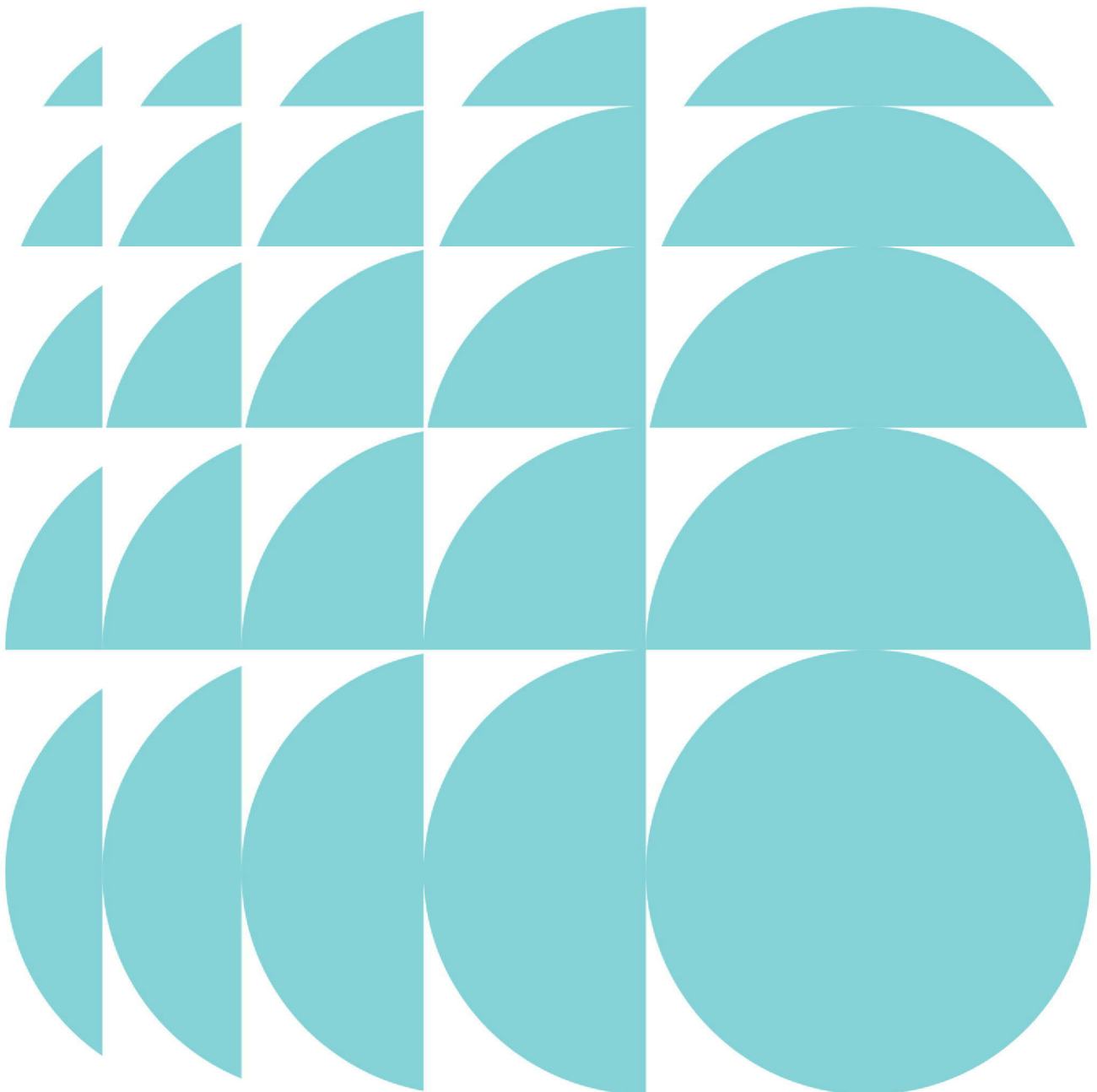
Statement of Environmental Effects

Central Precinct, St Marys
Ropes Connector Road, South Creek Bridge and
Regional Open Space

Submitted to Penrith City Council and Blacktown
City Council

On behalf of St Marys Land Limited (Lendlease)

07 March 2018 | 13070/17532



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1.0 Introduction

This Statement of Environmental Effects (SEE) has been prepared by Ethos Urban on behalf of St Marys Land Limited (Lendlease) for the construction of the South Creek Bridge and the Ropes Connector Road. The Connector Road will link the St Marys Central Precinct with Link Road in the Dunheved Industrial Precinct via the road corridor that traverses the Dunheved Precinct, the Regional Park and Regional Open Space of the Sydney Regional Environmental Plan No.30 – St Marys (SREP 30) site. The SEE also addresses the proposed filling within the Regional Open Space zone of the Central Precinct.

The proposed road and bridge passes through the Penrith and Blacktown Local Government Areas (LGA) and as such this application has been submitted concurrently with both Councils. The filling of the Regional Open Space occurs entirely within the Penrith LGA.

The DA seeks approval for:

- Construction of approximately 670 metres of the East West Connector Road including;
 - Bulk earthworks and importation and reuse of material to elevate the road above flood levels;
 - Retaining walls and fauna crossings;
 - Stormwater and culvert crossings;
 - Widening of the existing road footprint;
 - Installation of road underlay;
 - Provision of new pavement and street lighting; and
 - Provision of pedestrian and cyclepaths along the road corridor.
- Construction of approximately 850 metres of the Dunheved Links Road south from the East West Connector;
 - Bulk earthworks and importation and reuse of material to elevate the road above flood levels;
 - Retaining walls and fauna crossings;
 - Stormwater and culvert crossings;
 - Widening of the existing road footprint;
 - Installation of road underlay;
 - Provision of new pavement and street lighting; and
 - Provision of pedestrian and cyclepaths along the road corridor.
- Construction of the South Creek Bridge including;
 - Installation of new bridge piers;
 - Installation of new support structures; and
 - Installation of new bridge deck including handrails.
- Bulk earthworks within the Regional Open Space;
- Temporary use of access tracks within Regional Park zoned land during construction;
- Construction of a temporary bund within the Dunheved South Development; and
- Remediation (if required).

This SEE is based on the Engineering Plans provided by Cardno (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 Concurrence 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).

NSW Department of Primary Industries – Water

The proposed development is 'integrated development' in accordance with Section 4.46 of the EP&A Act. In addition to development consent from Blacktown City Council, in accordance with Section 91 of the *Water Management Act 2000*, due to the works being undertaken within 40m of a watercourse, being South Creek and its numerous tributaries the development requires a controlled activity approval issued by the NSW DPI Water.

National Parks and Wildlife Services

Clause 44 of SREP 30 applies to land adjacent to the Regional Park. The proposed works are situated on land adjoining the Regional Park to the south, north and east and as such referral of this DA to the Director-General of NPWS for comment is required. NPWS then have 28 days to provide advice on the application.

A meeting was held on site with a NPWS representative on 13 February 2018 to discuss the proposed works and highlight an indicative construction methodology.

2.0 Background

2.1 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** below.

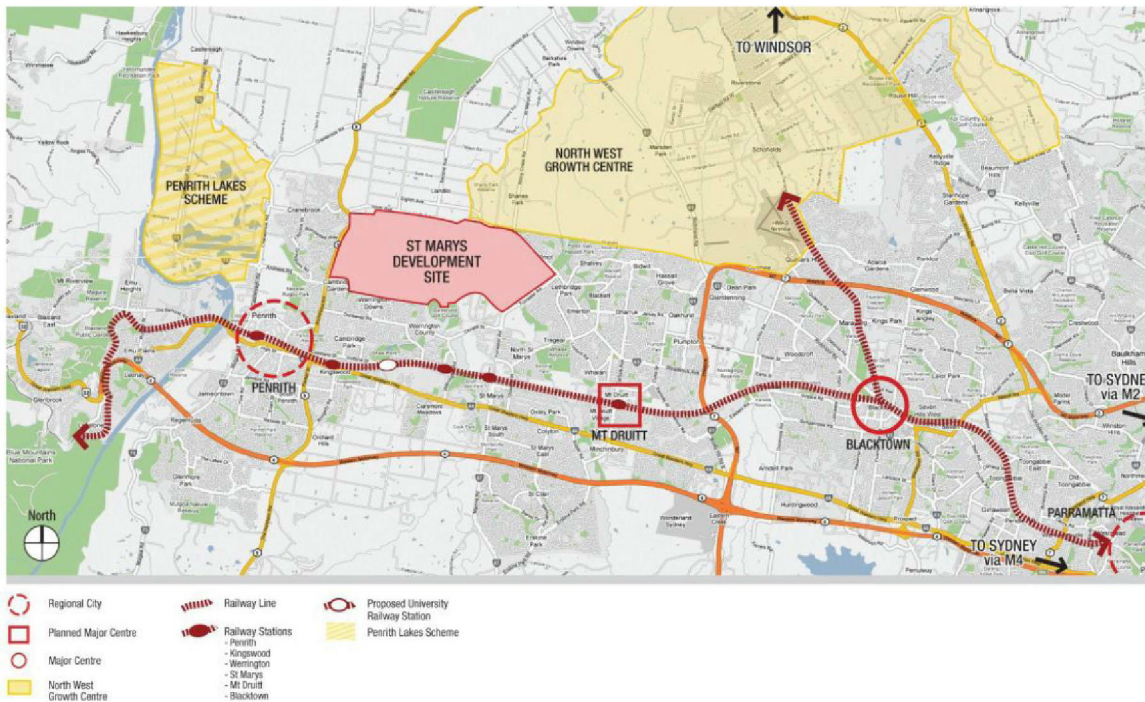


Figure 1 The ADI St Marys Site Location

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

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

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

The time between 1994 and 2000 reflects a period in which numerous and extensive investigations were undertaken into the environmental values and development capacity of the St Marys site. This period also involved input and consultation with BCC and PCC, relevant state agencies, and the general public.

The first significant body of work involved preparing the RES, which was exhibited for public comment in October 1995, and finalised in May 1996. The RES investigated the key planning issues of:

- biodiversity;
- aboriginal heritage;
- decontamination;
- total water cycle management;
- transport:
- urban form;
- air quality; and
- business/employment development.

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

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

2.2 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 subsequently been two 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 between three of the development precincts - the Central Precinct, Dunheved Precinct and Eastern Precinct (Ropes Crossing).



Figure 2 Overall site plan of the St Marys site

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.

2.3 Precinct Plans

Each of the precincts within the St Marys site are to have a Precinct Plan adopted. The Eastern Precinct Plan (Ropes Crossing) was adopted by Blacktown Council on 4 February 2004 and has seen the precinct near completion. The Dunheved Precinct Plan was adopted by Blacktown and Penrith Councils on 12 January 2007 and 11 December 2006 respectively. The Dunheved Precinct has not yet fully commenced development works, with only bulk earthworks being conducted to date. The Central Precinct Plan was adopted by Penrith Council at its ordinary meeting on 23 March 2009. Development in the Central Precinct is currently being completed, through various subdivision approvals.

Importantly, all three precinct plans identify a connection between each precinct, being the Ropes Connector Road and Dunheved Link Road.

