MEMORANDUM

Reference: DA20/0509

To: Penrith Local Planning Panel

From: Jane Hetherington – Senior Development Assessment Planner

Date: 23 March 2021

Subject: Proposed Construction of a Single Storey Building for a Pub and Associated Car Parking Spaces, Stormwater Management and Landscaping Works at Lot 3989 Lakeside Parade Jordan Springs

I refer to the subject development proposal and the related assessment report that is scheduled for consideration by the Penrith Local Planning Panel on 24 March 2021.

This memorandum provides a response to questions from the Local Planning Panel ahead of the upcoming Local Planning Panel meeting.

No.	Question	Response
1	Provide a link to the Statement of Environmental Issues.	Copy of the SOEE attached.
2	Confirm that the indoor seating area is 446 square metres, not the gross floor area. What is the gross floor area? Which area has been used by Council officers to calculate car parking demand?	The 446m² relates to the indoor seating component and the gaming area, while the gross floor area (GFA) of the proposal is 880m². Under Penrith Development Control Plan 2014, the rates for pubs/registered clubs is 1 space per 4m² of bar floor area plus 1 per 6m² of lounge and dining room. As the rate specifies 'dining room' as opposed to 'area' the indoor dining component of the pub was used to calculate the car parking demand. Notwithstanding, the RMS guideline specifies that parking demand surveys, based on similar development, should be utilised to determine the appropriate levels of car parking. As such, as outlined in the report, parking surveys were undertaken at three similar developments by the applicants traffic consultants. A typical percentage of bar/lounge area was calculated by comparing the proposed bar/lounge area with the GFA of the Jordan Springs pub. This rate was then applied to the GFA of the existing pubs/taverns. A parking rate based on

		the bar/lounge floor area of the existing taverns was then calculated. If the highest parking rate is applied (1 per 17m² of bar/lounge area), the Jordan Springs Tavern requires 27 parking spaces to be provided.
3	Clarify whether the outdoor seating area will be part of the licensed area, and should therefore be included in calculations of car parking demand.	The outdoor seating area will form part of the licensed area. However, as outlined above, as the rate for pubs/registered clubs specifies 'dining room' as opposed to 'area' only the indoor dining component of the pub was used to calculate the car parking demand. Notwithstanding, the parking provisions was considered acceptable based off the parking demand surveys undertaken by the applicants traffic consultant.
4	Provide a copy of the bushfire certificate required by Section 4.14 of the Act.	Bushfire report attached. While the application was originally sent as integrated development to the NSW Rural Fire Service (RFS) as a special fire protection purpose, the RFS advised that it was not integrated as the pub will not contain accommodation. As such a Bushfire Safety Authority hasn't been issued.
5	Explain what changes may be needed for the development to achieve Bushfire Assessment Level 29. Will this require the deletion of flammable elements and closing of openings, such as the roof for the gaming area?	BAL 29 primarily relates to protection of the building from ember attack and burning debris ignited by wind borne embers and radiant heat. The development being constructed to a BAL 29 will not require any major design changes. The type of construction materials will need to be non-combustible or fire-resistant, (i.e. bushfire-resisting timber). Windows will still be able to contain openable portions however, they will need to be screened (either internally or externally) with metal screens. However, the roof/wall junction is required to be sealed to prevent openings greater than 3mm. This will impact on the roof of the gaming area.

6	Provide copies of the documents the Panel must consider under Clause 20 of the SREP.	The Western Precinct Plan attached.
7	Explain how the development is consistent with Clause 40 of the SREP.	The proposal is consistent with the objectives of the Urban Zone in that: -It provides a 'neighbourhood tavern' for the residents of Jordan Springs. -The scale of the development is not considered to adversely impact on the amenity of adjoining residential development. -The development is not considered to have a negative impact on the biodiversity or conservation within the Regional Park zone.
8	Explain why shops in the Jordan Springs Centre are considered 'general stores' rather than 'shops'.	Under SREP 30 *general stores* and *shops* are separately defined. *A shop is defined as a building or place used for the selling, exposing or offering for sale by retail, of goods, merchanise or materials, but (in Part 6) does not include a building or place elsewhere specifically defined in this Schedule, or a building or place used for a land use elsewhere specifically defined in this schedule.* *A general store is defined as a shop which operates primarily to serve the surrounding residential area and does not exceed 100 square metre in gross floor area, and which may include the facilitates of a post office, newsagency or dry cleaning agency.* Some of the shops within the Jordan Springs town centre are considered general stores given their floor area does not exceed the 100m² requirement.
9	Provide evidence of how the development of the Western Precinct exceeds the expectation in Clause 59.	The intended lot yield and associated population of Jordan Springs exceeds the expected projections outlined with the SREP and Development Control Strategy, therefore additional

		commercial floor area is warranted to support the additional population of Jordan Springs. Further opportunities for additional commercial floor space within Jordan Springs is limited due to the existing development within the Village Centre. The location and design of the proposal is considered appropriate, without detracting from the services offered within the Village Centre.
10	Explain whether NPWS and the applicant agree on the proposed reduction in hours of operation.	The NPWS have been advised of the proposed amended hours of operation. To date, no response has been received. In Council's correspondence to the applicant, it was recommended that reduced hours be considered. The applicant has responded that the proposed hours are consistent with their other hotel venues which are successfully operated. As such, it is expected that the applicant will not support Council's proposed hours of operation. However, for the reasons outlined in the report these hours are considered to be appropriate.
11	Explain if consideration has been given to not allowing use of the beer garden/outdoor area after 10pm to reduce noise impacts for neighbours?	The acoustic assessment outlines that beer garden and kids' playground area shall not to be used after 10pm. This requirement has formed a condition of consent (Condition No. 36). The acoustic assessment found that with a maximum occupancy of 120 patrons, the outdoor dining area can comply with the relevant noise criteria until midnight. Given that it is proposed to limit the hours of operation until 10pm on Sundays to Wednesdays, further restrictions within this area were not considered necessary.
12	Explain what is expected to be the peak time for operations, and does this coincide with the	The traffic surveys were undertaken on Fridays and Saturdays between 11am to 3pm and 6pm to 10pm. These are

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	times for the surveys in the Traffic Assessment.	considered to be the peak times for the pubs operation.
13	Provide a link to Attachment 2 of the Traffic Impact Assessment.	Parking layout assessment attached.
14	Explain if any changes are proposed to the road layout at the entrance to the property to provide a turning bay, or will vehicles block the east bound lane?	There is no turning bay proposed, with vehicles required to wait in the east bound lane to turn right. This is considered acceptable given the scale of development, moderate scale of the car park, that Lakeside Parade is a minor collector road with a 50km/hr speed limit and limited delays are expected.
15	Explain if the recommendations of the acoustic study have been incorporated in the design. Are these amendments to the design consistent with changes needed to achieve the bush fire criteria?	Under the acoustic report, the construction requirements of the pub include: -Glazing installed at a minimum of 6.38mm/10.38mm laminate (depending on location); And for outdoor enclosed area: - Metal deck sheeting; - Minimum 100mm cavity with 100mm thick glass wool; - 13mm plasterboard ceiling; and - ceiling to be lining with absorptive material with a minimum noise reduction coefficient of 0.75. These requirements do not conflict with the bushfire assessment and the requirement for a BAL 29 construction.

Jane Hetherington
Senior Development Assessment Planner

STATEMENT OF ENVIRONMENTAL EFFECTS

PROPOSED PUB AND ASSOCIATED CAR PARKING

LOT 3989 LAKESIDE PARADE
JORDAN SPRINGS

STIMSON
URBAN & REGIONAL PLANNING

STATEMENT OF ENVIRONMENTAL EFFECTS

Prepared by

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Client and Land Details

Client:	**FDC Construction (NSW) Pty Ltd**
Subject Site:	**Lot 3989 DP 1190132, Lakeside Parade, Jordan Springs**
Proposal:	**Proposed Pub and Associated Car Parking**

Warwick Stimson RPIA
Director

Registered Planner

Planning Institute Australia

Version	Date	Comment
1.0	30/7/20	Preliminary Draft for client review
2.0	7/8/20	Final Draft for client review
3.0	17/8/20	Final for DA lodgement

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1 INTRODUCTION

1.1 PROJECT OVERVIEW

Stimson Urban & Regional Planning has been engaged by FDC Construction (NSW) Pty Ltd to prepare a Statement of Environmental Effects in relation to the property known as Lot 3989 Lakeside Parade, Jordan Springs.

The proposal includes the construction of a single storey building that will comprise a pub as well as at grade car parking. The pub will include a main bar and dining room, external beer garden, gaming room, and associated back of house areas.

The site is zoned *Urban Zone* under *Sydney Regional Environmental Plan No 30 – St Marys,* with the proposal being permissible with consent.

The proposal is defined as *development* in Section 4 of the Act. The Act stipulates that the development must not be carried out on the subject site until consent has been obtained. The proposal is also considered to be 'integrated development' with approval being required from the Natural Resources Access Regulator (NRAR) prior to the determination of the application. Council will not be able to determine this application until General Terms of Approval have been received from the NRAR.

This report describes the proposed development and subject site in detail and undertakes an assessment of the proposal against the relevant aims, objectives and development provisions of the SREP, associated controls, and Section 4.15 of the Act.

1.2 REPORT STRUCTURE

This Statement of Environmental Effects is structured as follows:

- Section 1: Introduction – provides an overview of the proposal, planning history for the site and background to the application.
- Section 2: The Site and Surrounds – provides an analysis of the subject site, development within the locality and a consideration of the local and regional context.
- Section 3: Project Description – provides a detailed description of the proposed development and its characteristics.
- Section 4: Statutory Considerations – provides for an assessment of the proposal against the specific planning instruments and policies that are applicable.
- Section 5: Key Planning Issues – provides an assessment of the key issues identified in the preparation of the application.
- Section 6: Section 4.15 Assessment – provides an assessment against section 4.15 of the EPA Act.
- Section 7: Conclusion and Recommendation – summarises the report and presents a recommendation.

1.3 HISTORY OF THE APPLICATION

1.3.1 *Urban Design Review Panel Meeting*

Meeting held 19 June 2020

Key Issue	Consideration
Key Matters for Consideration and Address	
The site is subject to the provisions of Sydney Regional Environmental Plan (SREP) No. 30 – St Marys, the Western Precinct Plan, Western Precinct Development Control Strategy (DCS) and the Jordan Springs Village Centre Concept Plan. While the SREP permits the proposed development within urban zoned land, the application of the adopted Concept Plan by virtue of the Precinct Plan and DCS is relevant to the suitability of this site for the proposed use. This site was established through the DCS and Concept Plan for residential development and not specifically a tavern. Scope for mixed use development potential is established through the Concept Plan but this development is not mixed use. In saying that, the use has the potential to be complimentary to the town centre and could suitably integrate as part of a broader mixed use 'precinct'. This is subject to a suitable spatial arrangement of the development on the site, which is currently not considered to be suitable or supportable in its current form.	The relevant instruments have been considered later in this report, as has the Jordan Springs Village Centre Concept Plan. The configuration of the site as submitted is considered to be the most appropriate and has been determined as a result of the UDRP meeting. The use is considered suitable, noting the development will provide a significant contribution to the mix of uses in the village centre.
The first key consideration is to establish permissibility and site suitability for the development, which will require an analysis against the Jordan Springs Village Centre Concept Plan to demonstrate compliance and contextual appropriateness of the proposed development within this location. This is challenging given the irregular shape and dimensions of the allotment, the approved and currently proposed seniors living and aged care developments to the immediate west (sensitive land use interface), residential apartment units directly opposite the site, and the regional park immediately to the south.	The use is permissible with consent in the zone. The layout of the proposed built form has been determined as a result of the UDRP meeting. Potential impacts with adjoining land uses have been considered in all accompanying consultant reports.
Following demonstration of site suitability, the spatial arrangement of the development needs to be informed by the location of approved / constructed works and access arrangements on adjoining developments. Principally the location of an access driveway which cannot be located off the emergency services access driveway at the bend of Lakeside Parade. Council's Traffic Engineers do not support this location, nor is a parking area at the termination of the view corridor south appropriate. As such, the driveway access arrangements should be relocated towards the eastern end of the allotment (where the allotment dimensions are highly constrained). The exact location will need to consider the location of approved (and under construction) driveway locations for the residential units opposite the site. The setback of the driveway from the intersection east of the site will also need to be considered by way of a detailed traffic impact assessment report.	The final layout and configuration of the site has been determined as a result of the UDRP meeting. A detailed traffic impact assessment accompanies this application.

Key Issue	Consideration
As outlined above, the location of the car park is not suitable. Lakeside Parade as the main street through the precinct centre provides view corridors to the lake and to the regional park which must be maintained. The separating landscape strip between the car park and western boundary as proposed does not maintain and enhance this vista. Further the car park and resulting abundance of hard stand area does not provide a suitable termination presentation at the southern end the town centre. If justification for the site suitability and concept plan requirements is that this site can form the southern leg of the town centre, then the built form must present as part of the town centre and be designed to complement and not detract from this aspect. The built form should be relocated to the west, as a sight line termination / marker at the southern end of the town centre, with a suitable landscaped setback to the western boundary that provides for and maintains direct views from the town centre to the rear regional park. This setback could still include an external and landscaped beer garden but cannot be occupied by hard stand line marked car parking.	The design layout of the development has been progressed since receiving these comments. Most of these principles have been adopted within this submission.
The adjacent seniors living development (Stage 2) to the west, provides a basement access driveway located adjacent to the communal boundary which provides for ground separation of uses. While upper floor residential / seniors living apartments are proposed above, the orientation of external seating areas and the landscaping arrangement adjacent to the western boundary could still be arranged and designed to mitigate potential adverse amenity impacts for these future residents. This will remove the beer garden from the front setback zone to Lakeside Parade which is positive as the current location is not considered to be suitable and will contribute to noise and amenity impacts for the future residential apartment's opposite.	The proposed development is not intended to be significant in scale- it is a local pub of a scale that is appropriate to its locality. The potential impacts are therefore not considered to be fatal to any adjoining land use or the development itself. A detailed acoustic impact assessment accompanies the application and a Plan of Management has also been included to demonstrate how the venue will be managed. This includes complaints management.
It is considered necessary for a site in this location and the dimensional constraints that apply to the site, that underground or under-croft parking be pursued rather than full reliance on at grade parking. The undergrounding of parking will significantly improve streetscape presentation, will internalise and mitigate noise generation from activity in the car park, and could capitalise on the topographic fall of the site which seems to fall to the rear. While a full basement may not be feasible, the contours may be able to support under-croft parking with balcony and function floor space projecting over with views to the regional park. The eastern part of the site could then act as a driveway with descending ramp to the parking in or basement or partially underneath the built form.	As was discussed in the UDRP meeting, the provision of basement car parking would not be economically viable. At grade parking is proposed.

Key Issue	Consideration
The architectural design of the building requires further consideration and refinement noting the redesign recommendations above. The design of the building needs to have regard to the residential character of Jordan Springs. The design at present is reflecting that of an industrial building form, noting specifically the inactivated edge treatments to the west (which is visually prominent) and the south. Developments to the west of the site (seniors living stage 2 development) include a pedestrian connection / thoroughfare along the southern interface with the regional park and its continuation and potential activation of the drainage channel is something that could be explored and encouraged in the future. As such, the presentation of the proposed built form should activate the southern interface to the regional park that is not a blank wall. Views to the regional park should be encouraged and capitalised through the building design and external presentation through materiality and form. The first floor / mezzanine currently provides plant and back of house facilities along the southern edge (providing a dead edge treatment). Opportunity for views to the lake and regional park may be achieved through the relocation of the built form, and rearrangement of the ground and first floor arrangements which may be able to include ancillary function space (if permitted through the SREP).	We submit that the design is in fact high in quality and that it will complement the locality. The site layout and configuration has evolved since the UDRP meeting, responding to most of the issues raised.
Noting licencing requirements, the visual prominence of the gaming area and opportunities for light penetration into this space should be further explored. Given the comments above, relocation of the gaming area to the eastern end of the development may be more appropriate.	The gaming area has been designed and located as per the relevant regulations and is in a functional location, consistent with other pub designs by this client.
A high-quality landscape treatment is sought across the site with a combination of tree canopy and under croft planting. The landscaping should enhance the built form and have regard to surrounding context being on the edge of the regional park and in proximity to the main lake and village centre.	Noted. A Landscape Plan accompanies this application.
Clause 59 of SREP 30 states that consent cannot be granted for the proposal unless the land is identified as being suitable for the purpose of a retail centre by a precinct plan and the total floor area of all commercial buildings in the precinct does not exceed 7500 square metres.	See accompanying statement from the developer of Jordan Springs estate.
It is noted that there may be flexibility in additional gross floor area, where it can be demonstrated that it is required to reasonably service the local residential community and workforce. This should be supported by an economic impact assessment if an increase to the gross floor area is sought.	Noted. Not required for this application.
The site is mapped as being within a designated bush fire prone area. The application is Integrated Development as the development, being a hotel, is defined as special fire protection purpose. The application will require advertising and referral to the Rural Fire Service for concurrence in accordance with the requirements of Section 4.8 of the Environmental Planning and Assessment Act 1979.	Noted. A bushfire impact assessment accompanies the application.

1.3.2 *Pre-Lodgement Meeting*

The proposal was discussed at a pre-lodgement meeting held with the relevant officers at Penrith City Council on 19 June 2020 where a range of issues were discussed.

Key Issue	Requirement for Consideration
Part 7 – Development Controls of SREP 30 – St Mary's will need to be addressed. Clause 59 outlines maximum floor space / gross floor area restrictions for shops and commercial premises having regard to the land uses outlined within Schedule 4. A hotel is included in the list of land uses as is a restaurant. As such a calculation of all existing approved retail and commercial floor space within the western precinct will be required, to demonstrate compliance as a consequence of this development. Where an exceedance is identified, an economic impact statement that addresses the population of the precinct with respect to the resulting floor space will be required for consideration.	Noted and addressed later in this report.
Clause 44 of the SREP 30 – St Mary's requires engagement with NPWS where land adjoins the regional park.	Noted and addressed later in this report.
Car parking should be suitably screened from the public domain by landscaping or basement / undercroft construction. Any remaining at grade parking should include provision for minim 2.0m wide landscape beds between every 10 parking spaces to ameliorate the hard stand presentation of the car park. These planting beds should include provision of shade trees and understorey planting.	A formal landscaped solution is proposed within the accompanying Landscape Plan.
Any fencing sought should be detailed on the landscape plans submitted with indications of material, colours and dimensions.	Noted.
Any signage sought should be detailed on the architectural plans with dimensions, colours and advertising detail. This includes building signage and any way finding signage.	Noted.
Hours of operation will be a key consideration given the location of the development adjacent to sensitive land uses.	Noted.
Environmental Management Considerations	
(i) Contamination (SEPP 55) The application is to address all relevant requirements under State Environmental Planning Policy 55 Remediation of Land (SEPP 55), specifically Clause 7. Council cannot consent to any development unless these requirements have been satisfied.	A report into the potential contamination of the site accompanies the application.
(ii) Noise Impacts An acoustic assessment is required to be submitted as a part of the application to demonstrate that the proposed development will not have any impact on nearby receivers (both built and under construction/yet to be constructed).	A detailed Acoustic Impact Assessment accompanies the application.

(iii) Food Handling and Storage	
• General fit-out plans are required for the bar, kitchen, and food area components of the proposed development. Fit out plans should refer to AS4674-2004 Design, Construction and Fit out of Food Premises and Food Safety Standard 3.2.3 of the Australian and New Zealand Foods Standard Code, and provide general details of construction of walls, floor, ceiling, and indicative layout of equipment, fridges, cool room, freezer, storeroom, preparation areas, sinks and wash hand basins	Noted.
• Details of proposed kitchen exhaust system(s) with consideration of Clause F4.12 of the Building Code of Australia and Australian Standard AS1668 Parts 1&2	Noted.
(iv) Waste Management A Waste Management Plan is to be provided addressing waste produced during both the construction and operational phase of the development. It should address waste quantities, storage locations and removal. Vehicular access for collection also needs to be addressed.	A Waste Management Plan accompanies the application.
(v) General Environmental Health Impacts The environmental impacts associated with the construction of the development will also need to be addressed, such as water quality, noise, dust and air quality, and sediment and erosion control. This can be included in the Statement of Environmental Effects. Any areas provided for waste/bin storage and washing are to be connected to sewer with provision of hot and cold water as well as drained to a floor waste.	Noted. Can comply.
WSUD Considerations In relation to Council's WSUD Policy and DCP, the following will need to be submitted in support of a development application:	
• A water sensitive urban design strategy prepared by a suitably qualified person is to be provided for the development. The strategy shall address water conservation, water quality, water quantity, and include details of operation and maintenance requirements. It is recommended that a vegetated solution to treat and manage stormwater be incorporated into the design, as it is in-keeping with the intent Council's WSUD Policy and Cooling the City Strategy.	Noted & provided.
• A stormwater concept plan shall be prepared in accordance with Council's WSUD Policy and supporting Technical Guidelines.	Noted & provided.
• The application shall also include MUSIC modelling (*.sqz file) demonstrating compliance with Council's adopted Water Sensitive Urban Design Policy and Technical Guidelines.	Noted & provided.

Council's WSUD Technical Guidelines are available on Council's Website and were prepared to outline how to comply with the requirements of Council's WSUD policy and outline Council's requirements in relation to the contents of a WSUD Strategy and detail required for concept designs to be lodged with the development application. The guidelines refer to resources which guide the development of suitable plans for submission with a development application.	Noted & provided.
Engineering and Stormwater Management Considerations	
(ii) Stormwater Management Considerations	
• Stormwater drainage for the site must be in accordance with the following: o Council's Development Control Plan, o Stormwater Drainage Specification for Building Developments policy, and o Water Sensitive Urban Design Policy and Technical Guidelines.	Noted.
• A stormwater concept plan, accompanied by a supporting report and calculations, shall be submitted with the application.	Noted & provided.
• The concept stormwater plan shall be accompanied by a completed 'Checklist for Stormwater Concept Plans' as per Appendix A of Council's Stormwater Drainage Specification for Building Developments policy.	Noted & provided.
(iii) Stormwater Channel along Rear of Property	
• Consideration is to be given to the stormwater channel running along the rear of the property. An unsealed access track runs along the top of the northern bank. A suitable fence / barrier is to be provided to the access track in consultation with Council.	An appropriate response can be negotiated as part of a condition of consent.
• Information upon the design and construction of the channel is available from Council Development Application DA15/0943 and Construction Certificate application No CCX16/0016.	Noted.
• Finished surface levels of the lot shall be in accordance with the report 'Upstream Extended East/West Open Channel Report' by SKM, reference EN02754, dated 23 April 2013.	Noted.
(vi) Traffic Management Considerations:	
• The application shall be supported by a traffic report prepared by a suitably qualified person addressing, but not limited to, traffic generation, access, car parking, and manoeuvring.	Noted & provided.
• Site access – vehicular access to the site may be limited to a left-in and left-out type arrangement due to the proximity to the west of the 90-degree bend in Lakeside Parade and any existing approved vehicular access points. The safety of motorists wishing to turn right into the facility is to be considered from the possible rear end collisions of vehicles travelling eastbound on Lakeside Parade. Consideration is also to be given to any approved access that services No 39 Jordan Springs Boulevard (Lot 1 DP 1248137 – proposed retirement village) and No 55 Jordan Springs Boulevard (Lot 2 DP 1248137 - proposed aged care facility). Fully dimensioned plans are to be submitted showing access arrangements.	The design layout of the proposal has evolved since the Pre DA meeting.

• The application must demonstrate that access, car parking, and manoeuvring details comply with AS2890 Parts 1, 2 & 6 and Council's Development Control Plan. This shall include separation of any waste vehicle / delivery vehicle / service vehicle reversing manoeuvring from the car park and pedestrian activity areas.	Noted & provided.
• The application shall be supported by turning paths for the largest delivery vehicle expected to service the site. The turn paths shall be in accordance with AS2890 clearly demonstrating satisfactory manoeuvring on-site and forward entry and exit to and from the public road.	Noted.

1.4 Supporting Documentation

The proposed is accompanied by the following documentation:

Documentation	Prepared by
Architectural Drawings & Design Statement	Team2 Architects
Acoustic Assessment	Acoustic Logic Consultancy Pty Ltd
Access Capability Statement & Access Design Assessment	Design Confidence (Sydney) Pty Ltd
BCA Assessment Report	Blackett Maguire + Goldsmith
Bushfire Assessment Report	Travers Bushfire & Ecology
Erosion and Sediment Control Plan	EWFW Consulting Engineers
Fire Engineering Concept Report	Minerva Management Group Pty Ltd.
Hydraulic Report/Stormwater Plans	EWFW Consulting Engineers
Landscape Plan	Site Image Landscape Architects
Plan of Management- Operations & Security	GJ Consulting
Preliminary Site Investigation	Geotechnique Pty Ltd
Section J Report	Northrop Consulting Engineers Pty Ltd
Social Impact Assessment	Barr Property & Planning
Sustainability Report	Northrop Consulting Engineers Pty Ltd
Survey	RPS Australia East Pty Ltd
Traffic Impact Assessment	PTC Consultants
Waste Management Plan	Stimson Urban & Regional Planning

1.5 Legislation, Environmental Planning Instruments and Policies to be considered

- Biodiversity Conservation Act 2016
- Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River
- State Environmental Planning Policy No 55 – Remediation of Land
- State Environmental Planning Policy (Infrastructure) 2007

- State Environmental Planning Policy No 64 – Advertising & Signage
- Sydney Regional Environmental Plan No 30—St Marys
- Western Precinct - Precinct Plan and Development Control Strategy
- Jordan Springs Village Centre Concept Plan

1.6 CONSENT AUTHORITY

Council has indicated that the Penrith Local Planning Panel will determine this application.

2 The Site and Surrounds

The subject site and its surrounds have the following characteristics.

Site Address	Lot 3989 Lakeside Parade, Jordan Springs
Lot/DP	Lot 3989 DP 1190132
Site Area	5190sqm (approx.)
Local Government Area	Penrith City Council
Zoning	Urban Zone
Current Land Use	Vacant
Proposed Land Use	Pub and associated car parking.
Surrounding Land Uses	Residential to the north & west, bushland to the east & south.
Topography	Generally Flat (0.5m downward slope rear to front)
Terrestrial Biodiversity	Not mapped
Bushfire	Site is mapped

Figure 1 Subject Site - Aerial

Figure 2 Subject Site - Cadastre

2.1 Surrounding Context

The subject site is located within close proximity to the Jordan Springs local centre. Residential development (under construction) is located to the north and west (seniors housing) of the site. The Wianamata Regional Parkland is located to the south of the site. The architect's design statement summarises the surrounding context as follows:

> *As of the end of 2019 the surrounding area boasts a newly constructed shopping centre and multiple residential apartments which also include facilities dedicated to Age Care and related ailments scattered around the site. This in turn is further surrounded by newly developed residential in the form of standalone houses.*
>
> *The site itself is 5026m² in area and includes a significant corner portion to the east that is affected by an acute angle making development is that zone very difficult. To the south of the site is a council maintained drainage corridor with RFS access road. On the opposite side of the drainage corridor lies the Wianamatta Regional Parkland.*

The following photos highlight the site and its surrounds.

Figure 3 Subject site looking south-west

Figure 4 Subject site looking west

Figure 5 Subject Site looking south from Town Centre

2.2 TRANSPORT NETWORK

The subject site is located on Lakeside Parade in Jordan Springs. The site is primarily serviced by The Northern Road, a State road located west of the site. The Highway provides a north-south link through the Penrith LGA.

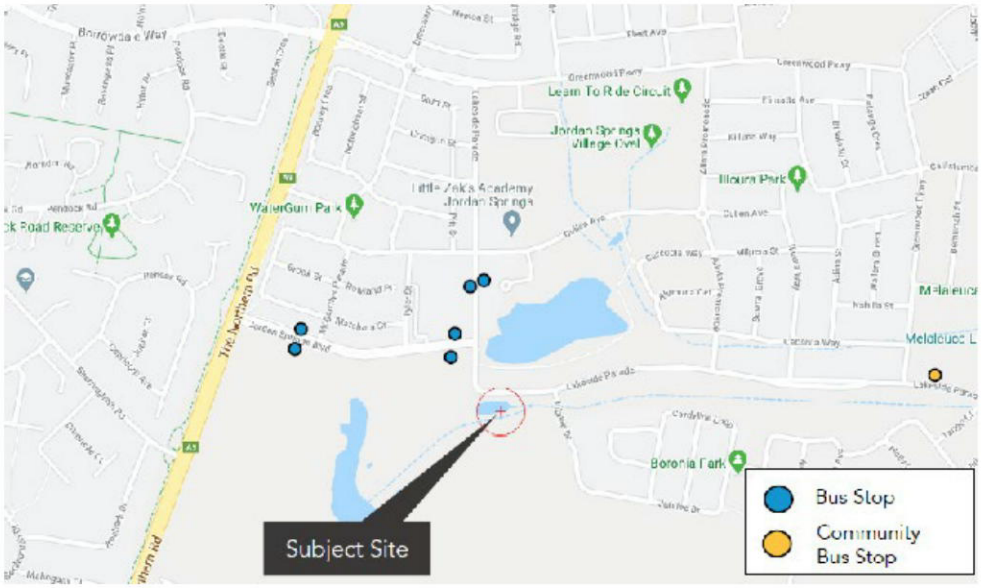


Figure 6 Location of public transport

The local area is serviced by buses running along Jordan Springs Boulevard and Lakeside Parade. There is also a community bus which provides a free transportation service from Jordan Springs to Werrington Train Station. Figure 6 shows the locations of public transport services in respect to the subject site.

The closest bus is approximately 150m away from the site, along Jordan Springs Boulevard. There is also a community shuttle bus stop located 800m (10 minute walk) west along Lakeside Parade. The community bus also provides a link to the nearest train station, Werrington Train Station.

3 PROJECT DESCRIPTION

3.1 DETAILS OF THE PROPOSAL

The proposed development is for a single storey pub and associated car parking. In detail, the development comprises:

- Main entry lobby fronting Lakeside Parade, with minor secondary entry on the eastern side of the building.
- Main bar and dining area of some 293sqm.
- Gaming area of some 153sqm accommodating 25 Gaming machines.
- Beer garden and kids playground within the front building setback (Lakeside Parade).
- Toilets and parents amenities.
- Back of house including cold and dry storage, kitchen and refuse room.
- Exterior seating along the northern elevation, overlooking the proposed beer garden.
- Car parking for some 48 vehicles, inclusive of one accessible space and drop-off zone.
- Bicycle parking.

3.2 BUILT FORM

The Architectural Design Statement for the proposal summarises the design approach as follows:

> *Remaining sensitive to the residential surroundings a barn style architecture was chosen. The design includes a single storey space on ground floor with generously vaulted internal spaces that make use of 3 dormer constructions to capture northern light. A shaded pergola area on the northern façade creates the transition space between the inside of the tavern and the generous garden space with kids play area.*
>
> *The main roof construction is a fully folded extrusion with gabled ends. Three dormers on the northern façade are spaced to face the main view corridor approaching from Lakeside Parade. The height of the building ensures the backdrop of the Wianamatta Regional Parkland remains visible from the intended view corridor.*
>
> *Low height walls mimicking existing precedents in the area along with local planting create a physical barrier to the site while the views into the development remain. More mature trees and planting with acoustic treatments are proposed for the western boundary to provide both shade and further buffer to the neighbouring developments.*

The parking area is lowered from the road height and finished ground floor height to create the opportunity for the raised planting and landscaping to conceal vehicular activity from the street and provide clearer site lines onto the reserve behind the site.

Figure 7 Perspective presenting Lakeside Parade

3.3 VEHICULAR ELEMENTS

The development includes the provision of 48 at grade car parks and a loading bay accommodating Medium Rigid Vehicles (MRV's). The manoeuvring of vehicles into and out of the loading bay was raised as an item of interest by Council and this has been demonstrated in the application documentation.

Figure 8 Turning Template Analysis through the site

We are advised by our client that deliveries to the venue will take place no earlier than 7.30am, through to early afternoon only, and that these times are 'off peak' times for activity within the venue. The client also notes that based on their experience of operating similar venues across New South Wales, the commercial operations of the proposed development, as well as waste collection, will only require an MRV to service the site.

3.4 Landscaping and Open Space

A Landscape Concept accompanies the application. The Plan focuses on the external beer garden on the northern part of the site. This area comprises a number of 'zones', including:

- Buffer planting to car park.
- Entry signage.
- Beer garden lawn with seating.
- Pier and open panel fencing.
- Front presentation planting
- Playground with fencing.
- Playground supervision seating.

The high-quality materials and finishes proposed in these areas will create a unique landscape response on the site, complementing its setting within the Jordan Springs Village Centre.

3.5 Hours of Operation and Employee Numbers

The following hours of operation are proposed as part of this application:

Monday to Saturday	10am to 3am
Sunday	10am to 12am

The following exceptions apply:

Good Friday	Midday to 10pm
Christmas Day	Midday to 10pm

It is expected that in excess of 150 construction related jobs will be created by the development, and that ongoing permanent and casual staff will be of a similar number.

3.6 Signage

No advertising signage is proposed for the development. A building identification sign is proposed naming the building 'Jordan Springs Tavern'. The perspectives show indicative business identification signage only. Business identification signage will comprise illuminated façade signage, as well as some landscape signage on a plinth. Some small scaled way finding signs will be required to assist people walking between

the car park and the pub, the details of which could be provided as part of any Construction Certificate.

Figure 9 Northern elevation showing indicative identification signage

3.7 Stormwater Drainage

A stormwater drainage concept plan accompanies the application and demonstrates compliance with Council's controls.

Further information is appended to this report in regards to the stormwater management on the site, including a response to Council's WSUD principles.

3.8 Utilities

The site will be appropriately serviced to accommodate the proposed use. Some utility upgrades are likely to be required and will be confirmed with the relevant service authority.

