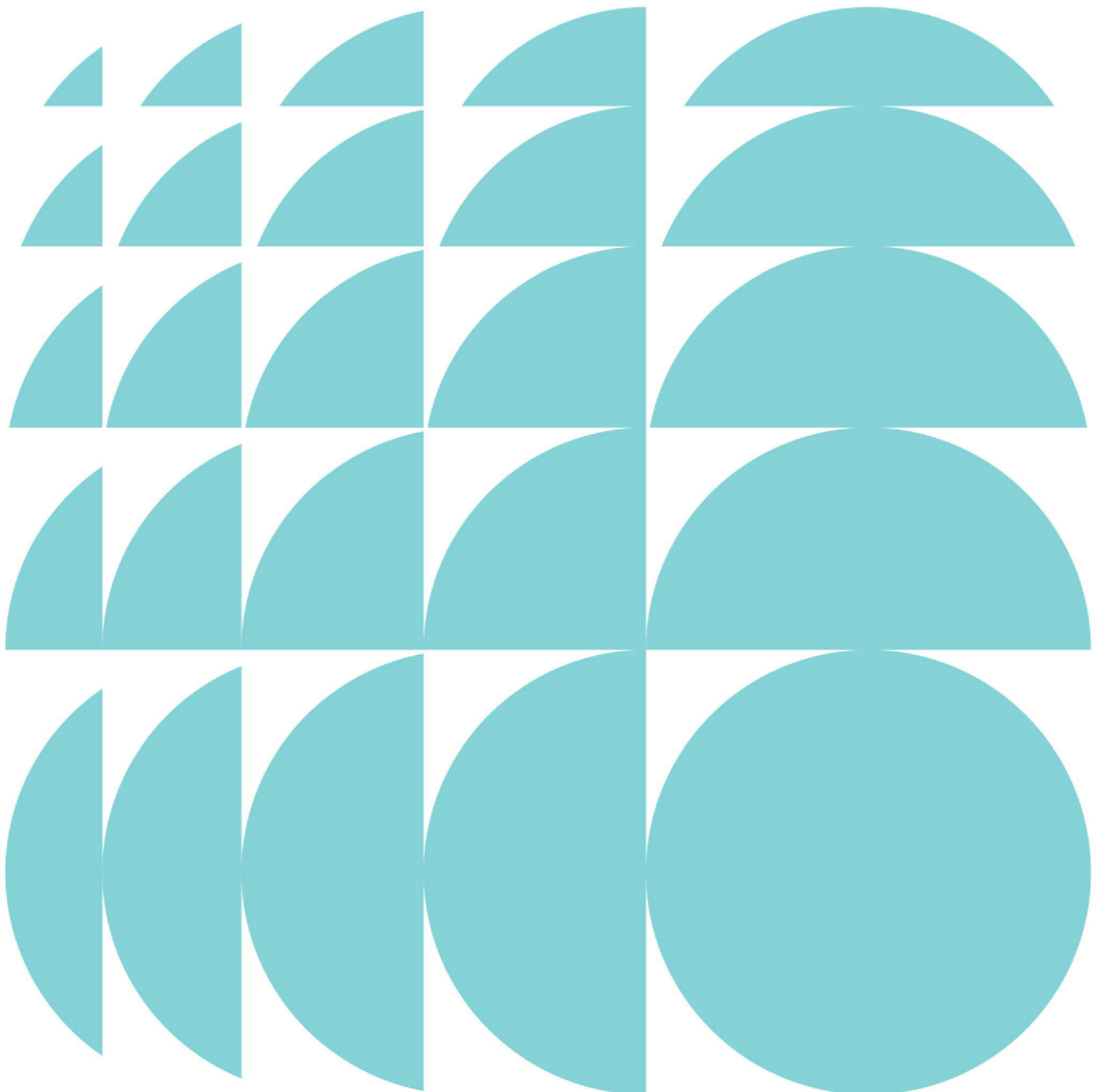


Statement of Environmental Effects

Central Precinct, St Marys
Stage 3 - Links Road Intersection

Submitted to Penrith City Council
On behalf of St Marys Land Limited (Lendlease)

12 April 2018 | 13070/17532



CONTACT

Tim Ward Director tward@ethosurban.com 02 9956 6962

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This document has been prepared by:

This document has been reviewed by:



11/4/2018

Tim Ward

12/4/2018

Eliza Arnott, Christopher Curtis

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VERSION NO.	DATE OF ISSUE	REVISION BY	APPROVED BY
A1	28/3/2018	EA	TW
B1	9/4/2018	CC	TW
C1	11/4/2018	CC	TW
C	12/4/2018	CC	TW

Ethos Urban Pty Ltd
ABN 13 615 087 931.
www.ethosurban.com
173 Sussex Street, Sydney
NSW 2000 t 61 2 9956 6952

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WSP
- L Jordan Springs East Internal Road and Intersection Assessment with Rezoning November 2017
WSP
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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 Dunheved Link Road / Links Road Intersection and a portion of the Dunheved Link Road. The Dunheved Link Road will connect Links Road with the St Marys Central Precinct, Regional Park and Regional Open Space of the Sydney Regional Environmental Plan No. 30 – St Marys (SREP 30) site, via the Dunheved Industrial Precinct.

The development application (DA) seeks approval for the demolition of the existing haul road and intersection and the construction of the Dunheved Link Road / Links Road intersection comprising:

- importation and reuse of material to elevate the road above flood levels;
- widening of existing road footprint;
- installation of road underlay;
- provision of new pavement and street lighting;
- provision of pedestrian and cycle paths along the road corridor;
- Services upgrades where required;
- Stormwater upgrades as required; and
- Street lighting upgrade to suit design alignment.

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

Clause 44 of *Sydney Regional Environmental Plan No. 30 – St Marys* (SREP 30) applies to land adjacent to the Regional Park. The proposed works are situated on land adjoining the Regional Park to the west and as such referral of this DA to the Director-General of the National Parks and Wildlife Service (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.

The proposed development is 'integrated development' in accordance with Section 4.46 of the EP&A Act. In addition to development consent from Penrith 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.

In addition, as works are proposed on Links Road, the proposed development requires approval under Section 138 of the *Roads Act 1993* from Penrith City Council as the relevant roads authority.

2.0 Background

In May 2007, an Environmental Impact Statement (EIS) was lodged to Blacktown City Council (BCC) and Penrith City Council (PCC) as part of a DA to each Council for the filling, compaction and subdivision of land to facilitate future development of employment lands in the North and South Dunheved Precincts. Consent was granted on 25

February 2008 for DA07/0494 by PCC for the DA relating to the South Dunheved Precinct. The consent comprised the following works relating to the construction of roads:

- Construction of a collector road (Road 1) through the Dunheved Precinct, which connects to Links Road to the south of the site and to the east-west access road to the north of the site;
- The construction of local roads branching off from the collector road;
- Provision of a cycleway along Road 1 connecting to Links Road;
- Provision of services infrastructure within the road reserves; and
- Landscaping of road reserves including the provision of street trees.

Since consent was granted in 2008, the proposal has been the subject of one Section 96(1a) modification application (DA07/0494.01) relating to the modification of fill details and materials, specifically Condition No 17 and approved on 26 May 2009.

This application specifically relates to the construction of the Dunheved Link Road / Links Road intersection and a portion of Dunheved Link Road. To the extent of any inconsistency with the approved road layout in DA07/0494 this DA will supersede DA07/0494.

Separate DAs have also been lodged to PCC and BCC for the construction of the rest of the Dunheved Link Road through the Dunheved Industrial Precinct (known as Stage 2). This DA for the Dunheved Link Road / Links Road intersection will connect the Stage 2 Dunheved Link Road to Links Road, ultimately forming part of the regional road network.

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.