2.3.1 The Central Precinct Plan and Development Control Strategy

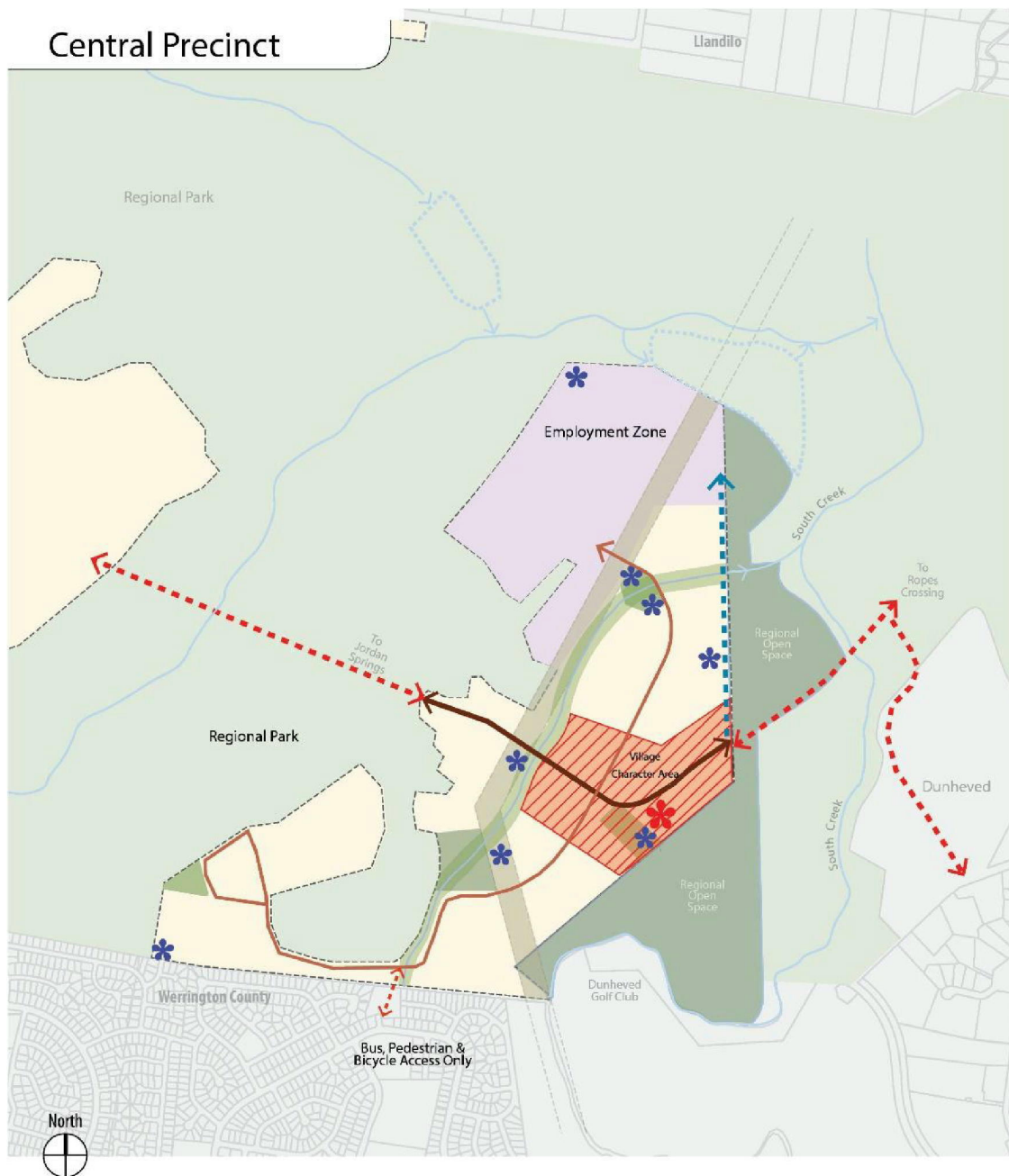
Upon gazettal of Amendment No. 2 of SREP 30 in February 2009, the Central Precinct was zoned Urban in the southern part of the Precinct and Employment in the northern part of the Precinct. Land zoned Urban is intended to accommodate primarily residential uses, with limited non-residential uses such as 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 Regional Open Space zone is to provide recreational opportunities for the general community. The Regional Open Space will also provide passive recreational amenity that will supplement the passive use local and pocket parks contained within the Central Precinct.

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. Amendment No. 1 of the CPP has been endorsed by Penrith City Council subject to confirmation from the Department of Planning and Environment. 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.

The CPP illustrates the manner in which the Central Precinct is to be developed. The Framework Plan of the CPP, as proposed to be amended, 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.

Importantly, the CPP identifies a connector road from the eastern boundary of the Central Precinct to Ropes Crossing and Dunheved Precinct to the east.



Framework Plan

Scale: NTS

- | | | | |
|-------------------------------|--------------------------------------|-------------------------------------|-----------------|
| Precinct Boundary | Zoned Drainage Basins | Collector Roads | Urban Zone |
| Village Centre Character Area | Riparian Corridor & Drainage Reserve | Local Streets | Employment Zone |
| Village Centre | Neighbourhood Parks | Road Connection to Existing Network | |
| Water Quality Basin | Transmission Easements | Employment Collector Road | |

Note: Location of all elements indicative only, subject to confirmation via detailed design.

Figure 3 Proposed Amendment No.1 to the CPP

2.4 Previous DAs

This DA must be considered within the context of the other key DA's for Central Precinct and Connector Road already lodged/approved by Council. Of particular importance to the subject DA are the following as listed below.

Table 1 Previous Development Applications by LGA

Application Details
Blacktown City Council
DA 17-00963 for the demolition of the existing connector road between Ropes Crossing and the Central Precinct (only for works within the Blacktown LGA), removal of a small number of trees and undertake contamination and unexploded ordinance (UXO) investigations to identify any areas that may require remediation. This DA was approved by Blacktown Council on 18 October 2017
DA18-00271 and DA18-00272 for the demolition of the Ropes Creek and South Creek Bridges respectively. These DAs were submitted to Blacktown Council on 21/2/2018
DA07-1029 approved by Blacktown Council on 9 March 2009 for subdivision of the Dunheved North Precinct into residue lots for future industrial purposes, new roads and associated landfilling, and the importation of fill. This DA was modified on 20 December 2017 to address inconsistencies in conditions
DA11-2529 approved by Blacktown Council on 23 August 2012 and subsequent approved Section 96 modifications to construct the Western Collector Road within Ropes Crossing and a 105m length that extends into the Road and Road Widening zone.
Penrith City Council
DA for the demolition of Connector Road between the Haulage Road through Dunheved and Central Precinct, Tree Removal and Contamination/Unexploded Ordinance Investigation Works, submitted to Penrith Council (DA17/0834)
DA18/0166 was submitted to Penrith Council on 21/2/2018 for the demolition of the South Creek Bridge, demolition of structures in the Regional Open Space and vegetation clearing
DA14/0766 (approved by Penrith Council in March 2015) and DA14/1219 (approved by Blacktown Council in March 2015) for the construction of a temporary haulage road and associated infrastructure upgrades between Links Road and Central Precinct
Bulk Earth Works, Interim Stormwater Infrastructure, Landscaping, Tree Removal, and Environmental Management Works Including Realignment of an Existing Riparian Corridor. The application is classified as 'Designated Development' being a Waste Management Facility or Works - Landfilling which required determination by the NSW Joint Regional Planning Panel – DA14/1228, approved 20/8/2015
DA16/0888 for site remediation works across the Central Precinct was approved by Penrith City Council on 7/11/2017
DA for the subdivision of Lot 1037 in DP 1149525 into 380 residential allotments, 7 open space allotments, and 3 residual super lots, including an internal road network and a collector road to connect Jordan Springs within the Western Precinct to Stage 1 of the Central Precinct (Stage 1 DA). This application (DA15/0299) was approved by the JRPP on 19/11/2015
DA for the subdivision of Lot 1037 in DP1149525 into 278 residential allotments, 4 residual super lots and a bus-only connection into Werrington County in Stage 2 of the Central Precinct (Stage 2 DA). This application (DA15/1216) was approved by the JRPP on 3/03/2016. A Section 96 modification application for amendments to the subdivision pattern and associated road alignments was approved on 11/08/2016
DA for the subdivision into 79 Torrens Title Residential Lots, 1 Residue Lot and Associated Road Construction and Infrastructure works for Stage 3A of the Central Precinct (Stage 3A DA). This application (DA16/0113) was approved by Penrith Council on 6/1/2017
DA for Torrens Title Subdivision x 53 Residential Allotments and Associated Landscape and Civil Works, known as Stage 3B1 and approved by Penrith Council on 27/11/2017 (DA17/0675)
DA for Stage 3B2 including subdivision of four residue lots for future integrated housing and the extension of the Wianamatta Parkway (East West Connector Road), lodged with Penrith Council on 25/9/2017 (DA17/0889)
DA for the subdivision into 142 x residential Torrens Title lots, 2 x residue lots, and associated road construction and infrastructure works. This application for Stage 4A and 4B (DA17/0491) was approved by Penrith Council on 19/12/2017
DA for Torrens Title Subdivision into 119 x Residential Lots, 1 x Drainage Lot & Public Roads (DA17/0920). This application for Stage 5A was submitted to Penrith Council on 29/9/2017
DA04/0494 approved by Penrith Council on 7 March 2008 for subdivision of the Dunheved South Precinct for landfill and subdivision, and construction of associated civil works. This DA was modified on 26 May 2009 to modify filling details

These DAs provide for the residential subdivision of the Central Precinct and associated works required to develop the St Marys site. There have been a number of previous DAs submitted to Blacktown Council for the residential subdivision of Ropes Crossing which are not listed. As part of these DAs there has been a variety of community and

stakeholder consultation undertaken, including community information sessions, monthly meetings with Council and the public notification and advertising of DAs.

2.5 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*.

2.6 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. A previous agreement was finalised between Blacktown Council and the proponent related to Ropes Crossing.

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.

2.7 Pre-DA Advice

Pre-application meetings were held with Penrith Council and Blacktown Council in 2016, with several items raised regarding the proposed development. It should be noted that since the meeting time, the design has evolved, and the planning approvals process has been modified from that originally presented to Council, to reflect construction requirements.

A further site meeting was held with both councils to discuss the change in the design and road specification requirements of each Council on 17 November 2017. The design of the road as outlined in this SEE and the Engineering Plans at **Appendix A** are generally consistent with the outcomes of that meeting. Notwithstanding, responses to Council's comments from the pre-DA meetings have been provided in the following tables.

Penrith Council

A pre-application meeting was held with Penrith Council on 13 April 2016 (ref: PL 16/0038) to discuss the proposed road development and bridge connecting Central precinct to Ropes Crossing. The table below provides a detailed response to how the feedback from Council has been addressed in the submitted proposal.

Table 2 Penrith Council Pre-Application Meeting Minute Responses

Council Comment	Response
<p>The application shall address timing for construction of the following:</p> <ul style="list-style-type: none"> • Bridge over South Creek • The filling of Central Precinct 	<p>The proposed development includes the upgrade and construction of the bridge over South Creek. Timing for construction has been included in the Civil Engineering and Infrastructure Report at Appendix B and is discussed in Section 4.6 below.</p>

Council Comment	Response
<ul style="list-style-type: none"> The filling of the Dunheved Precinct 	The filling of Central Precinct has now been completed and the filling of the Dunheved Precinct will be completed when required as approved under DA07/0494.
Commitments have been made previously that Dunheved Precinct will not be filled until such times as the bridge over South Creek is delivered.	The proposed development seeks approval for the construction of the South Creek bridge.
The section of the east west connector road within the Penrith LGA will require full kerb and gutter and piped drainage.	The proposed development includes full kerb and gutter on both sides and construction of a piped drainage network. Further discussion is provided in Section 4.2 below.
Consideration is to be given to the provision of a roundabout at the boundary of Central Precinct to allow future vehicular access to the Regional Open Space areas to the north and south.	This application seeks approval for the upgrade of the East West Connector Road, Dunheved Links Road and filling of the regional open space only. The roundabout at the boundary of the Central Precinct will be subject to a separate development application.
The bridge and culvert system over South Creek shall comply with the flood modelling parameters as per the adopted flood study by Jacobs.	A flood study has been conducted by Jacobs and is included at Appendix C .
Full details including long sections and cross sections of the bridge, culverts and embankments are to be provided with the application. Full details of the bridge structure and culverts are to be submitted with the application.	The Civil Engineering and Infrastructure report at Appendix B provides details of the road cross sections and bridge structure, including culverts and embankments. This is also discussed in Section 4.2 below.
A bund is to be provided along the frontage of the link road within the Dunheved Precinct. This may require a S96 Modification to the Dunheved South Precinct DA.	The temporary bund across the Dunheved South precinct will be constructed in advance of filling of this precinct. This is shown on the civil drawings prepared by Cardno at Appendix A .
It is understood that modification to the alignment of the Dunheved connector road may be sought. This will require a S96 Modification to the Dunheved South Precinct DA.	The upgrade of the Dunheved Links Road has been designed in accordance with the temporary haul road which will be removed as part its approval.
The Dunheved South Precinct road shall be full width industrial road with kerb & gutter and piped drainage.	The Dunheved Links Road has been designed to be full width industrial road, with kerb and gutter both sides. This is further discussed in the Civil Engineering and Infrastructure Report at Appendix B .
All engineering works must be designed and constructed in accordance with Council's <i>Guidelines for Engineering Works for Subdivisions and Developments - Part 1- Design and Council's Engineering Construction Specification for Civil Works</i> .	As discussed in the Civil Engineering and Infrastructure Report at Appendix B all roads have been designed within the parameters presented in the Penrith Council <i>Guidelines for Engineering Works for Subdivisions and Developments - Part 1- Design and Council's Engineering Construction Specification for Civil Works</i> .
The proposal would be nominated integrated development to the NSW Office of Water for any works within 40m of a watercourse. This would result in a 30 day exhibition / advertising period.	Noted.
A Flora and Fauna Assessment Report would be required to accompany the development application.	An Ecological Assessment for the proposal has been prepared by Cumberland Ecology for previous approvals and is included at Appendix H for information purposes.
The application would require referral to NPWS as per the requirements of SREP No. 30 - St Marys.	Noted.
The intended construction timing of the works would need to be outlined with in the application.	The construction timing is discussed in Section 4.6 below.
Permissibility would need to be addressed within the application having regarded to the SREP No. 30 and Precinct Plans.	The proposed development is related to a road and the provision of recreational facilities within the relevant zones, and is permissible with consent under SREP 30.

