

# Environmental Assessment Report State Significant Site Listing, Concept Plan and Stage 1 Project Application

## North Penrith

### State Significant Site, Concept Plan and Stage 1 Project Application

Submitted to  
Department of Planning  
On Behalf of Landcom

November 2010 ■ 09414

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This report has been prepared by: Amanda Harvey

Signature



Date 06/12/10

This report has been reviewed by: Stephanie Ballango

Signature



Date 06/12/10

# Statement of Validity

This Environmental Assessment has been prepared and submitted under Part 3A of the *Environmental Planning and Assessment Act 1979* (as amended) by:

## Environmental Assessment

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In respect of	Study and Concept Plan Application

## Project Application

Applicant name	Landcom
Address address	PO Box 237, Parramatta NSW 2124
Land to be developed	North Penrith Development Project Site
Proposed development	Refer to Environmental Assessment Report

Environmental Assessment	An Environmental Assessment (EA) is attached
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Certificate	I certify that I have prepared the content of this Environmental Assessment and to the best of my knowledge:
-------------	--------------------------------------------------------------------------------------------------------------

- It is in accordance with the Environmental Planning and Assessment Act and Regulation.
- It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.

Signature



Name	Stephanie Ballango
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Date	6 December 2010
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B	North Penrith Draft Development Control Plan <i>JBA Planning</i>
C	Quantity Surveyors Certificates <i>Currie and Brown</i>
D	State Significant Site Amendment Explanatory Note and Supporting Plans <i>JBA Planning</i>
E	Stage 1 Project Application Drawings <i>Various</i>
F	Director General's Environmental Assessment Requirements <i>Department of Planning</i>
G	North Penrith Social Sustainability Due Diligence Assessment <i>Elton Consulting</i>
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### Volume 2

I	North Penrith Land Use and Economic Assessment\ <i>SGS Economics and Planning</i>
J	Site Survey <i>Craig and Rhodes Surveyors</i>
K	Contamination Report <i>Geotechnique Pty Ltd</i>
L	Site Auditor Statements <i>Environ</i>
M	Geotechnical and Groundwater Assessment <i>Geotechnique Pty Ltd</i>
N	Stormwater and Drainage Report <i>Worley Parsons</i>
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P	Flora and Fauna Assessment <i>Ecological Australia</i>

- Q** Statement of Heritage Impact  
*Tanners Architects*
- R** North Penrith Defence Site Concept Plan Heritage Interpretation Strategy  
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- S** North Penrith Lands Non-Indigenous Archaeology  
*Casey & Lowe Pty Ltd*
- T** Brief Reassessment of the Site (Aboriginal Cultural Heritage)  
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- U** Aboriginal Heritage Management Plan for Site # 45-5-2491  
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- V** Transport Mobility and Accessibility Plan (TMAP)  
*Parsons Brinckerhoff*
- W** Consideration of Planning Controls, Strategies and Guidelines  
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- X** North Penrith Village Environmental Assessment Landscape Concept Report  
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- Y** Open Space Maintenance Schedule  
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- FF** Public Art Strategy: Stage 1 Project Application  
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- GG** Preliminary Construction Environmental Management Plan  
*National Project Consultants/Worley Parsons*
- HH** Construction Traffic Management Plan  
*Worley Parsons*
- II** North Penrith Defence Site Project Application Statement of Heritage Impact  
*Tanners Architects*

## Executive Summary

Landcom (the proponent) is seeking a rezoning of approximately 40.6ha of land (known as North Penrith), a Concept Plan approval for development of the site for approximately 1,000 dwellings, mixed use and industrial development, and a Project Application for the first stage of the development for subdivision and infrastructure works.

The Capital Investment Value of the overall project value is in the order of \$423 million.

### The Site

The North Penrith site is located immediately north of the centre of the Penrith, approximately 50km west of Sydney CBD. The site comprises a large area of vacant former military land and adjoins part of the Penrith urban residential area that is bound by Coreen Avenue to the north, The Crescent to the south and the suburb of Lemongrove to the east.

The majority of the site is currently owned by the Commonwealth (Department of Defence). The Project is intended to be carried out once ownership or control has passed to the State.

### Concept Plan

Landcom is seeking Concept Plan approval for a transit oriented and cohesive mixed uses development incorporating residential, retail, commercial, business, civic, community, industrial and recreation uses, specifically including:

- land use type and distribution;
- approximately 900 – 1,000 dwellings, comprising a minimum of:
  - 100 seniors living/aged care dwellings;
  - 44 affordable/social housing dwellings; and
  - 44 adaptable dwellings;
- a range of dwelling typologies, building heights and densities;
- a Village Centre located adjacent to the Penrith Railway Station and centred around a public square (Station Square);
- up to approximately 12,500m<sup>2</sup> of retail, business and commercial floor space;
- the retention and protection of land for Thornton Hall, a 19<sup>th</sup> Century homestead building and its associated curtilage;
- appropriate interpretation of the European and Aboriginal heritage values of the site including retention of Thornton Hall;
- an open space network (including water bodies) of approximately 7ha including the general location, level of embellishment and function of passive and active areas to serve the future residential and worker population;
- a road network and hierarchy for the site and a pedestrian, cycle and public transport network;
- a water cycle management strategy for the development; and
- strategies for the provision of other associated infrastructure including water and sewer (including a new sewer pumping station), power, telecommunications and gas.

The Concept Plan also proposes:

- a Development Control Plan (DCP) to guide future built form at North Penrith; and
- a developer contributions framework and a proposed governance arrangement and funding mechanism for infrastructure and public open space.

### State Significant Site Listing

To support the Concept Plan, Landcom is seeking the Minister for Planning introduce a new planning framework for the site by listing North Penrith as a State Significant Site (SSS) in Schedule 3 of the Major Development SEPP to:

- introduce new land use zones and objectives using the Department of Planning's Standard LEP Template, including:
  - R1 General Residential
  - R2 Low Residential
  - B4 Mixed Uses
  - IN2 Light Industrial
  - RE1 Public Recreation
- identify principal development standards to broadly guide yield and density;
- identify heritage items and nominate matters for consideration that future development to, on or within the vicinity of the heritage items must address (this will be affected through provisions in a DCP); and
- identify future consent role and approvals requirements/responsibilities.

### Project Application – Stage 1

A Project Application for the first subdivision stage of the overall North Penrith development is lodged with the Concept Plan application. The Stage 1 Project Application seeks approval for:

- subdivision to create 120 lots comprising:
  - 106 future residential lots;
  - 1 Village Centre lot;
  - 6 super lots;
  - 3 future open space lots, including 1 lot to accommodate the community centre;
  - 1 future industrial lot;
  - 1 sewer pumping station lot; and
  - 2 residue lots;
- site establishment and perimeter security measures;
- establishment of environmental and safety controls and traffic control measures;
- preparatory works, including small building demolition, trees/shrub removal, topsoil stripping and stockpiling for later reuse and the disposal of unsuitable topsoil material, and taking up and stockpiling existing concrete and asphalt hardstands and roads for later reuse in other stages of the construction works;
- bulk earthworks – cut and fill, including the importation of material to raise levels;
- sections of the retaining wall next to the Penrith Training Depot;
- roads and road intersections;

- drainage and stormwater management infrastructure;
- utilities servicing infrastructure, viz electrical, sewerage (including a sewer pumping station), telecommunications, potable water and gas;
- lots formation;
- minor works external to the site, such as footpaths;
- construction of the community pavilion;
- landscaping;
- erecting informative signage; and
- site de-establishment and handover.

## Strategic Justification

The broad strategic justification for the overall project is that it will:

- accommodate about 1,800 people;
- deliver approximately \$882 million in expenditure during the construction phase of the development including \$419 million in direct expenditure and \$462 million in flow on benefits;
- deliver approximately \$349 million in expenditure during the operational phase of the development including \$202 million in direct expenditure and \$148 million in flow on benefits;
- create 3,795 construction jobs (direct and flow on) and 1,450 operational jobs (direct and flow on) of which 770 jobs will be provided on the site; and
- assist in the achievement of Department of Planning (DoP) targets for the provision of housing and jobs and meet State and Local government planning objectives for the provision of 'seniors housing', allowing for a range of housing types to meet the needs of a diverse population, intensification around centres and transit oriented development, and the promotion of increased housing affordability; and
- locate housing and employment opportunities in close proximity to well connected public transport services, while contributing to improve associated public transport infrastructure.

## Environmental Assessment

Detailed investigations of the site constraints and opportunities demonstrate that the site is relatively free of major physical limitations for development. Land to be zoned for residential, mixed use and industrial uses accords with these constraints and opportunities, and the findings, conclusions and recommendations of detailed technical investigations.

The Concept Plan, SEPP Amendment and Project Application proposals present a holistic and integrated outcome having regard to flooding, heritage, stormwater management and other environmental outcomes, while enabling future residential, commercial and industrial development to work within these aspects.

This report demonstrates that the proposed project is satisfactory with respect to:

- State and local legislative requirements, planning instruments and policy;
- transport and accessibility, including demonstration that the cumulative impacts of traffic growth can be appropriately mitigated and management through a series of road network improvements;
- conservation and reinterpretation of heritage values across the site, both with respect to Aboriginal and Non-Aboriginal heritage aspects;
- flood, drainage and stormwater management, including consideration of appropriate flood impact mitigation measures and evacuation procedures, such that the project will not contribute to any cumulative impact in terms of flood extent or levels within the catchment;
- appropriate management of contamination, land stability, erosion and ground water impacts; and
- landscape and visual impacts, such that the development will rejuvenate the site's aesthetic appearance and provide various opportunities for passive and active recreation opportunities.

## 1.0 Introduction

On 9 February 2010, pursuant to Clause 6 of State Environmental Planning Policy (Major Development) 2005 (the Major Development SEPP), the Minister for Planning (the Minister) formed the opinion that the North Penrith Project constitutes a Major Project under Part 3A of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) and authorised the submission of a Concept Plan for the site. In doing so, the Minister also formed the opinion that a State Significant Site (SSS) Study be undertaken to determine whether to list the site in Schedule 3 of the Major Development SEPP.

This report comprises a:

- study to assist the Minister in determining whether North Penrith should be included as a SSS in Schedule 3 of the Major Development SEPP; and an
- Environmental Assessment (EA) for a Part 3A Concept Plan for the site, and for the carrying out of certain detailed aspects of the Project.

The report fulfils the requirements issued by the Director General on 2 July 2010 for the preparation of the SSS Study and Concept Plan application. It also fulfils the requirements for a Stage 1 Project Application, comprising subdivision of land, and the carrying out of infrastructure and civil works.

The North Penrith site is located immediately north of the centre of the Penrith, approximately 50km west of Sydney CBD. The site comprises a large area of vacant former military land and adjoins part of the Penrith urban residential area that is bound by Coreen Avenue to the north, The Crescent to the south and Lemongrove to the east.

The majority of the site is currently owned by the Commonwealth (Department of Defence) and was formerly used as an army camp up until the 1990s when it was identified as surplus to Defence requirements. Since this time it has been progressively vacated. The Project is intended to be carried out once ownership or control has passed to the State.

Landcom is the Proponent for the proposal. Landowners' consents to the lodgement of the Concept Plan, Stage 1 Project Application and SSS are submitted under separate cover.

A Capital Investment Value Report prepared by Currie and Brown is included at **Appendix C** and indicates that the overall project value is in the order of \$423 million.

Landcom is seeking Concept Plan approval for a transit oriented and cohesive mixed uses development incorporating residential, retail, commercial, business, civic, community, industrial and recreation uses, including:

- land use type and distribution;
- approximately 900 – 1,000 dwellings, comprising a minimum of:
  - 100 seniors living/aged care dwellings;
  - 44 affordable/social housing dwellings; and
  - 44 adaptable dwellings;
- a range of dwelling typologies, building heights and densities;
- a Village Centre located adjacent to the Penrith Railway Station and centred around a public square (Station Square);
- up to approximately 12,500m<sup>2</sup> of retail, business and commercial floor space;
- the retention and protection of land for Thornton Hall, a 19<sup>th</sup> Century homestead building and its associated curtilage;

- appropriate interpretation of the European and Aboriginal heritage values of the site including retention of Thornton Hall;
- an open space network (including water bodies) of approximately 7ha including the general location, level of embellishment and function of passive and active areas to serve the future residential and worker population;
- a road network and hierarchy for the site and a pedestrian, cycle and public transport network;
- a water cycle management strategy for the development; and
- strategies for the provision of other associated infrastructure including water and sewer (including a new sewer pumping station), power, telecommunications and gas.

The Concept Plan also proposes:

- a Development Control Plan (DCP) to guide future built form at North Penrith; and
- a developer contributions framework and a proposed governance arrangement and funding mechanism for infrastructure and public open space.

The series of drawings illustrating the Concept Plan for which approval is sought is included at **Appendix A**.

To support the Concept Plan, Landcom is seeking the Minister for Planning introduce a new planning framework for the site by listing North Penrith as a SSS in Schedule 3 of the Major Development SEPP as outlined in Section 7 and **Appendix D**) to:

- introduce new land use zones and objectives using the Department of Planning's Standard LEP Template, including:
  - R1 General Residential
  - R2 Low Residential
  - B4 Mixed Uses
  - IN2 Light Industrial
  - RE1 Public Recreation
- identify principal development standards to broadly guide yield and density;
- identify heritage items and nominate matters for consideration that future development to, on or within the vicinity of the heritage items must address (this will be affected through provisions in a DCP); and
- identify future consent role and approvals requirements/responsibilities.

A Project Application for the first subdivision stage of the overall North Penrith development has been lodged with the Minister concurrently with this Concept Plan application (refer to Section 11 and **Appendix E**). The Stage 1 Project Application seeks approval for:

- subdivision to create 120 lots comprising:
  - 106 future residential lots;
  - 1 Village Centre lot;
  - 6 super lots;
  - 3 future open space lots, including 1 lot to accommodate the community centre;
  - 1 future industrial lot;
  - 1 sewer pumping station lot; and
  - 2 residue lots;



- site establishment and perimeter security measures;
- establishment of environmental and safety controls and traffic control measures;
- preparatory works, including small building demolition, trees/shrub removal, topsoil stripping and stockpiling for later reuse and the disposal of unsuitable topsoil material, and taking up and stockpiling existing concrete and asphalt hardstands and roads for later reuse in other stages of the construction works;
- bulk earthworks – cut and fill, including the importation of material to raise levels;
- sections of the retaining wall next to the Penrith Training Depot;
- roads and road intersections;
- drainage and stormwater management infrastructure;
- utilities servicing infrastructure, viz electrical, sewerage (including a sewer pumping station), telecommunications, potable water and gas;
- lots formation;
- minor works external to the site, such as footpaths;
- construction of the community pavilion;
- landscaping;
- erecting informative signage; and
- site de-establishment and handover.

The overall development will:

- accommodate about 1,800 people;
- deliver approximately \$882 million in expenditure during the construction phase of the development including \$419 million in direct expenditure and \$462 million in flow on benefits;
- deliver approximately \$349 million in expenditure during the operational phase of the development including \$202 million in direct expenditure and \$148 million in flow on benefits;
- create 3,795 construction jobs (direct and flow on) and 1,450 operational jobs (direct and flow on) of which 770 jobs will be provided on the site; and
- assist in the achievement of Department of Planning (DoP) targets for the provision of housing and jobs and meet State and Local government planning objectives for the provision of 'seniors housing', allowing for a range of housing types to meet the needs of a diverse population, intensification around centres and transit oriented development, and the promotion of increased housing affordability; and
- locate housing and employment opportunities in close proximity to well connected public transport services, while contributing to improve associated public transport infrastructure.

This report has been prepared by JBA Urban Planning Consultants Pty Ltd (JBA) for Landcom. It is based on information provided by Landcom and supporting technical documents prepared by an expert consultant team. This report:

- provides an analysis of the site and its immediate surrounds;
- establishes the basis for change to the existing zoning and planning provisions for the site and includes a proposal to amend the Major Development SEPP as it relates to the site;

- presents a Concept Plan for the future urban development of the site; and
- provides an assessment of the environmental impacts of the proposed land use change, Concept Plan and Stage 1 Project Application in accordance with the Director-General's Environmental Assessment Requirements.

**Volume 1** of the EAR is structured as follows:

**Section 1:** Introduction, background, assessment and approvals process.

**Section 2:** Strategic justification for the project.

**Section 3:** Analysis of the site and its surrounds.

**Section 4:** A summary of the consultation undertaken to date in the preparation of the project.

**Section 5:** The project's strategic and statutory context.

**Section 6:** A description of the Concept Plan development detailing the development for which approval is sought.

**Section 7:** The proposed Major Development SEPP amendment including nomination of future land use zones and a planning approvals strategy for future applications.

**Section 8:** An Environmental Assessment of the Concept Plan.

**Section 9:** A Draft Statement of Commitments for the Concept Plan.

**Section 10:** A description of the Stage 1 Project Application development detailing the development for which approval is sought.

**Section 11:** An Environmental Assessment of the Project Application for the Stage 1 works.

**Section 12:** A Draft Statement of Commitments for the Project Application.

**Section 13:** Conclusion.

**Volume 2** contains the Appendices which include the technical studies undertaken to inform the proposed land use change, Concept Plan and Stage 1 Project Application and its environmental assessment, including urban design, ecology, landscape and open space, European and Aboriginal heritage, engineering (infrastructure, water cycle, flooding), traffic, economics, social and community planning, contamination, geomorphology, soils and geotechnical assessment.

This EAR and the technical studies included at **Volume 2** address the Director General's requirements to accompany the Concept Plan, Stage 1 Project Application and the SSS proposal. They provide a detailed analysis of existing site conditions and constraints and opportunities that have informed the development of the proposal. They also provide technical assessment of the environmental impacts of the proposed development, and recommend proposed mitigation measures to manage potential environmental impacts associated with the proposal.

## 1.1 Project Background

### 1.1.1 Previous Land Use Planning

North Penrith has been the subject of broad strategic planning investigation and environmental assessment over the past 20 years by Penrith City Council, the Department of Planning, the Department of Defence (DoD) (the current landowner of the site) and Landcom.

The considerable number of site investigations and planning studies that have been undertaken have resulted in numerous concept designs and draft Development Control Plans (DCPs) that have proposed medium to high density residential developments, along with compatible and complementary commercial, retail and community uses, recreation facilities and landscaped open space. The following sections provide a short summary of the planning processes undertaken to date.

The North Penrith site was first identified in 1990 as surplus to the Commonwealth's defence needs. Between 1990 and 1996, a number of technical studies were undertaken on behalf of DoD for land within its ownership including aboriginal archaeology, social and community planning, ecological and grassland assessments, land capability, infrastructure, European heritage, transport and water cycle management and stormwater in support of future residential uses on the site.

In 1993, Council resolved to prepare a Local Environmental Plan (LEP) for the site to allow a mix of residential, commercial and industrial uses. In May 1993, Council notified servicing authorities and adjoining landowners of Council's intentions to prepare the draft LEP and submissions were subsequently received.

In November 1993, the now DoP identified the promotion of transit oriented development as a key planning objective for Thornton Park (as it was then known), in recognition of the site's proximity to Penrith Railway Station. Council was requested to include this objective in its draft LEP.

#### North Penrith Urban Investigation Area (NPUIA)

In 1995, Council expanded the site boundaries to include land bound by the railway to the south, the Lemongrove residential area to the east, Coreen Avenue to the north and Castlereagh Road to the west to form the North Penrith Urban Investigation Area (NPUIA).

Architectus (formerly Travis McEwan Group) was engaged in 1996 to secure a rezoning and master plan approval for the NPUIA site. In June 1999, the NPUIA Rezoning Request Part 1: Planning Report, which included a Structure Plan was released and proposed a mix of residential and industrial uses for the site.

The draft Penrith LEP 1988 (Urban Land) Amendment No. 3 – North Penrith (Urban Land LEP 1998 Amendment 3) and NPUIA Development Control Plan 2001 (North Penrith DCP), which were based on Architectus' work, were exhibited in June/July 1999, before being respectively adopted and gazetted in December 2000.

#### Current Planning Framework

In 2002, DoD commissioned Cox Richardson to prepare a more detailed master plan for the DoD lands within the NPUIA to further resolve the land use distribution and proposed built form. The revised master plan, contained an amending DCP and LEP Amendment to reconcile underlying zone boundaries and housekeeping matters. Both the Draft LEP Amendment and DCP were publicly exhibited in May 2002, but have not been adopted to date.

The entire NPUIA has continued to be subject to various master planning and structure planning process, however further amendments to the planning controls have not been made since Urban Land LEP 1998 Amendment 3.

The North Penrith site is therefore currently zoned for a range of medium and high density residential, mixed use, public and private recreation, industrial, special uses (including civic square and car parking zones).

The land use zones that currently apply to the site permit several of the uses envisaged by the Concept Plan. However, existing zone boundaries do not correspond with the urban design outcome proposed by the Concept Plan. It is therefore proposed to rezone the site through an amendment to Schedule 3 of the Major Development SEPP, in accordance with the Department of Planning's Standard LEP Template.

### 1.1.2 Commonwealth Disposal of the Site

In February 2009, the Commonwealth amended its Commonwealth Property Disposals Policy (CPDP) to allow surplus land assessed as suitable for housing and/or community purposes to be disposed of to optimise the Government's commitments to:

- increasing housing supply without adversely affecting surrounding property prices;
- improving community amenity, and
- creating jobs.

In terms of North Penrith, the Commonwealth will require Landcom to:

- provide significant housing supply including social housing, including:
  - 100 seniors living/aged care dwellings;
  - 44 affordable/social housing dwellings; and
  - 44 adaptable dwellings;
- create up to 770 jobs on the site;
- provide community amenity through the mix, urban design and social infrastructure of the neighbourhood, and
- facilitate other Commonwealth or co-operative policy initiatives (e.g. Housing Affordability Fund, National Rental Affordability Scheme, First Home Saver, social housing initiatives).

### 1.1.3 Landcom's Role at North Penrith

Landcom is currently finalising negotiations to purchase of the site from the Commonwealth. Pending final negotiations, Landcom will be contractually bound to implement the Commonwealth's CPTD Policy through a series of commitments which can broadly be summarised as follows:

- undertaking further detailed structure planning to obtain planning approval (i. e: procurement of the SSS listing, Concept Plan approval and Stage 1 Project Application);
- providing significant housing supply including:
  - 100 seniors living/aged care dwellings;
  - 44 affordable/social housing dwellings; and
  - 44 adaptable dwellings;
- creating of up to 770 jobs on the site;
- pursuing, if supported, a State Heritage Register Listing of Thornton Hall and its curtilage;
- construction of infrastructure; and
- selling land to builders or end purchasers.

Landcom's responsibilities in the proposed development extend to the preparation of the SSS listing, Concept Plan and the provision of infrastructure and public domain works including roads, utilities, stormwater drainage, landscaping and public open space including the proposed Village Centre. Landcom also proposes to refurbish the Thornton Hall building to reflect its historic value and then on-sell the property to a private purchaser.

At this stage, Landcom is not anticipating to construct the future built form on the site. Landcom will contract with builders or end users to ensure that the building type, size, sustainability outcomes, and architectural themes are consistent with the approved Concept Plan, Development Control Plan and the Commonwealth/ State contract of purchase.

## 1.2 Environmental Assessment and Approvals Process

The Part 3A process under the EP&A Act allows for North Penrith to be planned, assessed and delivered in an holistic manner, with a uniform set of planning provisions and determination by a single consent authority. Given the scale of the proposal, a Concept Plan and SSS listing provide the opportunity to identify and resolve key issues such as land use and urban form, development staging, infrastructure delivery and environmental management in an integrated and timely manner. The Stage 1 Project Application provides the opportunity to commence early delivery of the project.

The Major Development SEPP identifies development to which Part 3A of the EP&A Act applies, and for which the Minister is the consent authority.

Clause 6 of the SEPP states that development, which in the opinion of the Minister is development of a kind referred to in Schedule 1 (Classes of Development, Schedule 2 (Specified Sites) or Schedule 3 (State significant development) of the SEPP, is declared to be a project to which Part 3A applies.

Group 5 Clause 13 of Schedule 1 of SEPP Major Development includes development for the purpose of residential, commercial or retail projects with a capital investment value of more than \$100 million.

Pursuant to Clause 8 of the Major Development SEPP the Minister may initiate an investigation into the listing of additional sites onto Schedule 3 of the SEPP, and may require the Director General to undertake a Study or to make arrangements for a study to be undertaken for the purpose of determining:

- whether any development on the site should be declared to be a project to which Part 3A of the EP&A Act applies; and
- the appropriate development controls for the site.

The identification of SSS under the Major Development SEPP aims to facilitate development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State. The NSW Government uses the State Significant Site provisions to help it achieve the planning objectives on major sites that are important to the delivery of the metropolitan strategy or regional strategies. The provisions facilitate significant investment in economic and employment generating development in NSW and redeveloping major State government sites.

The criteria for determining whether a site is of State significance described in the Department of Planning's *Draft Guideline State Significant Sites* (July 2005) are as follows:

- (a) *The site is in an identified strategic location (in a State or regional strategy), is important to a particular industry sector, or employment, infrastructure, service delivery or of redevelopment significance in achieving government policy objectives; or*

- (b) The site is important for environmental conservation or natural resources; or*
- (c) The site is important in terms of amenity, cultural, heritage, or historical significance in achieving State or regional objectives; or*
- (d) The site needs alternative planning or consent arrangements where added transparency is required because of potential conflicting interests or more than one local council is likely to be affected.*

A Preliminary Assessment Report (PEAR) for the project was lodged with the Department of Planning in December 2009 and provided justification for the planning, assessment and delivery of the project to occur under Part 3A, having regard to the demonstrated contribution that the project will have to achieving State and regional planning objectives.

Pursuant to Clause 6 of the Major Development SEPP, on 9 February 2010, the Minister for Planning formed the opinion that North Penrith constitutes a Major Project to be assessed and determined under Part 3A of the EP&A Act, and also authorised the submission of a Concept Plan for the site. In doing so, the Minister also formed the opinion that a SSS study be undertaken to determine whether to list the site as a State Significant Site in Schedule 3 of SEPP Major Development.

**Figure 1** below outlines the main steps in the approval process for the Major Development SEPP amendment and the Concept Plan application/Project Application. Following approval of the Concept Plan and the Stage 1 Project Application, future detailed applications will be lodged for the assessment of the detailed design of the various components of the Concept Plan progressively over a number of stages.

### 1.3 Director General's Requirements

The Director-General of the Department of Planning issued the requirements for the preparation of the Study to justify nomination of the site as a SSS and the requirements for the preparation of the Environmental Assessments to accompany the Concept Plan and Stage 1 Project Application on 2 July 2010. A copy of the Part 3A declaration and initiation of the SSS listing and Director General's Environmental Assessment requirements (DGRs) relating to the Concept Plan and Stage 1 Project Application are included in **Appendix F**. A copy of the State Significant Site Study requirements also issued by the Director General is also attached at **Appendix F**.

As noted above, this report comprises the Study and the EA prepared in accordance with the requirements for the Study attached to the letter from the Department of Planning dated 9 February 2010, and the Director General's Requirements for the Concept Plan dated 2 July 2010 respectively.

**Appendix F** details the individual matters listed in the DGRs for the SSS Study, Concept Plan EAR and Stage 1 Project Application and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.



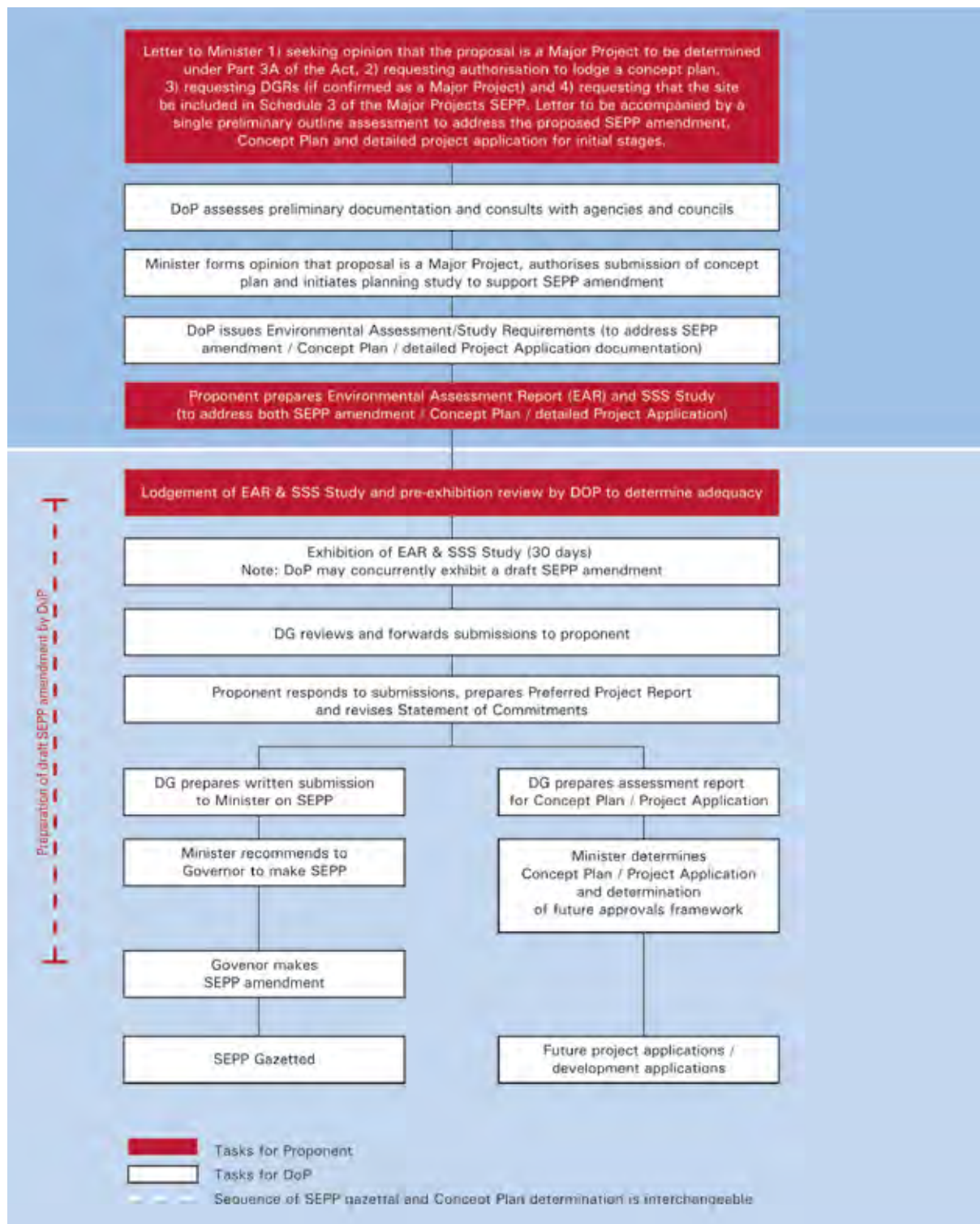


Figure 1 – Part 3A assessment and approvals process

## 1.4 Team

An expert project team has been formed to support the Concept Plan Modification comprising:

<b>Proponent</b>	Landcom
<b>Urban Planning</b>	JBA Planning
<b>Master Designer</b>	Annand Alcock
<b>Collaborative Designers</b>	Allen Jack + Cottier
<b>Project Manager</b>	National Project Consultants
<b>Quantity Surveyor</b>	Currie and Brown
<b>Landscape</b>	Place Design
<b>Flora and Fauna</b>	Eco Logical Australia
<b>Economic Assessment</b>	SGS Economics and Planning
<b>Traffic and Transport</b>	Parsons Brinkerhoff
<b>Contamination and Remediation</b>	Geotechnique
<b>Geotechnical</b>	Geotechnique
<b>Soil and Water</b>	Worley Parsons
<b>Noise &amp; Vibration</b>	Benbow Environmental
<b>Heritage</b>	
■ <b>Statements of Heritage Impact</b>	Tanner Architects
■ <b>Interpretation Strategy</b>	Tanner Architects
■ <b>Non Indigenous Archaeology</b>	Casey and Lowe
■ <b>Indigenous Heritage and Archaeology</b>	Jo McDonald Cultural Heritage Management
<b>Infrastructure &amp; Services Provision</b>	Worley Parsons
<b>Ecologically Sustainable Development</b>	All consultants
<b>Economic Impact</b>	SGS Economics and Planning
<b>Social Sustainability</b>	Elton Consulting
<b>Housing</b>	Elton Consulting
<b>Communications / Community Consultation</b>	Elton Consulting
<b>Infrastructure and Service Provision</b>	Worley Parsons
<b>Flooding</b>	Worley Parsons
<b>Odour</b>	Pae Holmes



## 2.0 Strategic Justification & Metropolitan Strategy Context

The strategic justification for North Penrith has been demonstrated by the previous planning work undertaken by DoP and Penrith City Council over the past 20 years (Section 1.1).

More recently the Department of Planning's Metropolitan Strategy and Draft North West Subregional Strategy have identified the North Penrith site as a key site which should:

- be subject to careful planning to attract new development to the city centre, while complementing and reinforcing the existing city centre;
- promote a mixed uses response for the site comprising high density housing (estimated at 1,200-1,500 dwellings) with some employment uses, consistent with the strategic objectives co-established by the Department of Planning and Penrith City Council;
- avoid employment uses that will compete directly with the city centre;
- provide opportunities for job intensive uses such as education, research and technology; and
- consider the potential for interim uses so that the site is protected for major employment opportunities in the future.

It should be noted that the North West Subregional Strategy identifies the North Penrith site as being a total of 50ha in area. However this includes land excluded from the current proposal such as:

- the Penrith Training Depot; and
- the land to be later developed by Penrith City Council for a commuter car park.

These lands may, at a later date, be developed in their own right, at which time they will need to consider the appropriateness of the proposal in the context of the housing and employment expectations established by the Metropolitan and North West Subregional strategies.

Deducting the excluded portions of land identified by the North West Subregional Plan, the resulting 40.6ha of land proposed to be rezoned and developed by Landcom equates to approximately 81.2% of what is identified in the Subregional Strategy.

Consequently the comprehensive proposal satisfies specific objectives of these strategies by:

- proposing over 80% of the forecasted residential targets in the shorter term while including flexible residential controls that will provide the opportunity for densities to increase over the longer term, consistent with regional residential targets;
- incorporating provisions to facilitate a wide range of proposed permissible uses to attract various types of business investment and job growth;
- creation of the "Opportunity Site", which 'future proofs' the site for additional job generating activities should there be market demand for an institutional use beyond that provided for around the Station Square; and
- providing the ability for longer term growth of employment generating development over the site that is balanced and compatible with the long term growth and redevelopment of the city centre.
- by proposing a carefully quantified urban structure and a quantum of land uses that reflects current market demand while accommodating opportunities for future growth; and

- delivering outcomes that are proportionate to the area of proposed to be developed within the North Penrith land identified under the North West Subregional Strategy.

The justification for the project can also be understood in the context of recent trends towards population growth, decreasing household size and an anticipated increase in demand for seniors/aged care accommodation, particularly in proximity to Penrith Town Centre. Decreases in the relative affordability of housing in Penrith and a decline in the supply of housing create a need for the provision of land for residential development. The need for increased housing provision is reflected in housing targets set out in the Sydney Metropolitan Strategy and the North West Subregional Strategy.

The identification of SSS's under the Major Development SEPP aim to facilitate development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State. The NSW Government uses the SSS provisions of the Major Development SEPP to help it achieve the planning objectives on major sites that are important to the delivery of the Metropolitan Strategy or Regional Strategies. The provisions facilitate significant investment in economic and employment generating development in NSW and in redeveloping major State Government sites.

The criteria for determining whether a site is of State Significance is set out in the Department of Planning's "*Guideline for State Significant Sites under the Major Projects SEPP*" which requires consideration of specific criteria when making an application to the Minister to nominate a site as State significant, being:

- *.....of regional or state importance because it is in an identified strategic location (in a State or regional strategy), its importance to a particular industry sector, or its employment infrastructure, service delivery or redevelopment significance in achieving government policy objectives*
- *.....of importance for environmental conservation or natural resources;*
- *.....of exhibiting State or regional amenity, cultural, heritage, or historical significance; or*
- *.....a site which requires alternative planning or consent arrangements where added transparency is required because of potential conflicting interests or more than one local council is likely to be affected.*

The following section outlines the demographic trends facing Penrith and the way in which North Penrith satisfies the State Government's planning objectives as set out in both the Metropolitan and Subregional Strategies. In addition, **Appendix W** addresses the North Penrith proposal against the detailed aims of these strategies.

Based on the following, there is justification for North Penrith to be planned, assessed and delivered by the listing of the site as a SSS under Schedule 3 of the Major Development SEPP and approval of the Concept Plan under Part 3A of the EP&A Act.

## 2.1 Housing Affordability

Australia faces a national housing affordability and supply crisis. There is predicted to be a shortfall of more than 200,000 homes in Australia by 2013 and more than 1 million Australian families are in housing stress. This number is expected to grow in the short to medium term.

Recent pronouncements by all levels of Government agree that the contributing causes of the housing affordability crisis are inadequate housing supply in the market, complex planning systems and high infrastructure levies. All levels of Government have developed policy framework to address housing affordability across Australia.

Housing is a reform priority of COAG which has identified housing affordability as a “pressing issue for Australians” and accordingly, all levels of Government have developed policy frameworks to address housing affordability across Australia. Specific to the North Penrith site, the Department of Defence has established a target of at least 44 affordable housing dwellings to be provided on the site – this is outlined in more detail in Section 1.1.2.

The NSW State Plan (Priority Item E6) articulates the State’s response to housing affordability: it acknowledges that one of the factors affecting affordability is housing and recognition that there is a need to ensure there is competitive tension in the supply of land so that there is a continuing flow of new properties into the market.

The NSW State Plan provides a commitment to streamline the planning approval process to make it easier to deliver affordable housing by increasing the availability of zoned lots so that there is enough land for future supply when needed. It also commits to promoting expanded supply of land for housing in existing urban areas via local targets for each LGA; and to deliver housing growth around regional centres to ensure access to infrastructure services.

There is a significant shortage of housing production across NSW. Housing production in NSW has dramatically fallen since 2003 and Greenfield land supply has been at record lows for five years. It now accounts for only 10% of all new dwellings even given the Government’s own policy requirement of 30-35% of all new dwellings (UDIA State of the Land Report 2009).

The Social Sustainability Due Diligence Assessment prepared by Elton Consulting (**Appendix G**) indicates that housing in Penrith is relatively affordable. The median rent for a two bedroom dwelling in Penrith was \$250 per week for the March quarter of 2010, compared with \$400 for Sydney as a whole. In 2009, the average sales price for a dwelling in Penrith was \$348,000, compared with \$607,000 for Sydney. However, housing affordability is declining in Penrith. For instance, between June 2004 and December 2007, the proportion of properties in the Penrith private rental market that were theoretically affordable to people at 80% of median income declined from 84.9% to 67.3%.

The socio economic profile of the Penrith LGA demonstrates why housing affordability is an issue that impacts the future of the area:

- median income is lower than the NSW average;
- mortgage payments are generally lower than the NSW average;
- a relatively high level of community stability – people generally remain in the area;
- lower levels of tertiary qualifications;
- an ageing population and particularly workforce; and
- a relatively fluid young workforce (25 to 35 age group) with a high turnover.

In this context a significant component of new housing in Penrith must be targeted at entry level product with amenity and infrastructure that is in the financial reach of the population. The housing affordability dilemma requires responses that deliver housing product that meets the market’s ability to pay.

Landcom’s Concept Plan and SSS proposal specifically satisfy State Plan objectives through the proposal to zone land at a sufficiently high density that land prices (and dwellings) are affordable. Moreover, Landcom’s Concept Plan specifically commits to the provision of 44 affordable housing dwellings.

The development of North Penrith will also assist in meeting State Government policy to release as much land to the market as quickly as possible by delivering a range of housing products to maximise diversity, affordability and choices at the lower and median end of the market.

Housing products will be designed to suit the requirements of the households and match the ability of the market to pay. These will be delivered in a master planned community, which will ensure the quality of the housing products is maintained. Further, the early commencement of this project through the Stage 1 Project Application will provide a catalyst for similar development in Penrith.

The site is crucial to the delivery of the additional housing required to meet the needs of the rapidly growing population of the region (refer Section 2.2). Without new housing supply to meet demand, prices can be expected to escalate rapidly, with corresponding declines in affordability.

## 2.2 Population Growth and Increased Housing Demand

The Department of Planning's *NSW Statistical Local Area Population Projections* anticipates the population of the Penrith LGA will increase from its 2006 level of 177,200 to 196,500 by 2016. The population is anticipated to further increase by an additional 37,800 residents by 2036.

The need to provide more housing to meet demand generated by population growth is recognised by the Department of Planning's Sydney Metropolitan and North West Subregional Strategies which sets a target of 25,000 additional dwellings in Penrith by 2031. The proposed provision of approximately 900 – 1,000 dwellings on the site will assist in meeting anticipated demand for housing and contribute towards dwelling targets in the LGA. This quantum housing equates to over 80% of the Department of Planning's and Penrith City Council's overall vision of 1,200-1,500 dwellings over the longer term.

The project is consistent with and will assist in the delivery of key outcomes of the NSW State Plan and the North West Sub-Regional Strategy by contributing to the supply to market of appropriately located land to sustainably accommodate the projected housing (and employment needs) of the Region's population over the next 15 - 20 years.

The successful development of North Penrith is important if the high level of ongoing housing demand in western Sydney is to be met. Strong population growth is anticipated over the coming decades, particularly in the major cities, and as outlined above, current projections suggest that Penrith LGA must accommodate a significant proportion of Sydney's growth.

The dwelling targets for Penrith cannot be achieved without North Penrith which will make a substantial contribution to meeting demand. North Penrith is capable of speedy and well planned development with construction expected to commence in mid 2011.