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 BCC, PCC 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 to investigate a range of key planning issues. The RES was exhibited for public comment in October 1995, and finalised in May 1996. 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.

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.

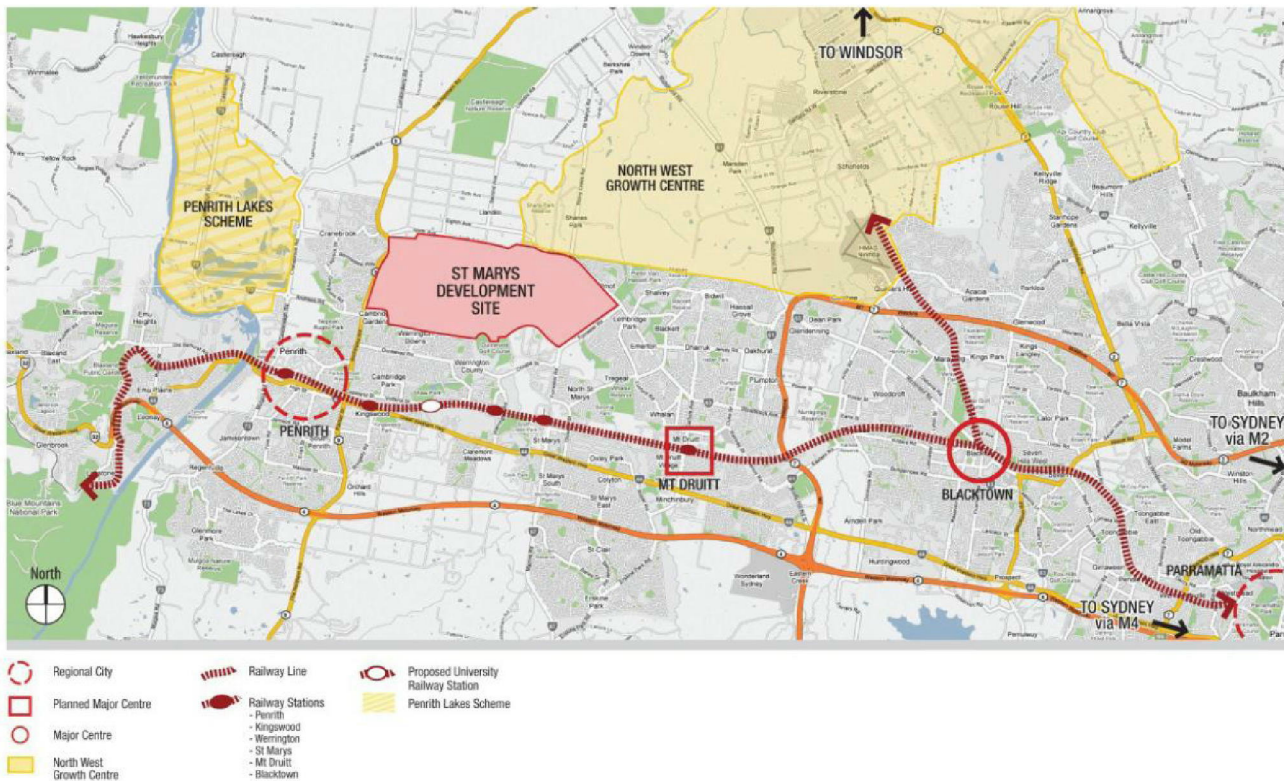


Figure 1 The ADI St Marys Site Location

2.2 Sydney Regional Environmental Plan No. 30 – St Marys

SREP 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 of this DA is located in and adjacent to the South Dunheved Precinct.



Figure 2 Overall site plan of the St Marys site

2.3 Precinct Plans

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.

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.

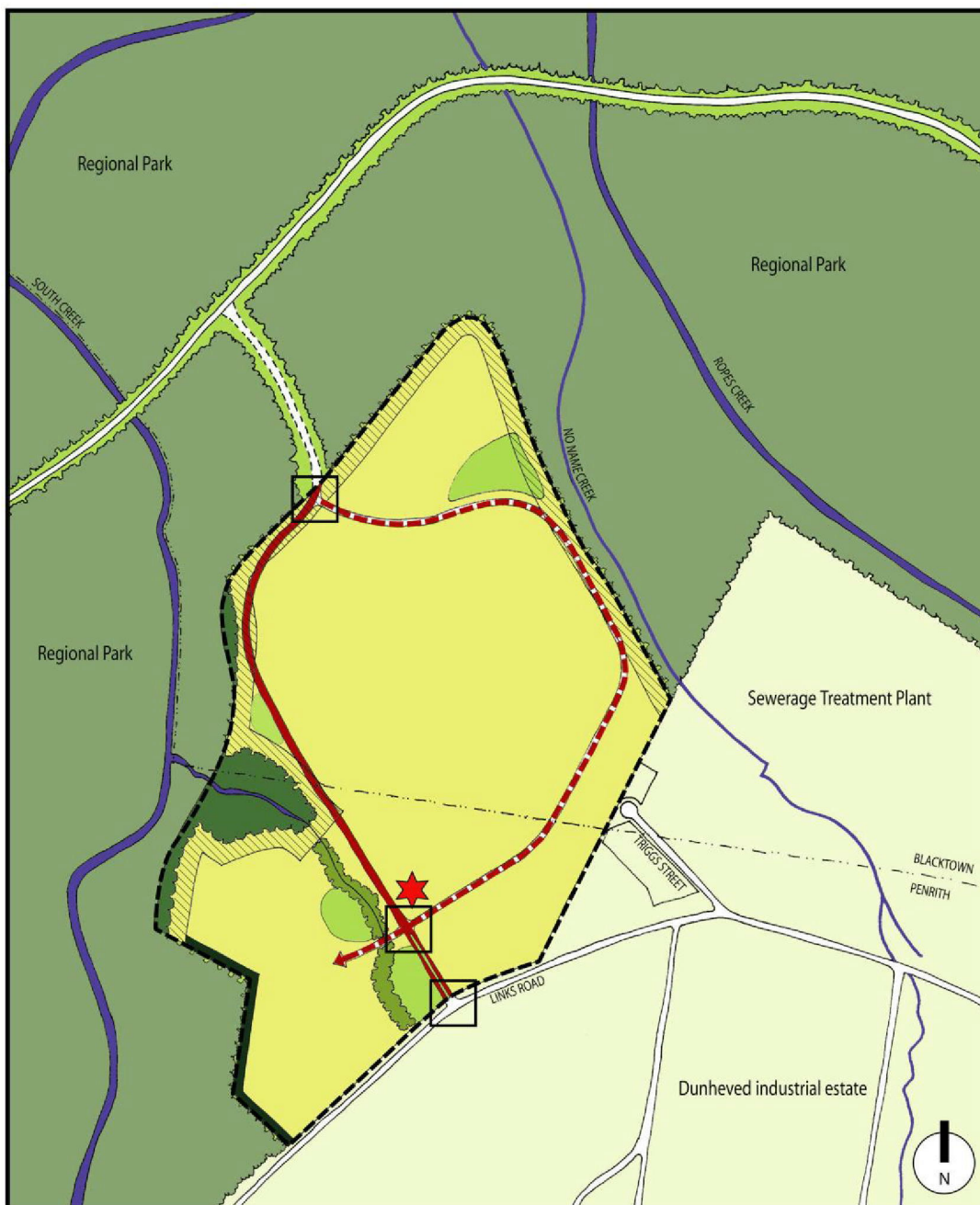
The Dunheved Precinct Plan (DPP) was adopted by Blacktown and Penrith Councils on 12 January 2007 and 11 December 2006 respectively. The Dunheved Precinct has not yet fully commenced development works, with only bulk earthworks being conducted to date.

The Central Precinct Plan (CPP) 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.