Council Comment	Response
<p>Stormwater drainage for the site must be in accordance with the following:</p> <ul style="list-style-type: none"> • Council's Development Control Plan • <i>Stormwater Drainage for Building Developments (Working Draft) policy</i> • <i>Water Sensitive Urban Design Policy and Technical Guidelines</i> <p>A stormwater concept plan, accompanied by a supporting report and calculations shall be submitted with the application.</p>	<p>As stated in the Civil Engineering and Infrastructure Report, the proposed development has been designed to comply with the relevant plans and policies. The report identifies strategies regarding water quality, quantity and management.</p> <p>Further discussion is provided in Section 5.2 below.</p>
<p>The site is affected by mainstream flooding from South Creek.</p> <ul style="list-style-type: none"> • The road shall be located above Council's current adopted 1% AEP flood level from South Creek. • All plans for the site shall have levels and details to AHO. • The application must demonstrate that the proposal is compatible with the State Government Floodplain Development Manual and Council 's Local Environmental Plan and Development Control Plan for Flood Liable Lands. 	<p>Jacobs have undertaken appropriate studies to predict the flood behaviour of South Creek, which has informed the design of the road network and surrounding areas. As such, the proposed development has been designed in accordance with the recommendations from Council.</p> <p>Further discussion is provided in Section 5.2 below.</p>
<p>No retaining walls or filling is permitted for this development which will impede, divert or concentrate stormwater runoff passing through the site.</p>	<p>The proposed retaining walls and filling of the Regional Open Space has been designed in accordance with the stormwater runoff and recommendations from Jacobs.</p>

Blacktown City Council

A pre-application meeting was held with Blacktown City Council on 17 May 2016 (ref: C16/17743). Feedback received from Council has been incorporated into the proposed development where appropriate. The table below provides a detailed response to how the feedback from Council has been addressed and submitted in the proposal.

Table 3 Blacktown Council Pre-Application Meeting Minute Responses

Council Comment	Response
Engineering matters	
<p>The road to be re-constructed has been identified as a collector road. The road is to be designed for 80km/h traffic in accordance with Blacktown City Council standards.</p>	<p>All roads have been designed for a speed of 70km/h with a sign posted speed limit of 60km/h to ensure safety along the road network. The carriageway with a sealed shoulder and kerb will reinforce this speed limit. This is further discussed in Section 4.2 below.</p>
<p>The road is to have a 3.7m carriageway with a sealed shoulder and kerb as per Anthony Shorten (Senior Engineer).</p>	<p>Due to the designated speed limit, provision of a 3.5m carriageway along the East West Connector and shared pathway has been provided. Further discussion is provided in Section 4.2 below.</p>
<p>It is the applicant's responsibility to conduct a structural assessment of Ropes Creek Bridge to determine whether or not demolition is a necessity. If not, arguments for the retention of the bridge (subject to a pedestrian bridge) will need to be part of the DA documentation.</p>	<p>Construction of the Ropes Creek Bridge is the subject of a separate development application (Stage 1).</p>
<p>The road will need to be higher than 100 year flood levels. Any portion of the road that is located upstream of any water bodies is to contain satisfactory plans that show how ponding issues are resolved.</p>	<p>The proposed development has been designed in accordance with the 100 year flood levels. Flood modelling has been conducted by Jacobs and is included in the Flood Assessment at Appendix C.</p>
<p>If it can be demonstrated that MUSIC modeling is unnecessary due to the road forming part of a subdivision, this will need to be documented as part of the DA. It is requested that the proponents liaise with Council's drainage engineers to confirm this information.</p>	<p>MUSIC modelling has not be provided as part of the DA as per discussions between Cardno and Blacktown Council.</p>

Council Comment	Response
Traffic Matters	
A comprehensive traffic report (traffic modelling) is to accompany the DA.	A traffic assessment prepared by WSP is included at Appendix K and a Road Safety Audit has been provided at Appendix L .
Road construction is required to facilitate a bus (to Council's standards). Roundabout design to cater for a 14m long bus (standard design).	The proposed roads have been designed to accommodate a 14.5m long rigid bus, 19m semi-trailer and B-Double at the Links Road and Dunheved Link Road intersection. Refer to Section 4.2 for further information.

3.0 Site Analysis

3.1 Site Location and Context

This application applies to the land currently occupied by the existing East West Connector Road between Ropes Crossing and the Central Precinct. The site is situated between the Central Precinct, Dunheved Precinct and Ropes Crossing in St Marys, traversing the Penrith City Council and Blacktown City Council LGAs.

The Connector Road site follows the historical East West Connector Road corridor between Ropes Crossing and the Central Precinct, with connectivity through to Links Road via the Dunheved Precinct. The road crosses South Creek within the Penrith City Council area between the Ropes Crossing and Central Precinct. The South Creek Bridge consists of five spans of varying length and is to be demolished subject to approval under DA18-00272 submitted to Blacktown Council and DA18/0166 submitted to Penrith Council.

The land proposed to be filled is situated to the east of the Central Precinct urban zone boundary and is zoned as Regional Open Space. Future recreational facilities (the subject of separate applications) will be developed in this area to provide regional sporting grounds for the wider area.

The site traverses the following lots as outlined below:

- Lot 2 DP1203565 (Blacktown);
- Lot 5 DP1203565 (Blacktown);
- Lot 6 DP1203565 (Blacktown);
- Lot 3 DP1133301 (Blacktown);
- Lot 1 DP1132380 (Penrith); and
- Lot 3000 DP120974 (Penrith).

St Marys Land Limited owns the lots the subject of this application. St Marys Land Limited is a subsidiary of Comland Limited which is being developed by Maryland Development Company (Lendlease) Maryland Development Company is the joint venture company that was established by ComLand and Lendlease to develop the larger site.

The site's locational context is shown at **Figure 4**.

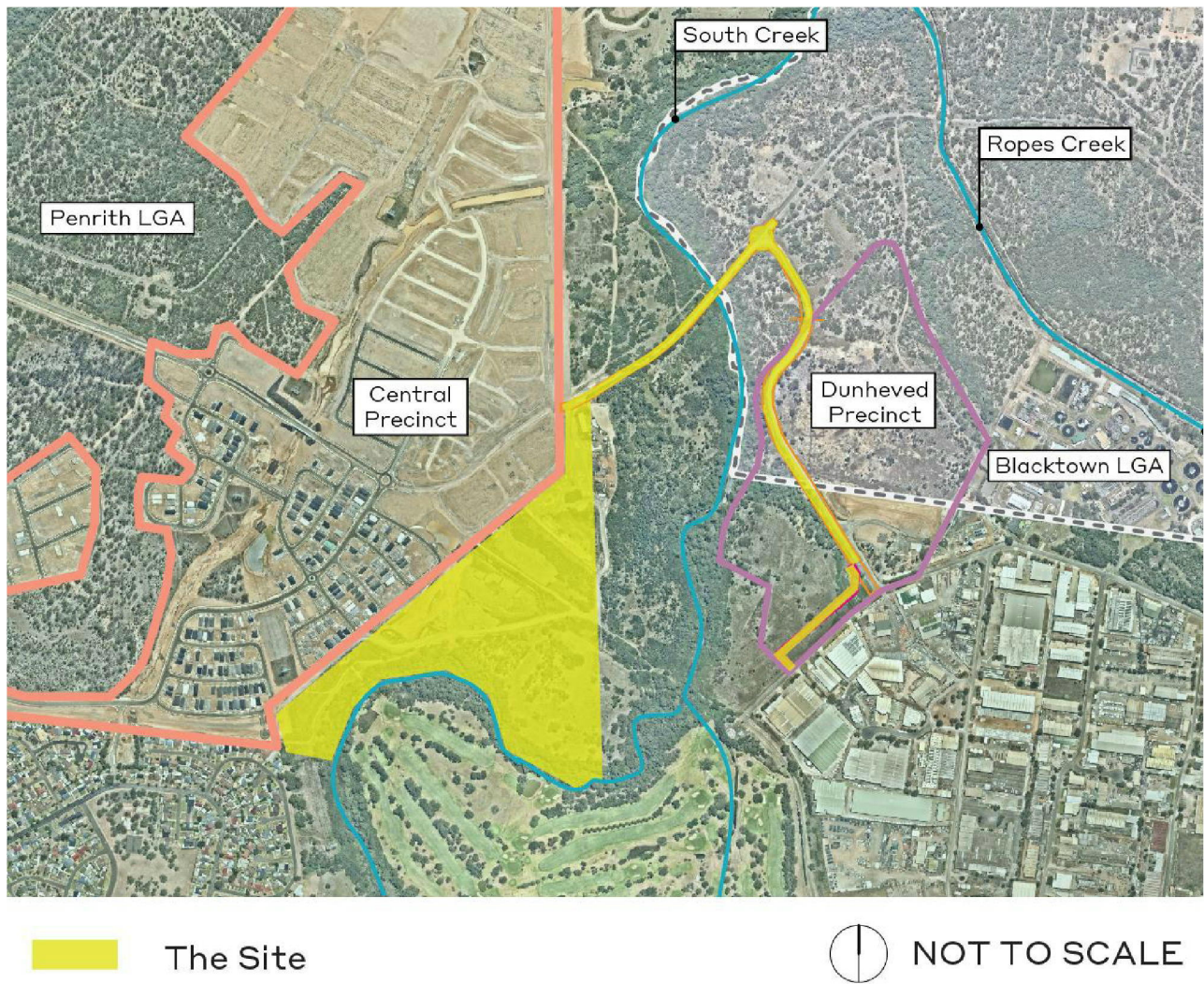


Figure 4 The subject site is located adjacent to Central Precinct



Figure 5 Existing South Creek Bridge

3.2 Zoning

The site covers multiple zones. The connector road corridor is zoned Road and Road Widening under SREP 30 which permits drains, parks, regeneration activities, utility installations and roads. The area for filling is zoned as Regional Open Space which permits advertisements, drains, parking areas, recreation establishments, recreation facilities, roads and utility installations (other than generating works) with consent. The proposed filling works is considered preparatory works for the future recreational facilities to be developed on the site.

Access tracks to the bridge location on South Creek extend into the Regional Park zoning. Discussions with NPWS have indicated access is considered appropriate along these existing trails.

3.3 Contamination

The former ADI Site was remediated over the period from 1993 to 1999 with validation reports being prepared and several Site Audit Statements (SAS) issued. There are three SAS currently applying to the wider St Marys site with the SAS for the major part of the land being issued for the highest possible land use. Of these three SAS, two are relevant to the proposed connector road and Regional Open Space filling works.

At the time of the issuing of the original SAS, roads and buildings were still in use, and as such the SAS acknowledge their continued use for the current purposes, subject to later investigation, audit and issue of SAS following removal. The figures attached to the SAS show the location of hardstands, car parks, roadways, buildings and railways. The following gives a brief overview of the remediation of the St Marys site.

Site Audit Statement CHK001/1 St Marys Site

This SAS identified the St Marys site as being suitable for residential development, including for vegetable garden and poultry use, i.e. the highest level of clearance available. The only condition other than excluding the areas covered by other statements (in the Eastern Precinct and under existing structures and hardstand areas including roads) was that an appropriate contamination management plan be developed.

Site Audit Statement CHK001/6 relating to existing structures

This SAS relates to a number of buildings, car parks, roads and concrete stockpiles which previously existed across the St Marys site. As well as the requirement for an appropriate management plan, there is a condition that when the facilities are removed (completed by a previous DA), the soils beneath them shall be tested for ordinance and for chemical contamination.