3.9 Civil Works

Some minor civil engineering works are required to level the site to prepare for construction and these are detailed in the accompanying plans.

3.10 Waste Management Strategy

A dedicated waste storage room is proposed within proximity of the loading bay. Waste will be collected by commercial contractors as arranged. Arrangements relating to waste management and collection have been proposed as per the specific

requirements of the venue. Waste collection will be managed with a commercial contractor.

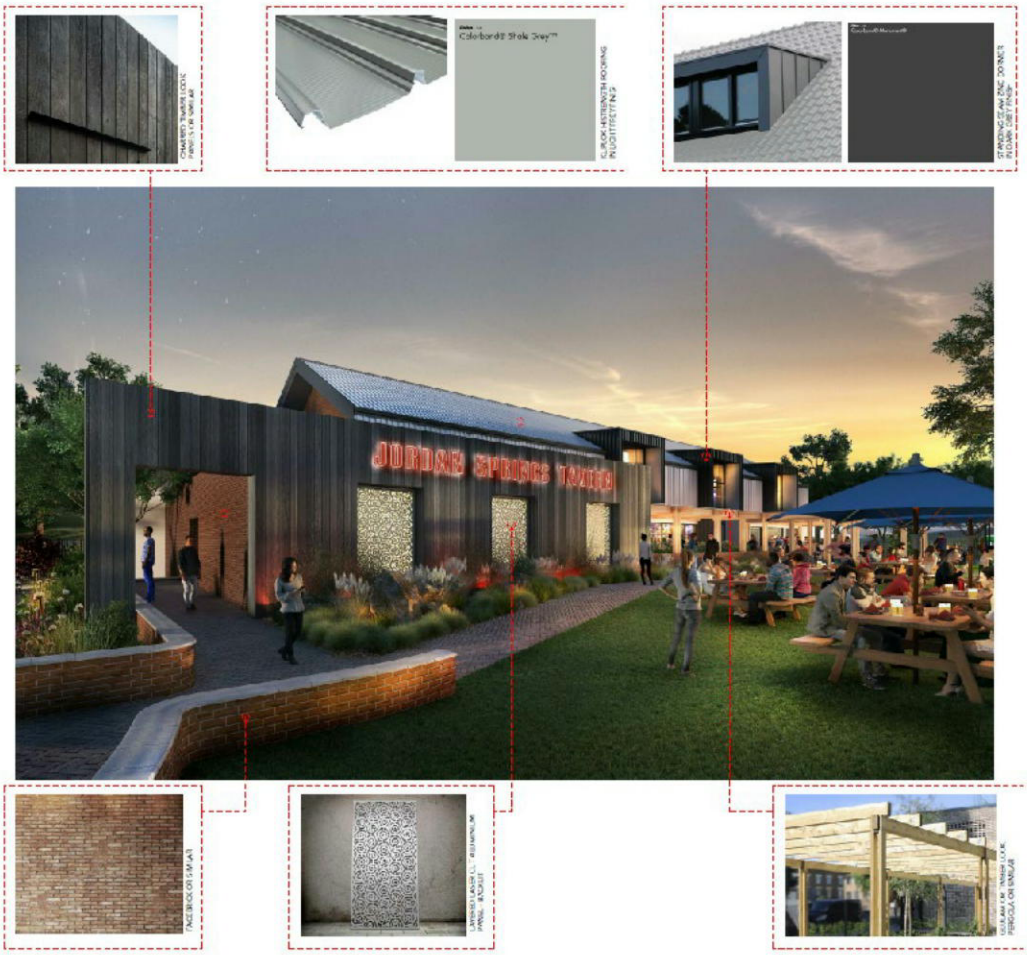


Figure 10 Finishes and materials proposed

3.11 National Construction Code Compliance

All works will be carried and comply with the National Construction Code (now incorporating the BCA). A Construction Certificate will be required in relation to the proposal and it is expected that Council will require matters relating to NCC compliance.

4 STATUTORY CONSIDERATIONS

The applicable statutory planning instruments and relevant guidelines have been considered below.

4.1 BIODIVERSITY CONSERVATION ACT 2016

The NSW *Biodiversity Conservation Act 2016* (BC Act) commenced on 25 August 2017. The Act applies to all of NSW.

The Biodiversity Offsets Scheme (BOS) applies to local developments assessed under Part 4 of the EPA Act that trigger the BOS threshold or is likely to have a significant effect on threatened species based on the 'test of significance' at s7.3 of the BC Act.

Amongst other changes, the Act introduced new mandatory requirements for biodiversity assessment and reporting and requires proponents to offset biodiversity impacts by retiring biodiversity credits through the BOS. This is a significant change to the previous legislation where non-significant impacts did not require offsets.

As part of the biodiversity reforms, the State Government established the Biodiversity Assessment Method (BAM) which replaces previous assessment methodologies such as the BioBanking Assessment Methodology. The BAM is an evolution of these previous methodologies and determines the number and type of credits required at a development site, and the number and type of credits created at a Biodiversity Stewardship Site (offset site).

The key principle of BAM is 'no net loss', where impacts of development are offset by improving the condition of vegetation or habitat at a Biodiversity Stewardship Site. Importantly, developments cannot proceed simply by securing the required offsets, they are required to firstly demonstrate avoidance, minimisation and mitigation of impacts through reasonable measures prior to offsets being used.

For Local Development (i.e. Part 4 Development Applications under the EP&A Act) the BC Act and BAM apply. There are three ways in which detailed assessment through BAM and the Biodiversity Offset Scheme are triggered:

1. Proposed clearing for your project exceeds the thresholds for minimum lot size in the relevant Local Environmental Plan (LEP)
2. Sensitive Biodiversity Values have been mapped within your project area (as mapped by the State Government); or
3. Impacts on threatened species, populations or communities are likely to be 'significant' as determined through the new 'five part test'.

For this proposal, no clearing is proposed, however the site is mapped on the Sensitive Biodiversity Values Map.

We have received advice from Cumberland Ecology, detailing consideration of this matter in the context of the site conditions and the approvals history. That advice accompanies this application.

Importantly, clearing of the site is already approved under previous development consents and since those approvals are still valid, no further assessment under the former TSC Act, or the BC Act is required.

Accordingly, we submit that no further consideration of this Act is required.

4.2 Sydney Regional Environmental Plan No 20 – Hawkesbury Nepean River

The aim of SREP 20 is to protect the Hawkesbury-Nepean River system by ensuring that the impacts of future land uses are considered in a regional context.

Appropriate conditions of consent would normally be applied to any approval to ensure the health of the river system is not compromised by way of sediment or erosion from the works or use.

4.3 State Environmental Planning Policy No 55 – Remediation of Land

Under Clause 7(1)(A) the consent authority must not consent to a development application unless consideration has been given to whether the land is contaminated. A Preliminary Site Investigation accompanies the application and concludes:

The findings of this PSI of the soil are summarised as follows:

- *All the laboratory test results satisfied the criteria for stating that the analytes selected are either not present or present in the soils at concentrations that do not pose a risk of harm to human health of the environment, under a commercial/industrial use.*
- *No remediation/management of the site are* [sic] *required.*

A Stage 2 Detailed Contamination assessment is therefore not required, and the site is suitable in this regard.

4.4 State Environmental Planning Policy (Infrastructure) 2007

Subdivision 2 of the SEPP will require Council to refer the application to the relevant electricity supply authority. We are happy to provide a response to any comments that Council may receive.

4.5 State Environmental Planning Policy No 64 – Advertising and Signage

This SEPP applies to signage that can be displayed with or without development consent and is visible from any public place or public reserve, except as provided for by the SEPP.

The signage for which consent is required includes the 'Jordan Springs Tavern' signage located on the entry elevation. Under the SEPP that signage is considered to be defined as follows:

> **building identification sign** means a sign that identifies or names a building and that may include the name of a building, the street name and number of a building, and a logo or other symbol but does not include general advertising of products, goods or services

The signage is not considered to be *advertising* as defined in the SEPP.

Clause 8 of the SEPP provides:

> 8 Granting of consent to signage
>
> A consent authority must not grant development consent to an application to display signage unless the consent authority is satisfied:
>
> (a) that the signage is consistent with the objectives of this Policy as set out in clause 3 (1) (a), and
>
> (b) that the signage the subject of the application satisfies the assessment criteria specified in Schedule 1.

The objectives of the SEPP include the following:

> (a) to ensure that signage (including advertising):
>
> (i) is compatible with the desired amenity and visual character of an area, and
>
> (ii) provides effective communication in suitable locations, and
>
> (iii) is of high quality design and finish, and
>
> (b) to regulate signage (but not content) under Part 4 of the Act, and
>
> (c) to provide time-limited consents for the display of certain advertisements, and
>
> (d) to regulate the display of advertisements in transport corridors, and
>
> (e) to ensure that public benefits may be derived from advertising in and adjacent to transport corridors.

The proposed signage satisfies the objectives in that it:

- Provides visual cues for the proposed building.
- Integrates into the design of the building.
- Is constructed of high-quality finishes and materials.
- Is not excessively sized given its proximity to the adjoining road corridor; and
- Is broadly consistent with signage you would expect in a village centre locality.

An assessment of the proposed signage against the assessment criteria in Schedule 1 follows.

Schedule 1 Assessment criteria	
1 Character of the area	
Is the proposal compatible with the existing or desired future character of the area or locality in which it is proposed to be located?	The proposed signage is not considered to be offensive, or of a scale that is unacceptable.
Is the proposal consistent with a particular theme for outdoor advertising in the area or locality?	The signage has been designed to be integrated into the building design, consistent with its architectural theme.
2 Special areas	
Does the proposal detract from the amenity or visual quality of any environmentally sensitive areas, heritage areas, natural or other conservation areas, open space areas, waterways, rural landscapes or residential areas?	The signage is not offensive or of a scale that is unacceptable. It is subtle in its appearance, but functional, providing the necessary visual cues for visitors to the site.
3 Views and vistas	
Does the proposal obscure or compromise important views?	No.
Does the proposal dominate the skyline and reduce the quality of vistas?	No.
Does the proposal respect the viewing rights of other advertisers?	Not applicable.
4 Streetscape, setting or landscape	
Is the scale, proportion and form of the proposal appropriate for the streetscape, setting or landscape?	Yes – the signage is integrated into the elevations of the building and will not present as an overbearing visual element.
Does the proposal contribute to the visual interest of the streetscape, setting or landscape?	Yes – the signage provides the necessary function of identifying the building.
Does the proposal reduce clutter by rationalising and simplifying existing advertising?	Yes – the signage is simple and functional and will not present as an overbearing element.
Does the proposal screen unsightliness?	Not applicable.
Does the proposal protrude above buildings, structures or tree canopies in the area or locality?	No.
Does the proposal require ongoing vegetation management?	No.
5 Site and building	
Is the proposal compatible with the scale, proportion and other characteristics of the site or building, or both, on which the proposed signage is to be located?	Yes – the signage integrates into the building elevation design.
Does the proposal respect important features of the site or building, or both?	Yes – the signage does not present as an overbearing visual element but provides the necessary function for its purpose.
Does the proposal show innovation and imagination in its relationship to the site or building, or both?	Not applicable.

6 Associated devices and logos with advertisements and advertising structures	
Have any safety devices, platforms, lighting devices or logos been designed as an integral part of the signage or structure on which it is to be displayed?	No. Not applicable.
7 Illumination	
Would illumination result in unacceptable glare?	No.
Would illumination affect safety for pedestrians, vehicles or aircraft?	No.
Would illumination detract from the amenity of any residence or other form of accommodation?	No.
Can the intensity of the illumination be adjusted, if necessary?	Yes, if necessary.
Is the illumination subject to a curfew?	No, but it is intended to operate at night during opening hours.
8 Safety	
Would the proposal reduce the safety for any public road?	No.
Would the proposal reduce the safety for pedestrians or bicyclists?	No.
Would the proposal reduce the safety for pedestrians, particularly children, by obscuring sightlines from public areas?	No.

It is submitted that the proposed signage satisfies the provisions of the SEPP.

4.6 Sydney Regional Environmental Plan No 30 – St Marys

The SREP is the main environmental planning instrument that applies to land use controls on the site. The aims of the Plan are

(a) support the St Marys Environmental Planning Strategy, 2000 of the Department of Urban Affairs and Planning by providing a framework for the sustainable development and management of the land to which this plan applies, and

(b) rezone certain land for urban and employment-generating development, and

(c) rezone land for conservation purposes and conserve the significant heritage values of the land to which this plan applies, and

(d) ensure that urban development on the land achieves desirable environmental, social and economic outcomes, and

(e) provide opportunities for recreation facilities that meet the needs of the regional and local community, and

(f) ensure that development of the land to which this plan applies is integrated with established surrounding areas.

Part 5 contains performance objectives against which development proposals need to be considered.

Part 5 Performance objectives		
Provision		**Comment**
21	**Required outcomes for any development** The performance objectives set out in this Part describe the desired environmental, social and economic outcomes for development on the land.	Noted.
22	**Ecologically sustainable development** Development on the land to which this plan applies is to be planned and carried out so that it supports the goal of ecologically sustainable development within the region declared under the Act and known as the Sydney Region.	Noted. The application is accompanied by a Sustainability Report that supports the development by detailing initiatives that will deliver a development that meets the needs of its owners and the wider community in Penrith. These include committing to sustainability outcomes, and energy, water and stormwater management measures.
23	**Air quality**	
(1)	Adverse impact on the air quality of the Blacktown City and Penrith City local government areas is to be minimised through the implementation of appropriate measures as part of any development.	Not applicable
(2)	Development on the land to which this plan applies should contribute to improved regional air quality by containing growth in vehicle kilometres travelled, by achieving higher than normal public transport use, encouraging walking and cycling, and promoting energy-efficient businesses and homes.	Initiatives such as on-site bicycle parking will contribute to satisfying this objective.
24	**Conservation**	Not applicable to the subject development.
25	**Heritage**	
(1)	Regard for, and education and understanding of, the identified items of environmental heritage on the land to which this plan applies are to be promoted.	There are no matters of heritage relating to the site or the proposed development.
(2)	Development is not to adversely affect the heritage significance of items of environmental heritage and their settings.	Not applicable.
(3)	The Aboriginal community is to be given the opportunity to comment regarding any potential impacts of development on, and proposals for mechanisms for the management of, items of Aboriginal heritage significance.	
26	**Community services**	Not applicable to this application.
27	**Open space and recreation**	Not applicable to this application.
28	**Watercycle**	
(1)	During and following construction, impacts upon water quality are to be minimised, through the utilisation of effective erosion and sediment control measures in accordance with industry standards.	These objectives have been considered in the proposed design.
(2)	The use of the land to which this plan applies is to incorporate stormwater management measures that ensure there is no net adverse impact upon the water quality (nutrients and suspended solids) in South Creek and Hawkesbury-Nepean catchments.	
(3)	Water usage on and the importation of potable water on to the land to which this plan applies are to be minimised.	
(4)	Development is to be designed and carried out so as to ensure that there is no significant increase in the water table level and that adverse salinity impacts will not result.	

(5) There is to be only minimal impact upon flood levels upstream or downstream of the land to which this plan applies as a consequence of its development.	
(6) Drainage lines are to be constructed and vegetated so that they approximate as natural a state as possible. Where it is necessary to modify existing drainage lines to accommodate increased stormwater runoff from urban areas, this should be done in a manner which maximises the conservation of indigenous flora in and around the drainage lines.	
(7) Development is to be carried out in a manner that minimises flood risk to both people and property.	
(8) Changes in local flow regimes due to development are to be minimised for rainfall events up to the 50% AEP rainfall event.	
(9) Gross pollutants are to be collected at, or as close as possible to, their source or at all stormwater outlets, or at both of those places, so that there is no increase in sediment/litter entering the creeks as a result of development.	
29 Soils	
Development is to have regard to soil constraints to ensure that the risk of adverse environmental and economic impacts is minimised.	Not applicable to this application.
30 Transport	
(1) Development should support creation of effective public transport and bicycle links to the dominant centres and major transport nodes in the Blacktown City and Penrith City local government areas.	These objectives have been considered in the proposed design.
(2) Public transport is to be provided early in the development of the land to which this plan applies to establish use patterns.	
(3) Development of the land to which this plan applies is to maximise accessibility to services and facilities for people who do not have access to a private car.	
(4) Development of the land to which this plan applies is to effectively link that land into the surrounding road network and traffic generated by the development is to be catered for at a satisfactory level of service.	
(5) Provision of transport infrastructure and services is to be coordinated with the staging of development on the land.	
(6) Urban form is to maximise the potential for public transport, walking and cycling to replace car travel, with an overall net neighbourhood density target of at least 15 dwellings per hectare.	
(7) High trip-generating uses such as employment development, retailing and multi-unit housing are to be concentrated adjacent to major public transport routes and nodes.	
(8) The overall development of land to which this plan applies is to include a range of land uses sufficient to minimise demand for travel outside the land to which this plan applies.	

(9)	Public transport infrastructure and services are to be provided to a level sufficient to achieve a significantly higher use of public transport compared to other similar development in the Blacktown City and Penrith City local government areas.	
31	**Urban form**	
(1)	Development of the land to which this plan applies is to result in an attractive and safe built environment which satisfies a diverse range of community needs.	The proposal has been the subject consideration by Penrith's Urban Design Review Panel. The proposal represents a high quality architecturally designed building that will create a venue that will contribute to the Jordan Springs community. The scale of the building is considered appropriate in this location, within close proximity to the Village Centre.
(2)	Development is to integrate the new community with existing adjoining communities.	
(3)	Development on the land to which this plan applies is to include— (a) a diverse range of building types and designs, and (b) residences in close proximity (that is, a comfortable walking distance) to public transport, human services and retail, community and recreation facilities, and (c) clearly distinguished public and private spaces, and (d) a legible street layout.	
(4)	The overall development of the land to which this plan applies is to incorporate urban design measures to discourage crime and facilitate safety and access for disabled persons.	
32	**Employment and business development**	
(1)	The total number of jobs generated by development on land to which this plan applies (including jobs generated on the surrounding land) is to approximate the number of workers who will be resident on the land to which this plan applies after the development has been carried out.	The proposed development will create ongoing employment opportunities, as will the construction of the development.
(2)	Retail and commercial development on the land to which this plan applies is not to undermine the regional and district retail and commercial centre hierarchy.	
(3)	Local retail services are to be provided in the early stages of the development of each precinct.	
(4)	Noise conflict between employment or business-related development and nearby residential development is to be minimised.	
33	**Housing**	Not applicable.
34	**Energy efficiency**	
	Development on the land to which this plan applies is to incorporate best practice energy management and implement energy efficient principles wherever possible.	Noted and incorporated into the proposed development.

35 Waste management	
(1) Buildings are to be designed and constructed in a way that minimises the production of unnecessary waste.	Noted and incorporated into the proposed development.
(2) Development is to facilitate appropriately designed and scaled local activities which reuse, recycle and reprocess wastes.	

Part 6 Zoning	
Provision	**Comment**
40 Urban zone	
(1) The objectives of the Urban zone are—	
(a) to ensure that buildings and works within the zone are primarily used for residential purposes and associated facilities, and	The proposal is for non-residential development.
(b) to limit the range and scale of non-residential uses to ensure that they are compatible with residential amenity and primarily serve local residents, and	The proposed use is permissible in the zone. The potential amenity impacts have been considered in the design and mitigation measures recommended accordingly.
(c) to provide for local retailing and related services, including supermarkets, which will complement established centres in the Blacktown City and Penrith City local government areas and not have a significant adverse effect on the viability of established retail centres, and	The proposed use will complement existing uses within the Jordan Springs centre, by establishing a community orientated venue that will promote social activation for local residents within close proximity to where they live.
(d) to provide for medium density residential development in locations which provide optimum access to employment, public transport and services, while ensuring residential amenity, and	Not applicable.
(e) to promote home based industries where such activities are unlikely to adversely affect the living environment of neighbours, and	Not applicable.
(f) to ensure that development adjacent to the Regional Park zone does not have a negative impact on biodiversity or conservation within that zone.	The proposed development will not create any unacceptable biodiversity impacts in the locality.
(2) In the Urban zone—	
(a) development for the purpose of the following is allowed with the consent of the consent authority— advertisements, amusement centres, backpackers' hostels, bed and breakfast establishments, boarding houses, bush fire hazard reduction, centre-based child care facilities, clubs, community facilities, drains, educational establishments, essential community services, exhibition homes, exhibition villages, fast food take-away restaurants, flood mitigation works, general stores, guesthouses, home activities, home businesses, hospitals, hotels, housing, local retail or commercial premises, medical centres, motels, nursing homes, parks, places of assembly, places of worship, professional consulting rooms, public buildings, recreation establishments, recreation facilities, regeneration activities, restaurants, retail plant nurseries, roads, service stations, shops.	The proposed use is permissible with consent in the zone.
(b) any other development (except that identified by this plan as exempt or complying) is prohibited.	Not applicable.

Part 7 Development controls	
Provision	**Comment**
44 Consultation with National Parks and Wildlife Service	
(1) This clause applies to the following— (a) development of land adjoining land within the Regional Park zone, and (b) development for the purpose of a road or public utility undertaking on land zoned Regional Park that is subject to an existing easement, where the application is lodged prior to the land being reserved or dedicated under the *National Parks and Wildlife Act 1974*.	Noted. Council will notify NPWS of this application.
(2) The consent authority must not grant development consent for development unless it has referred a copy of the development application to the Director-General of National Parks and Wildlife.	Noted.
(3) Where a copy of a development application has been forwarded to the Director-General of National Parks and Wildlife pursuant to this clause, the consent authority must not grant consent to the application until— (a) it has received and considered advice with respect to the application from that Director-General, or (b) the consent authority has been notified that that Director-General does not wish to submit any advice with respect to the application, or (c) 28 days have elapsed after the date on which the application was referred to the Director-General, whichever occurs first.	Noted.
45 Subdivision	Not applicable.
46 Development near zone boundaries	Not applicable.
47 Demolition	Not applicable.
48 Interim uses	Not applicable.
49 Land below the PMF level	Not applicable.
50 Filling of land	Not applicable.
51 Salinity and highly erodible soils	Matters relating to soil assessments would have been considered as part of the original masterplan application for the Estate. Notwithstanding, any concerns can be conditioned accordingly.
52 Tree preservation	
(1) A person must not ringbark, cut down, lop, top, remove, injure or wilfully destroy any tree, or cause any tree to be ringbarked, cut down, topped, lopped, removed, injured or wilfully destroyed by any action (including the addition of soil or drainage works around the base of the tree), except with the consent of the consent authority.	Noted. No significant vegetation existing on the site. We also note previous development consents have permitted the clearing of this site.

(2) Despite subclause (1), consent is not required where— (a) the tree is dead, or (b) the tree is declared a noxious weed under the *Noxious Weeds Act 1993*, or (c) the tree is assessed as dying, in poor condition or potentially dangerous by a qualified arborist, or (d) the action to the tree is taken for the purpose of bush fire hazard reduction in accordance with an approved local bush fire management plan referred to in section 52 of the *Rural Fires Act 1997*, or (e) the tree is less than five metres from a building or work for which consent has been granted or which has been approved by the consent authority, or (f) the action to the tree is taken in accordance with a permit issued by the consent authority.	Noted – refer above.
(3) before granting a consent or permit referred to in this clause, the consent authority must make an assessment of the importance of the tree or trees concerned in relation to the following— (a) soil stability and prevention of land degradation, (b) preservation of scenic and environmental amenity, (c) maintenance of vegetation systems and natural wildlife habitats and corridors, (d) prevention of soil salinity and a rising water table.	
(4) This clause does not apply to the lopping of trees in accordance with Part 9 of the *Electricity Supply (General) Regulation 1996* or section 48 of the *Electricity Supply Act 1995*, or to any trees under the control of the National Parks and Wildlife Service.	Noted.
53 Items of environmental heritage	Not applicable.
54 General heritage considerations	Not applicable.
55 Conservation of items of environmental heritage	Not applicable.
56 Demolition of items of environmental heritage	Not applicable.
57 Access	Not applicable.
58 Certain development prohibited	Not applicable.

59 Retail and commercial development restricted (1) The consent authority must not grant consent to development described in Schedule 4 on land zoned Urban unless— (a) the proposed development is located on land identified as suitable for use for the purpose of a retail centre by a precinct plan, and (b) the consent authority is satisfied that, if the proposed development is carried out, the total gross floor area of all buildings on land to which this plan applies that may be used for the purpose of shops will not exceed 13,000 square metres approximately divided as follows— (i) Western Precinct—7,500 square metres, (ii) Central, Dunheved North and Dunheved South Precincts (combined)—2,500 square metres, (iii) Eastern and Ropes Creek Precincts (combined)—3,000 square metres.	The accompanying statement from Lend Lease, the developer of the Jordan Springs estate, confirms the development is within this GFA limit.
(2) However, subclause (1) (b) does not apply if the consent authority is satisfied that, after the proposed development is carried out, the total gross floor area (including the gross floor area of all other buildings used for retailing in the locality) will not be greater than the total required to reasonably service the local residential community and workforce.	Not applicable.
(3) Subclause (1) does not apply to the granting of consent for general stores.	Not applicable.
60 Services Development must not be carried out on any land to which this plan applies until arrangements have been made for the supply of water, sewerage, drainage and underground power that are satisfactory to the consent authority.	The site is appropriately serviced to accommodate the development.
61 Subdivision without consent.	Not applicable.
62 Bush fire hazard reduction works	Not applicable.
62A Temporary use of land	Not applicable.
62B Conversion of fire alarms	Noted.

The proposed development satisfies the provisions of the SREP.

4.7 Western Precinct – Precinct Plan and Development Control Strategy

The following relevant clauses have also been considered in respect of this development proposal.

5C Non Residential Built Form	
5.8 Non Residential Buildings (Village Centre)	
Mix of Uses A range of uses including office, community, educational, residential and recreational uses may be considered within a mixed use building. Mixed uses can be arranged horizontally, vertically or in a combination. Horizontal mixed use development in the Village Centre will locate retail and commercial uses along street frontages with residential use to the rear or along secondary streets and accessways. Vertical mixed-use development will locate retail and commercial uses at street level, so as to maximise street activation, with commercial and residential uses located on upper levels. Conflict between uses will be minimised through appropriate siting or via the application of appropriate building materials to eliminate noise transmission and other conflicts. Loading bays, site storage and access points for waste collection will be located away from public spaces, streets and residential areas to minimise amenity issues associated with cooking exhausts, waste, plant rooms and service vehicles.	Whilst being identified as part of the Village Centre, the subject site is located at its periphery, adjoining the Regional Park to the south. The site is within walking distance to the retail/mixed use area, with the proposed pub being readily viewed from that area. The subject site is considered ideal for the proposed use, creating a destination venue for locals. Its location will assist in activating the Village Centre and provides passive surveillance in this location. Potential impacts have been considered within this application and along with the implementation of the accompanying Plan of Management, can be satisfactorily mitigated. Potential conflicts are therefore considered to be minimal.
Street Frontages/Entrances Non-residential uses will be located on the street with ground floor uses and upper floor windows facing the street to activate these edges and provide passive surveillance. Primary entrances will generally be provided off the main street. Access points will be compatible with the overall façade of the building but will be clearly defined and identifiable for vehicles and pedestrians.	The design of the pub will provide significant street activation and passive surveillance of the public domain in this locality.
Building Form Buildings will be designed to face the street with particular attention paid to the rear of the building and its relationship to accessways and adjacent buildings. Built form should relate to the public domain and its form and scale. Façade treatment should avoid the use of blank walls and should break up excessive bulk and scale. The façade of large buildings will be articulated in terms of volume and surface treatments, to reflect the existing scale of the street and adjacent development.	The proposed design successfully responds to these requirements with a contemporary design, high quality materials and finishes, and an appropriately scaled built form.
Building Depth Building depth should be adequate in order to maximise natural light, ventilation and circulation unless specific building use requires otherwise. This depth will allow optimum circulation and room layout while minimising artificial lighting at the building core.	Provided for in the design.

5 Key Planning Issues

The following impacts have been considered in the preparation of this development proposal.

5.1 Compatibility in Locality

The development of the Jordan Springs Village Centre has largely been guided by the Jordan Springs Village Centre Concept Plan - a non-statutory document communicating the vision of the Centre. The Concept Plan sets out an indicative development plan but promotes a flexible approach that responds to market conditions. The principles outlined in the Concept Plan allow freedom for the detailed design of each site, providing a guide to assist in the assessment of applications relating to non-residential development in the centre.

Figure 11 Village Centre Concept Plan

The vision of the Centre calls for activation through both day and night by a mix of uses, allowing for people to move easily and safely between destinations. The proposed development satisfies the Village Centre Principles as follows:

- The development 'book ends' the southern end of the Centres north-south axis
- The development is not excessive in scale and bulk so as to unacceptably dominate its immediate locality.
- Clear paths of travel and wayfinding are available to residents to travel within the village centre and the subject site.
- The development does not remove the focal point of the Town Square.
- The development represents a high-quality example of 'casual dining' and entertainment that is dispersed throughout the Village Centre.
- The development represents a 'commercial opportunity for the Village Centre promoting connectivity to the Regional Park'

The Concept Plan also identifies the subject site as a potential 'residential density' site, with the Plan suggesting interface sites consider visual amenity, noise and acoustic attenuation, hours of operation and privacy as part of any application.

The subject site is considered more appropriate for a commercial use, primarily because of its unique shape and configuration. The proposed development is a permissible land use in the zone, and is preferably located on the subject site to take advantage of its limited number of neighbours, but also to take advantage of its link between the Village Centre and the Regional Park. Potential impacts of adjoining land uses can be mitigated through a range of measures that are recommended in the accompanying consultant reports.

In summary, the proposed development represents a permissible land use in the zone that can sit comfortably amongst the surrounding land uses within the Village Centre. The site contributes to the Village Centre at the southern end of its north south axis, with a community facility that demonstrates a high degree of architectural design.

The proposed development is consistent with the strategic visions of Councils' relevant planning documents and studies and therefore it is considered to be compatible in the locality.

5.2 Stormwater and Flooding

A stormwater concept plan has been submitted with the development application demonstrating compliance with Council's requirements in this regard and is consistent with the discussions held at the pre-lodgement meeting.

5.3 Erosion and Sediment Control

It is expected that Council would impose appropriate conditions of consent to ensure that erosion and sediment control measures were installed on the site prior to construction commencing.

5.4 Traffic Generation and Parking

A Traffic Impact Assessment accompanies the application, that provides detailed consideration of the potential traffic generation and parking demand of the proposed development. The assessment confirmed the following:

- The proposed development generates a parking space requirement of 111 spaces when considered against the DCP.
- Considering the location of the proposal within the Jordan Springs estate, it is likely there will be a high percent of patrons that would walk, therefore lowering the potential demand.
- Given the modern behaviour of patrons attending pubs, it is reasonable to assume an occupancy rate of 2.5 persons per vehicle be applied to this development, on which basis, the parking requirement would reduce to 45 spaces.
- Traffic studies undertaken at comparable facilities suggest that the likely range of parking requirement for this facility will be between 10 and 15 spaces.
- Accordingly, the 48 spaces proposed is considered to be a suitable for this development within this locality.

We note accessible and bicycle parking has also been provided for in the development.

In terms of traffic generation, Covid-19 restrictions have not allowed traffic surveys to be undertaken at this time since surveys may not be representative of typical traffic volumes. Accordingly, the traffic impact assessment prepared by WSP dated November 2017 as part of the 'Jordan Springs East – Internal Road and Intersection Assessment with Rezoning' has been used and extrapolated for the purposes of this assessment. This is considered a reasonable approach given the circumstances.

It has been determined that the development traffic generation of 48 vehicles in the PM peak hour would have minimal effect on the intersection's operation, and therefore the development is considered acceptable in terms of a traffic consideration.

The Traffic Impact Assessment also confirms that a medium rigid vehicle can be accommodated on the site for deliveries in a safe manner.

5.5 Noise Impacts

An acoustic assessment was undertaken on the site considering the proposed hours of operation and the surrounding locality. The assessment considered existing residential dwellings within the catchment of the proposal. It also noted that the proposed operation of the venue situates the majority of noise sources to internal areas, and along Lakeside Parade. The assessment concludes with the following recommendations:

- Limitations on capacity of various components of the venue at various times of the day.

- Limitations on the timing and output of amplified music.
- Limitations on waste collection times and other operational aspects.

The management of acoustic issues is one that the proponent is very familiar with across their venue portfolio. Recommendations within the acoustic report, and the adoption of the accompanying Plan of Management, will ensure the site is managed in a way that is respectful and sympathetic of the surrounding land uses. The acoustic report outcomes have been reviewed by the proponent and are largely consistent with operational restrictions at other venues.

5.6 Visual Impact

Consideration has been given to the potential visual impacts of the proposal when viewed from the public domain. The two main views identified are from the north from the main Village area, and from the east down Lakeside Parade. The accompanying plans provide perspectives of those views, and importantly, include the massing from the adjoining development (DA19/0808).

The proposed building will be smaller in scale but will provide a visual 'anchor' when viewed from the north. When viewed from the east, the proposed development will provide a transition in scale up to the adjoining development.

As a result, any visual impacts created by the development will not be negative with the development contributing to the visual amenity of the locality.

Figure 12 View from the north

Figure 13 View from the east

5.7 Services

The site is appropriately serviced to allow for the proposed development.

5.8 Social and Economic

The accompanying Social Impact Assessment details positive social impacts arising from the development as including:

- Activation of the wider area,
- Increased opportunity for social relations and gatherings for members of the community due to the availability of a local venue and the decreased need to travel outside the suburb, and
- As a growing population in Jordan Springs, the provision of an entertainment venue is considered to have positive social interconnectedness and mental health outcomes.

On balance, the assessment also identified minor negative impacts as including:

- General consumption of alcohol and engagement in gambling activities,
- Resultant risky drinking and gambling behaviors'.