The CPP and DPP illustrate the manner in which the Central Precinct and Dunheved Precinct are to be developed. Both Framework Plans identify a connector road from the eastern boundary of the Central Precinct to Ropes Crossing and a connection to the Dunheved Precinct.

The Framework Plan of the DPP is provided at **Figure 3**. As illustrated the proposed Dunheved Link Road / Links Road intersection is conceptually identified in the DPP, and forms part of the regional road network for the wider St Marys Precinct.

The Framework Plan of the CPP, as currently proposed to be amended (the proposal is currently being assessed by PCC), is provided at **Figure 4**. As illustrated the proposed development is part of the regional road network for the wider St Marys Precinct and will provide access to the west and east.

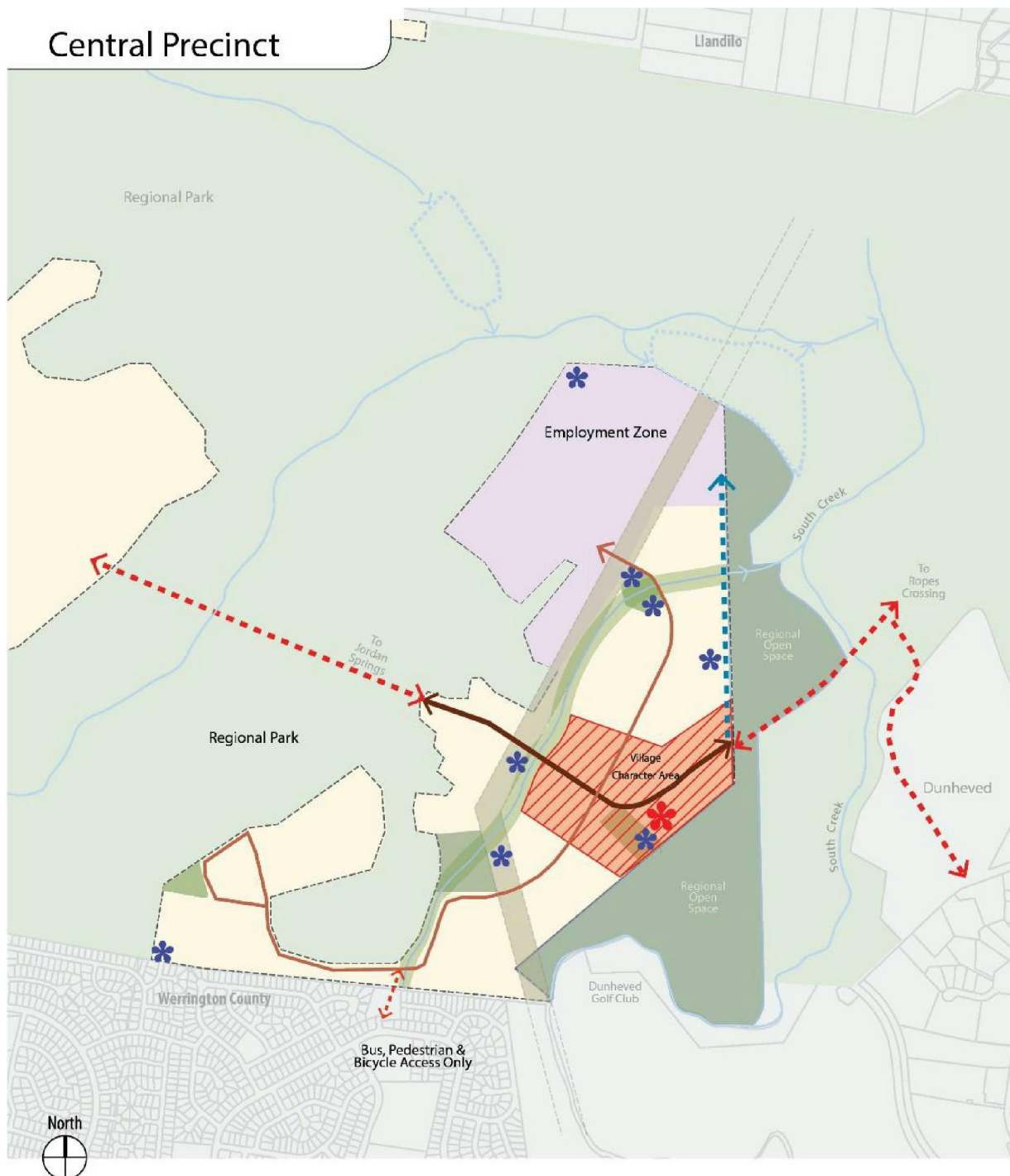


Framework Plan (indicative layout)



- | | | | | | | | |
|--|-----------------|--|--|--|---|--|----------------------|
| | Collector Road | | Indicative Road Design
<small>(subject to separate future approval process)</small> | | Precinct Boundary | | Intersection control |
| | Other Road | | Heritage Landscape Setback | | LGA Boundary | | |
| | Drainage Basins | | Riparian Corridor | | APZ
<small>(can include Car Parking and Roads)</small> | | |
| | Employment Land | | Drainage Corridor | | Node
<small>(preferred location for Local Retail Services)</small> | | |

Figure 3 The Dunheved Precinct Plan – Framework Plan



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 4 The CPP (pursuant to Amendment No.1)

2.4 Previous DAs

This DA should 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 is DA07/0494 approved by Penrith Council on 25 February 2008 for subdivision of the Dunheved South Precinct for landfill and subdivision, and construction of associated civil works. This DA included details of the Dunheved Link Road, as well as an intersection with Links Road. To the extent of any inconsistency with the approved road layout in DA07/0494 this DA will supersede DA07/0494. DA07/0494 was modified on 26 May 2009 to modify filling details.

Also of particular importance are the DAs associated demolition and reconstruction of the Connector Road, including new bridges spanning South Creek and Ropes Creek. At this time, DA17/0834 and DA18/0166 have been lodged with Penrith Council for demolition of the existing Connector Road and South Creek bridge respectively. DAs are also being prepared for imminent lodgement for the new Connector Road and South Creek bridge, which will form part of the same regional road network as the Dunheved Link Road / Links Road intersection subject of this DA. Similar DAs have been submitted to Blacktown Council in relation to demolition of the existing Connector Road and South Creek / Ropes Creek bridges, and will also be submitted for the replacement Connector Road and bridges.

The following DAs should also be considered. 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.

Table 1 Previous Development Applications

Penrith City Council – Development Applications

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

DA for the demolition of Connector Road between the Haulage Road through Dunheved and Central Precinct, Tree Removal and Contamination/Unexploded Ordinance Investigation Works, approved on 27/2/2018 by 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 (known as the Connector Road Stage 2 DA)

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

DA16/0888 for site remediation works across the Central Precinct was approved by Penrith City Council on 7/11/2017

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 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

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 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 (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

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

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.

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. Accordingly, the Planning Agreement will not be affected by this DA.

2.7 Pre-DA Advice

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. 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 Penrith and Blacktown Councils to discuss the change in the design on 17 November 2017, the existing Dunheved consent was also discussed during this meeting. 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.