These existing SAS identify that the area beneath hardstand, such as the ground beneath the connector road pavement, has not been validated as suitable for its intended use, and that a SAS is required to be issued for those areas once cleared of contamination. Approved DA17-00963 provides for contamination investigations along the East West Connector Road to be undertaken within the Blacktown Council LGA. Completion of those investigations and any subsequent remediation works (if required) will permit a SAS to be prepared by an Environment Protection Authority (EPA) Accredited Site Auditor. The SAS will be prepared prior to the construction of the new Connector Road within the Road and Road Widening Zone and will confirm at that time that the site will be suitable for that future intended use (i.e. as a road).

The connector road corridor is classified as a commercial/industrial site for environmental assessment purposes, consistent with previous approvals and applications within the Central Precinct (DA15/0299.05 and DA17/0889).

3.4 Site Access

The main length of the connector road from Ropes Crossing intersection with the established haul road at Dunheved is currently not accessible by the public. Construction access is currently afforded from the haul road through Dunheved. It is proposed to allow construction access from Jordan Springs and Links Road for parts of the site.

3.5 Landform and Vegetation

The land to the north and south of the existing connector road corridor is unmanaged land zoned Regional Park under the SREP 30 and is in the process of being transferred to NSW National Parks and Wildlife Services for inclusion in the adjacent Wianamatta Regional Park. The park supports Cumberland Plain vegetation communities including *Eucalyptus molucanna* (Grey Box) and *Eucalyptus tereticornis* (Forest Red Gum). Cumberland Plain Woodland is listed as a critically endangered ecological community under the *Threatened Species Conservation Act 1995* (NSW). In particular, the vegetation surrounding the site is identified as Alluvial Woodland.

The boundary between the 'Road and Road Widening Zone' and the future Regional Park is currently delineated by a macrofauna fence. The ground along the verge falls steeply away from the road and some sections of the road are bordered with a steep bank. This macrofauna fence is to be replaced as part of these works where the existing fence requires replacement.

Removal of all vegetation within the Connector Road corridor is subject to DA18-00271 submitted to Blacktown Council and DA18-0166 submitted to Penrith Council. The relevant Ecological Assessments prepared by Cumberland Ecology and previous assessments have been included with this subject DA for context.

3.6 Aboriginal Archaeology and European Heritage

As above this application affects land which currently contains the hardstand area within the connector road alignment. It is considered unlikely that any items of heritage significance would be located under that area given the extensive excavation works that have previously occurred. Additionally, the site is covered by an Aboriginal Heritage Impact Permit (AHIP) C0000362 (Attachment D) which permits the required works to enable residential development across the site. The East West Connector Road in its entirety is recognised as being within Management Zone 4 under the AHIP, requiring no action.

No items of European Heritage are situated within the corridor.

3.7 Flooding

The site is located on the floodplain of the South Creek, a tributary to the Hawkesbury Nepean River. South Creek traverses along the eastern boundary of the Central Precinct. Due to the proximity of the site to South Creek, system flooding occurs following rainfall in the catchment of South Creek, as well as backwater flooding from major flood events in the Hawkesbury Nepean River. The connector road alignment located within the Penrith LGA is located on the western boundary of the South Creek and alignment located within the Blacktown LGA is located to the east of South Creek.

3.8 Soil and Salinity

Geotechnical investigations have been undertaken across the wider St Marys site, and indicate that the Luddenham and South Creek soil landscapes form the two soil units within the site.

Salinity along the road corridor can be described as generally non-saline. There have been 24 samples undertaken across 14 different boreholes and pits, with 19 of these classed as non-saline under the Department of Land and Water Conservation's class assessment criteria for soil in urban environments (2002). Two results were identified as slightly saline, one as moderately saline and two isolated instances of very saline occurred. Further detail is provided in the Geotechnical Factual Report at **Appendix N**.

3.9 Surrounding Development

The surrounding development to the connector road comprises of:

- the future residential development of the Central Precinct to the west of the road alignment;
- unmanaged land zoned Regional Park, set aside for the future Wianamatta Regional Park to the north and south;
- St Marys Sewerage Treatment Plan and future Dunheved Industrial Estate to the south;
- low density residential development in Ropes Crossing to the north east of the connector roads eastern end; and
- a 55ha golf course known as Dunheved Golf Club to the south.

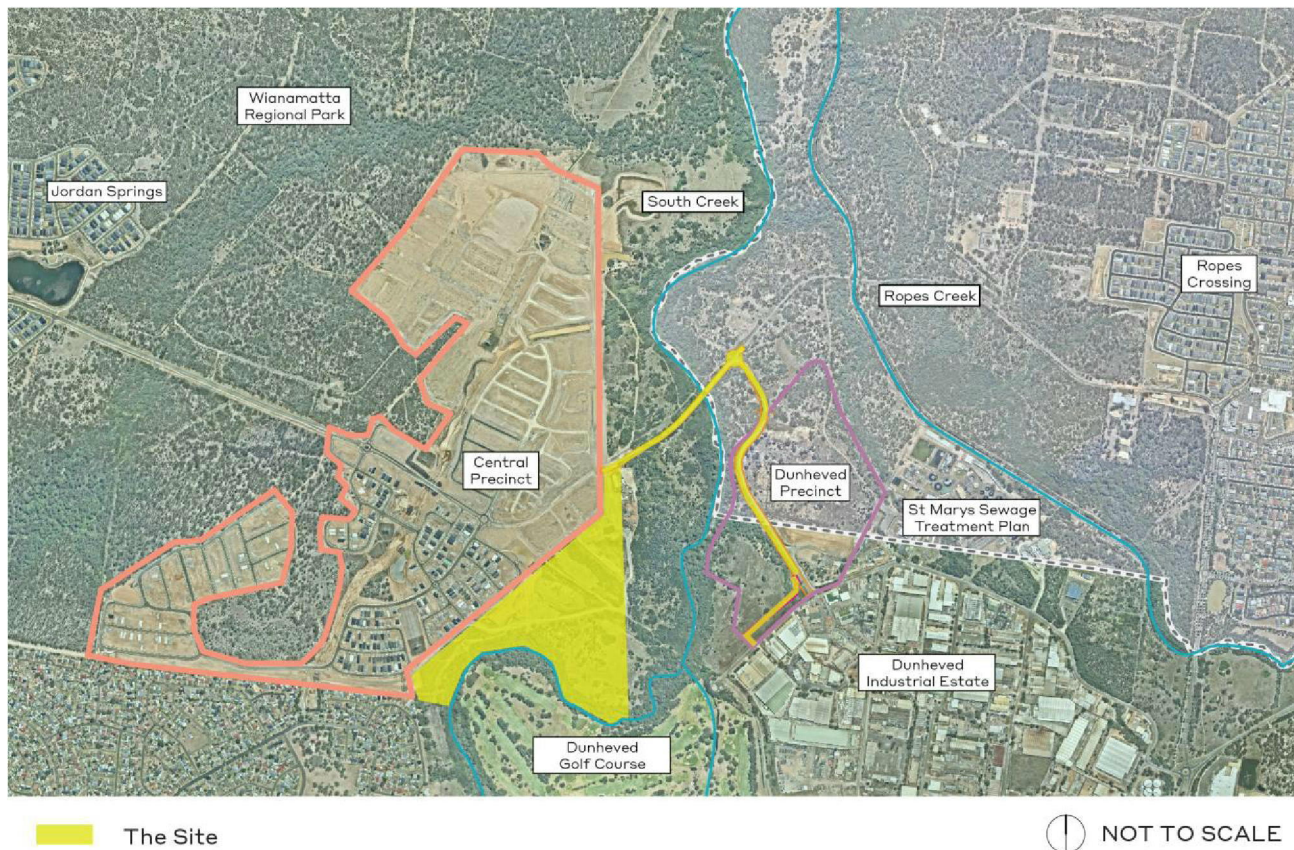


Figure 6 Development surrounding the site

4.0 Description of Proposed Development

The DA seeks approval for:

- Construction of approximately 670 metres of the East West Connector Road including;
 - Bulk earthworks and importation and reuse of material to elevate the road above flood levels;
 - Retaining walls and fauna crossings;
 - Stormwater and culvert crossings;
 - Widening of the existing road footprint;
 - Installation of road underlay;
 - Provision of new pavement and street lighting; and
 - Provision of pedestrian and cyclepaths along the road corridor.
- Construction of approximately 850 metres of the Dunheved Links Road south from the East West Connector;
 - Bulk earthworks and importation and reuse of material to elevate the road above flood levels;
 - Retaining walls and fauna crossings;
 - Stormwater and culvert crossings;
 - Widening of the existing road footprint;
 - Installation of road underlay;
 - Provision of new pavement and street lighting; and

- Provision of pedestrian and cyclepaths along the road corridor.
- Construction of the South Creek Bridge including;
 - Installation of new bridge piers;
 - Installation of new support structures; and
 - Installation of new bridge deck including handrails.
- Bulk earthworks within the Regional Open Space;
- Temporary use of access tracks within Regional Park zoned land during construction;
- Construction of a temporary bund within the Dunheved South Development; and
- Remediation (if required).

Engineering plans illustrating the proposed development are included at **Appendix A**.

4.1 Works by Local Government Area

The proposed works, detailed above, are to occur across the boundary of the Penrith and Blacktown LGAs. **Table 3** distinguishes those works to be located within each respective LGA.

Table 4 Proposed works by LGA

Blacktown City Council	Penrith City Council
<p>Construction of roads</p> <ul style="list-style-type: none"> • The construction of part of the EWC road to connect to the remainder of the connector road to the east • Construction of part of the Dunheved Links Road • The provision of a cycleway in the form of a shared path along the eastbound side of the EWC road 	<p>Construction of roads</p> <ul style="list-style-type: none"> • The construction of part of the EWC road to connect to the remainder of the connector road to Central Precinct in the west • Construction of part of the Dunheved Links Road • The provision of a cycleway in the form of a shared path along the eastbound side of the EWC road
<p>Construction of South Creek Bridge</p> <ul style="list-style-type: none"> • Construction of part of the South Creek Bridge approximately 120 metres long, with a new deck level that varies between 1.2 and 2.4 metres above the 1% AEP flood event • Including construction of: <ul style="list-style-type: none"> – new bridge piers; – installation of new support structures; and • Installation of new bridge deck including handrails. 	<p>Construction of South Creek Bridge</p> <ul style="list-style-type: none"> • Construction of part of the South Creek Bridge approximately 120 metres long, with a new deck level that varies between 1.2 and 2.4 metres above the 1% AEP flood event • Including construction of: <ul style="list-style-type: none"> – new bridge piers; – installation of new support structures; and • Installation of new bridge deck including handrails.
<p>Flood mitigation measures</p> <ul style="list-style-type: none"> • Installation of 20 x 1.8 metre pipe culverts beneath the Dunheved Link Road to facilitate flood conveyance between the South Creek floodplain and Ropes Creek floodplain 	<p>Flood mitigation measures</p> <ul style="list-style-type: none"> • Installation of a 6 x 4.2 x 2.7 reinforced concrete box culvert structure to provide additional flood relief to mitigate potential impacts of the proposed road
<p>Construction of associated stormwater engineering works</p> <ul style="list-style-type: none"> • Construction of a piped drainage network 	<p>Construction of associated stormwater and flood engineering works</p> <ul style="list-style-type: none"> • Construction of a piped drainage network and temporary tailout drains in advance of the future permanent drainage works for the Dunheved precinct • Construction of a temporary bund within the footprint of the future Dunheved fill platform
	<p>Importation and compaction of fill</p> <p>This work includes:</p> <ul style="list-style-type: none"> • Importation of 46,400m³ of fill • Compaction of fill on key areas within Regional Open Space zone

4.2 Proposed Connector Road Staging

The Connector Road is the subject of multiple development applications to both Blacktown and Penrith Councils. This DA relates to Stage 2 as described in **Figure 7** below.