## 2.3 Ageing Population and Demand for Seniors Housing

The projected population growth in the Penrith LGA is expected to coincide with an increase in the relative "ageing" of the population. The proportion of the population aged 65 or over is projected to increase from 8% in 2006 to 15% by 2036. Trends toward an ageing population will result in increased demand for housing for seniors/aged care accommodation. Both the Social Sustainability Due Diligence Assessment by Elton Consulting at **Appendix G** and the Housing Assessment at Appendix BB note that previous studies of the Penrith LGA have identified a need for the provision of seniors housing.

The proposed development of approximately 100 seniors living/aged care housing units on the site will help meet the housing needs of a population which is anticipated to age significantly over coming years.

Locating dwellings close to the centre of Penrith will also cater for the locational preferences of seniors in the area.

The project will also fulfil State Government objectives of “ageing in place” by allowing seniors to move into accommodation with higher levels of care close to where they currently live, thereby avoiding dislocation from their existing geographic community and family ties. This will be achieved through the provision of adaptable housing, consistent with Landcom’s Universal Housing Guidelines, which can satisfy the changing needs of residents throughout their life cycle.

## 2.4 Demand for Smaller Housing Types

Australian Bureau of Statistics Census data indicates the median household size in the Penrith LGA fell from 3.2 occupants in 1991 to 2.9 occupants in 2006. Assuming this trend towards reduced household sizes will continue it is likely that there will be a growing need for a diversity of housing types including smaller housing types in the Penrith LGA.

The Social Sustainability Assessment by Elton Consulting indicates there is a need for greater diversity in the housing market in the LGA, including the provision of smaller housing types. The assessment also indicates that young people who wish to leave their parental home yet remain in Penrith, are an increasing group within the population that require smaller housing types. A greater supply of smaller housing type will afford entry level housing opportunities that will have the effect of retaining younger people in the Penrith LGA and thereby promote social diversity and sustainability. This is particularly the case given trends towards an ageing population.

Larger “greenfield” residential developments in the LGA such as those at Penrith Lakes, St Marys, and Caddens will contribute to the fulfilment of targets for the overall numbers of dwellings in the LGA. However, it is considered that a planning response is required in order to meet likely future demand for smaller dwellings.

## 2.5 Medium Density Housing for Couples and Families

The Social Sustainability Assessment indicates that 34% of all existing housing stock in the Penrith LGA categorised as semi-detached, row and townhouse dwellings is occupied by lone person households.

The remaining 66% of existing semi-detached, row and townhouse dwellings are equally split between couples with children, couples without children and one parent families. This implies that a significant proportion of present and anticipated demand for semi-detached, row and townhouses comes from couples with and without families and single parent families.

North Penrith presents an opportunity to provide new medium density housing in Penrith to accommodate couples with children, couples without children and one parent families. This is consistent with the objectives set by the Department of Planning and Penrith City Council in the North West Subregional Strategy to develop the North Penrith site as a mixed use response for the site comprising higher density housing.

## 2.6 Infrastructure Delivery

Existing infrastructure, services and facilities are not adequate to support the development of North Penrith and a comprehensive range of new infrastructure and services will be required.

A Utilities Servicing Report prepared by Worley Parsons is included at **Appendix H** and detailed at Section 6 of this report. Landcom has undertaken a significant amount of investigation into how the development can be serviced, and, based on its experience elsewhere, prepared an assessment of required infrastructure, including community facilities and services and open space and recreation needs. There is a clear and viable infrastructure and servicing implementation strategy that leverages readily accessible existing infrastructure. Key infrastructure is well located to service North Penrith.

The project demonstrates the advantages of delivery through single commercial control over multiple land holdings:

- a single point of responsibility for delivery and implementation;
- efficient internal utilities distribution networks with good connectivity;
- integrated transport and land use delivery;
- co-ordinated landscape and open space places, public domain and urban design;
- opportunity for innovative services delivery model for learning, including initiatives such as utilisation of spare capacity that presently exists in nearby local schools, sharing of facilities and co-location; and
- co-ordinated community/children's/seniors activities delivered through a multi-purpose, flexible community centre, on site.

Consequently, the proposal demonstrates that the following specific Sub Regional Strategy Sustainability Criteria are met:

- mechanisms to ensure utilities, transport, open space and communication are provided in a timely and efficient way;
- provision of accessible transport options for efficient and sustainable travel between homes, jobs, services and recreation;
- quality health, education, legal, recreational, cultural and community development and other Government services are accessible.

### Cost to Government

The infrastructure strategy involves provision of new substantial infrastructure, facilities, services and open space areas – at Landcom's cost – to satisfy the needs of the future North Penrith community. Savings and efficiencies in Government expenditure in the planning and delivery of infrastructure can be delivered by integrated planning and control over delivery through consolidated land holdings. This is particularly the case in the proposed development of the North Penrith site as a transit oriented development (TOD), which is strategically located adjacent to the Penrith Rail Station.

The following economic effects of the proposal that are expected to yield benefits and costs to the Penrith LGA and wider community:

- diversification of local economic activity;
- investment certainty;
- increased demand for goods and services;
- cost effectiveness and timely development; and
- maximising the net benefits of land use.



## 2.7 Employment Generating Uses

The strategic planning context for North Penrith with respect to jobs growth and employment opportunities is detailed in the Land Use and Economic Assessment prepared by SGS Economics and Planning (refer to **Appendix I**).

As outlined above, Penrith LGA will see substantial population growth and an aged population in future.

The provision of up to 9,300m<sup>2</sup> of commercial space on the site, along with around 2 ha of industrial/warehouse uses and 3,200m<sup>2</sup> of retail space is anticipated to generate around 770 jobs on the site. This represents 2.5% of the Sydney Metropolitan and North West Subregional Strategies' employment target of 28,000 additional jobs in Penrith LGA by 2031 (bringing the total to 86,000). In terms of the Penrith City Centre specifically, the North West Subregional Strategy sets an employment target of 11,000 additional jobs by 2031, or a 58% increase on 2001 numbers.

North Penrith will provide a balance of job creation through both a traditional base and new driver industries, supported by a range of initiatives for the facilitation of workforce skills development and business success and growth.

Landcom's SSS proposal establishes 5.8ha of B4 Mixed Uses land and 2.8ha of IN2 Light Industrial land. In addition, the draft SSS provisions introduce additional flexibility through the "Opportunity Site" that permits additional commercial and other non-residential uses above and beyond the proposed B4 Mixed Uses zone, should there be appropriate market demand.

Based on accepted employment density ratios, the yield for the proposed development as envisaged by the Concept Plan is:

- 372 commercial office jobs (at 1 per 25m<sup>2</sup>)
- 90 retail jobs (at 1 per 40m<sup>2</sup> for supermarket retail & 1 per 30m<sup>2</sup> for other retail)
- 229 industrial jobs (at 1 per 60m<sup>2</sup>)

The North Penrith Land Use and Economic Assessment prepared by SGS Economics and Planning at **Appendix I** indicates the western Sydney suburban office market, which includes the Penrith LGA, performed well in 2009, with a fall in vacancy rates from 13.6% to 8.4%. The recent fall in vacancy rates implies western Sydney office market is relatively healthy. This market is characterised by relatively low rents with smaller floor plates and slow take up rates.

Although this market is unlikely to be affected by developments in Parramatta or Norwest Business Park, SGS Planning and Economics notes that the Penrith Business Community considers the establishment of a Penrith Business Park as an important objective and one of the '10 Big Ideas for Penrith'. However, the North Penrith Land Use and Economic Assessment (at **Appendix I**) indicates that beyond commercial development in the Village Centre and the proposed industrial zoned portion of the North Penrith site, a 'research orientated innovation park', 'business incubator precinct' or 'small eco-industrial park' maybe the only suitable business park typologies for the North Penrith site.

The reason for this is that the North Penrith site does not possess the characteristics to attract this type of employment generating development in a park setting. Specifically it is not well connected major roadways (i.e. motorways) and would be in direct competition with many alternatives sites in the region that can be developed a lower cost than North Penrith.

Although there are identified opportunities for certain business park typologies suited to the North Penrith site, these are specialised in nature and would require the strong support of the government and major institutions.

Furthermore, the recent growth in the health and education sectors (which are considered ideal uses for a research orientated development) is occurring elsewhere in Penrith (Nepean Hospital, University of Western Sydney at Werrington and the Penrith City Centre's State Government Building) has generally focused this type of business development away from the Penrith City Centre.

Despite this, the Concept Plan provides flexibility to pursue a suitable tenant that may be able to develop and occupy a portion of the site where it is deemed feasible and balanced with the growth and development of the Penrith CBD as a Regional Centre (see Section 6.5 of this report for more detail). Landcom and Penrith City Council are committed to working together to actively seek an appropriate use.

The North Penrith Land Use and Economic Assessment (at **Appendix I**) also indicates North Penrith will generate around \$24.5 million in retail expenditure per year, as further detailed in Section 8.3 of this report.

The 2.8ha of proposed industrial zoned land will further generate jobs at the North Penrith site. The location and size of the industrial uses is a direct response to:

- Land use transition gradient outwards from the Penrith City Centre to existing industrial uses north of Coreen Avenue and along Castlereagh Road;
- The need to balance industrial uses with potential traffic conflicts – Landcom's proposal ensure significant traffic movements will not arise from the quantum of industrial uses proposed; and
- The results of consultation undertaken with local real estate agents who have indicated that strata-titled units located away the city centre (where rents are lower) are in highest demand.

## 2.8 Transit Oriented Development

The site's location provides an opportunity for the provision of elements of a 'transit oriented development' (TOD). This occurs where mixed uses are located close to a key public transport node. The North Penrith site is located adjacent to Penrith Station, which provides regular train services to Western and Central Sydney. The proximity of dwellings on the site to the station will promote the use of public transport in travelling to and from places of employment and retail/community services, thereby serving State and local government planning objectives. The increasing demand for smaller housing types discussed above allow for the higher densities on the site which will further promote TOD by decreasing walking distances between dwellings and the station.

The location of the residential developments close to community and retail services in Penrith CBD will fulfil promoting State and local government objectives for intensification around centres. As the site is within walking distance of Penrith CBD (via a pedestrian bridge over the station), objectives for promoting walking as a form of transport will also be fulfilled.

The project will also support and promote transit oriented development in proximity to the railway station, by providing higher density housing close to the proposed Village Centre and a mix of retail and commercial uses.



## 2.9 Sustainability

North Penrith demonstrates sustainability as follows:

- the project has been designed to achieve Landcom's sustainability targets as further discussed in Section 6.11;
- the project delivers integrated planning and design that coordinates social, physical, transport and economic outcomes;
- it will deliver a range of densities, lot sizes and dwelling types and create a diverse community that is demographically balanced. The variety of housing forms will provide opportunities to respond to changing life cycle, lifestyle and work requirements over time, enabling people to age in place. It delivers key social sustainability outcomes;
- as a developer lead master planned community North Penrith can be delivered in a manner that achieves a relatively high level of self containment in terms of employment generation, retail expenditure and vehicle trip generation. This self containment will contribute positively to reducing the carbon footprint of the development as compared to traditional residential development;
- a comprehensive package of deliverable sustainable transport measures is identified to assist in achieving a TOD;
- North Penrith will generate approximately 770 full time equivalent jobs, of which there will be a high containment ratio to the Penrith LGA. This will contribute positively to a reduction in trip generation and to minimising the carbon footprint of the development;
- the Project retains core heritage areas within the site and presents a long term ownership and management regime for the management of retained native woodland;
- the proposed infrastructure and servicing strategy will deliver efficiencies and economies of scale in infrastructure delivery and thus improve the sustainability of infrastructure to support future urban growth;
- energy sustainability focuses on reducing the demand for energy through the efficient design of the urban form to capitalise on the natural features of the site. Demand will also be mitigated through consumer demand initiatives including BASIX requirements for dwelling design; and
- North Penrith adopts potable water supply reduction targets and identifies sustainable integrated options for water supply, wastewater and stormwater servicing.

## 3.0 Site Analysis

### 3.1 Site Location

The North Penrith site is located approximately 50 km to the west of Sydney CBD on the northern side the Penrith CBD. The location and context of the site is shown in the Location Plan at **Figure 2** and Aerial Photograph at **Figure 3**.

The site's southern boundary adjoins the Penrith Railway Station. The site is between Lemongrove Road to the east and Castlereagh Road to the west both of which are accessible via Coreen Avenue to the north.

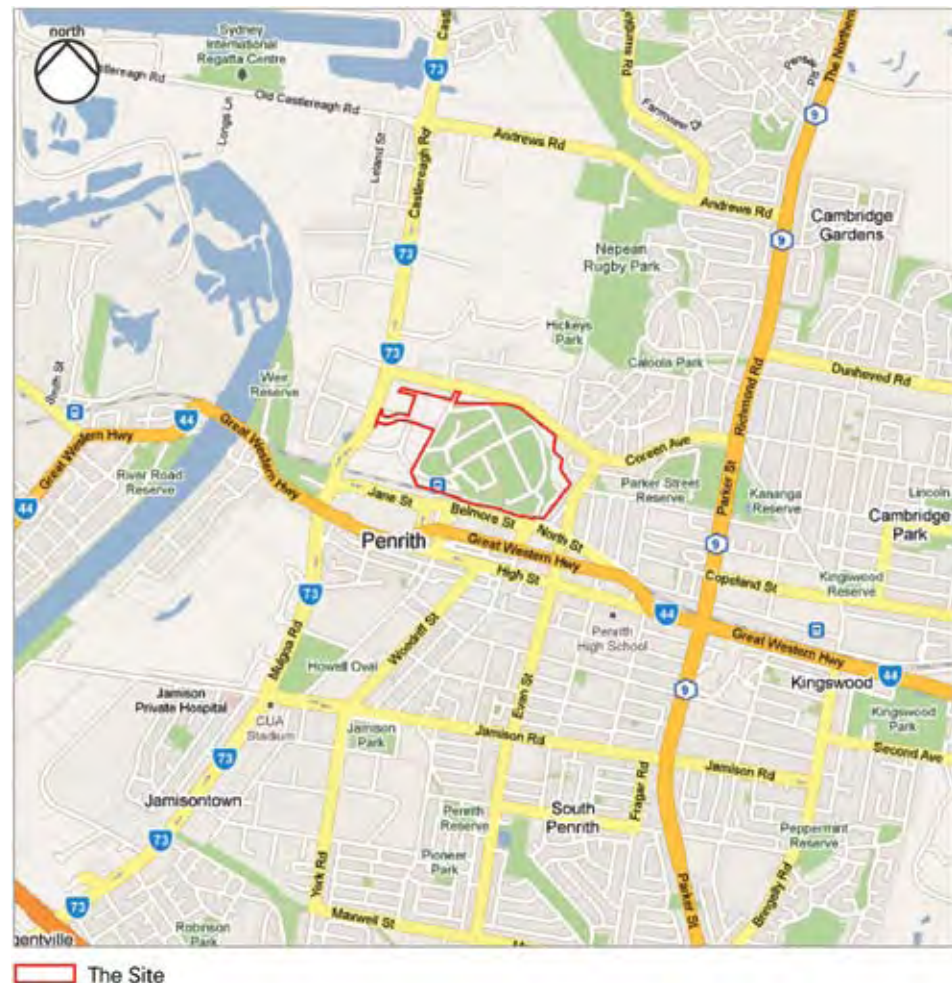


Figure 2 – Location Plan

### 3.2 Legal Description and Land Ownership

The site comprises 10 allotments, which are listed in **Table 1**, along with the areas of each lot. The total area given in **Table 1** includes the site of the proposed commuter car park and the Penrith Training Depot (PTD). The location of each of the lots listed in **Table 1** is shown in the map in **Figure 4**. A site survey is attached at **Appendix J**.

The site is Commonwealth-owned land and under the Federal Government's jurisdiction. The total area in Lot 1 in DP 33754 is 39.34ha; however 6.7ha of this will be excised. This includes 3.7ha for the Penrith Training Depot (PTD) and 3ha for a proposed commuter car park, leaving 40.64ha for the North Penrith project.



Figure 3 – Aerial Photograph

Table 1 – Legal Descriptions and Areas of Lots Comprising the Site

Legal Description	Area
Lot 1 in DP 1020994	4,815m <sup>2</sup>
Lot 2 in DP 1020994	1.357ha
Lot 4 in DP 1020994	987m <sup>2</sup>
Lot 5 in DP 1020994	1.863ha
Lot 6 in DP 1020994	1,179m <sup>2</sup>
Lot 3 in DP 1017480	2,795m <sup>2</sup>
Lot 4 in DP 1017480	446m <sup>2</sup>
Part Lot 1 in DP 33754	32.64ha
Lot 1 in DP 33753	1.977ha
Lot 1 in DP 532379	1.788ha
Total	40.6ha (subject to description below)



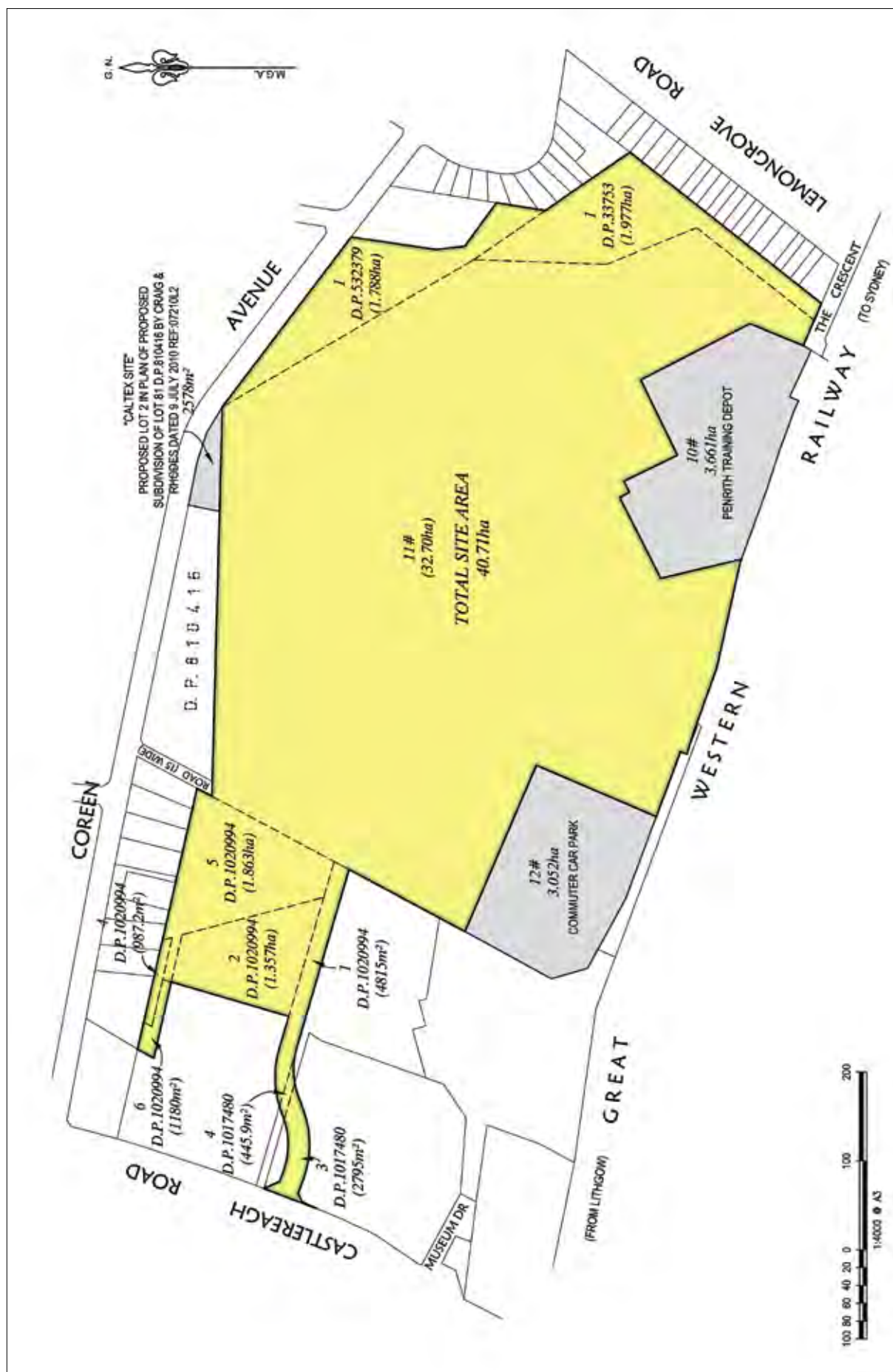


Figure 4 – Cadastral layout

### 3.3 Existing Zoning

The following four local environmental planning instruments apply to the site:

- Penrith Local Environmental Plan 1998 (Urban Land) (LEP 1998);
- Penrith Local Environmental Plan 2010 (LEP 2010);
- City of Penrith Planning Scheme Ordinance 1960 (PPSO); and
- Penrith Local Environmental Plan (Environmental Heritage) 1991.

The existing land use zones applying to the site are summarised in **Table 2** and illustrated by **Figure 5**. The proposed distribution and density of uses envisaged under the Concept Plan are currently not permissible under the underlying land use zones and development control legislation. The land is therefore required to be rezoned for the intended land uses.

**Table 2 – Land Use Zones Applying to the Site**

Instrument	Zone
Urban Land LEP 1998	<ul style="list-style-type: none"> <li>- Zone 2 (a) Residential (Urban and Landscape Protection);</li> <li>- Zone 2 (c) Residential (Low – Medium Density)</li> <li>- Zone 2 (d) Residential (Medium Density);</li> <li>- Zone 2 (e) Residential (Medium – High Density);</li> <li>- Zone 5 (a) Car Park;</li> <li>- Zone 5 (a) Parking;</li> <li>- Zone 5 (a) Civic Square; and</li> <li>- Zone No. 6(b) Proposed Public Recreation and Community Uses.</li> </ul>
Penrith LEP 2010	<ul style="list-style-type: none"> <li>- Zone IN1 General Industrial; and</li> <li>- Zone IN2 Light Industrial.</li> </ul>
PPSO 1960	<ul style="list-style-type: none"> <li>- General Industrial 4(a); and</li> <li>- Special Uses 5(a) (Army Stores Area).</li> </ul>



**Figure 5 – Zones Applying to the Site (Courtesy Penrith City Council)**

### 3.4 Topography, Slope and Stability

The North Penrith site is predominantly flat, rising to its highest point at the western end of the site, at which is located the Thornton Hall residence (described below). Differences in level across the predominant western portion of the site range between around RL 24 AHD and RL 26 AHD. This part of the site also features a network of excavated gullies which appear to have been part of the Department of Defence's drainage system. Other former earthworks and materials stockpiles are also distributed across the site, along with the concrete slabs of demolished industrial buildings. There is a small brick building, previously used as an electrical transforming station that is no longer used located on the western part of the site.

The land starts to slope gently from around RL27AHD on the oval at the centre of the site to RL 29AHD at the bottom of the significant slope in the site's western portion. From there, the land slopes up to RL39 AHD around the Thornton Hall residence. The location of the building on the highpoint of the site affords views from Thornton Hall across the site to the west. The lower Blue Mountains are visible from vantages on the higher land. Levels along the site's western boundary are between around RL39 AHD and RL40.5 AHD.

### 3.5 Geology and Geomorphology

#### 3.5.1 Soils and Contamination

A contamination assessment has been prepared by Geotechnique and is attached at **Appendix K**. Two Site Audit Statements (SAS) have been prepared for the site by the same Site Auditor, Graeme Nyland dated February 2001 and May 2009 in accordance with the NSW Contaminated Land Management Act 1997 which consider previous extensive environmental investigations on the site:

- One for the majority of the site;
- One for the adjoining Kennards development site and the north western portion of the site.

The SAS's (**Appendix L**) find that the site is considered suitable for residential development including gardens, day care, pre-school and primary school uses, secondary schools, parks, recreational facilities and open space and commercial and industrial uses.

The SAS's recommends that if ground water is to be extracted from the site, its quality should be assessed prior to its use on the land and that the potential for flaking paint on the Thornton Hall residence to contain lead should be considered in future works on the building. A stockpile of soil on the site should not be used in the surface of residential areas (refer to **Appendix L** for further details).

### 3.5.2 Groundwater

The Geotechnical and Groundwater Assessment prepared by Geotechnique at **Appendix M** indicates that:

- site surface run-off is generally diverted into naturally occurring channels/depressions that traverse the site and ultimately discharge into two large concrete stormwater pipes located at the north-western corner of the site;
- groundwater over the central and western portions is situated within probable relatively highly permeable coarse gravel aquifers, at depths in excess of 5m from surface levels;
- groundwater over the eastern portion is situated within probable relatively low permeability clays, at depths in excess of 8m from surface levels;
- groundwater underlying the site appears to flow in a north to north-westerly direction;
- the groundwater table at the site is at depths greater than 5m; and
- groundwater does not appear to rise significantly following heavy rainfall so as to become a potential hazard for rising salinity.

### 3.6 Acid Sulphate Soils

Reference to the Acid Sulphate Soil Risk Map published by the NSW Department of Land and Water Conservation (1997) indicates that acid sulphate soils (ASS) are not present within parts the site. Notwithstanding, ASS are only a moderate constraint to development, and can be appropriately managed with good engineering practice.

### 3.7 Hydrology and Flooding

#### 3.7.1 Stormwater and Drainage

A Drainage, Stormwater and Groundwater Management Report prepared by Worley Parsons is included at **Appendix N**.

The report characterises the site as being made up of ten (10) existing catchments and as being predominantly flat (see **Figure 6**). The site currently drains via a number of earthen open channels that flow mainly to the north west of the site, and then connect to the existing stormwater drainage infrastructure within Coreen Avenue. Much of the site is pervious, with approximately only 17% of the site comprised of existing hard stand surfacing.



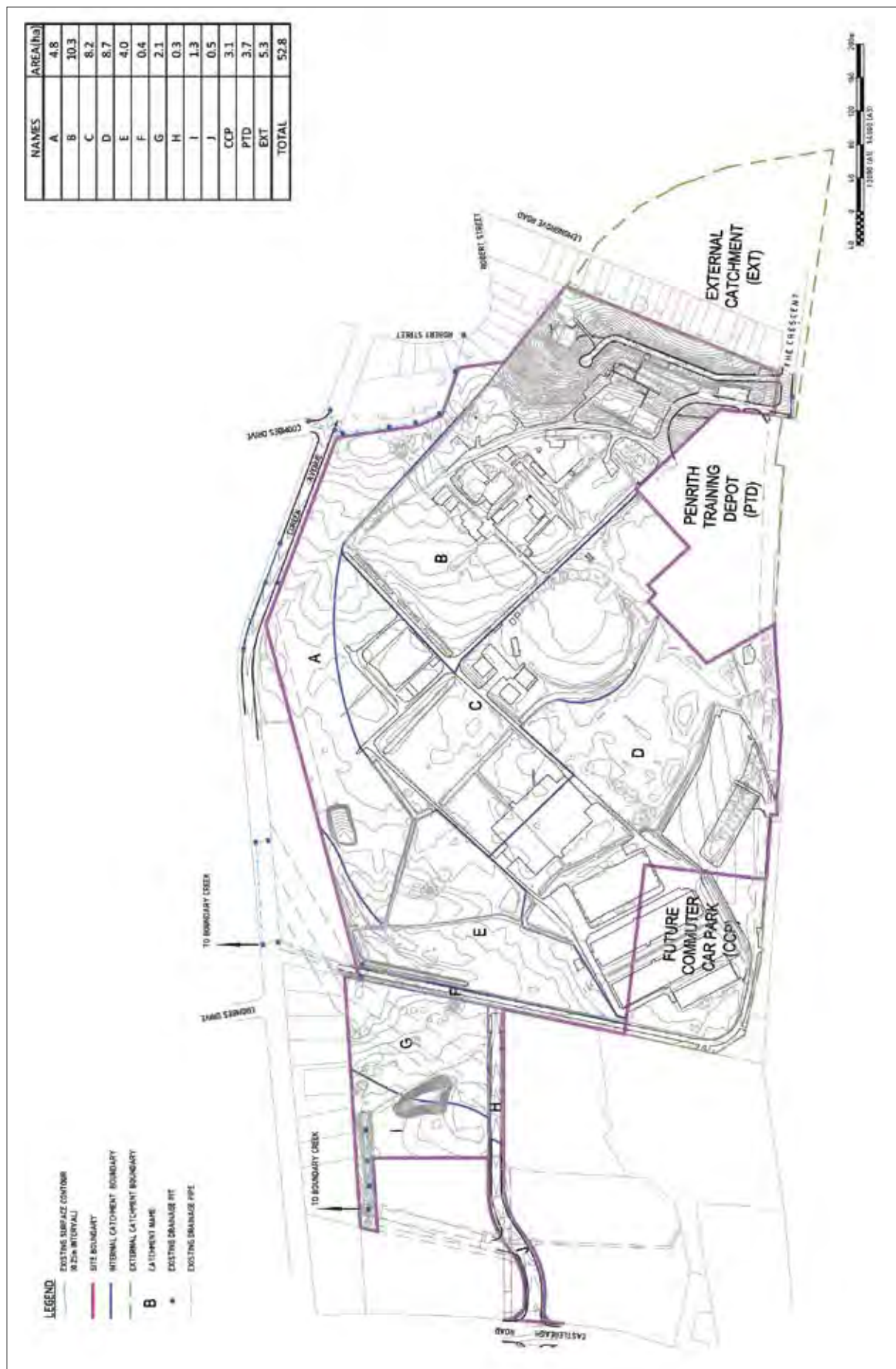


Figure 6 – Existing catchment across the North Penrith site



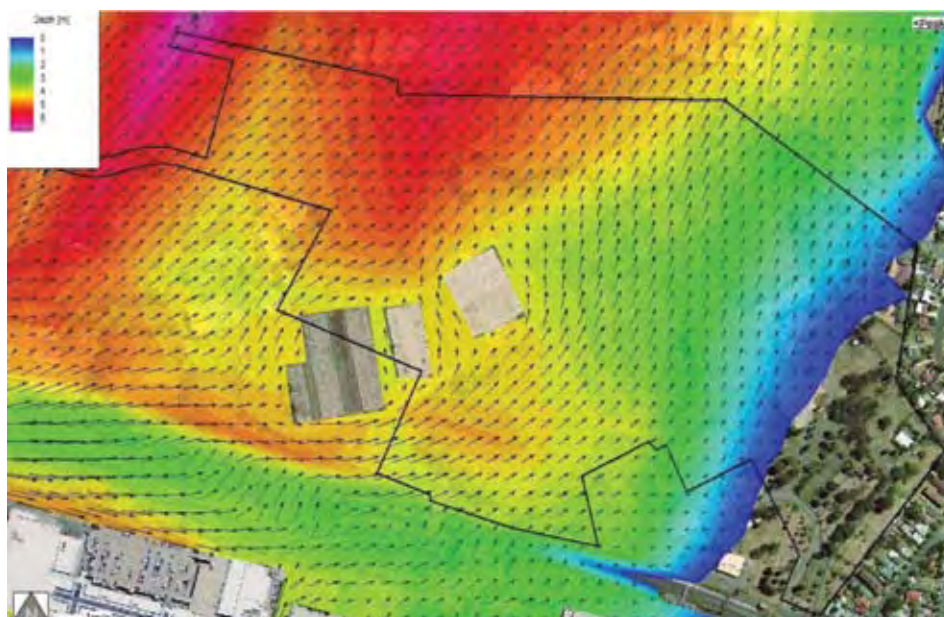
### 3.7.2 Flooding

An analysis of the existing site hydrology and flooding is contained within the Regional Flooding Assessment prepared by Worley Parsons included at **Appendix O**. The Flooding Assessment considers the potential effects of the 1 in 100 year annual recurrence interval (ARI) event and the probably maximum Flood (PMF) level.

The site is located within the Hawkesbury Nepean River catchment, which is subject to flooding that can reach Penrith after more than 24 hours of rainfall occurring. The extent of this flooding is illustrated in Figures 3 to 7 within Worley Parson's report. **Figure 7** illustrates the extent of the Probable Maximum Flood (PMF) levels affecting approximately 87% of the North Penrith site's area, most notably that of the eastern portion.

A combination of limited bank capacity of streams and broad, flat, well defined floodplains results in flood plain inundation for much of the site during the most significant flood events.

It should be noted that an anomaly exists within the flood model that results in three concrete slabs being blocked out in **Figure 7**. Work undertaken to date has made no amendment to the flood model to ensure that results presented in this report are consistent with Council's flood model.



**Figure 7** – Extent of the PMF across North Penrith and surrounds

## 3.8 Ecological Characteristics and Values

A Flora and Fauna Assessment prepared by Eco Logical is included at **Appendix P**. The key ecological characteristics and values of the site are identified below.

### 3.8.1 Vegetation

A total of 96 flora species are present on the site, including 39 locally native species, 11 introduced native species and 46 exotic species. None of the recorded flora species are listed as threatened under the NSW Threatened Species Conservation Act 1995 (TSC Act) or Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act). A total of 46 exotic flora species have been recorded across the site including 5 noxious weeds. Flora habitat characteristics include grassy groundcover, shrub-layer and intact canopy.

There is a total of 0.86 ha of native vegetation on the site. Subject to long term defence land uses, over 85% of the site has been heavily modified by clearing. **Figure 8** shows the distribution of existing vegetation community types and conditions within the site.

The Flora and Fauna Assessment indicates that one native vegetation community is present on the site, being Cumberland Plain Woodland (CPW). CPW is a Critically Endangered Ecological Community (CEEC) under the NSW Threatened Species Conservation Act 1995 (TSC Act) and also under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act), although the definitions as to what constitutes CPW under the TSC Act and the EPBC Act differ.

The CPW on the site is found in two conditions:

- wooded remnants; and
- derived native grasslands.

While the CPW on the site is consistent with the listing for the vegetation community set out in the TSC Act, it is in a degraded state and isolated from other native vegetation.

It is not consistent with the listing for CPW in the EPBC Act and Eco Logical Australia has determined that the remnant woodland is not a matter of National Environmental Significance (NES) under the EPBC Act. In particular, the remnant patch is small in area (0.63 ha), isolated from other native vegetation and over 70% of its perennial understorey cover comprises exotic species.

The wooded remnants and derived native grasslands are located on the slope and high point to the west of the site, while the derived native grasslands is also present in and around artificial drainage channels.

The project design has been undertaken with close regard to the findings of the Flora and Fauna Study which has formed a fundamental part of the determination of the urban capable footprint of the site. This has resulted in the identification of areas where the CPW ecological community will be incorporated into public open space.



**Figure 8** – Distribution of vegetation communities

### 3.8.2 Fauna Species and Habitat

During field surveys, twenty five fauna species were recorded on site, including birds common to urban areas, the Red-bellied Black Snake, the Common Eastern Froglet and the European Rabbit. European Fox scat was also recorded. Based on desktop surveys, three threatened species were considered to have the potential to be on the site, namely the Cumberland Land Snail and the Large Bent-wing Bat and the Diamond Firetail bird species. One migratory bird species was also considered to potentially occur, being the Rainbow Bee-eater. However, none of these species were recorded during the field surveys.

The quality of faunal habitat varies considerably across the site, with woodland areas to the east providing higher quality potential habitat than derived native grassland or 'other woody vegetation'. Woodland habitat provides more complexity and contains a broad array of breeding, nesting, roosting and foraging habitats. Large woody debris in woodland area may provide refuge for some native ground dwelling mammals and reptiles.

Derived native grassland generally provides low-moderate quality habitat but is managed as mown lawn and so does not provide a shelter element for fauna migration.

Other woody vegetation found onsite provides potential roosting and foraging habitat. While other grassland areas are exotic, their dense groundcover may provide refuge for native and exotic mammals, reptiles and birds. One dead stag with possible hollow spouts was present towards the western boundary of the site. Telephone poles provide another habitat element for passerine birds as well as birds of prey. Drainage lines provide some habitat for the Eastern Common Toadlet.

Detailed lists of the status of these species and populations under the TSC Act and EPBC Act are summarised in Appendix A of the Flora and Fauna Assessment at **Appendix P**.

### 3.8.3 Riparian Areas

There are four artificial drainage lines located on the site are infested with exotic grasses and weeds. These drainage lines are considered to be artificial due to their linear nature and the general absence of natural drainage lines. This has been confirmed by the Hawkesbury Nepean Office of the Department of Environment, Climate Change and Water (DECCW).

## 3.9 European Heritage

Two Statements of Heritage Impact and a Heritage Interpretation Strategy have been prepared for the North Penrith site (**Appendices O, P and Q**).

### Initial Uses

Although the site was originally part of a 1,000 acre grant to Naval Captain Daniel Woodriff in 1804, it was not occupied until 1862 by Thomas Smith. Smith built the Thornton Hall residence c1880 and established farming over the lands known as Belmore Park. The residence still remains, with some modification, and is located to the eastern portion of the site (see **Figures 9 – 11**).

The Thornton Hall residence is listed as a local heritage item in Urban Land LEP 1998 and the Penrith Local Environmental Plan (Environmental Heritage Conservation) 1991 (Heritage LEP 1991). It is also listed on the Commonwealth Heritage List under the EPBC Act and the Register of the National Estate.

The Smith family over generations leased much of the land for farming and various cultural and sporting uses, such as early ballooning and amateur aviation, cricket, horse racing, golf course, rifle range and speedway activities.



The site's historical uses also includes association with the first cross-country airplane flight in Australia and the 1892 tour of the English cricket team sponsored by Lord Sheffield, which played the local Nepean District team in a game at the site on 26 January that year.

From 1941 onwards, the site was acquired over time by the Commonwealth Government for occupation by the Australian Army who used the site as an engineer's stores depot. The most intensive use of the site by the Army was during WWII when the site accommodated the largest engineering depot in the Eastern Command region during the period. Many of the buildings associated with the site's use by the Army have now been removed. To the south eastern portion of the site is the PTD which still accommodates the Army. The area for the PTD does not form part of the site.



Figure 9 – Thornton Hall Location



Figure 10 – Thornton Hall (front)



**Figure 11** – Thornton Hall (rear)

## Thornton Hall

A detailed physical description of Thornton Hall (including its settings and views), the oval and former speedway, and assessment of their significance is provided in the North Penrith Concept Plan Statement of Heritage Impact prepared by Tanner Architects at **Appendix Q**.

In summary, Thornton Hall and associated landscape elements have local significance as an early residence in the Victorian style. It is significant for its unusual design and construction, however this significance has been somewhat compromised by later alterations and demolition of original fabric. The residence has aesthetic significance for its prominent location on rising ground with views spanning almost 180 degrees from the north to the south west.

Thornton Hall also has local significance owing to its historical associations with the early development of the district and with the Smith family. The former driveway to Thornton Hall, the remains of the former speedway and the cricket oval are important for their close association with entrepreneur Thomas Smith and his son, the influential politician Sydney Smith, who inherited the property in 1896.

## Other Heritage Items/Events

Heritage significance is also attributed to North Penrith for its association with community and sporting activities held at Belmore Park (the flat section of land to the west of the residence) during the late 19th and early 20th centuries. These activities included a cricket match against a touring English Side, which is associated with the establishment of the Sheffield Shield in Australia, early feats in aviation, and motor cycle and car racing on a former speedway.

## Heritage Opportunities

The heritage parameters that have been incorporated into the Concept Plan are as follows:

- the historic associations between Thornton Hall and the Smith family, which can be appropriately interpreted through sensitive adaptive reuse of the Hall, interpretation of the early driveway leading to the house and street names;
- the retention of the driveway, oval and the alignment of the speedway, thereby retaining the connection between existing structures on the site and the Smith family;
- retention of views to Thornton Hall that will allow interpretation of the Hall's historic relationship with the rest of the site;
- former agricultural, recreational and aviation-related activities, which took place on the site. The existing sports oval and remnant speedway on the site provide opportunities for interpretation; and
- military associations from 1917 until 1994 provide an important historical layer, which may be interpreted.

The manner in which the Concept Plan respects and responds to the heritage significance of Thornton Hall and Combewood House is further outlined in Section 6.6.

## Adjoining Heritage Items

The western portion of the site adjoins the Combewood landholding, which was built c1890 for the Woodriff family. Although the house is located to the north (and outside) of the site, an orchard and outbuildings associated with the residence were located within the North Penrith site. The residence was occupied by the Woodriff family until the 1950s. The dwelling remains to the north of the site and fronts Coreen Avenue (see **Figure 9**).

Combewood House, is listed as a local heritage item in the under Penrith Local Environmental Plan (Urban Land) 1998 and Penrith Local Environmental Plan (Environmental Heritage Conservation) 1991 and is also subject to a heritage listing with the National Trust of Australia and also in the Register of the National Estate.

## Archaeological Potential

Casey & Lowe Pty Ltd has carried out a detailed assessment of the potential archaeological evidence that may be present over the site. A copy of their Non-Indigenous Archaeological report is included at **Appendix S**.

The assessment concludes that there is potential for a limited scattered archaeological resource to remain within the North Penrith site. The reason for this is that the character of the early 19<sup>th</sup> century development was sparse and consisted of mostly simple structures, other than the structures identified above. Further, there is little intact evidence of the many cultural and sporting uses that occurred on the site remaining, other than for the former speedway and oval.

Outside of the two homestead sites, archaeological potential is likely to consist of the footings or foundations of mostly timber structures including domestic and farm structures, fences etc. The overall significance and research value of the potential archaeological resources for the site is considered to be low.



### 3.10 Indigenous Heritage

The Penrith region, including the North Penrith site, has a rich Aboriginal archaeological background. An Aboriginal Archaeological and Cultural Heritage Assessment prepared by Jo McDonald Cultural Heritage Management is included at **Appendix T**.

There is one known Aboriginal item in the north eastern portion of the site, which contains archaeological artefacts of Aboriginal cultural and scientific significance. The site is numbered 45-5-2491 on the Aboriginal Heritage Information Management System (AHIMS) database maintained by the Department of the Environment, Climate Change and Water (DECCW) – refer to **Figures 12 and 13**.