3.0 Site Analysis

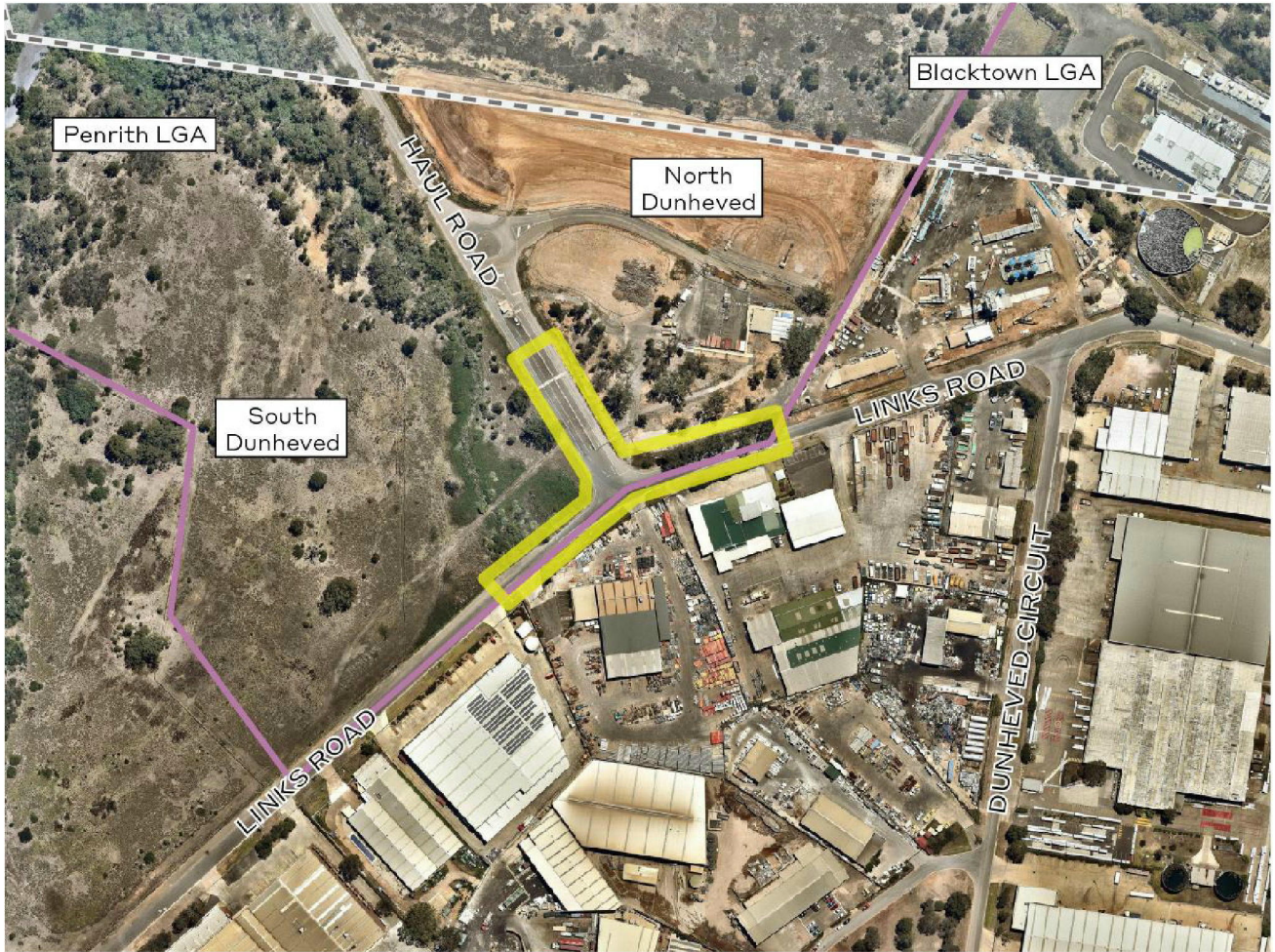
3.1 Site Location and Context


This application applies to the land currently occupied by the existing Dunheved Link Road and Links Road. The site is situated within the Dunheved Precinct and is located north of the Dunheved Industrial Precinct, between the Central Precinct and Ropes Crossing in St Marys. The site is located wholly within the Penrith City Council LGA. The site is legally described as Lot 1 in DP 1132380 and road reserve of Links Road.

The North and South Dunheved Precincts have a combined area of 30.3ha. The site is south of the historical East West Connector Road corridor between Ropes Crossing and the Central Precinct and will provide access to future Dunheved development to the east and west, as well as Links Road to the south. Links Road is the main road through to the Dunheved Industrial Park, which comprises a range of predominantly large-scale light and heavy industrial uses.

St Marys Land Limited owns the lots the subject of this application, and Penrith Council administers Links Road. 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 extent of the site subject of this DA, and its locational context is shown at **Figure 5**. A photo of the existing Links Road intersection is shown in **Figure 6**.



-  The Site
-  Dunheved Precinct

 NOT TO SCALE

Figure 5 The Site



Figure 6 Existing Links Road Intersection

3.2 Zoning

Under SREP 30, Dunheved Link Road is zoned employment land. The employment zone is intended to accommodate primarily employment generating land uses which are compatible with the surrounding future development.

Links Road is zoned IN1 General Industrial under the *Penrith Local Environmental Plan 2010*.

The construction of roads within the IN1 zone under the LEP 2010 and the Employment zone under SREP30 is permissible with development consent.

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. The previous SAS process has concluded the need for further contamination investigations under the road within the Dunheved Precinct however does not include Links Road, which is outside of the St Marys site boundary. Links Road has not been assessed or validated under the St Marys contamination management regime.

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 Development site as being suitable for residential development, including for vegetable garden and poultry use, i.e. the highest level of clearance available. This SAS excludes the areas covered by other statements (in the Eastern Precinct and under existing structures). That part of the proposed Links Road Intersection within the St Marys site is validated under this SAS as suitable for the future intended use.

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 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. 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 intersection within the Employment Zone and will confirm at that time that the site will be suitable for that future intended use (i.e. as a road).

3.4 Site Access

Construction access to the site will be afforded via Links Road. The proposed road upgrades will be constructed in stages to ensure there are no adverse impacts on access arrangements to surrounding sites (refer to **Section 5.7**).

3.5 Landform and Vegetation

Clearing of the trees has been approved under DA07/0494, including the vegetation located around the Dunheved Link Road / Links Road intersection. A Flora and Fauna Assessment for the St Marys Dunheved Precinct was conducted by Cumberland Ecology as part of DA07/0494, which is attached at **Appendix H**. An extract of that report is provided in **Figure 7**, illustrating the native vegetation communities that existed at the site at that time. Some of the trees around the Dunheved Links Road / Links Road intersection still exist, however the landform and vegetation along the road corridor and its immediate surrounds have been impacted by the construction and use of the haulage road, and the ongoing construction activities located in the Dunheved South Precinct.

The Cumberland Ecology report confirms a range of native fauna species are generally associated with the regrowth woodland and the creek lines across the study area, with these habitats almost entirely conserved within the land zoned Regional Park.

The surveys conducted in the Dunheved study area revealed that a low diversity of flora species exist throughout the Dunheved Precinct.