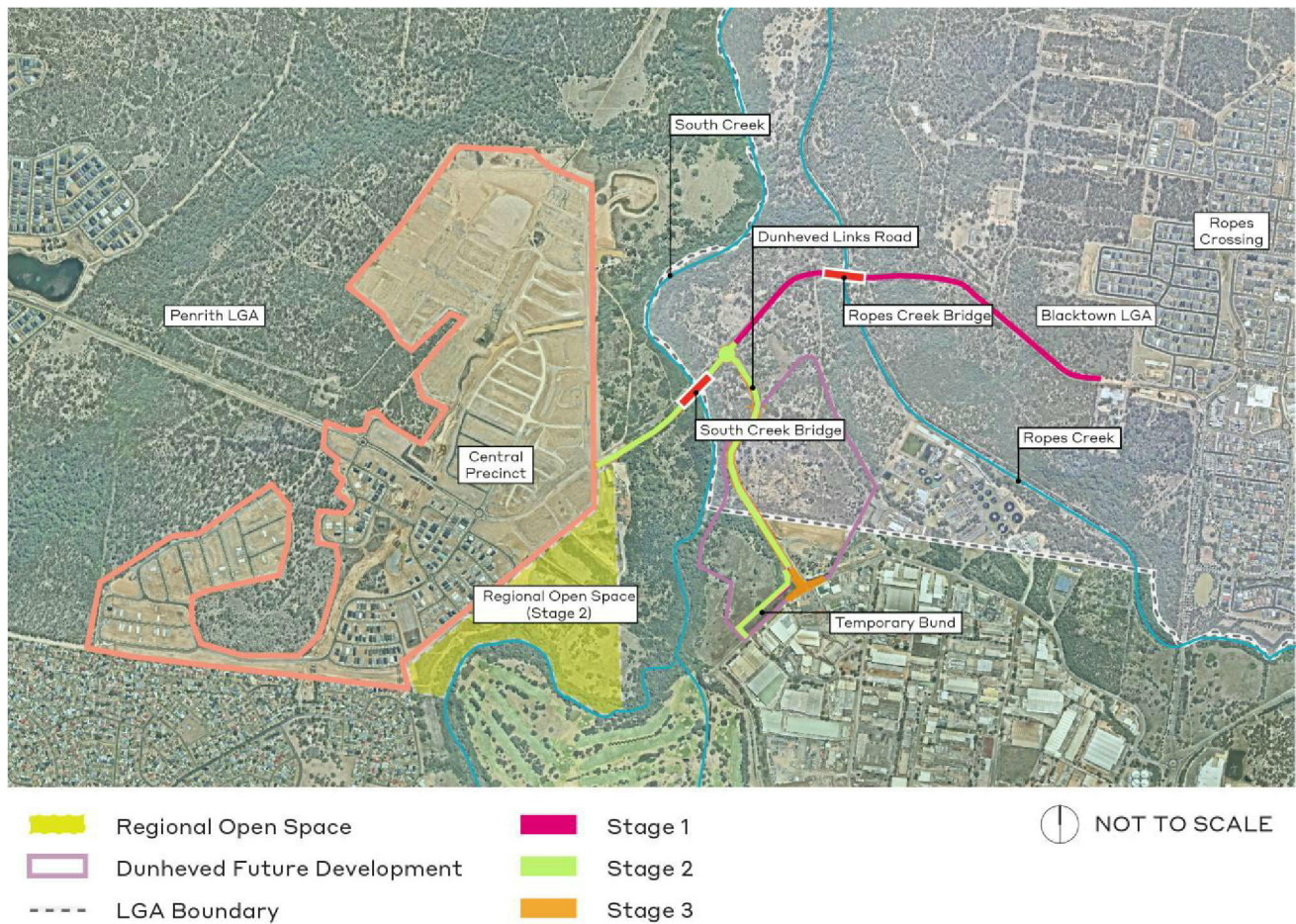


Figure 7 The proposed staging of the approvals for the Connector Road and Regional Open Space

4.3 Connector Road Construction Works

The Connector Road has the following works proposed:

- Bulk earthworks, including road embankment formation, landscaping shaping and boundary interface works;
- New bridge crossing over South Creek;
- Construction of a piped drainage network;
- Construction of retaining walls
- Replacement of existing culvert crossings including provision of fauna crossings;
- Oil and water separators for water quality management;
- Remediation of land under the hardstand (if required); and
- Provision of street lighting.

4.4 Site Grading

Civil Engineering Plans prepared by Cardno illustrating the final levels of the site are included at **Appendix A**, and details of the earthworks and grading is included in Section 5 of the Civil Engineering and Infrastructure Report at **Appendix B**.

The site is proposed to be graded with a rise from 21m AHD at the western end, 22.5m AHD at the intersection with the Dunheved Link Road to 20.75m AHD at the southern end of the road corridor. This site grading is required due to the need to elevate the site above the regional 1% AEP peak water surface level.

To achieve the levels of grading, cut and fill along the extent of the road corridor will be undertaken, with the following requirements.

Table 5 Grading Requirements

Grading Type	Blacktown Council	Penrith Council
Cut	-30m ³	-10,300m ³
Fill	+53,900m ³	+29,300m ³
Balance	+53,870m ³ (importation of and re-use of on-site material)	+18,900m ³ (importation of and re-use of on-site material)

Source: Cardno

Fill will be imported to the site from other locations within the St Marys site, including areas within the Central Precinct. If necessary, external fill from outside the site will be brought in which will meet the commercial/industrial criteria for use under the road.

There are several retaining walls within Stage 2 which runs for a total combined length of 819m. The retaining wall has a maximum height of 5m with an average height of 1.6m.

4.5 Road Specifications

The design of the road was discussed with both councils at a meeting held on 17 November 2017. The outcomes of that meeting have informed the design of the road including specifications required by each Council.

The proposed East West Connector road has been designed to merge with the West Collector Road at Ropes Crossing and the Wianamatta Parkway in Central Precinct. The proposed roads have been designed to accommodate the following vehicles:

- 14.5m long rigid bus;
- 19m semi-trailer; and
- B – double (Links Road / Dunheved Road intersection).

The horizontal alignment of the connector road and Dunheved Links Road follows the existing alignment of the haul road. The road alignment for the Dunheved Link Road has been designed to maintain the consistency with the design which was approved as part of the Dunheved subdivision application and haul road construction. The haul road was approved under DA14-1219 by Blacktown Council and DA14/0766 by Penrith Council, and will be demolished as per those consents prior to the construction of the Connector Road.

All roads have been designed for a speed of 70km/h with a sign posted speed limit of 60km/h. Warning signs have been placed at a number of horizontal curves along the East West Connector road alignment to increase road safety. A cycle way is proposed along the southern side of the East West Connector road and the Dunheved Link Road.

There are four road cross sections forming part of the road corridor design. Three of the cross sections apply to this DA. The Civil Engineering Report at **Appendix B** provides further detail.

The South Creek Bridge deck level will be 21.25m AHD, sloping east to a level of 22.51m AHD. This deck level varies between 1.2 and 2.4 metres above the 1% AEP flood event. The deck has a total width of 12.85m and length of 125.985m with 3m either end of approach slab. The bridge soffit level under the deck is 20.053m RL at its western end and 21.313m RL at its eastern end.

Table 6 Road Cross Sections

Road Type	Road Reserve Width (m)	Pavement Width (m)	Kerb Type	Construction Stage
Central Precinct Connector Road	20.00	12.00	Kerb and gutter both sides	Stage 2
Connector Road East	19.90	11.00	Kerb and gutter both sides; kerb and toe where superelevation applied	Stage 1 (subject to a separate DA)
Dunheved Industrial Road (with median)	26.30	17.50	Kerb and gutter both sides	Stage 2
Dunheved Industrial Road (modified)	22.30	13.50	Kerb and gutter both sides	Stage 2

Source: Cardno

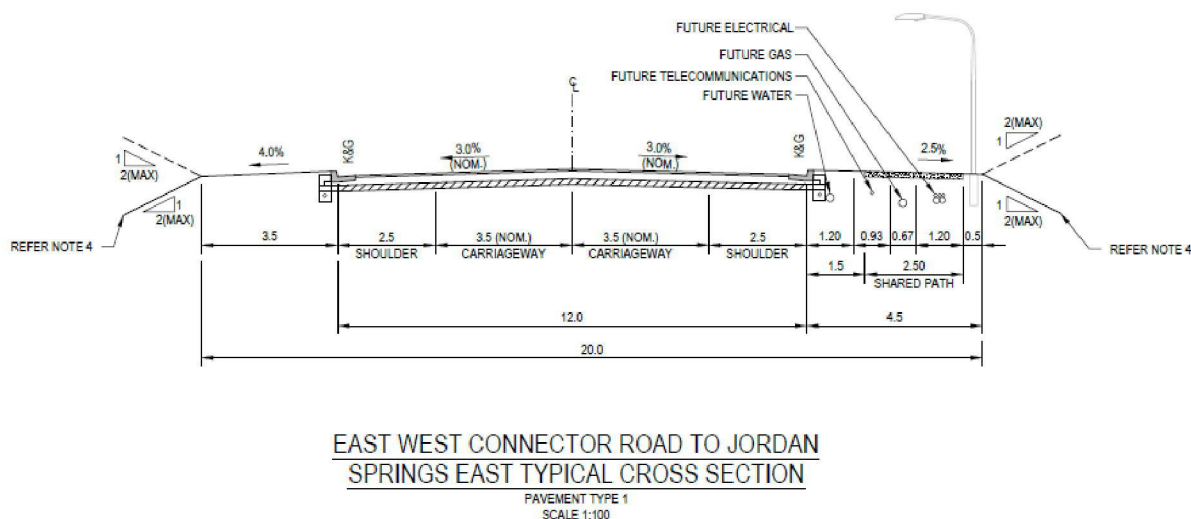


Figure 8 Typical cross section of the Connector Road

Source: Cardno

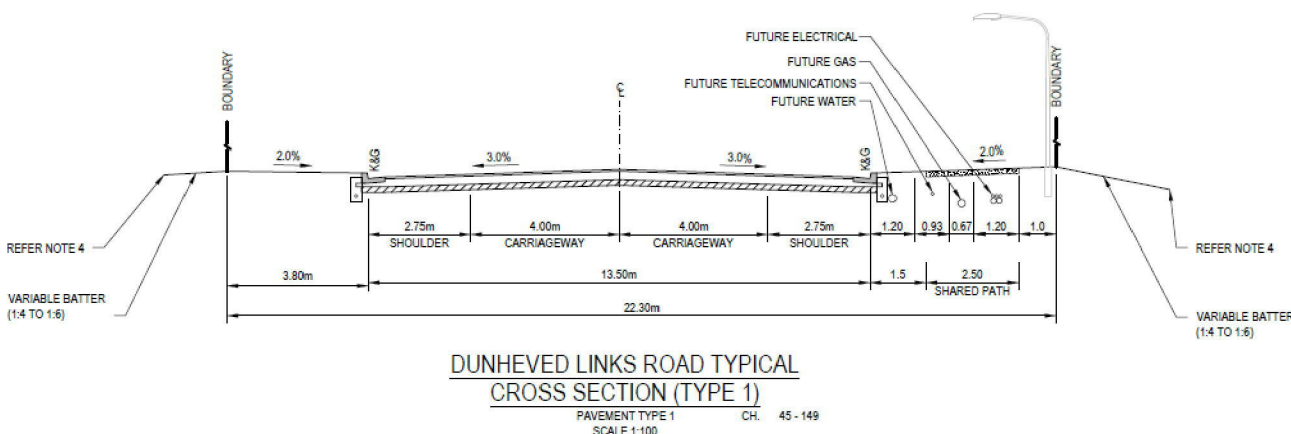


Figure 9 Typical cross section of the Dunheved Links Road

Source: Cardno

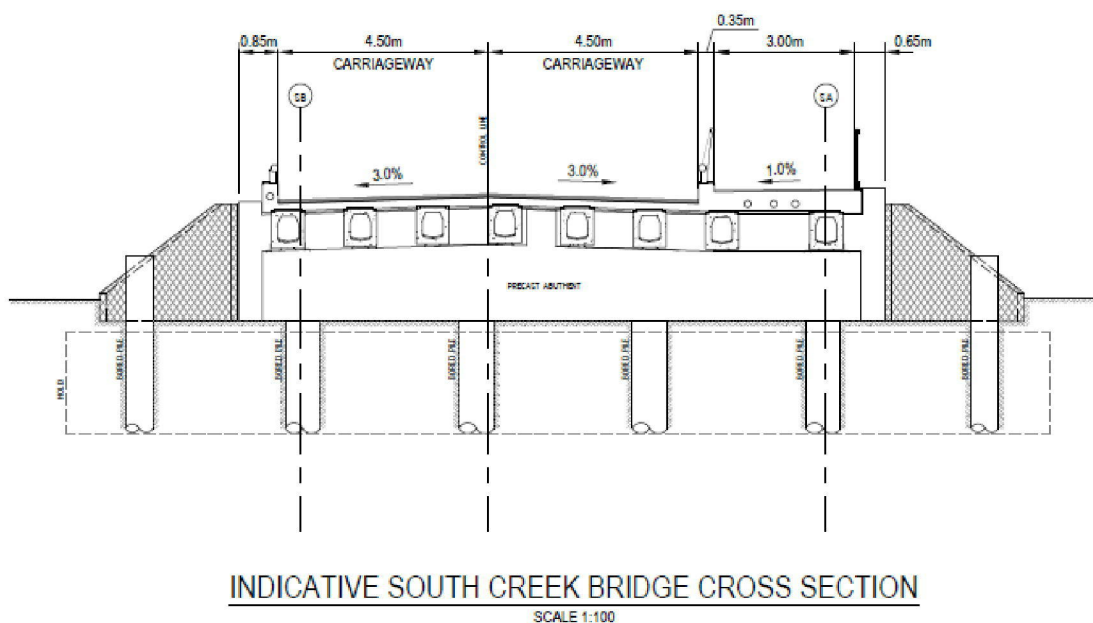


Figure 10 Proposed South Creek Bridge design

Source: Cardno

4.6 Regional Open Space Filling

Bulk earthworks as part of the regional open space filling are proposed to facilitate an appropriate level of flood protection for future playing fields. The bulk earthworks include the creation of a series of fill platforms within the Regional Open Space and the construction of a temporary bund, within the footprint of the future Dunheved fill platform. The following outlines the cut and fill requirements for the construction of the Regional Open Space:

- 6,800m³ of cut;
- 46,400m³ of fill; and
- 39,600m³ balance (importation of and re-use of on-site material which meets the criteria).