**Figure 12** – Distribution of potential and known Aboriginal archaeology



**Figure 13** – View of location of indigenous heritage item

A Phase 2 Field Assessment was undertaken in July and August 2010 to quantify the indigenous heritage values of site and to inform Landcom's development footprint, which included consultation with the following organisations as interested indigenous groups:

- Deerubbin Local Aboriginal Land Council
- Darug Custodian Aboriginal Corporation,
- Darug Tribal Aboriginal Corporation
- Darug Aboriginal Cultural Heritage Assessments
- Darug Land Observations
- Darug Aboriginal Land Care Inc
- Widescope Indigenous Group Pty Ltd
- Yarrawalk.

The field assessment noted the mapped artefact is small, not in pristine condition, and has been previously disturbed. In addition to Item 45-5-2491, additional artefacts were identified during the field assessment within the stand of trees located nearby. An on-site and subsequent assessment of their condition determined that conservation is not necessary, as only small portions of the site exhibit moderate potential archaeological deposit. The majority of the site is however not constrained by indigenous heritage values and is considered to be of low or no archaeological potential or public significance.

The levels of archaeological potential for the site are shown on **Figure 14**, showing low (yellow), moderate (purple) and no potential (blue) for archaeology. As outlined in **Appendix U**, Landcom is not required to retain the artefacts as their value is considered to be low; however Landcom has determined to retain the surrounding trees thereby protecting other potential undiscovered artefacts which may be present on site.

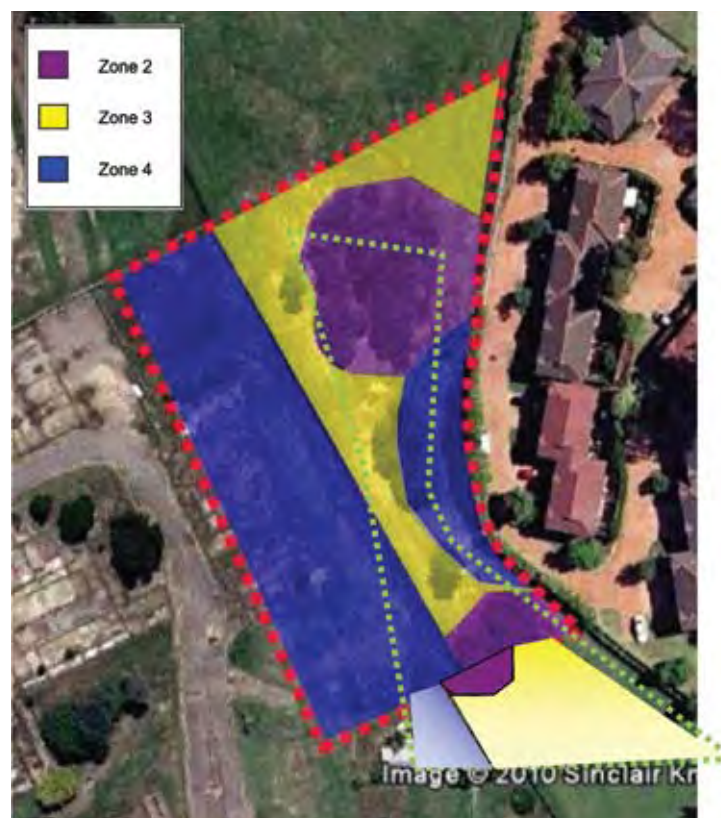


Figure 14 – Zones of potential archaeology



### 3.11 Access and Transport

A Transport Accessibility Study and Transport Management and Accessibility Plan (TMAP) prepared by Parsons Brinkerhoff is included at **Appendix V**.

North Penrith is an extension to the existing urban footprint. Its location presents a number of issues to work through when considering transport accessibility. The key issues include:

- an existing surrounding road network;
- a regional road network which presently experiences peak period congestion at key intersections and mid-block sections;
- a region with an existing high level of car dependence due to poorly integrated public transport, low service levels, irregular low-density urban development and dispersed trip origins and destinations; and
- significant urban developments planned in surrounding areas such as Penrith Lakes, Cranebrook, St Mary's, Werrington Enterprise Learning and Living Precinct, Glenmore Park Stage 2, Badgerys Creek and Castlereagh Road employment lands.

#### Functional Road Classifications

The major road network surrounding North Penrith is described at Table 13 of the TMAP at **Appendix V**.

Key elements of the existing road network can be summarised as follows:

- there are 13 RTA State classified roads within the vicinity of the site;
- Coreen Avenue is classified as a Regional Road that is managed by the RTA and Penrith City Council
- the highest order roads in the vicinity of the site are the M4 Motorway and the Great Western Highway linking interregional trips from metropolitan Sydney to Penrith, the Blue Mountains and beyond;
- the Northern Road links interregional trips in the North-South corridor as does Castlereagh Road/Mulgoa Road;
- vehicular and pedestrian access into the site is Coreen Avenue to the north, Castlereagh Road to the west from The Crescent to the south. An unnamed road from Coreen Avenue also provides access into the site; and
- other local roads within the vicinity of the site include Lemongrove Road, Macquarie Avenue, Peachtree Road and Coombes Drive. The Lemongrove Road Bridge provides access across the railway line. It is a two way road configured with one lane in each direction and provides access to the Penrith CBD and the Great Western Highway via Evan Street. To the north, the bridge provides access to Coreen Avenue via Lemongrove Road.

### 3.11.1 Existing Road Network Performance

In terms of the existing road network performance:

- Coreen Avenue and Castlereagh Road are operating at satisfactory levels in the peak hour directions. The Great Western Highway Bridge across the Nepean River is approaching capacity during the peak hours.
- In terms of intersection performance:
  - the Parker Street/Great Western Highway and Castlereagh Road/Great Western Highway/Mulgoa Road/High Street intersections are showing unacceptable levels of delay (Lo S E and F);
  - the Parker Street/Richmond Road/Coreen Avenue and Oxford Street intersection is operating close to its capacity (LoS D);
  - the remaining intersections appear to be operating satisfactorily.
- Queuing is occurring at some intersections, however acceptable delays are being experienced.

### 3.11.2 Existing Public and Active Transport Deficiencies

There is currently a high level of movement of workforce to jobs into, out of, and within the Penrith LGA. Car is the predominant mode of travel for work trips for both origin and destination trips within the LGA, as well as within the local North Penrith. The remaining modes contain very small percentages compared to the car mode.

The North Penrith site is served by the following public transport modes:

- **Rail:** Penrith Railway Station provides rail connection to Central Sydney via Blacktown and Parramatta with services leaving approximately every 5 to 15 minutes. The railway station is served by the existing rail commuter car park on the site; and
- **Bus:** Bus services are available from a bus station located adjacent to the Railway Station on the southern side of the site. Regular services are available to areas within the greater Penrith area and to nearby town centres such as St Marys Mount Druitt, Emu Plains, Craneboork, Glenmore Park, Mulgoa and Richmond.

The TMAP notes that rail services from Penrith Railway Station currently operate as follows during peak travel times:

- Western line eastbound: maximum 7 services per hour;
- Western line westbound: maximum 9 services per hour;
- Blue Mountains Line eastbound: maximum 3 services per hour; and
- Blue Mountains Line westbound: maximum 4 services per hour.

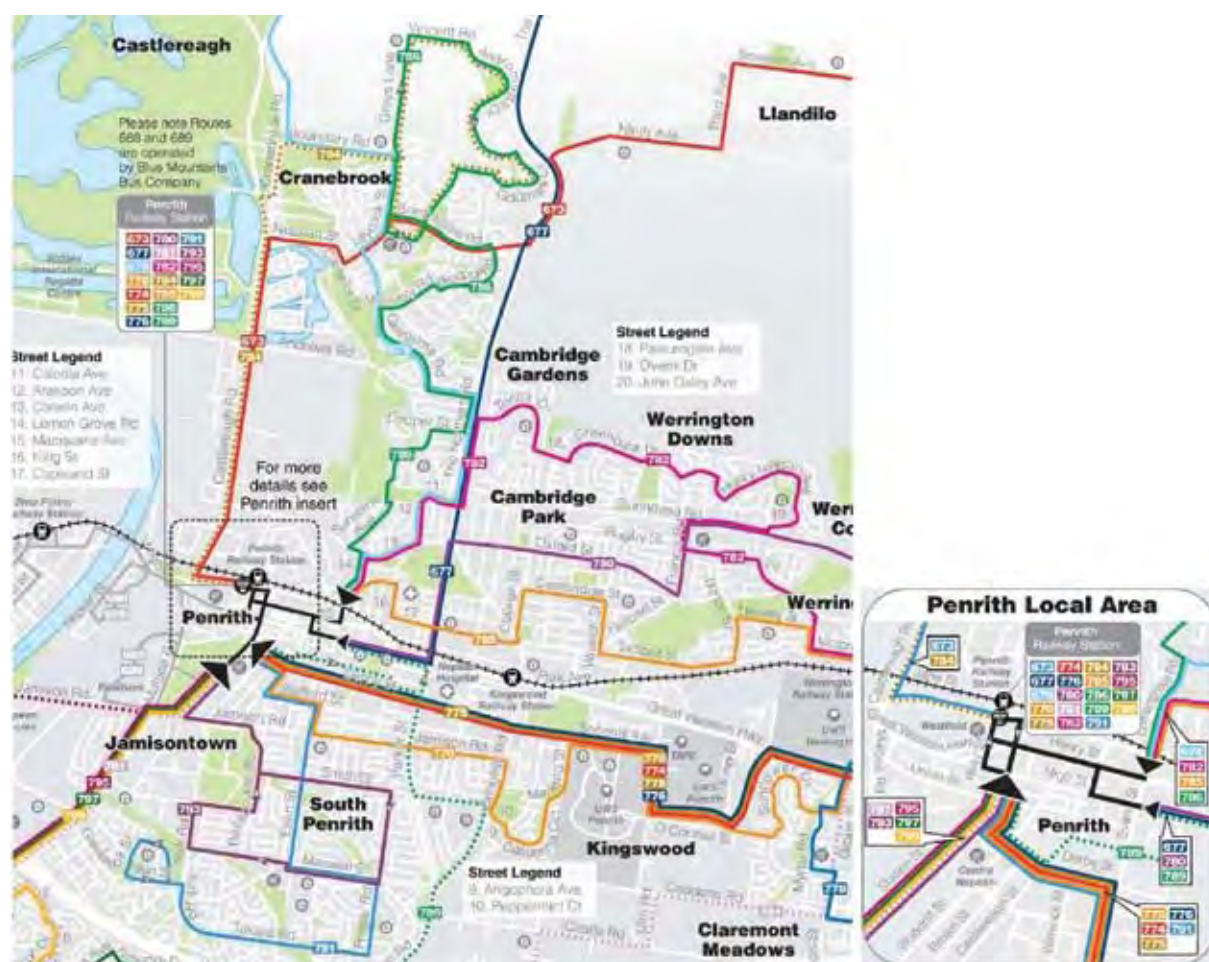
Daily passenger movements through the station are set out in Section 2.0 of the TMAP. On weekdays, an averaged total of 7,140 people enter and leave the station during a 24 hour period. Passenger movements into the station peak at 2,870 between 6.00am and 9.30am. Movements out of the station peak between 3.00pm and 6.30pm at 3,050. Data from Railcorp indicates that trains departing for Central Station are on average 30% full when they leave Penrith during the morning peak period. However, some services originating in the Blue Mountains on their way to Central are full when they arrive at Penrith.

Bus services travelling from the site are detailed in Section 2.0 of the TMAP. Services travelling north from the site include those to Richmond, which leave every 30 to 60 minutes at peak times, services to Mount Druitt every 15 minutes and to Windsor, which leave every 30 minutes in the AM peak, with one service in the PM peak.

However, the existing transport network contains a number of deficiencies which require management to increase the use of public transport:

- the large car dependency arises from the lack of public transport facilities available in the local area, and the nature and distance of the trips;
- as the site is presently owned and operated by DoD, no regular public bus services are provided;
- bus routes serving nearby urban areas are generally infrequent ranging from one service per hour up to 4 buses per hour and are typically circuitous and. The existing bus network is shown on **Figure 15**; and
- urban development is generally located distant from railway stations so the rail line is generally not used for local journeys. It functions mainly as a commuter service between Sydney and the Blue Mountains.

There are presently no pedestrian or cyclist facilities provided within the development site as it is presently Commonwealth owned land and has restricted access.



**Figure 15** – Bus network in the vicinity of the North Penrith site

In light of the above, key transport opportunities include:

- an opportunity to create a master planned community with key sustainable transport principles included within its planning and design from the outset;
- the planning of a regional road network sufficient to resolve the currently experienced significant peak period congestion at key intersections and mid-block sections; and
- the opportunity to remove the high car dependency due to the Region's current poorly integrated public transport, low service levels, irregular low density urban development and dispersed trip origins and destinations.

### 3.12 Community Facilities and Human Services

The existing local level facilities in adjoining areas will be readily accessible to the future population of North Penrith suggesting there is not a significant demand for new local facilities and services to be established within North Penrith.

A Social Assessment prepared by Elton Consulting is included at **Appendix AA**. The Assessment finds that, consistent with its role as a regional city, a wide variety of regional facilities and services are located within or close to Penrith CBD including:

- Joan Sutherland Performing Arts Centre and Q Theatre;
- Penrith Regional Gallery and Penrith Regional Library;
- Westfield Penrith, Nepean Centro and smaller shops and commercial services;
- Leisure and entertainment facilities including restaurants, cafes, cinemas and clubs such as Penrith Leagues Club and the Penrith Panthers Entertainment Complex;
- Nepean Hospital and Governor Phillip Special Hospital;
- University of Western Sydney, the Western Sydney Institute of TAFE and Nepean Community College;
- Human service agencies including Department of Community Services, Department of Education and Training, Fair Trading, RTA Motor Registry, Centrelink, the Child Support Agency and Medicare;
- Penrith Senior Citizens' Centre;
- Penrith Community Health Care and private medical and allied health practitioners;
- PCYC (Police and Community Youth Centre);
- Lemongrove retirement village and aged care services and St Stephens retirement village; and
- A variety of non-government organisations providing community services.

Penrith Public School and Penrith High School are located to the south east within 1 km of the site, with other government schools within a 5km radius of the site. Local neighbourhood retail services are located in local centres surrounding Penrith CBD. The Department of Education and Training has indicated that capacity within local primary and high schools is increasing as enrolments remain steady or decline with the ageing of the populations of their catchments. Discussions with children's services providers have identified a significant oversupply of both long day care and pre-school places in Penrith LGA generally and around the city centre in particular.

Within the Penrith LGA, there are 19 neighbourhood centres and 12 community halls providing community meeting and activity space. The closest to the site is the North Penrith Neighbourhood and Community Centre in Illawong Avenue, Kingswood Park to the north of the site.

Large areas of public open space are located in the vicinity of North Penrith. Approximately 23 local parks are located within a 2km radius of the site. The largest of these parks is River Road Reserve in Emu Plains which is almost 7ha in area. Thirteen local parks are within 1km of the site. The closest district level sporting facility is Parker Reserve, which accommodates soccer, athletics and cricket on a 13.5 ha site. Other sporting fields within a 1km kilometre radius include the rugby and baseball pitch at Nepean Rugby Park (39.15 ha), rugby pitches at Hickeys Park (3.75 ha) and Weir Reserve (7.56 ha), a lawn bowls green at Judges Park (1.87 ha) and a tennis court at Woodriff Gardens (7.16 ha).

Other regional and district level sport and recreation facilities within a 3km radius of the site include Penrith Swimming Centre, the Nepean River and environs, Sydney International Regatta Centre and Jamison Park (which includes playing fields, netball courts, skate park).

The existing network of district and regional facilities and services provides a solid foundation to support the community of North Penrith.

Elton has identified the following key social issues within the Region that will inform future development on the North Penrith site:

- a need for diverse and affordable housing;
- initiatives to address potential physical and social isolation;
- access to local employment opportunities;
- a need to provide quality social infrastructure to support new development; and
- a particular need for activities and support for older people.

The Concept Plan's response to these factors is outlined in Section 6. In addition, the developer contributions framework at Section 6.13 incorporates a range of human services infrastructure responding to the identified demands of the incoming population for social infrastructure.

### 3.13 Utility Services Infrastructure

Figure 1 of the Worley Parsons Utilities Servicing Report at **Appendix H** illustrates the extent of existing water, sewer, telecommunications, gas and electricity infrastructure and services facilities across and in the vicinity of the site.

Although the site itself does not include much existing infrastructure, there is a good network of services infrastructure surrounding and directly adjacent to the site.

Detailed analysis of existing infrastructure and utility services is provided in the Utilities Servicing Report by Worley Parsons, included at **Appendix H**.

### 3.14 Existing and Future Land Uses

An aerial photograph of the site is included at **Figure 3**. General views of the site are illustrated in **Figure 16**. The site is predominantly vacant following demolition and removal of the majority of the buildings and structures that were previously present. Much of the site is vegetated with grass and other un-cultivated vegetation as described in Section 3.9. Concrete slabs comprising the remains of demolished industrial buildings remain, along with internal roads across the site. Some of the land is used as commuter car parking adjacent to the railway station.





Former driveway



Grasslands and scattered vegetation



Example of site interface



Derelict driveways and weeds



Existing commuter car park



Example of built form on the site

**Figure 16** – Site photos

### 3.14.1 Surrounding Development

The site is surrounded by industrial buildings to the north that accommodate a range of uses including automotive repair workshops and building supplies warehousing/retail outlets. Between the industrial buildings are areas of underutilised land covered with grass.

Directly to the north of the site is the Mobile fuel storage depot. As identified in Section 3.10, the locally and Nationally heritage listed Combewood House, a 19<sup>th</sup> century villa and its gardens, are also located adjacent to the site's northern boundary. Further north are industrial buildings that occupy the area to the north of Penrith between Coreen Avenue and Andrews Road.

Immediately to the east of the site are residential developments on Lemongrove Road and Robert Street that predominantly comprise single dwellings with some townhouse developments along the northern section of Robert Street. The PTD site also adjoins the site to the east and accommodates predominantly single storey industrial style buildings that accommodate army supplies and equipment.

Penrith Railway Station and the Main Western Railway Line adjoin the site to the south. A flight of steps and pedestrian bridge provide access to the railway station from the rail commuter car park on the site. The bridge and steps also provide access to Penrith CBD to the opposite (southern) side of the station. The Westfield shopping centre is within 100m walking distance of the pedestrian bridge over the station.

Immediately to the west of the site is the Museum of Fire, an area of underutilised land covered with grass and industrial, commercial and retail uses to the west of Castlereagh Road. Further west is the Nepean River.

Directly southwest of the site is a portion of land allocated for a new commuter car parking area. This development is the subject of a separate approval and will be constructed by Penrith Council. This purpose built car parking area is likely to be a multi-storey car park that will accommodate approximately 1,000 vehicles. In preparing the Concept Plan and Project Application, Landcom has had various meetings and workshops with Council to assist in designing and managing the interface the car park and the proposed development.

## 3.15 Urban Capable Land Capability

As demonstrated throughout this section of the report and the specialist reports contained within the Appendices, the North Penrith site is relatively free of major physical and environmental constraints. The land that is capable of being developed for the proposed urban uses having regard to manageable environmental constraints. This has been used as the basis from which to develop the Concept Plan presented at Section 6.

The site has a relatively high ratio of urban capable land to non urban capable land. The constraints that do exist on site can be integrated, managed and / or conserved as part of the proposed development through the adoption of appropriate strategies.

## 4.0 Consultation

Consultation has been undertaken with the Council and relevant Government agencies during the preparation of supporting technical studies and investigations, and the formulation of the Concept Plan and supporting Stage 1 Project Application for the project.

In accordance with the DGRs, the following public authorities, including all relevant utility providers, have been consulted:

- Penrith City Council
- Department of Planning, including Heritage Branch
- Department of Environment, Climate Change and Water
- Roads and Traffic Authority (RTA)
- Ministry of Transport
- Railcorp
- Sydney Water
- Integral Energy
- Jemena Gas Networks
- Telstra
- State Emergency Service

### 4.1 Council Consultation

Consultation with Penrith City Council first commenced in October 2008 and then more recently, in November 2009, in regard to the Part 3A planning process. Since then Landcom and Penrith City Council have had regular meetings to discuss and progress the design.

Landcom has undertaken extensive consultation with Penrith City Council. Consultation first commenced in November 2009 to provide a broad overview of the project and has since included 17 other meetings and workshops where Council officers were involved in providing feedback and assisting in the development and refinement of the Concept Plan, the DCP and other matters. Consultation with Council is planned to be ongoing.

### 4.2 Agency Consultation

Various public agencies were consulted to derive key issues for these agencies with respect to the North Penrith site and its development. The following provides a summary of these:

- Eco Logical Australia (Lucas McKinnon) undertook consultation with the Office of Hawkesbury Nepean, DECCW, pertaining to drainage lines under the *Water Management Act 2000*;
- Landcom (Nicole Woodrow) undertook consultation with Environmental Protection and Regulation Division of DECCW, on outcomes for the Cumberland Plain Woodland present at the Project Site;
- Consultation with Sydney Water was undertaken to ensure odour impacts from the Penrith STP were adequately assessed;
- Consultation with Sydney Water regarding the requirements of the site for a sewer pumping station;



- The relevant infrastructure services authorities (Sydney Water, Integral Energy, Jamena and Telstra) were consulted during the formulation of both the Concept Plan and Stage 1 Project Application;
- In the preparing the Transport Mobility Accessibility Plan, Landcom and Parsons Brinckerhoff consulted with the RTA, Transport NSW, Penrith Council and RailCorp. Any issues these groups raised are documented and addressed in the TMAP report at **Appendix V**.

## 4.3 Community Consultation

Landcom has produced and distributed the first community newsletter to the local community. Currently surveys are underway with the local community. A website and hotline have also been established to provide information to the community and provide responses to issues and/or concerns raised by the public.

A second newsletter is scheduled to be published to coincide with the statutory public exhibition of this EAR.

Landcom is also committed to continuing consultation throughout the assessment and delivery processes.

### 4.3.1 Aboriginal Consultation

Aboriginal community stakeholders have been consulted as part of the preparation of the Aboriginal archaeological and cultural heritage assessment undertaken by Jo McDonald (see **Appendices T and U**). This included representatives of:

- The Deerubbin Local Aboriginal Land Council;
- The Darug Custodian Aboriginal Corporation (DCAC);
- The Darug Tribal Aboriginal Corporation (DTAC);
- The Darug Aboriginal Cultural Heritage Assessments (DACHA); and
- Darug Land Observations (DLO).

Identification of Aboriginal community stakeholders was undertaken in accordance with the DECCW *Community Consultation Requirements for Applicants 2010*. This required notification of the relevant Local Aboriginal Land Council, other abovementioned Aboriginal groups. Further, an advertisement for other interested Aboriginal groups or individual s was placed in the Penrith Star, which included a deadline to respond by 15 July 2010.

All registered stakeholders and one additional group, being the Hickey family (Widescope Indigenous Group Pty Ltd) inspected the registered site on 4 August 2010. The site was reinspected and various options for management were canvassed with the groups' representatives

## 5.0 Strategic and Statutory Context

### 5.1 Strategic Framework

Key Strategic Plans for the site include:

- The NSW State Plan;
- The Sydney Metropolitan Strategy;
- North West Draft Subregional Strategy;
- Metropolitan Development Programme (MDP); and
- Metropolitan Transport Plan 2010.

The consistency of the proposal with the above strategic plans is addressed in the Table of Consistency With Strategic Plans and Instruments at **Appendix W**.

### 5.2 Statutory Planning Controls

The following environmental planning instruments (EPIs) are relevant to the proposal and are discussed further below:

- Sydney Regional Environmental Plan No 20 – Hawkesbury-Nepean River (No 2 -1997) (SREP 20);
- State Environmental Planning Policy No. 32 – Urban Consolidation (SEPP 32);
- State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55);
- State Environmental Planning Policy No. 64 – Advertising and Signage (SEPP 64);
- State Environmental Planning Policy No. 65 – Design Quality of Residential Flat Development (SEPP 65);
- State Environmental Planning Policy (Major Development) 2005 (Major Development SEPP);
- State Environmental Planning Policy (Infrastructure) 2007 (Infrastructure SEPP);
- State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 (Exempt and Complying Development SEPP);
- State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (HSPD SEPP);
- State Environmental Planning Policy (Affordable Rental Housing) 2009 (Affordable Housing SEPP);
- State Environmental Planning Policy (Temporary Structures) 2007 (Temporary Structures SEPP);
- State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 (BASIX SEPP);
- Penrith Local Environmental Plan 1998 (Urban Land) (Urban Land LEP 1998);
- Penrith Local Environmental Plan 2010 (Penrith LEP 2010); and
- Penrith Planning Scheme Ordinance 1960 (PPSO).

The above instruments as they relate to the proposal are addressed in the Table of Consistency with Environmental Planning Instruments at **Appendix W**. A summary statement of compliance is also provided.

## 6.0 North Penrith Concept Plan

### 6.1 Introduction

The Concept Plan is the planning and development framework to be used by consent and approval authorities to assess future development proposals within the North Penrith site. It identifies the parameters and outcomes for future development and describes key elements of the environmental strategies that are to be implemented.

The Concept Plan responds directly to the opportunities and constraints identified in the Site Analysis at Section 3, and proposes a development outcome that is faithful to Penrith City Council's previous master planning parameters for the site and is consistent with the contemporary environmental, social and economic context within which the North Penrith site is located.

Landcom will deliver the physical infrastructure associated with the Concept Plan proposal. It is envisaged that the staged delivery of this will be over 5-7 years. The built form outcome will begin in 2010 and delivery will continue for 10-15 years. This requires a planning and assessment framework that provides the certainty of a workable urban structure at the outset.

The Concept Plan provides an urban structure that addresses the manner in which site wide environmental issues and relationships including heritage protection and conservation, water management, traffic management, and infrastructure servicing, have been resolved.

Detailed planning and design for urban development will be addressed as part of a series of future applications for subdivision, open space, conservation and infrastructure works that will be submitted over time, consistent with the parameters and outcomes for development identified in the Concept Plan.

Each of these future applications will be required to be generally consistent with the Concept Plan, Statement of Commitments and the Development Control Plan.

The proposed amendments to the existing land use zones that apply to North Penrith to allow for the implementation of the Concept Plan will be effected through the inclusion of the site as a SSS under Schedule 3 of the Major Development SEPP. The proposal for the amendment to the Major Development SEPP is included at Section 7, and importantly enables future intensification of development on the sites to accord with the Metropolitan Strategy's and North West Subregional Strategy's longer term vision for the site.

## 6.2 Proposed Development

Landcom is seeking the Minister for Planning's Concept Plan approval pursuant to Section 750 of Part 3A of the EP&A Act for a sustainable, transit oriented and cohesive mixed uses development. More specifically, Concept Plan approval is sought for:

- land use type and distribution;
- approximately 900 – 1,000 dwellings, comprising a minimum of:
  - 100 seniors living/aged care dwellings;
  - 44 affordable/social housing dwellings; and
  - 44 adaptable dwellings;
- minimum subdivision lot sizes for a range of dwelling typologies, building heights and densities;
- a Village Centre located adjacent to the Penrith Railway Station and centred around a public square (Station Square);
- up to approximately 12,500m<sup>2</sup> of retail, business and commercial floor space;
- the retention and protection of land for environmental conservation and / or management purposes including Thornton Hall, a 19<sup>th</sup> Century homestead building and its associated curtilage;
- appropriate interpretation of the European and Aboriginal heritage values of the site including retention of Thornton Hall;
- an open space network (including water bodies) of approximately 7ha including the general location, level of embellishment and function of passive and active areas to serve the future residential and worker population;
- a road network and hierarchy for the site and a pedestrian, cycle and public transport network;
- a water cycle management strategy for the development; and
- strategies for the provision of other associated infrastructure including a recycled and potable water, power, telecommunications and gas, including a sewer pumping station.

The Concept Plan also proposes:

- a Development Control Plan to guide future built form at North Penrith; and
- a developer contributions framework and a proposed governance arrangement and funding mechanism for infrastructure and public open space.

The series of drawings illustrating the Concept Plan for which approval is sought is included at **Appendix A**, including an illustrative Concept Plan, which is reproduced at **Figure 17** below.





Figure 17 – North Penrith Illustrative Concept Plan

## 6.3 Vision and Urban Design Concept

The North Penrith Concept Plan is premised on the following vision statements:

- *North Penrith will be a village of well designed spaces that engage and activate its community for living and working. These spaces will include cool leafy urban landscapes and a responsive built form.*
- *A new village centre will be urban in nature and compliment the railway station and Penrith CBD.*
- *A series of well connected linkages, nodes and destinations that integrate with a significant water body.*
- *Diverse yet cohesive housing products that allow adaptability to the ever changing household needs and formations.*
- *A business / employment centre that is complementary and an extension to the Penrith CBD.*

To achieve the above vision, the urban design and development principles driving the planning and development of the site are as follows:

### Village Centre focus of Activity

- A focus of business and community activity in the Village Centre with a mix of retail, commercial and community uses adjacent to the main rail/ bus interchange providing employment opportunities and meeting the business services and retail needs of the community.
- The urban and built form of the Village Centre has a main street focus and is pedestrian friendly.

### Transit Oriented, Accessible and Connected Development

- Higher density housing is provided within walking distance of the Village Centre, rail station and bus/rail interchange.
- Public transport and arterial roads upgrades give access connections to and from other business centres, employment lands and community facilities in surrounding localities.
- A hierarchy of roads and paths provide clear and convenient access links throughout the precinct and particularly between key urban places.
- A cycleway network link destination points and open spaces.
- Creation of a safe walkable community.

### Community places

- A series of community spaces with distinct identity is embedded in the urban structure.
- Community and social infrastructure is incorporated into the precinct including a multi-purpose community facility, local neighbourhood parks and public art.
- Streets and public spaces are designed for formal and informal social engagement.
- A safe and secure environment is provided with high levels of passive surveillance of the public domain.



## Heritage Protection

- Thornton Hall and its curtilage will provide a heritage sensitive precinct which enjoys visual linkages across the site.
- Important indigenous heritage elements are also preserved in open spaces.
- Significant places and items of heritage are retained, and interpretation and celebration of heritage values and adaptive re-use of European and Indigenous heritage is proposed to contribute to an ongoing sense of identity and understanding of the place.

## 6.4 Sustainability

Sustainability is a fundamental element of North Penrith and include:

### Environmental Sustainability

- Retention of core ecological communities within the site and provision of conservation and open space connectivity with a long term ownership and maintenance regime.
- Water sensitive urban design measures that will improve water quality, and form a critical component of the site's urban design.
- Adoption of potable water supply conservation target and identification of integrated options for water supply, wastewater and stormwater servicing.
- Conservation in energy demand by facilitating orientation of lots that can ensure optimal solar access.
- Reduction in travel distances and improved mode share split by
  - establishing a Village Centre and locating traffic generating land uses adjacent to the future railway station and bus interchange;
  - locating related land uses centrally to maximise the opportunity for multipurpose trips;
  - providing a street network with a high level of connectivity and permeability;
  - locating the majority of dwellings within 400 metres walking distance of public transport services and nodes;
  - providing public transport corridors to key local destinations;
  - providing an interconnected network of pedestrian priority streets and open space corridors to encourage walking between residences and facilities; and
  - providing a system of on-street and off-street cycle ways to encourage bicycle usage.

## Social Sustainability

The social sustainability objectives for North Penrith are:

- A planning approach that integrates social planning components with physical, environmental and economic planning, to ensure comprehensive sustainability principles are addressed.
- A population which is diverse in terms of demography and lifestyle choice, achieved through diversity of housing and setting.
- A pleasant, healthy and safe environment which promotes a sense of security and wellbeing and an active lively neighbourhood life.
- A vibrant and accessible Village Centre which acts as the focal point of the community.
- Convenient and equitable access to jobs, shops, public transport, schools and social and recreational facilities at the local level and in the wider region.
- Encouragement for residents to learn throughout their lives, through local provision of a range of learning opportunities and resources.
- Provision of a range of facilities, services and programs that meet the learning, social, cultural, health and recreational needs of the community and help build its resources.
- Efficiency in the development and use of community resources.
- Opportunities for all age groups and sections of the population to become involved in the life of the community, and to develop community networks and connections with other residents and a sense of belonging.
- Opportunities to participate in the on-going planning and development of the community and to develop stewardship over its resources.
- An identity and image that promotes civic pride and celebrates its unique sense of place.
- Respect, interpretation and celebration of its natural and cultural heritage.
- Integration with surrounding communities and the wider regional, both physically and socially.
- Contribution to the amenity of the region, by providing jobs, transport, commercial, cultural and recreational resources which are accessible to the wider community.



## 6.5 Land Uses, Distribution & Future Proofing

### 6.5.1 Future Proofing the Site

A key component of the Concept Plan is to optimise the locational advantages of the site and promote efficient land use. Landcom's Concept Plan seeks to "future proof" the North Penrith site by introducing new planning controls (through the SEPP Amendment discussed in Section 7 and the Concept Plan framework) by providing maximum flexibility whilst encouraging built form outcomes that recognise the site's strategic location and potential synergies with the Penrith CBD.

The "future proofing" of the site is proposed to be delivered through the controls which enable short term built form outcomes to be realised immediately, but are also flexible enough to accommodate additional land uses and development as a critical mass is delivered. For example, the Village Centre may initially be developed as two and three storey buildings, however over time, development is expected to achieve up to six storeys. The Concept Plan and SEPP Amendment are also flexible enough to accommodate changing land uses over time – this is particularly the case within the "Opportunity Site" discussed below.

### 6.5.2 Land Use Framework

Landcom's Land Use Framework at **Figure 18** illustrates the proposed distribution of land uses across the North Penrith site. The manner in which the Land Use Framework Plan is proposed to be realised is discussed below. The process for securing approvals for development is outlined in Section 6.15 and Section 7 of this report.

### 6.5.3 Residential Precincts

#### Dwelling Yield

The Concept Plan will deliver approximately 900 – 1,000 dwellings over the next 10-15 years.

**Figure 19** and **Table 3** identify a minimum dwelling yield for the development on a staged basis demonstrating the manner in which the proposed yield is intended to be delivered within the site. Future detailed applications for future stages of the development will demonstrate implementation of the dwelling yield targets within the framework of **Figure 20**. Staging is further addressed in Section 6.12.



Figure 18 – Land Use Framework Plan



Figure 19 – Block subdivision plan

**Table 3** – Indicative land use summary

Block(s)	Zoning	Intended Use
T1, T2 & A7	B4 Mixed Use	Village Centre retail with some opportunities for commercial uses
T3, T4, T5 & A2	B4 Mixed Use	Predominantly residential apartments with some opportunities for retail or commercial uses at lower levels
T6	B4 Mixed Use	Predominantly commercial use
A5 to A6	B4 Mixed Use	Predominantly residential with some commercial uses at lower levels, however may be developed as an 'Opportunity Site' for commercial use (refer to Section 6.5)
A3 & A4	R1 – General Residential	Predominantly medium density/townhouse developments, however may be developed as an Opportunity Site for commercial use (refer to Section 6.5)
A1, B1 to B10, & C1 to C7	R1 – General Residential	Predominantly medium density/townhouse developments with some apartments. Block A1 & C3 is specifically earmarked for apartment style dwellings
H1	R2 – Low Density Residential	Retained/refurbished Thornton Hall to be used as a residence and/or professional consulting rooms
E1 to E3	IN2 Light Industrial	Light industrial
OS 1	RE1 Public Recreation	'The Oval' – existing oval to be upgraded as a recreation space, children's play areas, landscaping and water feature
OS6	RE1 Public Recreation	Waterfront Park – an artificial canal and surrounding open space
OS5	RE1 Public Recreation	Wetland Park – a stormwater detention basin and surrounding landscaped area
OS2, OS3, OS4 & OS7	RE1 Public Recreation	Parks – public open space and recreational facilities
OS8	RE1 Public Recreation	Station Square / meeting place

## Dwelling Mix

A key component of Concept Plan is Landcom's proposal to deliver affordable, adaptable and aged care housing. As discussed in Section 1.0, Landcom is contractually bound to implement the Commonwealth's CPTD Policy through the provision of:

- 100 seniors living/aged care dwellings;
- 44 affordable/social housing dwellings; and
- 44 adaptable dwellings.

The remaining dwellings will be constructed in accordance with a range of dwelling typologies and made available to the general housing market through the release of lots and super lots. The mix of housing forms to be provided within North Penrith will encourage population diversity and help create a socially balanced and stable community. The development will provide housing choice to satisfy the needs of a wide spectrum of households, at differing life cycle stages, and with varying socio-economic circumstances and lifestyle preferences. The indicative dwelling mix is summarised in **Table 4**.





**Figure 20 – Indicative Subdivision Plan**

**Table 4** – Indicative Dwelling Mix

Dwelling Type	Proportion of Mix
Detached Housings (>10m frontage)	24%
Secondary Dwellings (lofts/ studios)	6%
Attached Housing, Dual Occupancies, Semi-detached housing (<10m frontage)	20%
Apartments	50%

The Concept Plan does not seek approval for the above indicative mix and specifically does not pre-determine the number of dwellings or mix within each stage of the development. Dwelling mix is subject to change over the significant time period for implementation of the development as market requirements change. The actual dwelling mix and yield for each dwelling type will be determined as part of future detailed applications for each development stage.

To control the built form product on the site and ensure the targeted densities are delivered, the DCP requires that all applications for subdivision proposing residential allotments in **Figure 21** with a site area of less than 235m<sup>2</sup> and with a lot width of less than 8m will need to be accompanied by plans for the proposed dwellings on those lots (i.e. an Integrated Development Application). The minimum number of allotments within an 'integrated development' is proposed to be three (3) dwellings, except as where provided for at **Figure 22**.

A key component of the North Penrith Concept Plan and the SSS Study (Section 7) is the introduction of "studio lofts" which are self-contained dwellings that may be occupied separately from the principal dwelling and are on a separate title from the principal dwelling. Studio lofts are integral to the North Penrith Concept Plan as they:

- encourage a diversity of affordable housing product;
- provide housing and accommodation options for a range of family types and age groups;
- promote innovative housing solutions compatible with the surrounding residential environment;
- provide passive surveillance of rear lanes and shared driveways; and
- encourage the use of studios over garages to provide surveillance, work from home or residential accommodation opportunities.

The preferred location of such dwellings is illustrated in the North Penrith DCP (**Appendix B**) and reproduced below in **Figure 22**.

### Housing for Seniors

The 100 housing units designed for older people will generally be located no more than 400m walking distance away from the Village Centre shops and services and the railway station. An aged housing provider will be selected by Landcom through an open tender process.

### Affordable Housing

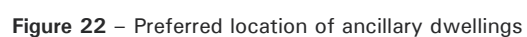
A minimum of 44 affordable rental housing dwellings will be provided to households in the low, very low and moderate income bands. Applying the State Environmental Planning Policy No 70—Affordable Housing (Revised Schemes) (SEPP 70) definitions, affordable housing within the North Penrith site captures households that earn \$82,000 or less per annum.

Landcom envisages to provide the dwellings in collaboration with a yet to be appointed non-profit community housing association which may construct the dwellings either directly, or through a joint venture partnership.





Figure 21 – Integrated housing lot subdivision





## Adaptable Housing

A minimum 44 accessible dwellings are also proposed to be provided on to accommodate the needs of people with a disability or progressive frailty and will be consistent with Landcom's Universal Housing Guidelines.

## Minimum Lot Sizes

Within the general residential footprint, residential lot sizes will range from 120m<sup>2</sup> to 12,288m<sup>2</sup> (C3). Thornton Hall and its curtilage and has an area of 10,444m<sup>2</sup>.

The range of dwelling types and minimum subdivision lot sizes for which Concept Approval is sought is within the general residential areas. These are set out below (refer to **Table 5**) and illustrated in **Figure 23**. The Concept Plan and future Project Applications will seek subdivision of lots greater than or equal to 235m<sup>2</sup>. Lots will be permitted to be subdivided to 120m<sup>2</sup> subject to an integrated housing solution. The smallest lot size proposed within the general residential zone is 120m<sup>2</sup>. No minimum lot size is proposed within the Village Centre.

**Table 5** – Proposed minimum subdivision lot sizes

Dwelling Type	Minimum allotment size
Semi-detached dwellings	120m <sup>2</sup>
Attached dwellings	120m <sup>2</sup>
Multi-unit housing	360m <sup>2</sup>
Residential Flat Buildings	650m <sup>2</sup>

## 6.5.4 Village Centre

The Concept Plan provides for the new North Penrith Village Centre with capacity for approximately 12,500 m<sup>2</sup> of commercial floor space. A maximum of 3,200m<sup>2</sup> of retail uses, including a 2,000m<sup>2</sup> anchor supermarket is intended to meet new residential and worker demand generated by the Concept Plan.

The Village Centre will be the focus of activity and will comprise a mix of land uses, including local retail, residential, office, and community and educational facilities, with a high level of integration between uses and functions. The mixed use nature of the Centre will allow living, learning, working and playing to strongly integrate. Importantly, it will also contain some higher density residential uses, such as shop top housing and residential flat buildings, ensuring that people will live in the Village Centre as well as work, shop and play there.

This amount of non-residential floor space provides the opportunity for employment generation in the form of 532 full time equivalent jobs in retail and office uses. The Village Centre is expected to offer employment opportunities in retail, services industries, education, home based businesses, conservation and recreation, transport-related services, and construction. As discussed in the Land Use and Economic Assessment by SGS Economics and Planning, the indicative range of employment opportunities to be offered in the Village Centre are:

- 372 commercial jobs;
- 40 retail jobs;
- 50 supermarket jobs; and
- 70 health / aged care jobs on the site.

The Concept Plan development is intended to provide a strong degree of amenity for commercial uses within the Village Centre through proximity to areas of open space, so as to increase the market viability of commercial floor space. The location of commercial and mixed use buildings within convenient walking distance of the railway station will further support the viability of commercial floor space and promote the use of public transport.



Figure 23 – Indicative subdivision plan (with key lot dimensions)

### 6.5.5 Key Sites

Landcom has identified a number of key sites with respect to the urban design outcomes that promote development, resulting in a high quality public and private domain (**Figure 24**). The DCP contains detailed controls for these sites.