Importantly, the assessment identifies a number of recommendations that can be implemented, appropriately through the Plan of Management (attached to this submission), to control such risks. It should also be said that such risks are considered further and in more detail as the project moves through its licensing application with the Liquor and Gaming NSW and the NSW Police.

However, for the purposes of this planning application, it is considered that for a venue of this size, the potential risks can be monitored and controlled satisfactorily, and that the benefits that arise as a results of its development outweigh those risks.

There are no significant economic impacts that are expected to arise as a result of this application, and as such, the proposal is considered satisfactory from an economic and social impact perspective.

5.9 Crime Prevention Through Environmental Design (CPTED)

The consideration of CPTED issues has been prepared having regard to various published CPTED literature and academic works, and specifically includes the *"Crime Prevention and Assessment of Development Application Guidelines under Section 4.15 of the Environmental Planning and Assessment Act 1979"* published by the former Department of Urban Affairs and Planning.

The advice is structured in accordance with Part B of the above guidelines – *Principles for Minimising Crime Risk*. In this regard, the advice considers the responsiveness of the proposed design to each of the adopted four principles for CPTED (surveillance; access control; territorial reinforcement and space management).

CPTED principles have been adopted by the NSW Police Force, based on recognition that the design of spaces plays a pivotal role in facilitating the safety and security of its users. The NSW Police Force has identified key principles of CPTED being:

- Establish opportunities for **good surveillance**, both casually and technically.
- Provide legible barriers for **access control** for spatial definition.
- Create a sense of ownership over spaces that are also clearly demarcated between public and private ownership for **territorial reinforcement**.
- Establish spaces that are utilised appropriately through **proper space management**, relating to litter and graffiti removal, and ensuring lighting fixtures are working.

When implemented, these measures are likely to reduce opportunities for crime by using design and place management principles.

Surveillance

The proposed development will provide numerous opportunities for surveillance. The following casual surveillance opportunities have been provided through the design of the project:

- Opportunities for visual observance through a high percent of transparent glazing along all frontages allow normal space users to see and be seen by others.
- Entries are located in highly visible locations.

- Active communal areas at the front and rear of the building are well positioned.
- Clear visual pathways within and around the development from public streets to private entrances.
- Areas of entrapment are limited due to multiple exit points from around the development.
- CCTV will be utilised on the site.

Access Control

Access control to public, semi public and private areas of the development is considered to be well managed and effective. Access control to the building can be effectively managed through lockable entry doors. With respect to fire escape points and building services rooms, the location of these access points, the use of lockable doors and other environmental cues will make it clear that these are not public entry points.

Overall access to the building will be managed by the on-site manager.

Territorial Reinforcement

Clear separation exists between public and private space in terms of the relationship between the proposal and the public domain. Appropriate signage, landscaping, site furnishings and paving will provide good environmental cues about the transition or movement from public to private domain.

Space Management

Space management is increasingly carried out in a professional manner, often by third party specialist building management businesses. Therefore, the effectiveness of management systems such as materials and fittings replacement, removing graffiti, and fixing broken site furnishings will influence the perceived level of care of the project. In this case, the on-site manager will ensure that processes are established to respond to and fix services and structures and under whose responsibilities these services are assigned.

Site cleanliness is also a factor that influences the perceived and actual level of care of an area. Cleanliness of the project will be managed by on-site management on a daily basis.

5.10 Operations

A Plan of Management accompanies this application, establishing the way in which the venue is to be managed. This extends to the management of patrons, security, maintenance, and noise and amenity. The Plan can be regularly reviewed if required.

6 Section 4.15 Assessment

An assessment of the proposal has been undertaken in accordance with the statutory requirements of the EPA Act. The following assessment against Section 4.15 of the EPA Act has been undertaken.

6.1 Section 4.15(1)(a)(i) – Any Environmental Planning Instruments

The relevant environmental planning instruments have been considered earlier in this report. These include the following:

- Biodiversity Conservation Act 2016
- Sydney Regional Environmental Plan No 20 - Hawkesbury-Nepean River
- State Environmental Planning Policy No 55 – Remediation of Land
- State Environmental Planning Policy (Infrastructure) 2007
- State Environmental Planning Policy No 64 – Advertising & Signage
- Sydney Regional Environmental Plan No 30—St Marys
- Western Precinct - Precinct Plan and Development Control Strategy

The proposal is permissible with consent and is considered satisfactory when assessed against the relevant controls.

6.2 Section 4.15(1)(a)(ii) – Any proposed instrument that is or has been the subject of public consultation under this Act and that has been notified to the consent authority

There are no known draft Environmental Planning Instruments specifically applicable to the subject site or the proposed development.

6.3 Section 4.15(1)(a)(iii) – Any Development Control Plan

Compliance against the relevant DCP has been considered earlier in this report.

6.4 Section 4.15(1)(a)(iiia) – Any Planning Agreement or Draft Planning Agreement entered into under Section 7.4

There are no known planning agreements that apply to the site or development.

6.5 Section 4.15(1)(a)(iv) – The Regulations

There are no sections of the regulations that are relevant to the proposal at this stage.

6.6 Section 4.15(1)(a)(v) – Any coastal zone management plan

Not relevant to the proposed development.

6.7 Section 4.15(1)(b) – The likely impacts of that development

6.7.1 *Natural Environment Impacts*

There are unlikely to be any natural environment impacts. There is no vegetation on site of any significance, and the proposed works to the site are consider minor in the context of the surrounding locality. The adjoining Regional Park will not be negatively impacted on, if anything, the proposal will strengthen the potential link between the Village Centre and the Park.

6.7.2 *Social and Economic Impacts*

The proposed development introduces a community facility to Jordan Springs. The accompanying consultant reports confirm that there will be positive social and economic impacts arising from the development. There will be minor impacts that can be appropriately managed through the implementation of the accompanying Plan of Management, which is a document common across other venues owned by the proponent.

6.7.3 *Built Environmental Impacts*

The proposed building is of a scale and bulk that is well within the development controls applicable to the site. The size is modest in the context of the site, and its relationship with the Village Centre.

6.8 Section 4.15(1)(c) – The suitability of the site for the development

The proposal is generally consistent with the planning controls that apply in this zone. Moreover, the objectives of the zone have been satisfied, ensuring that the proposed pub would not result in any unacceptable impact on any adjoining landowners or buildings.

The site is considered to be suitable for the development for the reasons outlined below:

- The proposal is permissible with consent in the Urban zone.
- The proposal represents an appropriate land use and built form located on an appropriately serviced site that is in an accessible location. In this context we submit the proposal is not inconsistent with the objectives of the Jordan Springs Village Centre Concept Plan.

- The proposal is compatible with surrounding land uses within the Village Centre, including higher density residential and seniors housing and various retail shops.

The accompanying consultant reports identify the way in which the proposed development will be received within the locality and in this regard, it is considered to be acceptable.

6.9 Section 4.15(1)(d) – Any submission made

Council will undertake a notification process in accordance with its controls and policies. We welcome the opportunity to provide additional information in response to any submission that might be received.

6.10 Section 4.15(1)(e) – The public interest

Given the type of development, its general compliance with the planning controls, how the objectives are satisfied and the suitability of the site it is considered that the public interest would not be jeopardised as a result of this development.

We submit approval of the development is within the public interest given the way in which the strategic objectives of the relevant planning framework have been met.

7 Conclusion and Recommendation

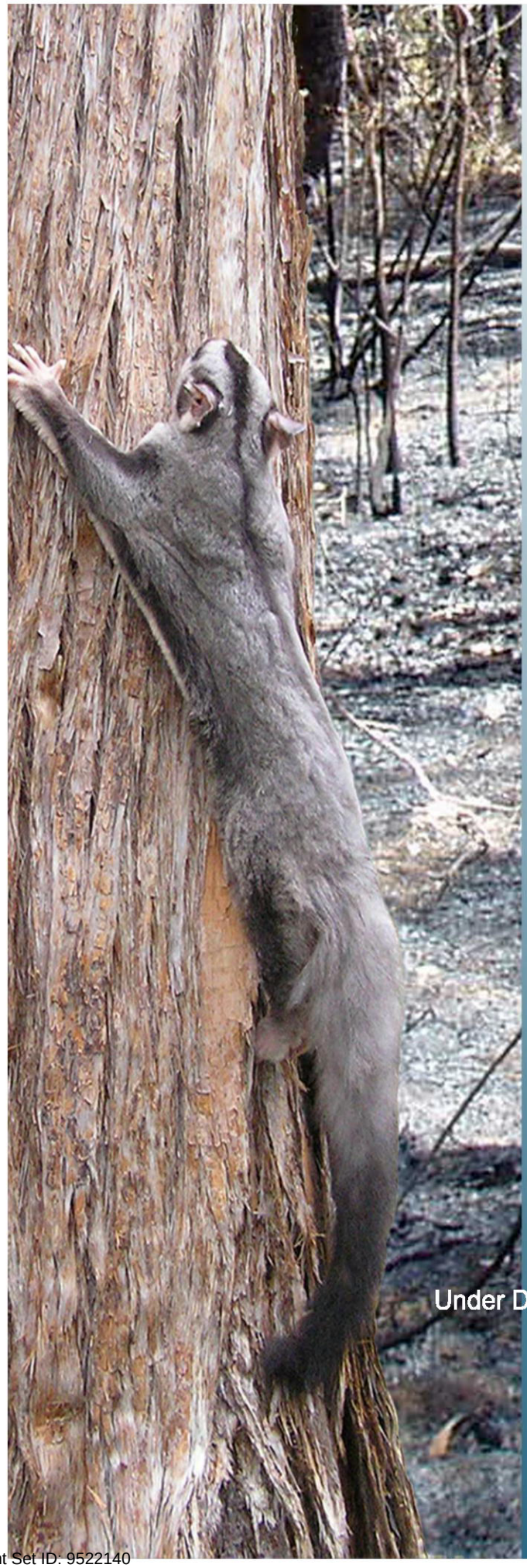
The proposed development has been assessed against the requirements of the SREP and is considered to represent a form of development that is acceptable.

The proposed pub would not result in any unacceptable impact on the locality.

The site is considered quite suitable for a use of this nature and is consistent with nearby and adjoining development.

An assessment against Section 4.15 of the EPA Act has not resulted in any significant issues arising.

Accordingly, it is recommended that the proposed development be approved.



Travers

bushfire & ecology

bushfire protection assessment

Commercial Development

Jordan Springs Tavern
Lot 3989 DP 1190132
Lakeside Parade, Jordan Springs

Under Division 4.3 (section 4.14) of the EP&A Act 1979

July 2020
(REF: 18FDC08)

Bushfire Protection Assessment

Jordan Springs Tavern
Lot 3989 DP 1190132
Lakeside Parade, Jordan Springs

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Checked by:	John Travers
Date:	9 July 2020
File:	18FDC08

BPAD Bushfire Planning & Design Accredited Practitioner Level 3

Disclaimer:

This report has been prepared to provide advice to the client on matters pertaining to the particular and specific development proposal as advised by the client and / or their authorised representatives. This report can be used by the client only for its intended purpose and for that purpose only. Should any other use of the advice be made by any person, including the client, then this firm advises that the advice should not be relied upon. The report and its attachments should be read as a whole and no individual part of the report or its attachments should be relied upon as meaning it reflects any advice by this firm. The report does not suggest or guarantee that a bush or grass fire will not occur and or impact the development. This report advises on policies and specifications published by the *NSW Rural Fire Service* e.g. *Planning for Bush Fire Protection 2019*.

The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

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EXECUTIVE SUMMARY

A bushfire protection assessment has been undertaken for the construction of a tavern within Lot 39899 DP 119132, No. 10 Lakeside Parade, Jordan Springs.

The proposed tavern is considered a 'Class 6' structure in accordance with the National Construction Code (NCC) and is such categorised by the NSW Rural Fire Service (NSW RFS) planning policy document *Planning for Bush Fire Protection (PBP)* as being 'other' development.

The NSW RFS requires that development on bushfire prone land should satisfy the aims and objectives of *PBP*, propose a combination of bushfire protection measures and provide evidence that the intent of each measure can be satisfied.

The assessment found that bushfire can potentially affect the proposed tavern from the grassland (approved APZ) and forest located to the south of the property resulting in possible flame, ember and radiant heat attack.

This assessment has concluded that the proposed development will provide compliance with the aims and objectives of *PBP*, with the implementation of the following combination of bushfire protection measures:

- The tavern will comply with A*S3959 (2018) Construction of buildings in bushfire prone areas* – bushfire attack level (BAL) 29 refer Schedule 1 attached;
- The outdoor seating area and associated roofing will be constructed to comply with BAL 29. Fences are to be non-combustible;
- Landscaping within the site is to ensure compliance with the requirements for an asset protection zones (APZs) and provide for a defendable space for firefighting operations
- Consultation with Penrith Council is to occur to ensure the ongoing maintenance of the drainage corridor to the south of the site;
- Water and gas supply in compliance with the acceptable solutions outlined in *PBP 2019*; and
- A bushfire emergency evacuation plan is to be prepared prior to building occupation.

GLOSSARY OF TERMS

AHIMS	Aboriginal Heritage Information System
APZ	asset protection zone
AS1596	*Australian Standard – The storage and handling of LP Gas*
AS2419	*Australian Standard – Fire hydrant installations*
AS3745	*Australian Standard – Planning for emergencies in facilities*
AS3959	*Australian Standard – Construction of buildings in bushfire-prone areas 2018*
BAL	*bushfire attack level*
BCA	*Building Code of Australia*
BSA	bushfire safety authority
DA	development application
DLUP	Development Land Use Plan
EEC	Endangered ecological community
EP&A Act	*Environmental Planning & Assessment Act 1979*
FFDI	forest fire danger index
IPA	inner protection area
LEP	Local Environmental Plan
LGA	local government area
m	metres
NCC	*National Construction Code*
OPA	outer protection area
PBP 2019	*Planning for Bush Fire Protection 2019*
RF Act	*Rural Fires Act 1997*
RFS	NSW Rural Fire Service
TBE	*Travers bushfire & ecology*

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Introduction 1

Travers bushfire & ecology has been commissioned to undertake a bushfire protection assessment for the proposed construction of a new tavern within Lot 3989 DP 1190132, Lakeside Parade Jordan Springs.

The proposed development is located on land mapped by *Penrith Council* as being bushfire prone (refer Figure 1.1). This triggers a formal assessment by Council in respect of the NSW Rural Fire Service (RFS) policy against the provisions of *Planning for Bush Fire Protection (PBP)*.

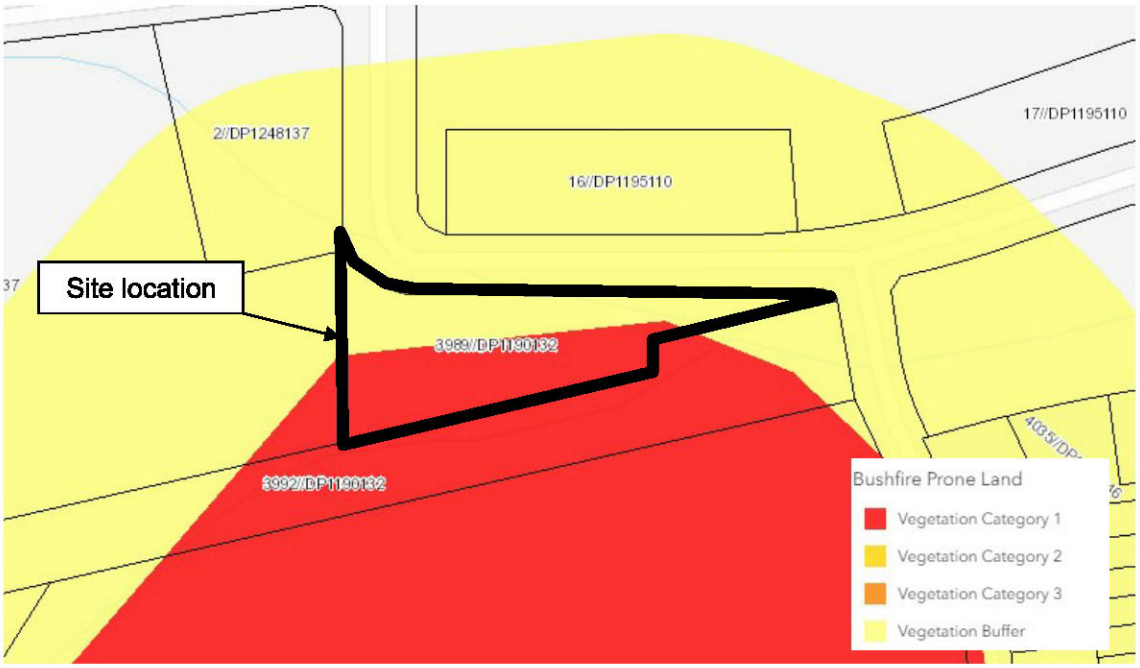


Figure 1.1 – Bushfire Prone Land Map
(source: NSW Planning Portal, 2020)

1.1 Aims of the assessment

The aims of the bushfire protection assessment are to:

- review the bushfire threat to the landscape
- undertake a bushfire attack assessment in accordance with *PBP*
- provide advice on mitigation measures, including the provision of asset protection zones (APZs), construction standards and other specific fire management issues
- review the potential to carry out hazard management over the landscape.

1.2 Project synopsis

The proposal involves the construction a new tavern and associated carpark within the western portion of Lot 3989 DP 1190132, Lakeside Parade Jordan Springs (refer Figures 1.2 - 1.4).

The proposed tavern includes a main bar / dining room, TAB, kitchen, gaming rooms, outdoor seating and smoking area, beer garden and kids play area.

Access to the development will be provided via a driveway extending from Lakeside Parade Road at the north-east corner of the site to the internal car parking area.

Schedule 1 shows the proposed development and bushfire protection measures, including APZs and bushfire construction standards.

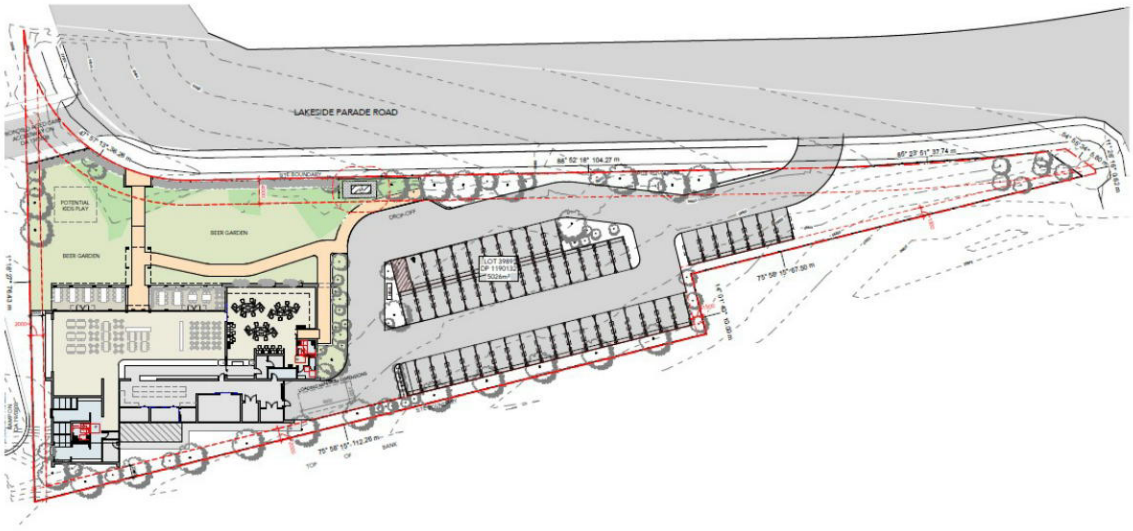


Figure 1.2 – Site Plan
(source: Team2 Architects, Project No. 930, Drawing No. SK-001, Rev. 12, dated 20.07.01)

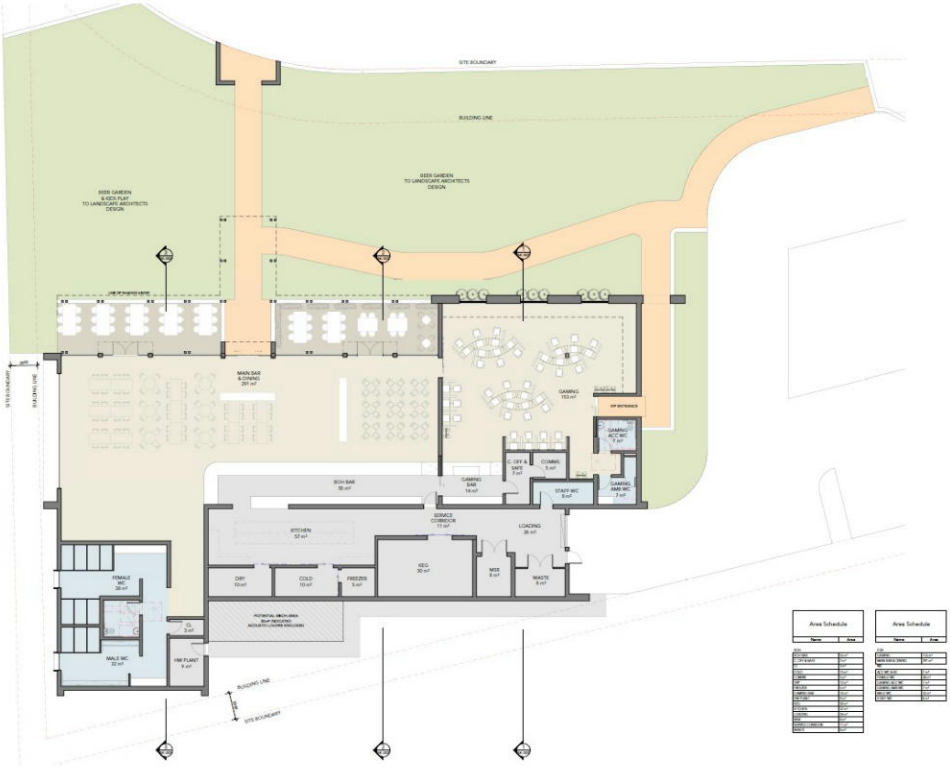


Figure 1.3– Proposed ground floor plan
(source: Team2 Architects, Project No. 930, Drawing No. SK-002, dated 20.07.01)

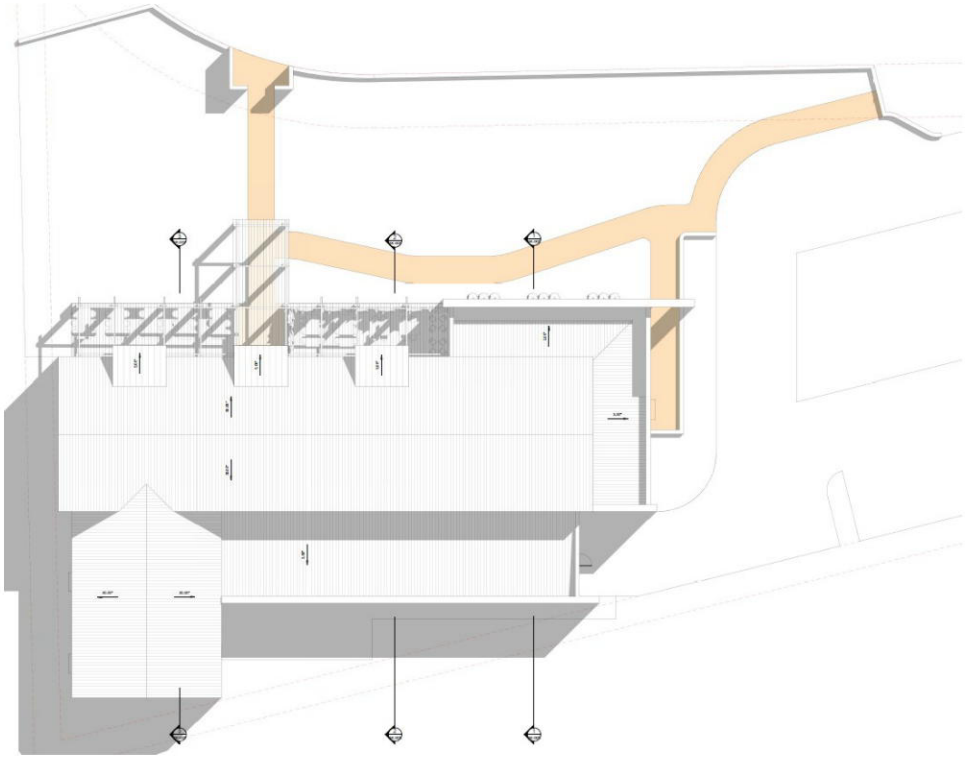


Figure 1.4– Proposed roof plan
(source: Team2 Architects, Project No. 930, Drawing No. SK-006, dated 20.07.01)

1.3 Information collation

Information sources reviewed for the preparation of this report include the following:

- Site, ground and roof plans prepared by *Team2 Architects,* dated 20.07.01
- Wianamatta Regional Park Masterplan, prepared by Environment, Climate Change & Water, dated March 2013
- *NearMap* aerial photography
- Topographical maps DLPI of NSW 1:25,000
- *Australian Standard 3959 Construction of buildings in bushfire-prone areas (AS3959)*
- *Planning for Bush Fire Protection 2019 (PBP)*

A site inspection of the proposed development site and surrounds was undertaken by Emma Buxton to assess the topography, slopes, aspect, drainage, vegetation and adjoining land use. The identification of existing bushfire measures and a visual appraisal of bushfire hazard and risk were also undertaken.

1.4 Site description

The property is located to the south-west of Lakeside Parade and Jubilee Drive intersection, Jordan Springs within the local government area (LGA) of Penrith (refer Figure 1.5).

The site supports no existing structures and is surrounded by a mixture of managed, cleared and residential land to the north and west.

The proposal is adjoined to the immediate south by a drainage corridor serviced by Penrith Council. This corridor is accessed via a 4-metre-wide road extending from Jubilee Drive. At the time of inspection, the corridor supported a mixture of managed and unmanaged grassland. The land south of the corridor within Wianamatter Regional Park, supports forest vegetation. It is noted that previous approvals for the overall masterplan have identified the drainage corridor to the south as being maintained as an APZ (refer Section 2.1 for further detail).

Figure 1.5 – Aerial appraisal
(source: NearMap, 2019)

1.5 Legislation and planning instruments

Is the site mapped as bushfire prone?	Yes
Proposed development type	Commercial development (construction of a Class 6 building – Tavern)
Does the proposal rely on an alternative solution?	Yes
Does DA need to be referred to RFS District / Team / Zone office?	Yes – as required under Division 4.3 (Section 4.14) of the *EP&A Act*
Zoning	Deferred Matter (DM)
Significant environmental features	No – the proposed development (including APZs) will not involve the removal of native vegetation.
Details of any Aboriginal heritage	No known Aboriginal sites.

1.5.1 National Construction Code (NCC) and the Australian Standard AS3959

The *NCC* is given effect through the *EP&A Act* and forms part of the regulatory environment of construction standards and building controls. The *NCC* outlines objectives, functional statements, performance requirements and deemed to satisfy provisions.

In NSW, the construction of buildings in bushfire prone areas relates to Classes 1, 2, 3, 4 and Class 9 buildings that are a special fire protection purpose (SFPP) or a Class 10a building or deck associated with the aforementioned building classes. The design and construction manual for the deemed to satisfy requirements is the Australian Standard *Construction of buildings in bushfire-prone areas 2018 (AS3959)*. These classes of buildings must therefore be constructed in accordance with *AS3959*.

The *NCC* does not provide for any bushfire specific performance requirements for commercial and industrial buildings (Classes 5-8) and, as such, *AS3959* does not apply as a set of deemed to satisfy provisions. However, compliance with AS3959 and the NASH Standard must be considered when meeting the aims and objectives of PBP.

1.5.2 Planning for Bush Fire Protection (PBP)

PBP outlines the bushfire protection measures required to be assessed for new development in bushfire prone areas. For buildings identified of Class 5 to 8 under the NCC the following objectives are to be applied in relation to access, water supply and services, and emergency and evacuation planning:

- To provide safe access to/from the public road system for firefighters providing property protection during a bush fire and for occupant egress for evacuation;
- To provide suitable emergency and evacuation (and relocation) arrangements for occupants of the development;
- To provide adequate services of water for the protection of buildings during and after the passage of bush fire, and to locate gas and electricity so as not to contribute to the risk of fire to a building; and
- Provide for the storage of hazardous materials away from the hazard wherever possible.

The general fire safety construction provisions of the NCC are taken as acceptable solutions however construction requirements for bush fire protection will need to be considered on a case-by-case basis.

Bushfire Threat Assessment 2

To assess the bushfire threat that is likely to occur, and thus affect the subject site, a review of the elements that comprise the overall threat needs to be completed. These elements include the potential hazardous landscape that may affect the site, the subsequent extent of the bushfire risk and the expected level of vulnerability that is likely to affect occupants and / or fire fighters.

2.1 Hazardous fuels

PBP guidelines require the identification of the predominant vegetation formation in accordance with David Keith (2004) to determine APZ distances for subdivision developments. The hazardous vegetation is calculated for a distance of at least 140m from a proposed building envelope.

The vegetation posing a bushfire hazard to the site consists of the:

- Unmanaged grassland located within the drainage corridor to the immediate south of the proposed tavern facility (refer Photo 1). This land is owned and managed by Penrith Council and is accessed by a 4m wide service road extending from Jubilee Drive to the east which runs parallel to the site's southern boundary.

  A Bushfire Protection Assessment report was prepared by *Ecological Australia* in March 2014 for the broader subdivision of the Village Centre 2 (refer Figure 2.1). This report states that '*the drainage corridor has been designed to comply with an APZ through the mass planting of native grasses and sparse tree planting. The future plan of management for the riparian corridor will stipulate the management regime to keep the grasses consistent with acceptable APZ fuel loads*'.

  Penrith Council is responsible for vegetation management along this corridor in accordance with a plan of management. At the time of site inspection this corridor supported a grass height in excess of the 100mm required for APZ compliance purposes. For the purpose of this assessment the existing grassland threat has been acknowledged whilst recognising that Council are responsible of the ongoing maintenance / mowing of the grassland.

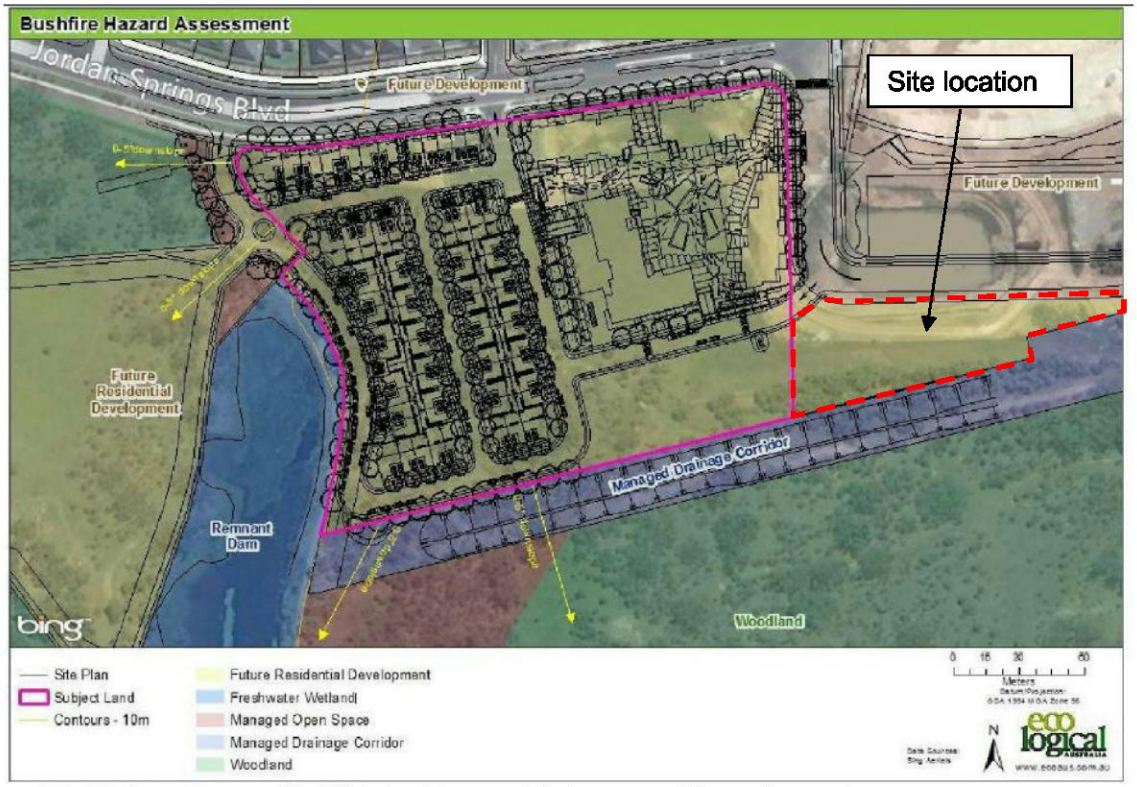


Figure 2.1 – Managed drainage corridor to the south
(source: Ecological Australia, 2014)

Photo 1 – Grassland associated with Council easement (including access road)

- Forest located beyond the drainage corridor to the south of the site (refer Photo 2). This vegetation is listed as protected in accordance with the Wianamatta Regional Park Masterplan;

Photo 2 – Forest located within Wianamatta Regional Park

- Grassland / freshwater wetland vegetation associated with the stormwater easement over 31m to the west and;
- Unmanaged grassland to the north-west (refer Photo 3).

Photo 3– Unmanaged grassland to the north-west (future development)

The remaining land, within 100m of the site, is not considered a bushfire threat as it consists of a mixture of cleared / managed land.

2.2 Effective slope

The effective slope is assessed for a distance of up to 100m. Effective slope refers to that slope which provides the most effect upon likely fire behaviour. A mean average slope may not in all cases provide sufficient information such that an appropriate assessment can be determined.