Any material used to create the fill platforms within the Regional Open Space will meet the recreational criteria.

The temporary bund across the Dunheved South precinct will be constructed in advance of filling of this precinct.

4.7 Landscaping

No landscaping of the public domain, other than street tree and verge planting, is proposed under this DA. Future DAs will be lodged with Council for the embellishment of the road corridor.

4.8 Stormwater Management

The proposed stormwater management strategy for the Connector Road is shown in the Civil Engineering Plans at **Appendix A** and described in the Civil Engineering & Infrastructure Report at **Appendix B**. The drainage network includes stormwater pits where required with a maximum flow width of 2.5m from the face of kerb during the design storm event.

Water quality controls have been included in each development precinct of the St Marys site, and include:

- Gross pollutant traps;

- Bio-retention basins;
- Riparian channels;
- Wetlands; and
- Swales.

The road catchment and pollutants generated by the Connector Road are not typical of those generally found within a subdivision development. A qualitative assessment indicates that pollutants are generally expected to be limited to oil and grease from traffic using the road. As such, treatment devices within the road corridor are limited to oil and water separators within pits immediately upstream of a discharge point.

4.9 Contamination Management

The existing SAS identified that the area beneath hardstand, such as the ground beneath the connector road pavement, has not been validated as suitable for its intended future use, and that a Site Audit Report (SAR) is required to be issued for those areas once cleared of contamination. The demolition of the existing bridge and underlying material will allow for any remediation required (subject to investigations conducted under DA17-00963 and DA17/0834) prior to the reconstruction of the connector road. Any areas of contamination identified for remediation (if required and to be completed as part of this DA) will be the subject of a validation report prepared by an EPA accredited Site Auditor, prior to the construction of the Connector Road. A subsequent SAS will then be issued.

4.10 Construction Management

Construction activities would be undertaken between 7:00am and 6:00pm Monday to Friday and between 7:00am and 1:00pm Saturday, if inaudible on neighbouring residential properties otherwise 8:00am to 1:00pm. No work is to take place on Sunday or public holidays. Any construction work outside these hours would be subject to prior consultation with Blacktown Council.

The nearest residential property to the work site is located in Ropes Crossing at the eastern end of the Connector Road, approximately 1.3km to the north-east. Impacts are to be managed in accordance with standard road construction mitigation measures, however are anticipated to be minor due to the existing Regional Park acting as a buffer zone.

Access for construction will be via Jordan Springs Boulevard, Lakeside Parade and the Jordan Springs Connector Road (also known as Wianamatta Parkway) to the west, and Links Road to the south.

The Bulk Earthworks activities have concluded for the Central Precinct, and as such there will not be an accumulation of construction impacts caused by several activities occurring at the same time.

4.10.1 Construction Staging

The construction and ultimate configuration of the Connector Road and filling of the Regional Open Space is to be staged as follows (see **Figure 7**):

- Stage 1: Construction of the Connector Road and Ropes Creek Bridge, east of the Dunheved Link Road intersection;
- Stage 2: Construction of the remainder of the Connector Road, including the South Creek Bridge, bulk earthworks within the Regional Open Space and a temporary bund within the Dunheved Precinct; and
- Stage 3: Construction of a new intersection at the Links Road Intersection.

This DA relates to Stage 2. Stage 2 is anticipated to commence construction in September 2018 and conclude December 2019. Regional Open Space filling is expected to start September 2018 with completion by December 2019.

5.0 Assessment of Environmental Impacts

Under Section 4.15 of the EP&A Act, in determining a development application the consent authority has to take into account a range of matters relevant to the development including the provisions of environmental planning instruments; impacts of the built and natural environment, the social and economic impacts of the development; the suitability of the site; and whether the public interest would be served by the development.

The assessment includes only those matters under Section 4.15 that are relevant to the proposal. The planning issues associated with the proposed development are assessed below.

5.1 Compliance with Environmental Planning Instruments

- Sydney Regional Environmental Plan No. 30 – St Marys (SREP 30);
- State Environmental Planning Policy No. 55 – Remediation of Land (SEPP55);
- St Marys Environmental Planning Strategy 2000 – (2006 Update) (St Marys EPS);
- Central Precinct Plan;
- St Marys Development Agreement and St Marys BCC Planning Agreement

The DAs consistency and compliance with the relevant statutory and strategic plans and policies is provided below.

5.1.1 Sydney Regional Environmental Plan No.30 – St Marys

SREP 30 contains planning objectives, principles and provisions to control development within the three Precincts of St Marys. Overall, the proposed works are consistent with the achievement of the performance or zone objectives and reflects the aims of the development control strategies of SREP 30.

The connector road corridor is zoned Road and Road Widening under SREP 30 which permits drains, parks, regeneration activities, utility installations and roads, with the proposed works permissible with consent. The area for filling is zoned as Regional Open Space which permits advertisements, drains, parking areas, recreation establishments, recreation facilities, roads and utility installations (other than generating works) with consent. The proposed filling works is considered preparatory works for the future recreational facilities to be developed on the site subject to a separate DA.

The proposed works support the key performance objectives outlined within Part 5 of SREP 30. **Table 6** outlines the consistency with SREP 30.

Table 7 Summary of consistency with SREP 30

SREP 30	Assessment
24 Conservation	
(4) Infrastructure is to be designed and located to minimise potential adverse impacts on the conservation values of the land	The proposed road upgrade is fully contained within the Road and Road Widening Zone and the area for filling is contained in the Regional Open Space zone and will not have any adverse impacts on the conservation values of the land.
(5) Infrastructure and recreational facilities within the regional park are to be sited and constructed to minimise adverse impact on the park's natural values.	The proposed road upgrade and bridge construction is fully contained within the established Road and Road Widening Zone. No road construction works are proposed within the Regional Open Park.
30 Transport	
(5) Provision of transport infrastructure to be coordinated with the staging of development on the land	The Connector Road represents the final internal major road connection required to achieve the ultimate road network as envisaged for the St Marys site. Connectivity from Ropes Crossing through to Central Precinct and further to Jordan Springs will be made possible through the provision of this road. The timing of delivery of the road will coincide with the Central Precinct occupation nearing completion. Bulk

SREP 30	Assessment
	earthworks and filling within the Regional Open Space will allow for the future development of the regional recreational spaces proposed for the zone.
(8) The overall development of land to which this plan applies is to include a range of land uses sufficient to minimise demand for travel outside the land to which this plan applies.	The Connector Road will enable residents of all three residential precincts (Jordan Springs, Central and Ropes Crossing) to stay within the St Marys site yet be allowed access to three different village centres providing a range of services and retail options. Future development in the Central Precinct will comprise of a variety of retail and commercial uses to support the residential population of the wider St Marys site. Additionally, the existing Ropes Crossing town centre allows for greater choice for these residents. The East West Connector will service both precincts. The bulk earthworks and filling of the Regional Open Space will allow for the development of the recreational facilities (subject to a separate DA).
38 Regional Open Space Zone	
Development for the purpose of the following is allowed with the consent of the consent authority: advertisements, drains, parking areas, recreation establishments, recreation facilities, roads, and utility installations (other than generating works)	Part of the site is zoned Regional Open Space and involves bulk earthworks and filling in preparation for the construction of recreational facilities for the Central Precinct. The proposed recreational facilities are permitted with consent within the Regional Open Space zone with the works being for 'recreational establishments' and 'recreational facilities'.
41 Road and Road Widening Zone	
Development for the purpose of the following is allowed only with the consent of the consent authority: drains, parks, regeneration activities, roads and utility installations.	Part of the site is zoned Road and Road Widening and involves construction of the South Creek Bridge and road. The proposed connector road is permitted with consent within the Road and Road Widening land use zone with the works being for the purpose of a 'road'.
44 Consultation with National Parks and Wildlife Service	
This clause applies to the development of land adjacent to regional parks.	The proposed works are situated on land adjoining the Regional Park. Referral of this application to the Director-General of National Parks and Wildlife for comment is required. The Director-General has 28 days to provide advice on the application.
47 Consultation with National Parks and Wildlife Service	
A person may demolish, in part or in whole, a building on land to which this plan applies, but only with the consent of the consent authority.	Demolition has been sought under separate applications.
52 Tree Preservation	
A person must not ringbark, cut down, lop, top, remove, injure or wilfully destroy any tree, or cause any tree to be ringbarked, cut down, topped, lopped, removed, injured or wilfully destroyed by any action (including the addition of soil or drainage works around the base of the tree), except with the consent of the consent authority.	Removal of vegetation within the road corridor has been sought under separate applications previously submitted to Council. A copy of the applicable ecological assessments is provided at Appendix H for reference purposes.

5.1.2 State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55)

The SEPP 55 promotes the remediation of contaminated land for the purpose of reducing the risk of harm to human health and other environmental aspects. The St Marys site has been the subject of an extensive investigation including multiple NSW EPA accredited Site Auditor issued SAS for the site. The site will be subject to further investigations and (if necessary) remediation prior to the construction of the new road to ensure it is suitable for the proposed use.

If remediation is required a Remedial Action Plan (RAP) will be provided to Council for approval, prior to remediation works being carried out. Remediation will be completed prior to construction of the new road, and a SAS issued by an EPA accredited Site Auditor.

5.1.3 St Marys Environmental Planning Strategy 2000 (2006 Update)

The St Marys EPS 2000 establishes guidelines and strategies for the future development of land under SREP 30, specifically in relation to matters of conservation, cultural heritage, water cycle and soils, transport, urban form, energy and waste, human services, employment and contamination.

- there are no significant impacts predicted to occur to any threatened species within the land zoned Regional Park and minimal impact on significant flora and fauna on the site;
- there is no impact on any areas of potential archaeological despot (PAD) or other culturally significant areas; and
- the proposed works will facilitate the connectivity of the site in its ultimate form.

5.1.4 Central Precinct Plan and the Dunheved Precinct Plan

The proposed road and bridge upgrade will allow for the orderly and efficient development of the St Marys Central Precinct in line with the aims and objectives of the Precinct Plan, while providing access to the east from Central Precinct and to the south towards Dunheved. The upgrade of the road and filling of Regional Open Space will allow for adequate infrastructure to service both the Ropes Crossing and Central Precinct communities, and future development of recreational space subject to a separate development application.

5.1.5 Water Management Act 2000

In accordance with Section 91 of the WMA 2000 a Controlled Activity Approval is required for works undertaken on 'waterfront land' within 40 metres of a water course, being the South Creek and its tributaries.

5.2 Flooding and Stormwater

The flooding regime and impacts of the Central Precinct development have been assessed and approved as part of the Bulk Earthworks DA14/1228 approved by the Joint Regional Planning Panel with the consent issued by Penrith City Council, which included flood modelling to identify the impacts to the South Creek catchment because of the filling of the urban area of Central Precinct. The Bulk Earthworks DA14/1228 recommended several flood mitigation measures be delivered with the Connector Road and further assessment of flood impacts to confirm the upstream and downstream impacts remain consistent (if not better) than those approved under that DA. A further assessment has been completed by Jacobs (**Appendix C**).