Of particular importance is the flexibility introduced by the 'Opportunity Site' in the proposed SSS Controls, Concept Plan and the DCP to enable the use of Blocks A3 to A6 for commercial activities and complementary uses. This site provides the flexibility of additional commercial floor space should a key "anchor tenant" be secured.

As identified by the North Penrith Land Use and Economic Assessment by SGS (at **Appendix I**), the 'Opportunity Site' would be best suited for specific commercial, information, education, or health related purposes like that for research orientated development, whilst also accommodating residential uses (if considered appropriate).

It should be noted, however, that despite the growth in the health and education sectors occurring elsewhere in Penrith (i.e. Nepean Hospital, University of Western Sydney at Werrington and the Penrith City Centre's State Government building), the Penrith City Centre is still considered to be in the very early stages of growth towards achieving Regional City status. Hence, adaptability to accommodate high density employment uses has been a key consideration in the design of the commercial areas of North Penrith. Consequently Landcom has drafted the SSS provisions to provide sufficient flexibility to not only suit the current market gaps but also enable future infill (higher density) development in the future, allowing the North Penrith site to grow intrinsically with that of the city centre into a Regional City.

As the site is predominately residential in character, it is considered that potential institutional/educational/research tenants may be deterred from locating at North Penrith due to its perceived lack of commercial identity. However, Blocks A3 to A6 (that being the 'Opportunity Site') and the remaining B4 Mixed Use zoned land have the potential to offer a degree of amenity that assists in attracting potential larger commercial tenants to the site.

To actively encourage this type of development, Landcom has agreed in principle with Penrith City Council to enter into an agreement whereby Council and Landcom will jointly explore opportunities for (and attempt to secure) appropriate large scale employment development that could complement the CBD. It is important to note that the location of such development could (through the flexibility of the zoning and the framework of the Concept Plan) be located anywhere in the B4 Mixed Use zone not just that of the 'Opportunity Site'. Most notably Blocks T4, T5 and T6 offer key commercial locations with excellent access in close proximity to well connected public transport services. This flexibility will enable greater opportunity to further improve employment outcomes.

This approach will then likely assist to boost employment generated by the development over and above that envisaged by the Concept Plan. This commitment has been included as part of the Statement of Commitments for the Concept Plan (see Section 9.0 of the EAR).





Figure 24 – Key Sites Plan illustrating Opportunity Site

### 6.5.6 Light Industrial Uses

The proposed 2ha of light industrial land located to the north of the site on Coreen Avenue, capable of delivering a total of 229 jobs on the site.

The placement of industrial uses along Coreen Avenue presents Landcom with the opportunity to:

- Create additional employment generating land uses to assist Landcom to achieve the 770 job forecast established for North Penrith;
- Provide local or “population serving” industry(ies) such as trade supplies, bulky goods or domestic storage;
- Address land use conflicts with adjacent residences within the site and to provide an acoustic buffer between residences and Coreen Avenue.

## 6.6 Heritage

The Concept Plan proposes the retention and interpretation of the following heritage items:

- Thornton Hall and its curtilage;
- Views to and from Thornton Hall;
- The alignment of the former speedway on the site; and
- The existing oval at the centre of the site (which will be upgraded).

The proposed OS2 lot is adjacent to Thornton Hall and will be known as Thornton Park (**Figure 25**). The Park will incorporate remnant Cumberland Plan Woodland which will be retained, managed and improved in accordance with the recommendations of the Flora and Fauna Assessment by Ecological Australia at **Appendix P**. Further, the proposed view corridor reinforces the relationship of the Homestead with the various activities held on the site throughout the site’s history. It is also from this location that clear views to the river and the Blue Mountains will be maintained.

The Coombewood residence is not located within the North Penrith site; however the Concept Plan proposes to accommodate land formerly associated with Combewood open space network (discussed below). This land has also been incorporated into the interpretation strategy for the site.

The alignment of the speedway and the existing oval are discussed in later sections of this report, as they are integral to the open space and street layout proposed for the site.

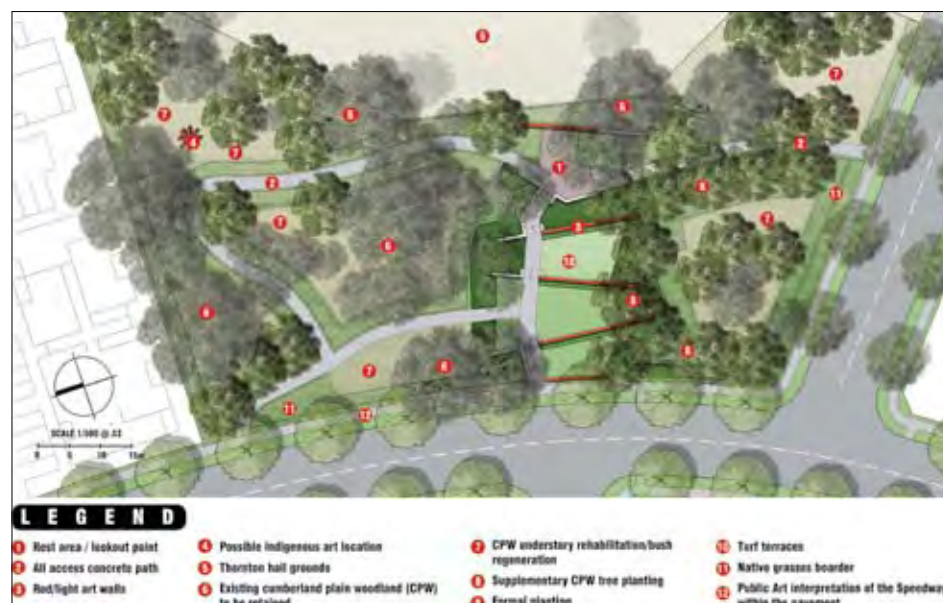


Figure 25 – Thornton Park Landscape Plan

## 6.7 Open Space and Public Domain

The Concept Plan Open Space and Public Domain Plan is shown at **Figure 26**. A Landscape Concept Plan prepared by PLACE design is included at **Appendix X** and details the proposed embellishment proposed by Landcom with respect to local open space.

The Concept Plan Open Space Network will deliver a combination of conservation, passive and active recreation opportunities. It encompasses the proposed water bodies (refer to Section 4.8) as well as other open space corridors, the Thornton Hall curtilage and local parks.

The landscape and open space vision for North Penrith is to:

- create an overall landscape setting that responds to the sites natural assets including natural systems, topography and vegetation;
- create an accessible, integrated, diverse, safe and adaptable network of open space, facilities and landscape with an identifiable character and sense of place;
- protect fauna and flora habitats through the creation of conservation areas;
- create new watercourses;
- create parks and streets that celebrate the natural landscape and the needs of the surrounding community;
- create parks and streets that are of a high quality and which promote local character and identity;
- provide pedestrian and cycleway connections through the conservation lands and with regional beyond the site; and
- provide large shady trees as relief from the new urban environment.

The overall public open space network is underpinned by the provision of significant open space elements at the centre of the site, in the form of the retained Oval and the proposed Waterfront Park and surrounding landscaped areas. Visual and pedestrian connections link the Oval with the Waterfront Park, while planted local streets link the two major open space elements with the Village Centre and smaller pocket parks.





Figure 26 – Concept Plan Open Space Network

Within the North Penrith site, public open space provision includes:

- eight areas of passive open space including interpretative features, opportunities for public art, children's playground equipment;
- upgrade and refurbishment of the Oval including improvements and embellishment to the field, cricket pitch, BBQ area, children's play ground facilities, fitness stations, landscaping, lighting, viewing platforms and amenities;
- drainage works and detention ponds; and
- land and construction of footpaths and cycle ways.

It is proposed to dedicate all parks and open space areas to Penrith City Council.

### 6.7.1 The Oval (Smith's Paddock)

The retained/upgraded oval at the centre of the site will become the local community hub for passive and active recreation. Upgrades to the existing oval will include landscaped treatments, spaces for passive recreation, a children's play area, a cycleway and fitness stations (exercise equipment).

Landscaping will incorporate evergreen and deciduous species to provide shade in summer and solar access in winter. Existing woodland will be retained and incorporated into landscaping treatments to the south of The Oval (Smith's Paddock).

A linear water feature will be provided that will visually connect The Oval (Smith's Paddock) with the adjacent Waterfront Park to the west. The linear water feature will include opportunities for children's water play. A community centre is proposed to the south east of The Oval (Smith's Paddock) (refer **Figure 27** and Section 10). An artist's impression, based on Landcom's indicative scheme is provided at **Figure 28**.



Figure 27 – Landscape plan for the northern end of The Oval (Smith's Paddock)





**Figure 28** – Artists impression of The Oval (Smith's Paddock)

### 6.7.2 Station Square

The Station Square within the Village Centre (**Figure 29**) will comprise:

- a paved civic space comprising outdoor seating areas for cafe / restaurant uses in the Village Centre;
- planted trees to provide shade and smaller planter boxes;
- linear water features inlaid in the hard surface;
- a lawn area; and
- a central sculpture feature.

Retail / community service tenancies will front and activate the Square. The Square will connect with the proposed steps to the railway station footbridge to Penrith CBD to the south.

An artist's impression, based on Landcom's indicative scheme is provided at **Figure 30**. The illustrated design does not form part of the Concept Plan for which approval is being sought, and is merely intended to illustrate the possible scope of public access and activity available within the Square.



Figure 29 – Landscape Plan for the Station Square



Figure 30 – Artist's impression of Station Square

### 6.7.3 Waterfront Park

Waterfront Park (**Figure 31**), which extends west from The Oval (Smith's Paddock), will provide a recreation and open space resource whilst concurrently performing an integral function within the stormwater management system of North Penrith.

Waterfront Park will comprise a canal and surrounding landscaping. The canal will feature cascade features and gardens created through aquatic plantings. Pedestrian access will be provided along the edges of the canal and also across it via bridges to be constructed of concrete or steel. Landscaping around the canal will include terraced plantings, sculptural elements, tree plantings wetland areas and turfing areas. A visual link will be created between Waterfront Park and the linear water feature to the south of The Oval (Smith's Paddock), which follow a similar alignment.



The canal within Waterfront Park will convey water flows to the detention basin located in the western extent of the site. The canal will be designed in accordance with WSUD principles and incorporate segmented filters and aquatic gardens which will partially purify detained stormwater. Water will then flow from the canal to the detention basin in the western extent of the site (i.e.: Wetland Park), in which further sedimentation will take place. Flow from the detention basin to the west of the site is to Council's stormwater drainage infrastructure.

An artist's impression, based on the indicative scheme is provided at **Figure 32**. The illustrated design does not form part of the Concept Plan, and is merely intended to illustrate the possible scope of public access and activity available on the Waterfront.



Figure 31 – Landscape Plan for the Waterfront Park



Figure 32 – Artists impression of Waterfront Park

### 6.7.4 Wetland Park

The detention basin in the western portion of the site that comprises the final stage of the WSUD stormwater treatment system for North Penrith is the basis of the proposed Wetland Park (**Figure 33**).

Wetland Park will provide fauna habitat and amenity in the form of landscaped open space. Detained stormwater collected from the Waterfront Park canal will be directed to the Wetland Park through channels planted with microphytes that will filter impurities in the water. The planting of macrophytes and other aquatic plantings and the appropriate design and construction of the detention basin will allow the basin to function as a wetland.

The emphasis of the park's design is on the provision of passive recreation space. A hard edge to the basin and a viewing platform within the wetland will provide for public access and boardwalks / pedestrian footpaths will be constructed around the perimeter of the wetland. A public gathering space with seatings and shade structures will be located on the eastern side of the wetland. A water feature to the south east corner of the Wetland Park will provide a visual link with the Waterfront Park to the east. A kiosk may be provided for the sale of refreshments adjacent to the public gathering space.



Figure 33 – Landscape plan for the Wetland Park

### 6.7.5 Pocket Parks

The pocket parks proposed on the site will provide passive and active recreation spaces conveniently accessible from residential streets. Pocket parks will incorporate deciduous and evergreen species, with contoured mounding, formal planting and turfed areas for passive or active play.

Three pocket parks are proposed:

- Belmore Green (**Figure 34**);
- Howell Park (**Figure 35**); and
- McHenry Place (**Figure 36**).



Belmore Green will be located along a north east axis from the Smiths Paddock and will provide a landscape connection with the key design elements of the Smiths Paddock. Belmore Green's character will be in keeping with the surrounding streetscapes and incorporate both large deciduous and evergreen trees. Belmore Park will function as a "neighbourhood park" that provides users with both passive and unstructured low level active recreation opportunities.

Howell Park and Belmore Green will offer residential parks in opportunistic locations to service small residential communities. These parks will provide the residence and visitors with areas for passive and active recreation, children's play and quiet contemplation.

McHenry Place is a park proposed within the Village Centre. The main emphasis of this park will be on passive recreation and the provision of a sloping sunning lawn.

More detail is provided on the vision for all pocket parks within the Open Space Concept Plan at **Appendix X**.



Figure 34 – Landscape plan for Belmore Green pocket park



Figure 35 – Landscape plan for Howell Park pocket park





**Figure 36** – Landscape plan for McHenry Place pocket park

### Community Garden

An area to the northeast of the Wetland Park will be dedicated for use as a Community Garden, in which land will be made available to residents for the cultivation of vegetables and other produce. The location of the community garden adjacent to the Combewood property is intended to enable the interpretation of the former agricultural use of the property. The community garden is shown in **Figure 35**.

### 6.7.6 Street Planting

Street trees planted within road reserves will reinforce the street hierarchy through differentiation in arrangements, sizes and species selection (**Figure 37**).

Street trees will predominantly be of introduced deciduous species. Mid to large species will primarily be planted within primary streets, collector roads and the main entry boulevard from Coreen Avenue. Smaller deciduous trees will be planted along local streets. 'Landmark species' endemic to the locality will be planted at entrances to the site. Street plantings will provide view corridors through the site, linking with areas of open space. Plantings in local streets will allow for the canopies of mature species to connect to provide shade.

Planted roadside swales / 'rain gardens' implemented as part of the WSUD stormwater management system on the site will be incorporated into landscaped strips within the entry boulevard.

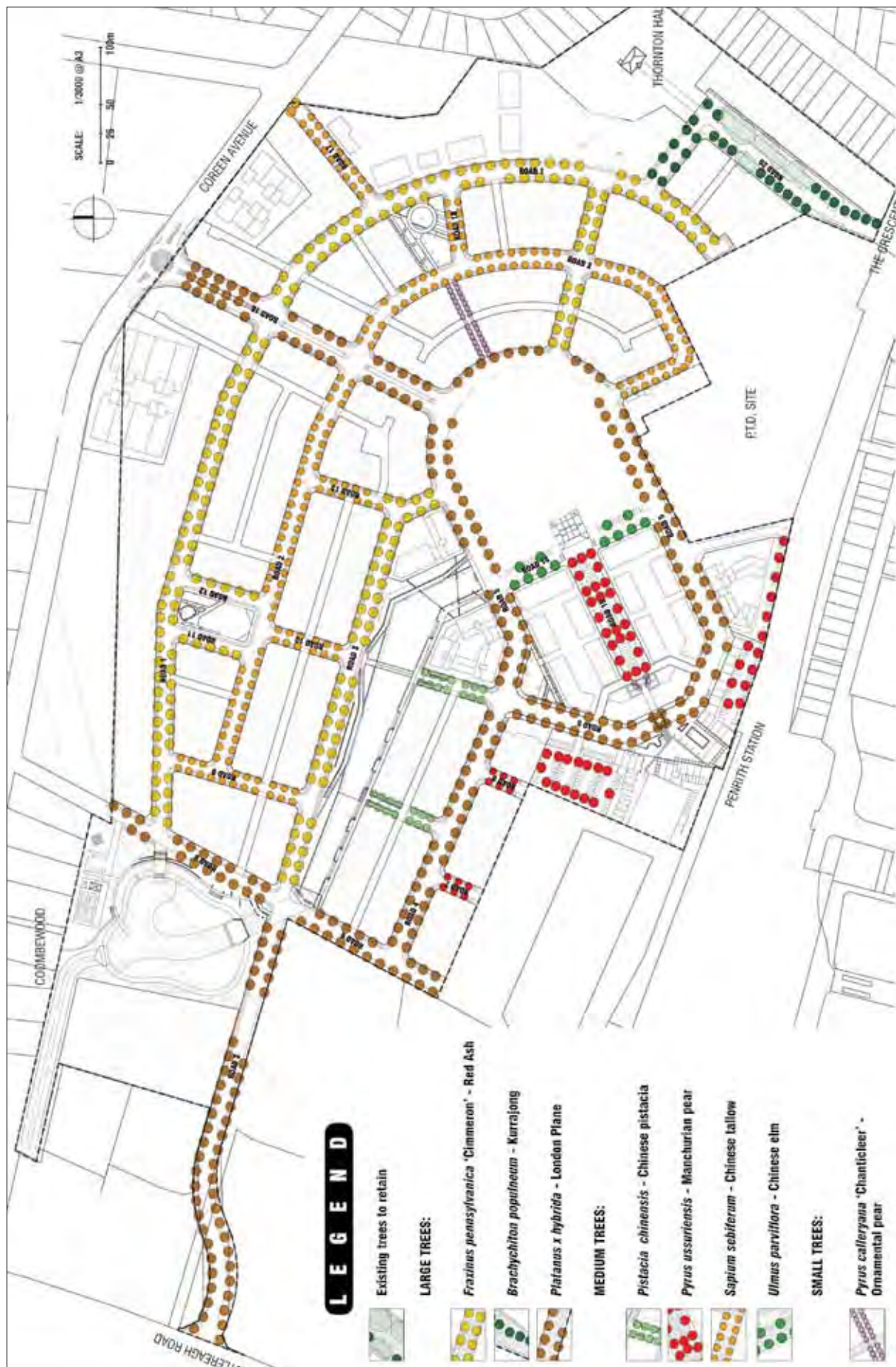


Figure 37 – Street tree planting





Figure 38 – Public Art Strategy

### 6.7.7 Public Art Strategy

Landcom has engaged Milne and Stonehouse to prepare a Public Art Strategy for North Penrith (**Appendix Z**) which sets out Landcom's proposed methodology for the implementation of public art throughout North Penrith.

The Strategy suggests the themes and opportunities for potential artworks

within North Penrith and is underpinned by the Landscape Open Space Concept Plan prepared by Place Design and discussed above. The site's heritage values present exciting opportunities to implement site specific artworks which respond to the histories of the site as well as to the nature, function and audience/ participant of the future North Penrith community.

The Public Art vision for the site is summarised in **Figure 38**.

## 6.8 Traffic and Access

The proposed Concept Plan Road Network Hierarchy is illustrated in **Figure 39**. The transport goals for North Penrith are to:

- provide a permeable network that reduces travel distances;
- provide clear paths from Coreen Avenue to the village centre, and Penrith Station;
- maintain direct access from Coreen Avenue to the commuter car park whilst minimising commuter car park traffic in residential areas;
- slowing traffic as it moves through the village centre to improve amenity and pedestrian safety;
- match road capacity and standard to the anticipated traffic volume;
- facilitate access from the PTD for oversized trucks;
- provide space for a bus underpass of the rail line; and
- provide minor local streets for short lengths only.

The key features of the Road Network Hierarchy are:

- a street network that maximises north-south and east-west permeability;
- a hierarchy of roads and paths to provide clear and convenient access links throughout the site and particularly between key urban places;
- a street and path network that links the residential areas to the Village Centre;
- pedestrian friendly streets, with footpaths on both sides, street trees and green verges (paved in the Village Centre ); improving permeability to other business centres, employment lands and community facilities in surrounding localities;
- public streets with good surveillance create a safer walkable community;
- walking and cycling networks designed to provide for both commuter and recreation users; and
- higher density housing located within walking distance of the North Penrith Village Centre , Penrith railway station and bus/rail interchange.



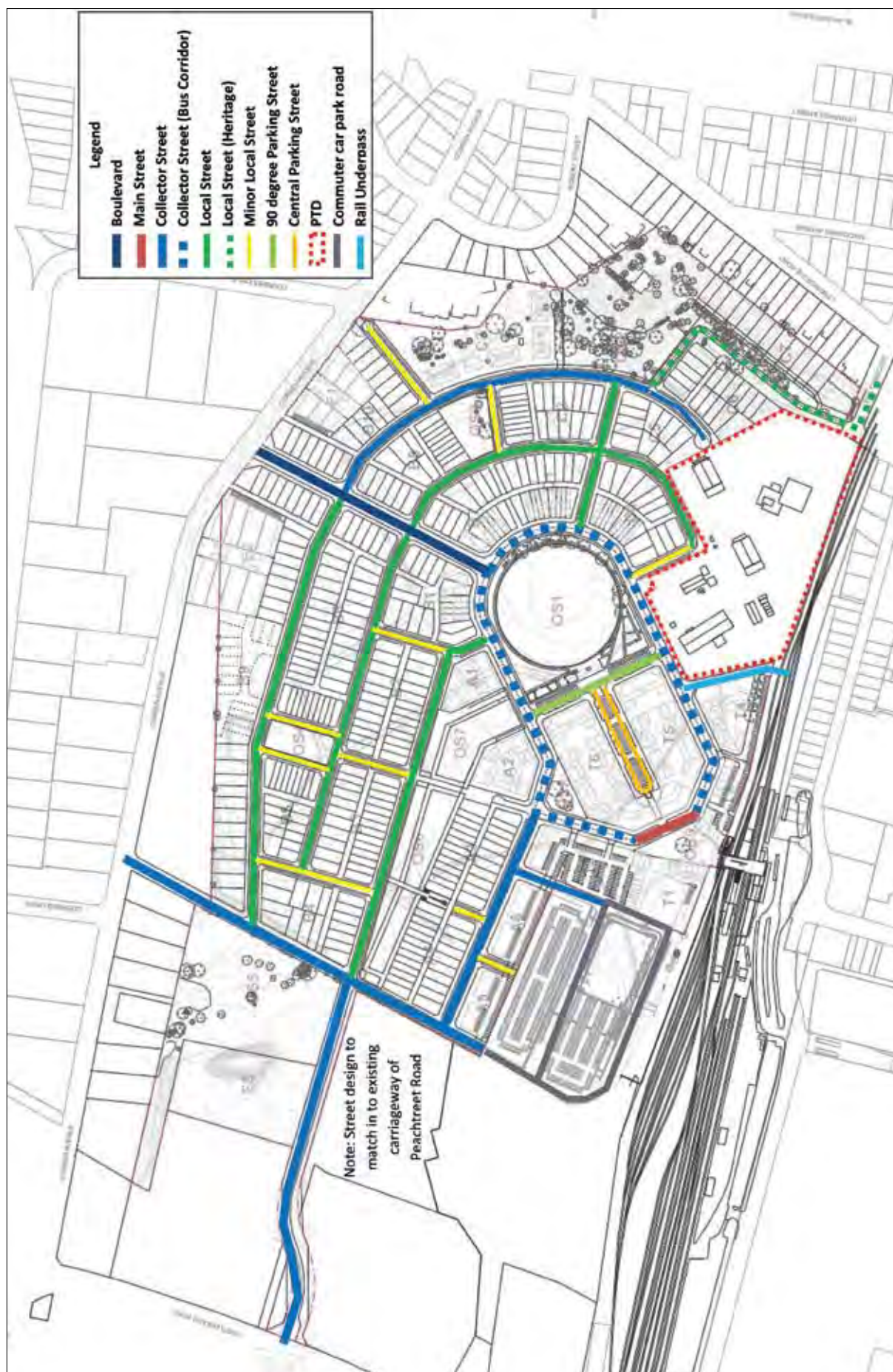


Figure 39 – Road hierarchy plan



## 6.8.1 Internal Road Network

Referring to the Road Hierarchy Plan at **Appendix V** and **Figure 39**, street typology cross sections are attached in Figure 22 of **Appendix V** and illustrate carriageway widths, parking aisles, verges, footpaths, cycle ways and land for plant/services.

Key features of the proposed accesses and internal road network are:

- provision of four access intersections as follows:
  - existing intersection of Coreen Avenue and the commuter car park access road;
  - new intersection at Coreen Avenue and the entry boulevard approximately 180 metres west of Coombes Drive, which is proposed to be controlled through the provision of a new roundabout,;
  - existing intersection of Castlereagh Road and Peachtree Road which will be subject to a left in/left out only arrangement; and
  - existing intersection at The Crescent;
- internal intersections are proposed to be managed through priority sign controlled arrangements;
- design of internal roads and streets in accordance with:
  - Penrith City Council's Draft Development Control Plan 2008;
  - Landcom's Street Design Guidelines;
  - AMCORD Standards;
  - Australian Standard AS 2890.5-1993 On Street Parking; and
  - Examples of street design in practice;
- incorporation of large vehicle swept paths to cater for buses, waste collection and servicing vehicles, semi trailers that may service the Village Centre and long over sized semi trailers accessing the PTD;
- interpretation of the former Thornton Hall carriageway and curve of the former speedway on the site in the street alignment of local and minor streets;
- provision of a staged bus corridor through the site to connect to Penrith Station; and
- provision of access to the commuter car park through pedestrian and cycle linkages, thereby promoting commuters to pass through the Station Square, and retail offer.

### 6.8.2 Car Parking

The Parking and Assessment Plan and the Centre Parking Principles Plan included at **Appendix V** indicate the location of proposed car parking on the site.

The North Penrith project is in a unique position to provide a transit-friendly development in a regional city due to its:

- proximity to a rail station with frequent and express services;
- proximity to regional and feeder bus connections;
- close proximity (within walking distance) of Penrith Village Centre employment, regional shopping, entertainment and community facilities;
- potential selection by people with a lower level of car use than those used as a basis for setting the Penrith Council parking requirements, such as university students, mature-age, young professionals;
- planned high degree of walk-ability and cycle-friendly trip lengths; and
- mixed use of retail, commercial and residential land uses, allowing the potential for trip containment and trip sharing.

For these reasons, it is proposed that the provision for car parking within the site, should be provided at rates that are lower than typical developments in the suburban parts of the Penrith City LGA. Proposed car parking rates by land use are identified in Table 31 of **Appendix V** and are typically lower than Penrith City Council's emerging car parking requirements.

### 6.8.3 Public Transport Initiatives

The proposed public transport network and facilities are as follows:

- provision of short-term / long term-term bus routes, as flows:
  - Stage 1 locates the bus corridor within the entry boulevard, around The Oval (Smith's Paddock) and back towards Coreen Avenue ( );
  - Stage 2 locates the bus corridor within the entry boulevard, around the Village Centre, and towards the future rail underpass (to be constructed by others) – refer to **Figure 41**;
- recognition in the road design and gradients that future bus lanes and peak period clearways may be required once the bus underpass under the Western Rail Line is constructed; and
- strong linkages and connections to the adjoining commuter car park (refer to Section 6.8.4).

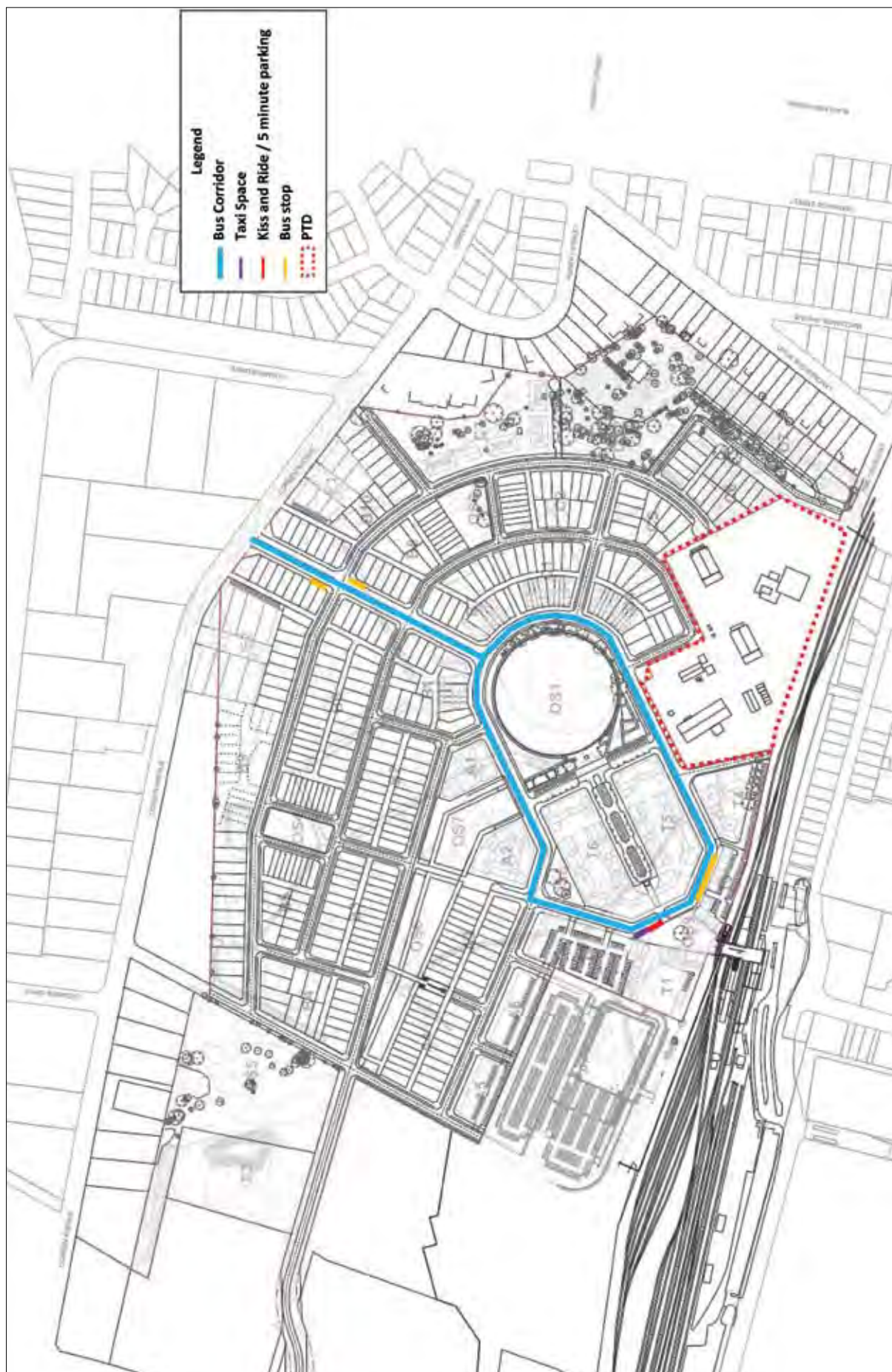


Figure 40 – Interim bus corridor



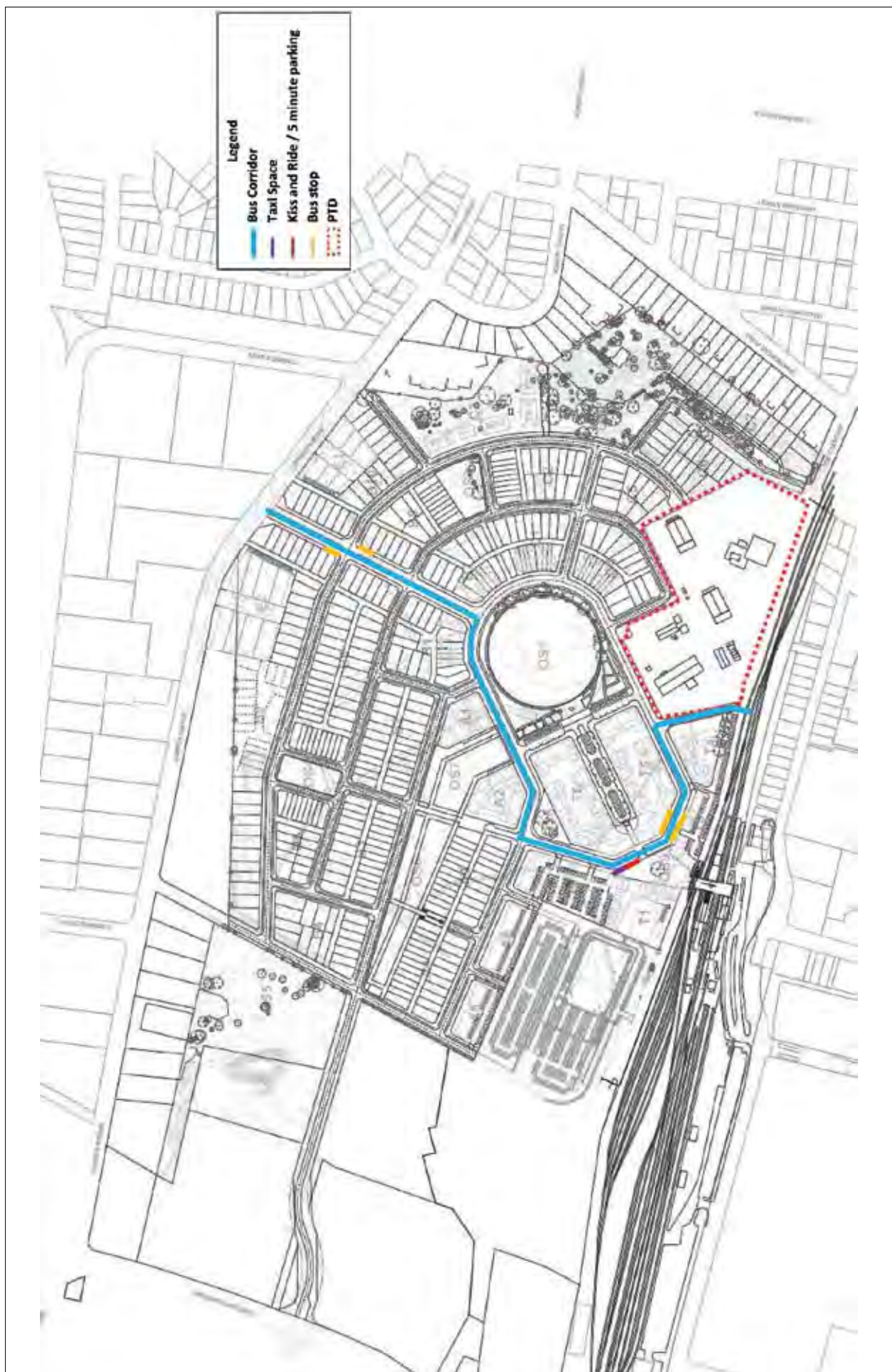


Figure 41 – long term bus corridor



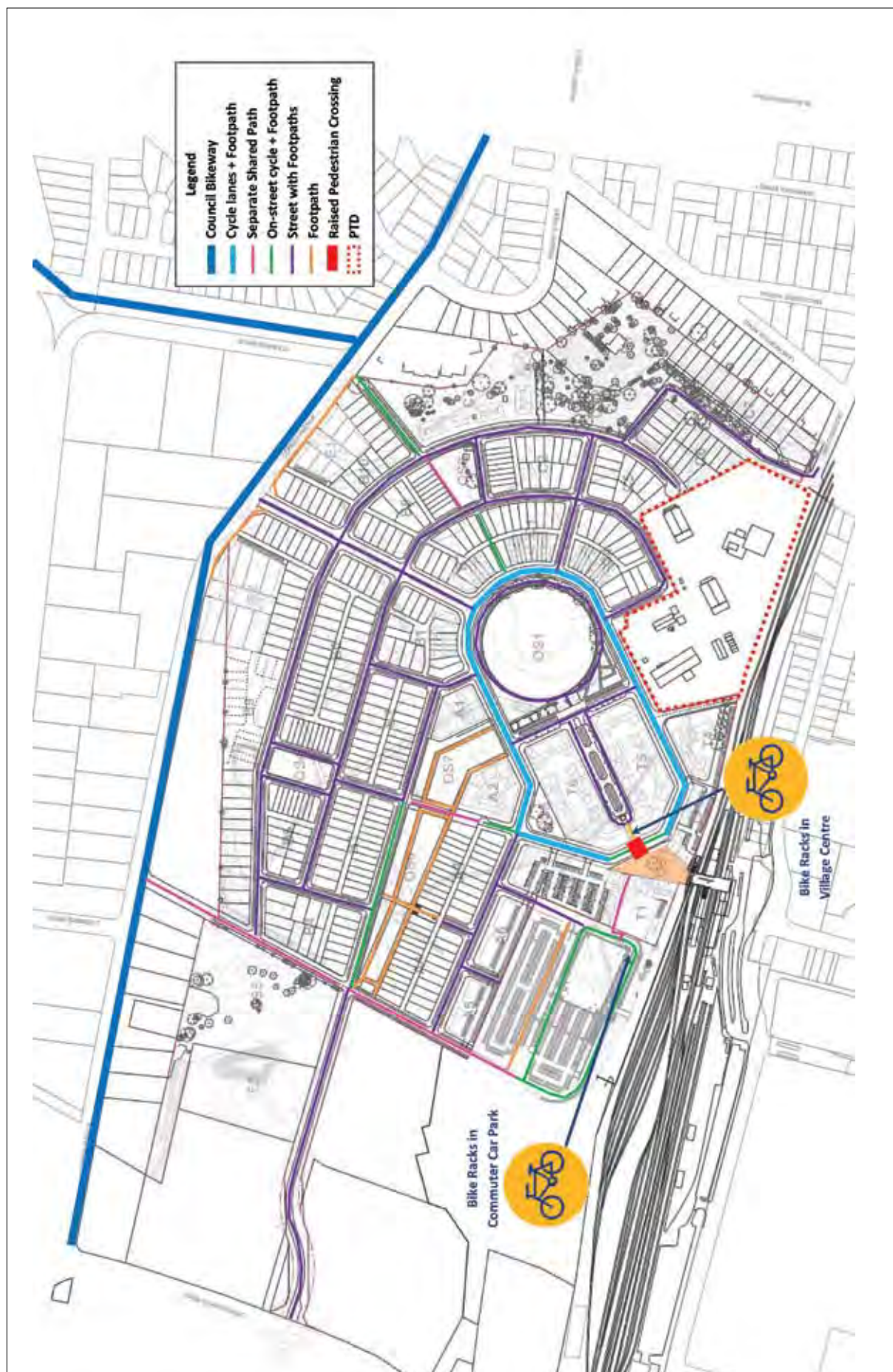


Figure 42 – Pedestrian and cycle facilities

### 6.8.4 Pedestrian and Cycle Networks

The Concept Plan Pedestrian, Cycle and Public Transport Network is shown at **Figure 42**.

North Penrith has been designed to be highly permeable for pedestrians and bicycles. The key features of the proposed walking and cycling network are:

- pedestrian footpaths will be provided along all streets;
- footpaths on public streets connect areas of open space and provide access to footpath and shared bicycle/footpath networks in the Waterfront Park and The Oval (Smith's Paddock);
- the proposed stairway to the site from the existing footbridge over the railway station will provide general public access to the Village Centre from Penrith CBD; and
- bicycle parking areas will be located within the Village Centre enabling cyclists to commute to and from the site by a combination of bicycle and train.

The proposed bicycle network will connect with the rail commuter car park to be constructed to the west of the site adjacent to the railway. Bicycle spaces will also be provided in commuter car park.

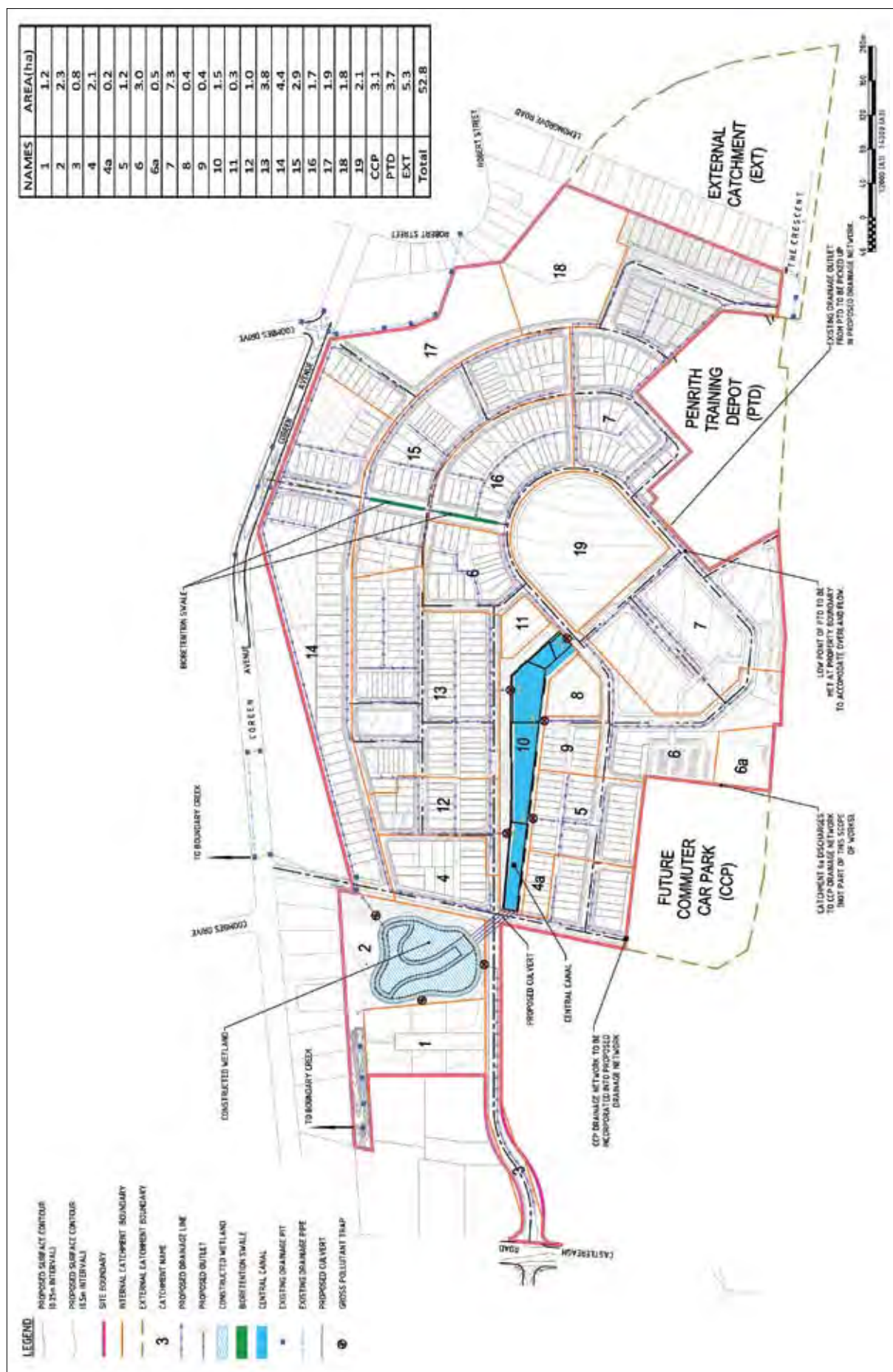
## 6.9 Water Cycle Management

The Concept Plan Water Cycle Management Strategy for North Penrith is illustrated at **Figure 43** and detailed in the Stormwater and Drainage Report prepared by Worley Parsons included at **Appendix N**.