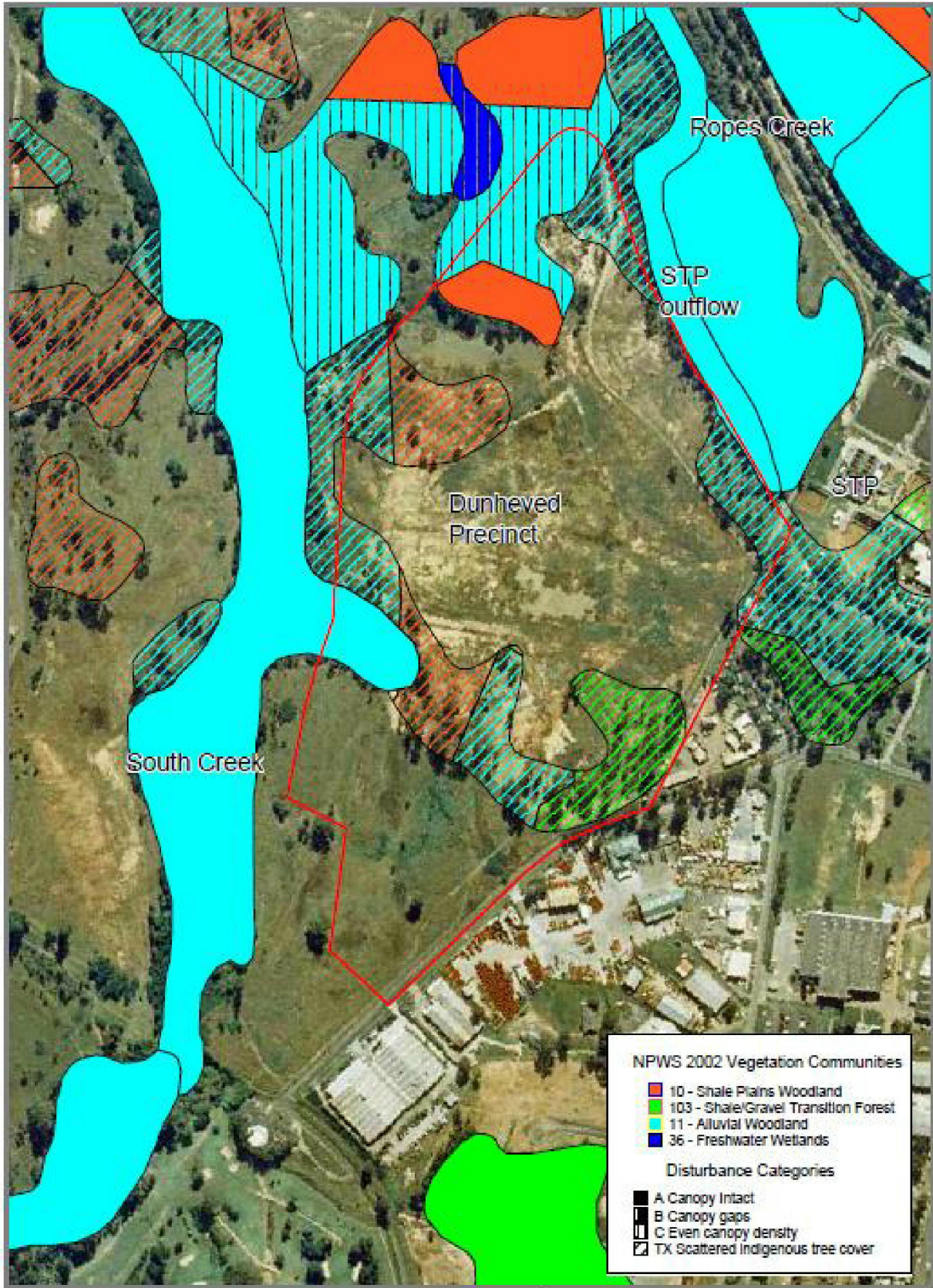


Figure 7 Location of vegetation communities

3.6 Aboriginal Archaeology and European Heritage

As above, this application affects land which currently contains the hardstand area within the Links Road and Dunheved Links 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. A Cultural Heritage Statement was prepared by Jo McDonald Cultural Heritage Management as part of DA07/0494, which is attached at **Appendix D**. The heritage assessment identified specific heritage items located within the Dunheved Precinct, as well as zones of potential archaeological deposit with specific management objectives for the different zones. An extract from the Aboriginal Heritage report accompanying DA07/0494 is provided in **Figure 7**.

The assessment concluded that there is generally low archaeological sensitivity within the Dunheved Precinct, with the subject site being within Zone 4, requiring no further archaeological investigation.

No items of European Heritage are situated within the corridor.



Figure 8 Location of Aboriginal Heritage Items and Areas of Significance

3.7 Flooding

A detailed flood model has been prepared that takes into account the filling of the Dunheved Precinct, the filling of the Central Precinct and associated regional open space, and the replacement of the bridges over South Creek and Ropes Creek. The flood model report is provided in **Appendix C**. It identifies that a localised low spot exists in Links Road and the footpaths on either side. Flood water may flow through the end of the Dunheved fill area and onto nearby industrial properties. To mitigate these flood impacts, a temporary bund is proposed to be constructed as part of a separate development application lodged with Penrith Council on 8 March 2018 (DA18/0166) and additional mitigation measures have been implemented, as discussed in **Section 5.2**.

3.8 Soil and Groundwater

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.

The soil 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.

3.9 Surrounding Development

The surrounding development to the Dunheved Link Road comprises of:

- the future residential development of the Central Precinct to the west of the road alignment beyond South Creek and the Regional Park;
- East West Connector Road and unmanaged land zoned Regional Open Space to the north;
- St Marys Sewerage Treatment Plan to the east and Dunheved Industrial Estate to the immediate south;
- low density residential development in Ropes Crossing to the north east;
- a 55ha golf course known as Dunheved Golf Club to the southwest; and
- Dunheved Industrial estate to the south, which includes a number of light industrial businesses including Orange Hire, Gulf Western Oil and ToxFree.

4.0 Description of Proposed Development

The DA seeks approval for the demolition of the existing haul road to allow the construction of the Dunheved Link Road intersection comprising:

- importation and reuse of material to elevate the road above flood levels;
- widening of existing road footprint;
- installation of road underlay;
- provision of new pavement and street lighting;
- provision of pedestrian and cycle paths along the road corridor;
- Services upgrades where required;
- Stormwater upgrades as required; and
- Street lighting upgrade to suit design alignment.

The intersection with the existing Links Road involves the incorporation of a driveway which is located at 84 Links Road. This will be incorporated as the fourth leg of the roundabout.

The design layout has gone through a number of amendments due to external reviews and requests by external stakeholders. The proposed Dunheved Links Road intersects with the existing Links Road to the south, via the proposed roundabout, which will ultimately provide access to surrounding precincts.

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

4.1 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 relatively flat at 20.1m AHD at the roundabout to 20.6m AHD at the connection of the intersection to the Dunheved Link Road in the north. 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 at the intersection of Link Road will be undertaken, with the following volumes:

- 90m³ cut;
- 1780m³ fill; and
- 1690m³ balance.

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.

4.2 Road Specifications

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

The Dunheved Road intersection has been designed to accommodate the following vehicles:

- 14.5m long rigid bus;
- 19m semi-trailer; and
- B – double.

The horizontal alignment of the 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 that was approved as part of the Dunheved subdivision application and haul road construction. The haul road was approved under DA14-0766 by Penrith Council and will be demolished as per the consent.

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 at the intersection to increase road safety. A cycle way is proposed along the Dunheved Link Road.

Concrete shared paths will contain a maximum of 2% cross fall for the Dunheved Link Road and a maximum width of 2.5m for all roads.

4.3 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.

4.4 Stormwater Management

The proposed stormwater management strategy for the 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 pipes where required.

Water quantity and quality is being managed via controls included as part of the subdivision development and haul road construction approved previously. Specifically, 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.

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. Any residual increase in the pollutant load generated as a result of the development is expected to be managed via consideration with respect to the regional stormwater strategy in achieving the outcomes of SREP30 with respect to water quality. Water quality requirements are managed through the Dunheved development consent DA07/0494. The existing approved basin as part of DA07/0494 is unaffected by the proposed intersection, bar a minor encroachment of the earthworks batter into one corner – this is minor and can be resolved by a minor adjustment to the basin footprint when constructing the retaining wall.

4.5 Contamination Management

Prior to the temporary haul road, there was no hardstand located along the road corridor and as such the existing SAS CHK1/001 identifies the area under the proposed footprint of the Dunheved Link Road as being cleared and validated as suitable for its future intended use.

4.6 Construction Management

Construction activities would be undertaken between 7:00am and 6:00pm Monday to Friday and between 8:00am and 1:00pm Saturday. No work is to take place on Sunday or public holidays. Night works may be required to minimise disruptions to traffic. Liaison and coordination with Council processes will be conducted and all approvals sought in accordance with Councils traffic requirements if this is determined as required.