Flooding impacts in South Creek were originally assessed using the MIKEFLOOD modelling program, with this revised assessment submitted in support of the subject DA refining the model to include the following design modifications:

- The approved fill layouts for the Central and Dunheved Precincts (under separate approvals);
- Removal of the Old Munitions Road embankment (as approved under the Bulk Earthworks DA14/1228);
- Upgrades of the Connector Road, South Creek and Ropes Creek bridges;
 - Including an increased waterway area under both bridges;
- Inclusion of high-flow culverts to the west of South Creek;
- Inclusion of a bank of pipes under the Dunheved Link Road;
- Provision of a bund at the southern end of the Dunheved fill platform adjacent to Links Road (subject to the Stage 2 Connector Road DA) and a backwater prevention device on the Dunheved riparian corridor culvert; and
- Removal of stockpiles within the Regional Open Space (with their removal approved under DA16/0888 approved by Penrith City Council).

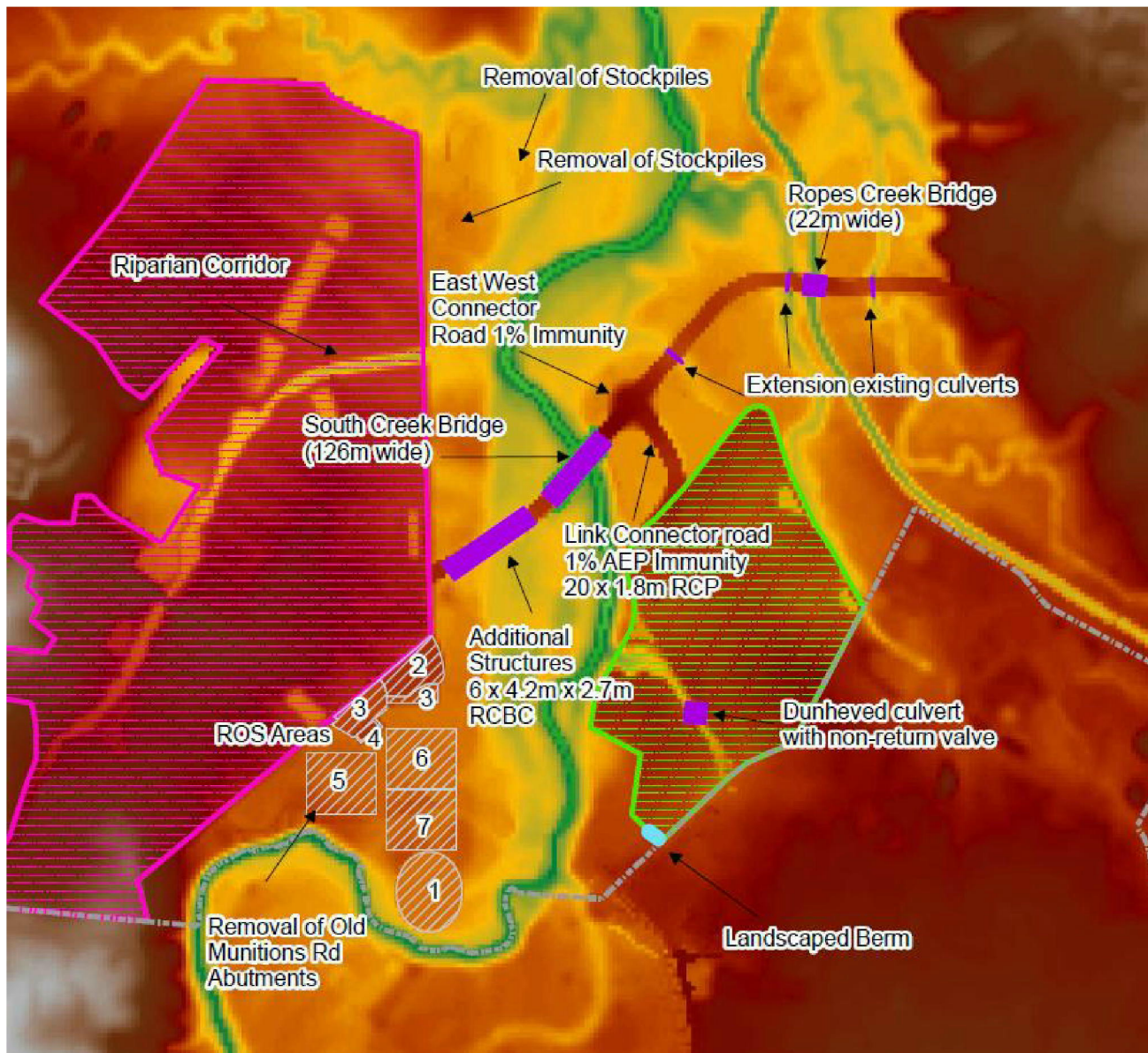


Figure 11 The revised model includes a number of refinements of design as the project has evolved

Source: Jacobs

5.2.1 Flooding impacts of development

The site is located on the floodplain of South Creek, a tributary of the Hawkesbury Nepean River. South Creek traverses along the eastern boundary of the Central Precinct. Due to the proximity of the site to this creek system flooding occurs following rainfall in the catchment of South Creek, and also by backwater flooding from major flood events in the Hawkesbury-Nepean River. Ropes Creek is also a tributary of South Creek.

The Connector Road in its current form restricts water flow through the existing bridges and culverts under the road. Sections of the road are also affected by floodwaters during a 5% AEP event, and in larger events the road acts as a weir.

The 1% AEP peak water surface level varies between approximately 19.6 and 19.9m AHD along the Connector Road, with a level of approximately 20m AHD adjacent to the overflow structure on the Dunheved Link Road (subject to the Stage 2 DA). The 1% AEP flood level is approximately 20.5m AHD near the southern boundary of the Dunheved Precinct, adjoining Links Road.

The proposal to raise the level of the road increases its immunity and reduces the weir action and water flow over the road, offset through the increase in waterway area through South Creek and Ropes Creek, and the additional culverts proposed under the western section of the road (within the Stage 2 DA area).

Generally, the road achieves a 1% AEP flood immunity, with parts of the Regional Open Space (subject to filling under the Stage 2 DA) achieving 5% AEP and 20% AEP immunity. The urban development footprint within the Central Precinct has been elevated to provide future lot levels a minimum of 500mm above the water surface level under a 1% AEP. The increase in that area was approved through the Bulk Earthworks DA14/1228 by the JRPP.

Under the existing conditions, flow is constricted through the existing bridge and culverts under the road. The majority of the Golf Course adjoining the site is inundated by water over 1 metre deep in the 1% AEP event, with depths up to 3 metres in some areas.

Flooding impact

Impacts of the proposed filling works within the Regional Open Space, and the proposed Connector Road construction, does not create any newly flooded properties for the 1% AEP regional tailwater event. Increased flooding greater than 20mm upstream of the site is limited to three lots and the Links Road road reserve.

Table 8 Impacted upstream lots

Lot and Plan	Description	Impact on Lot (mm) in 1% AEP Regional Tailwater Event
1 DP234336	Dunheved Golf Course	33
20 DP773781	Dunheved Golf Course	31
1 DP600517	Sydney Water Recycled Water Scheme	28
N/A	Links Road	20

Source: Jacobs

No buildings on these properties will be flooded above surveyed floor levels.

Impacts upstream are generally limited to the Dunheved Golf Course site, with the majority of the Golf Course adjacent to the Central Precinct and Dunheved site being inundated by depths up to 3m (generally over 1m deep) in some areas under a 1% AEP event. No impacts on buildings or the car park occur, with water levels in these areas decreasing under the refined flood modelling. An increase in the total area of flooding of 1ha on the Golf Course site is offset by a decrease of approximately 50ha which sees reduced flooding of 10-50mm in peak water surface levels. The duration of flooding on the Golf Course is unchanged under developed conditions at approximately 20 hours in the regional 1% AEP flood event.

The proposed works result in a decrease of 4mm (compared to the 38mm approved by the JRPP under the Bulk Earthworks DA flood modelling to 34mm under the refined model) at the upstream site boundary, with a 7mm impact (down from 11mm under the previous model) at the downstream site boundary during a 1% AEP regional tailwater event. Upstream impacts now only affect four lots (Sydney Water Recycled Water Scheme site, Dunheved Golf Course and Links Road), down from the original five impacted lots. No increase in flooding duration is expected on the Golf Course.

Flood Planning Areas (FPA) have been remodelled, which identifies no additional properties outside of the four originally impacted industrial sites on Links Road are affected, when compared to the existing conditions (previously approved). The four affected properties are subject to an increased FPA extent.

Table 9 Flood Planning Area affected lots

Lot and DP	Description	Total Lot Area (ha)	Area affected by FPA (ha)		% Area affected by FPA	
			Existing	Developed	Existing	Developed
192 DP1135762	Industrial	0.56	0.01	0.33	2%	59%
1 DP1191285	Industrial	0.90	0.14	0.44	15%	49%
44 DP1185482	Industrial	1.15	0.32	0.44	28%	38%
45 DP1185482	Industrial	1.09	0.01	0.04	1%	4%

Source: Jacobs

Peak velocities in the 1% AEP event at the downstream site boundary are generally maintained under the developed conditions with only a 1% maximum increase. Existing velocities vary between 0.8-1.2m/s within the channel and less than 0.8m/s on the floodplain. The upstream site boundary has a minor change in velocities where the Old Munitions Road embankment will be removed (part of the Stage 2 DA). The removal of this bund causes increases on the western bank of up to 0.7m/s in the 1% AEP Event. There are also some minor increases up to 0.3m/s in South Creek adjacent to the southern-most Regional Open Space fill area in the 1% AEP event. This is consistent with the previous reporting where changes to the velocity at the upstream and downstream boundaries are minimal.

The developed scenario and refined modelling does not inundate any additional buildings under a 1% AEP event, with no additional properties being affected. The Connector Road works (and those works being completed as part of the Stage 2 DA, subject to separate approval) provides for an outcome consistent with and in some parts better than that approved under the Bulk Earthworks DA14/1228.

5.2.2 Stormwater impacts

Stormwater quantity

As outlined in the Civil Engineering report at **Appendix B**, the proposed drainage network has been designed to safely convey major and minor flows to outlets that coincide with existing water courses along the road network. The design has adopted rainfall intensities as follows:

- Minor system
 - Urban Residential 20% AEP
 - Local / Collector Road Crossings 10% AEP
- Major system 1% AEP

Stormwater pits have been positioned to suit the proposed road geometry and generally maintain a maximum flow width of 2.5metres from the face of kerb during the design storm event. Overland flow paths have been designed to accommodate the 1% AEP storm event.

Stormwater quality

Stormwater quality management for the Connector Road takes into account the regional objectives outlined in SREP 30 which inform the stormwater strategy for both Central Precinct and Jordan Springs (Western Precinct).

Accordingly, the provision of regional basins throughout the Regional Park provide for stormwater quality management, which will achieve the following reductions in post-development pollutant loads:

- Gross Pollutants: 90%;
- Total Suspended Solids: 85%;
- Total Phosphorus: 60% in Penrith, 65% in Blacktown; and

- Total Nitrogen: 45%.

The Connector Road will be constructed adjoining the Regional Park, with the western end of the road adjoining the Regional Open Space. It is proposed that treatment devices including oil/water separators within pits are located immediately upstream of a discharge point. MUSIC modelling has not been provided as per discussions held between Cardno and Blacktown Council.

Stormwater management

As identified in the Civil Engineering Report, treatment devices will be implemented within the road corridor to manage the pollutants expect from traffic utilising the road. Any residual increase in the pollutant load generated as a result of the development is expected to be managed via the application of the regional stormwater strategy in achieving the outcomes of SREP 30.

Links Road within the Dunheved Precinct will be managed via controls included as part of the future Stage 3 intersection development.

Further discussion is provided in the Civil Engineering Report at **Appendix B**.

5.3 Flora and fauna

Vegetation near to the South Creek Bridge will be removed prior to the reconstruction works occurring. The removal of this vegetation has been sought under DA18/0166 submitted to Penrith Council and DA18-00271 submitted to Blacktown Council. The separate DAs also sought approval for removal of all vegetation within the road corridor to allow for the construction works to occur without impediment. Vegetation along existing Regional Park access trails may require noxious weed management and subsequent removal to facilitate access and processing requirements for the demolition works will be completed as required, as discussed with NPWS (**Appendix G**).