In principle the North Penrith development will incorporate best practice water cycle, groundwater, soils, water and flood management practices. However, in practice this is an integrated stormwater management system comprising of an interconnecting system of rainwater tanks, stormwater drainage lines (including WSUD swales), a central detention canal and an artificially constructed wetland.

Given the currently flat ground levels across the site, these works will be carried out in conjunction with the necessary bulk earthworks across the site moderately re-contour the site in order to enable the site to drain adequately and raise site levels above the 1 in 100 year flood levels.





**Figure 43 – Concept Plan Stormwater Management System for North Penrith site**

## 6.10 Infrastructure Servicing

To ensure the site can suitably service the future development, Worley Parsons has prepared the utility services strategy illustrated in the Utilities Servicing Report at **Appendix H**. Utilities infrastructure services will require both on and off site works and upgrades in stages over the life of the development.

### 6.10.1 Internal Site Servicing

#### Water

Four connections to the existing (Sydney Water) SWC system are required. Two of these connections are to the existing DN600 main located in Coreen Avenue, one to the DN200 main in Castlereagh Street and a further connection to the existing DN150 main in the south-eastern corner of The Crescent.

The proposed sizing of the internal water services pipes is preliminary, but has been determined to accord with the anticipated lot density, building heights and future stages. This aspect of the proposed services works is required to be subject to confirmation from SWC.

It is anticipated that upgrades to the existing system external to the site will be required. After SWC has provided the results of their feasibility assessment any need to improve this system will need to be accounted for and included in the detailed design for the servicing strategy.

#### Sewer

The proposed sewer strategy for the site will necessitate the construction of a sewer pumping station and amplification of the existing sewer main located within Coreen Avenue from a DN225 to a DN375.

The pumping station is proposed to be located adjacent to the PTD and is proposed as part of the Project Application.

#### Electricity

The Penrith Zone Substation, located west of the site, has capacity to supply the estimated future load demand from the development of the site and will extend into the North Penrith site via three new dedicated high voltage feeders.

The development will require the provision of a number of distributed substations (padmount type) throughout the site. These substations will interconnect to each other and the 11kV feeders to provide a reliable supply to future development. The number of these substations is to be confirmed; however initial indications are that 16 x 500KVA substations would be required.

#### Gas

Extensions from the existing gas mains located in Coreen Avenue are proposed to adequately supply future development with gas.

The new gas mains servicing development will be provided underground in a shared service trench arrangement. No works are required to upgrade or improve this service and that there is capacity to adequately supply the site.

#### Telecommunications

Advice from Telstra confirms that existing local telecommunications infrastructure has sufficient capacity to serve the future development. It is proposed that connections will be made to the three existing optic fibre cables within Castlereagh Road, Coombes Drive and the western end of The Crescent to then service the site.

All new optic fibre cables will be installed underground in a shared service trench throughout the site. These cables will be able to support broadband, ADSL, ISDN, ATM, Frame Relay and Virtual Private Network services.



## 6.10.2 Penrith Training Depot

Worley Parsons has confirmed that the PTD existing services and utilities provision will not be detrimentally impacted upon by the development as envisaged under the Concept Plan. No works are proposed in relation to the PTD however, the Depot will benefit from connection to one of the 11 kV high voltage line proposed through the North Penrith Site.

## 6.11 Ecologically Sustainable Development

Landcom's Concept Plan is underpinned by the following ESD principles to promote sustainable development:

- the Concept Plan structure has taken into consideration the existing topography, drainage patterns, site orientation and existing urban street patterns of the surrounding area;
- the proposed mix of dwelling types will contribute to housing diversity in Penrith and encourage a balanced population that includes a diversity of age, life cycle, household and socio-economic groupings. In this way, housing diversity will contribute to the social sustainability of the development;.
- North Penrith will provide new housing that is in close proximity to well connected public transport services and employment opportunities;
- public transport usage is promoted, most particularly the existing Penrith Railway Station, by:
  - improving accessibility to this service through the development of new link roads;
  - providing opportunities for bus services to directly access the northern side of the station; and
  - providing legible pedestrian linkages throughout the new community within short walking distances of the station;
- the proposed street network through the site integrates well with, and helps to improve the capacity of the local road network of the surrounding area;
- the siting and orientation of future development will enable North Penrith to achieve good cross ventilation, maximise solar access to habitable rooms and open spaces, encourage deep soil planting and introduce endemic species in the landscape concept design;
- a wide variety of dwelling types will be delivered to meet the diverse needs of the Penrith community, including affordable housing and seniors living housing;
- new employment generating opportunities for the new community of North Penrith will be created, enabling people to work in close proximity to where they live;
- Water sensitive urban design principles have been incorporated into the Concept Plan by way of bio-retention basins and swales that capture and retain stormwater runoff to minimise the impact of uncontrolled and unmanaged stormwater from entering the existing natural creek systems; and
- The development will provide extensive and connected open spaces that will give residents and visitors various opportunities for active and passive recreational activities and places to reflect on past generations of occupants of the land, including Aboriginal occupants.

## 6.12 Indicative Project Staging

As shown at **Figure 44**, North Penrith is to be generally delivered in 5 stages. More than one stage may be under construction at any point in the time. Each future stage within the overall development will contain a range of lot sizes and a variety of housing types. Physical infrastructure including roads, parks, drainage and community infrastructure will also be delivered on a stage by stage basis.

The development will commence in the north as outlined in the Stage 1 Project Application (Section 11) and is summarised as:

- site establishment and perimeter security measures;
- establishment of environmental and safety controls and traffic control measures;
- preparatory works, including small building demolition, trees/shrub removal, topsoil stripping and stockpiling for later reuse and the disposal of unsuitable topsoil material, and taking up and stockpiling existing concrete and asphalt hardstands and roads for later reuse in other stages of the construction works;
- bulk earthworks – cut and fill, including the importation of material to raise levels;
- sections of the retaining wall next to the Penrith Training Depot;
- roads and road intersections;
- drainage and stormwater management infrastructure;
- utilities servicing infrastructure, viz electrical, sewerage (including a sewer pumping station), telecommunications, potable water and gas;
- lots formation;
- minor works external to the site, such as footpaths;
- construction of the community pavilion;
- landscaping;
- erecting informative signage; and
- site de-establishment and handover.

Proceeding stages will continue across the site and are likely to be of a similar scale and nature to the Stage 1 Project Application.



## 6.13 Development Contributions

### 6.13.1 Existing local contributions regime

The North Penrith site is not currently subject to any contributions plans or levies for residential subdivision, traffic management works, drainage and other local facilities typically levied. There are however, a number of LGA wide Contributions Plans for “community” items that apply to the entire Penrith LGA and would also apply to the North Penrith site (current to August 2010). These contributions are set out in **Table 6**.

**Table 6** – Summary of community related levies

Development Type	Contribution
Cultural Facilities	\$211 per person
District Open Space and Facilities	\$1,495 per person
Library Facilities	\$211 per person
Local Open Space	\$532 per person

In the absence of traffic and engineering being applicable to the North Penrith site, a number of Council’s Section 94 Plans adopted for comparable land release areas have been examined to provide a reasonable assessment of the potential contributions Landcom could be expected to pay at North Penrith:

- Lambridge Section 94 Plan (2004) for the Lambridge Industrial Estate requires levies in the order of \$230,884 per hectare for drainage and subdivision works; and
- Glenmore Section 94 Plan levies range between \$212,957 and \$442,453 per hectare.

In addition, the Civic Improvements Plan adopted in 2008 for the Penrith CBD, immediately adjacent to the North Penrith site identifies that new development is subject to the following rates:

- \$7,707 per multiple dwelling;
- \$4,817 per aged /seniors living dwelling;
- \$148/m<sup>2</sup> commercial uses;
- \$85/m<sup>2</sup> retail uses;
- \$59/m<sup>2</sup> industrial uses; and
- 1% plan administration fee.

### 6.13.2 Proposed local contributions

Landcom intends to meet its obligations with respect to local development contributions via a combination of carrying out of works in kind, dedication of land free of cost and provision of material public benefits.

Landcom will dedicate the land and works which are above and beyond any works contemplated by Penrith City Council’s existing contributions framework. Land and works are proposed to be delivered generally at a similar benchmark rate of provision typically required throughout the Penrith LGA; however the proposed open space and internal street network will be provided at a slightly higher standard of quality than normally required.

Given that the whole of the landholding is to be the subject of a single comprehensive statutory approval (i.e. the Part 3A Concept Plan), the delivery of local works that might otherwise ordinarily form part of a Section 94 Contributions Plan can be appropriately imposed as conditions of approval.



Preliminary Schedules prepared by Landcom outlining the proposed scope of local contributions are included at **Table 7** and illustrated in **Figure 45** and identify:

- the proposed facility and scope / requirements; and
- timing, including threshold staging as relevant.

The detail of embellishment will be included as part of subsequent applications.

**Table 7** – Summary of North Penrith Contributions

Subject	Commitments	Specification and Timing
Parks and Open Space	<ul style="list-style-type: none"> <li>- Smiths Paddock &amp; The Cricketer's Pavilion (OS1) - Active and Passive – local park</li> <li>- Thornton Park (OS2) – Passive Area – local park</li> <li>- Belmore Green – Passive Area (OS3) – local park</li> <li>- Howell Park – Passive Area (OS4) – local park</li> <li>- The Common – Passive Area (OS5) – water body and associated foreshore</li> <li>- Waters Edge – Passive Area (OS6) – water body and associated foreshore</li> <li>- McHenry Place – Passive Area (OS7) – local park</li> <li>- Station Square – Active Area (OS8) – village square</li> </ul>	<ul style="list-style-type: none"> <li>- Embellishment to be generally in accordance with the specifications identified in the North Penrith Village Environmental Assessment Landscape Concept Plan prepared by PLACE Planning Design and dated October 2010.</li> <li>- Timing and level and embellishment to be agreed with Penrith City Council.</li> </ul>
Roads & Traffic Facilities	<ul style="list-style-type: none"> <li>- Sydney Smith Drive – Entry boulevard and main neighbourhood collector road (Bus Corridor) and Main Street</li> <li>- Daniel Woodriff Drive – Coreen Avenue link road</li> <li>- The Speedway Circuit – Part collector street and part local road</li> <li>- McHenry Street – Collector street</li> <li>- Hudson Avenue - Collector street</li> <li>- Grace Drive – Part collector street and part local street</li> <li>- William Hart Crescent – Local street</li> <li>- Thornton Avenue – Local street</li> <li>- The Carriageway – Local street (heritage)</li> <li>- Van Praag Avenue – Minor local street</li> <li>- Clifton Street – Minor local street</li> <li>- Burrows Road – Minor local street</li> <li>- Player Avenue – Minor local street</li> <li>- West Howell Place – Minor local street</li> <li>- East Howell Place – Minor local street</li> </ul>	<ul style="list-style-type: none"> <li>- As per identification (Figure 45) and specifications in the Transport Mobility and Accessibility Plan prepared by Parsons Brinckerhoff and dated October 2010.</li> <li>- Timing and detailed design to be agreed with Penrith City Council.</li> <li>- As per recommendations in Table 1 &amp; 34 in the Transport Mobility and Accessibility Plan prepared by Parsons Brinckerhoff and dated October 2010.</li> </ul>

Subject	Commitments	Specification and Timing
Roads & Traffic Facilities	- Bass Way – Minor local street	
	- Hope Place – Minor local street	
	- Sheffield Street – 90 degree parking street	
	- Aviators Way – central parking street	
	- Stratton Lane - Lane	
	- Cannonball Lane - Lane	
	- Seymour Circuit - Lane	
	- Cleveland Lane – Lane	
	- Benstead Lane - Lane	
	- Woodriff Row – Lane	
	- Simmons Lane - Lane	
	- Stoddard Lane – Lane	
	- Read Lane - Lane	
	- East Lane - Lane	
	- South Bank Row – Lane	
	- Install one –lane roundabout at intersection of Coreen Avenue/Sydney Smith Drive (Site Boulevard)	
	- Install 'seagull' treatment on Coreen Avenue at its intersection with Coombes Drive	
	- Widen one corner roundabout (to accommodate large vehicle turning) at intersection of Coreen Avenue/Daniel Woodriff Drive (Commuter Car Park Road)	
Community Facilities	- Local Multi Purpose Community Centre	<ul style="list-style-type: none"> <li>- As per the Cricketer's Pavilion Plan (Drawing No. AR.DA.01) prepared by Tanner Architects and dated October 2010.</li> <li>- Landcom will continue to work with Council to resolve the provision of this infrastructure.</li> </ul>



Figure 45 – North Penrith Open Space, Roads and Community Facility Plan

The Statements of Commitments at Section 9 reinforce Landcom's commitment to deliver local infrastructure in accordance with **Table 7**.

In accordance with s.75O (5) of the EP&A Act, it is anticipated that the Minister will impose a condition of approval on the Concept Plan requiring Landcom to comply with each of these obligations of the Concept Plan Statement of Commitments.

In accordance with s.75R (4) of the EP&A Act – which states that Division 6 of Part 4 (Development Contributions) applies to both Concept Plans and Project Applications under Part 3A – Landcom's proposed approach to local development contributions is consistent with:

- **s.94 Contribution towards provision or improvement of amenities or services** – which allows the Minister to require the dedication of land or payment of a monetary contribution in relation to a development that will or is likely to require the provision of or increase the demand for public amenities and public services within an area, and for that contribution to be met via the carrying out of works; and
- **s.94B(2) Contributions plans** – which allows the Minister to impose a condition under s.94 or 94A even though it is not authorised (or of a kind allowed) by, or is not determined in accordance with, a contributions plan, subject to the Minister having regard to any contributions plan that applies to the whole or any part of the area in which development is to be carried out;
- **s.94C Cross boundary issues** – which allows the Minister to impose a condition under section 94 or 94A for the benefit (or partly for the benefit) of an area that adjoins the local government area in which the development is to be carried out; and
- **s.94E Directions by Minister** – this allows the Minister to direct a consent authority as to the nature of local development contributions (scope and maximum amount).

### Long term ownership and ongoing maintenance

**Table 7** includes land that is earmarked for public open space, and upon transfer into the ownership of Penrith City Council, will need to be managed in accordance with a plan of management prepared in accordance with the Local Government Act 1993. In the interim, a maintenance schedule (**Appendix Y**) outlines the range of works proposed, estimated cost and likely maintenance requirements and frequencies.

The Concept Plan and Stage 1 Project Application outline the works to be provided within the proposed open space. Landcom will continue to provide details with respect to the proposed carrying out of works in subsequent Project Applications, and will also identify the land to be dedicated to Penrith City Council at the time of the application relating to each subsequent stage of the development. The land to be dedicated to Council will be shown on the relevant plan(s) of subdivision. Landcom and Penrith City Council will agree to the level of embellishment/works for the items in **Table 7** at this time.

The implementation process relating to works, facilities and services approvals, maintenance and handover procedures will generally accord with the standard practices of Penrith City Council. Accordingly, the Statement of Commitments addresses the maintenance and handover periods for the land and works that are to be delivered.



## 6.14 North Penrith Development Control Plan

The Concept Plan is supported by the North Penrith Development Control Plan (DCP) which contains provisions that have been developed to facilitate the sustainable development of residential, commercial, retail, industrial and open space areas on the site (**Appendix B**).

The DCP contains detailed provisions that supplement the provisions of Schedule 3 of the Major Development SEPP and the framework identified within the Concept Plan. If there is any inconsistency between the DCP and Schedule 3 of the Major Development SEPP or Concept Plan, the SEPP and/or Concept Plan will prevail.

Where possible, the DCP adopts the relevant sections of the Penrith Development Control Plan 2006 and adopted Council policies, guidelines and codes of Penrith City Council.

## 6.15 Future Approvals Processes

To ensure the above vision is implemented effectively, Landcom proposes to implement the following framework (**Figure 46**) to ensure that the development assessment process is streamlined, efficient and enables expeditious delivery of the development as described in the proceeding sections, and more specifically, built form outcome on the ground.

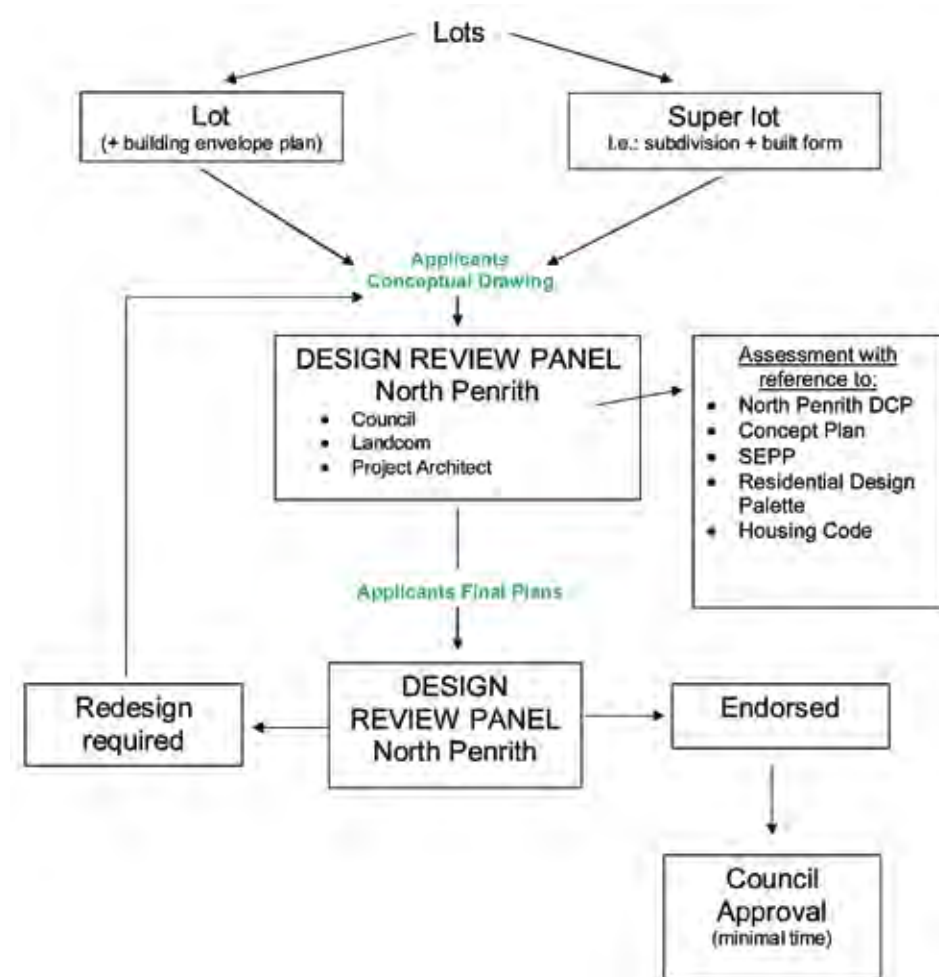


Figure 46 – Preferred development delivery framework

## 7.0 Major Development SEPP Amendment

### 7.1 Introduction

The proposed listing of the North Penrith site as a State Significant Site within Schedule 3 of the Major Development SEPP will establish a new planning regime for the site.

The Schedule 3 amendment will replace the current local environmental planning instruments applying to the land. It is proposed that the amendment to Schedule 3 (the Amendment) will rezone the land to R1 General Residential, B4 Mixed Uses, IN2 Light Industrial, RE1 Public Recreation and R2 Low Density Residential (Thornton Hall and curtilage) generally in accordance with the provisions of the Standard Instrument (Local Environmental Plans) Order 2006 (the Standard LEP Template).

The Amendment will also identify:

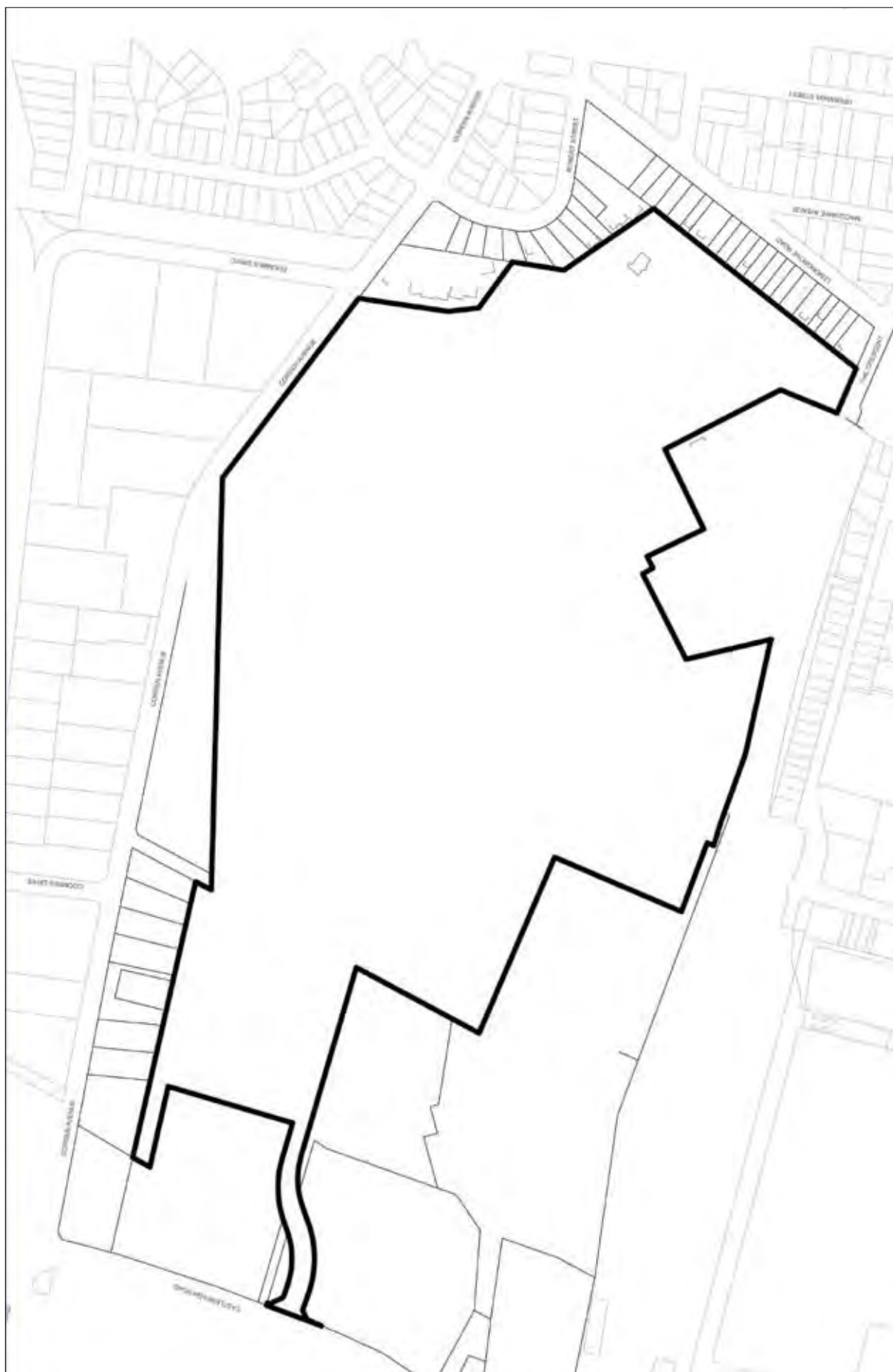
- principal development standards that will broadly guide yield and density of future development across the site;
- identify heritage items and nominate matters for consideration for future development to, on or within the vicinity of the heritage items must address; and
- identify future consent role and approvals requirements/responsibilities.

A key component of the SEPP Amendment is to optimise the locational advantages of the site. Landcom's proposed SEPP Amendments seeks to "future proof" the site by introducing new planning controls which will provide maximum flexibility whilst encouraging built form outcomes that recognise the site's strategic location and potential synergies with the Penrith CBD.

Hence, adaptability to accommodate high density development has been a key consideration in the design of the commercial areas of North Penrith. Consequently, Landcom has drafted the SSS provisions to provide sufficient flexibility to not only suit the current market gaps but also enable future infill (higher density) development in the future, allowing the North Penrith site to grow intrinsically with that of the Penrith City Centre into a Regional City.

### 7.2 Land to which SEPP will apply

A proposed Land Application Map is provided at **Figure 47**. The proposed Land Application Map illustrates the land that is to be included in the SEPP Amendment.



**Figure 47 – Land allocation map**

## 7.3 Relationship to other EPIs

It is proposed that Urban Lands LEP 1998, LEP 2010 and PPSO 1960, which are the existing local environment planning instruments applying to the land to which the proposed SEPP amendment will apply, will cease to apply once the SEPP Amendment is gazetted.

It is proposed that all existing SEPPs will apply to the site except for State Environmental Planning Policy No 1 – Development Standards (SEPP 1).

Accordingly, the following key SEPPs will apply to future proposals within the site, with detailed consideration of the objectives and provision of these policies required to be addressed in future applications:

- SEPP 32;
- SEPP 55;
- SEPP 64;
- SEPP 65;
- Major Development SEPP (Schedule 3);
- Infrastructure SEPP;
- Affordable Housing SEPP;
- Exempt and Complying Development SEPP.

It is proposed to apply Standard LEP Template *Clause 1.9 Application of SEPPs and REPs* in this regard.

It is also proposed to adopt the Standard LEP Template Dictionary in its entirety. It is also proposed to include the following additional definition as follows:

‘*Studio Loft*’ – means a self-contained dwelling that:

- a) may be on an individual and separate title; and
- b) is separate from, the principal dwelling.

The addition of this definition will enable subdivision of this type of dwelling and enable further housing choice and affordability within North Penrith site.

## 7.4 Future Approvals and Assessment Requirements

It is proposed that the SEPP Amendment determine the future assessment and approvals regime for subsequent stages of the North Penrith project as follows:

- Part 3A Approval (Minister as consent authority):
  - subdivision/site infrastructure/ bulk excavation works, other than:
    - works that would otherwise be exempt/complying under the ISEPP or clause 26 of the Standard Template; and/or
    - strata title subdivision, community title subdivision or subdivision for a range of purposes including widening of a public road, boundary adjustments, minor realignments of boundaries, etc – see draft SEPP Amendment for more detail at **Appendix D**; and/or
    - torrens title subdivision of super lots initially created under Part 3A of the EP&A Act.
  - Construction and embellishment of open space;
  - particular works to Thornton Hall; and



- Part 4 development consent (Council or JRPP as consent authority)
  - All other development, other than works that would otherwise be development permitted without consent (exempt/complying development).

It is also proposed that a provision be included in the SEPP Amendment to permit the issue of subdivision certificates for the project by an accredited certifier, generally in accordance with the following:

- Subject to section 75S of the Act, a subdivision certificate may issued by an accredited certifier for a subdivision in accordance with section 109D(1)(d) (iv) of the Act.

## 7.5 Proposed Land Uses

It is proposed that the following Standard LEP Template land use zones be applied to the North Penrith land:

- R1 General Residential
- R2 Low Residential
- B4 Mixed Uses
- IN2 Light Industrial
- RE1 Public Recreation

A Draft Land Zoning Map illustrating the intended location of each proposed land use zone is provided at **Figure 48**.

The proposed R1 General Residential zone seeks to encourage a wide range of dwellings and associated uses. This area of land is expected to deliver a large proportion of new dwellings over the North Penrith site. This aim is supported by the minimum allotment sizes and maximum building height development standards outlined in Section 7.7 below.

The proposed R2 Low Residential zone applies only to the Thornton Hall and its curtilage. This zone is intended to protect land that has heritage and ecological conservation value. A number of land uses considered to be inappropriate for this zone have been mandated as prohibited uses.

The B4 Mixed Uses zone is located in close proximity to the Village Centre and the existing Penrith railway station. This zone is intended to encourage a diverse range of uses that will support residents within North Penrith and serve to generate local employment opportunities, while also integrated high density residential in close proximity to these facilities and services. The range of proposed permissible uses within the B4 Mixed Uses zone is more extensive than the uses permitted under the B4 Mixed Uses zone adopted elsewhere in Penrith to enable greater opportunity for job creation, consistent with the Metropolitan and Northwest Subregional strategies.

The IN2 zone relates to northern most parts of the North Penrith site. These areas aim to deliver light industrial development comparable to existing industrial development along Coreen Avenue and will help to deliver local employment and business opportunities.

The RE1 Public Recreation zoned land will be embellished and dedicated to Penrith Council to provide active and passive recreation opportunities for residents and workers. The RE1 zoned land to the west of Thornton Hall will deliver conservation outcomes associated with the retention of remaining Cumberland Plain Woodland Ecological Community and will facilitate an area for reinterpretation of former Aboriginal occupation of the North Penrith site.

The proposed development that is intended to be permissible without consent, with consent or prohibited in each zone and the zone objectives are outlined in **Table 8** below. The provisions of **Table 8** are consistent with the Standard LEP Template.



Table 8 – Draft Land Use Zoning Table

Zone	Purpose (as per DoP Practice Note)	Permissible & Prohibited
R1 General Residential	This zone is generally intended to provide for a variety of residential housing types and densities, including dwelling houses, residential flat buildings, multi dwelling housing and senior housing. The zone also provides for additional uses that provide facilities or services to residents, including neighbourhood shops and child care centres.	<p><b>1 Objectives of the zone</b></p> <ul style="list-style-type: none"> <li>- To provide for the housing needs of the community;</li> <li>- To provide for a variety of housing types and densities; and</li> <li>- To enable other land uses that provide facilities or services to meet the day to day needs of residents;</li> <li>- To encourage medium density housing in locations of high amenity adjoining open space and accessible transport corridors;</li> <li>- To support the well being of the community, including recreational, community, and other activities where appropriate, whilst also ensuring there will be no adverse effect on the amenity of proposed or existing nearby residential development; and</li> <li>- To allow for a variety of recreational uses within open space areas.</li> </ul> <p><b>2 Permitted without consent</b></p> <p>Home businesses, Home industries, Home occupations</p> <p><b>3 Permitted with consent</b></p> <p>Affordable housing; Attached dwellings; Boarding houses, Business premises; Child care centres; Community facilities, Dual occupancies; Dwelling houses, Exhibition homes; Exhibition villages; Group homes, Food and drink premises; Health services facilities; Hostels, Mixed use developments; Multi dwelling housing, Neighbourhood shops; Places of public workshop, Roads; Recreation facilities (indoor); Recreation facilities (outdoor); Residential care facilities; Residential flat buildings; Semi-detached dwellings; secondary dwellings; Semi-detached dwellings; Seniors housing; Shop top housing; Studio lofts; Take away food and drink premises.</p> <p><b>4 Prohibited</b></p> <p>All other uses not included in 2 and 3 above</p>
R2 Low Residential	This zone is generally intended to be applied to land where primarily low density housing is to be established or maintained. The zone objectives also encourage the provision of facilities or services that meet the day-to-day needs of residents.	<p><b>1 Objectives of the zone</b></p> <ul style="list-style-type: none"> <li>- To provide for the housing needs of the community within a low density residential environment.</li> <li>- To enable other land uses that provide facilities or services to meet the day to day needs of residents.</li> <li>- To support the well being of the community, including educational, recreational, community and other activities if there will be no adverse effect on the amenity of the proposed or existing nearby residential development.</li> </ul> <p><b>2 Permitted without consent</b></p> <p>Home businesses; Home industries; Home occupations</p> <p><b>3 Permitted with consent</b></p> <p>Boarding houses, Community facilities; Dwelling houses, Earthworks; Educational establishments; Environmental protection works; Group homes; Health consulting rooms; Information and education facilities; Recreation areas; Roads</p> <p><b>4 Prohibited</b></p> <p>All other uses not included in 2 and 3 above</p>

Zone	Purpose (as per DoP Practice Note)	Permissible & Prohibited
B4 Mixed Uses	This zone is generally intended for where a wide range of land uses are to be encouraged, including retail, employment, residential, community and other uses	<p><b>1 Objectives of the zone</b></p> <ul style="list-style-type: none"> <li>- To provide a mixture of compatible land uses;</li> <li>- To integrate suitable business, office, residential, retail and other development in accessible locations so as to maximise public transport patronage and encourage walking and cycling;</li> <li>- To encourage development that supports or complements the primary retail and office functions of the Penrith City Centre;</li> <li>- To encourage development providing services to the surrounding community;</li> <li>- To permit development that adds to the vitality and diversity of commercial and retail centres while not prejudicing their principal function.;</li> <li>- To minimise conflict between land uses within the zone and land uses within adjoining zones; and</li> <li>- To create opportunities to improve public amenity.</li> </ul> <p><b>2 Permitted without consent</b></p> <p>Home occupations, Home business, Home industries</p> <p><b>3 Permitted with consent</b></p> <p>Affordable housing; Amusement centres; Boarding houses; Business premises; Child care centres; Community facilities; Educational establishments; Entertainment facilities; Environmental facilities; Environmental protection works; Flood mitigation works; Function centres; Health services facilities; Home based child care; Hostels; Hotel or motel accommodation; Information and education facilities; Medical centres; Mortuaries; Multi dwelling housing; Office premises; Passenger transport facilities; Places of public worship; Public administration buildings; Pubs; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Registered clubs; Residential care facilities; Residential flat buildings; Retail premises; Roads; Seniors housing; Serviced apartments; Shop top housing; Signage</p> <p><b>4 Prohibited</b></p> <p>All other uses not included in 2 and 3 above</p>
IN2 Light Industrial	This zone is generally intended for land that provides light industry, warehouse and distribution uses.	<p><b>1 Objectives of the zone</b></p> <ul style="list-style-type: none"> <li>- To enable land to be used for public open space or recreational purposes.</li> <li>- To provide a wide range of light industrial, warehouse and related land uses.</li> <li>- To encourage employment opportunities and to support the viability of centres.</li> <li>- To minimise any adverse effect of industry on other land uses.</li> <li>- To enable other land uses that provide facilities or services to meet the day to day needs of workers in the area.</li> <li>- To promote development that makes efficient use of industrial land.</li> </ul> <p><b>2 Permitted without consent</b></p> <p>Nil</p> <p><b>3 Permitted with consent</b></p> <p>Amusement centres; Car parks; Child care centres; Community facilities; Crematoria; Depots; Educational establishments; Electricity generating works; Environmental facilities; Environmental protection works; Flood mitigation works; Food and drink premises; Function centres; Hotel or motel accommodation; Industrial retail outlets; Landscape and garden supplies; Light industries; Medical centres; Neighbourhood shops; Places of public worship; Recreation areas; Recreation facilities (indoor); Resource recovery facilities; Roads; Self-storage units; Service stations; Signage; Timber and buildings supplies; Vehicle repair stations; Vehicle sales or hire premises; Veterinary hospitals; Warehouse or distribution centres; Waste or resource transfer stations</p> <p><b>4 Prohibited</b></p> <p>All other uses not included in 3 above</p>



Zone	Purpose (as per DoP Practice Note)	Permissible & Prohibited
RE1 Public Recreation	This zone is generally intended for a wide range of public recreation areas and activities, including local open space. Councils may generally permit typical public recreation uses in this zone. A range of land uses compatible with the recreation use of the land should be permitted.	<p><b>1 Objectives of the zone</b></p> <ul style="list-style-type: none"> <li>- To enable land to be used for public open space or recreational purposes.</li> <li>- To provide a range of recreational settings and activities and compatible land uses.</li> <li>- To protect and enhance the natural environment for recreational purposes.</li> </ul> <p><b>2 Permitted without consent</b></p> <p>Nil</p> <p><b>3 Permitted with consent</b></p> <p>Building identification signs; Business identification signs; Community facilities; Earthworks; Environmental facilities; Environmental protection works; Drainage; Flood mitigation works; Information and education facilities; Jetties; Kiosks; Markets; Moorings; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Roads; Water recreation structures; Water reticulation systems; Water storage facilities; Water supply systems; Water treatment facilities; Waterbodies; Waterbodies (artificial).</p> <p><b>4 Prohibited</b></p> <p>All other uses not included in 3 above</p>

## 7.6 Exempt and Complying Development

*State Environmental Planning Policy (Exempt and Complying Development Codes) 2009, State Environmental Planning Policy (Infrastructure) 2007 and State Planning Policy No.64 (Advertising and Signage)* apply and will continue to apply to the site establishing a range of exempt and complying development.

It is proposed that no further exempt and complying development provisions be incorporated within the proposed Amendment. Rather the Amendment will rely upon the exempt and complying development provisions of Penrith Local Environmental Plan 2010.

## 7.7 Principal Development Standards

In recognition of the sites' strategic location and the need to future proof the site for the longer term, development standards that seek to restrict the overall quantum of gross floor area or mix of uses is not proposed. This will ensure that the North Penrith site can be developed in response to market demands and eventually provide the envisaged mix and quantum of residential and employment generating activities encouraged by the Metropolitan and Northwest Subregional strategies.

Based on these objectives, it is intended that the Amendment will contain principal development standards for:

- Maximum building height in the R1 General Residential and B4 Mixed Use zones (refer to height map at **Figure 49**); and
- Minimum allotment sizes in the R1 General Residential and B4 Mixed Use zones (refer to allotment size map at **Figure 50**).



Figure 49 – Draft Height Map



Figure 50 – Draft Lot Size Map

The maximum height maps illustrate that developments of greater scale will be concentrated in close proximity to facilities and services, such as retail and commercial development, public transport facilities and recreational open spaces.

Similarly the smaller lot dwellings will be encouraged to be developed and concentrated in close proximity to the same facilities and services, as illustrated in the allotment size map. The minimum allotment sizes by dwelling type are as follows:

- Attached dwellings – 120m<sup>2</sup>
- Semi-detached dwellings – 120m<sup>2</sup>
- Multi-unit housing – 360m<sup>2</sup>
- Residential flat buildings – 650m<sup>2</sup>

The Standard Template *Clause 4.6 Exceptions to development standards* provisions will be included in the Amendment.

Whilst the Concept Plan proposes a land use mix of up to 1,000 dwellings and a combined 12,500m<sup>2</sup> of retail and commercial floor space (as described in Section 6), the proposed SEPP provisions are far more flexible in recognition of the site's development potential and Penrith's growing status into a Regional City.

## 7.8 Land Reservation and Acquisition

The proposed SEPP Amendment will reserve land exclusively for a public purpose via the establishment of the proposed RE1 Public Recreation Zone.

The SEPP Amendment will therefore need to make provision for the acquisition of this land and it is proposed to include Standard LEP Template *Clause 5.1 – Relevant Acquisition Authority* for this purpose. Only RE1 Public Recreation is nominated as land for acquisition and will be acquired by Penrith Council. Land will be handed over to Council after completion of the relevant Project Application works.

## 7.9 Heritage

It is proposed to include Thornton Hall and its curtilage as items of environmental heritage under the Amendment.

A proposed Heritage Map is included at **Figure 51**. It is proposed to include Standard LEP Template *Clause 5.10 – Heritage Conservation* in relation to the identified item.





**Figure 51 – Draft SEPP Amendment Heritage Map**

## 7.10 Miscellaneous Standard Provisions

The Amendment has been drafted to give regard to and include similar or same provisions as those included in the Penrith LEP 2010, the Growth Centres SEPP and the Standard LEP Template where relevant. Where possible, the proposed zones for the site have sought to align with the zones established under the recently gazetted Penrith LEP 2010.

It is proposed that the following provisions from the Standard LEP Template be included:

### ***Standard LEP Template***

- Clause 2.6 – Subdivision consent requirements
- Clause 5.3 – Development near zone boundaries
- Clause 5.4 – Controls relation to miscellaneous permissible uses
- Clause 5.9 – Preservation of trees or vegetation
- Clause 5.10 – Heritage conservation
- Clause 5.12 – Infrastructure development and use of existing buildings of the Crown

In addition to the above a new provision relating to the “Innovation Site” is also proposed to be included in the Amendment. This seeks to afford the opportunity to undertaken office, education and/or education facilities information developments on the site identified as the “Innovation Site” on the Land Zoning Map. This development may be approved where it adjoins residential uses and/or other development provided it will not detrimentally affect these adjoining uses.

The proposed listing of the North Penrith Development Project site as a State Significant Site within Schedule 3 of the Major Development SEPP will establish a new planning regime for the site.

The Schedule 3 amendment will replace the current local environmental planning instruments applying to the land. It is proposed that that amendment to Schedule 3 (the Amendment) will rezone the land to R1, R2, B4 and RE1 generally in accordance with the provisions of the Standard Instrument (Local Environmental Plans) Order 2006 (the Standard LEP Template).

## 8.0 Concept Plan

### Environmental Assessment

This section of the report assesses and responds to the following with respect to both the Concept Plan and the SSS proposal:

- State environmental legislation.
- Environmental planning instruments and development control plans.
- Section 117 Ministerial Directions.
- Transport and accessibility.
- Biodiversity and conservation.
- Water cycle management including flooding, surface water, groundwater quality and riparian corridors.
- European heritage impact.
- Aboriginal cultural heritage impact.
- Bushfire risk assessment.
- Noise and vibration assessment.
- Utilities infrastructure.
- Social and community planning needs and impact assessment.
- Geotechnical, soils and contamination assessment.
- Landscape and visual impact.

The consistency of the Concept Plan and consideration of the SSS listing proposal with regional and sub-regional planning is contained within the background to the project included at Section 1 and the Strategic Justification for the Project documented at Section 2, and has not been repeated in this Section.