The effective slope within the hazardous vegetation is outlined within Table 2.1.

2.3 Bushfire attack assessment

A fire danger index (FDI) of 100 has been used to calculate bushfire behaviour on the site based on its location within the Greater Sydney region. Table 2.1 provides a summary of the bushfire attack assessment.

Note: There are no predetermined minimum APZ requirements for commercial development under *PBP*. The distances provided in Column 5 (of Table 2.1) will provide appropriate defendable space for the proposed tavern facility. The defendable space is designed to allow fire fighters room and safety to fight fires.

Table 2.1 – Bushfire attack assessment

Aspect	Vegetation formation within 140m of development	Effective slope in hazard vegetation	Minimum APZ recommended to avoid flame contact	APZ provided	BAL level recommended (Refer Section 3.2)
South	Grassland	0-5^{0D}	9m	5m (including 4m wide Council service road) (refer Note 1)	BAL 29
	Forest	Level	24m	26m	
North-west	Grassland	Level	8m	39m	
West	Grassland / Freshwater wetland	0-5^{0D}	5m	31m	
North & east	Managed / cleared	N/A	N/A	>100m	

Note 1- The APZ extends outside of development site within adjoining Lot 1037 DP 1149525 (south) to include the existing 4m wide service road. This corridor is owned by Penrith Council and is managed as a drainage corridor. During the time of inspection this corridor was 'unmanaged' however Penrith Council are responsible for maintenance / mowing of this land. Consultation with Penrith Council is to occur to ensure the ongoing maintenance / mowing of this land.

Specific Protection Issues 3

3.1 Asset protection zones (APZs)

APZs are areas of defendable space separating hazardous vegetation from buildings.

The APZs provided for the commercial development comply with the following aims and objectives of *PBP.* These include:

1. Afford occupants of any building adequate protection from exposure to a bushfire.
2. Provide for a defendable space to be located around buildings.
3. Provide appropriate separation between a hazard and buildings which, in combination with other measures to prevent material ignition.
4. Provide for ongoing management and maintenance of bushfire protection measures, including fuel loads in the APZ.

In accordance with *PBP,* appropriate defendable space, coupled with the provision of access and building construction requirements has been provided to comply with the aims and objectives listed above.

3.2 Building protection

The *NCC* does not provide any bushfire specific requirements for Classes 5-8 industrial / buildings. The general fire safety construction provisions are taken as acceptable solutions.

PBP recommends that bushfire construction standards for Classes 5-8 buildings should be considered on a case by case basis. Bushfire construction recommendations are dependent on the level of bushfire risk and the provision of adequate access opportunities.

The bushfire attack assessment (as calculated within Section 2.3 of this report) shows the building may be exposed to flame contact if the grassland to the south is not maintained on consistent basis. As a result it is recommended that the applicant contact Council to resume maintenance of the corridor.

The building and outdoor seating area is to comply with BAL 29 as outlined in *AS3959 Construction of buildings in bushfire prone areas (2009)* or *NASH Standard* (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Areas - 2014* as appropriate, with additional construction requirements as listed within *PBP*.

3.3 Hazard management

APZs are required to be managed as an inner protection area (IPA) in accordance with the NSW RFS guidelines *Standards for Asset Protection Zones* (RFS, 2005), with landscaping design to comply with Appendix 4 of *PBP*. Appendix 2 provides maintenance advice for vegetation within the APZ.

3.4 Access for fire-fighting operations

Access to the development will be provided via a 5.5m wide driveway extending from Lakeside Parade in the north-east. This driveway forms an internal road network and provides car parking for up to seventy (70) vehicles together with a vehicle drop-off bay and truck loading area adjacent to the tavern.

The proposed access complies with the aims and objectives of *PBP*.

3.5 Water supplies

The fire hydrant system is to comply with the following requirements;

- fire hydrant spacing, sizing and pressures comply with *AS2419.1 (2005).*
- hydrants are not placed within any road carriageway.
- all above ground water and gas pipes external to the building are metal, including and up to taps.

The proposal must comply with the above requirements.

3.6 Gas supplies

Gas services are to comply with the following requirements:

- Reticulated or bottled gas is installed and maintained in accordance with *AS/NZS 1596:2014* and the requirements of relevant authorities, and metal piping is used;
- All fixed gas cylinders are kept clear of all flammable materials to a distance of 10m and shielded on the hazard side;
- Connections to and from gas cylinders are metal;
- Polymer-sheathed flexible gas supply lines are not used; and
- Above-ground gas service pipes are metal, including and up to any outlets.

The proposal must comply with the above requirements.

3.7 Emergency and evacuation planning

Table 3.6 outlines the required performance criteria for the proposal's emergency procedures

Table 3.1 – Performance criteria for emergency and evacuation planning

Performance criteria	Acceptable solutions	Acceptable solution	Performance solution	Comment
A bush fire emergency and evacuation management plan is prepared.	A bush fire emergency management and evacuation plan is prepared consistent with the: • The NSW RFS document: *A Guide to Developing a Bush Fire Emergency Management and Evacuation Plan*	☑	☐	An evacuation plan will be prepared
Note: A copy of the Bush Fire Emergency Evacuation Plan should be provided to the Local Emergency Management Committee for its information prior to occupation of the development.				

Performance criteria	Acceptable solutions	Acceptable solution	Performance solution	Comment
Suitable management arrangements are established for consultation and implementation of the emergency and evacuation plan.	An Emergency Planning Committee is established to consult with residents (and their families in the case of aged care accommodation and schools) and staff in developing and implementing an Emergency Procedures Manual.	☑	☐	Will be a condition of consent
	Detailed plans of all emergency assembly areas including 'on-site' and 'off-site' arrangements as stated in *AS 3745* are clearly displayed, and an annual (as a minimum) trial emergency evacuation is conducted.			

Conclusion & Recommendations

4

4.1 Conclusion

A bushfire protection assessment has been undertaken for the construction of a tavern within Lot 39899 DP 119132, No. 10 Lakeside Parade, Jordan Springs.

The assessment found that bushfire can potentially affect the proposed tavern from the grassland and forest vegetation located to the south of the development resulting in possible flame, ember and radiant heat attack.

This assessment has concluded that the proposed development will provide compliance with the aims and objectives of *PBP*, with the implementation of the following combination of bushfire protection measures:

- The tavern will comply with A*S3959 (2018) Construction of buildings in bushfire prone areas* – bushfire attack level (BAL) 29 refer Schedule 1 attached;
- The outdoor seating area and associated roofing will be constructed to comply with BAL 29. Fencing is to be non-combustible;
- Landscaping within the site is to ensure compliance with the requirements for an asset protection zones (APZs) and provide for a defendable space for firefighting operations
- Consultation with Penrith Council is to occur to ensure the ongoing maintenance of the drainage corridor to the south of the site;
- Water and gas supply in compliance with the acceptable solutions outlined in *PBP 2019*; and
- A bushfire emergency evacuation plan is to be prepared prior to building occupation.

The following recommendations are provided to ensure that the development is in accord with or greater than the requirements of *PBP*.

4.2 Recommendations

Recommendation 1 - The development is as generally indicated on the attached Schedule 1 – Plan of Bushfire Protection Measures.

Recommendation 2 - The entire property (landscaping) is to be managed as an inner protection area (IPA) as outlined within Section 4.1.3 and Appendix 5 of *Planning for Bush Fire Protection 2006* and the NSW RFS document *Standards for asset protection zones*.

Recommendation 3 - Consultation with Penrith Council is to occur to ensure the ongoing maintenance of the drainage corridor to the south of the site in accordance with a Plan of Management.

Recommendation 4 - Building construction standards are to be applied in accordance with BAL 29 (Tavern and outdoor seating area) as outlined in *AS3959 Construction of buildings in bushfire prone areas (2009)* or *NASH Standard* (1.7.14 updated) *National Standard Steel Framed Construction in Bushfire Areas - 2014* as appropriate, with additional construction requirements as listed within *PBP*.

Recommendation 5 - Fencing is to be non-combustible.

Recommendation 6 - Water, electricity and gas supply is to comply with Section 5.3.3 of *Planning for Bush Fire Protection 2019.*

Recommendation 7 - A Bushfire Emergency Management and Evacuation Plan is to be prepared to comply with Section 6.8.4 of *PBP.*

REFERENCES

Australian Building Codes Board (2010) – *Building Code of Australia*, Class 1 and Class 10 Buildings Housing Provisions Volume 2

Chan, K.W. (2001) – *The suitability of the use of various treated timbers for building constructions in bushfire prone areas*. Warrington Fire Research

Councils of Standards Australia AS3959 (2009) – *Australian Standard Construction of buildings in bush fire-prone areas*

Keith, David (2004) – *Ocean Shores to Desert Dunes – The Native Vegetation of New South Wales and the ACT*. The Department of Environment and Climate Change

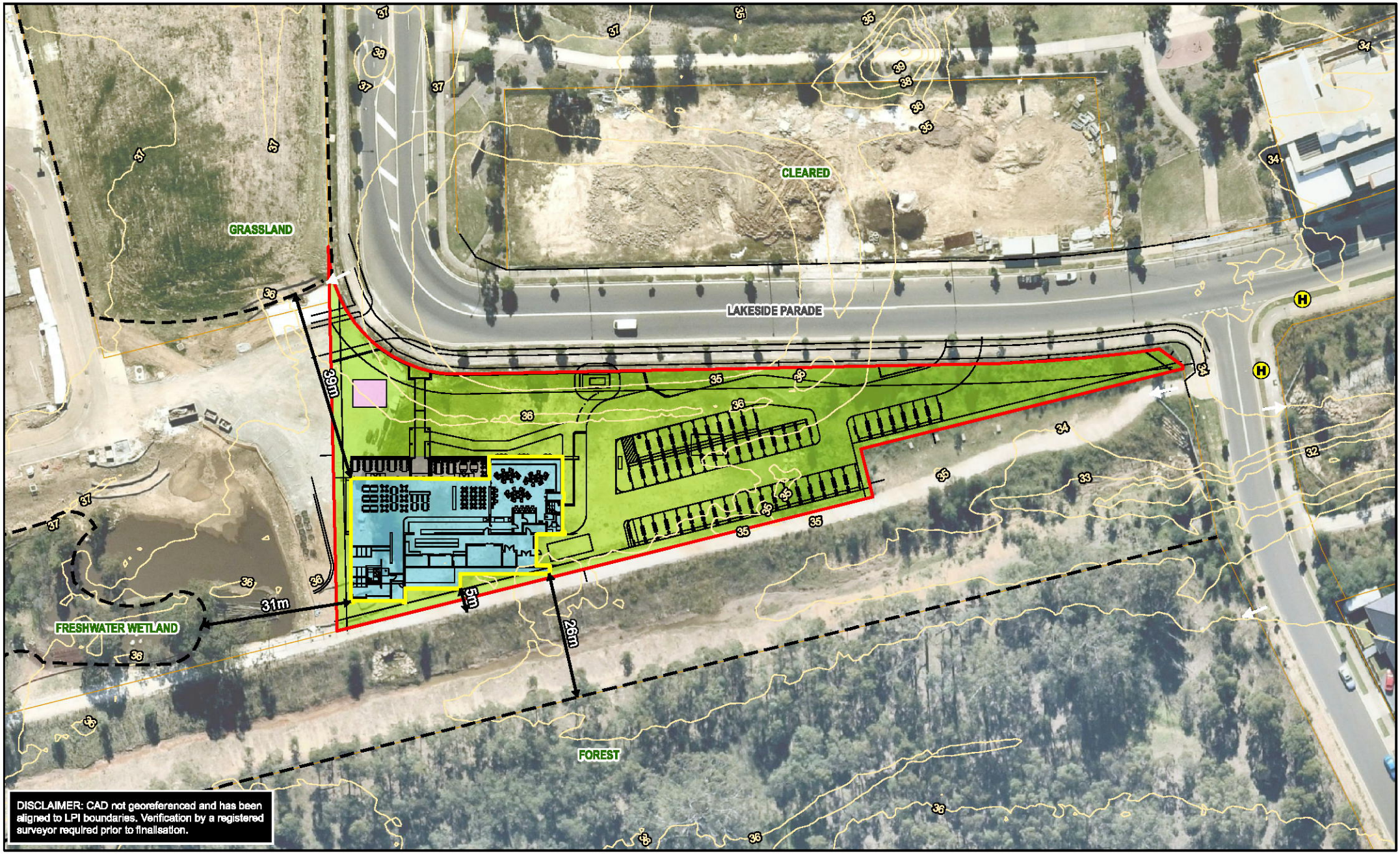
Rural Fire Service (2006) - *Planning for bushfire protection – a guide for councils, planners, fire authorities and developers*. NSW Rural Fire Service

Rural Fire Service (2006) - Bushfire Attack Software on RFS web site

Tan, B., Midgley, S., Douglas, G. and Short (2004) - *A methodology for assessing bushfire attack*. RFS Development Control Service

Bushfire Protection Measures

S1



Legend

Site boundary (soure:LPI)
Edge of vegetation
Existing hydrant
Asset Protection Zone (APZ)
Proposed Infrastructure
Tavern
Outdoor Seating
Play area
Bushfire Construction Standards AS3959 (2018)
BAL 29

* Please refer to additional construction requirements for BAL levels which are contained in section 7.5 of *'Planning for Bushfire Protection'* (2019).

Aerial source: Nearmap

0 15 30 m

Disclaimer: The mapping is indicative of available space and location of features which may prove critical in assessing the viability of the proposed works. Mapping has been produced on a map base with an inherent level of inaccuracy, the location of all mapped features are to be confirmed by a registered surveyor.

PROJECT & MXD REFERENCE	DATE & ISSUE NUMBER	SCALE & COORDINATE SYSTEM
LakesidePde, JordanSprings 18FDC08_BF001_	9/07/2020 Issue 1 SC	1:1,000 @ A4 GDA 1994 MGA Zone 56

TITLE

Schedule 1 - Bushfire Protection Measures

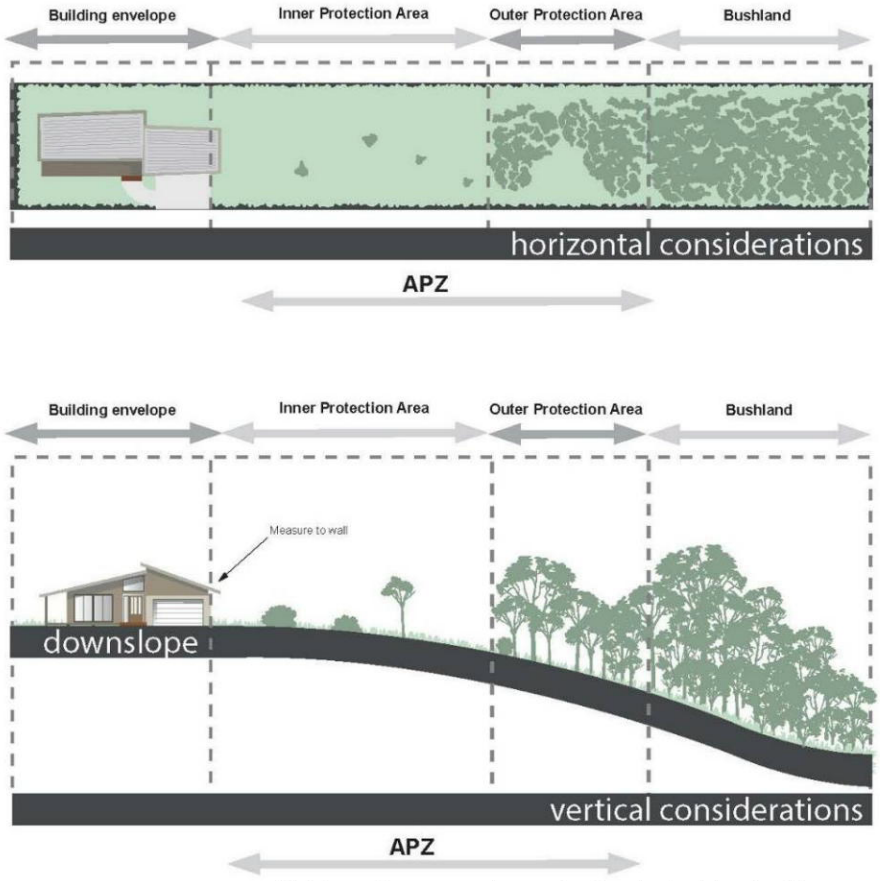
Document Path: N:\GIS STORAGE\N Drive\18FDC08_LakesidePde_JordanSprings\MXDs\18FDC08_BF001_.mxd

Travers bushfire & ecology

Management of Asset Protection Zones A1

The RFS provides basic advice in respect of managing APZs through documents such as, *Standards for Asset Protection Zones* (RFS, 2005), with landscaping to comply with Appendix 5 of *PBP*.

The APZ generally consists of two subordinate areas, an inner protection area (IPA) and an outer protection area (OPA). The OPA is closest to the bush and the IPA is closest to the dwellings. The property is to be managed to IPA standards only. A typical APZ is graphically represented below:



APZs and progressive reduction in fuel loads (Source: PBP, 2019)

Note: Vegetation management as shown is for illustrative purposes only. Specific advice is to be sought regarding vegetation removal and retention from a qualified and experienced expert to ensure APZs comply with the RFS performance criteria.

The following provides maintenance advice for vegetation within the IPA. The APZ is to be maintained in perpetuity and should be undertake regularly, particularly in advance of the bushfire season.

Inner protection area (IPA)
Fuel loads within the IPA are to be maintained so it does not exceed 4t/ha.

Trees are to be maintained to ensure;

- canopy cover does not exceed 15% at maturity;
- trees (at maturity) do not touch or overhang the building;
- lower limbs should be removed up to a height of 2m above ground;
- tree canopies should be separated by 2 to 5m; and
- preference should be given to smooth barked and evergreen trees.

Shrubs are to be maintained to ensure;

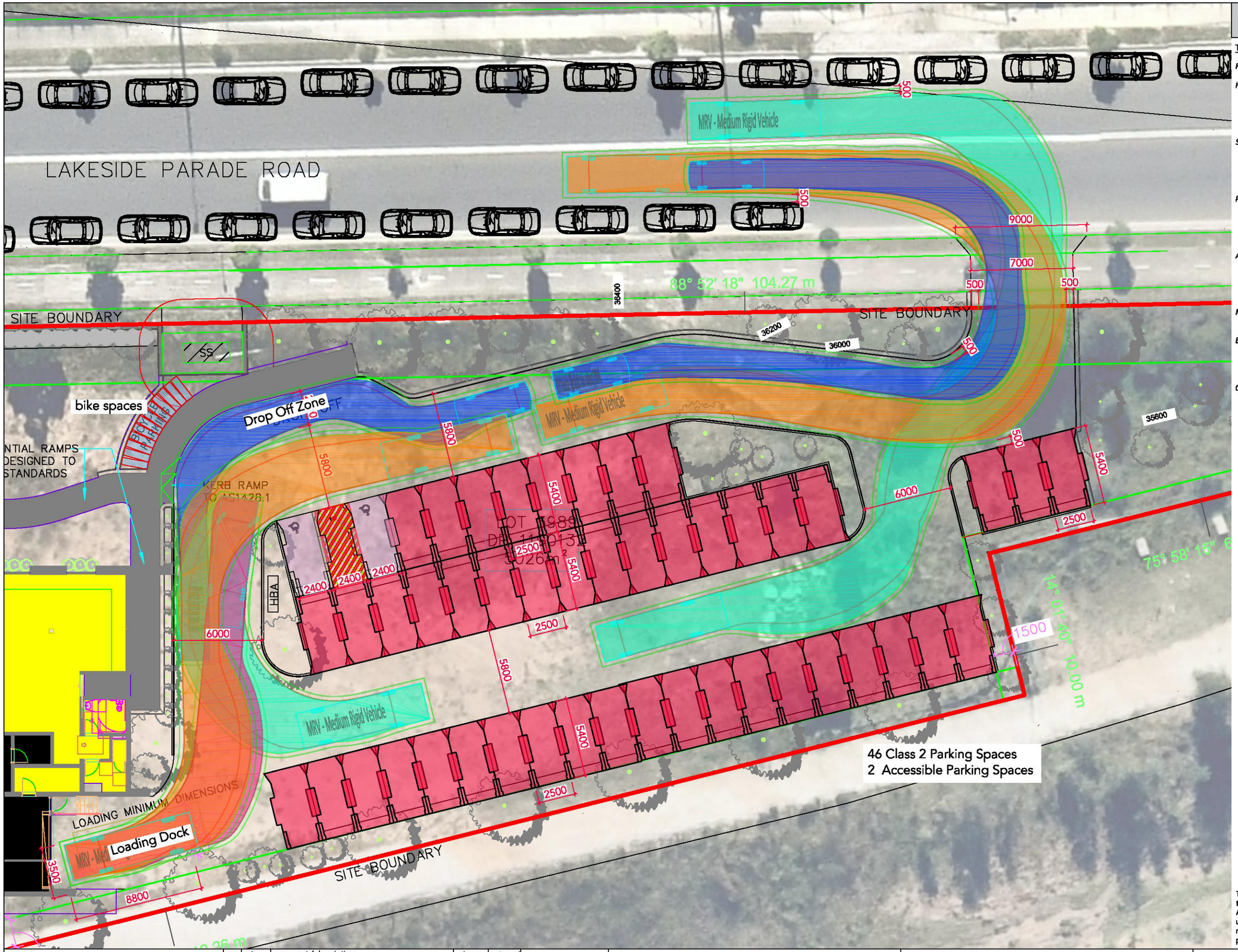
- create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings;
- shrubs should not be located under trees;
- shrubs should not form more than 10% of ground cover; and
- clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of vegetation.

Grass is to be maintained to ensure:

- grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and
- leaves and vegetation debris should be removed (litter fuel within the IPA should be kept below 1cm)

General advice for landscaping is provided below:

- Suitable impervious areas being provided immediately surrounding the building such as courtyards, paths and driveways;
- Restrict planting in the immediate vicinity of the building which may over time and if not properly maintained come into contact with the building;
- When considering landscape species consideration needs to be given to estimated size of the plant at maturity;
- Avoid species with rough fibrous bark, or which retain/shed bark in long strips or retain dead material in their canopies;
- Use smooth bark species of trees species which generally do not carry a fire up the bark into the crown;
- Avoid planting of deciduous species that may increase fuel at surface / ground level (i.e. leaf litter);
- Avoid climbing species to walls and pergolas;
- Locate combustible materials such as woodchips / mulch, flammable fuel stores away from the building;
- Locate combustible structures such as garden sheds, pergolas and materials such timber garden furniture way from the building; and
- Use of low flammability vegetation species.



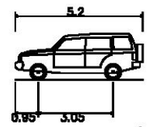
comments

A3

TYPICAL

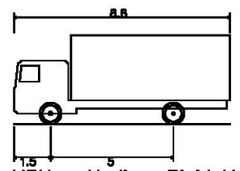
Please note the following compliance requirements:

Height Clearance:	**2.2m** (min) throughout all areas of the car park accessible to vehicles and bicycles. **2.5m** above accessible and shared bays **X** wherever access is required for a refuse vehicle (and safety clearance envelope)
Sight Splays:	Visibility splays in the form of a **2.5m x 2m** right-angled triangle to be provided (AS2890.1). Ensure design avoids visual obstructions in sight splay (i.e. dense landscaping, tall fencing/walls etc.)
Parking Spaces:	The parking envelopes shown, must be kept clear of all physical obstructions, including height clearance reductions. Ensure that grades within the parking module do not exceed 1:20 (1:40 for accessible bays).
Accessible Spaces:	To be designed in accordance with AS2890.6. i.e, standard parking space with adjacent shared bay (2.4m x 5.4m), to be installed as per AS2890.6 requirements (bollard and markings).
Motorcycle Parking:	Motorcycle bays to be designed as a 2.5m x 1.2m envelope (AS2890.1).
Bicycle Parking:	Bicycle spaces are to allow for a envelope of 500mm by 1800mm, with an aisle width of 2000mm for locker storage, or 1500mm for racks.
Control Measures:	Please note recommended control measures, including line markings, signage, bollards, convex mirrors, lights etc.



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m



MRV – Medium Rigid Vehicle

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	3.633m
Min Body Ground Clearance	0.428m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10.000m

The turning paths illustrated in this drawing have been prepared using the Autotrack vehicle modelling software in conjunction with AutoCAD. The vehicle model was prepared by Analytico Pty Ltd based upon vehicle data provided by Austroads. While this modelling represents a conservative assessment of the vehicles ability, it is not possible to account for all vehicle types/characteristics or driver ability.

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rev	date	comment / description	drawn	reviewed
7	16/11/20	Updated base Plan	SW	AM
6	29/10/20	Response to Council Comments	SW	AM
5	17/07/20	Final	SW	AM
4	08/07/20	Bike spaces added	SW	AM
3	07/07/20	For Review	SW	AM
2	26/06/20	For Review	SW	AM
1	25/06/20	For Review	SW	AM

project: Jordan Springs Neighbourhood Tavern

drawing title: Car Park Assessment

client	FDC Construction and Fit Out
drawing #	ptc-001
project #	2819
scale	1 : 500

rev 7

Precinct Plan and Development Control Strategy

Western Precinct

St Marys

Submitted to
Penrith City Council
On behalf of Maryland Development Company

May 2009 ■ 07251

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JBA Urban Planning Consultants Pty Ltd operates under a Quality Management System. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

This report has been prepared by: Oliver Klein

Signature  Date 29/05/09

This report has been reviewed by: Bernard Gallagher

Signature  Date 29/05/09

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1.0 Part 1 – Introduction

This Plan is known as the Western Precinct Plan.

It has been prepared by JBA Urban Planning Consultants Pty Ltd on behalf of Maryland Development Company Pty Ltd in accordance with the requirements of Sydney Regional Environmental Plan 30 - St Marys (SREP 30) and the St Marys Environmental Planning Strategy 2000 (the St Marys EPS).

The Precinct Plan applies to all land within the Western Precinct, St Marys. It is a key part of the planning process established by the NSW Government for the St Marys site.

The site is owned by St Marys Land Limited and is being jointly developed by ComLand Limited and Lend Lease Development Pty Limited through their Joint Venture company, Maryland Development Company.

The St Marys site is located approximately 45km west of the Sydney CBD, 5km north-east of the Penrith City Centre and 12km west of the Blacktown City Centre. The main western railway line is located approximately 2.5km south of the site. The Great Western Highway is located another 1km south and the M4 Motorway a further 1.5km south. Refer to **Figure 1** below.

The St Marys site has an area of 1,545 ha and stretches approximately 7km from west to east and 2km from north to south. It is bounded by Forrester Road and Palmyra Avenue in the east, The Northern Road in the west, Ninth Avenue and Palmyra Avenue in the north and the Dunheved Industrial Area, Dunheved Golf Club and the suburbs of Cambridge Gardens, Werrington Gardens and Werrington County in the south.

The overall site, which has been rezoned for a variety of uses, comprises 6 development "precincts", namely the Western Precinct, Central Precinct, North Dunheved Precinct, South Dunheved Precinct, Ropes Creek Precinct and Eastern Precinct. The boundaries of the precincts within the St Marys site are shown in **Figure 2**.

The current status of all precincts is as follows:

- Eastern Precinct:
  - Declared a release area by the Minister Assisting the Minister for Infrastructure and Planning on 16 June 2003;
  - Precinct Plan adopted by Blacktown City Council (BCC) on 4 February 2004;
  - Being developed.
- North and South Dunheved Precincts:
  - Declared a release area by the Minister Assisting the Minister for Infrastructure and Planning on 16 June 2003;
  - Precinct Plan adopted by Penrith City Council (PCC) on 11 December 2006 and by BCC on 12 January 2007;
  - First DAs approved by BCC and PCC;
  - Development to commence shortly.
- Ropes Creek Precinct:
  - Declared a release area by the Minister for Planning on 29 September 2006;
  - Precinct Plan lodged with BCC.

- Central Precinct:
  - Declared a release area by the Minister for Planning on 29 September 2006.
  - Precinct Plan adopted by PCC on 23 March 2009.
- Western Precinct:
  - Declared a release area by the Minister for Planning on 29 September 2006.
  - Precinct Plan adopted by PCC on 23 March 2009.

1.1 The Western Precinct

The Western Precinct is bounded by Ninth Avenue and rural residential development in the suburb of Llandilo to the north, The Northern Road and residential development in Cranebrook to the west, and land zoned for Regional Park to the south and east. The precinct has a total area of approximately 229 ha, including an existing education establishment (Xavier College) in the north-western portion of the precinct fronting Ninth Avenue.

Following the gazettal of Amendment No. 2 of SREP 30 in February 2009, the Western Precinct is zoned entirely Urban. Land zoned Urban is intended to accommodate primarily residential uses, with limited non-residential uses such as local retail and commercial uses.

Under Amendment No.2 the previous 28ha Employment Zone in the Western Precinct was relocated into a consolidated Employment Zone in the Central Precinct.

1.2 Proposed Development

The proposed development of the Western Precinct entails:

- A Village Centre Character Area, comprising a mix of retail, commercial, community, open space and residential uses, in the southern part of the precinct;
- Predominantly residential development in the remainder of the precinct;
- Construction of roads, including external connections to The Northern Road and Ninth Avenue and east to the Central Precinct; and
- Provision of local open space, riparian corridors and stormwater basins.

It is anticipated that the Western Precinct will accommodate approximately 2,450 dwellings and a residential population in the order of 6,400.

The proposed development is described in detail in Part 4 of this Plan.

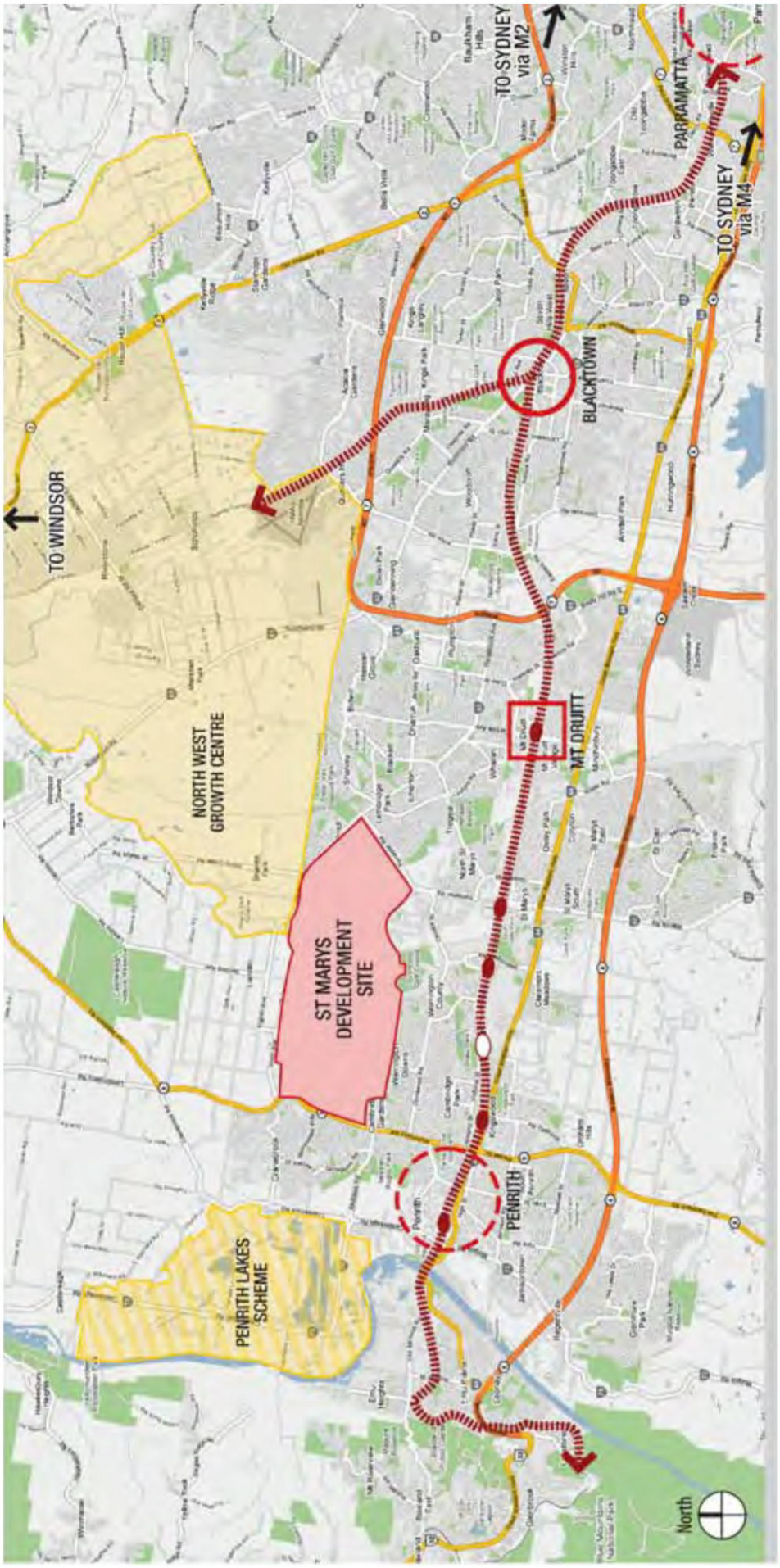


Figure 1 – Site Location Plan

Figure 2 – St Marys site and Precincts

1.3 Purpose and Aims

The purpose of the Precinct Plan is to establish planning strategies and proposals, development principles and development controls to be administered by Penrith City Council (PCC) to guide the future development of all land within the Western Precinct in an integrated manner. It will form part of the regulatory planning framework for Council to assess and make decisions about the development of the Western Precinct, including requirements for physical infrastructure, public domain and buildings, and environmental management.