An addendum to the previously conducted ecological assessments (also attached) by Cumberland Ecology for the road corridor (**Appendix H**) identifies no threatened flora species as being recorded within the areas to be cleared.

The majority of the connector road corridor is generally void of vegetation, however all remaining vegetation in the corridor is to be removed as part of DA18-00271 and DA18/0166. Furthermore, the clearing of vegetation within the road corridor (a total of 3.74ha across the entire road corridor including that within the Stage 1 component of the connector road works) is not considered to have a significant impact, rather result in improved access and drainage in the adjacent Regional Park. No vegetation outside the macrofauna fence will be removed during the road corridor vegetation removal.

To ensure off-site impacts on vegetation in the Regional Park zone are avoided or minimised, mitigation measures to be implemented for the works include:

- Temporary fencing installation;
- Rehabilitation of the access tracks used for the works with an equivalent grassed finish as agreed with OEH; and
- Conduct surveys for cave-dependant microbats as part of the pre-clearing process.

The existing macrofauna fence will be replaced where necessary.

Permanent fauna crossings over the road and at the bridges have been considered in the design of the road.

5.4 Traffic and Transport

A Traffic Impact Assessment (TIA) summary has been prepared by WSP (**Appendix K**). The TIA assesses the anticipated traffic of the Central Precinct and its impact on the Connector Road through to Ropes Crossing and Links Road. The assessment builds on traffic analysis (**Appendix M**) completed for the Central Precinct Plan Amendment No.1 which has been endorsed by Penrith City Council and will be adopted subject to receipt of formal notification from the Department of Planning and Environment. The traffic assessment assumes the 38ha of

employment zoned land has been rezoned to residential, predicated the future rezoning as proposed under a separate amendment to SREP 30. Regional traffic modelling has also been completed for this assumption, with this modelling previously provided to Penrith and Blacktown Councils as part of stakeholder engagement related to the Precinct Plan Amendment No.1. Due to confidentiality, this report has not been provided.

Based on the analysis, the mid-block traffic volumes for the Connector Road in the year 2021 are estimated to be approximately 850 vehicles during the AM peak and 1,250 vehicles in the PM peak. Stage 2 of the Connector Road (the subject of this DA) has an AM peak of 700 vehicles eastbound and 150 vehicles westbound, and a PM peak of 220 vehicles eastbound and 1,020 vehicles westbound.

Intersection performance of the key intersections for the year 2021 have been modelled for the Connector Road as shown in **Table 6**.

Table 10 Intersection performance in 2021

Intersection	2021 AM Peak			2021 PM Peak		
	LoS	Delay (secs)	Queue (m)	LoS	Delay (secs)	Queue (m)
East West Connector Road / Road No 4 at Jordan Spring East	A	12	28	B	17	63
East West Connector Road / Dunheved Link Road	A	9	34	B	22	143
East West Connector Road / Ropes Crossing Boulevard	A	12	16	A	12	30
Dunheved Link Road / Links Road	A	6	32	A	8	29

Source: WSP

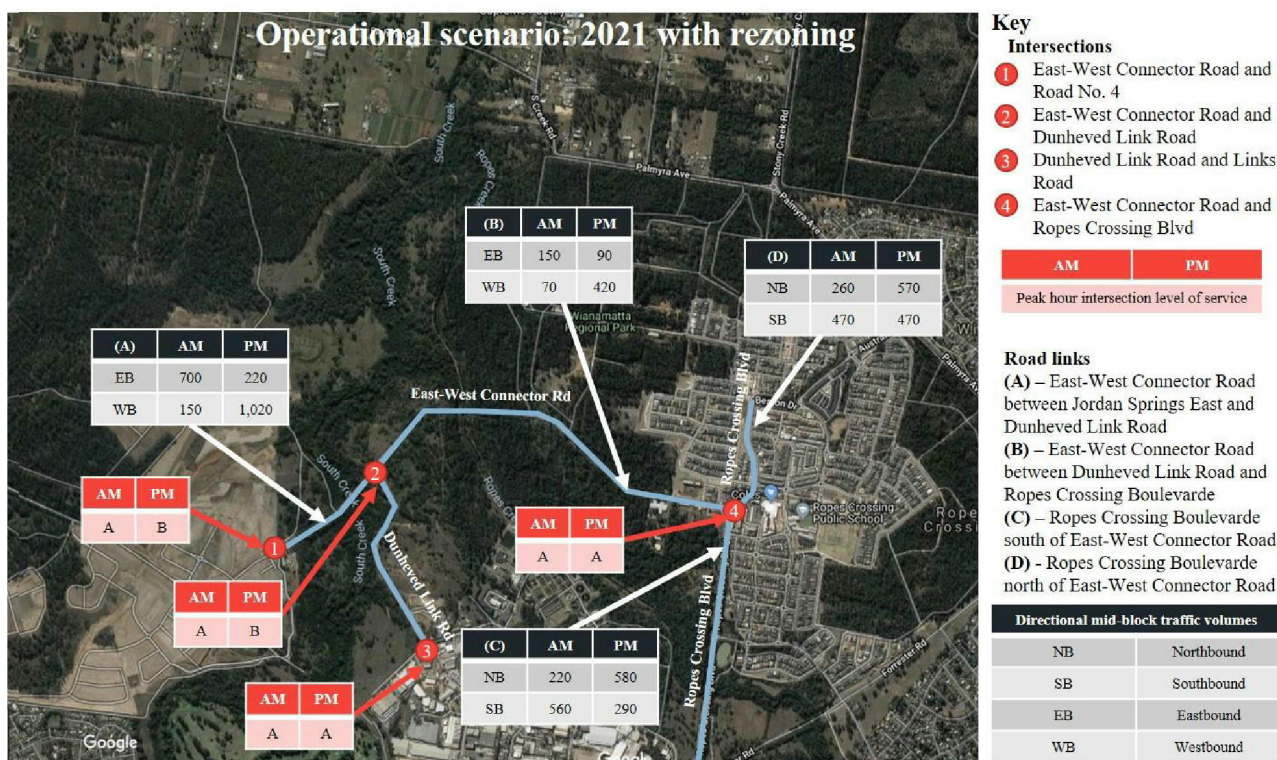


Figure 12 Intersection performance in 2021 across the wider site

Source: WSP

The impact of the Connector Road on Ropes Crossing Boulevard and the Dunheved Link Road and Links Road intersections all will perform within capacity at good levels of service. Traffic volumes of the Ropes Crossing Boulevard south of the Connector Road would be 560 vehicles southbound and 220 northbound in the AM peak and 290 vehicles southbound and 580 vehicles northbound in the PM peak. Traffic volumes on Ropes Crossing Boulevard north of the Connector Road will be 470 vehicles southbound and 260 northbound in the AM peak and 470 southbound and 570 northbound in the PM peak. These volumes are within the capacity of Ropes Crossing Boulevard.

5.4.1 Concept Design

The Road Safety Audit Included at **Appendix L** 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 and widths;
- Kerb ramps and transitions;
- Pedestrian facilities and protection;
- Adjacent land use access points;
- Intersection layout and geometry;
- Signage and line marking; and
- Drainage.

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

The audit identified one high risk and one medium risk issue relating to the proposed road design. These issues are outlined in **Table 7** below.

Table 11 Key identified road safety issues and designer responses

Issue location and rating	Issue description	Designer response
Dunheved Links Road – alignment and cross section delineation: Medium	The carriageway width of Dunheved Links Road for each direction ranges from 7.215 m to 9.29 m. Longitudinal lane line marking and right turn lane arrow marking are not indicated on the plan. It is unclear if the road follows a two-lane two-way configuration. Wide lanes may introduce possibility of two cars travelling side-by-side. No delineation to regulate traffic could create vehicle side-swipe issues.	The design of the Dunheved link road has been based on the previously approved design plans. Lane marking is proposed to delineate the travel section, consideration will be given to additional preventative measure to mitigate the likelihood of vehicles travelling side by side.
East West Connector and Dunheved Links Road intersection – shared path: High	The shared path terminates at the southeast corner of the roundabout. Pedestrians and cyclists who continue heading south along Dunheved Links Road are required to use the western side shared path. A crossing facility has not been proposed to provide safe access for pedestrians and cyclists. This could increase the risk of collisions involving pedestrians and cyclists with vehicles.	A median conforming to Austroads requirements is documented in revision 2 of the drawings, which provides safe access

Source: WSP

5.5 Contamination

The St Mary's 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 Mary's site.

A contamination management and remediation regime has been established in the Central Precinct. This regime will be adopted for the road works (as discussed below). If remediation is required a Site Remedial Action Plan (SRAP) will be prepared specific to this DA and will be provided to Council for approval prior to carrying out remediation. If remediation is required it will involve excavation of material that does not meet the commercial/industrial standards for removal off-site. Prior to commencing construction works on the road a validation report by the environmental consultant will be provided to Council demonstrating that the site is suitable for the use.

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 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 road corridor which are under former road/hard stand areas (such as the existing connector road pavement) are subject to validation for commercial/industrial uses as this classification is appropriate for the use of the land for a road.

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.

Contamination Management Plan, prepared by JBS&G (Rev 3, 24 January 2018)

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.

5.6 Heritage

5.6.1 Indigenous

As noted in Section 3.6 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.

The East West Connector Road in its entirety is recognised as being within Management Zone 4 under the AHIP, requiring no action.

5.6.2 European

As detailed in Section 2.3.7, no archaeological or European heritage items located within Stage 4. As such, no assessment of European heritage is warranted as part of this DA.

5.7 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.

5.7.1 Construction Hours

Construction activities are to follow the working hours of:

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

The nearest residential property to the work site is located in Ropes Crossing at the eastern end of the Connector Road, approximately 1.3km to the north-east. Impacts are to be managed in accordance with standard road construction mitigation measures, however are anticipated to be minor due to the existing Regional Park acting as a buffer zone. The location of the construction works is considered remote enough to reduce any construction noise and dust impacts on neighbouring residents. Furthermore, heavy vehicle movements will be limited where possible on weekends, especially Sundays to reduce traffic impacts.

5.7.2 Noise and Vibration, Dust and Air Quality

The work sites location away from residential receptors will reduce the impacts from noise, vibration and dust associated with the construction works. Notwithstanding, mitigation measures to reduce noise and vibration, and dust and air quality impacts as a result of construction at the site will be implemented. A Construction Environmental Management Plan will be prepared as part of construction certificate documentation.

5.7.3 Waste Management

The Waste Management Plan that accompanies this DA (**Appendix E**) 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.

5.7.4 Construction Traffic Management

The construction of the road will restrict access along the road corridor to Ropes Crossing, noting that this is currently only used by construction vehicles and is not publicly accessible. 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.

5.8 Site suitability

The proposed development in its entirety is appropriate in that:

- the proposed development is generally consistent with and supports the Precinct Plans;
- allows for connectivity through the entire St Marys site from Jordan Springs to Ropes Crossing via Central Precinct as envisaged in SREP 30;
- allows for connectivity to the Dunheved Precinct to the south;
- required site preparation works are to be undertaken under previous applications to make the site suitable with regards to demolition of the road, structures and land clearing;
- appropriate works and protocols are being undertaken to make the site suitable with regards to contamination and remediation;
- the site is zoned to accommodate the proposal in accordance with SREP 30; and
- will deliver infrastructure to support the housing and employment markets in the local and regional area of Penrith and Blacktown.

5.9 Social and Economic Impacts

The proposed residential development of urban land within the Central Precinct for future residential purposes (subject to separate approvals) will provide further housing choice within the region and is well connected to community services, public transport, parks and open spaces. The connection of Central Precinct to Ropes Crossing will provide a benefit for future residents, through offering variety of entry and exit into the St Marys site.

The proposed Connector Road construction 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. Connectivity through the St Marys site will result in a well-connected and accessible residential community, contributing to the economic benefits provided by the overall development.

The proposal is generally consistent with SREP 30 and the applicable Precinct Plans for the site, which have been subject to public exhibition and comment and subsequently adopted by both Penrith and Blacktown Councils. It therefore represents both Council's planning objectives for the St Marys site, which has been subject to review by the community.

6.0 Conclusion

The proposed connector road construction and fill platforms proposed in the Regional Open Space are consistent with the aims, objectives and planning strategies for the St Marys site set out in SREP 30, the St Marys EPS and the applicable Precinct Plans.

The proposed development facilitates the ongoing development of the Central Precinct and the provision of future residential development plus connectivity and access to jobs and services for the new community. 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 matters affecting the site. 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.