Access for construction will be via Links Road as well as Jordan Springs Boulevard, Lakeside Parade and the Jordan Springs Connector Road (also known as Wianamatta Parkway) to the west. This will be managed as per the construction timeframe outlined in **Section 5.7**.

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.

4.6.1 Construction Staging

The construction of the intersection in the context of the delivery of the surrounding regional road network is to be staged as follows (see **Figure 8**):

- 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 3. Stage 3 is anticipated to commence construction in September 2019 and conclude May 2020.

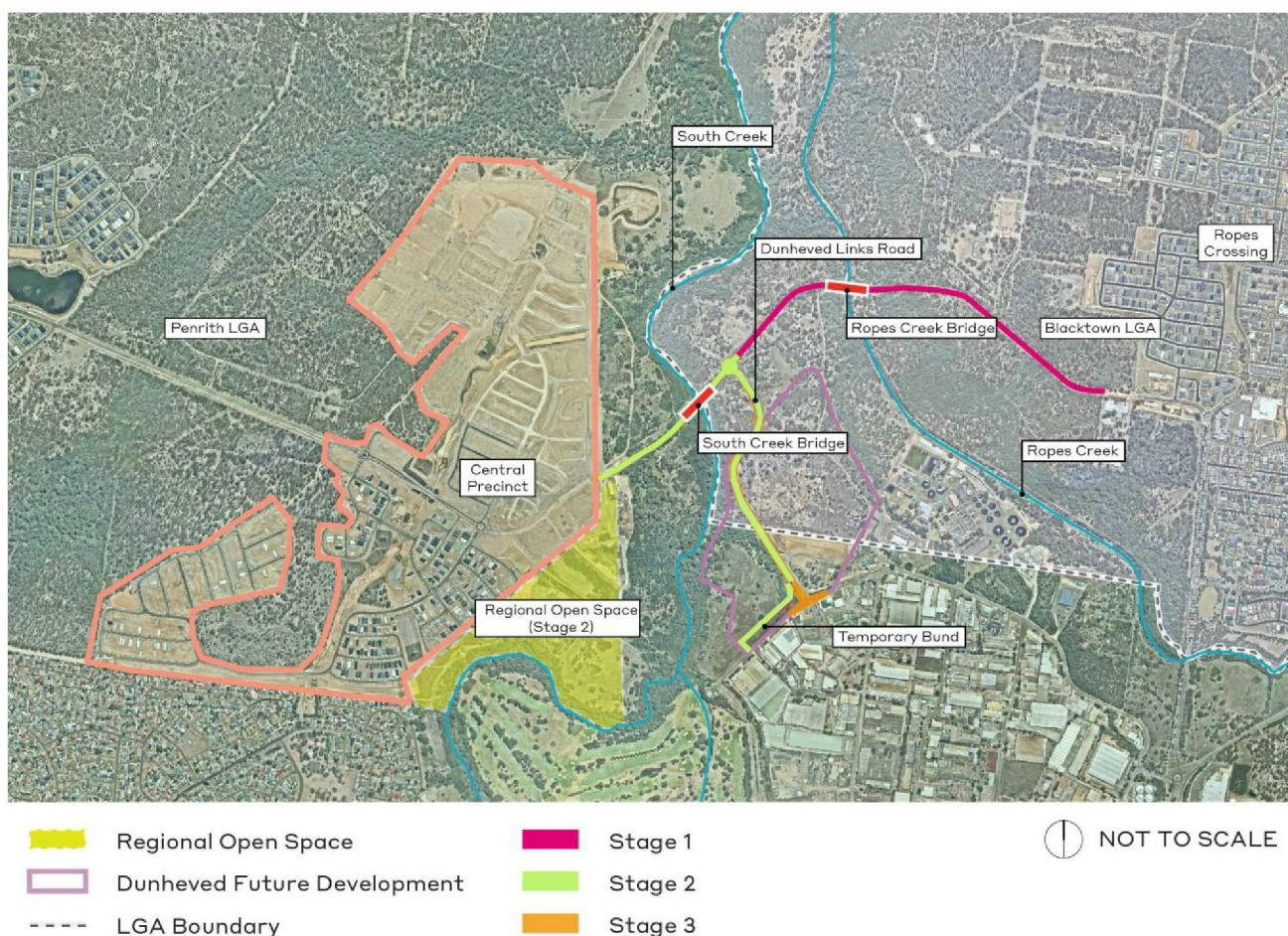


Figure 9 Connector Road Construction Staging Plan

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);
- Dunheved Precinct Plan;
- St Marys Development Agreement and St Marys Planning Agreement; and

- Penrith LEP 2010 and Development Control Plan 2014.

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 Dunheved Link Road corridor is zoned Employment under SREP 30 which permits any development compatible with surrounding development and to provide for a wide range of employment development, which are accessible from within and outside the land to which this plan applies.

The proposed works support the key performance objectives outlined within Part 5 of SREP 30. **Table 2** outlines the consistency with SREP 30.

Table 2 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 construction is fully contained within the Employment Zone and will therefore not have any adverse impacts on the conservation values of 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 construction is fully contained within the Employment 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 construction of the Dunheved Link Road / Links Road intersection represents the final major road construction to achieve the ultimate road network as envisaged for the St Marys site. Connectivity to the Dunheved Precinct, Central Precinct and Ropes Crossing Precinct will be made possible through this intersection.
(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 construction of the road will allow for access to the surrounding residential precincts, providing a range of services and retail options. The Links Road intersection will ultimately serve the Dunheved Precinct. Future development in the Central Precinct and Ropes Crossing Precinct will allow choice for residents comprising a variety of retail and commercial uses to support the wider St Marys site.
39 Employment Zone	
2(a) any development (except that identified by this plan as exempt or by paragraph (b) as prohibited) is allowed only with the consent of the consent authority.	The site is zoned Employment and involves construction of the Dunheved Link Road intersection. The proposed intersection is permitted with consent within the Employment Zone. The proposed intersection is also consistent with the objectives of the Employment zoned as it will facilitate a connection to the southern portion of the Dunheved Precinct, providing access to the Precinct, as well as providing for a regional road network connecting Dunheved and the broader road network (i.e. Links Road) to the Eastern, Central and Western Precincts as envisaged under SREP 30.
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.

SREP 30	Assessment
52 Tree Preservation	
<p>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.</p>	<p>The Dunheved Precinct is relatively clear and has undergone extensive clearing in the past. As such, the clearing of vegetation and associated works for the proposed development is unlikely to have a significant impact upon threatened species, communities and habitat conservation. The impacts of vegetation clearance will be balanced by the creation and maintenance of the Regional Park in which habitats for all threatened flora and fauna are known to occur. A copy of the applicable ecological assessments is provided at Appendix H for reference purposes.</p> <p>The proposed development seeks to remove a number of trees within the road alignment. The Ecological Report prepared by Cumberland Ecology at Appendix H confirms that the site is located within a highly degraded area, primarily with exotic grassland that has experienced high levels of disturbance to the original soil and vegetation structure. As such, due to the conditions of the existing vegetation on the subject site, the proposed clearing is not likely to threaten or have capacity to threaten any habitats or species. As well, much larger areas of vegetation will be retained within the Regional Park.</p>

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 Dunheved Precinct Plan

The proposed construction of the Dunheved Link Road intersection will allow for the orderly and efficient development of the St Marys Site in line with the aims and objectives of the relevant Precinct Plans, while providing access to the north east and west towards Central Precinct and Ropes Crossing. This upgrade will support the delivery of regional road infrastructure to service the Dunheved Precinct and other surrounding precincts of the St Marys Site and allow for the future development to continue in accordance with the relevant Precinct Plans.