The Precinct Plan provides a vision and framework for the future development of the land and identifies how development can occur in a sustainable and environmentally responsible manner. It will ensure that future development within the Western Precinct achieves the aims, objectives and requirements of SREP 30, the St Marys EPS and the St Marys Employment Development Strategy (EDS).

Parts 3, 4 and 5 of the Precinct Plan include proposals for and provide information about the following for the Western Precinct:

- Distribution of major land uses and phasing of development;
- Access for public transport, pedestrians, bicycles and vehicles;
- An indicative subdivision road layout;
- Location and function of public facilities and open space;
- Analysis and management of potential impacts on the physical and environmental characteristics of the land, including significant native flora and fauna habitat and soil characteristics;
- Analysis and management of potential impacts on adjoining land within the Regional Park zone;
- Identification and management of Aboriginal and non-Aboriginal heritage;
- Identification and management of remnant contamination risk, drainage and flooding issues;
- Infrastructure requirements;
- Identification of design principles developed from an analysis of the site's characteristics; and
- Guidelines for the design, siting and construction of buildings.

A key focus of the Precinct Plan is the promotion of innovative development that ensures environmental, social and economic sustainability. This approach affects all levels of planning and design and will shape the growth of this new precinct.

The Precinct Plan aims to ensure the efficient, effective and flexible delivery of future development as an integral component of this overall development approach.

Part 5 of the Precinct Plan is referred to as the Western Precinct Development Control Strategy (DCS), which sets out site specific development guidelines and controls for the Western Precinct.

1.4 Metropolitan Strategy and draft North West Subregional Strategy

Penrith is identified as one of three Regional Cities under the NSW Department of Planning's Metropolitan Strategy. Regional Cities are to provide a full range of business, government, retail, cultural, entertainment and recreational activities. They are also a focal point for regional transport and jobs.

Under the draft North West Subregional Strategy, Penrith is the primary centre within the North West Subregion. Significant growth is planned for this Regional City, including 10,000 new jobs and 10,000 new residents within the centre. Overall, the Penrith LGA is expected to contribute 25,000 additional dwellings and 28,000 additional jobs in the period to 2031.

1.5 Vision for the City of Penrith

PCC's vision for the City of Penrith is[1]:

> *"...one of a sustainable and prosperous region with a harmony of urban and rural qualities and a strong commitment to environment protection and enhancement. It would offer both the cosmopolitan and cultural lifestyles of a mature city and the casual character of a rural community. In pursuing this vision, Council has a long term goal to ensure new areas provide well planned, serviced and cohesive living and working environments."*

PCC's Sustainability Blueprint for Urban Release Areas June 2005 incorporates 10 key principles for sustainable design. These key principles have been considered in the preparation of the Precinct Plan:

- **Principle 1**: Value the Site Attributes – preserve ecosystems, protect biodiversity, air, water, and conserve heritage;
- **Principle 2**: Create Localised Landscapes and Quality Public Domains – based on the indigenous landscape attributes;
- **Principle 3**: Create Communities – not just housing estates;
- **Principle 4**: Create Employment – promote the economic growth of the City and minimise the need for commuting;
- **Principle 5**: Save Water – Water Sensitive Urban Design;
- **Principle 6**: Save Energy and Greenhous Gases – 'smart-lot' design;
- **Principle 7**: Maximise Liveability & Longevity – design for durability and adaptability;
- **Principle 8**: Reduce Resource Consumption – energy, land, water and materials;
- **Principle 9**: Minimise Waste – return, reuse, recycle;
- **Principle 10**: Build-in Community Safety & Crime Prevention Measures – thoughtful design of the public domain.

1 Penrith City Council Sustainability Blueprint for Urban Release Areas June 2005

1.6 Western Precinct Development Vision

The vision for the Western Precinct is intended to shape the planning, design, and management of the future development.

PCC and Maryland Development Company Pty Ltd have developed the following shared vision for the development of the Western Precinct:

> *The St Marys Development will be a cohesive community that meets the needs and aspirations of all stakeholders. It will be an integrated, thriving and vibrant place centred on the core elements of learning, community interaction and engagement, housing diversity, enterprise and sustainability. It will capitalise on connections with nature and open space, respecting the natural and rural qualities of the region.*

Key elements

The key elements driving the shared vision are:

- Learning – access to whole of life learning;
- Diversity – mixture of uses and housing;
- People Focused – safe, accessible, community centric, lifestyle driven;
- Employment – employment for local residents providing 21st Century jobs, enterprise capability;
- Innovation – creative, distinctive, functional and responsive;
- Collaboration – partnership and integration;
- Sustainability – a holistic approach to social, economic and environmental outcomes, consistent with Council's 'Sustainability Blueprint for Urban Release Areas';
- Delivery – timely delivery of facilities to meet the needs of the community; and
- Design – provision of safe, well-designed and high quality urban environments that foster a cohesive community.

Value and Place Attributes

The value and place attributes for the Western Precinct development are:

- A real place where you feel you belong and can contribute to the life of the community;
- A planned community that features places and spaces for today and tomorrow's needs;
- A walkable place where you can walk or cycle safely to school, work and other destinations – a place that caters for personal mobility choice, regardless of age or level of ability;
- A place where people of all ages and abilities can gather and access community facilities;
- A vibrant place with a village heart that engenders community spirit;
- A place that integrates with, and builds links to surrounding communities;
- A natural place where quality parklands maximise opportunities for usable green space;
- A healthy and active community where there is access to quality facilities for social interaction and active and passive recreation for all people with diverse abilities;

- A learning place for people of all ages where the community can grow and prosper;
- A place that offers real housing choice incorporating high quality urban design to meet market needs;
- A place where enterprise activity adds value to the workers and residents;
- A place connected by contemporary telecommunication infrastructure; and
- A place that respects the natural environment and encourages community participation in its upkeep and maintenance.

1.7 Land to which the Precinct Plan applies

This Precinct Plan applies to all the land in the St Marys Western Precinct as identified in SREP 30. Whilst the existing education establishment fronting Ninth Avenue (Xavier College) is included within the Precinct, the provisions of this Precinct Plan do not seek to alter or change the development and use of that site. The purpose of this Precinct Plan is to primarily cater for change and the development of the remaining land within the Precinct consistent with the legislative framework.

The Western Precinct has a total area of approximately 229 hectares and is located within the City of Penrith. The boundaries of the Precinct are shown in **Figure 2.** Whilst the Precinct Plan deals specifically with land in the Western Precinct, planning for this area has also taken into account:

- The relationship of the future development to the future Regional Park lands located to the south and east and to Xavier College;
- Relationship to The Northern Road and existing residential development to the west in Cranebrook;
- Relationship to Ninth Avenue and existing rural residential development to the north in Llandilo;
- Opportunities and constraints presented by the other precincts; and
- Future integration of the Western Precinct with the balance of the St Marys site and existing surrounding development.

It is noted that any future development within the Regional Park (i.e. outside the boundaries of the Western Precinct) is subject to determination through the preparation of a Regional Park Plan of Management by the Department of Environment and Climate Change (DECC). DECC has been consulted in the preparation of this Precinct Plan.

1.8 Land Ownership

The land to which the Precinct Plan applies is owned by St Marys Land Limited and is being jointly developed by ComLand Limited and Lend Lease Development Pty Limited through their Joint Venture company, Maryland Development Company.

1.9 Date of Adoption

The Western Precinct Plan was adopted by Penrith City Council on 23 March 2009.

1.10 How to use the Precinct Plan

The Precinct Plan comprises 2 Volumes consisting of written information, maps and diagrams containing provisions illustrating a proposed pattern of development and development controls for the land within the Precinct.

Volume 1

Volume 1 of the Precinct Plan is divided into 5 main parts:

Part 1: Introduction: contains background information and provides an overview of the structure of the document.

Part 2: Planning Framework: provides an overview of the statutory planning context for the preparation and adoption of the Precinct Plan, and for the future development of the Western Precinct.

Part 3: Site Characteristics: identifies the key planning issues, opportunities and constraints that have informed preparation of the Precinct Plan and development of the Precinct Framework Plan.

Part 4: Framework Plan & Environmental Management Strategies: describes the Framework Plan for the Western Precinct. The Framework Plan conceptually illustrates how the proposed development of the Western Precinct will respond to the development principles identified in Part 4.

This Part comprises a series of plans and proposals for, and accompanying explanatory notes relating to, the following matters:

- Framework Plan
- Urban Structure and Major Land Uses;
- Future Character Areas;
- Subdivision Layout Principles;
- Phasing of Development;
- Access and Movement;
- Conservation of Natural Values;
- Landscape and Open Space Network;
- Bushfire Measures;
- Water Cycle and Soils;
- Efficient Resource Use Strategy;
- Cultural Heritage;
- Infrastructure and Services; and
- Community Facilities and Services

This part also incorporates key recommended outcomes, performance objectives, management measures and planning provisions contained within the management plans and strategies that have been prepared to provide the framework for the long term management of the site's environmental issues. The detailed management plans and strategies, which will be used to guide future development, are contained in Volume 2 of the Precinct Plan.

Part 5: Development Control Strategy: contains specific objectives and development guidelines/controls for subdivision design, the design, layout and siting of buildings, and environmental management.

The DCS is the section that will ultimately be used by PCC as the basis against which to assess all future Development Applications (DAs) within the Western Precinct. It is divided into 3 sub-sections: A – Urban Structure and Subdivision; B - Built Form Housing; and C - Non Residential Built Form.

The DCS will be reviewed by Maryland Development Company in conjunction with PCC at minimum five year intervals.

Appendix A of the Precinct Plan:

- Identifies Council development control plans (DCPs) which are relevant to land uses or activities which are permitted under SREP 30 within the precinct;
- Indicates relevant development controls contained within the DCPs; and
- Indicates and justifies any proposed departures from the relevant development controls.

DA Checklists are included at **Appendix B** of the Precinct Plan. These Checklists are designed for use by applicants seeking to lodge DAs for land contained within the Western Precinct.

Appendix C of the Precinct Plan contains figures that relate to the various street typologies, **Appendix D** contains figures that relate to the various dwelling types, **Appendix E** contains indicative treatment options for The Northern Road interface.

Volume 2

The detailed studies, management plans and strategies that form part of the Precinct Plan are included in Volume 2 over 2 parts. These management plans and strategies, have been prepared in consultation with relevant local and State government authorities, include:

- Western Precinct Open Space and Landscape Master Plan dated March 2009 prepared by Environmental Partnership;
- Western Precinct Landscape Maintenance and Handover Plan dated September 2008 prepared by Environmental Partnership;
- Western Precinct Biodiversity Assessment dated May 2009 prepared by Cumberland Ecology;
- Western Precinct Weed Management Plan dated July 2008 prepared by Cumberland Ecology;
- Western Precinct Feral and Domestic Animal Management Strategy dated July 2008 prepared by Cumberland Ecology;
- Bushfire Protection Assessment – Western and Central Precincts dated April 2009 prepared by Bushfire and Environmental Services;
- Western Precinct Community Plan dated July 2008 prepared by Elton Consulting;
- Archaeological Assessment - Western Precinct, St Marys, NSW, dated September 2008 prepared by Casey & Lowe;
- Archaeological Assessment of Indigenous Heritage Values in the Western Precinct, dated April 2009 prepared by Jo McDonald Cultural Heritage Management Pty Ltd;
- Contamination Management Plan Western Precinct Development Phase dated July 2008 prepared by URS;
- Western Precinct Plan Water, Soils & Infrastructure Report dated May 2009 prepared by SKM.

- Western Precinct Plan Traffic and Transport Report dated May 2009 prepared by SKM; and
- Tree Survey and Tree Schedule dated November 2007 prepared by Whelans Insite Surveyors.

1.11 Consultations

The draft Precinct Plan and DCS have been prepared in consultation with PCC.

The abovementioned supporting studies, plans and strategies have been prepared in consultation with the numerous stakeholders including PCC, state agencies, the Infrastructure Coordination Group and the EDS Committee as required by SREP 30.

The Deerubbin Local Aboriginal Land Council, Darug Tribal Aboriginal Corporation, the Darug Custodian Aboriginal Corporation and Darug Aboriginal Cultural Heritage Assessments were also consulted in the preparation of the Archaeological Assessment of Indigenous Heritage Values.

The community consultation process for the preparation of the Precinct Plan has involved:

- A Community Information and Feedback Session;
- Newsletters;
- Website and telephone responses; and
- Press advertisements.

The purpose of the community consultation has been to provide information to the surrounding community on the proposed development of the Western Precinct, as well as to provide an opportunity for the community to give feedback on the draft Precinct Plan, prior to its finalisation and submission to PCC.

The Precinct Plan and DCS were publicly exhibited in accordance with the statutory public consultation and exhibition requirements of SREP 30 and all agency and community submissions received were considered during the finalisation of the documents.

1.12 Submission of Applications

In accordance with SREP 30, DAs must be lodged for all development in the Western Precinct (other than for exempt or complying development). PCC is the consent authority for all DAs relating to land within the Western Precinct.

Applicants are encouraged to discuss their development with Council officers prior to lodging a DA. This will help to ensure that issues are resolved before the DA is lodged and that the DA contains all necessary information.

In addition to the Precinct Plan and DCS and to the approvals process already required by Council, a system of design guidelines will be administered by Maryland Development Company during development. The guidelines will set out design requirements for dwelling construction. Purchasers will be required to comply with the guidelines and obtain design approval from Maryland Development Company for their development prior to lodging their plans with Council.

Where proposed development is complying development and does not require a DA through Council, proponents will still be required to comply with the design guidelines and obtain design approval from Maryland Development Company for their development prior to approval of their plans by a Principal Certifying Authority.

2.0 Part 2 – Planning Framework

2.1 Introduction

The St Marys site, which has been rezoned for a variety of uses, comprises 6 development "precincts", namely the Western Precinct, Central Precinct, North Dunheved Precinct, South Dunheved Precinct, Ropes Creek Precinct and Eastern Precinct. These precincts relate to areas within the St Marys site that are suitable for development. The boundaries of the precincts within the St Marys site are shown in **Figure 2**.

Because the St Marys site straddles the boundary between two local government areas (i.e. Blacktown and Penrith), the State Government decided that a Regional Environmental Plan should be prepared to guide and control future development of the land.

Technical investigations into the environmental values and development capability of the land were commenced in 1994, and SREP 30 was subsequently gazetted in January 2001.

SREP 30 is the main statutory planning framework document for the St Marys site. It contains planning principles, objectives and provisions to control development. The overarching aim of SREP 30 is to provide a framework for the sustainable development and management of the St Marys site. The original precinct and zone boundaries of SREP 30 were altered by the gazettal of Amendment No 1 in April 2006.

SREP 30 is accompanied by the St Marys EPS which identifies the aims for the future use and management of the site and sets out specific performance objectives and strategies to address key planning issues, including: conservation, cultural heritage, water and soils, transport, urban form, energy and waste, human services, employment, and remnant contamination risk.

The St Marys EPS identifies actions to be undertaken by local and State governments, as well as the obligations of developers. A Development Agreement was entered into in December 2002 between the Joint Venture developer and the NSW Government setting out the developer's and State Government's responsibilities in providing services and infrastructure.

A Planning Agreement was also entered into with PCC in December 2006. Although this Planning Agreement principally relates to the development of the South Dunheved Precinct, it also sets out traffic and transport contributions relating to the development of the Central and Western Precincts. This Planning Agreement is currently being amended in relation to human services, open space and stormwater infrastructure contributions resulting from the development of the Central and Western Precincts.

SREP 30 requires the development control strategies contained within the St Marys EPS to be taken into account in any development proposals for the St Marys site. It also requires that a Precinct Plan be adopted by Council prior to any development taking place within the relevant precinct. Planning for any precinct is to address all of the relevant issues in SREP 30 and the St Marys EPS, including preparation of management plans for a range of key issues.

Under SREP 30 the St Marys site is zoned for a combination of "Urban", "Employment", "Regional open space", "Regional park", "Drainage", "Deferred matter" and "Road and road widening" uses.

The pattern of the Employment zones and Urban zones in the Western, Central and Ropes Creek Precincts were altered by the gazettal of Amendment No.2 on 27 February 2009, resulting in the creation of a larger, consolidated Employment zone in the Central Precinct.

The SREP 30 structure plan for the Western Precinct is shown at **Figure 4**.

2.2 SREP 30 Provisions – Western Precinct

Following the gazettal of Amendment No. 2 of SREP 30, the Western Precinct is zoned entirely Urban. Land zoned Urban is intended to accommodate primarily residential uses, with limited non-residential uses such as local retail and commercial uses. **See Figure 3.**

Under Amendment No.2 the previous 28ha Employment Zone in the Western Precinct was relocated into a consolidated Employment Zone in the Central Precinct.

Key SREP 30 Structure Plan provisions for the Western Precinct are shown on **Figure 4** and include:

- The existing educational establishment located in the north western corner of the site on Ninth Avenue;
- The designated road corridor providing access to the Regional Park and the Central Precinct to the east;
- The identification of indicative locations of three drainage basins – rather than the earlier two indicative drainage basin locations;
- The identification of four road access points along The Northern and one road access point on Ninth Avenue; and
- The indicative location of a future retail centre within the precinct.

Vehicular access, other than for the purpose of a public road, is not permitted to The Northern Road, Palmyra Avenue or Forrester Road. Direct vehicular access may be provided to Ninth Avenue subject to consideration of:

- The capacity of Ninth Avenue to accommodate additional traffic;
- The effect of additional vehicular traffic on the existing road hierarchy in the vicinity; and
- Any adverse impact of the proposed development on the rural character of Ninth Avenue or its surrounds.

The SREP 30 Heritage Map (**see Figure 5**) identifies 4 items of environmental heritage within the Western Precinct, namely:

- Site 9 – House, western part portion 104;
- Site 14 – Dumbles new house and out buildings;
- Site 15 – Dumbles Old House; and
- Site 16 – Mrs Smiths House.

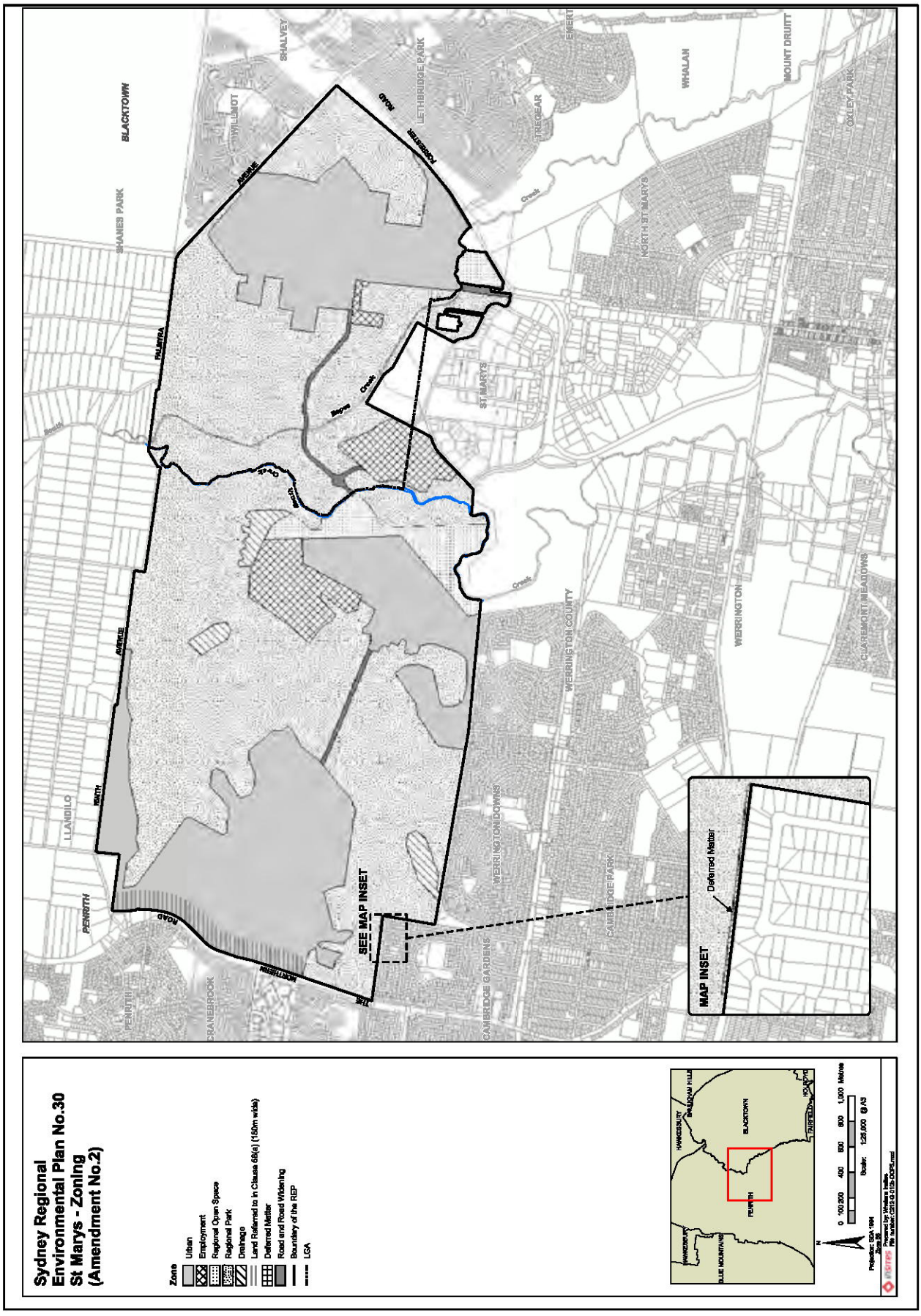


Figure 3 – Current SREP 30 Zoning

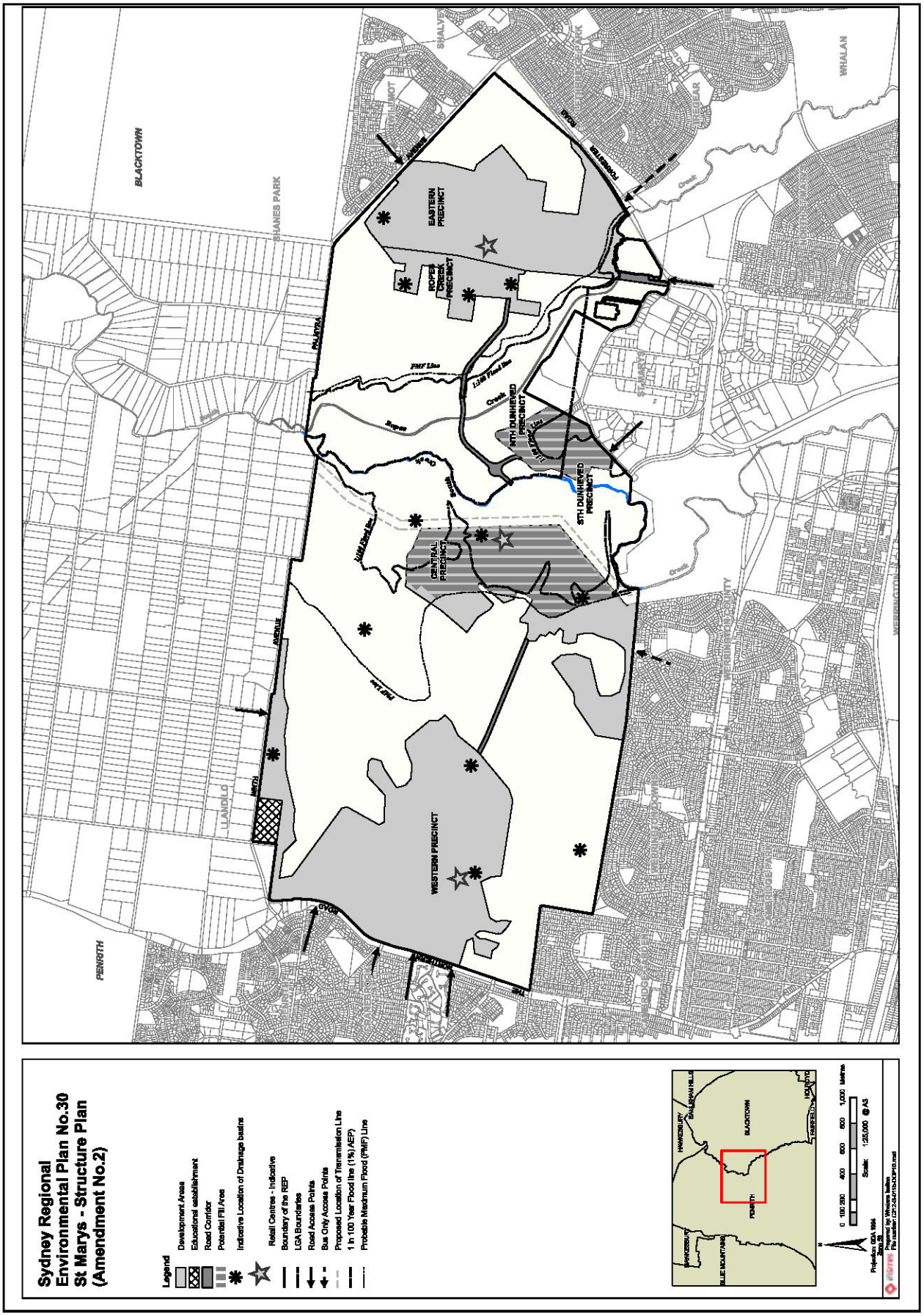


Figure 4 – Current SREP 30 Structure Plan

Figure 5 – SREP 30 Heritage Items

2.3 St Marys Employment Development Strategy

The future development of the Western and Central Precincts for residential and employment generating land uses is a key component in the implementation of the St Marys Development Employment Development Strategy (EDS).

Prepared with input from local Councils, State Government agencies and business organisations, and endorsed by the Employment Development Strategy Committee, the St Marys EDS identifies the actions and initiatives to be implemented to meet the employment and business development performance objectives for the St Marys site set out in SREP 30.

The St Marys EPS requires that:

> *"The total number of jobs generated by development ... (including jobs generated on the surrounding land) is to approximate the number of workers who will be resident on the land ... after the development has been carried out."*

This principle is designed to ensure that development of the site will not add to the existing employment deficit within the region and will contribute to greater employment containment in the region, and thereby contribute to a reduction in the proportion of people commuting long distances to work.

The St Marys EDS includes strategies and an action plan for the following:

- Facilitation of a targeted 5,300 ongoing jobs (both on site and off site), equating to one job for every resident worker;
- Generation of an anticipated additional 8,600 jobs during the construction phase;
- Establishment of a range of capacity building initiatives to provide opportunities for skilling and training, and to build a platform for long term skill development and knowledge generation within the new and established communities;
- Development of partnerships with regional employers and employment and training service providers to deliver a range of employment initiatives for the benefit of the new residents and the surrounding community; and
- Facilitate business growth initiatives for firms located on and around the site to promote business prosperity, growth, employment generation and local economic benefit.
- Deliver Fibre to the Premises (FttP) broadband capability to:
  - attract and support higher order home-based-business activity;
  - provide capacity for residents to work from home; and
  - cater for changing technologies associated with firms in the employment zone

Whilst the Western Precinct does not contain land zoned for Employment, significant employment opportunities will be facilitated through the Village Centre and home-based business.

2.4 Macrofauna Management

As also required by the St Marys EPS, a Macro Fauna Management Plan for the St Marys site was submitted to the then DEC (formerly NPWS, now DECC) in late 2003. The Macro Fauna Management Plan outlines mechanisms to manage the displacement of macrofauna (including kangaroos and emus) from development of the site.

The Director General of the DEC assessed and endorsed the Macrofauna Management Plan on 3 March 2004. DEC also confirmed that the Macrofauna Management Plan satisfies the requirements of the EPS subject to the conditions imposed by the DEC as part of the process of finalising the Plan. The implementation of the Macrofauna Management Plan is being progressed by the developer in conjunction with the DECC, BCC and PCC.

2.5 Commonwealth Approvals

The Commonwealth environmental assessment of the development of the St Marys site has been completed under the provisions of the *Environment Protection (Impact of Proposals) Act 1974* , with certification provided under the *Environmental Reform (Consequential Provisions) Act 1999*.

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

3.0 Part 3 – Site Characteristics

3.1 Introduction

This section of the Precinct Plan identifies the site characteristics of the Western Precinct, thereby establishing the key planning issues, opportunities and constraints that have informed preparation of the Precinct Plan. Existing site characteristics are shown in **Figure 6** below.

3.2 Key Opportunities and Constraints

The key development opportunities and constraints associated with the site, as identified below, are illustrated in **Figure 7** and are further discussed in the relevant sections of this Part of the Precinct Plan.

Opportunities

- Multiple vehicle access points to the external road network along The Northern Road and Ninth Avenue;
- SREP 30 listed European Heritage Items – Sites 9, 14, 15 and 16 – provide opportunities for interpretation of local area heritage.
- Zoned road corridor providing connection to the Central Precinct;
- Predominantly flat to undulating topography;
- High points on the site provide panoramic views and ideal locations for hilltop and ridgeline parks;
- Large Regional Park interface, offering high visual amenity, strong visual enclosure, and access opportunities to the Park;
- Land has been heavily disturbed through past site activities and comprises mainly grassland, with limited areas of remnant and regrowth woodland and forest that is generally highly degraded;
- Some remnant and regrowth native vegetation that, where appropriate, can be retained for future public domain areas;
- Existing drainage lines offer opportunity to rehabilitate riparian habitat and provide open space linkages;
- Good drainage opportunities and no flooding impacts;
- Surrounding established urban areas provide opportunities to improve access to services and facilities for the broader community; and
- Making use of existing services and infrastructure in proximity to the site with spare capacity and ability for augmentation.

Constraints

- Large Regional Park interface results in areas of bushfire risk;
- The Northern Road interface and the potential requirement to buffer residential development along this interface;
- SREP 30 listed European Heritage Items require specialised assessment as part of the development process.
- Existing structures requiring demolition such as derelict buildings along the existing road in the south-west of the Precinct and radio mast, shed and watertanks on McGarrity's Hill in the north-west of the Precinct;
- Potential Aboriginal archaeology (see **Figure 9**)
- Limited areas of remnant and regrowth woodland and forest and small local patches of Freshwater Wetlands artificially created through past site activities; and
- Limited areas of steeper topography.

Existing Site Characteristics

Scale 1:15,000m @ A4 (approximate)
0 100m 200m 500m

- Existing Trees
- Existing Drainage Lines
- 15 European Heritage Sites
- Existing Road
- Radio Mast and Water Tanks
- Contours at 1m intervals

Figure 6 – Existing Characteristics

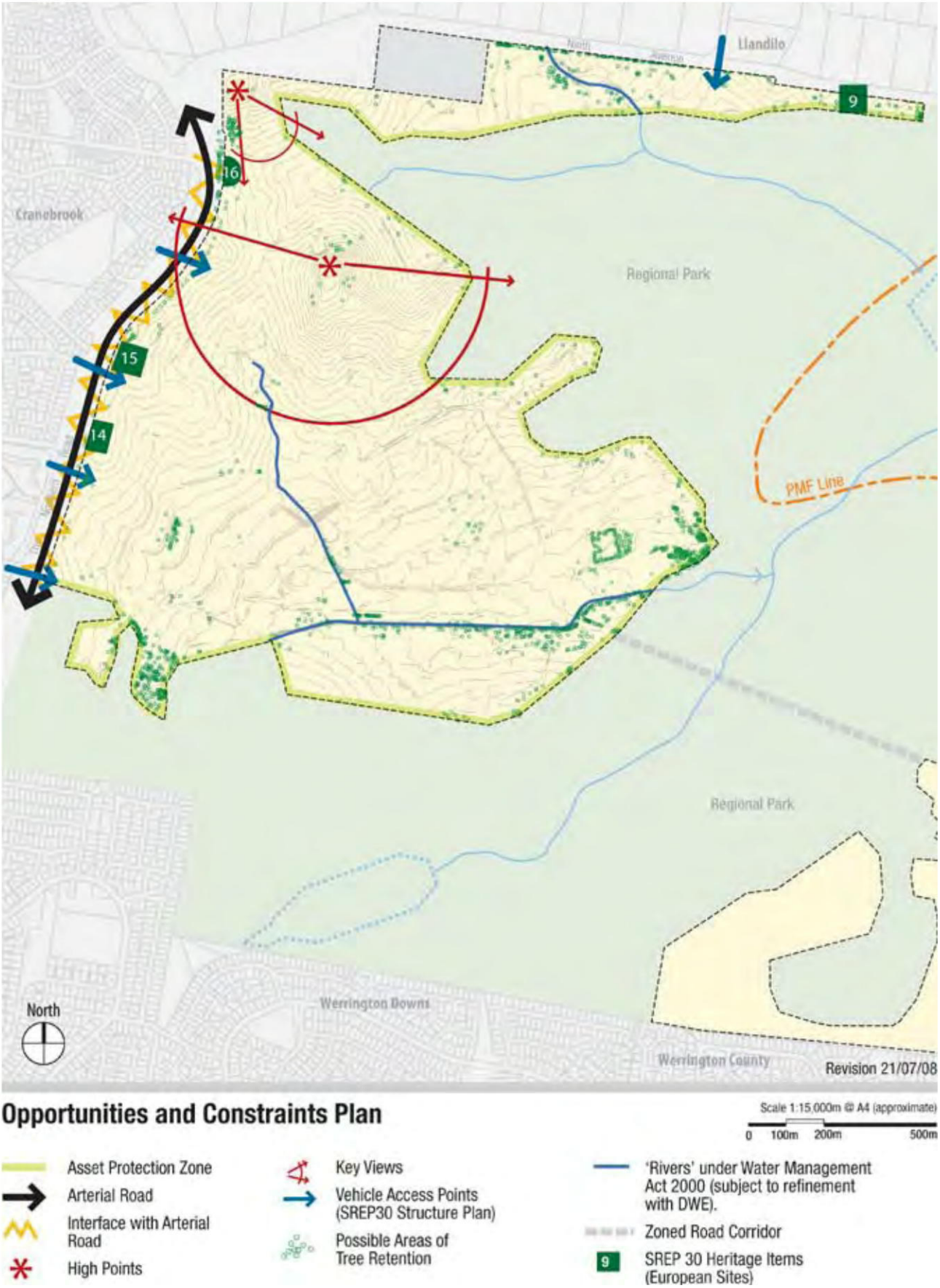


Figure 7 – Opportunities and Constraints Plan

3.3 Water, Soils and Drainage

A detailed analysis of the existing water, drainage and soil characteristics of the site is contained within the Water, Soils & Infrastructure Report prepared by SKM (see **Appendix F**). A summary of relevant key issues, opportunities and constraints follows.