The Site Analysis at Section 3 provides a comprehensive documentation of existing site conditions, based on technical investigations and assessments undertaken by a range of specialist disciplines. It also analyses linkages, synergies and potential impacts of the project with respect to existing and proposed urban development adjoining the site.

This Environmental Assessment draws upon the site analysis, which justifies the configuration of the proposed development and the land use zones proposed.

The draft Statement of Commitments at Section 9 complements the findings of this section.

**Appendix F** provides a detailed summary of each the individual matters listed in the DGRs and identifies where each of these requirements has been addressed in this report and the accompanying technical studies. It demonstrates that the documentation presented in the combined SSS Study and Environmental Assessment meets the requirements that have been issued by the Director General.

## 8.1 State Environmental Legislation

A range of State environmental legislation governs the development of the North Penrith site. This includes, of particular relevance, the following:

- Heritage Act 1977 in relation to potential European archaeological relics;
- National Parks and Wildlife Act 1971 in relation to Aboriginal archaeological resources;
- Native Vegetation Act 2003 with respect to clearing of native vegetation; and
- Roads Act 1993 with respect to future road works.

The EP&A Act sets out the manner in which this legislation will be applied to future detailed applications relating to the implementation of the Concept Plan, whether they are to be determined under Part 3A or Part 4.

Approval of the Concept Plan will provide the statutory planning framework with which the assessment of detailed proposals must comply with respect to:

- road layout and road hierarchy;
- use and management of riparian corridors, including CRZs;
- European and Aboriginal archaeological resource management; and
- water cycle management.

## 8.2 Environmental Planning Instruments and DCPs

### 8.2.1 State Environmental Planning Policies

**Appendix F** identifies the existing State Environmental Planning Policies (SEPPs) that are relevant to the North Penrith project and demonstrates that the Concept Plan is consistent with the requirements of all relevant SEPPs. Under the proposal for amendment to the Major Development SEPP (refer to Section 7 and **Appendix D**) all relevant SEPPs are proposed to continue to apply to the site. Future development will therefore be required to comply with all relevant SEPP requirements. In summary, no issues arise.

### 8.2.2 Existing LEP & DCP provisions

The existing zoning of the land under Penrith City Council's LEPs is detailed at Section 3; however the site is the subject of a SSS proposal. Listing of the site at Schedule 3 of the Major Development SEPP will repeal the existing LEPs and PSO applying to the land, subject to establishment of an appropriate statutory relationship that adopts the Department of Planning's Standard LEP Template.

This Study and EAR provides a comprehensive assessment and justification of the proposed land use change, and the new statutory development provisions are proposed to be applied to the land. The proposed new land use zone boundaries have been determined on the basis of the site analysis.

Following approval of the Concept Plan, it is intended that the Development Control Plan at **Appendix B** will provide the primary basis for the assessment of future applications, within the terms of the Concept Plan Approval and the statutory provisions included in the SEPP.



### 8.2.3 Section 117 Ministerial Directions

The Minister for Planning, under section 117(2) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) issues directions that relevant planning authorities such as local councils must follow when preparing planning proposals for new LEPs. The directions cover the following broad categories:

- employment and resources;
- environment and heritage;
- housing, infrastructure and urban development;
- hazard and risk;
- regional planning; and
- local plan making.

Although not technically relevant to a SEPP Amendment, the DGRs require consideration of relevant s.117 Directions. The Section 117 Ministerial Directions listed at **Appendix F** are considered to be of key relevance to the proposed development. The proposal's response to each relevant s.117 Direction is also included in the Table. As demonstrated at **Appendix F**, the proposal is consistent with, or is justified in terms of the consistency criteria specified within each of the relevant s.117 Directions.

## 8.3 Social and Economic Issues

The future population at North Penrith will have particular characteristics which give an indication of future housing and social needs. These social characteristics and needs inform the planning of urban development at the site.

The North Penrith site has been the subject of a number of planning reports over the last 20 years relating to its release and rezoning for urban purposes, which have examined social planning issues as well as infrastructure funding and delivery. More recently, Elton's Consulting has undertaken a Social Sustainability Due Diligence (**Appendix G**) and Social Assessment (**Appendix AA**) to quantify the contemporary demographic. Elton's report identifies the current characteristics of the Penrith population (including age cohorts) and also examines predicted population growth and age structure. Reference is also made to Section 2 of this report.

Noting the existing and proposed populations, the implications for the North Penrith site are:

- The successful development of North Penrith is important if the high level of ongoing housing demand in western Sydney is to be met. Strong population growth is anticipated over the coming decades, particularly in the major cities, and current projections suggest that Penrith LGA must accommodate a significant proportion of Sydney's growth, with housing for approximately 25,000 additional residents needed over the next twenty years. This target cannot be achieved without the North Penrith development. As a single holding, the North Penrith site is capable of speedy and well planned development.
- There is a need for more diverse housing. The provision of appropriate housing in western Sydney is an essential prerequisite to achieving a range of Australian Government policy priorities in the fields of economic development, strong communities, and social sustainability.
- The mix of households in the area in future is projected to include an increasing proportion of small households as well as a more balanced age structure. Greater housing choice is needed to address these needs, and to help ensure that sustainable communities develop, in keeping with key social and economic policy objectives of the Australian Government.

- The proportion of older people in the population will need appropriate housing, and residential areas that allow older people to “age in place” are needed to address a key Australian Government policy priority, and help to limit the growth in demand for Australian Government funded residential aged care places.
- The large proportion of low income households need access to appropriate and affordable housing options.

### 8.3.1 Housing Supply and Choice

As discussed in Section 2.2, the Department of Planning’s projections anticipate that the population of the Penrith LGA will increase from of 177,200 in 2006 to 196,500 by 2016. The population is anticipated to further increase by an additional 37,800 residents by 2036. As discussed in Sections 2.4 and 2.5 should trends towards reduced household sizes in Penrith continue, there will be growing demand for a diversity of housing types including smaller sized dwellings. A significant proportion of anticipated demand for semi-detached, row and townhouses will come from couples with and without families and single parent families.

The Land Use and Economic Assessment by SGS Economics and Planning at **Appendix I** and Housing Assessment prepared by Elton Consulting (**Appendix BB**) collectively consider North Penrith’s ability to achieve:

- the required housing targets in terms of the proposed dwelling mix;
- the ability for Landcom to achieve affordable housing and supply a diverse range of housing, aged persons, community and adaptable housing; and
- create a socially sustainable development.

#### Housing Diversity

There appears to be a need within Penrith to expand the range of housing types and sizes available to meet the needs of a changing and ageing population, particularly given the current overwhelming predominance of detached family housing in the LGA. A greater supply of smaller and affordable housing types is required to cater for smaller households, such as single person households, young people in group households, single parents and couples without children.

The North Penrith Concept Plan is well placed to support this objective through the proposed housing mix. The proposed range of dwelling forms and sizes will meet the needs of a variety of household types, and consequently contribute to housing diversity within the Penrith LGA. Dwellings are proposed to predominantly be semi-detached or attached typologies suitable for one or two person households, single parent families or other families with only one child. There will also be a small proportion of detached dwellings, suitable for families with children. The proposed mix will provide housing diversity as it will create a balanced and socially sustainable community, rather than one that segregates families with children from other household types.

Whilst medium density dwellings are not currently featured strongly in Penrith LGA’s housing mix, SGS’s Housing Model indicates that there is an underlying demand for medium and higher density dwellings (**Appendix I**). The North Penrith site is therefore well positioned to accommodate higher density options as it is within immediate proximity to rail and bus transport options, employment opportunities, retail and services.

## Affordable Housing

There is a need for a greater supply of housing suitable for smaller households, including single person households who are in greatest housing stress. Housing affordability and the housing needs of low and moderate income households will be realised at North Penrith through Landcom's commitment to:

- providing a high proportion of small dwellings within the North Penrith development, as indicated in the Concept Plan, that will be affordable for purchase by moderate income households, in line with Landcom's Moderate Income Housing policy, and
- delivering 44 dwellings as affordable rental properties, this will be managed by a community housing provider, in line with commitments to the Commonwealth Government as part of the sale of the North Penrith site.

## Housing for Older People

A condition of the sale of the North Penrith site to Landcom by the Commonwealth Government is that Landcom make available 100 dwellings designed to meet the needs of older people.

Landcom has had considerable experience in providing housing for older people in some of its other developments. Whilst neither a specific site for aged housing, nor an aged housing provider has been selected at this stage, Landcom proposes to select a provider in the next stage of the planning process, either directly or through a joint venture delivery partner. The size and specific location of the site for aged housing will depend on the housing and care delivery model of the selected provider. The Statement of Commitments commit Landcom to this process, thereby ensuring the provision of the 100 aged persons dwellings.

## Adaptable Housing

Under the conditions of the sale of the North Penrith site between Landcom and the Commonwealth Government, Landcom is bound to providing at least 44 adaptable dwellings. As with aged housing, Landcom will enter into a commercial arrangement with a joint venture partner to provide a minimum 44 adaptable dwellings which will need to be constructed in accordance with Landcom's Universal Housing Design Guidelines. The Statement of Commitments reinforces this commitment.

## 8.3.2 Economy and Employment

The SSS and Concept Plan provides for a new North Penrith Village Centre with capacity for approximately 12,500m<sup>2</sup> of commercial floor space for retail, office and business uses. An additional 2ha of light industrial employment lands are also proposed.

This amount of commercial floor space and industrial uses provides for the retail and business services to meet the needs of future residents on the site. It also provides the opportunity for employment generation in the form of over 770 full time equivalent jobs to be located within close proximity to residential dwellings, whereby people may choose to reside close to their place of employment. In addition, the North Penrith site is expected to offer employment opportunities in retail, services industries, education, home based businesses, conservation and recreation, transport-related services, and construction.

## Commercial Space

The North Penrith Concept Plan recognises the need for a style of development that complements rather than competes with the Penrith CBD. Consequently the Concept Plan layout and DCP design controls allow purpose built offices, rather than conventional office space that should be located within Penrith's core CBD.

As outlined in Section 2, the Land Use and Economic Assessment by SGS Economics and Planning at **Appendix I** has identified a fall in vacancy rates in western Sydney, implying relatively strong demand for commercial office space. The 9,300m<sup>2</sup> of proposed commercial floor space in North Penrith is therefore well placed to contribute to the current demand. In addition, North Penrith provides opportunities to:

- offer relatively cheaper rents and faster build times than other markets in metropolitan Sydney. At \$232/m<sup>2</sup>, office rents are typically lower in Penrith providing an attractive alternative to other suburban markets.
- respond to the increasing demand within western Sydney for new office space, particularly as trends indicate supply has declined since 2008; and
- respond to high take up rates for recent commercial office developments in Penrith. Real estate information collected by SGS Economics and Planning suggests that commercial office buildings with larger floor plates would act as an attractor for strategic investors without competing with the Penrith core CBD.

Further, employment data reviewed by SGS Economics and Planning indicates that there is a relatively high proportion of clerical and administrative workers that live in Penrith and have to travel outside Penrith LGA for work. As there is a low staff retention rate for these employment classifications, North Penrith provides the existing local workforce with opportunities to occupy offices based locally within the LGA. Planned residential developments are anticipated to increase the numbers of educated workers in Penrith that will support the viability of major office developments on the site.

### Opportunity Site

The relatively strong local demand for commercial office, potential for local office workers to take jobs within the LGA, the suitability of larger commercial floorplates on the site, and the anticipated increase in educated workers in the area, suggest that business park uses could be an appropriate land use on the North Penrith site (refer to SGS Land Use and Economic Assessment at **Appendix I**).

However, given the relatively small area available for a business park and the lack of convenient motorways to the site and competition from other surrounding parks, the form of business park development likely to be viable on the site would be of a specialised “alternative” model. Such a model may be able to include research-oriented, business incubator or small eco-industrial developments.

SGS Economics and Planning finds that, while there is theoretically sufficient commercial floor space capacity in Penrith CBD to accommodate targeted jobs growth, it is unlikely to be realised in the short to medium term, as it would require redevelopment of presently occupied sites. The inclusion of commercial space on the site will therefore contribute positively to the Penrith employment market. The Land Use and Economic Assessment concludes that, given the low vacancy rates in Penrith CBD, the local commercial floor space market can support further development.

SGS recommends that the quantum of commercial space made available on the site should be sufficiently large to attract larger tenants and avoid the provision on the site of smaller commercial office developments that may result in a negative impact on the performance of Penrith CBD. The Opportunity Site presents the flexibility to attract a large floor plate based entity to locate on the site and optimise the co-locational advantages of strong public transport connections and the Penrith CBD without compromising the ability of the North Penrith site to deliver the proposed dwelling targets.



## Retail Uses

The Land Use and Economic Assessment considers the anticipated incomes and expenditures of the North Penrith development and the likely retail spend of on-site workforce. The Assessment concludes that:

- the North Penrith population will generate \$21.3 million of retail expenditure per annum, of which \$6.6 million will be supermarket expenditure;
- the on-site workforce will be similar in number to residents who leave the site to go to work. Therefore, the onsite workforce will have no net effect on retail activity;
- commuters using the future rail commuter car park adjacent to the site (but not working on the site itself) will generate \$1.6 million in expenditure, \$0.5 million of which will be supermarket expenditure;
- residents and workers in the areas to the north of the site will generate \$9.3 million in supermarket expenditure; and
- the site's proximity to Penrith CBD, suggests that most of the retail expenditure from the site's residents will be split between the site and Penrith CBD. Given the lack of intervening opportunities for retail spending, it is unlikely that expenditure will go to other centres in the region.

The Concept Plan includes provision of a 2,000m<sup>2</sup> supermarket and supporting retail. Whilst a supermarket of this size may, in the short term, trigger a turnover impact greater than the accepted industry standard at the nearby centres of Cambridge Gardens and Kingswood Park, SGS concludes that over the longer term the supermarket can be supported and is not expected to have significant economic impacts.

Consistent with the Concept Plan, SGS recommends that the areas of the North Penrith site adjacent to the existing industrial area be zoned for local (population serving) industry such as trade supplies or domestic storage. This would provide a suitable buffer between the existing industrial area along Coreen Avenue and the planned residential area within the North Penrith site.

## Industrial Space

SGS Economics and Planning's Land Use and Economic Assessment indicates the amount of available industrial space in Sydney is decreasing, despite positive market trends relating to demand. The gross take up rate of industrial space in the Outer West precinct, in which Penrith is located, doubled between 2008 and 2009 to 400,000m<sup>2</sup> leased over the year.

In January 2010, the amount of industrial space in the western and south-western Sydney precincts had fallen by 10% from October levels to 314,000m<sup>2</sup>. There is a particular shortage of A-Grade industrial space, as a high proportion of available space is provided in older buildings.

The Concept Plan's proposal to locate 2ha of light industrial land adjacent to the existing industrial zoned land to the north of Coreen Avenue responds to strong demand for industrial strata units in the locality. The provision of such premises on the site is not likely to detrimentally impact existing industrial land on Coreen Avenue (refer to **Appendix I**). If industrial development fronting Coreen Avenue was of high quality design, with presented street frontages, it would improve the image of the existing industrial area on Coreen Avenue and result in a potentially positive impact through land value uplift.

Interface impacts with the proposed residential uses within the North Penrith site are addressed through the provision of design controls as provided in the draft DCP (**Appendix B**).

### 8.3.3 Employment Generation

The Land Use and Economic Assessment finds that proposed uses on the site will result in a total of 786 jobs on the site as follows:

- 229 light industrial jobs;
- 372 commercial jobs;
- 40 retail jobs;
- 50 supermarket jobs
- 25 jobs related to residential uses on the site; and
- 70 health / aged care jobs on the site.

By increasing total leasable floorspace, the development will promote additional job creation in the local economy. SGS Economics and Planning estimates that the number of additional jobs created in the Penrith LGA resulting from the development amounts to 664 jobs. The construction of the Concept Plan development will generate around 3,794 construction jobs.

## 8.4 Community Services & Facilities

There are a wide variety of local and regional facilities and services in or close to Penrith CBD that will be available to North Penrith residents (refer to **Appendices G and AA** of this report).

Considering the likely population characteristics of the future North Penrith population, Elton Consulting concludes that:

- the population of North Penrith will create only “modest” demand for community facilities and human services;
- demand generated by the proposal will not be large enough to justify the provision of most types of facilities and services for the new development alone;
- the population of the site is unlikely to sustain commercial enterprises such as childcare centres and medical services;
- the population of the site is below the thresholds required for public (Council provided) facilities such as a community centre (which is generally around 5,000 people);
- the site is in close proximity to a wide variety of existing facilities and in and around Penrith CBD. Accordingly, most of the demand generated by the Concept Plan for community facilities and human services can be met by existing facilities and services nearby. Services already provided in and around the CBD include those for health, aged care, family support, entertainment, arts and cultural facilities, tertiary education, lifelong learning and libraries, major sporting and recreation facilities and parks;
- spare capacity in surrounding schools will be sufficient to meet demand resulting from the proposal, particularly given the small proportion of children within the North Penrith Population. No new schools or childcare facilities are required within the site; and
- whilst health, welfare and support services in Penrith are currently operating at capacity, the majority of new residents at North Penrith will be re-locating from within the Penrith area, and they will have already been considered in population planning processes that determine the allocation of health resources.

## Local Facilities Required on the Site

Notwithstanding the above, the North Penrith Concept Plan recognises that the following new local facilities and services will be required to be provided to cater for the demands of the new development and population:

- a community pavilion;
- facilities to support the informal social and leisure needs of residents (such as cafes, restaurants, parks and children's playgrounds); and
- communal facilities and support services provided in association with the aged care housing on the site and which are also accessible to the broader population.

The community centre required to serve the North Penrith population is to be provided by Landcom as part of the proposed works (refer to the Stage 1 Project Application at Section 10). The community centre will be constructed by Landcom and initially used as a sales centre for the promotion and sale of land at North Penrith to potential buyers. Once the use of the building for this purpose has ceased, the centre will be converted for use as a community centre and dedicated to Council, which will operate the centre.

The other facilities identified by Elton Consulting as required to meet the informal social and leisure needs of the North Penrith community will be provided in the form of the parks proposed on the site and through allowance for restaurants, cafes and other retail uses in the Village Centre. Notably, the open space provision of 7.2348ha on the site is in excess of the 5.04ha required by Council's Open Space Policy (which sets a rate of 3.04ha of open space per 1,000 people).

In relation to aged Care services, seniors housing will be provided on the site by a specialist aged housing provider. While the nature and form of such housing will be subject to further market and feasibility assessment, it is probable that it will include some communal facilities. This has been the case in other Landcom developments which have incorporated housing for older people, such as in Park Central at Campbelltown and Prince Henry at Little Bay. There is potential for communal facilities to be made available to the wider North Penrith population and not just residents of aged housing on the site.

## Community Development Programme

The Landcom Community Development Program aims to contribute to the social sustainability of new communities by:

- fostering a sense of belonging for new residents;
- promoting a culture of welcome and hospitality; and
- helping new residents settle in to the life of the local and broader community.

The Landcom Welcome Program seeks to achieve this by providing:

- a point of contact for residents;
- relevant information about the local area and the services, facilities and programs available, and
- opportunities for residents to meet other community members and develop friendships and networks.

Landcom has indicated its commitment to the implementation of the programme for the North Penrith thereby ensuring a strong and vibrant community is established at the site.

## 8.5 European Heritage

A Heritage Impact Statement to support the Concept Plan and SSS Study has been prepared by Tanner Architects and included at **Appendix Q**. The Heritage Impact Statement provides an evaluation of impacts on the significance of the site and heritage items within it.

The Concept Plan retains the following elements on the site:

- Thornton Hall and its curtilage;
- Views to and from Thornton Hall;
- The alignment of the former speedway on the site; and
- The existing oval at the centre of the site (which will be upgraded).

### European Heritage Values of the Site as a Whole

The SOHI finds that the design of the Concept Plan has considered the heritage significance of the site as a whole and interprets it through the retention of Thornton Hall and the existing oval on the site and the retention of views across the site to Thornton Hall. The incorporation of the remnant section of the former speedway track into the Concept Plan road layout will also contribute to the interpretation of the site's heritage significance.

### Thornton Hall

Impacts to Thornton Hall as a local heritage item will be minimised by the establishment of an appropriate curtilage of approximately 10,444m<sup>2</sup> around the building that will enable the provision of a generous landscaped setting. The curtilage around Thornton Hall is consistent with the Review of Interim Heritage Management Strategy (also by Tanner Architects) which recommended the retention of the rural character of Thornton Hall, protection and conservation surviving garden and landscape elements and establishment of a discrete setting for the house. The Concept Plan allows for the interpretation of Thornton Hall as local heritage item in its original context, is sympathetic to the heritage item and will minimise potential impacts on the heritage significance of the property. View corridors across the site to and from Thornton Hall, combined with the proposed curtilage also minimise potential impacts arising from the Concept Plan.

The proposal to use the Hall as a private dwelling and/or professional consulting rooms is assessed as the most appropriate use for the building. Works proposed to the Hall will serve to regain the building's heritage significance. Tanner Architects notes that, while public access to the Hall will not be permitted, views connecting the property with other elements on the site will allow an appreciation of the building's heritage significance. In this respect, the proposal will deliver a public benefit through an improvement over the existing situation in which views to the site are partially obscured by shrubs and trees.

### Combewood

Tanner Architects' SOHI finds that the proposal will be sympathetic to the adjacent Combewood property as it maintains open space on land within the Concept Plan site that was formerly associated with Combewood. This land will be part of the open space and interpretation strategy for the site and will effectively extend the existing curtilage of Combewood, which is defined by established plantings.

### Archaeological Potential

Casey & Lowe Pty Ltd has carried out a detailed assessment of what potential archaeological evidence may be present over the site, and what further investigations and management strategies are required to be carried prior to construction. The Non-Indigenous Archaeological report is included at **Appendix S**.



The assessment concludes that the key areas for archaeological potential were located in the vicinity of Thornton Hall and Combewood House residences. In this regard, Casey & Lowe recommends programs of archaeological recording be carried out prior to any disturbance to the areas south of Combewood and to the rear of Thornton Hall. These areas are identified as having the greatest potential for remains, however, resources expected to be found are likely to be generally be of fair integrity. This work will include of investigation and recording of any remains in these areas, utilising best practice methodologies.

In light of the findings of the Casey and Lowe Assessment, it is considered that the proposal is acceptable with regard to non -indigenous archaeology.

## Recommendations

Tanner Architects recommends that an archival recording be made of items of heritage significance on the site prior to works commencing and that a Heritage Architect be commissioned to design, document and superintend the works to Thornton Hall. These recommendations will be implemented and are included in the Statement of Commitments for the Concept Plan in Section 11.0 of this report.

The Heritage Interpretation Strategy by Tanners Architects (**Appendix R**) sets out the interpretive measures that are to be implemented on the site with the objectives of informing visitors of the site's history in accordance with best practice presentation standards for interpretive media.

The archaeological investigations and archiving recommendations made by Casey & Lowe are also incorporated into the Statement of Commitments.

## 8.6 Indigenous Heritage

The Concept Plan development includes the development of land within the known Aboriginal Site to the south east of Thornton Hall (listed as AHIMS site 45-5-2491) with built form, open space and part of a road into the site from Coreen Avenue. Jo McDonald Cultural Heritage Management has prepared an Aboriginal Management Plan for the Aboriginal Site in accordance with the draft *Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation 2005* (**Appendix U**) to manage these impacts.

Representatives of Aboriginal groups consulted in the preparation of the Aboriginal Management Plan have advised that the area concerned is small and not in pristine condition. The Aboriginal site has already been subject to clearing, agricultural uses and the construction of farm dams and as such these activities have had a substantial impact on subsurface deposits. Accordingly, the site is considered to exhibit low scientific significance and low public significance (i.e. little potential to educate the public about Aboriginal culture).

Jo McDonald Cultural Heritage Management found that there are no areas of high archaeological potential worthy of conservation within the identified site and concluded that the most appropriate management outcome for the identified Aboriginal site is not conservation. The Report recommends that all parts of the site identified as having no or low archaeological potential are developable with no archaeological constraint. Areas of the Aboriginal site assessed as being in zone 2 (moderate archaeological potential) should only be conserved if to do so is consistent with the optimal planning solution. The Aboriginal Management Plan finds that it may be appropriate to interpret the history and significance of the Aboriginal site as part of future development. This should be done in consideration of the views of the Aboriginal community. Landcom has provided an option for this interpretation within the curtilage of Thornton Park (OS-2).

Consequent to the findings of the Aboriginal Management Plan, the development of the Aboriginal site is acceptable. Mitigation measures in the form of the interpretation of the history and cultural significance of the Aboriginal site will be identified in consultation with Aboriginal community groups and included implemented in future development.

## 8.7 Transport and Accessibility

A Transport Management and Accessibility Plan (TMAP) has been prepared by Parsons Brinckerhoff to support the proposed Concept Plan and SSS Study (refer to **Appendix V**).

The TMAP has been prepared in accordance with the Ministry of Transport's Draft Guidelines for Transport Management and Accessibility Plans. The objectives of the TMAP are generally to:

- manage the transport impacts of the North Penrith development on surrounding sites and transport networks;
- suggest ways to reduce growth in overall Vehicle Kilometres Travelled forecast to be generated by development, both by cars and commercial vehicles
- help reduce reliance on the private car usage; and
- maximise the use of public transport, walking and cycling for new and current trips in the vicinity of the development.

The TMAP also addresses planning requirements for a future bus corridor through the development, linking Coreen Avenue to interchange on the southern side of Penrith Station.

### 8.7.1 Road Network

The TMAP identifies that the key road network surrounding the site, including Coreen Avenue and Castlereagh Road, are currently operating generally within capacity. Two nearby intersections – Parker Street and the Great Western Highway and Castlereagh Road/Great Western Highway/Jane Street – have been identified as congestion points.

In order to determine future traffic demand and identify road infrastructure upgrades to address future network capacity deficiencies, Parsons Brinckerhoff undertook traffic modelling to determine both existing traffic movements and the amount of traffic that is expected to be generated by other approved or planned major developments in the area. In determining the likely traffic volumes, the TMAP considers existing volumes on surrounding streets, the frequency of public transport services and travel behaviours and preferred transport modes of residents in Penrith LGA (based on Australian Bureau of Statistics (ABS) census and Transport NSW data).

The TMAP calculates the traffic volumes likely to result from the Concept Plan and other developments in the Penrith LGA, such as Penrith Lakes, Cranebrook, St Mary's, Werrington Enterprise Learning and Living Precinct, Glenmore Park Stage 2, Badgerys Creek and Castlereagh Road employment lands.

The TMAP's calculations of traffic volumes also consider planned upgrades to surrounding roads to project likely traffic conditions. Planned road upgrades considered by the report include the widening of Castlereagh Road to six lanes between Andrews Road and Jane Street and line marking for four lanes in Coreen Avenue between Castlereagh Road and Richmond Road.

The modelling indicates that the following upgrades to intersections and the local road network are necessary to accommodate the future traffic growth, before the development of North Penrith can proceed:

- upgrading of the turning space for large vehicles at the existing intersection of Coreen Avenue and the commuter car park road.
- provision of a one-lane roundabout at the new intersection of Coreen Avenue and the site entrance.
- upgrades of the following intersections:

- Coreen Avenue/new site entrance road;
- Coreen Avenue/Coombes Drive (eastern intersection);
- Coreen Avenue & Commuter car park road.

The amount of traffic expected to be generated by other approved or planned major developments in the area is estimated to require extensive road upgrades to maintain network performance. Once these improvements are in place, the additional traffic generated by the North Penrith project could largely be accommodated within either the capacity of the existing road network, or within the capacity created by the road upgrades for other developments.

The timing of the proposed intersection upgrades has been based on the point at which the degree of saturation for intersections changes to occur.

The estimated years of upgrading are:

- Coreen Avenue/ Sydney Smith Drive Site Access – 2012;
- Coreen Avenue/Daniel Woodriff Drive – 2015; and
- Coreen Avenue/Coombes Drive – 2018.

Converting these years into yields of development, the following stages are proposed:

- Coreen Avenue/New Site Access – On release of Stage 1A;
- Coreen Avenue/Commuter car park road – On occupation of the Supermarket; and
- Coreen Avenue/Coombes Drive – On completion of Stage 2A.

The timing of the introduction of bus lanes or peak period clearways is beyond the timeframe addressed in this study (subject to Government funding and announcements). The timing of the planned bus underpass of the Western Rail Line is dependent on the level of congestion on the arterial road network. This is in turn dependent on the timing and scale of other developments, such as the North St Marys and Penrith Lakes projects.

### 8.7.2 Transit Oriented Development Principles

The TMAP includes a series of TOD principles based on best practice. These can be broadly summarised as:

- a defined active centre that provides a moderate level of activity throughout the day to ensure passive surveillance;
- a mix of uses at medium to high densities;
- permeability and compact pedestrian oriented design which reinforces a low speed;
- direct, safe and convenient networks throughout the Village Centre and permeating into the surrounding residential areas;
- provision of excellent permeability for all modes of transport providing direct routes and reducing trip lengths;
- provision of a bicycle grid that includes dedicated bike lanes and off street bike ways linked to a regional bike system; and
- appropriate car parking allocation having regard to the close proximity of Penrith Rail Station to the site.

### 8.7.3 Sustainable Travel Strategy

The TMAP is premised on a sustainable travel strategy for North Penrith which encourages local trips by bus, bicycle and walking where possible, and longer trips to be undertaken by bus and rail. The sustainability measures as they relate to transport are:

- Public transport measures:
  - Integration of public transport services – bus and rail connectivity and interchange;
  - Bus service coverage;
  - Timing of bus services and development staging;
  - Good quality bus lanes and bus stops throughout the site;
  - Design for bus priority;
- Bicycle measures:
  - Dedicated, high quality cycle routes;
  - Bicycle facilities;
- Pedestrian measures:
  - A highly permeable and safe pedestrian network;
- Parking restraint measures:
  - Restraining parking rates for Village Centre high density residential development;
  - Village Centre co-sharing parking provisions;
- Travel planning measures:
  - travel work plans;

### 8.7.4 Public Transport Network

The TMAP found that the Concept Plan makes the provision for public transport services through the following measures:

- the road network and intersections have been designed to accommodate bus movements between the development and regional centres;
- the majority of the development area will be within 400m of the Penrith Rail Station; and
- Bus interchange and bus services which facilitate and encourage public transport usage.

### 8.7.5 Walking and Cycling Network

The TMAP found that the Concept Plan makes the provision for pedestrian and cyclists through the following measures:

- a network of off-road shared paths and on-road cycle paths are proposed within the proposed development, linking key amenities such as open space, the Village Centre and the rail station;
- a hierarchy of pathways will be created providing amenity for different user groups and adequately serve the need of pedestrians and cyclists;
- bridges across the Waterfront Park canal to promote walking and cycling opportunities;



- activity in the Village Centre will be increased by its integration into the pedestrian network and its use as a route between the future commuter car park adjacent to the site to the west and Penrith Rail Station;
- design of bicycle routes in accordance with the RTA's *Bicycle Guidelines* (2005);
- connection of the North Penrith cycle network to Penrith City Council's off-street cycle path including between Coombes Drive, Andrews Road and the planned cycle route along Coreen Avenue with Penrith Railway Station; and
- separating cyclists from motor vehicles on the streets with the highest traffic volumes, wherever practicable. Mixed traffic cycle routes are only proposed on low-traffic roads (less than 1,000 vehicles per day) to minimise the likelihood of conflicts between bicycles and motor vehicles.

### 8.7.6 TMAP Recommendations

The TMAP recommends a number of measures for the successful delivery of the proposed Concept Plan, meeting the needs of the future residents of North Penrith while achieving a mode shift towards public transport. These recommendations include:

- upgrade turning space for large vehicles at the existing intersection of Coreen Avenue and the commuter car park road;
- provide one-lane roundabout at the new intersection of Coreen Avenue and the site entrance (Sydney Smith Drive);
- upgrade the following intersections at the times specified above to accommodate the future traffic flows:
  - Coreen Avenue/new site entrance road (Sydney Smith Drive);
  - Coreen Avenue/Coombes Drive (eastern intersection);
  - Coreen Avenue & Commuter car park road (Daniel Woodriff Drive);
- establish a framework for use of travel modes, parking demands, and traffic generation that will apply to subsequent users of the site;
- prepare Transport Access Guides for new residents and require commercial tenants to produce a Workplace Travel Plans for their employees and clients; and
- provide cyclist end-of-trip facilities for commercial properties in accordance with the Planning guidelines for walking and cycling (NSW Planning, December 2004).

In addition to the above, Landcom proposes to undertake the following series of works in kind:

- widening of kerbside lanes along the public transport corridor to Coreen Avenue, and upgrading of the interchange facilities in the plaza on the northern side of Penrith Rail Station to promote the use of transit for travel;
- provision of a corridor for a proposed bus underpass under the Western Rail Line to promote the future development of the CBD bus network;
- provide direct and safe cycle and pedestrian routes from Coreen Avenue to Penrith Rail Station to promote active modes of access to transit and for travel to the local CBD;
- a wide plaza and good pedestrian access from Penrith Rail Station to the new commuter car park; and
- Upgraded access road to the commuter car park.

## 8.8 Biodiversity

Eco Logical's Flora and Fauna Assessment is appended at **Appendix P** and addresses:

- findings of surveys conducted for threatened ecological communities, populations and species;
- the proposed impacts to threatened ecological communities, populations and species;
- whether there are any drainage lines on the site that require controlled activity approvals under the Water Management Act 2000 (WM Act); and
- the potential ecological constraints to the Concept Plan development.

In addition, the Flora and Fauna Assessment provides recommendations and mitigation measures to address the identified impacts of the development.

### 8.8.1 Vegetation

Remnant vegetation on the site has been mapped as Shale Plains Woodland, which forms a component of Cumberland Plain Woodland (CPW). CPW is a Critically Endangered Ecological Community (CEEC) under the Threatened Species Conservation Act 1995 (TSC Act) and the Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act).

Field surveys were undertaken to ground truth the mapped vegetation communities, their condition and potential habitat. Surveys confirmed that 0.86ha of CPW is present on the site, in accordance with the relevant listing in the TSC Act. As outlined in Section 3.8, the CPW is in the form of two patches of wooded remnant (0.63 ha) and derived native grasslands (0.23ha) located toward the eastern boundary of the site. The distribution of CPW identified in accordance with the TSC Act on the site is shown in Figure 5 of the Flora and Fauna Assessment.

In relation to the EPBC Act, Ecological Australia found that the 2 patches of wooded remnant were not consistent with the listing for CPW contained in the EPBC due to the species composition and quality, and accordingly are not, CEECs for the purposes of the EPBC.

The proposal will result in the removal of a small area of CPW (as indicated in Figure 9 of the Flora and Fauna Assessment). The areas of CPW to be removed are currently isolated from other native vegetation in the area and are in a degraded state. Landscaping under the Concept Plan will result in the clearing of layers and removal of trees and understorey in some locations and a reduction in connectivity of CPW remnants. The proposal has been assessed in accordance with the *Draft Guidelines for Threatened Species Assessment* and is not considered to result in a significant impact to CEECs.

The previous recording of the Nodding Greenburg plant species was provided to an accuracy of 1000m and accordingly Eco Logical Australia questions whether the species ever occurred on the site. Field examinations using random meander techniques did not identify the species on site.

### 8.8.2 Fauna and Habitat

Eco Logical Australia's assessment indicates that previous records implying the likely presence of the Eastern Bent-wing Bat on the site were not conclusive. No known roosting sites for this bat species have been identified within the site or within the local area.

The stag tree identified as potential habitat for hollow dependent fauna species is not considered to provide a significant habitat resource.

### 8.8.3 Impact Assessment and Recommendations

In accordance with the *Draft Guidelines for Threatened Species Assessment*, Ecological Australia concluded that the proposal will not result in impacts on threatened flora or fauna species. Notwithstanding, the Flora and Fauna Assessment recommends the following measures to mitigate impacts to biodiversity values on the site:

- the ecological integrity of retained CPW should be enhanced through weed management, retention of local native species and landscaping with local provenance species (appropriate species are recommended in the Flora and Fauna Assessment);
- a Vegetation Management Plan should be implemented specifying measures retain and enhance any ecological values. The future management of CPW should be delivered through an alternative mechanism, such as a Plan of Management for an Open Space reserve;
- within the retained CPW, it is recommended that native species be retained to facilitate regeneration and supplement vegetation with targeted planting, so as to improve its ecological condition;
- control of exotic species throughout the site and in particular of noxious species should be implemented; and
- the health, safety and vigour of mature tree species including non-endemic Eucalypts should be addressed in a specialist Arborist report. Eucalypt species should be retained and incorporated into landscaping plans where possible.

## 8.9 Visual Impact

Photomontages have been prepared in support of the Concept Plan by Annand Alcock Urban Design and are reproduced at **Figures 52 – 55**. The montages show the degree of change anticipated in the landscape as a result of the Concept Plan. A number of landscape strategies are recommended to mitigate the visual impact of the proposed development, namely:

### Village Centre

- The proposed location and expected scale of development within the Village Centre is not likely to give rise to loss of views looking northward from the existing development located south of the railway line.
- The provision of new and additional large evergreen street tree planting will screen and soften the Village Centre edge conditions and provide green connections through the Village Centre zone.
- The inclusion of artworks and focal elements within the Village Centre will activate and complement future built development.
- Building heights will be limited to a maximum 30 m (3-6 storeys) at the edges.
- The final location and detail design of any 30m buildings will be carefully considered to address their high visual and landmark context as well as privacy and solar access.
- View corridors have been established through the Village Centre blocks to allow views through to the oval and to the east and west of the Village Centre. Additional view corridors will be identified through the provision of lanes to be determined at detailed Village Centre design stage.

## Residential (R1) Zone

- The provision of lot sizes and shapes, and relevant built form setbacks in the more compact development areas, will allow reasonable opportunities for immediate or future establishment of canopy tree planting on private land. In time this will provide natural shade, amenity and temperature control of houses, as well as visual softening of the development.
- Significant evergreen tree planting will be provided throughout the public domain to maximise year round softening of the most compact areas of development.
- Landscape setbacks will be required to allow canopy tree planting on private land to contribute to streetscape character.
- Detail designs for landscaped areas for medium density development (private domain), open space areas, schools, and other community facilities is required through the DCP to address the creation and preservation of canopy vegetation.

## Escarpment

- OS-2 (Thornton Park) is well elevated above the remainder of the site, which will ensure that views westward over the site and to the escarpment will not be obstructed.
- The DCP provide appropriate streetscape treatments and controls to the new streets in the east west alignment to ensure that heights and built form appropriately retain views to the escarpment.

## Heritage Items

- An appropriate curtilage to Thornton Hall is provided and will be protected to respect the 'rural' character of Thornton Hall, and retain significant views and vistas to and from the property.
- Views to Thornton Hall and Combewood are presently screened by groves of shrubs and trees. Views to Thornton Hall will be improved and enhanced as a result of the Concept Plan, as it will establish defined view corridors that will link the house to the site and allow interpretation of its relationships with the site.
- View corridors will be established between Thornton Hall and the Oval, and along the reconstructed/interpreted driveway leading to the house. These will allow views to the house from the site, and permit views from the house across the site.
- the site of Combewood already provides a curtilage from the building that is defined by dense well-established planting. The curtilage will be protected and extended by the land to its south (formerly part of Combewood's grounds), which is intended to remain open space, consolidated by landscaping and interpretive uses.





**Figure 52** – Existing and proposed views looking west to the Oval



**Figure 53** – Existing and proposed views looking west to the escarpment



**Figure 54** – Existing and proposed views looking south from Coreen Avenue



Figure 55 – Existing and proposed views looking north from south side of Penrith Rail Station



## 8.10 Air, Noise and Odour Quality

### 8.10.1 Air Quality and Odour Impacts

As part of the site is located within a recommended 400m odour buffer zone from the Penrith Sewage Treatment Plan (Penrith STP), an Odour Impact Assessment by PAE Holmes has been prepared for the Concept Plan development (**Appendix CC**). In addition to potential impacts from Penrith STP, the Odour Assessment also considers the likely effects of the Sewage Pumping Station (SPS) to be installed on the site as part of the Stage 1 Project Application. The assessment has been prepared in general accordance with the DECCW's Approved Methods for the Modelling and Assessment of Air Pollutants in NSW 2005.

PAE Holmes concludes that odour modelling indicates that odour impacts are unlikely to occur more than 50m from the boundary of the STP site. On the basis of the modelling, exceedances of DECCW odour impact assessment criteria are unlikely to occur on the site. Accordingly, it is not necessary to restrict development within the odour buffer to non-residential uses.

Worst case modelling assessment indicates that odour impacts from the operation of the proposed SPS will be minimal. PAE Holmes recommends that the final location of the SPS is selected so that a reasonable buffer zone from dwellings.

### 8.10.2 Noise and Vibration Impacts

#### Noise Impacts

Benbow has prepared a detailed Noise and Vibration Assessment (at **Appendix DD**), which evaluates the impact of noise and vibration from surrounding sources to the proposed development across the North Penrith site. The report also assessed the impact of potential noise and vibration emitted during the construction phases of the proposed development.

The key noise sources to the site are derived from the adjoining railway line to the south (which accommodates both passenger and freight train traffic) and road vehicle traffic along Coreen Avenue. Vibration is also emitted into the site from the railway.

The Noise and Vibration assessment has considered these emission sources and existing noise and vibration levels to the site to assess the suitability of the proposed land uses and their locations. The report indicates that parts of the site are subject to higher than acceptable levels of noise emissions, but acceptable vibration levels.

Benbow considers that the location of commercial and industrial development as proposed by the Concept Plan adjacent to the railway and Coreen Avenue to be appropriate and accords with the recommendations of the Department of Planning's *Development Near Rail Corridors and Busy Roads – Interim Guide*.

In addition, the Noise and Vibration Assessment (at **Appendix DD**) makes a suite of recommendations to ensure that the noise emissions to the site are suitably managed and ameliorated. These are included in the Statement of Commitments at Section 9 of this report.