The provision of the regional road infrastructure connecting Links Road to the East-West Connector Road via Dunheved, and providing access to the Eastern, Western and Central Precincts is documented in all of the Precinct Plans, including the Dunheved Precinct Plan. The proposed construction is consistent with the Dunheved Precinct Plan, providing connections with the surrounding areas to enable movement between the precincts whilst providing flexibility for future transport connections.

5.1.5 Penrith Local Environmental Plan 2010

The works within the Links Road road reserve are zoned as IN1 General Industrial which permits development for the purpose of a road with consent. The site is also located within 'flood planning land' under the LEP, requiring development consent.

The application is generally consistent with the requirements of the DCP 2015, with the intersection design being the subject of numerous meetings with Council's Traffic and Engineering Departments. Under the DCP 2015, the site is identified as being within Precinct 1 of Part D4 Industrial Development.

Part C10 of the DCP relates to Transport, Access and Parking. Links Road is not identified as a Key Transport Corridor under this part.

The intersection has been designed to enable forward entry and exit into adjacent industrial properties. Swept paths are shown within the Engineering Plans at **Appendix A**.

5.2 Flooding and Stormwater

Flooding impacts in South Creek has been revised as a result of the staged delivery of the East-West Connector Road. Specifically, the refined flood model includes the following parameters (which are illustrated in **Figure 10**):

- 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 East-West 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 berm 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 to prevent back flow of flood waters into the industrial area to the south of Links Road;
- Removal of stockpiles within the Regional Open Space North (with their removal approved under DA16/0888 approved by Penrith City Council), and filling of Regional Open Space areas; and
- Filling of the ROS South.

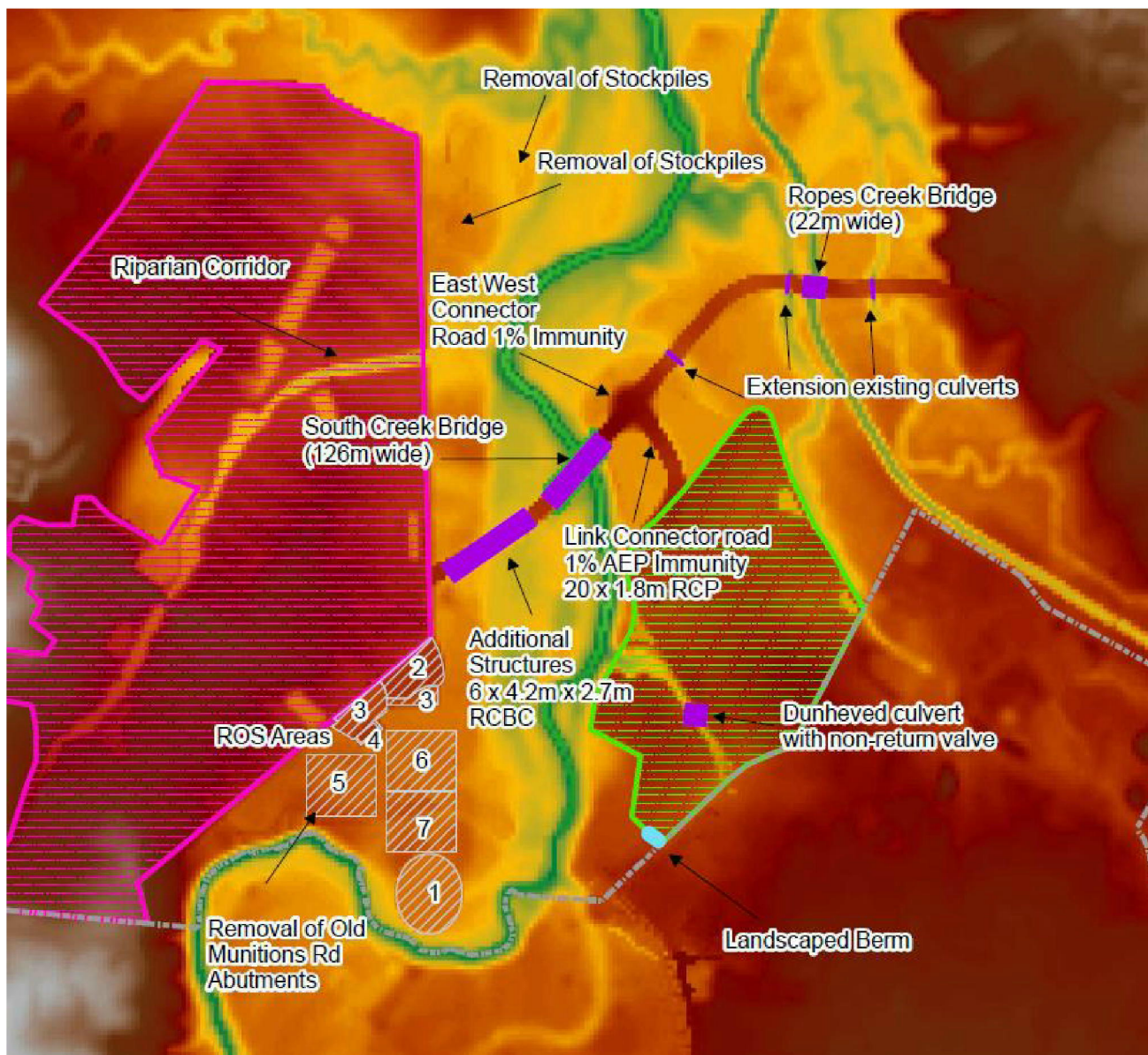


Figure 10 The revised model includes a number of refinements as the project has evolved

Source: Jacobs

5.2.1 Flooding impacts of development

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 Connector Road Stage 2 DA – DA18/0166). 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 Connector Road 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 Connector Road Stage 2 DA – DA18/0166) achieving 5% AEP and 20% AEP immunity.

Whilst the proposed road and intersection construction are not significant contributors in the flood model, they have been modelled and assessed as part of the broader flood model refinements arising from the new East West Connector Road and associated bridges over South Creek and Ropes Creek. The flood modelling indicates that the proposed design of the East West Connector Road and associated bridges over South Creek and Ropes Creek 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, as shown in **Table 3**.

Table 3 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, as shown in **Table 4**.

Table 4 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 Connector Road Stage 2 DA – DA18/0166). 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 proposed works (and those works being completed as part of the Connector Road Stage 2 DA, subject to DA18/0166) provides for an outcome consistent with and in some parts better than that approved under the DA14/1228 for the landfilling and bulk earthworks at Central Precinct.

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 road upgrade 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 across the whole St Marys site, 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%.

It should be noted that, for the section of the Dunheved Link Road within the Dunheved Precinct, water quantity and quality is being managed via controls included as part of the future subdivision development approved previously.

Stormwater management

As identified in the Civil Engineering Report, treatment devices will be implemented within the road corridor to manage the pollutants expected 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.

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

The stormwater basin to the west of the intersection as approved under DA07/0494 is relatively unaffected by the intersection works, excluding a minor encroachment of the earthworks batter into one corner. This represents a minor refinement to the basin and can be resolved by a minor adjustment to the basin footprint when constructing the retaining wall. DA07/0494 Condition 44 requires a concept design for stormwater quality and detention facilities

be submitted to Council prior to the issue of the relevant construction certificate for each lot. That process can capture the minor adjustment required to the basin footprint at the time that the Dunheved Precinct civil works are to be carried out in accordance with DA07/0494. As such, the Stage 3 Connector Road works proposed under this development application for the Dunheved Link Road / Links Road Intersection will not affect the future development of the Dunheved Precinct as approved under and in accordance with DA07/0494.