The Western Precinct has a planar land surface, and generally rises towards the north and westwards towards the site boundary.

The southern and northern catchments of the precinct drain eastwards to a tributary of South Creek.

The Western Precinct lies to the west of South Creek and the site is not at risk of flooding from South Creek in the 100 year ARI event. The Probable Maximum Flood (PMF), the regional flooding in the Hawkesbury Nepean River system does not impact on the Western Precinct as demonstrated in the SREP 30 Structure Plan.

The soils of the Western Precinct are typical of western Sydney's geology being principally Bringelly Shale bedrock weathered and overlain with alluvial floodplain deposits composed largely of clays and thinner and discontinuous layers of sand and gravel. The Western Precinct differs from the remainder of the St Marys site due to its higher proportion of surface shale bedrock and less alluvium, such as the clays found in the Central Precinct.

Two groundwater-bearing systems are present within the St Marys site. These are a shallow (regolith soil) aquifer and a deep (fractured shale bedrock) aquifer. These two systems are not true aquifers due to their various characteristics. Both systems comprise a complex of scattered and discontinuous sub-aquifers of limited area and volume.

3.4 Vegetation and Biodiversity

Detailed information relating to the site's vegetation and biodiversity is provided in the following documents:

- Western Precinct Biodiversity Assessment dated August 2008 prepared by Cumberland Ecology (**Appendix G**);
- Tree Survey and Tree Schedule dated November 2007 prepared by Whelans Insite Surveyors (**Appendix H**);
- Western Precinct Feral and Domestic Animal Management Strategy dated July 2008 prepared by Cumberland Ecology (**Appendix I**); and
- Western Precinct Weed Management Plan dated July 2008 prepared by Cumberland Ecology (**Appendix J**).

The Biodiversity Assessment identifies the flora and fauna that is present or has the potential to occur within the Western Precinct, and maps the vegetation communities, occurrences of threatened or migratory species and endangered ecological communities (as listed within Schedules of the *NSW Threatened Species Conservation Act 1995*, *NSW Fisheries Management Act 1994* and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*). It also predicts the potential impacts of development upon these and provides measures to mitigate these impacts.

- The Tree Survey (see **Appendix H**) located and mapped trees with a trunk diameter of 200 mm and greater within the Western Precinct. It records the approximate trunk diameter, canopy spread, height and number of trunks. Existing trees within the Western Precinct are shown in **Figure 6**.

Flora

The Western Precinct is, since European settlement, an extensively altered landscape comprising mainly mixed exotic and native grasses. These are mapped at **Figure 8** below as cleared land due to the land being clear of the original native vegetation cover. There are areas of highly degraded remnant and regrowth woodland and forest, with the majority of this vegetation existing as scattered tree cover with a high proportion of introduced species in the understorey and a high level of fragmentation. In general, the higher quality vegetation communities and habitats are found outside of the precinct within the Regional Park.

Ground-truthing by Cumberland Ecology identified Cumberland Plain Woodland as the main native vegetation community occurring within the Precinct amongst a mosaic of native and exotic grassland with occurrences of three other communities. The six vegetation communities recorded in the precinct were:

- Cumberland Plain Woodland
  - This community generally comprises regrowth low woodland with scattered mature remnant trees in mixed exotic and indigenous grassland. Cumberland Plain Woodland is mapped as Shale Plains Woodland in Figure 10 below. Cumberland Plain Woodland is an EEC listed under the TSC Act and the EPBC Act. There is also a preliminary determination to list Cumberland Plain Woodland as a critically endangered ecological community under the TSC Act. Most of this community has been heavily cleared and in various stages of regrowth.
- Shale-gravel Transition Forest
  - This community is similar to Cumberland Plain Woodland with a slightly different species composition based on the local presence of lateritic gravel in the soil. It was recorded in one small area (0.7ha) on the northern edge of the Precinct with another nearby representation in the Regional Park. Shale-gravel Transition Forest is listed as an EEC under the TSC Act. Most of this community has been heavily cleared, leaving only a very small patch present. It is in various stages of regeneration.
- River-flat Eucalypt Forest
  - This community has a limited occurrence within the Precinct in a band 10m either side of the drainage line in the east of the Precinct. Although it has a limited distribution within the Precinct (only 0.7ha) it adjoins more extensive areas of Alluvial Woodland within the Regional Park along the tributary to South Creek. The community is a form of the community mapped as Alluvial Woodland by the National Parks and Wildlife Service (NPWS) and is mapped as Alluvial Woodland in **Figure 8** below. RFEF on coastal floodplains on the NSW North Coast, Sydney Basin and South East Corner bioregions is an EEC listed under the TSC Act. The patch of this community in the Western Precinct is regenerating after previous disturbances and although is dominated by native species in each stratum and is in viable condition, contains some significant weeds.
- Native Grassland
  - Grassland dominated by native species occurs throughout the precinct. Native grassland is a highly modified variant of Cumberland Plain Woodland where most of the tree and shrub cover has been removed. Most areas of this community contain high proportions of exotic ground cover species that would possibly threaten its long-term viability and usefulness for conservation purposes.
- Exotic Grassland
  - The grassland in the Western Precinct comprises a mixture and mosaic of introduced and indigenous species. Areas containing exotic are considered to have no conservation significance. However, areas of exotic grassland mixed with native grassland, including regenerating native woodland, have some conservation significance.

- Freshwater Wetlands
  - Sedgeland, a form of Freshwater Wetland, occurs in very small local patches throughout the precinct, generally created by a small scraping of soil that results in a small depression. These areas are generally only a few square metres in area. A larger area along the drainage line in the south eastern section of the precinct has been mapped, as well as an area in the south-western section of the precinct that also includes the dam that falls within the Regional Park.
  - The occurrence of sedgeland in the Western Precinct is considered to be a variant of the EEC Freshwater wetlands listed under the TSC Act. The smaller areas of sedgeland in the Western Precinct formed in scrapes in the soil have minimal conservation value. The larger area of wetland towards the eastern side of the precinct has a slightly higher conservation value as it connects to larger areas of habitat in the Regional Park. Some sedgeland and wet meadows in the precinct occurring around the dam in the Regional Park also have high conservation value because of the connectivity to the Regional Park habitats.

The location of these communities is shown in **Figure 8**.

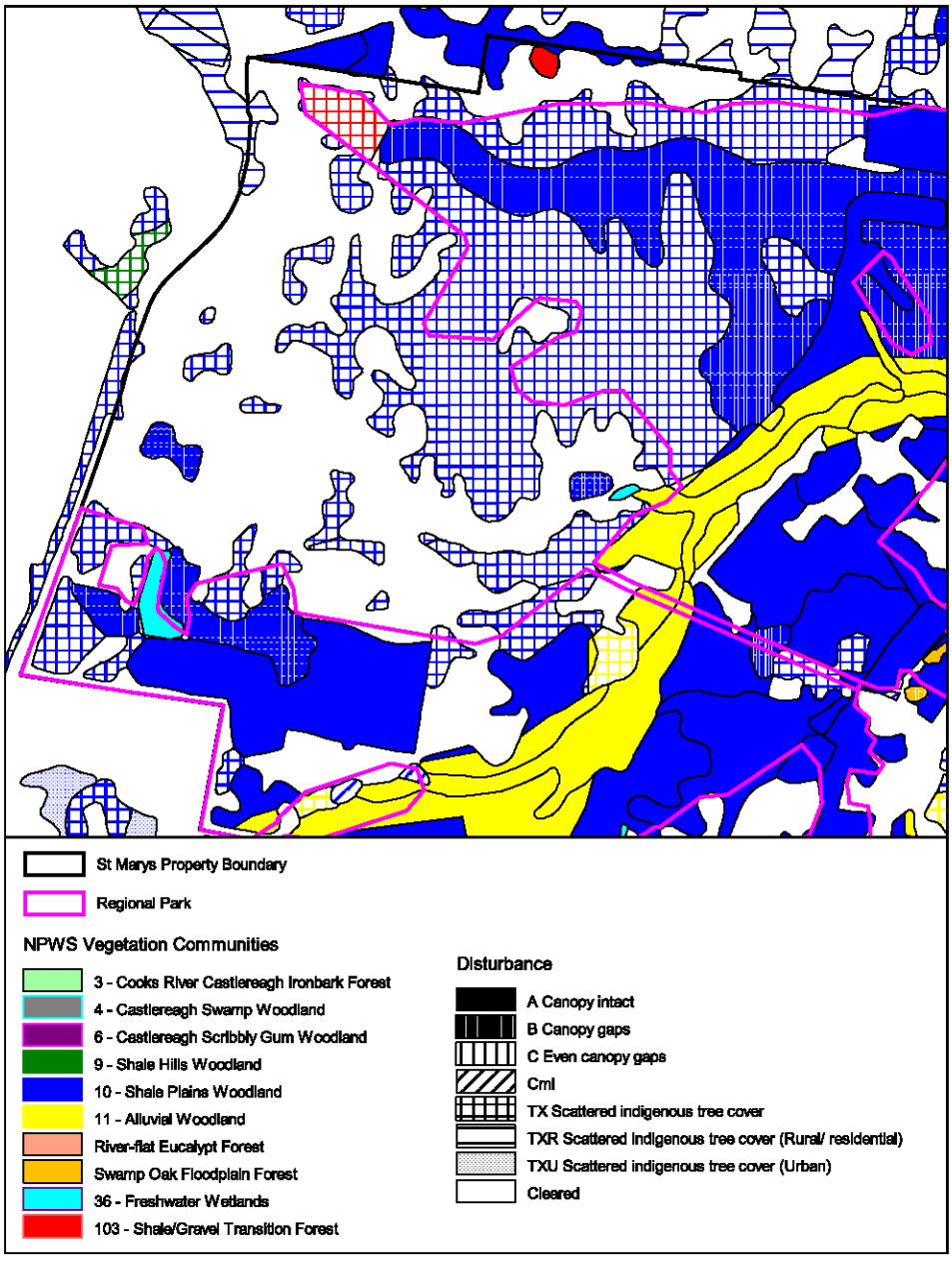


Figure 8 – Location of existing Endangered Ecological Communities

The examples of these communities that occur in the Western Precinct are highly degraded and consist of sparse native tree regrowth with a largely disturbed understorey. Due to their highly modified condition, the conservation value of these communities in the Western Precinct has been seriously compromised and this vegetation is not considered to be significant in terms of conservation.

Large areas of these communities are present within the Regional Park, which contains larger areas of undisturbed vegetation communities.

The following two threatened flora species have also been detected in the Western Precinct:

- *Grevillea juniperina* subsp *juniperina*
  - Small occurrences occur in the northern and southern margins of the precinct. *Grevillea juniperina* subsp *juniperina* is listed as Vulnerable under the TSC Act.
- *Pimelea spicata*
  - One population, consisting of approximately 2 individual mature plants, was recorded north of the existing east-west road within the precinct. *Pimelia spicata* is listed as Endangered under both the TSC Act and the EPBC Act.

The vegetation survey estimated that individuals of each species occurring within the precinct are negligible when compared to the number of these species within the Regional Park. Nonetheless, some existing trees are proposed to be retained, where appropriate. This is shown on **Figure 7** and further discussed in Section 4.

The Weed Management Plan prepared for the project has identified a number of weeds of national significance occurring both on the St Marys site and within the Western Precinct. This includes only Blackberry in the Western Precinct. The occurrence and distribution of this and other weeds (some 34 species in total) is strongly influenced by past use of the site and areas of disturbance. Within the precinct, weeds generally occur in dense pockets in areas of disturbance and to a lesser degree in existing bushland.

Measures to control weed growth are detailed in Section 4 of this report and at **Appendix J**.

Fauna

Due to the extent of disturbance, expanse of grasslands, and large proportion of regrowth woodland within the Western Precinct, there is little nesting and roosting habitat for arboreal fauna, nor habitat to support a wide range of species. Limited aquatic habitat also occurs in a small man-made drainage line in the eastern portion of the precinct and the wet meadow associated with the dam outside of the precinct inside the Regional Park. Habitats of value generally occur in the east along the common border with the Regional Park.

The Eastern Grey Kangaroo (*Macropus giganteus*) and the Red Kangaroo (*Macropus rufus*) are the most common mammals found across the St Marys site. The numbers of these animals is now regulated under the Macrofauna Management Plan (Cumberland Ecology 2004) implemented and commenced in 2005. Emus are also found at the site. There are no known or recorded sightings of koalas on the site or Western Precinct.

Exotic fauna species (including either feral, pest or domestic animals) recorded on the site include the European Fox, cats, dogs, rabbits, brown hares, black rats, and house mice.

Threatened species (under either the TSC Act and/or EPBC Act) found and recorded on the wider site and with the (limited) potential to be found within or in areas directly adjacent to the Western Precinct include:

- Large Footed Myotis *(Myotis adversus)*
- Greater Broad-nosed Bat *(Scoteanax rueppellii)*
- Eastern Freetail Bat *(Mormopterus norfolkensis)*
- Grey-headed Flying-fox *(Pteropus poliocephalus)*
- Lathams Snipe *(Gallinago hardwickii)* – migratory bird species recorded in wetland habitat of dam adjacent to the Western Precinct
- The Speckled Warbler *(Pyrrholaemus sagittata)*
- Other bird species listed as Vulnerable under the TSC Act have been recorded in the locality or the wider St Marys site, but are unlikely to be found in the Western Precinct, due to the relative immaturity of the woodlands and the lack of diversity and complexity of habitat in the precinct. Similarly, listed reptiles and amphibians are unlikely to be found within the precinct due to various habitat conditions. Whilst the Cumberland Land Snail, which is listed as endangered under the TSC Act, is found on the St Marys site, it is unlikely to be found in the Western Precinct as only patches of its habitat in a disturbed nature occur within the Precinct.
- Specific management and mitigation measures for flora and fauna are contained within Section 4.7 below and at **Appendix G**.

3.5 Bushfire Prone Land

The Bushfire Assessment prepared by Bushfire and Environmental Services (see Volume 2), consistent with the measures required under 'Planning for Bushfire Protection (2006)', has sought to identify necessary bushfire planning requirements for the development, subdivision, and future DAs.

The precinct will be subject to subdivision principally for residential purposes and the assessment identifies that at its internal boundaries the Western Precinct is largely classified as Bushfire Prone Land due to the proximity of large areas of unmanaged bushland within the adjacent Regional Park

Specific bushfire management, protection and mitigation strategies are detailed below in Section 4 and contained within the report at **Appendix K.**

3.6 Traffic and Transport

The information in this section is based upon the Western Precinct Traffic Report dated July 2008 prepared by SKM (see **Appendix L**).

A series of detailed transport (road planning and public transport) investigations have been previously conducted to examine the most appropriate methods of providing quality transport services to the St Marys site. These investigations resulted in the formulation of site access and transport strategy elements that were incorporated into SREP 30, and which are being implemented through the Development Agreements.

The Western Precinct is at present not accessible to private traffic. It is serviced and traversed by an internal (zoned) sealed road only from the Central Precinct and covered by a network of sealed and unsealed tracks. The Precinct has a frontage to The Northern Road, a major arterial road carrying 20,000 vehicles per day.

The closest railway station to the Western Precinct is Penrith, approximately three and a half kilometres to the south. Bus routes currently connect Penrith to suburbs neighbouring the precinct, including Cranebrook and Cambridge Park, and would ultimately connect to the precinct.

3.7 Cultural Heritage

Aboriginal Heritage

The information in this section is based on the Archaeological assessment of Indigenous Heritage Values in the Western Precinct (Jo McDonald, 2008) – **Appendix M.**

Detailed work undertaken in relation to the archaeological resources of the overall 1,545 hectare St Marys site has targeted a conservation outcome for Indigenous cultural heritage across the site, whilst at the same time facilitating the orderly management of archaeological resources in the resultant developable land.

The early work undertaken on the overall St Marys site was known as the "Strategic Management Model" (SMM), which identified previous land use disturbance and applied the use of a predictive model (SMM: McDonald and Mitchell 1994, Jo McDonald CHM 1997a). The overriding aim of the archaeological SMM was the preservation of a representative sample of intact landscapes across the overall site. Four zones within the overall site were identified, each zone having a different designated management outcome.

The identified zones are:

- Zone 1: Very high potential for intact archaeological evidence – potential conservation zone.
- Zone 2: High potential for intact archaeological evidence.
- Zone 3: Moderate potential for intact archaeological evidence.
- Zone 4: Low - no potential for archaeological evidence - no further work required.

The recent surveys undertaken by Jo McDonald Cultural Heritage Management Pty Ltd identified a total of 39 surface archaeological sites with almost 250 artefacts recorded within the Western Precinct. Sub-surface investigations at the western end of the St Marys site have produced over 7,000 stone artefacts.

Within the Precinct about 130 ha of land has been identified as having archaeological sensitivity (being Zones 1, 2 and 3). However, there is only 1.6 ha of Zone 1 land within the precinct – see **Figure 9.**

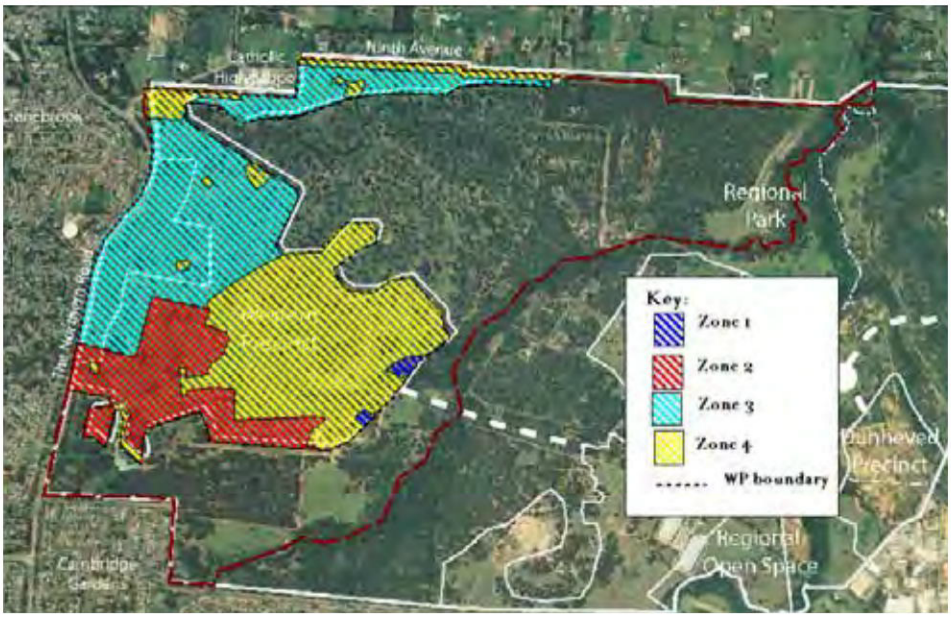


Figure 9 – Aboriginal Archaeological Zones

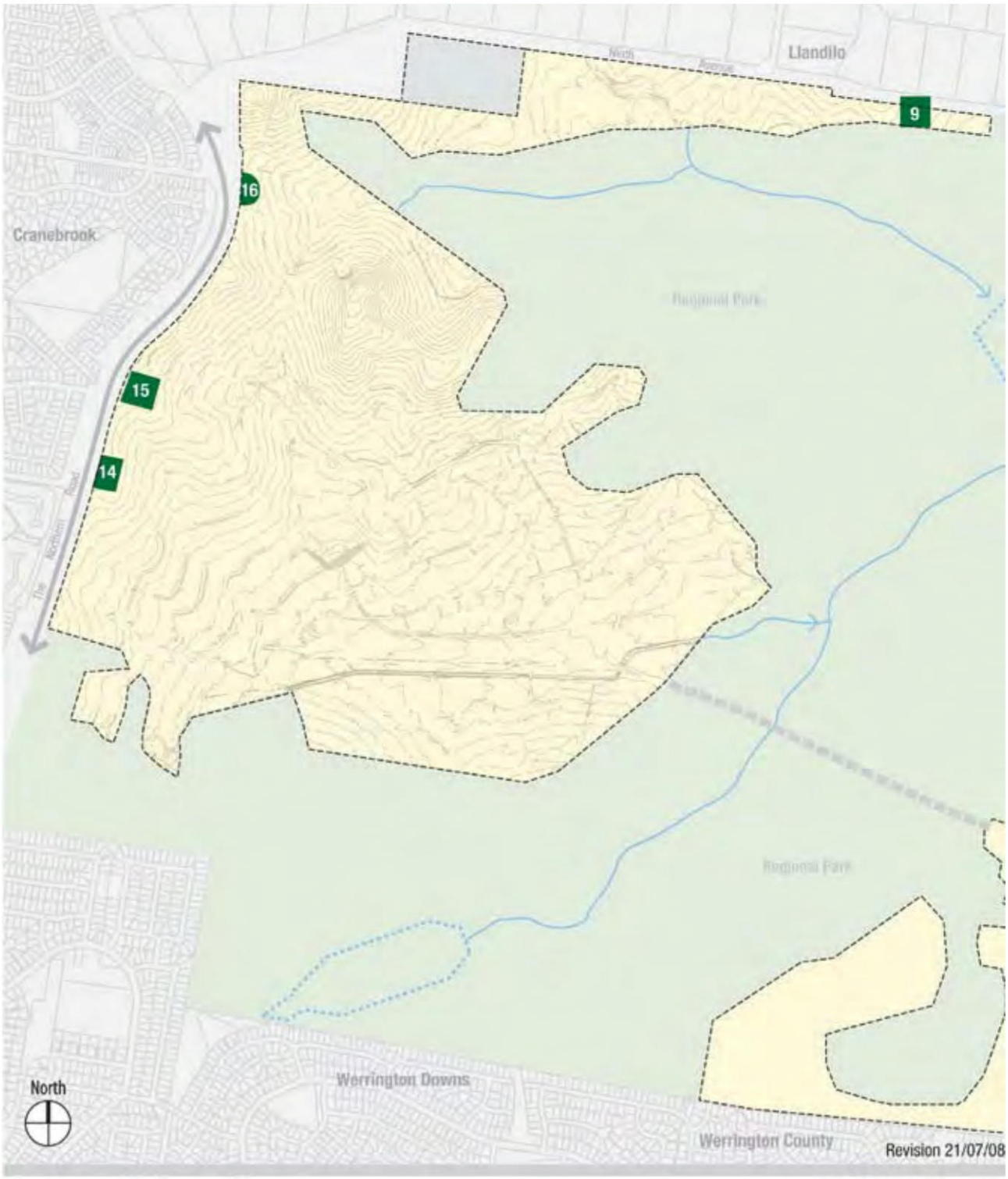
The development of the Western Precinct will, therefore, only impact on 1.6ha of land which has conservation potential (Zone 1). The development will also impact upon about 129ha of land with archaeological sensitivity (Zones 2 and 3). However, overall, there is a significant conservation outcome as a result of more than 60% of the total land area and almost 98% of the land with high archaeological sensitivity being excluded from the developable lands within the Western Precinct.

Six target areas within the developable areas of the Western Precinct have been identified as requiring archaeological salvage prior the development taking place. These salvage areas are generally located at the precinct's edges and are relatively evenly distributed. Salvage of these locations will add fundamentally to the understanding of Aboriginal occupation of this area. The salvage excavation process is further discussed in Section 4.12.

European Heritage

SREP 30 identifies 4 items of environmental heritage within the Western Precinct, as shown in **Figure 10**. Casey & Lowe Pty Ltd provided an archaeological assessment of the Western Precinct (see **Appendix N.**) A description of each heritage item is provided below:

- Site 9 – House, western part portion 104
  - This item is a former house (demolished in 1941) at the northern extremity of the site along the Ninth Avenue frontage. A late 19th or early 20th century house occupied the site until acquired by the Commonwealth Government. The house is believed to have stood for at least 40 years. The site has the potential to contain archaeological remains associated with its occupation by various residents. It is considered to have Local heritage significance.
- Site 14 – Dumbles new house and out buildings
  - This item is a former fibro house built in the late 1930s (and demolished in the 1980s) located along The Northern Road frontage of the site at its western-most extremity. The only visible remains of this property is a Canary Island palm tree, typical of plantings at this time.
  - The disturbed nature of this site does not reach an appropriate level to be considered to achieve Local heritage significance.
- Site 15 – Dumbles Old House
  - This item is a former weatherboard house located along The Northern Road frontage of the site at its western-most extremity. It was probably built in the late 19th or early 20th century. The site still has some limited archaeological potential for late 19th century and early 20th century remains. The site does not reach an appropriate level to be considered to achieve Local heritage significance.
- Site 16 – Mrs Smiths House
  - This item is located along The Northern Road frontage of the site at its north-western extremity. The site was formerly occupied by a five room weatherboard house. Its last known occupation was in 1941 prior to acquisition by the Commonwealth Government, at which point it was in a "dilapidated condition". The construction and demolition dates are not definitively known, but the house was potentially built between 1857 (when the land was first granted) and prior to 1872. The house would be typical of other houses and small holdings in the area and similar to Sites 9 and 15.
  - The presence of artefacts suggests that the site does have research potential. It may contain remains associated with the occupation of the house after 1857 and associated farming activities. The site is considered to reach the threshold of significance and is considered to have a Local level of significance.



European Heritage Sites

15 European Sites

9 - House
14 - Dumbles New House
15 - Dumbles Old House
16 - Mrs Smiths House

Figure 10 – SREP 30 Heritage Items

3.8 Human Services

Elton Consulting has prepared a Community Plan for the Western Precinct (see **Appendix O**). This report was prepared after consultation with various stakeholders including state agencies and PCC through the St Marys Infrastructure Coordination Group (including the People and Place Working Group) established under SREP 30, and the St Marys Human Services Consortium.

Community Planning for the residential component of the Western Precinct considered the social context of the Precinct, in terms of the characteristics of the surrounding and anticipated population and the existing services and identified needs of the future population.

The existing demographic structure surrounding the Precinct can be generally described as:

- Diverse pattern of residential development consistent with its era of development – larger semi rural lots in the older suburb of Llandilo to the north and smaller higher density single dwelling subdivisions of the 1970s and 1980s to the west and south (Cranebrook and Cambridge Gardens, respectively);
- A higher proportion of families with children or single parent households;
- A young median aged population;
- A higher proportion of children relative to Penrith LGA and Sydney generally (with the exception of Llandilo);
- Low cultural or linguistic diversity (with the exception of Llandilo);
- A significant Aboriginal population proportionate to Penrith and Sydney as whole;
- Low median household incomes;
- Low school retention rates and high proportion of trade and clerical training and employment; and
- High proportion of separate single dwellings with a high degree of housing stress.

In terms of existing services, the area surrounding the Western Precinct is generally well serviced by (with some capacity in part) and proximate to:

- State and Private primary and secondary schools;
- Local retail and commercial services;
- Neighbourhood community centres;
- Community development projects;
- Council and Private childcare centres;
- Health, welfare, and support services;
- Libraries;
- Emergency services; and
- Recreation and cultural facilities.

The new Western Precinct population will in part require the augmentation or creation of certain new services. These are considered in Part 4 of this report.

3.9 Contamination

The St Marys Western Precinct has been the subject of extensive investigation and remediation, where necessary, through the 1990s. The EPA (now DECC) has been involved throughout the process, and subsequently a NSW EPA accredited Site Auditor issued Site Audit Statements for the St Marys site.

The objectives of the investigation and remediation program were to assess the nature and degree of chemical contamination and/or identify any potentially explosive ordnance to allow the remediation of the site to a level where it was suitable for redevelopment for a variety of uses. For the purposes of the remediation and validation, the St Marys site was divided into nine sectors. The Western Precinct includes the following sectors and associated Site Audit Statements (SASs):

- Part Western Sector covered by SASs CHK001/1; and
- Part Southern West Sector covered by SASs CHK001/1, 001/6, and 001/7.

The information presented in the remediation and validation reports for these sectors has been used to develop a Contamination Management Plan for the Western Precinct (see **Appendix P**). The majority of the Precinct has been assessed by the site auditor to pose a negligible risk to the public or the environment with regard to chemical contamination or explosive ordnance. Areas under retained roads and building footprints which have not yet been addressed by the SASs, will require future investigation and assessment.

3.10 Site Services

An analysis of the existing services and infrastructure of the site is contained within the Water, Soils & Infrastructure Report prepared by SKM (see **Appendix F**). In general, there is existing infrastructure in and around the Precinct (generally with spare capacity or with the ability to be upgraded, augmented or amplified) in close proximity, including trunk components such as:

- Water reservoirs (Orchard Hills drinking water supply system and Cranebrook reservoir);
- Sewerage treatment plants, carriers and pumping stations (St Marys Sewerage Treatment Plant, the "Werrington Downs Carrier", and pumping station SPS366); and
- Zone substations (Cambridge Gardens Zone Substation although a new zone substation for the entire Western Precinct will be required).

Gas and underground communications services (including optical fibre and copper cables) also exist in the area.

4.0 Part 4 – Framework Plan and Environmental Management Strategies

4.1 Framework Plan

This part of the Precinct Plan describes the Framework Plan for the Western Precinct. It identifies the planning provisions contained within the management plans and studies, which provide the principles for the development and long-term management of the site.

The Framework Plan conceptually illustrates how the proposed development of the Western Precinct will respond to the key development principles, having regard to land form, environmental site conditions, the surrounding street network, and relationship with adjoining areas. The Western Precinct provides the opportunity to create a community which is designed around relevant 'best practice' principles in sustainable urban design. This will be achieved by:

1. **Connecting with nature:** the new community will have a strong connection with the Regional Park, drawing on the sense of space and natural beauty;
2. **Establishing a vibrant village centre:** the design will incorporate a Village Centre Character Area at the heart of the community serving residents of precinct and visitors from the local region;
3. **Delivering parks and wide open spaces:** a range of parklands for recreation and play;
4. **Providing diversity, choice and lifestyle:** provide housing choice and options to cater for a range of active and healthy lifestyles;
5. **Opportunities for business and enterprise:** provide for a range of business activities which generate jobs and support the community and surrounding region; and
6. **Achieving a sustainable future:** building social capacity, viable enterprise and environmentally responsive communities.

The Framework Plan for the Western Precinct is illustrated in **Figure 11**. The main elements of the Framework Plan are described in the following sections.

4.2 Urban Structure and Major Land Uses

The Western Precinct Framework Plan conceptually illustrates the urban structure for the planning and future development of the site. The principle land uses within the Western Precinct will be residential, with retail, commercial use, community and education uses planned in the village centre.

It is estimated that there will be around 2,450 dwellings in total in the Western Precinct, with an approximate resident population of 6,400. It is expected that the majority of dwellings (80-90%) will be detached dwellings, as shown in the indicative dwelling mix in **Table 4**.

The Dwelling Yield Plan at **Figure 12** shows the approximate dwelling yield in each sub-precinct or village.