#### Vibration Impacts

The Noise and Vibration Assessment indicates that the vibration levels comply with the BS 6472 and AS 2670 (human response) and DIN 4150 (cosmetic damage) standards. As such, no further recommendations are required.

Construction noise and vibration are dealt with as part of Project Application assessment (see Section 11 of this report).

In summary, the development has been designed to provide suitable buffers between noise and vibration sources and future residential development and can readily implement a range of mitigation and amelioration measures as part of future development to ensure a suitable level of amenity for occupants and workers.

## 8.11 Geotechnical, Soil and Contamination

### 8.11.1 Soils and Geotechnical Stability

The Geotechnical and Groundwater Assessment by Geotechnique at **Appendix M** assesses the existing ground and groundwater conditions at the site and determines the suitability of the site for the proposed land uses. The Assessment indicates that:

- the naturally occurring soils across the site have engineering properties that are favourable for residential, commercial and industrial construction;
- the site is located in a 'Moderate Salinity Potential' area as mapped by the "Salinity Potential in Western Sydney Map";
- near surface soil horizons (to depths of 500mm) generally exhibit a low salinity hazard. The underlying naturally occurring clays have a low to moderate salinity hazard;
- soils on the site do not exhibit characteristics of significant dryland salinity;
- soil salinity hazards can be readily managed through a Soil and Water Salinity Management Plan (which has been committed to in the Statement of Commitments at Section 9);
- the erosion hazard on the site is of a "moderate risk". Management controls are required to ensure there are no impacts from erodible soils;
- the risk of slope instability is categorised as "very low";
- shallow and deep footings will both be feasible on the site; and
- the majority of soils on the site may be re-used by means of excavation and filling (with additional assessment to determine any unsuitable material).

In addition to the above, Geotechnique identified two constraints on the site, namely that uncontrolled fill in some areas may not be suitable and that piling to depths below 5m is likely to encounter groundwater. However, these constraints can be overcome with appropriate management / mitigation methods. Geotechnique concludes that none of these constraints will adversely impact on the proposed construction.

Geotechnique recommends that more detailed geotechnical investigations be undertaken to support the detailed design of the development. Further targeted investigations will be required to ascertain the suitability of soils for re-use on the site. The CEMP is to include measures to ensure imported fill is suitable for its intended use. These recommendations have been incorporated into the Statement of Commitments.

### 8.11.2 Contamination

The Contamination Assessment Report by Geotechnique at **Appendix K** includes a review of the Site Audit Reports and SASs. A single site auditor has issued two Site Audit Reports, with accompanying Site Audit Statements (SASs) that cover the entire site (**Appendix L**).

As discussed by Geotechnique, previous investigations on the site have identified ash materials, some of which have been analysed and consequently removed.

While any remaining ash materials are considered to be essentially uncontaminated, testing is recommended to confirm their contamination status. There is a possibility of contaminated fill materials being present under existing concrete slabs.

While there is no evidence of significant or widespread contamination of groundwater on the site, minor contamination of groundwater has been detected. The groundwater on the site has not been assessed for its suitability for any use.

The Department of Defence considers there to be a low possibility of unexploded ordnance (UXO) on the site, it would be prudent to have measures in place to deal with possible finds of UXO during construction.

As discussed by Geotechnique, the Site Audit Reports / SASs certify that the site is suitable for the intended uses, namely:

- Residential development with accessible soil, including gardens;
- Day care centres, preschools, primary school and secondary schools;
- Residential developments with minimal opportunity for soil access, including units;
- Park, recreational open space and playing field uses; and
- Commercial/industrial uses.

The suitability of the site for the above uses is subject to further assessment of any extracted groundwater and flaking lead paint on the Thornton Hall homestead building during construction works, and a requirement that any existing stockpiled soil on the site is not to be used on the surface of residential areas.

In addition to the above, Geotechnique has recommended the following measures to ensure any potential contamination issues are appropriately managed:

- continued involvement of a Site Auditor during the construction stage in order that a series of Site Audit Statements can be provided for the development;
- preparation of a:
  - a site-specific Unexploded Ordnance Protocol; and
  - a site-specific Unexpected Finds Protocol;
  - (NB – both protocols are included in the Preliminary Construction Environmental Management Plan at **Appendix GG**);
- inspection of the exposed ground for indicators of contamination by a suitably qualified environmental engineer/scientist following removal of existing concrete slabs on the site. A Remediation Action Plan (RAP) is to be prepared for any required remediation works. Validation of the remediated area by the environmental engineer/scientist will be carried out after completion of remediation works;
- testing of any identified ash or coal materials to confirm whether they are contaminated. Ash or coal materials with concentrations of analytes within the applicable assessment criteria can be re-used on-site;
- in the event that groundwater is to be extracted and used on the site, a further groundwater assessment will need to be undertaken to verify the suitability of the water for use;
- further assessment of the groundwater on land in proximity to the Mobil fuel storage and distribution depot to the north of the site should be undertaken at the relevant Project Application stage. Such assessment should consider the extent to which the land may be contaminated by inflow from the Mobil depot;

- Crushed concrete and asphalt proposed to be reused on the site will first be assessed according to *"The recovered aggregate exemption 2010 under the Protection of the Environment Operation (Waste) Regulations 2005"*;
- The design and construction of refurbishments to Thornton Hall are to recognise the potential presence of lead paint. The CEMP is to describe the measures to be taken when carrying out work in and around Thornton Hall to safeguard construction workers and the environment;
- Soil classified as Virgin Excavated Natural Material (VENM) in an existing stockpile within Lot 2 in DP1020994 is to be reassessed if foreign matter mixed with the soil, soil staining and discoloration or odours emanating from the stockpile are observed; and
- Soil from the stockpile to be located within part Lot 1 in DP33754 should not be used on the surface of residential areas.

The above recommendations will be implemented in future construction works on the site and are included in the Statement of Commitments in Section 9 and 13. Considering the findings of the SASs that the site is suitable for the proposed uses (subject to further investigations), and the Statement of Commitments, it is considered that the Concept Plan accords with the provisions and principles of SEPP 55.

## 8.12 Water and Hydrogeology

The concept stormwater drainage networks for the North Penrith are attached at **Appendix N** and have been prepared in parallel with the bulk earthworks strategy and to function within the constraints of the development layout.

XP-RAFTS and MUSIC modelling was used to:

- model the hydrology of the site;
- determine the required volume of storage to attenuate post-development flow rates back to pre-development flow rates;
- estimate the concentrations of pollutants likely to be generated in the post-development scenario; and
- determine the effectiveness of the proposed WSUD measures in reducing these loads.

### Stormwater quantity

The North Penrith development requires the provision of approximately 11,000m<sup>3</sup> of detention volume to attenuate post-development peak flow rates back to pre-development levels prior to discharging into existing drainage infrastructure. The volume of storage is provided above the constructed wetland and within the central canal.

### Stormwater quality

The North Penrith development incorporates a suite of WSUD measures to reduce the average annual pollutant loads for Total Suspended Solids (TSS), Total Phosphorus (TP), Total Nitrogen (TN) and Gross Pollutants (GP). Measures include rainwater tanks, bio-retention swales, gross pollutant traps, sedimentation basins and constructed wetlands. These WSUD measures are strategically located within the development to provide a treatment train approach to stormwater quality management. MUSIC modelling predicts the effectiveness of the treatment train in minimising the annual average reduction rates as:

- 86% for TSS;
- 67% for TP;
- 46% for TN; and
- 100% for GP.



The average annual reduction rates for the North Penrith development exceed the baseline targets nominated in *'Draft Water Sensitive Urban Design Book 1 Policy'*, Landcom, May 2009.

## Flooding

The *'North Penrith Regional Flooding Assessment'*, Worley Parsons, October 2010 nominates a minimum road (25.40 mAHD) and minimum habitable floor levels (25.90 mAHD) for the North Penrith development.

Localised flooding has been addressed within the North Penrith development and Stage 1 to determine peak water surface levels for the 100 year ARI event within the constructed wetland, the central canal and the temporary basin. These water levels have been estimated based on the modelling work undertaken in XP-RAFTS and have been incorporated into the design of open spaces surrounding the water bodies.

## Groundwater

Based on the *'Geotechnical & Groundwater North Penrith Assessment Report'*, Geotechnique, October 2010 the existing groundwater is found at depths exceeding 5.0 m. Based on preliminary design of the constructed wetland and the central canal there will be no direct interaction between the stormwater management strategy and the existing groundwater resource.

Under proposed conditions infiltration will occur within pervious areas, bio-retention swales and the constructed wetland. Qualitative assessment indicates that extent of infiltration would be relatively consistent between the post-development and pre-development scenarios. Thus, no adverse impacts upon the existing groundwater resource are anticipated.

The stormwater management strategies for the North Penrith development will maintain the existing drainage regimes present at upstream and downstream boundaries of the site for events up to the 100 year ARI.

## Recommendations

The stormwater management strategies for the North Penrith development have been developed based on preliminary assumptions. As detailed design progresses for the development assumptions will need to be validated and refined to ensure the objectives of the stormwater management strategy are met.

Accordingly, the following will need to be undertaken during the detailed design phases of the North Penrith development:

- validation of the concept drainage network based on the final proposed surface;
- validation of proposed land uses;
- detailed design of the drainage network and stormwater detention infrastructure using DRAINS software;
- detailed design of hydraulic controls within the temporary basin, central canal and constructed wetland;
- refinement of the Sediment and Erosion control plans to reflect the phased construction proposed by Landcom and the contractor;
- detailed design of all overland flow paths;
- detailed design of WSUD measures;
- validation of the depth to groundwater along the alignment of the central canal and within the vicinity of the constructed wetland;
- detailed 1-Dimensional modelling of major overland flow paths within the development to determine localised flood hazards;

- detailed design of temporary diversion drains required during Stage 1; and
- liaison with Commuter Car Park designers to enable the stormwater management strategy for the Commuter Car Park to be integrated into the North Penrith development stormwater management strategy.

### 8.13 Utilities Infrastructure

A Utilities Servicing Report to support the Concept Plan and SSS Study has been prepared by Worley Parsons and is included at **Appendix H**.

Existing utility infrastructure is not adequate to service the future development and augmentation will be required to all key utilities and services and provision. Capacity does exist in the existing potable water and electricity networks which will facilitate early stages of development.

Significant physical infrastructure (in addition to roads) needed as part of the ongoing development of the site includes:

- water infrastructure (potable);
- a sewer pumping station;
- upgrades to power supply infrastructure in the form of three 11kV feeders to meet the anticipated demands of the development; and
- provision of fibre to the premises (FTTP) Communications.

The Utility Services Strategy for the site demonstrates the manner in which it is intended to deliver this infrastructure.

Implementation, timing and funding considerations for the delivery of utility services infrastructure is identified at **Appendix H**.

## 9.0 Concept Plan Statement of Commitments

Subject	#	Commitment	Responsibility / Timing
Local infrastructure contributions	1	Landcom will provide local infrastructure contributions in accordance with Table 7 at Section 6.13 of Concept Plan Environmental Assessment Report prepared by JBA Urban Planning Consultants Pty Ltd dated October 2010.	To be demonstrated by the proponent at the time of any relevant detailed application.
Housing/Built Form	2	Landcom will promote housing diversity in Penrith by including a wide mix of dwelling types and sizes for a range of household types within the development.	To be demonstrated by the proponent at the time of any relevant detailed application.
	3	Landcom will produce a mix of properties for sale and/or rent that include a proportion that are affordable for households within the very low, low, and moderate income bands (based on Affordable Housing SEPP definitions).	To be demonstrated by the proponent at the time of any relevant detailed application.
	4	Future applications shall consider the Development Control Plan included at Appendix B of the SSS Study and Concept Plan Environmental Assessment Report prepared by JBA Urban Planning Consultants Pty Ltd and dated November 2010, as relevant.	To be demonstrated by the proponent at the time of any relevant detailed application.
Employment Generation	5	Development on the site will include uses that generate at least 770 full time jobs.	To be demonstrated by the proponent at the time of any relevant detailed application.
	6	Landcom and Penrith City Council are to enter into a Memorandum of Understanding (MOU) to jointly explore and attempt to secure appropriate large scale employment opportunities that will complement and not compete with the City Centre. Consideration of such a use must consider what potential impacts may be generated by this type of development including (but not limited to) matters regarding traffic, service infrastructure, stormwater, flooding (including evacuation), heritage and social and economic impacts. Where unsustainable, detrimental or significant impacts are associated with taking forward the proposal then Council and Landcom may agree not proceed with the search to secure a tenant, or the scope of what may be feasible will be re-scoped.	Penrith City Council and Landcom will willingly enter into an MOU agreement to explore and attempt to secure an appropriate large scale employment opportunity prior to submission of any relevant development application for built form development for the key mixed use sites. Impacts associated with this 'additional' development above the quantified amounts of floorspace specified in the Concept Plan are to be investigated and determined prior to searching for a use.
Social and Recreational Facilities	7	Landcom will provide a community pavilion in accordance with the plans attached at <b>Appendix E</b> .	Landcom will own and manage the community pavilion for a period of 5 years before executing Commitment No. 7 below.
	8	Landcom will convert the community pavilion into a publicly accessible community centre in accordance with the plans attached at Appendix E and dedicated to Penrith City Council.	Upon occupancy of 400 dwellings or at a time mutually agreed by both Landcom and Penrith City Council.
	9	Landcom will construct and embellish the land zoned public recreation on the Open Space Concept Plan Master Plan in accordance with the plans at <b>Appendix X</b> prior to dedicating it to Council.	To be demonstrated by the proponent at the time of any relevant detailed application.
Heritage	10	The Concept Plan identifies the heritage values of Thornton Hall. The Future Project Application will implement the design, layout and landscape values which recognise the identified heritage values of the site.	To be demonstrated by the proponent at the time of any relevant detailed application.
	11	An archival recording of the place will be undertaken prior to work commencing.	To be demonstrated by the proponent prior to commencement of works.
	12	An Interpretation Strategy prepared in conjunction with a Public Art Strategy will be submitted in conjunction with subsequent Project Applications to ensure that opportunities to recognise the site's heritage values through landscaping and public art are fully realised.	To be demonstrated by the proponent prior to commencement of works.

Subject	#	Commitment	Responsibility / Timing
Non Indigenous Archaeology	13	Prior to commencing works within the vicinity of Thornton Hall (i.e.: the area denoted as H1 on the Indicative Subdivision Plan map) and Coombewood (i.e.: the area shown as OS5 on the Indicative Subdivision Plan map), Landcom will investigate and record any European archaeological remains within the areas utilising current best practice methodologies.	To be demonstrated by the proponent prior to commencement of works.
Indigenous	14	Prior to commencing works within the vicinity of Thornton Hall (i.e.: the area denoted as H1 on the Indicative Subdivision Plan map) and Coombewood (i.e.: the area shown as OS5 on the Indicative Subdivision Plan map), Landcom will investigate and record any indigenous archaeological remains within the areas utilising current best practice methodologies.	To be demonstrated by the proponent prior to commencement of works.
	15	Landcom will consider the views of the Aboriginal community when determining the management regime and interpretation of the mapped and identified indigenous artefact identified as No. 45-5-2491.	To be demonstrated by the proponent at the time of any relevant detailed application.
Landscaping, Public Domain and Public Art	16	Landcom commits to implementing public art throughout the site in the locations illustrated on the Opportunities Plan and generally in accordance with the Public Art Strategy attached at <b>Appendix Z</b> .	To be demonstrated by the proponent at the time of any relevant detailed application.
	17	Landcom will prepare a street and place naming and directional signage strategy for future open space and streets throughout the site.	To be demonstrated by the proponent prior to commencement of works.
Traffic and Access	18	Landcom will carry out the road works identified in Road Hierarchy Plans and dedicate those works on a stage by stage basis to Penrith City Council.	To be demonstrated by the proponent at the time of any relevant detailed application.
	19	The widened kerbside lanes along the public transport (i.e.: bus) corridor to Coreen Avenue, and the Station Square (OS8) adjacent to the station and the land reserved for the bus underpass of the Western Railway Line are considered to be works in kind as they are in excess of the bus requirements for this project and are included to benefit the transport needs of other developments and the broader community.	To be demonstrated by the proponent at the time of any relevant detailed application.
	20	Landcom will undertake the following road works and upgrades to the nominated intersections as part of the relevant Project Application: <ul style="list-style-type: none"> <li>- Upgrade of turning space for large vehicles at the existing intersection of Coreen Avenue and the commuter car park road.</li> <li>- Provision of a one-lane roundabout at the new intersection of Coreen Avenue and the site entrance.</li> </ul> The following intersection upgrades: <ul style="list-style-type: none"> <li>- Coreen Avenue/new site entrance road (Sydney Smith Drive);</li> <li>- Coreen Avenue/Coombes Drive (eastern intersection); and</li> <li>- Coreen Avenue &amp; Commuter car park road (Daniel Woodriff Drive).</li> </ul>	To be demonstrated by the proponent at the time of any relevant detailed application and delivered during construction works.
	21	In addition to the above, Landcom will provide the following transport related works in kind: <ul style="list-style-type: none"> <li>- The widened kerbside lanes along the public transport corridor to Coreen Avenue, and the interchange facilities in the plaza adjacent to the station to promote the use of transit for travel;</li> <li>- Land reserved for a bus underpass of the Western Rail Line to promote the future development of the CBD bus network;</li> <li>- Direct and safe cycle and pedestrian routes from Coreen Avenue to Penrith Station (northern side);</li> <li>- A wide plaza and good pedestrian access from Penrith Station to the new commuter car park; and</li> <li>- Landcom will provide an upgraded access road to the commuter car park.</li> </ul>	To be demonstrated by the proponent at the time of any relevant detailed application and delivered during construction works.



Subject	#	Commitment	Responsibility / Timing
Traffic and Access	22	Landcom will consult with the RTA in the design and construction of RTA owned and managed road works and upgrades.	To be demonstrated by the proponent prior to commencement of works.
	23	The estimated cost of the proposed road network upgrades, the apportionment to the North Penrith project on the basis of traffic growth contribution, and the proposed timings are shown in Table 1 of the Traffic Management and Access Plan prepared by Parsons Brinckerhoff at <b>Appendix V</b> . Landcom commits to contributing to the identified road as works as identified in that Table.	To be demonstrated by the proponent at the time of any relevant detailed application and delivered during construction works.
	24	Commercial premises will provide cyclist end-of-trip facilities in accordance with the Planning guidelines for walking and cycling (NSW Planning, December 2004).	To be demonstrated by the proponent at the time of any relevant detailed application.
	25	Landcom, through conditions on its future sales and tenancy agreements, will produce Transport Access Guides for new residents and require commercial tenants to produce a Workplace Travel Plans for their employees and clients.	To be demonstrated by the proponent at the time of any relevant detailed application.
Ecological Values	26	Landcom will prepare a Plan of Management for the Cumberland Plain Woodland within OS2 (Thornton Park). This Plan will include a suggested planting palette.	To be demonstrated by the proponent prior to commencement of relevant works.
	27	Landcom will create a restriction to the use of land over the trees within Block C3 to protect: <ul style="list-style-type: none"> <li>- the Cumberland Plain Woodland; and</li> <li>- indigenous archaeological values.</li> </ul>	To be demonstrated by the proponent at the time the subdivision linen plan is submitted.
Drainage and stormwater	28	Stormwater Infrastructure for the Concept Plan will be provided in accordance with the Stormwater Management Strategy and Stormwater Management Report Worley Parsons at <b>Appendix N</b> .	To be demonstrated by the proponent at the time of any relevant detailed application.
	29	The targets for annual post development loads are: <ul style="list-style-type: none"> <li>- 85% for Total Suspended Solid (TSS);</li> <li>- 65% for Total Phosphorus (TP);</li> <li>- 45% for Total Nitrogen (TN); and</li> <li>- 90% for Gross Pollutants (GP).</li> </ul>	To be demonstrated by the proponent at the time of any relevant detailed application.
	30	WSUD features will be maintained in accordance with 'Managing Urban Stormwater: Treatment Techniques' (1997), published by the Environment Protection Agency (EPA).	Ongoing following construction.
Flooding	31	Development on the site will be in accordance with the objectives of the NSW Government's Flood Prone Land Policy and the Flood Plan Development Manual 2005 published by the then Department of Infrastructure, Planning and Natural Resources (DIPNR) and will integrate with the State Emergency Service's regional evacuation strategy.	To be demonstrated by the proponent at the time of any relevant detailed application.
	32	The final ground surfaces will be at or above the regional 100 year ARI flood level of RL 25.4m (AHD).	To be demonstrated by the proponent at the time of any relevant detailed application.
	33	The minimum habitable floor level for the site will be RL 25.9 AHD, being a 0.5m freeboard above the 1 in 100 year annual recurrence interval (ARI) flood event (in accordance with the Regional Flooding Assessment by Worley Parsons at <b>Appendix O</b> ).	To be demonstrated by the proponent at the time of any relevant detailed application.
Contamination	34	Landcom will continue to work with a Site Auditor in recognition that there may be a requirement for further assessments, particularly relating to the importation of fill and the possibility of unexpected finds. Site Audit Statements will be prepared for individual Project Applications.	To be demonstrated by the proponent at the time of any relevant detailed application.

Subject	#	Commitment	Responsibility / Timing
Contamination	35	The Construction Environmental Management Plan (CEMP) is to include a site-specific Unexploded Ordnance Protocol (UOP). The UOP is to be implemented throughout the construction works under the responsibility of the Principal Contractor.	To be demonstrated by the proponent at the time of any relevant detailed application.
	36	The CEMP is to include a site-specific Unexpected Finds Protocol (UFP). The UFP is to be implemented throughout the construction works under the responsibility of the Principal Contractor.	To be demonstrated by the proponent at the time of any relevant detailed application.
	37	After removal of the existing concrete slabs, a suitably qualified environmental engineer/scientist will inspect the exposed ground for indicators of contamination. Sampling and testing might be required.	To be demonstrated by the proponent at the time of any relevant detailed application.
	38	Remediation and validation pursuant to an unexpected find or contamination found after removal of concrete slab. If remediation is required, a specific Remediation Action Plan (RAP) will be prepared. The remediation works will be carried out in accordance with the RAP. Validation of the remediated area by the environmental engineer/scientist will be carried out after completion of remediation works.	To be demonstrated by the proponent at the time of any relevant detailed application.
	39	Any identified ash/coal materials will be tested to confirm the contamination status. The ash/coal materials with concentrations of analytes within the assessment criteria can be re-used on-site. To mitigate the potential for site occupiers to have aesthetic-based concerns and/ or because the materials may be unsuitable as a planting medium, ash/coal materials will not be placed near-surface in any location in the site.	To be demonstrated by the proponent at the time of any relevant detailed application.
	40	In the event groundwater extraction is envisaged for any purpose, then further groundwater assessment will be undertaken to verify the suitability of the groundwater for the specific use.	To be demonstrated by the proponent at the time of any relevant detailed application.
	41	Further sampling, testing and assessment of the groundwater inside the northern site boundary, which is in the vicinity of the Mobil fuel storage and distribution depot, will be undertaken to confirm that the site is not impacted by any contamination inflow from the Mobil depot. The further assessment will be undertaken prior to lodgement of the Project Application for that part of the site.	To be demonstrated by the proponent at the time of any relevant detailed application.
	42	The crushed concrete and asphalt will be assessed according to "The Recovered aggregate exemption 2010" under the "Protection of the Environment Operation (Waste) Regulations 2005", prior to re-use.	To be demonstrated by the proponent at the time of any relevant detailed application.
	43	With reference to a comment by the Site Auditor in the Site Audit Statement, the design specification and construction approach for the refurbishment of Thornton Hall is to recognise the potential presence of lead paint attention. The CEMP is to describe the measures to be taken when carrying out work in and around Thornton Hall to safeguard construction workers and the environment.	To be demonstrated by the proponent at the time of any relevant detailed application.
	44	The Virgin Excavated Natural Material (VENM) classification will be reassessed in the event of the following observations during construction activities: <ul style="list-style-type: none"> <li>- foreign matter being found mixed with the soil;</li> <li>- soil staining and discoloration being identified within the stockpile;</li> <li>- odours emanating from the stockpile.</li> </ul>	To be demonstrated by the proponent at the time of any relevant detailed application.
	45	With reference to a comment by the Site Auditor in the Site Audit Statement, the soil in the stockpile should not be used on the surface of residential areas.	To be demonstrated by the proponent at the time of any relevant detailed application.

Subject	#	Commitment	Responsibility / Timing
Geotechnical and Groundwater	46	A Construction Environmental Management Plan (CEMP) is to be prepared which includes a site-specific Soil and Water Salinity Management Plan. The Soil and Water Salinity Management Plan is to be implemented throughout the construction works under the responsibility of the Principal Contractor.	To be demonstrated by the proponent at the time of any relevant detailed application.
	47	Further targeted investigations will be required to confirm the detailed design, including ascertaining the suitability of soils for re-use on the site.	To be demonstrated by the proponent at the time of any relevant detailed application.
	48	The CEMP is to include measures to ensure imported fill is suitable for the intended use on site.	To be demonstrated by the proponent at the time of any relevant detailed application.
Civil Works	49	During the detailed design process road grades shall be designed to minimise the amount of fill required at the site, where possible, to assist in providing a more sustainable outcome and also reduce the extent of retaining walls required at the property boundaries.	To be demonstrated by the proponent at the time of any relevant detailed application.
	50	Additional geotechnical investigations are required to confirm the extent of excavated cut volumes that can be placed as engineering fill within the site.	To be demonstrated by the proponent at the time of any relevant detailed application.
	51	Testing of the existing asphalt and concrete slabs should be undertaken to determine their respective suitability for re-use in the road profile of the internal road network.	To be demonstrated by the proponent at the time of any relevant detailed application.
Noise and Vibration	52	Future development shall be generally consistent with the findings and the recommendations of the Noise and Vibration assessment at Appendix DD.	To be demonstrated by the proponent at the time of any relevant detailed application.

## 10.0 Stage 1 Project Application – Subdivision & Infrastructure Works

### 10.1 Overview

Pursuant to Section 75J(3) of the EP & A Act, Landcom is seeking Project Application approval for the subdivision, detailed design and construction of Stage 1 at North Penrith. The extent of the Stage 1 Project Application is shown in **Figure 56**, including some additional land within the site that will be used for stockpiling and associated construction related works.

Subdivision of Part Lot 1 DP33754 is proposed as shown in the Draft Plans of Subdivision prepared by Craig and Rhodes (**Appendix E**) including:

- subdivision to create 120 lots comprising:
  - 106 future residential lots;
  - 1 Village Centre lot;
  - 6 super lots;
  - 3 future open space lots, including 1 lot to accommodate the community centre;
  - 1 future industrial lot;
  - 1 sewer pumping station lot; and
  - 2 residue lots;
- site establishment and perimeter security measures;
- establishment of environmental & safety controls and traffic control measures;
- preparatory works, including small building demolition, trees/shrub removal, topsoil stripping and stockpiling for later reuse and the disposal of unsuitable topsoil material, and taking up and stockpiling existing concrete and asphalt hardstands and roads for later reuse in other stages of the construction works;
- bulk earthworks – cut and fill, including the importation of material to raise levels;
- sections of the retaining wall next to the Penrith Training Depot;
- roads and road intersections;
- drainage and stormwater management infrastructure;
- utilities servicing infrastructure, electrical, sewerage (including a sewer pumping station), telecommunications, potable water and gas;
- lots formation;
- minor works external to the site, such as footpaths;
- construction of the community pavilion;
- landscaping;
- erecting informative signage at different road entries to the wider site; and
- site de-establishment and handover.

The Subdivision Plans and Engineering Drawings prepared by the consultant team which are included at **Appendix E** and the relevant appendices under each discipline illustrate the proposed scope of including roads, cut/fill, stormwater management, and soil and water management plans. It is intended to seek staged Construction Certificates as necessary to facilitate the efficient delivery of each phase of the development works.





Figure 56 – Stage 1 Project Application area

## 10.2 Proposed Subdivision

A draft subdivision plan has been prepared by Craig and Rhodes (Figures 57 – 58 and Appendix E). The distribution of lot types is shown in Table 9 and the proposed range of lot typologies and mix is in Table 9. Six (6) super lots will remain for sub-division and development in the future.

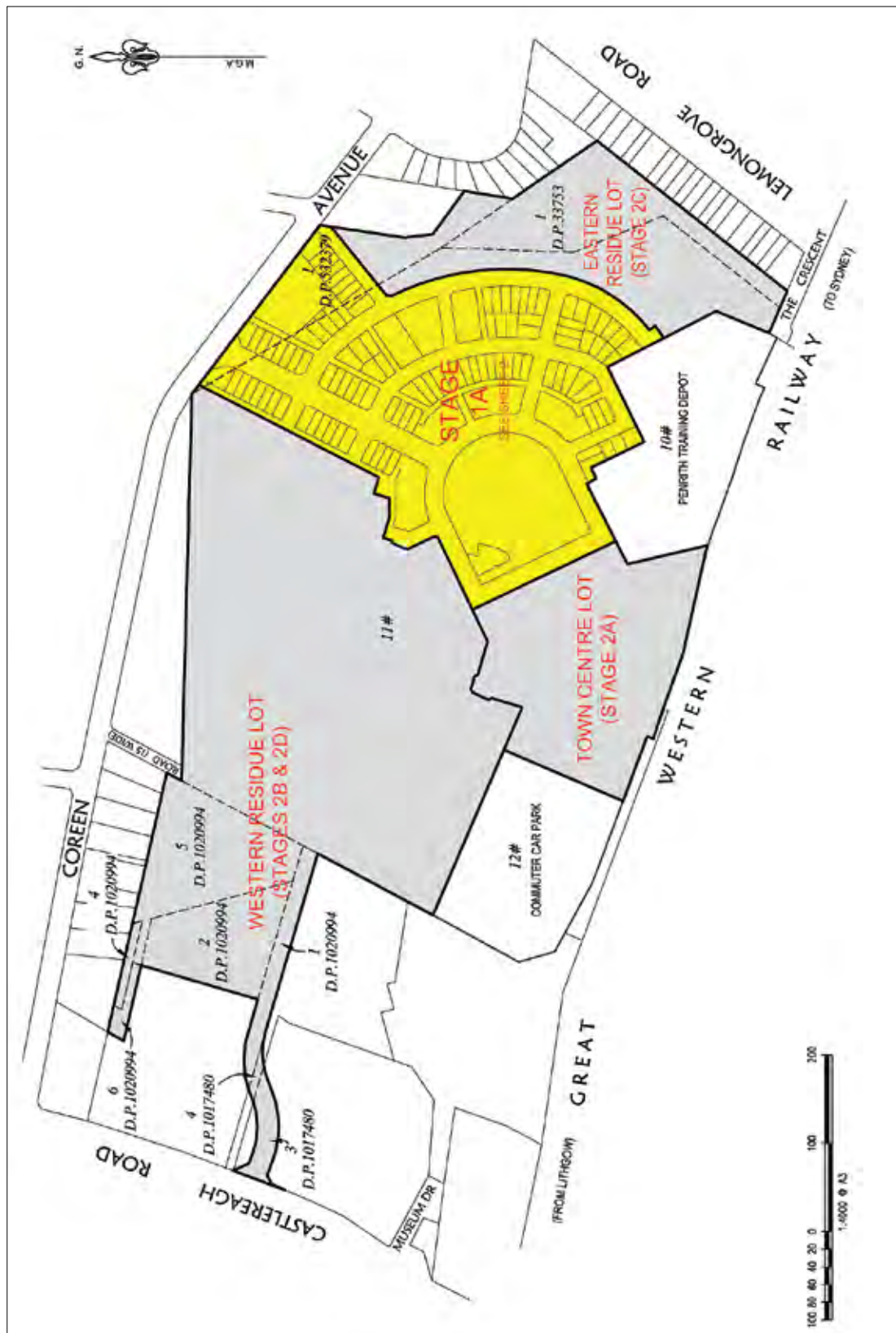


Figure 57 – Proposed plan of Stage 1 subdivision

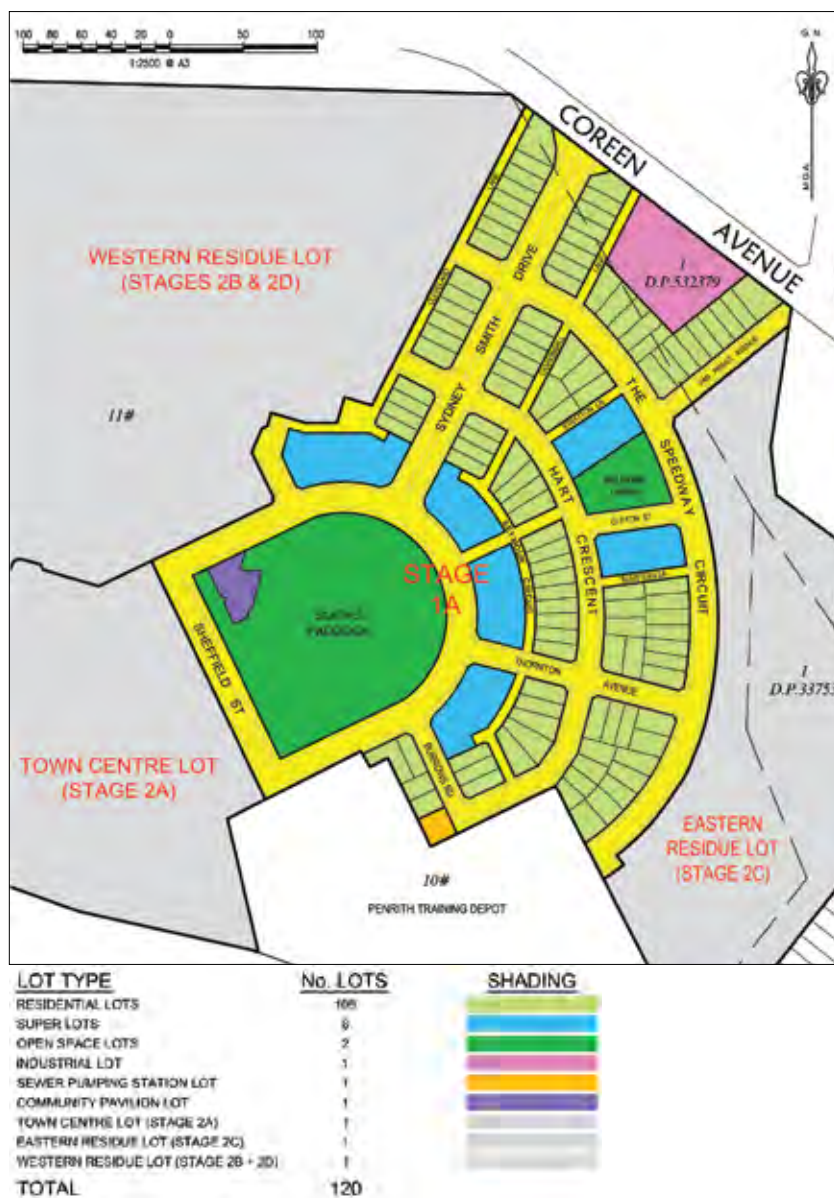


Figure 58 – Detailed plan of Stage 1 subdivision

Table 9 – Overview of Stage 1 Project Application Land Use Areas

Land Use	Area (ha)
Residential lots	4.7362
Industrial lots	0.4570
Open Space (including community use)	2.126

Table 10 – Proposed lot types and mix

Lot Type (m <sup>2</sup> )	No. of lots	Dwelling Yield	% of total lots
Residential lots > 235m <sup>2</sup>	106	106	59
Superlots	6	43	24
Preferred ancillary dwellings*	29	29	16
Industrial lots	1	1	1
<b>Total</b>	<b>n/a</b>	<b>179</b>	<b>100</b>

Note: the residential lots >235m<sup>2</sup> includes a number of preferred ancillary dwelling lots.



## 10.3 Demolition and Tree Removal

The Stage 1 Project Application seeks approval for the demolition of a single building, ancillary structures, and former hardstand areas and roads associated with the site's former military uses and the removal of existing trees and landscaping. The demolition is proposed in order to make the subject site suitable for future urban development.

The demolition of existing structures will be undertaken in accordance with Australian Standard AS2601 – 2001 – The demolition of structures, the Occupational Health and Safety Act and in accordance with current Work Cover requirements.

A site supervisor is to be appointed to ensure that any person working on site follows all health and safety procedures, and to make daily checks of the site. During the demolition the site will be fenced to ensure that only relevant staff and contractors are within the demolition and earthworks zone.

## 10.4 Earthworks

The Stage 1 Project Application seeks approval for the earthworks as summarised in the Civils Report prepared by Worley Parsons and the draft Construction Environment Management Plan at **Appendices EE and GG**.

The proposed earthworks are to facilitate the proposed stormwater management plan, facilitate road works and improve lot gradings. A bulk earthworks strategy has been prepared for the North Penrith development. The bulk earthworks strategy incorporates appropriate design constraints stemming from the stormwater drainage, internal road design, regional flood management and site servicing requirements. The bulk earthworks strategy also looks to minimise construction costs as well as minimising elevation differences at the property boundaries.

Stage 1 of the North Penrith development will adopt the proposed surface levels established as part of the bulk earthworks strategy. Some temporary civil works will be required at the boundaries of Stage 1 to achieve an appropriate integration between the proposed levels and existing levels. Such works include temporary batters, retaining walls and stormwater diversion drains.

The estimates of cut and fill volumes for the North Penrith Stage 1 are shown below in **Table 11**. No allowance has been made in volume estimates for stripping of topsoil or boxing out of road pavements.

**Table 11** – Proposed cut and fill volumes

Cut Volume (m³)	Unsuitable Cut (m³)	Fill Volume (m³)	Balance (m³)
38,000	9,000	49,000	20,000

The Site Grading Plan provides the existing and proposed surface levels (**Appendices E and EE**). The bulk earthworks plan for the Stage 1 Project Application showing the location, extent and quantities of cut and fill volumes required to produce a proposed surface conducive for urban development is also included at **Appendices E and EE**.

Associated with the bulk earthworks, will be the construction of a retaining wall along part of the Stage 1 / Penrith Training Depot boundary as illustrated in drawing number 301015-00NP-ST1-F03 of **Appendices E and EE**. Temporary batters will be constructed around the Stage 1 boundary to tie back the proposed surface levels associated with Stage 1 into existing surface levels.

Batter extents vary around the Stage 1 boundary, however at their maximum the temporary batters extend approximately 8.50m. The location of temporary batters is shown on drawing number 301015-00NP-ST1-F03 of **Appendices E and EE**.



## 10.5 Open Space and Landscaping

The Stage 1 Project Application includes 2.126 hectares of open space / parks proposed to be dedicated to Penrith City Council (see **Table 12**).

**Table 12** – Areas of open space / parks

Open Space / Park	Area (ha)
OS1 – The Oval (Smith's Paddock)	1.8850
OS3 – Belmore Green	0.2276
Total	2.126

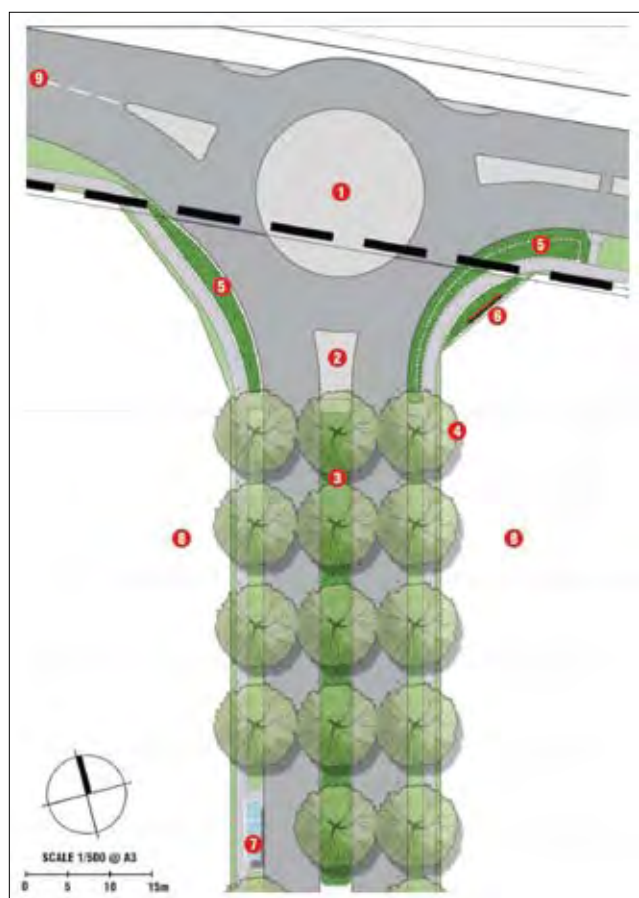
The Project Application seeks approval for the landscaping as described in the Landscape Concept prepared by PLACE Design included at **Appendix X**. The key landscape principles for North Penrith are set out in Section 6.7 of this report.

The Landscape Concept at **Appendix X** includes planting and materials schedules and describes the proposed landscape treatments for Stage 1 for:

- parks including treatment of the Coreen Avenue Entry, the Oval (Smiths Paddock) (OS1) and Belmore Green Park (OS3); and
- streetscapes, footpaths and cycle ways including tree planting, under storey planting, and median planting.

A Public Art Stagey for the Project Application is also provided at **Appendix FF**.

**Figures 59 – 61** illustrate the landscape plans for the Coreen Avenue Entry, The Oval (Smith's Paddock) and Belmore Green.



**Figure 59** – Landscape plan for Coreen Avenue entry



Figure 60 – Landscape plan for The Oval (Smith's Paddock)



Figure 61 – Landscape plan for Belmore Green

The Oval (Smiths Paddock) will provide the local community hub for passive and active recreation including provision for a community facilities building. The Stage 1 Project Application proposes unstructured active play areas along with interpretive public art. The park will include the existing eucalypt trees that define the eastern edge of the existing oval along with a mix of evergreen and deciduous tree planting for increased amenity and all year round impact.

Belmore Green provides a landscape connection with the key design elements of the Smiths Paddock. The park's character will be in keeping with the surrounding streetscapes and incorporate both large deciduous and evergreen trees. Large swaths of turf provide an open park experience with ample usable space for both active play and quite strolling.