5.3 Flora and fauna

Clearing of vegetation for the construction of the Dunheved Link Road / Links Road intersection has already been assessed and approved as part of DA07/0494. The clearing of vegetation associated with the development is not likely to threaten or have the capacity to threaten the survival of species in the locality as discussed in the Flora and Fauna Assessment that accompanied DA07/0494 and provided at **Appendix H**. The report concludes that the impacts of vegetation clearance will be balanced by the creation and maintenance of the 900ha Regional Park in which habitats for all threatened flora and fauna are known to occur. As such, the clearing of vegetation and associated works for the proposed development is unlikely to have a significant impact upon threatened species, communities and habitat conservation significance.

Whilst the land formally adjoins the Regional Park, the location of the construction works for the Dunheved Link Road / Links Road intersection is over 200m from the boundary with the Regional Park, and there will be no direct or indirect impacts on vegetation or habitats within the Regional Park. Ongoing consultation will continue to occur with National Parks and Wildlife Service as part of the broader delivery of the East-West Connector Road, as documented in the attached correspondence (see **Appendix G**). To ensure off-site impacts on vegetation in the Regional Park zone are avoided or minimised as part of these intersection works, mitigation measures will be implemented as appropriate and in consultation with NPWS, including temporary chain wire and sediment fencing.

5.4 Traffic and Transport

A Traffic Impact Assessment (TIA) summary has been prepared by WSP (see **Appendix I**). The TIA assesses the anticipated traffic of the Central Precinct and its impact on the road network in the Ropes Crossing, Central and Dunheved precincts in the broader context of the upgrades to the East-West Connector road and associated South Creek and Ropes Creek bridges. The assessment builds on traffic analysis completed for a proposed amendment of SREP 30 to rezone part of the Central Precinct (see **Appendix K**). The traffic assessment assumes the 38ha of employment zoned land within the Central Precinct has been rezoned to residential.

5.4.1 Intersection Performance

Intersection performance of the key intersections for the year 2021 have been modelled for the Connector Road and Dunheved Link Road as shown in **Table 5**.

Table 5 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 / Dunheved Link Road (Stage 2 DA)	A	9	34	B	22	143
Dunheved Link Road / Links Road (Stage 3)	A	6	32	A	8	29

Source: WSP

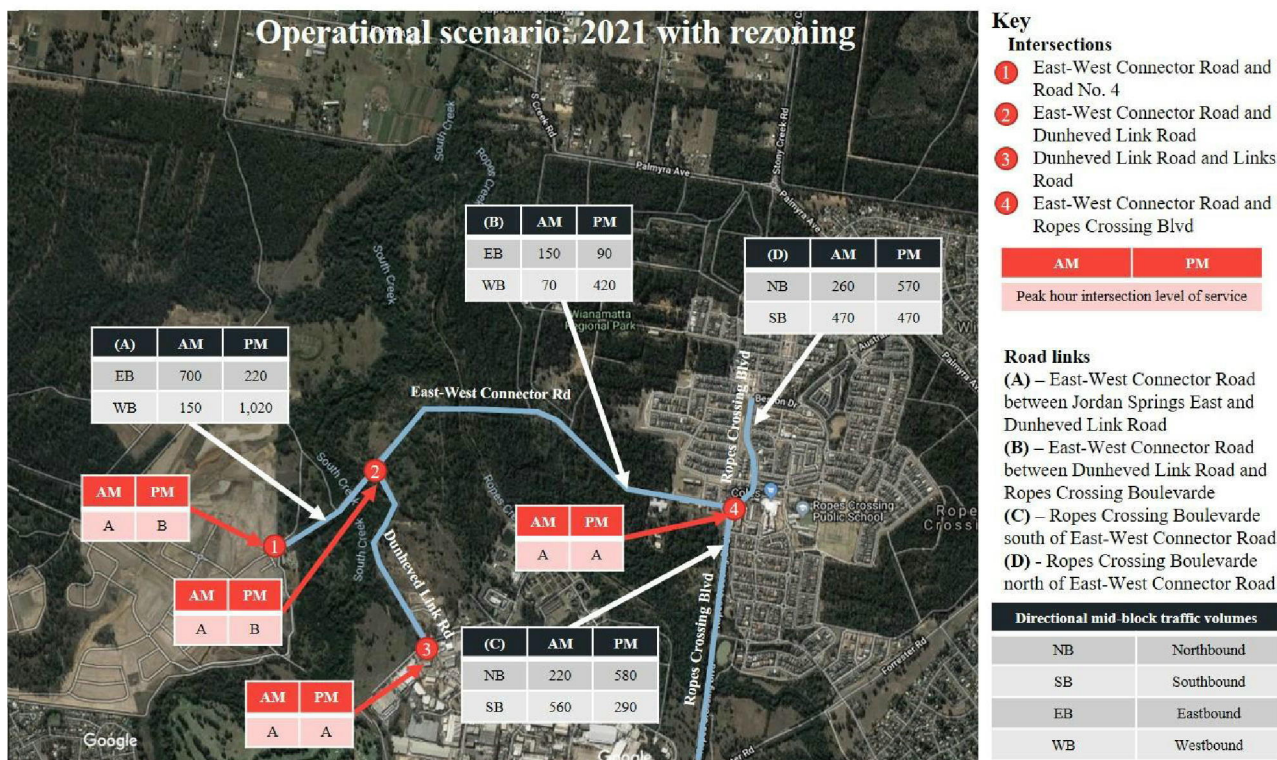


Figure 11 Intersection performance in 2021 across the wider site

Source: WSP

The report concludes that the Dunheved Link Road and Links Road intersection will perform within capacity and at good levels of service, with minimal queuing and vehicle delay.

5.4.2 Concept Design

The Road Safety Audit Included at **Appendix J** provides a Concept Design Road Safety Audit (RSA) 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 6** below.

Table 6 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 site 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 has issued SASs for the St Mary’s site.

The majority of the site (covered by CHK001/6) is considered suitable for the intended land use and will not require any further remediation work. The areas of the road corridor forming the Links Road Intersection have been validated under CHK001/1, as prior to construction of the temporary haulage road the corridor was not under hardstand and therefore able to be validated as suitable for its future intended use.

Links Road sits outside of the St Marys site and as such does not fall under the provisions of SREP30 in relation to contamination management. Any contamination identified within Links Road would be addressed appropriately and in accordance with the provisions of the State Environmental Planning Policy No.55 – Remediation of Land, noting that the road works do not constitute a change in land use within the road reserve and the land is not a type specified in clause 7(4) of that SEPP. There is no reason to believe that the site has been used for a purpose defined in the contaminated land planning guidelines or will be used for any other purpose other than a road post-development of the intersection.

5.6 Heritage

5.6.1 Indigenous

The Dunheved Link Road /Links Road intersection construction works area is identified as being within Management Zone 4, indicating no likelihood of heritage items or significance and requiring no further assessment action. Notwithstanding, pursuant to DA 07/0494 an AHIP is required for the development works across the Dunheved site, and the requirement for this AHIP will remain.

5.6.2 European

As detailed in Section 2.3.7, no archaeological or European heritage items have been identified in the vicinity of the Dunheved Link Road/Links Road intersection construction works area. 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 would be undertaken between 7:00am and 6:00pm Monday to Friday and between 8:00am and 1:00pm Saturday. No work is to take place on Sunday or public holidays. Any construction work outside these hours would be subject to prior consultation with Penrith Council. Night works may be required at times to minimise traffic disruptions, however will be discussed with Council if necessary, and the relevant approvals obtained.

The nearest residential property to the work site is located in Ropes Crossing 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 and Dunheved Industrial Precinct 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 and the Central Precinct, 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:

- allows for connectivity to the Dunheved Precinct to the south;
- 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;
- 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 construction of the Dunheved Link Road intersection 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 Penrith Council.

6.0 Conclusion

The proposed intersection and road construction 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 Dunheved 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.