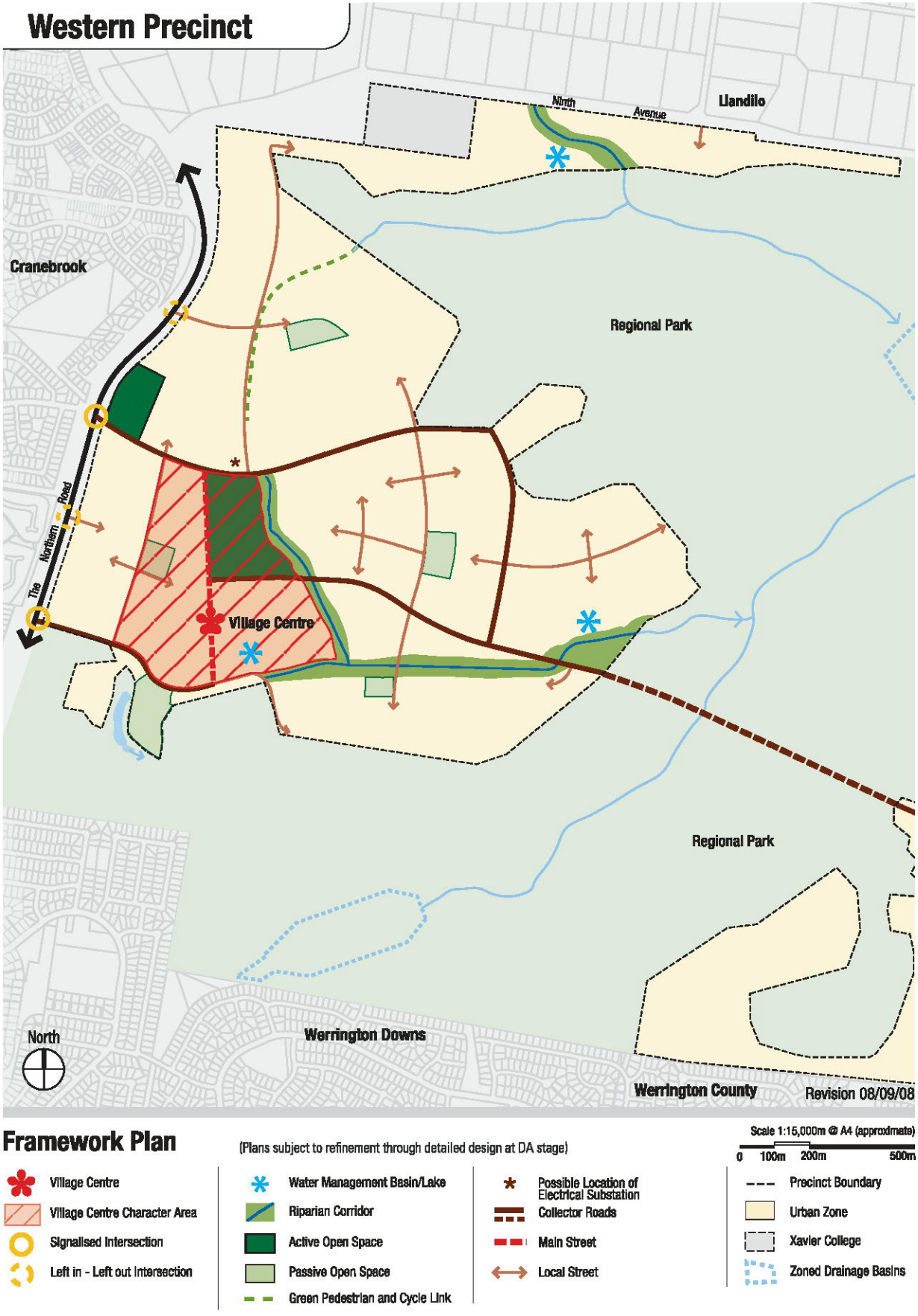
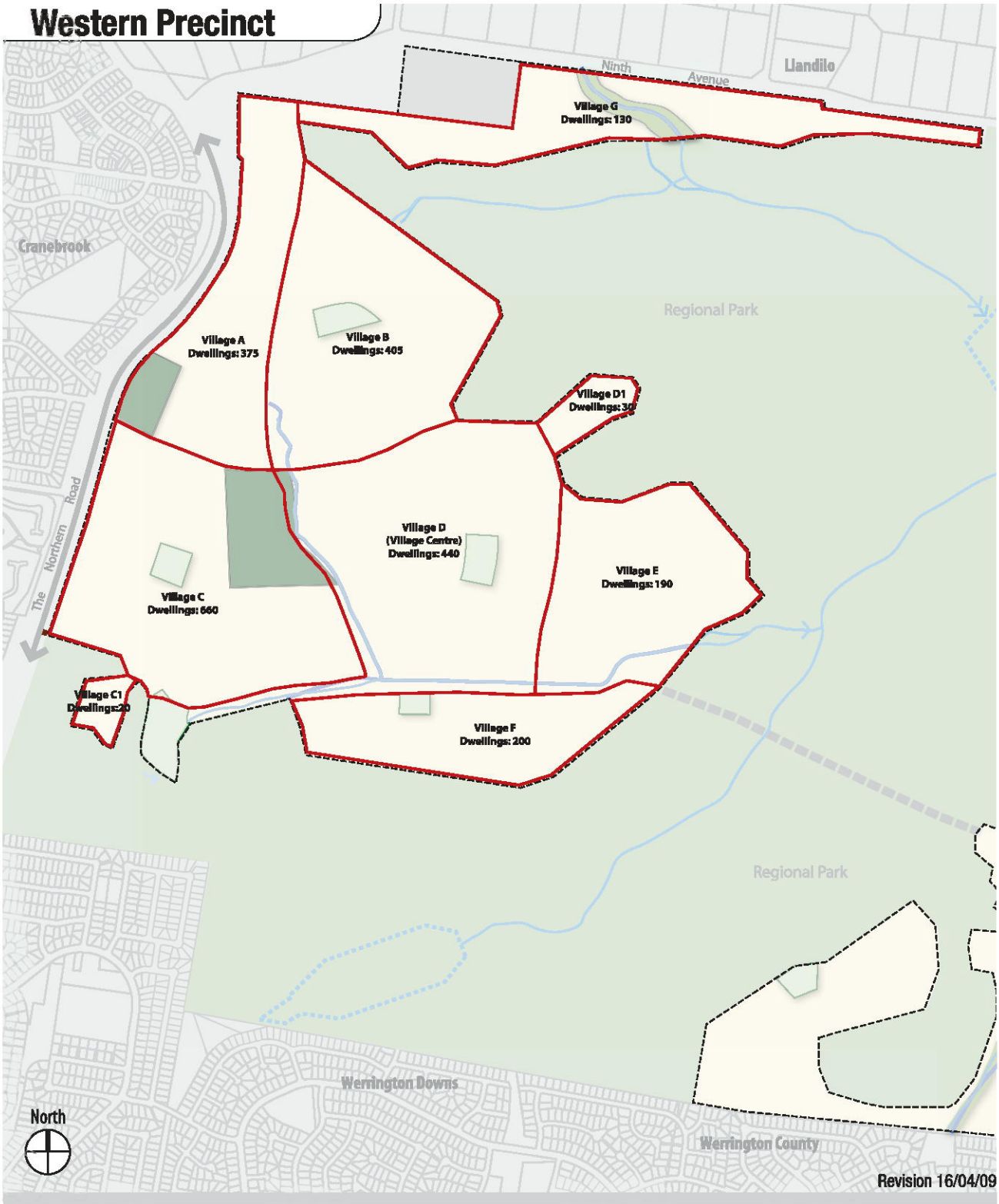


Figure 11 – Western Precinct Framework Plan



Dwelling Yield Plan (Plans subject to refinement through detailed design at DA stage)

Scale 1:15,000m @ A4 (approximate)
0 100m 200m 500m

Figure 12 – Dwelling Yield Plan

The urban structure outlined by the Framework Plan:

- Identifies **residential development** as the principal land use;
- Allows for future subdivision within the precinct to **create varying block sizes** to accommodate a variety land uses;
- Provides an indicative **Village Centre Character Area and main street** as a focal point for the community;
- Identifies the **Open Space hierarchy**; and
- Accommodates **housing options and choice to assist in the creation of a diverse community** while meeting the needs of the market.

The Framework Plan has been developed to accommodate the following:

- Creation of **a network of hike and bike trails** throughout the Western Precinct linking parks, riparian corridors, the village centre, Regional Park and surrounding areas;
- Provision of a **well connected modified grid street network**, allowing for high levels of permeability for pedestrians, cyclists and motorists. Residents and businesses will be within a short walk of a bus stop;
- Incorporation of **pedestrian and cycle friendly street design** including high quality landscaping and street tree planting to help create the place while providing shade and amenity;
- 3% of all Residential Allotments developed will be provided for the purpose of Affordable Housing which will be dispersed throughout the development area and not be able to be differentiated from other dwellings;
- Creation of an **appropriate interface with the Regional Park** via the establishment of asset protection zones, design provisions for uses fronting Regional Park areas and potential pedestrian / cycle access points to the Park;
- Integration of built form, street and parkland design to encourage passive surveillance ensuring **safe and usable public areas** where people can meet and interact;
- Promotion of relevant **best practice techniques** for built form and public domain in **conserving the use of energy and water**;
- Identification of a potential location of a **future electrical substation** located centrally within the Precinct. The exact location of the substation will be determined through further negotiation with Integral Energy and subject to relevant approvals;
- Incorporation of **design controls for streets, parks, buildings and vehicular access**, to ensure the creation of a high quality urban environment; and
- Integration of **Water Sensitive Urban Design** (WSUD) measures throughout the development as a response to site constrains, detention requirements and water quality.

4.3 Future Character Areas

Detailed built form controls contained within Part 5 (Development Control Strategy) of this Precinct Plan aim to generate buildings that are an appropriate scale, height, and architectural quality and that address and activate streets within the precinct. This will help create an environment which encourages walking, the use of public transport and passive surveillance of streets and open spaces.

As an overlay to the development controls in Part 5, character areas have been developed as a response to the structure of the Framework Plan. These character areas highlight particular nodes or areas and their desired future character which may require a particular design response to the immediate context. Important character elements and performance criteria are then identified for each character area. The character areas proposed for the site are illustrated in **Figure 13**, and are as follows:

- Urban Area/Neighbourhood Character;
- Village Centre Character Area;
- Parkland Node;
- The Northern Road Interface;
- Ninth Avenue Interface; and
- Bushland Edge.

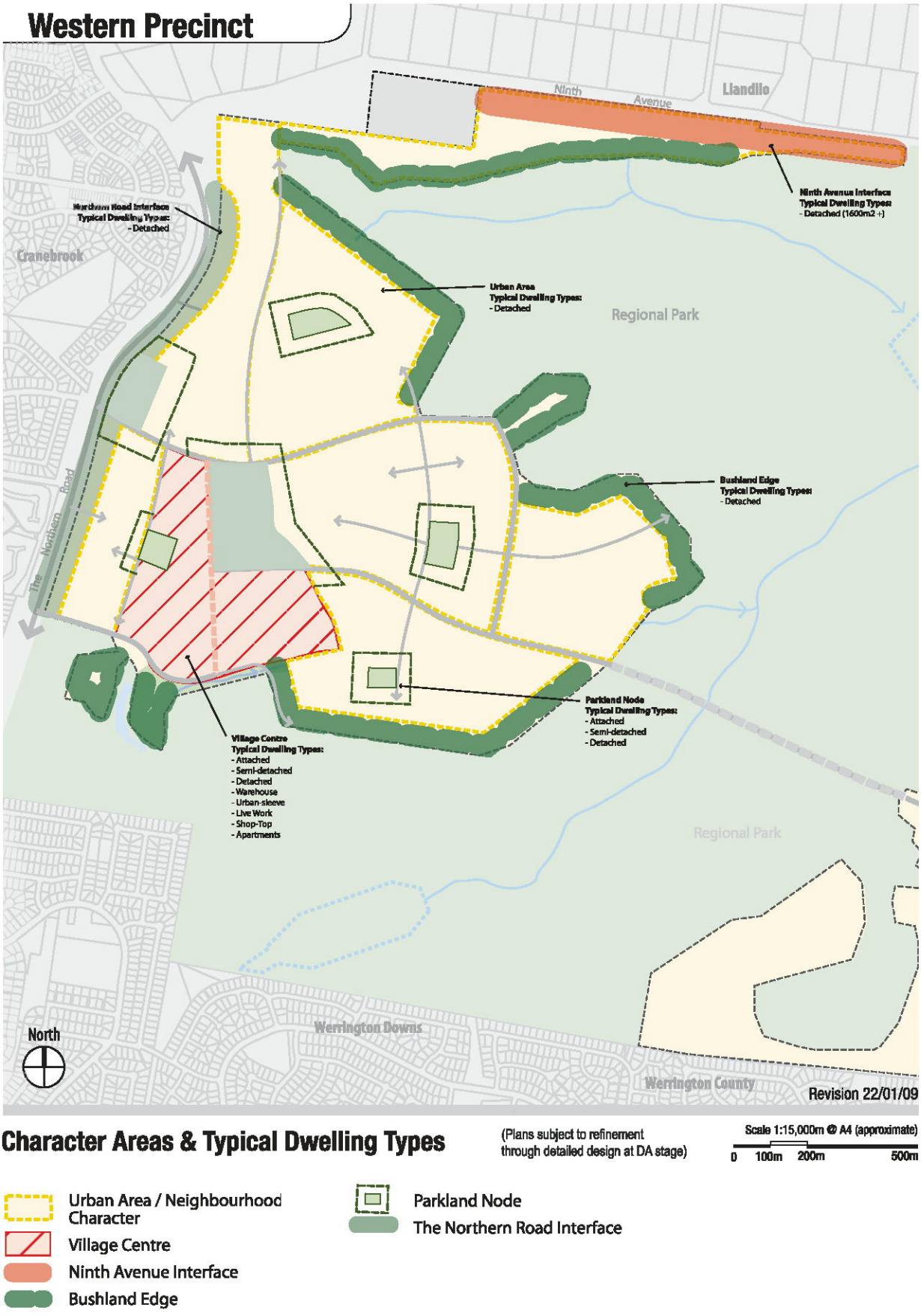
Urban Area / Neighbourhood Character

The Urban Area will have the characteristics of a well designed residential neighbourhood based on the traditional neighbourhood structure of a public space or neighbourhood park at its heart. The quality of the public realm with tree lined streets and a diverse range of housing types will also help define the characteristics of the Urban Area. This character will respond to the natural attributes of the site and in particular, through the layout of streets and parks, will have a strong connection to the Regional Park.

The street structure will be a modified grid form with a clear hierarchy expressed through street and verge widths, landscaping and the level of pedestrian amenity. Indigenous and cultural tree planting will be a key characteristic in streets and parks while links (physical and visual) to riparian corridors and the Regional Park will ensure the landscape characteristics of the site are drawn into the neighbourhoods.

The Urban Area will be developed according to the following design principles:

- Housing diversity and mix will support choice, affordability and adaptability;
- A variety of lot sizes will be made available on most streets, encouraging a housing mix that will assist with the creation of dynamic and diverse streetscapes;
- Predominant housing types will be detached housing;
- Building design should relate to setbacks and articulation in order to generate a positive relationship to the street, and create outlook and passive surveillance;
- Porches and other elements integrated with the façade of the building will help articulate the built form and build a stronger relationship to the street; and
- Houses will be built at an appropriate scale to the size of the lot on which they sit, with attention to setbacks, private open space, height, and overall floor area.



Character Areas & Typical Dwelling Types

(Plans subject to refinement through detailed design at DA stage)

Scale 1:15,000m @ A4 (approximate)
0 100m 200m 500m

- Urban Area / Neighbourhood Character
- Village Centre
- Ninth Avenue Interface
- Bushland Edge
- Parkland Node
- The Northern Road Interface

Figure 13 – Western Precinct Character Areas & Tyical Dwelling Types

Village Centre Character Area

The Village Centre Character Area forms the heart of the Western Precinct and will provide a vibrant mixed-use village centre within easy access of the surrounding residential neighbourhoods. The focus of the village centre will be a main street containing a mix of retail, commercial, community and education facilities serving the local population. The ground floor may accommodate shops, offices, markets, restaurants, cafes and community uses to create a lively pedestrian oriented urban environment, with upper level residential and office uses housed in 2 to 4 storey (up to 6 storeys for apartments) buildings oriented to the street. Education, community and employment uses will also be a key element in the fabric of the village centre.

Residential opportunities within the village centre will be varied with apartments, attached houses, warehouse housing, shop top housing and some semi-detached and detached housing proposed to serve a broad spectrum of the community. The design of the village centre will encourage a high degree of social interaction and activity in the public domain.

Public spaces of appropriate scale will promote casual social interaction and informal gathering, as well as allow for outdoor civic and cultural activities. These spaces will have active edges, which enhance casual surveillance and create a sense of passive ownership, promoting safety and security. They will also be designed to meet the needs of all segments of the population. In particular, the public domain will provide safe spaces for social interaction and expression.

The village centre will incorporate a lake with an approximate size of 2.5 ha that will serve a stormwater management function (retention and water quality) while providing a focal point for civic spaces and community activities along the main street. This will provide the opportunity for uses such as cafes and restaurants to overlook the water with a northerly aspect.

The village centre is to be developed according to the following design principles:

- A walkable pedestrian-friendly environment is to be established with generous footpaths fronted with active ground level uses. Most residents in the Western Precinct will be within a short walk of the village centre.
- Accessibility is to be encouraged through design for all people to ground level uses where possible.
- A main street is to be established, framed with 2 to 4 storey buildings.
- Main street parking is to be maximised, additional parking is to be located primarily in small, shared parking areas located at the rear of buildings and on public streets.
- Public transport is proposed to service the village centre and connect with the existing regional public transport network, and surrounding residential neighbourhoods.
- Mixed-use development is to be a key element of the village centre and should focus on the main street, and transition to residential uses at the edge of the Village Centre Character Area.
- Upper level building uses may be established on certain specific sites, including residential, education, community, restaurant, and office uses.
- Upper level setbacks are to be provided in building design in appropriate locations to provide for varied streetscapes and to allow for solar access.
- Corner design elements which accentuate key street junctions and nodes are encouraged.
- Civic Spaces are to be the focus for activities in the Precinct.
- Civic spaces and suitable uses such as cafes and restaurants will be located with a northerly outlook over the proposed village centre lake.

- Consideration may be given within the village centre to have a multi-use playing field shared between school and community users, including a civic interface with the main street of the village centre.
- Landscaping is to be robust and contribute to the identity of the Village Centre Character Area.
- High-quality street trees are to be used to provide shade and further enhance the use, enjoyment and character of streets in the village centre.
- Species selection for landscaping is to consider potential soil salinity issues / conditions.

A concept plan setting out proposals for the development of the Village Centre is required to be lodged with the first subdivision development application relating to the Village Centre. The concept plan shall incorporate the above design principles and shall outline:

- Proposed urban structure and public domain elements, including proposed land uses and proposed relationship with the Village Centre lake.
- Proposed dwelling yield and types.
- Proposed road network and car parking arrangements.
- Proposed pedestrian and cycle network.
- Proposed staging of development.

Parkland Nodes

Parkland Nodes are areas within the Urban/Neighbourhood Areas which are focused on neighbourhood parks and within close proximity to the public transport system. They cover the area within approximately 75 metres of the edge of a District Park, Neighbourhood Park, Local Park, Pocket Park or Corridor Open Space.

These nodes will provide the opportunity for higher density of housing due to the proximity to, and amenity of, a neighbourhood park, or a bus stop. Nodes will have a residential focus, with a mix of all housing types.

Parkland Nodes are to be developed according to the following design principles:

- Fronting uses (ie uses that face onto the public domain) are required for all parcels overlooking nodal areas. This will enhance the security and passive surveillance of neighbourhood parks and bus stops. The design of fronting uses is to ensure that the amenity of any adjoining open spaces is appropriately protected in terms of solar access. Canyon building effects adjacent to open space are to be avoided.
- Connectivity between nodes will be encouraged to enhance the legibility of the precinct for pedestrians, cyclists and motorists. The connectivity will be in the form of pedestrian links along local streets including pedestrian priority streets and collector streets, and will form part of the street hierarchy. This connectivity will be emphasised by a formal approach to street tree planting along these streets. This connectivity should also link these nodes with the village centre.

The Northern Road Interface

The Northern Road Interface will partially comprise residential development which may require alternate design solutions subject to detailed noise assessment at DA stage. The results of such assessment may require solutions for landscape treatment, setbacks, road layout, frontages, lot sizes, acoustic attenuation both on the lot and dwelling and potential measures such as earth mounding / acoustic barriers. Indicative treatment options are contained at **Appendix E.** This area will comprise a range of attached, semi-detached and detached dwellings, 1-2 storeys in height. The area is also proposed to contain open space uses.

Key considerations will be the visual qualities along The Northern Road corridor and of the proposed subdivision, pedestrian connectivity and connections to surrounding residential areas, and potential views from The Northern Road into the site. The interface with existing residential development along The Northern Road in Cranebrook will also be considered, as will the identification of clear and logical entry points to the site.

Ninth Avenue Interface

The Ninth Avenue Interface will comprise a residential character with a lot size, frontage width and setbacks that provide an appropriate urban transition to the rural residential development to the north. Lot sizes will generally be 1600m^2+, with dwellings designed to address the street, the adjacent rural residential character and the Regional Park edge.

Bushland Edge

The Bushland Edge area refers to areas fronting the Regional Park with residential characteristics which respond to the bushland setting and interface. Residential detached housing of 1-2 storeys will characterise the built form in this zone. This zone is also characterised by easy access to the Regional Parkland and generally a 5 minute walk to local/neighbourhood parks.

The Bushland Edge is to be developed according to the following design principles:

- Dwellings will be required to meet any asset protection zone requirements and setbacks for built form.
- Dwellings will be designed to address the street and activate parkland edges enhancing passive surveillance and views across parkland.
- The Regional Park interface will be emphasised and incorporated within neighbourhood design.
- Perimeter streets will front the Regional Park where possible, allowing houses to face onto the Park.

4.4 Subdivision Layout Principles

The subdivision layout within the Western Precinct will be based on design principles which aim to:

- Establish a permeable modified grid street system promoting connectivity and ease of movement for pedestrians, bicycles and vehicles;
- Overlay a clear and simple hike and bike network for recreation and to provide links throughout the neighbourhoods;
- Ensure a safe environment by promoting crime prevention through urban design;
- Create a legible street hierarchy through the use of appropriate types of streets responding to intended use and scale, designed to calm traffic and help identify character areas;
- Provide views of and links to the Regional Park particularly for pedestrian access, integrated with the Plan of Management for the Regional Park;
- Promote ease of movement and walkability including short block lengths to reduce vehicle speed and minimise walking distance;
- Promote connections and permeability between neighbourhoods, to the village centre and other nodes via for a clear and simple trail and path network;
- Provide an appropriate interface between neighbourhoods and the Regional Park and activate parkland edges and building frontages to promote passive surveillance and safer communities; and
- Establish housing diversity and mix within neighbourhoods and provide a variety of block sizes, enhancing permeability.

Landscape design principles include:

- Strengthen the visual recognition of the street hierarchy through landscape treatments;
- Provide appropriate and equitable distribution of neighbourhood open space;
- Reinforce neighbourhood identity through the placement of highly visible parks, and the creation of strong pedestrian links between key neighbourhood elements;
- Provide green links between riparian corridors and regional parkland;
- Provide space for street trees and landscape treatment while accommodating paths and trails; and
- Ensure landscape character dominates the street and trees define the space providing shade and amenity.

4.5 Dwelling Density

Dwelling density is expressed in SREP 30 as a performance objective relating to transport. Specifically, clause 30(6) of the SREP states:

> *"Urban form is to maximise the potential for public transport, walking and cycling to replace car travel, with an **overall net** neighbourhood density **target** of 15 dwellings per hectare." (Emphasis added)*

Accordingly, the applicable target dwelling density of 15 hectares is to be considered in the broader context of all relevant opportunities and initiatives to replace car travel with public transport, walking and cycling. That is, dwelling density is to be considered in conjunction with factors such as:

- The appropriate location of land uses within the precinct, such as retail, community and open space, that maximises accessibility through walking, cycling and proximity to public transport routes.
- An appropriately designed street network that promotes permeability and accessibility for pedestrians, cyclists and public transport users.
- Provision of a safe and useable network of pedestrian and cycle paths.
- Developer contributions, through both State and local level agreements, towards public transport initiatives and improvements.

Another important consideration is how dwelling density is defined and applied during the on-going implementation of the development. Based on the description of dwelling density in clause 30(6) of SREP 30, it is to be applied on the basis of:

(a) the overall St Marys development, ie, dwelling density is measured across all areas zoned Urban under SREP 30 rather than individual precincts;

(b) the net density achieved, ie, measured according to net developable area[2] rather than gross developable area; and

(c) the density being clearly expressed as a target, rather than a fixed requirement.

Each subdivision DA shall indicate the total number of dwellings proposed in the subject subdivision, the cumulative dwelling yield of all proposed and approved subdivisions, and the proposed dwelling density for the subject subdivision.

4.6 Phasing of Development

The development of the Western Precinct is to be carried out in stages. The indicative staging of the development of the precinct is shown at **Figure 14**.

It is envisaged that development will commence in the south-western area of the precinct, in the vicinity of the southern collector road intersection with The Northern Road and the village centre. Development will then progressively proceed to the north and east. All infrastructure and services, including public transportation, will be provided at the relevant stages of development where and as necessary. As the site is progressively developed, more than one phase may be under construction at any particular time. Development is currently forecast to commence in late 2009 and continue over a period of about 10 years.

2 Net developable area is defined as "the land occupied by development, including internal streets plus half the width of any adjoining access roads that provide vehicular access, but excluding public open space and other non-residential land."

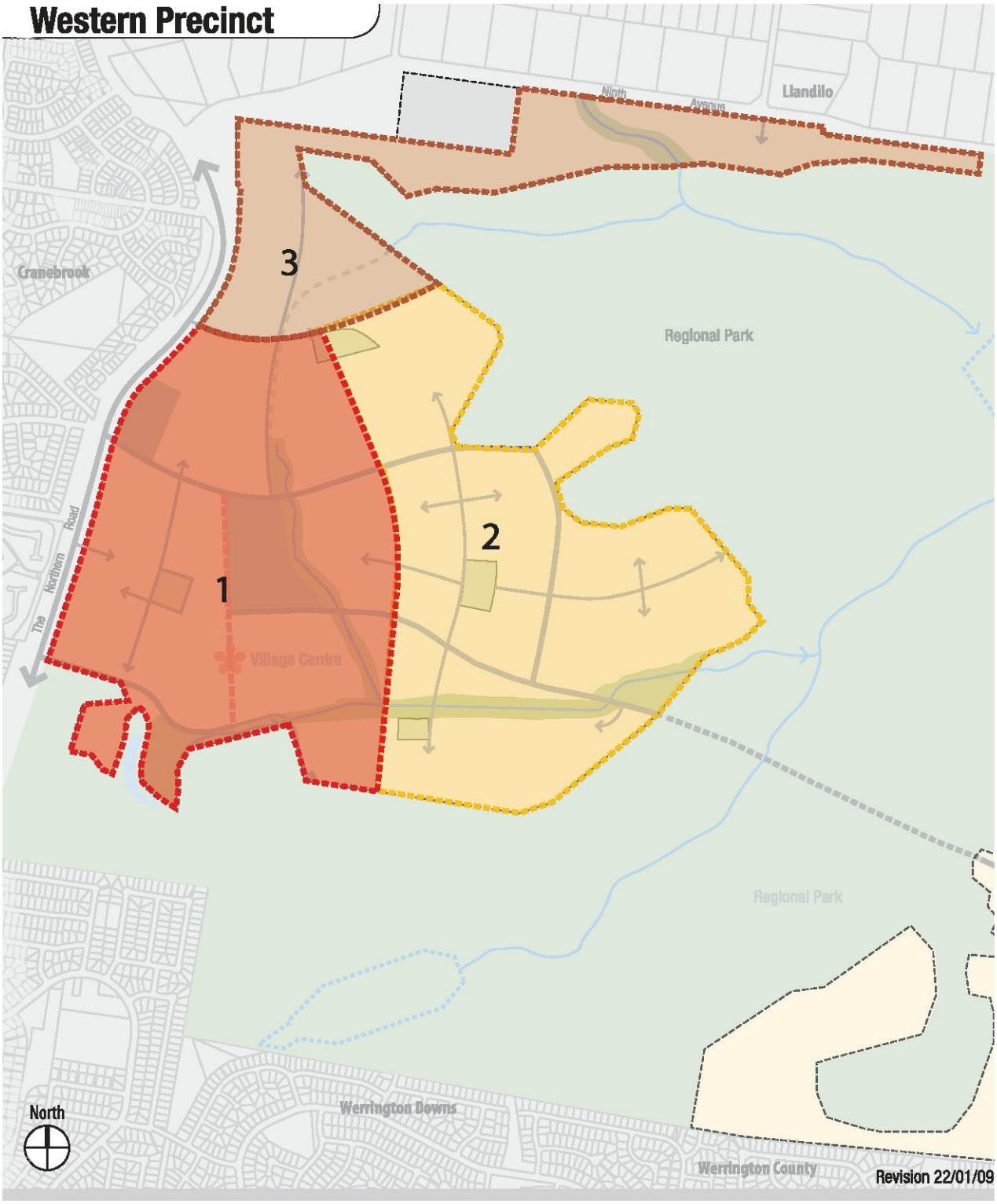


Figure 14 – Phasing of Development

4.7 Access and Movement

SKM has prepared a Traffic and Transport Report for the Precinct (see **Appendix L**). Given the detailed earlier studies and reports on the traffic and transport for the wider St Marys site, including the *St Marys Development Revised Transport Management Plan Traffic Study* (Sims Varley 2004) and the *St Marys Development Revised Transport Management Study* (SKM 2007), the current report's primary purpose is to further detail the relationship of future development of the precinct with adjoining land and precincts and future integration of transport for the balance of the site and existing surrounding neighbourhoods.

The Western Precinct is planned to provide high accessibility by buses, pedestrians, cyclists and general traffic, and to ensure effective links to surrounding regional road and public transport networks. The planning of the precinct focuses on securing a transport network that effectively caters for all modes of transport, promotes sustainability, and reduces car dependence. The proposed transport system will achieve the performance objectives of SREP 30 and the EPS.

The development principles that have been adopted for the Western Precinct transport system are:

- Ensure that the street system for the Western Precinct establishes a hierarchy;
- Ensure that the road network for the Western Precinct effectively connects to the external road network, via The Northern Road and Ninth Avenue;
- Ensure efficient road access to the east, including the Central Precinct, employment lands in the Central and North and South Dunheved Precincts, and to the proposed sporting and recreational facilities in the Regional Open Space adjacent to the Central Precinct;
- Ensure that the system of public streets within the Precinct is designed to balance the needs of pedestrians, cyclists, motorists and buses;
- Ensure that the vehicle movement network allows the opportunity for multiple routes to destinations;
- Ensure that road and pedestrian linkages with the surrounding areas provide access to employment opportunities for neighbouring residential areas;
- Design road linkages to provide routes for heavy haulage vehicles that avoid residential areas, minimising the potential impacts on the locality;
- Design the road hierarchy to provide flexibility as to the future lot sizes, to suit a wide range of future employment and urban uses;
- Establish good public transport links at the early stages of development, and ensure public transport is efficient, safe and reliable to increase patronage and reduce car use; and
- Allow for the future integration of the cycle network with cycleways proposed within the Regional Park (subject to the DECC Regional Park Plan of Management).

Site Access

The 2007 TMS assumed two of the intersections along The Northern Road to be signalised, with the other two un-signalised. The configuration of the Ninth Avenue intersection will either be a tee intersection rule controlled or a four-way intersection with appropriate priority control. Direct driveway access is also proposed along Ninth Avenue.

The existing zoned road corridor will provide access to the other precincts within the St Marys site to the east.

Internal Street System

- The objectives for the Western Precinct street system are:
- To establish a modified grid form street layout allowing for a high level of permeability and that supports the creation of a highly connected urban fabric;
- To ensure that the system of public streets within the Western Precinct balances the needs of pedestrians, cyclists, motorists and buses;
- To ensure that the movement network allows the opportunity for multiple routes to destinations, whilst generally orienting traffic to progressively higher order streets within the hierarchy;
- To ensure that the future street hierarchy clearly reflects the specific role of each street in the urban fabric of the Western Precinct;
- To ensure that the hierarchy of the streets is clearly discernible through sensitive management of the carriageway width, on-street parking, driveway access, building setbacks, pedestrian amenities and landscape character;
- To ensure that the street layout developed for the Western Precinct minimises potential impacts on other neighbourhoods in the locality;
- To ensure that the layout of streets allows for development to front streets, parks and natural areas, and encourages surveillance around local parks and other public spaces;
- To establish street orientation that maximises potential solar access to individual lots; and
- To allow for street block sizes to be designed to achieve maximum permeability.

The design standards for the collector street and local street road typologies are provided in Part 5 and **Appendix C.**

Street Hierarchy

An indicative street hierarchy for the Western Precinct is shown in **Figure15**, which shows:

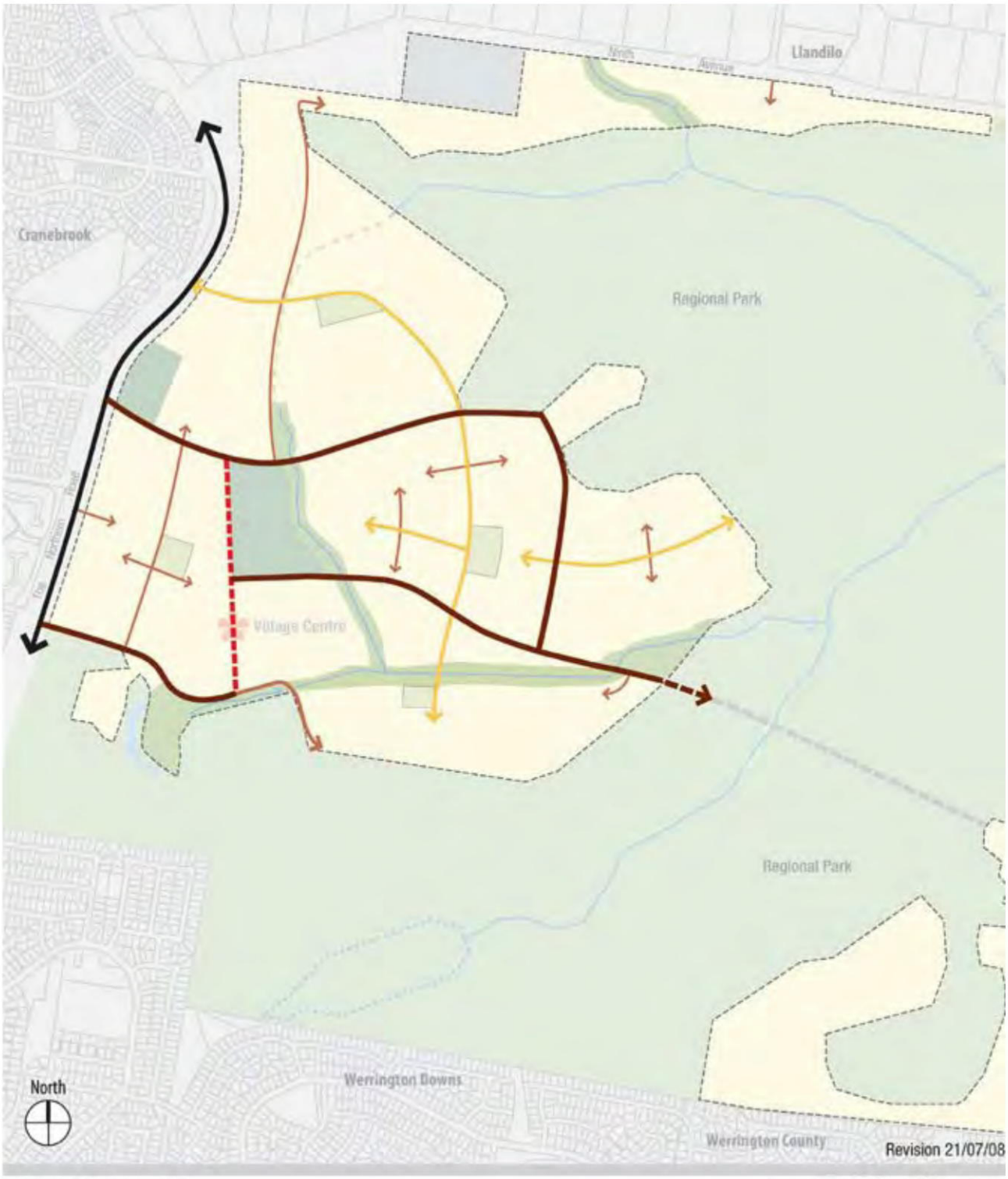
- Collector Roads;
- Local Streets; and
- Accessways.