Structured plantings to the west and east of the park will enhance the visual amenity of the park as well as provide screening to the residence situated on the western boundary.

A Maintenance Schedule outlining the proposed scope of facilities, management issues, and potential costs to Penrith City Council (as the ultimate owner) is provided at **Appendix Y**.

## 10.6 Access and Transport

Access to Stage 1 will be via the newly created intersection of Coreen Avenue and the site boulevard (**Figure 62**). The existing road to the commuter car park will also remain open. The PTD will continue to operate in its current manner.

Within the Stage 1 area, the street network and hierarchy will be delivered as shown on the road hierarchy plan and the street typologies and sections included at **Appendix V**.

## 10.7 Temporary Sales and Information Centre and Signage

The Project Application seeks detailed approval for the construction of a Temporary Sales and Information Centre, associated business and building identification signage, landscaping and on street car parking spaces for up to 50 vehicles.

The proposed temporary sales and information display suite will be constructed in accordance with the plans prepared by Landcom at **Appendix E**. The sales and information display will be accessed via Daniel Woodriff Drive.

### 10.7.1 Signage

It is proposed to provide business and building identification signs to convey the purpose and location of the sales and information centre to the public. Each sign will be 4 m (height) x 2 m (width).

The sales and information signage will be provided through-out the construction and sales period of the overall development.

Larger format marketing and sales signage is also proposed on the site's perimeters on Castlereagh Road and Coreen Avenue, and potentially opposite Penrith Rail Station.

### 10.7.2 Vehicular Access and Parking

An on street parking area will be provided for use by customers of the sales and information display suite. The car park will have capacity for 50 vehicles including disabled spaces. Equitable access is provided from the sales and information centre and the proposed car park.

### 10.7.3 Landscaping

A Landscape Plan is also included at **Appendix E**. The proposed landscaping concept for the sales and information centre includes feature planting. Selection of appropriate tree and plant species in and around the centre will be made from the indicative planting palette included in Section 9.0 of the Landscape Concept Report at **Appendix X**.



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### 10.7.4 Operational Details

Over the construction and sales period of the overall development, it is anticipated that the location and operation details of the temporary sales and display suites within the building may change as each residential stage is released to market.

The proposed sales and display suite, car park and signage are temporary. Once operational they will be used and erected for up to 5 years, prior to being converted into a multi-purpose community centre (the Cricketer's Pavilion). **Appendix E** includes plans that show the potential form and function of the Cricketer's Pavilion when converted into a community facility.

Both sales and information centres and associated car park areas will operate between 10.00am and 6pm, seven days a week.

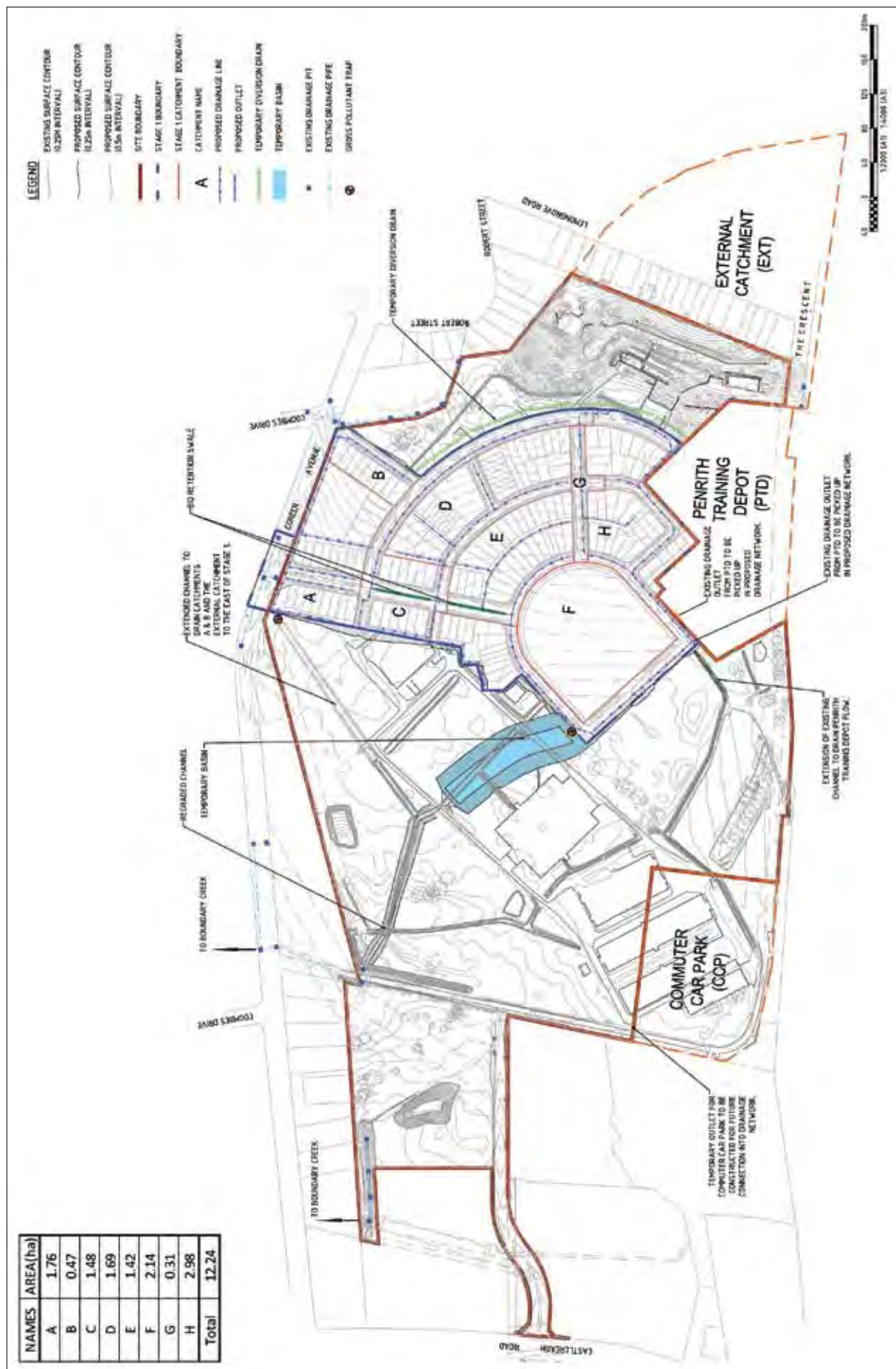
## 10.8 Stormwater Management Works

This proposed stormwater system for Stage 1 is in the Drainage and Stormwater Report by Worley Parsons at **Appendices E and N. Figure 63** summarises the proposed stormwater regime for Stage 1.

A small northern portion of Stage 1 will be required to drain directly to and connect with existing stormwater infrastructure within Coreen Avenue.

However, the remaining portion of Stage 1 will require approximately 4,000m<sup>3</sup> of detention volume to attenuate post-development peak flow rates back to pre-development levels prior to discharging into existing drainage infrastructure. The volume of storage is provided within a temporary basin west of the stage 1 subdivision works. This will drain to an extended channel flowing directly to the existing stormwater infrastructure within Coreen Avenue.

Stage 1 also incorporates WSUD measures to reduce the average annual pollutant loads for Total Suspended Solids (TSS), Total Phosphorus (TP), Total Nitrogen (TN) and Gross Pollutants (GP). Measures include bio-retention swales, gross pollutant traps and a temporary sediment basin.



**Figure 63 – Stage 1 stormwater and drainage concept**

## 10.9 Utility Services

In alignment with the overall infrastructure servicing strategy for the site as outlined for the Concept Plan (see Section 6.10), Worley Parsons has reviewed what works are required to adequately service the first stage of the site's development. Figure 3 of their Utilities Servicing Report at **Appendix H** specifically illustrates the extent of these works for Stage 1.

### Water

Stage 1 will be serviced by a single connection to the existing DN600 main in Coreen Avenue. A second connection can be made, if required, to the DN 200 main along Castlereagh Road.

### Sewer

A sewer pumping station is required to be delivered through Stage 1 in addition to some amplification works to the existing DN225 sewer main located in Coreen Avenue.

The sewer pumping station will be located adjacent to the Penrith Training Depot property boundary. The majority of the North Penrith development would drain via gravity to the sewer pumping station. The sewer pumping station would then pump wastewater via a rising main to the existing DN400 sewer main located in Coreen Avenue.

Dimensions for the internal sewer network will be confirmed during detailed design and would be subject to confirmation from SWC. However, Landcom and Sydney Water have been in discussions regarding the design and timing for the delivery of the sewer pumping station.

### Electricity

Two of the three 11 kV feeders will be installed for the Stage 1 development and will then be connected to the existing 11 kV overhead line in Coreen Avenue. The existing high voltage support to the Penrith Training Depot will be decommissioned. The Depot will either be connected to the 11 kV feeders proposed through the site or via a connection to the existing high voltage network in The Crescent, west of the Depot.

### Telecommunications

Stage 1 will be temporarily serviced from a single connection off Coreen Avenue. The existing optical fibre network located at the intersection of Coombes Drive and Coreen Avenue will also be upgraded.

### Gas

Similar to the telecommunications, a Stage 1 will be temporarily serviced via a single connection off Coreen Avenue. The existing gas main located at the intersection of Coombes Drive and Coreen Avenue will be required to be upgraded also.

## 10.10 Proposed hours of works

The proposed hours of construction associated with Stage 1 Project Application works are:

- 7 am – 6 pm, Monday to Friday; and
- 7 am – 5 pm, Saturday and Sundays.
- No work will be carried out on Public Holidays.

It is also noted that some activities may be required to be undertaken outside normal construction hours, for example the floating of plant and construction machinery to the site, and other site and maintenance activities.

## 11.0 Project Application Environmental Assessment

### 11.1 Subdivision

The Concept Plan for North Penrith includes a series of urban design principles driving the planning and development of the site covering:

- Village Centre focus of activity;
- Transit oriented, accessible and connected development;
- Community places;
- Parklands of native bushland;
- Heritage interpretation.

The Stage 1 Project Application is consistent with the urban design principles and layout of the Concept Plan. In particular, it provides an accessible and connected grid network of streets with good linkages internally and to the future Village Centre, the transport network and community facilities. It also provides 2 landscaped parks – the Oval (Smiths Paddock) and Belmore Green). These works will provide the necessary infrastructure and base facilities to support future housing development within the Stage 1 area.

### 11.2 Traffic and Transport

The Traffic Management and Accessibility Plan (TMAP) for North Penrith, prepared by Parsons Brinckerhoff (see **Appendix V**), addresses the range of matters identified in the DGRs. The report also examines the road network, intersection layout and treatment, pedestrian and cycle networks as well as the public transport network. All are designed to provide linkages to key destination points and transport hubs, and maximise accessibility between proposed land uses on the site.

The Stage 1 development requires a new intersection at the Coreen Avenue/new site entrance road (Sydney Smith Drive) to be constructed to cater for the traffic generated by the development as outlined in Section 10.6.

#### 11.2.1 Impacts on Road Network

The current road network can largely accommodate the traffic generated by the Project Application, subject to the construction of the Coreen Avenue/entry boulevard upgrade. The impacts on the road network identified in the Concept Plan and the TMAP are dependent on the amount and timing of additional traffic generated by other developments. The majority of road upgrades described in Table 24 of Parsons Brinckerhoff's report would be required by 2016 if all the other developments become operational as assumed. However, if they are delayed or downgraded in terms of scale of development, the Project Application does not create any additional burden to the road network that necessitates road upgrades and improvements.

The bus and train networks have sufficient capacity to accommodate the additional trips generated by the Project Application. Both bus scenarios (Figures 23 and 24) could be accommodated within the roads proposed as part of this Project Application. The interim bus scenario would be sufficient to accommodate the needs of the Project Application and the other local developments through 2016.

Pedestrian and cycling facilities would be timed to coincide with the development of the area of the Project.



## 11.2.2 Construction Traffic Impacts

Construction traffic volumes and routes for Stage 1 are not able to be determined at this point as a construction contractor has not been appointed, the exact methodology of construction is not yet known. Notwithstanding this, the Construction Traffic Management Plan (**Appendix GG**) it is expected that construction traffic movements will average 10-15 trucks per day and will peak at 30-45 trucks movements per day during bulk excavation and concrete pouring. The expected frequency of construction movements is less than the predicted traffic generation arising from Precinct 1 and therefore does not raise any significant traffic generation issues.

A complete construction traffic management plan will need to be prepared and submitted for approval before the commencement of construction. The following matters have been identified as matters that will need to be addressed by the construction management plan:

- Site Traffic Management Plans (STMP's) will be developed for specific areas of work outside the site that may impact in some way on local traffic;
- types of construction vehicles likely to be used during the stages of construction;
- frequency and turnover in staff and tradesmen contracted to undertake specific scopes of work;
- proposed truck routes for the development and the quickest path onto the arterial road network to avoid Coreen Avenue between Coombes Drive (eastern intersection) and Parker Street.

## 11.2.3 Proposed Traffic and Transport Measures

In accordance with the commitments made in the Concept Plan, Landcom will implement the following recommendations to facilitate the successful delivery of Stage 1. These include:

- sustainable travel strategies and TOD principles (consistent with the Concept Plan);
- infrastructure improvements to provide easy pedestrian and cyclist access via an internal shared pedestrian/cycle path network connecting to public transport services at Penrith Rail Station initially;
- public transport infrastructure, including well-designed bus stops to provide safe and convenient use of public transport services;
- road infrastructure upgrades to provide access to the site via a new intersection at Coreen Avenue as above.

## 11.3 Heritage

### 11.3.1 European Heritage

The North Penrith site exhibits considerable historic and social significance. The Stage 1 site contains a number of key attributes including the oval (Smiths Paddock), as described in the Statement of Heritage Impact prepared by Tanner Architects at **Appendix II**.

The area covered by the Stage 1 Project Application proposes upgrades to the existing oval on the site including peripheral landscaping treatments, the provision of passive recreation spaces, a children's play area and a cycleway and the creation of a linear water feature.

The Statement of Heritage Impact finds that the Stage 1 subdivision does not impact on Thornton Hall as the area of land subject to the Project Application is outside the curtilage of Thornton Hall. Aspects of the Project Application that do impact on heritage, such as the oval, retained section of Speedway and public artworks, will enhance the heritage significance of the site by interpreting past uses and providing a sense of identity for the place and a sense of continuity with the past. These aspects of the Project Application make specific reference to the history and uses of the North Penrith site and will provide interpretation that is integral to the site. The Heritage Interpretation Strategy prepared for the site outlines the manner in which these items will be reinterpreted (**Appendix R**).

The potential impacts of future development to be later located in the Project Application area (which would be the subject of future applications) are regulated by controls over building type, height, bulk setbacks and siting described in the Concept Plan and Development Control Plan for the North Penrith site.

Stage 1 also delivers the view corridor that is proposed to be established between Thornton Hall and the oval, which will allow views to the house from the site, and permit views from the house across the site.

The extent of the site for the Project Application does not include the identified areas for potential non-indigenous archaeology, being relating to Combewood House and Thornton Hall. In this regard it is expected that there is a low probability that there will be any significant archaeological resources within the area relating to the Project Application. Notwithstanding, archaeological supervision will be established at the time works commence.

### 11.3.2 Indigenous Heritage

The use of land within the site for the road is acceptable in light of the findings of the Aboriginal Management Plan (**Appendices T and U**) which describes the processes and management outcomes of the Aboriginal heritage assessment completed on Landcom's to guide future planning policies for the land.

Consultation for the Concept Plan has also been undertaken with the Local Aboriginal Land Council and confirmed that the Project Application represents little risk to the indigenous heritage values of the site.

## 11.4 Water Cycle Management

The temporary detention basin will adequately accommodate the approximately 4,000 m<sup>3</sup> of detention volume required to attenuate post-development peak flow rates back to pre-development levels prior to discharging into existing drainage infrastructure.

The proposed WSUD measures have been arranged into a treatment train and MUSIC estimates the following average annual reduction rates:

- 90% for TSS;
- 67% for TP;
- 47% for TN; and
- 96% for GP.

The average annual reduction rates for the Stage 1 both exceed the baseline targets nominated in *'Draft Water Sensitive Urban Design Book 1 Policy'*, Landcom, May 2009. Through the provision of detention volume the Stage 1 can demonstrate that peak flow rates are matched for events up to and including the 100 year ARI event and that average annual pollutant loads are reduced to in accordance with Landcom's baseline requirements.

## Flooding

Localised flooding has been addressed within Stage 1 to determine peak water surface levels for the 100 year ARI event. These water levels have been estimated based on the modelling work undertaken in XP-RAFTS and have been incorporated into the design of open spaces surrounding the water bodies.

## Groundwater

Based on the '*Geotechnical & Groundwater North Penrith Assessment Report*', Geotechnique, October 2010 the existing groundwater is found at depths exceeding 5.0 m. In this regard the Stage 1 construction works will have no adverse impacts on the existing groundwater resource.

## Recommendations

The stormwater management strategies for Stage 1 have been developed based in preliminary assumptions. As detailed design progresses for the development assumptions will need to be validated and refined to ensure the objectives of the stormwater management strategy are met.

## 11.5 Flooding

Worley Parson has prepared a Regional Flooding Assessment (at **Appendix O**) to determine whether the Stage 1 Project Application:

- conforms with the *NSW Government Flood Prone Land Policy*,
- integrates with the SES regional evacuation strategy; and
- will be able to adequately manage structural damage risk.

The assessment finds that there is a small north western portion of the site that is subject to 100 year flood events. To resolve this, Worley Parsons has recommended:

- the ground levels for this part of the site be raised to match the 100yr ARI flood level, being RL 25.40m AHD;
- all habitable floor levels for development are to have a minimum level of RL 25.9m AHD, which incorporates a freeboard of 500mm above the 100yr ARI flood level; and
- the minimum level for roads through the development site be RL 25.60m AHD.

These measures will ensure that all lots will be located outside the 100 year ARI flood and the floor levels of future dwellings will have a minimum freeboard of 500mm to comply with the Flood Development Manual and Penrith City Council requirements. Throughout the development, 100 year ARI flooding will be managed by a combination of an appropriately designed pipe drainage system and containment of surcharge flows (greater than pipe capacity) within the road reserves. Flows in road reserves will be limited to comply with Penrith City Council requirements.

Worley Parsons has also reviewed the ability for the site to be evacuated in the event of severe flood events. This review indicates that based on the type of flooding, the lengthy time which the site is actually affected by flooding and using the existing SES Emergency Response Plan flood evacuation route eastward along Coreen Avenue to Northern Road, the residents and occupants of the North Penrith site will be able to be timely evacuated. Furthermore, the eastern portion of the site, including Thornton Hall, will also provide a safe refuge point for residents within the site.

The structural damage risk is ascertained by Worley Parson's to be either none or low depending on the location of the development over the site. Where there is a low structural risk this is considered acceptable will not require flood mitigation or flood proofing measures for construction of dwellings.

This same outcome applies to infrastructure such as roads, drainage, sewerage, water, power, telecom and gas. However, any buildings above the category of dwellings will require mitigation measures such as concrete or steel frames that are linked to a structural foundation to prevent substantial damage by floodwaters.

All required mitigations measures are included in the draft DCP and/or the Statement of Commitments (see Section 13).

## 11.6 Geotechnical and Soil Matters

### 11.6.1 Site Preparation Works

The preliminary bulk earthworks strategies for North Penrith are constrained by:

- the 'North Penrith Regional Flooding Assessment Report', Worley Parsons, October 2010 (**Appendix O**);
- the provision of appropriate grades for the internal road network to the satisfaction of Penrith City Council;
- the 'North Penrith Drainage and Stormwater Report', Worley Parsons, October 2010 (**Appendix N**);
- the 'North Penrith Utilities Servicing Report', Worley Parsons, October 2010 (**Appendix H**);
- the requirements for site access at the property boundaries;
- minimising the elevation difference at property boundaries; and
- minimising the imbalance between cut and fill volumes.

The Stage 1 bulk earthworks strategy will require approximately 20,000m<sup>3</sup> of fill material. The sourcing of additional fill volumes (i.e. that beyond which can be sourced on site) will be subject to negotiations between Landcom and the contractor. Imported fill would need to be free of contamination and validated by a geotechnical engineer to ensure adequacy for use as engineering fill for road reserves and buildings. Any excess material will be stockpiled outside the Stage 1 boundary.

The Preliminary CEMP (at **Appendix GG**) provides further details regarding the sourcing and managing of the bulk earthworks. Subject to implementation of a final CEMP, it is considered that the proposed earthworks can be appropriately managed.

### 11.6.2 Groundwater Management

As outlined in Section 3 and **Appendix M**, the ground water characteristics of the site raise no issues for the Stage 1 Project Application as:

- groundwater over the central and western portions is situated within probable relatively highly permeable coarse gravel aquifers, at depths in excess of 5m from surface levels;
- groundwater over the eastern portion is situated within probable relatively low permeability clays, at depths in excess of 8m from surface levels;
- groundwater underlying the site appears to flow in a north to north-westerly direction;
- the groundwater table at the site is at depths greater than 5m; and
- groundwater does not appear to rise significantly following heavy rainfall so as to become a potential hazard for rising salinity.

No specific controls or recommendations are therefore required to be incorporated into the Statement of Commitments.



### 11.6.3 Contamination and Site Rehabilitation Works

Investigations undertaken by others for the site have identified the site is suitable for the proposed uses. The previous investigations involved an independent DECCW accredited Site Auditor reviewing investigation reports, remedial strategies and validation reports where remediation works have been completed.

The Project Application area has been the subject of remediation and validation programs and has been certified as suitable for the proposed residential use.

The Contamination Assessment Report at **Appendix K** has no specific recommendations for the Stage 1 Project Application. However, the report does note that several recommendations made in relation to the Concept Plan also apply to the Project Application development (i.e.: those numbered 1 to 6). Landcom's Statement of Commitments have adopted the relevant recommendations.

### 11.7 Noise and Vibration

Given that the development for Stage 1 will not in itself accommodate residents or workers, the impact of noise and vibration emissions to development are not considered as part of this assessment. However, noise and vibration emissions generated by the construction phase of the Stage 1 development have been assessed.

The Noise and Vibration Assessment at **Appendix DD** has been prepared in accordance with the *Environmental Criteria for Road Traffic Noise* (EPA 1999) (ECRTN) and *Development Near Rail Corridors and Busy Roads - Interim Guideline* (Department of Planning). The Assessment concludes that the proposed construction work will generate minimal noise impacts to surrounding offsite receivers. Notwithstanding this, noise safeguards have been recommended to minimise noise and vibration impacts to surrounding development. These measures have been included in the Statement of Commitments at Section 9 and 13 of this report.

### 11.8 Ecological Sustainable Development

The Stage 1 Project Application will set in place the key infrastructure elements that will facilitate these broad ESD outcomes for the Concept Plan. Specifically these include key road and infrastructure connections, stormwater and civil works, and residential subdivision patterns for future development.

Rainwater tanks will be provided on each residential lot. Rainwater tanks will retain stormwater runoff for re-use in toilet flushing and for outdoor irrigation. Preliminary water balance modelling indicates that a 3 kL tank would represent an optimal cost-benefit scenario.

## 11.9 Construction Management

A Construction Management Plan (CMP) to manage the methods and impacts of construction will be prepared prior to the commencement of any construction works.

It will contain a detailed Construction Environmental Management Plan (CEMP) that deals with environmental matters during the course of construction. This CEMP will build upon the Preliminary CEMP in **Appendix GG**.

The Preliminary CEMP has specific environmental management plans for:

- Construction Air Quality Plan;
- Construction Sediment and Erosion Control Plan – including referencing the Site-specific Sediment and Erosion Control Plan design documentation produced by Worley Parsons;
- Unexpected Finds Management Plan – includes taking up the relevant recommendations from the Contamination Assessment Report produced by Geotechnique;
- Construction Waste Management Plan;
- Retained Vegetation Management Plan;
- Working Adjacent Site Boundary Management Plan;
- Construction Heritage Management Plan – including archival recording and a protocol for any potential finds;
- Construction Noise and Vibration Management Plan – includes taking up the relevant recommendations from the Noise and Vibration Assessment Report produced by Benbow Environmental;
- Construction Traffic Management Plan – includes taking up the relevant recommendations from the Transport Management and Accessibility Plan produced by Parsons Brinckerhoff;
- Unexploded Ordnance Management Plan - includes taking up the relevant recommendations from the Contamination Assessment Report produced by Geotechnique; and,
- Soil and Water Salinity Management Plan – required pursuant to the recommendation in the Soil and Groundwater Assessment report produced by Geotechnique.

Other sections in the CMP will address the likes of:

- management responsibilities and reporting, and key personnel and responsibilities including workplace health and safety officers;
- workplace health and safety policy, and on-site safety requirements, including risks and control methods, safe work method statements, traffic management, electrical power supply and safety, signs, protective equipment and clothing, fire prevention, communication, public safety, inspections and safety audits, site inductions and visitors and plant and equipment; and,
- site emergencies including procedures for evacuation, fire, injury, crime, flood, storm, dust, first aid and incident reporting.

The CMP, with its CEMP, will be progressively augmented and customised for each later stage of construction at North Penrith. Implementation of this extensive programme of construction management processes and measures will adequately ensure that all aspects of the proposed development's construction will minimise and mitigate impacts.

## 12.0 Project Application Statement of Commitments

Subject	#	Commitment	Responsibility / Timing
Local Infrastructure Contributions	1	Landcom will provide local infrastructure contributions in accordance with Table 7 at Section 6.13 of Concept Plan Environmental Assessment Report prepared by JBA Urban Planning Consultants Pty Ltd dated October 2010.	To be demonstrated by the proponent prior to issue of the Subdivision Certificate.
	2	Landcom will maintain any local infrastructure contributions that are to be dedicated to Penrith City Council for a period of 36 months from the date of practical completion of the works, unless otherwise agreed by Landcom and Penrith City Council.	To be demonstrated by the proponent prior to issue of the Subdivision Certificate.
Social and Recreational Facilities	3	Landcom will construct the community facility (The Cricketers Pavilion) in accordance with the plans attached at <b>Appendix E</b> .	Landcom will own and manage the building for a period of 5 years from completion of its construction, before executing Commitment No. 4 below.
	4	Landcom will convert the pavilion into a publicly accessible community centre in accordance with the plans attached at Appendix E and dedicate it to Penrith City Council.	Upon occupancy of 400 dwellings or at a time mutually agreed by both Landcom and Penrith City Council.
	5	Landcom will construct and embellish the land zoned public recreation on the Open Space Concept Plan Master Plan in accordance with the plans at <b>Appendix X</b> prior to dedicating it to Council.	To be demonstrated by the proponent prior to issue of the Subdivision Certificate.
Heritage	6	An archival recording of the place will be undertaken prior to work commencing.	To be demonstrated by the proponent prior to commencement of works.
	7	Landcom will produce an Interpretation Strategy in conjunction with a Public Art Strategy to ensure that opportunities to recognise the site's heritage values through landscaping and public art are fully realised.	To be demonstrated by the proponent prior to commencement of works.
Landscaping, Public Domain and Public Art	8	Landcom commits to implementing public art throughout the site in the locations illustrated on the Opportunities Plan and generally in accordance with the Public Art Strategy attached at <b>Appendix Z</b> .	To be demonstrated by the proponent at the time of any relevant detailed application.
	9	Landcom will prepare a street and place naming strategy for future open space and streets throughout the site.	To be demonstrated by the proponent prior to issue of the Subdivision Certificate.
Utilities	10	The final location of the Sewer Pumping Station will be selected and designed in consultation with SWC to ensure its appropriate sizing and location.	To be demonstrated by the proponent prior to commencement of works.
Traffic and Access	11	Landcom will carry out the road works identified in Road Hierarchy Plans and dedicate those works on a stage by stage basis to Penrith City Council.	To be demonstrated by the proponent prior to issue of the Construction Certificate.
	12	Landcom will undertake the following road works and upgrades to the nominated intersections as part of the Project Application: - Coreen Avenue/new site entrance road (Sydney Smith Drive)	To be demonstrated by the proponent prior to issue of the Construction Certificate and during works.
	13	In addition to the above, Landcom will provide the following transport related works in kind as applicable to the extent of the Project Application area: - The widened kerbside lanes along the public transport corridor to Coreen Avenue; - Direct and safe cycle and pedestrian routes.	To be demonstrated by the proponent prior to issue of the Construction Certificate and during works.
	14	Landcom, through conditions on its future sales and tenancy agreements, will produce Transport Access Guides for new residents and require commercial tenants to produce a Workplace Travel Plans for their employees and clients.	To be demonstrated by the proponent at the time of sale.

Subject	#	Commitment	Responsibility / Timing
Drainage and Stormwater	15	Stormwater Infrastructure will be provided in accordance with the Stormwater Management Strategy and Stormwater Management Report Worley Parsons at <b>Appendix N</b> .	To be demonstrated by the proponent prior to issue of the Construction Certificate and during works
	16	The targets for annual post development loads are: - 85% for Total Suspended Solid (TSS); - 65% for Total Phosphorus (TP); - 45% for Total Nitrogen (TN); and - 90% for Gross Pollutants (GP).	To be demonstrated by the proponent prior to issue of the Construction Certificate and ongoing following construction.
	17	WSUD features will be maintained in accordance with 'Managing Urban Stormwater: Treatment Techniques' (1997), published by the Environment Protection Agency (EPA).	Ongoing following construction.
Flooding	18	Development on the site will be in accordance with the objectives of the NSW Government's Flood Prone Land Policy and the Flood Plan Development Manual 2005 published by the then Department of Infrastructure, Planning and Natural Resources (DIPNR) and will integrate with the State Emergency Service's regional evacuation strategy.	To be demonstrated by the proponent prior to issue of the Construction Certificate and ongoing following construction.
	19	The site will be at or above the regional 100 year ARI flood level of RL 25.4m (AHD).	To be demonstrated by the proponent prior to issue of the Construction Certificate.
	20	The minimum habitable floor level for the site will be RL 25.9 AHD, being a 0.5m freeboard above the 1 in 100 year annual recurrence interval (ARI) flood event (in accordance with the Regional Flooding Assessment by Worley Parsons at Appendix O).	To be demonstrated by the proponent prior to issue of the Construction Certificate.
Contamination	21	Landcom will continue to work with a Site Auditor in recognition that there may be a requirement for further assessments, particularly relating to the importation of fill and the possibility of unexpected finds. Site Audit Statements will be prepared for individual Project Applications.	To be demonstrated by the proponent prior to issue of the Construction Certificate.
	22	The Construction Environmental Management Plan (CEMP) is to include a site-specific Unexploded Ordnance Protocol (UOP). The UOP is to be implemented throughout the construction works under the responsibility of the Principal Contractor.	To be demonstrated by the proponent prior to issue of the Construction Certificate.
	23	The CEMP is to include a site-specific Unexpected Finds Protocol (UFP). The UFP is to be implemented throughout the construction works under the responsibility of the Principal Contractor.	To be demonstrated by the proponent prior to issue of the Construction Certificate.
	24	After removal of the existing concrete slabs, a suitably qualified environmental engineer/scientist will inspect the exposed ground for indicators of contamination. Sampling and testing might be required.	To be demonstrated by the proponent during works.
	25	Remediation and validation pursuant to an unexpected find or contamination found after removal of concrete slab. If remediation is required, a specific Remediation Action Plan (RAP) will be prepared. The remediation works will be carried out in accordance with the RAP. Validation of the remediated area by the environmental engineer/scientist will be carried out after completion of remediation works.	To be demonstrated by the proponent prior to issue of the subdivision Certificate.
	26	Any identified ash/coal materials will be tested to confirm the contamination status. The ash/coal materials with concentrations of analytes within the assessment criteria can be re-used on-site. To mitigate the potential for site occupiers to have aesthetic-based concerns and/ or because the materials may be unsuitable as a planting medium, ash/coal materials will not be placed near-surface in any location in the site.	To be demonstrated by the proponent prior to issue of the Construction Certificate.



Subject	#	Commitment	Responsibility / Timing
Geotechnical and Groundwater	27	A Construction Environmental Management Plan (CEMP) is to be prepared which includes a site-specific Soil and Water Salinity Management Plan. The Soil and Water Salinity Management Plan is to be implemented throughout the construction works under the responsibility of the Principal Contractor.	To be demonstrated by the proponent prior to issue of the Construction Certificate.
	28	Further targeted investigations will be required to confirm the detailed design, including ascertaining the suitability of soils for re-use on the site.	To be demonstrated by the proponent prior to issue of the Construction Certificate.
	29	The CEMP is to include measures to ensure imported fill is suitable for the intended use on site.	To be demonstrated by the proponent prior to issue of the Construction Certificate.
Civil Works	30	During the detailed design process road grades shall be designed to minimise the amount of fill required at the site, where possible, to assist in providing a more sustainable outcome and also reduce the extent of retaining walls required at the property boundaries.	To be demonstrated by the proponent prior to issue of the Construction Certificate.
	31	Additional geotechnical investigations are required to confirm the extent of excavated cut volumes that can be placed as engineering fill within the site.	To be demonstrated by the proponent prior to issue of the Construction Certificate.
	32	Testing of the existing asphalt and concrete slabs should be undertaken to determine their respective suitability for re-use in the road profile of the internal road network.	To be demonstrated by the proponent during works.

## 13.0 Conclusion

Landcom is proposing to deliver a mixed uses development at North Penrith that meets the State Government's objectives to increase housing supply, provide community benefits and create jobs. The development will assist in revitalising and complementing the northern side of the Penrith CBD.

The key benefits of the State Site Significant listing will be to:

- put in place zones and development standards that are flexible enough to accommodate and enable current demands for residential and commercial development, while facilitating long term growth and evitable development evolution of the site as sought by the Metropolitan and North West Subregional strategies;
- incorporate various zones to provide a balanced approach to the delivery of residential, commercial, industrial and retail development across the site that takes advantage of the close proximity to existing transport nodes and while complementing the existing Penrith CBD;
- incorporate provisions to safeguard and conserve the existing cultural and heritage significance of the site; and
- provide clarification of the roles and responsibilities for the approval regimes applying to future development.

The key benefits of the North Penrith Concept Plan are that it:

- initially accommodates up to 1,000 residential dwellings over the site, which is a significant component of the new dwelling requirements for Penrith LGA proposed in the strategy;
- enables the site to deliver over 770 jobs in the short to medium term, not including indirect jobs elsewhere in the LGA or the jobs that may be generated by any large scale tenant that may be able to locate within all or part of the 'opportunity site';
- retains and reinterprets a number of identified heritage elements and associations within the site including the Oval (Smith's Paddock) and the adaptive re-use of Thornton Hall, thereby conserving this heritage for future generations;
- identifies and incorporates community infrastructure for the whole of the site, which will not undermine or overburden existing facilities and services;
- supports and promotes transit oriented development given the site's proximity to Penrith Rail Station;
- demonstrates that adequate provision for infrastructure, including land in appropriate locations, that is planned for in line with the proposed development staging; and
- enables the delivery of housing types such as moderate income housing and seniors housing across the site, which is suited to the social and demographic diversity of Penrith and providing a proportion of dwellings at affordable price points.

The key benefits of the Stage 1 North Penrith Project Application are that it will:

- deliver a significant component of the lead-in infrastructure required for the site, which will help stimulate more immediate delivery of built development across the site;
- provide the infrastructure framework for future development to proceed in accordance with the parameters set by the Concept Plan; and
- undertake a large portion of the early works for the site.

## 13.1 Public Interest

The significance of, and detailed strategic justification for, the North Penrith project is summarised in Section 2.0 of this report. In summary, the broad outcomes of the project will be that it:

- delivers a large quantum of residential dwellings for the Penrith Region that will cater to the needs of various types of households and persons, on the basis the development comprises various housing options including affordable and seniors living accommodation;
- accommodates complementary land uses such as retail, commercial and industrial development to help bring about new employment opportunities, while providing support services and facilities for new and existing Penrith residents;
- has a series of quantifiable economic benefits and positive flow on effects to the new community, namely:
  - the construction phase the development as sought by the Concept Plan will generate a direct economic benefit to the community of Penrith of approximately \$419 million (1,707 jobs), with flow on effects of \$462 million (2,087 jobs), totaling \$882 million and 3,794 jobs. These figures are based on the total value of construction for all construction elements; and
  - the operational phase the development as sought by the Concept Plan will generate a direct economic benefit to the community of Penrith of approximately \$202 million (786 jobs), with flow on effects of \$148 million (664 jobs). totaling \$349 million and 1,450 jobs;
- conserves and reinterprets heritage and historical associations associated with the site's past with regard to European heritage;
- reinterprets and reinforces the site's Indigenous heritage through the use of public art and open spaces;
- encourages active and passive recreation through the delivery of various and different open spaces throughout the North Penrith site;
- effectively manages and treats stormwater while also utilising this water to become part of attractive open space features through the site;
- delivers new public transport infrastructure that will value-add to existing services and infrastructure, thereby encouraging new and existing residents to use more sustainable means of transport in the Penrith area; and
- provides improvements to the local road infrastructure that will not only accommodate for new residents of North Penrith, but will also serve to improve traffic flows on local roads in the vicinity of the site.

These outcomes are considered to be wholly within the public interest.

## 13.2 Alternative Land Uses

A detailed analysis of existing land uses on and in the vicinity of the site is provided in Section 3.0 of this report.

The strategic justification for the proposed development as outlined in Section 2.0 of this report follows approximately 20 years of the North Penrith site being considered suitable for the proposed land uses. The various strategic and environmental studies that were undertaken prior to the preparation of the subject Concept Plan, SSS and Project Application (see Section 1.1) reflect a long history of mixed uses being proposed for the site.

If alternatives were to be considered for the site, the various potential alternative outcomes (having regard to the previously proposed range of land uses and investigations) could include:

- retaining the site in-situ and continuing and maintaining the current uses of the site;
- rezoning and redeveloping the site primarily for large scale business and/or retail uses;
- rezoning and embellishing the site for large scale open space areas; and
- rezoning the site for low scale residential development.

These alternative land use scenarios are not considered appropriate as they do not capitalise upon the idea opportunity for integrated transport and development outcomes while delivering scope for flexibility in the various types of development suitable for the site now and in the future. Specifically, this site possesses the ideal characteristics of being adjacent to a well connected railway station and the CBD of Penrith Town Centre and the demand for affordable residential development that has good access to services and facilities in the Penrith area still remains at high levels. Hence the balance of development sought the by the Concept Plan proposal is appropriate.

Conversely, strong demand for employment generating development (most notably commercial development) is still currently questionable as indicated by the North Penrith Land Use and Economic Assessment (at **Appendix I**), but could be accommodated on the site by virtue of the flexibility in the applicable zones and development standards. The approach proposed by Landcom under the Concept Pan then enables the market to dictate the needs of the community and to ensure that parts of the site are not sterilised and limited for specific uses that might otherwise result in no or little development. Whereas, the SSS readily enables and accommodates what future demand may be generated in the future.

The 'opportunity site' proposed by the Concept Plan provides the flexibility for a large scale business/institution to locate to the North Penrith site that may be complementary to the transit orientated location of the site and potential synergies with the Penrith CBD. However securing this use will be subject to a MoU with Penrith Council and indeed the location of such a use could, through the flexibility of the zoning and controls be located anywhere in the mixed use zone. This flexibility will enable greater opportunity to secure the optimal outcome. However, this approach will be the subject of further assessment to determine what impacts this may have for the local and regional area (see Statement of Commitments at Section 9.0).

The North Penrith site offers the ability to deliver balanced transit oriented and affordable development outcomes. In this regard, the proposed land uses and density of development over the North Penrith site is more than appropriate on a local and regional level, and accords with State and local government objectives (see Section 5.0 of this report for more detail).



### 13.3 Cumulative Impacts

The Site Analysis at Section 3.0 justifies the land uses and urban layout reflected in the Concept Plan proposal and the proposed zones under the SEPP Amendment.

Land to be incorporated into the open space and conservation areas of the North Penrith site accords with the findings, conclusions and recommendations of detailed technical investigations including, particularly the:

- Flora and Fauna Report at **Appendix P**;
- Contamination Report at **Appendix K**;
- Stormwater and Drainage Report at **Appendix N**; and
- The various heritage reports at **Appendices Q – U**.

The Concept Plan and SEPP Amendment proposals present a holistic and integrated outcome having regard to heritage, flooding, biodiversity and water quality and quantity.

The Strategic Justification for the Project (see Section 2.0), the Environmental Assessment at Sections 8.0 and 11.0 and the technical supporting investigations appended to the report provide a detailed assessment of the environmental impact of the proposed land use change (SEPP Amendment proposal) and Concept Plan development.

All measures that have been recommended as part of the detailed technical investigations and studies to mitigate potential environmental impacts have been incorporated into the Concept Plan and SEPP Amendment proposals, or are included in the Statement of Commitments at Sections 9.0 and 12.0.

Cumulative impacts have been considered throughout this report. Specifically, the development proposal and the assessment of its environmental impacts:

- responds to future patterns of growth and development in Penrith outside of the development site, including regional land use planning assumptions as identified at Section 2.0;
- demonstrates that the cumulative impact of the proposed development and that is likely to occur in the future having regard to the identified future regional land use planning context is satisfactory with respect to housing and employment demands;
- demonstrates that the cumulative impacts of traffic growth, both with and without the proposed development, can be appropriately mitigated and managed through a series of road network improvements;
- the assessment has had regard to the necessary staging / timing and appropriate apportionment of cost for these works based on regional cumulative traffic growth;
- demonstrates the manner in which demand for utilities services infrastructure can be met having regard to both the demand generated by the proposed development, as well as that of other known release areas in the area;
- demonstrates that the proposed development will not contribute to an increase in flood levels in the 1% AEP event, and thus will not contribute to any cumulative impact in terms of flood extent or levels within the catchment; and
- demonstrates that appropriate community services infrastructure will be provided for the development and thus the development will have no cumulative impact on the capacity of existing facilities and services.

On balance, the proposal is highly supportable from a strategic planning, environmental, social and economic perspective.