As indicated on the Framework Plan at **Figure 11**, the two signalised access points are proposed to be interconnected to an internal collector road network bisecting the village centre, while also forming a circuit that traverses the northern, eastern and southern parts of the precinct. The focal point of the road system is in the middle of the circuit, where retail, commercial, education and community uses are proposed within the village centre. The road cross-sections are included in the Western Precinct DCS at Part 5.

Traffic Flows

To examine traffic flows on the internal primary road system, traffic travelling to / from twelve sub areas of the Western Precinct was assessed by SKM. This assessment found that peak hourly traffic volumes at representative locations on the primary internal road network would generate between 260 and 660 vehicles (two way AM peak hour flow).

This assessment found that residential areas fronting collector roads would have traffic volumes below the relevant RTA environmental limit. The traffic volumes on the collector road would also be below the RTA's guidelines functional limit of 1000 vehicles per hour.



Street Hierarchy (Plans subject to refinement through detailed design at DA stage)

Scale 1:15,000m @ A4 (approximate)
0 100m 200m 500m

- Collector Road
- Main Street
- Local Street
- Local Street (Pedestrian Priority)

Figure 15 – Western Precinct Street Hierarchy

Internal Intersections

In order to provide sufficient capacity and control traffic speeds, it is proposed that roundabouts be provided at key intersections on the roadwork. These will be determined as more detailed planning evolves through the DA process.

Initial analysis indicates that such roundabouts would operate well within capacity (Level of Service A to C). Other intersections would be priority controlled though measures such as Stop or Give Ways signs or tee intersection rule controlled.

Speed Control and Traffic Management Strategies

Possible measures to minimise the potential for "rat-running" or shortcut routes through the Western Precinct include roundabouts, appropriate speed limits and raised "wombat" type pedestrian crossings at appropriate located.

Traffic speeds can be managed through techniques such as limited street lengths, incorporation of street bends and slow points including mountable roundabouts, central islands, road narrowings, parking embayment with kerb blisters.

Such measures will be determined as more detailed planning evolves through the DA process.

Pedestrian and Cycle Network

Detailed site planning will promote walking and cycling within the Western Precinct and complement connections to the local and regional transport systems. The development of the pedestrian and cycle network is an important component of the ongoing planning for the site.

The routes will be enhanced by providing effective and safe access, good quality materials, visual amenity and clarity in route identification. The indicative pedestrian and cycle plan network shown in **Figure 16** allows for:

- Pedestrian priority streets with footpaths on both sides, increased verge widths and additional landscaping and street tree planting with the aim of providing enhanced amenity;
- A shared pedestrian and cycle network linking with key community facilities, services, parkland, and the village centre; and
- Links to commuter cycle networks beyond the site.

Public Transport

Transport management studies have concluded that bus services will be the most effective form of public transport for the St Marys site. To encourage the use of public transport the proposed street hierarchy is designed to accommodate the extension of bus services from The Northern Road, through the precinct, and to the Central Precinct to the east. Subject to further discussions with local bus service providers, it is expected that bus services will connect the Western Precinct to the Penrith CBD and railway station to the south-west and to the Central Precinct and beyond to the east.

The provision of public transport services will ensure the connectivity of the precinct with surrounding neighbourhoods and to the established transport systems serving the greater metropolitan area, enhancing access to jobs, shops, services and opportunities in the wider region.

The potential location of bus stops within the Western Precinct is shown in **Figure 17**. These are located with the objective of the majority of future residents, workers and visitors being within a 5 minute walk (approximately 400 metres) of these bus stops.

Pedestrian and Cycle Network (Plans subject to refinement through detailed design at DA stage)

Scale 1:15,000m @ A4 (approximate)
0 100m 200m 500m

Shared path (2.5m)
Pedestrian path (1.5m)
Potential Regional Park access

Figure 16 – Indicative Pedestrian and Cycle Routes

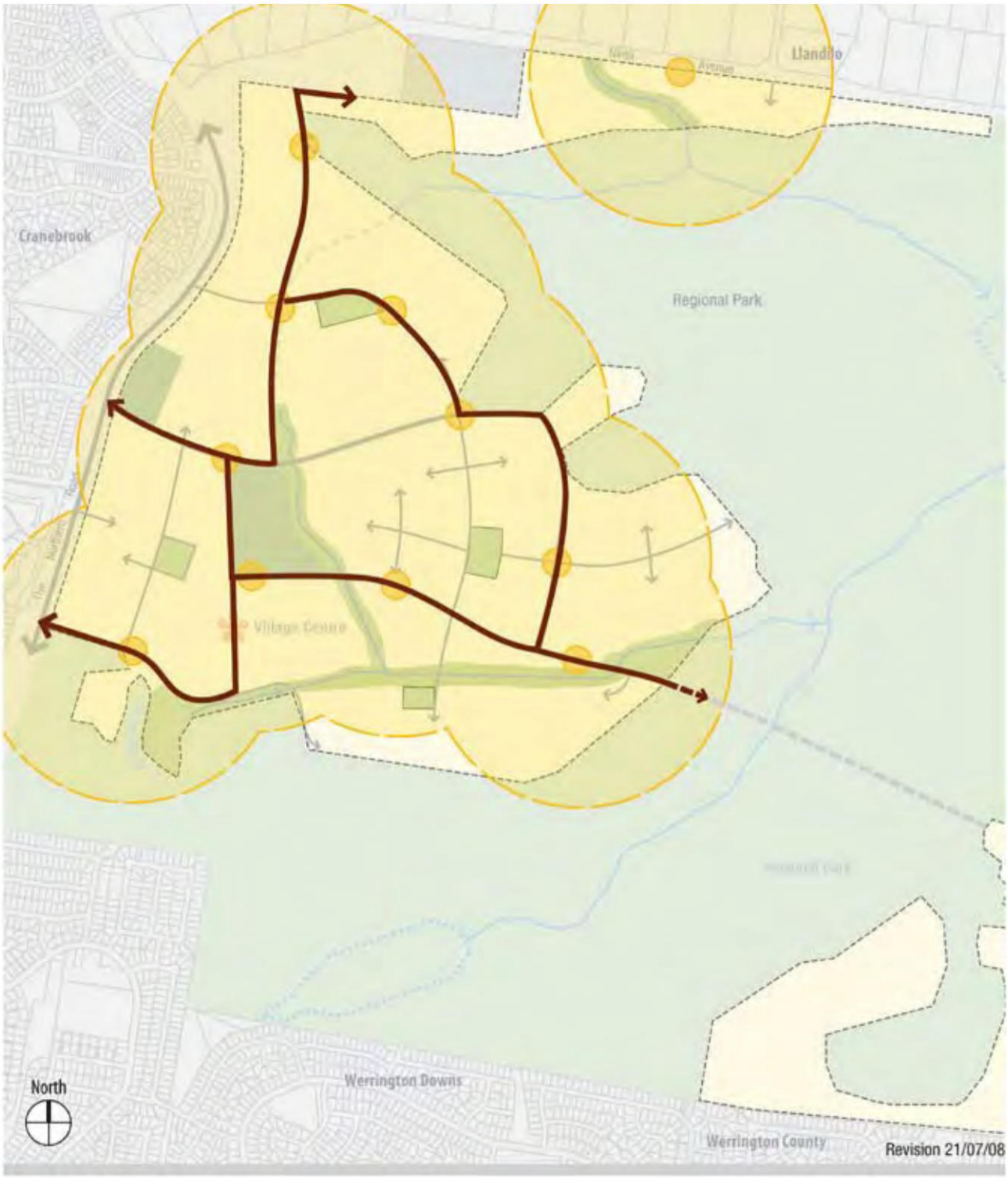


Figure 17 – Western Precinct Transport Network

4.8 Conservation of Natural Values

The development of the St Marys site has been planned so as to support the goals of ecologically sustainable development. The proposed landscape design recognises and responds to the existing natural character of the Western Precinct. Existing significant trees are to be retained, where possible, where they are appropriately located within areas of open space. These potential tree preservation areas are indicatively shown in **Figure 7** – Opportunities and Constraints.

A representative and significant proportion of the natural values of the overall St Marys site will be protected within the Regional Park that is to be dedicated to the State Government.

The establishment of the Regional Park is the foremost conservation measure that accompanies development within the overall St Marys site. The Regional Park will protect the major occurrences of endangered woodland and forest communities as well as the habitats of threatened and regionally significant species.

The Regional Park is to be managed by the NSW National Parks and Wildlife Service (NSW NPWS) in accordance with a plan of management that will address the provision of appropriate recreational facilities and the protection of conservation values. The transfer of the Regional Park has commenced, and will occur progressively over time.

The development of the Western Precinct may result in the removal or disturbance of several EECs, including Cumberland Plain Woodland, RFEF, Freshwater Wetlands and Shale – gravel Transition Forest. The examples of these communities that occur in the Western Precinct are highly degraded and consist of sparse native tree regrowth with a disturbed understorey. Due to their highly modified condition, the conservation value of these communities in the Western Precinct has been seriously compromised and this vegetation is not considered to be significant in terms of conservation. Significantly larger areas of these communities are present and will be conserved within the Regional Park.

Furthermore, although parts of the Western Precinct contain scattered trees representative of viable CPW, the CPW in the Regional Park is in excellent condition. Therefore the loss of low quality CPW from the precinct is not considered to significantly impact on the local occurrence of the community because high quality CPW is conserved in the Regional Park. If a final determination was made to list Cumberland Plain Woodland as a critically endangered ecological community, the further field studies that are to be undertaken for the flora and fauna assessments for each development application in the Western Precinct would ensure ongoing assessment of the community as a critically endangered ecological community in terms of the seven part test.

Threatened species (under either the TSC Act and/or EPBC Act) found and recorded on the wider St Marys site and with the limited potential to be found within the Western Precinct include:

- Large Footed Myotis *(Myotis adversus)*
- Greater Broad-nosed Bat *(Scoteanax rueppellii)*
- Eastern Freetail Bat *(Mormopterus norfolkensis)*
- Grey-headed Flying-fox *(Pteropus poliocephalus)*
- Lathams Snipe *(Gallinago hardwickii)* – migratory bird species recorded in wetland habitat of dam adjacent to the Western Precinct
- The Speckled Warbler *(Pyrrholaemus sagittata)*

The potential impact on these species is unlikely to be significant given the existing habitat is severely degraded, immature or fragmented. It is most likely that threatened or other species would be most commonly found within the Regional Park, given the quality of habitat.

The foremost mitigation measure for threatened species and ecological communities is the establishment of the 900 ha Regional Park. Additional mitigation measures and development principles that have been adopted for vegetation and biodiversity within the Western Precinct are:

- Retention where possible of stands of trees and vegetation within open space areas, where practicable, and inclusion in open space to provide habitat for native fauna species;
- Establishment of buffers around sensitive conservation areas and around the Regional Park, particularly around the wetland in the Regional Park directly adjacent to the precinct boundary (to preserve the foraging habitat of Lathams Snipe);
- Appropriate buffers between urban development and the wetland referred to above;
- Weed control;
- Use of clean fill;
- Habitat regeneration where possible;
- Control of feral and over-abundant native animals through planning during construction phase;
- Control of domestic animal access;
- Local native plant species and species of conservation significance (including threatened species) be included in the landscape design for the precinct, including endemic species as road trees and landscaping of public places; and
- Infrastructure is to be designed and located to minimise potential adverse impacts on the conservation values of the land.

Domestic and Feral Animal Management

Cumberland Ecology has prepared a Feral and Domestic Animal Management Strategy to address these potential impacts. This report is at **Appendix I.**

The objective for management of domestic and feral animals is:

- To minimise the potential for domestic animals within the Western Precinct to impact on native flora and fauna values;
- To ensure that development of the Western Precinct does not directly or indirectly increase populations of, or improve habitats for, feral/exotic pest animals and over-abundant native species;
- To minimise the potential for feral/exotic pest, over-abundant native and domestic animals to impinge on the conservation values of the adjoining Regional Park; and
- To ensure that development of the Western Precinct does not exacerbate any "Key Threatening Process" under the *Threatened Species Conservation Act 1995* or the *Environmental Biodiversity & Conservation Act 1999*, including predationor grazing by feral animals.

The strategies proposed to ensure these objectives can be met and to control feral, exotic and pest animals include:

- Minimising the dispersal of the Plague Minnow into created water bodies;
- Preventing access to rubbish during the construction and occupation phases;
- Avoid landscaping with hybrid *Grevillea* and *Callistemon*;
- Destroying rabbit warrens;

- Restraining pets in yards, indoors, in designated fenced pet exercise areas or on leashes so that they cannot access native wildlife; and
- Community education on pet ownership and the proliferation of feral animals.

Development in the Western Precinct is to implement the relevant measures specified in Cumberland Ecology's Domestic and Feral Animal Management Plan.

Weed Management

Cumberland Ecology has prepared a Weed Management Plan (included at **Appendix J**) which addresses weed control measures such as preventing weed spread and establishment, weed suppression, control and management, and education, as well as follow-up work and monitoring.

The objectives of controlling weeds are to:

- To prevent the spread of weeds from the Western Precinct to the adjacent Regional Park;
- To control the spread and intensification of existing weed species within the Western Precinct;
- To prevent the introduction of new weed species to the Western Precinct; and
- To reduce the existing weed populations within the Western Precinct.

To achieve the above, development in the Western Precinct should implement the relevant measures specified in Cumberland Ecology's Weed Management Plan.

- This includes the following controls:
- Land is to be revegetated after disturbance or construction activities to reduce the likelihood of weed species growing on-site;
- Landscaping in accordance with an approved landscape plan must be established as soon as practicable following completion of construction to prevent weeds from infesting disturbed ground;
- All mulch and topsoil utilised in landscaping must be certified weed free by the material supplier or landscaper; and
- Any plant species identified as a noxious weed within the Noxious Weeds Act 1993 should not be used in any landscaping scheme.

A vital component of the weed control strategy for the Western Precinct is follow-up work and monitoring.

Monitoring will help to identify and address non-conformance and allow the implementation of corrective actions within an appropriate time frame. It will also assist in determining cost effectiveness of weed control measures and allow for the refinement of weed control budgets.

The recommended short term monitoring program includes:

- Short term monitoring as a "follow-up" after weed control operations to ensure that weeds present in targeted areas have actually been sprayed or removed, and to re-spray if necessary;
- Once weeds have been initially reduced in densities dues to control activities they need to be regularly monitored, so that any outbreak or spread of weeds can be quickly suppressed; and
- This type of monitoring is essential for grassy weeds, which could remain hidden amongst the non-target vegetation during the initial control activities.

The recommended long term monitoring program includes:

- Providing sufficient feedback on the overall success of the weed control strategies including suppression and prevention of weed spread and establishment;
- Providing some information about the successful regeneration of native vegetation communities that contained weed species;
- Conducting qualitative weed surveys and mapping every year in the appropriate season for five years to coincide with the implementation schedule; and
- Comparison of annual maps to indicate whether the distribution and abundance of weeds has increased or decreased over the year, and allow future weed control measures to be tailored to specific objectives.

4.9 Landscape and Open Space Network

4.9.1 Open Space Masterplan

The Open Space and Landscape Masterplan by Environmental Partnership (see **Appendix Q**) sets the direction for the landscaping of public domain areas of the Western Precinct.

The Open Space Strategy addresses the following objectives for the Precinct:

- Recognition of natural values;
- Recognition of cultural values;
- Network connectivity;
- Multi-use facilities;
- Responsiveness to needs; and
- Recognition of specific opportunities provided by the St Marys site.

PCC's baseline open space provision is contained in its 2007 Open Space Action Plan. The baseline ratios establish a guideline provision only and a baseline reference for development an open space plan for the site. The application of the baseline ratios to the projected population of the Western Precinct (6400) are:

Active Open Space	1.4 ha / 1000	8.8 ha
Passive Open Space	1.64 ha / 1000	10.5 ha
Total	3.04 ha / 1000	19.46 ha

The Western Precinct presents a range of site specific characteristics and opportunities that have been considered in establishing the most effective open space provision and distribution framework. These include:

- The Western Precinct is bounded by the 900 ha Regional Park for over 60% of its perimeter. General access and recreation opportunities, consistent with the St Marys Development Agreement and draft Regional Park Plan of Management, will be available. Discussions with DECC have also identified that it highly likely that the two "peninsulars" of Regional Park projecting into the northern edge of the main section of the Western Precinct (with a total area of approximately 11 ha) could play a role in the passive local open space network.

- In close proximity to the Western Precinct directly adjoining the Central Precinct is 40 ha of land zoned as Regional Open Space. PCC's 2007 Open Space Action Plan and District Open Space Contributions Plan identifies the provision of a range of district level sporting and recreational facilities on the Regional Open Space land.
- The development of riparian and vegetation corridors though the precinct provide potential for recreational and open space provision. It is proposed to construct several open space corridors (serving dual riparian and recreation function) within the precinct.

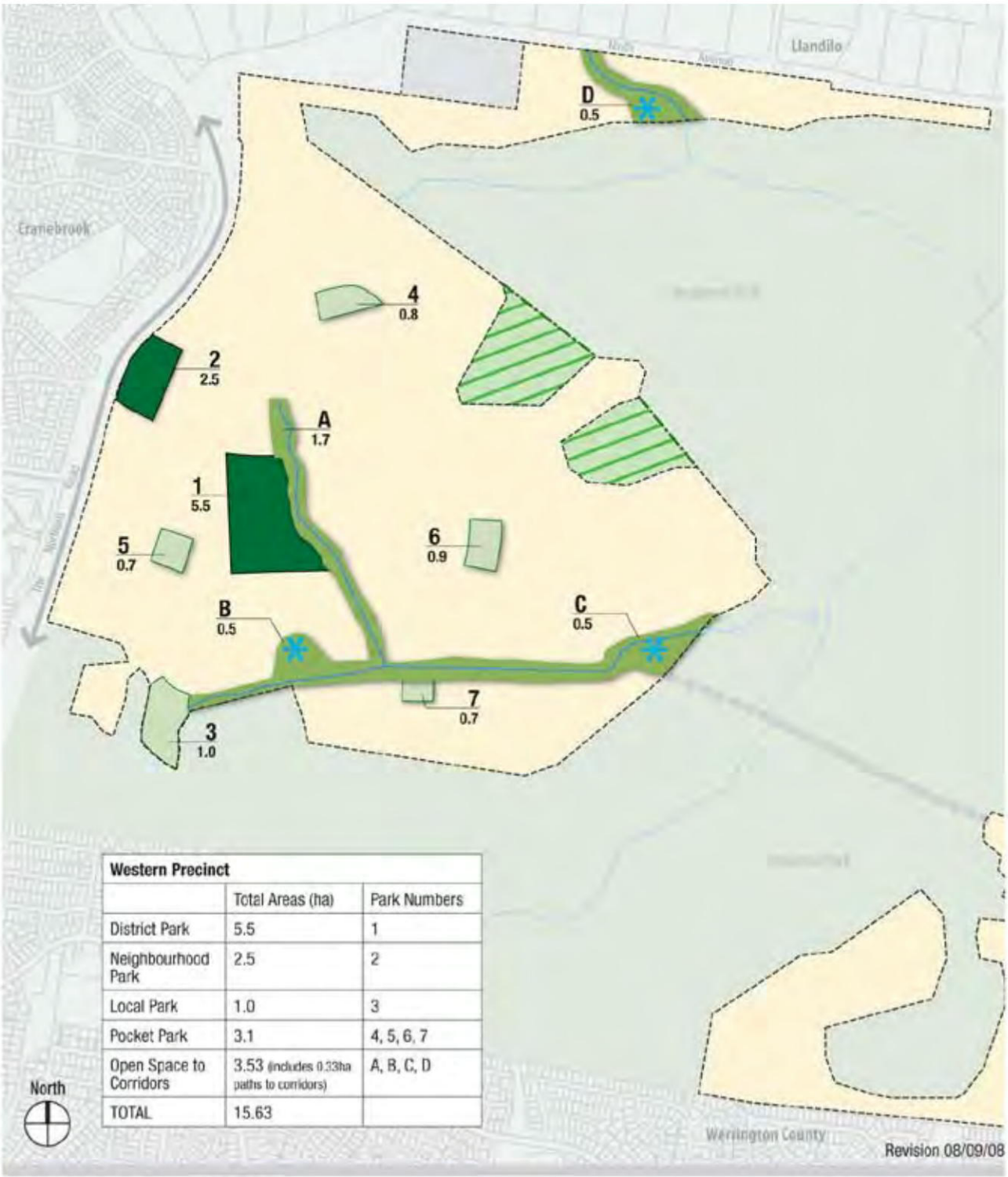
Proposed Open Space Masterplan

The Open Space Masterplan developed for the Western Precinct is shown in **Figures 18** and **19** and described in **Table 1**. It provides an open space distribution and quantum that meets the needs of the new community for quality, accessible and sustainable open space and takes into account site specific open space opportunities.

The total local open space contribution of 15.63 ha equates to 2.44 ha / 1000 population, based on the population estimate for the Western Precinct of 6400. This comprises 8.0 ha of active open space and a total of 7.63 ha of passive open space.

- The proposed quantum recognises the following factors:
- The distribution of open space adequately addresses the minimum target for accessibility to residences of 5 minutes walk generally;
- The Regional Park and Regional Open Space accessible to the Western Precinct in addition to Regional Park areas suitable for use as passive open space supplement local open space in providing a "quantum" of space for recreational use;
- The Regional Park context and the accessibility of corridor open space and linkages provides a high level of landscape amenity;
- The proposed Village Oval (Park No. 1 – a district park under Council's Open Space Action Plan) will provide not only playing field and other active facilities, but also passive recreational amenity that will supplement the passive use of local and pocket parks;
- Open space embellishment will provide a high level of landscape amenity that promotes "quality" of open space and recreational experiences rather than quantity only;
- Oversupply of poor quality open space is not a good or sustainable outcome;
- The interface with and access to the Regional Park provide a very high level of landscape amenity, as will all other areas of open space, beyond the need to merely provide a quantum of open space without consideration of the qualities and context of the space; and
- The open space masterplan response reflects the needs-based and qualitative approach as recommended in PCC's PLANS Strategy.

The inclusion of the additional 11 ha of Regional Park with potential for use as passive open space would increase the total overall open space provision for the Western Precinct to 26.63 ha, which is approximately 7.2 ha over the baseline requirement.



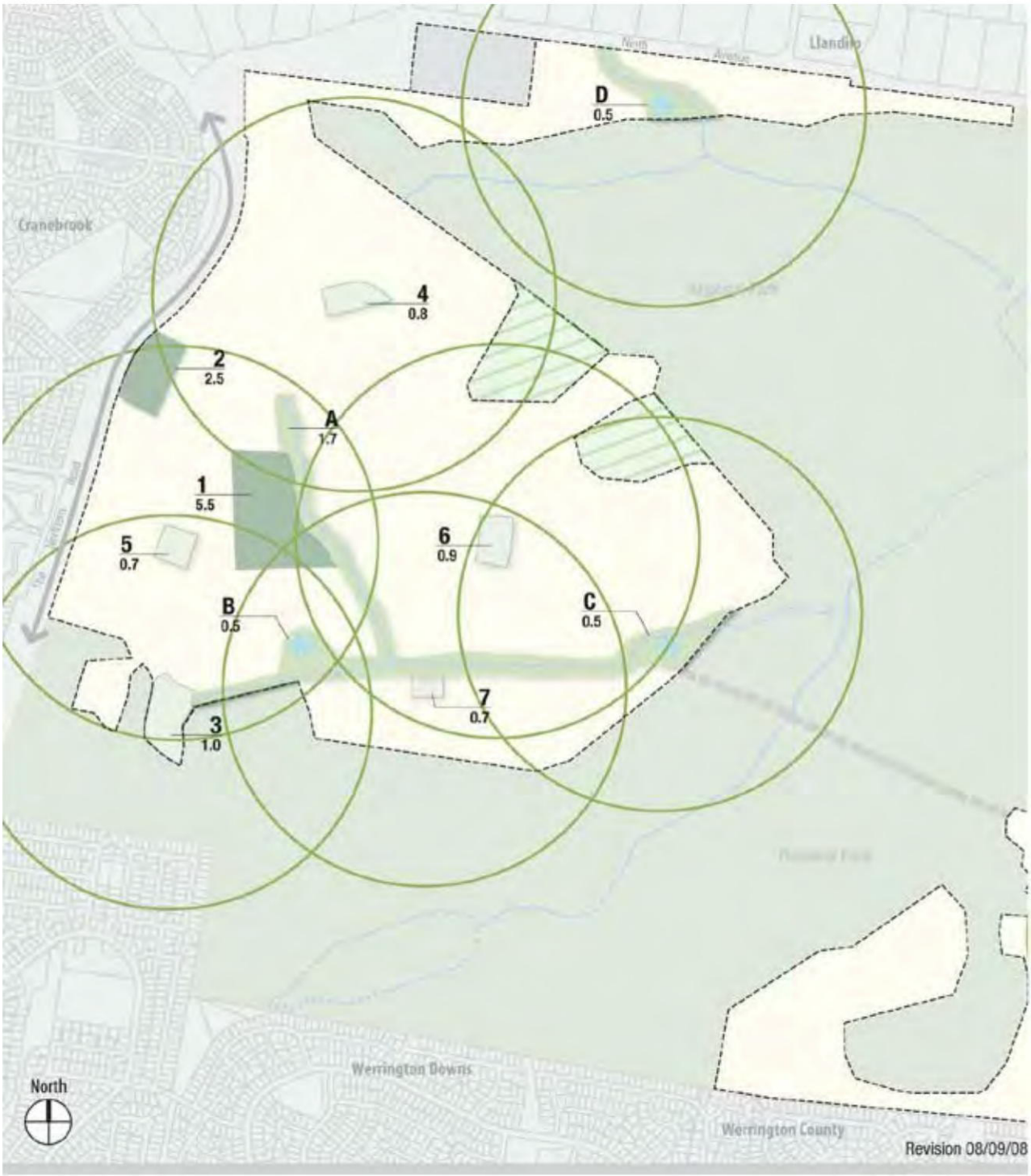
Open Space Master Plan

(Plans subject to refinement through detailed design at DA stage)

Scale 1:15,000m @ A4 (approximate)
0 100m 200m 500m

- Riparian Corridor / Parkland
- Passive Open Space
- Active Open Space
- Regional Park Passive Open Space Opportunity (approx. size 11ha)
- Water Management Basin/Lake

Figure 18 – Western Precinct Open Space Network



Access Master Plan (Plans subject to refinement through detailed design at DA stage)

Scale 1:15,000m @ A4 (approximate)
0 100m 200m 500m

- Riparian Corridor / Parkland
- Passive Open Space
- Active Open Space
- Regional Park Passive Open Space Opportunity (approx. size 11ha)
- Water Management Basin/ Lake
- 500m Walking Distance

Figure 19 – Western Precinct Open Space Access

Table 1 – Open Space Hierarchy / Master Plan

Item	No.	Approx. Area	Total Area West prec
District Open Space		N/A	
District Park	1	5.5 ha	5.5 ha
Sub total			**5.5 ha**
Neighbourhood Park (> 5 ha)	2	2.5 ha	2.5 ha
Sub total			**2.5 ha**
Sub total active open space (PCC baseline active O/S - 8.96ha)			**8.0 ha**
Local Park (0.5-3ha)	3	1.0 ha	1.0 ha
Sub total			**1.0 ha**
Pocket Park (0.25-1ha)	4	0.8 ha	0.8 ha
	5	0.7 ha	0.7 ha
	6	0.9 ha	0.9 ha
	7	0.7 ha	0.7 ha
Sub total			**3.1 ha**
Open Space to corridors	A	1.7 ha	1.7 ha
	B	0.5 ha	0.5 ha
	C	0.5 ha	0.5 ha
	D	0.5 ha	0.5 ha
Paths to corridors (nominal 2.5m width x 1350 lin/m)	paths	0.33 ha	0.33 ha
Sub total			**3.53 ha**
Sub total passive open space (PCC baseline active O/S - 10.5ha)			**7.63 ha**
Total local open space- Western Precinct			**15.63 ha**
Other Open Space Resources			
Regional Park areas with potential for use as passive open space		11 ha	11 ha
PCC baseline open space requirement		19.46 ha	19.46 ha
Reference Total - Overall Open Space Resources		1.07 ha	26.63 ha

Locational Principles

Key locational principles for each of the identified open space areas are described in below.

- Western Village Oval (District Park) (1)
  - Located on main east-west collector road and within Village Centre Character Area to maximise accessibility;
  - Adjoins the north-south drainage corridor to maximise accessibility;
  - Takes advantage of most level topography on the site;
  - Location will maximise visual exposure;
  - Will relate strongly to proposed school and community uses in the village centre; and
  - Layout should aim to optimise tree retention.
- Northern Road Oval (Neighbourhood Park) (2)
  - Located at the intersection of The Northern Road and main collector road to precinct;
  - Location highlights its identity and access to adjoining suburbs;
  - Will play a secondary passive role to adjoining neighbourhoods; and
  - Layout should aim to optimise tree retention.
- Remnant Farm Dam Local Park (3)
  - Located adjacent to the remnant farm dam in the Regional Park to take advantage of attractive character of existing vegetation and water;
  - An open space linkage is provided through to the village centre to promote access and habitat/vegetation connections; and
  - Location will take advantage of existing tree canopy.
- Hilltop Park (4)
  - Located on one of the highest points on the site with views from the west to south-east;
  - Centrally located within the northern section of the precinct and closely located to the corridor linking through to the village centre; and
  - Space will take advantage of limited existing tree canopy.
- West Pocket Park (5)
  - Adjoins village centre to the east;
  - Located centrally to the adjoining residential neighbourhood to optimise accessibility and function; and
  - Location will take advantage of existing tree canopy.
- East Pocket Park (6)
  - Located centrally within the adjoining neighbourhood to optimise accessibility and function;
  - Aligns with the north-south corridor; and
  - Location will take advantage of existing tree canopy.
- South Pocket Park (7)
  - Located centrally to the adjoining residential neighbourhood to optimise accessibility and function.

- North Corridor Park (A)
  - To be provided as a node in the north of the drainage corridor to complement local and pocket parks in serving the adjoining neighbourhoods; and
  - Integration with corridor will optimise the landscape and visual amenity and provide good connectivity via the corridor shared access path.
- Central Basin Park (B)
  - Provided as a node at the junction of the north-south and east-west drainage/vegetation corridors to complement local and pocket parks in serving the adjoining neighbourhoods;
  - Adjoins the proposed detention basin which will provide a permanent standing water body (proposed village centre lake), enhancing visual and recreational potential;
  - Integration with corridor will optimise the landscape and visual amenity and provide good connectivity via the corridor shared access path; and
  - Relates closely to the village centre and offers potential for strong interaction with activity and uses in the centre.
- Eastern Basin Park (C)
  - Provided as a node at the western end of the east-west drainage / vegetation corridor to complement local and pocket parks in serving serving the adjoining neighbourhoods;
  - Adjoins proposed stormwater basin which will provide a permanent standing water body, providing visual and recreational potential; and
  - Integration with corridor will optimise landscape and visual amenity and provide good connectivity via the corridor shared access path.
- Ninth Avenue Corridor Park (D)
  - Provided as a node in the drainage/vegetation corridor between the Ninth Avenue Character Area and the Regional Park;
  - Generally larger lot sizes in this area will generate lower demand for local open space; and
  - Integration with corridor will optimise landscape and visual amenity and provide good connectivity via the corridor shared access path.
- Corridors
  - Corridors primarily relate to site drainage lines identified as suitable for rehabilitation for riparian and recreational purposes; and
  - All corridors provide potential for off road cycle/pedestrian linkages.

4.9.2 Landscape Maintenance and Handover Plan

Ongoing management and maintenance requirements for open space and landscape treatments are outlined in the Landscape Maintenance and Handover Plan at **Appendix R**.

4.10 Bushfire Measures

The Bushfire Assessment prepared by Bushfire and Environmental Services (BES) (see **Appendix K**), consistent with the measures required under SREP 30 and 'Planning for Bushfire Protection (2006)' (PBP), details the bushfire protection measures recommended for future development within the Western Precinct as required within the Acceptable Solutions of PBP. These measures include APZs, building construction standards, access, and services.

The Western Precinct is identified as bushfire prone land and will be subject to subdivision for predominantly residential purposes. A Bushfire Safety Authority from the NSW Rural Fire Service is required for approval for residential subdivision and this authority is to be provided based on the details of a Bushfire Protection Assessment.

Although a Bushfire Safety Authority is not required for planning at the precinct level, the Bushfire Protection Assessment provides the necessary detail to guide future subdivision applications with the Western Precinct.

Future development for non-residential uses (where relevant) is to be assessed by Council under the provision of Section 79BA of the Environmental Planning and Assessment Act 1979, which includes the consideration of PBP.

Therefore, bushfire risk and matters including APZs, building construction standards, access and services will be further addressed at the DA stage and, depending on the type of DA, in accordance with the requirements to obtain Rural Fire Service approval or to consult with the Rural Fire Service. This will include further consideration of the APZ widths identified in this precinct plan.

Based on the recommendations of the Bushfire Protection Assessment, the following development principles have been adopted for management of bushfire risk in the Western Precinct:

- A variable APZ for residential development, predominantly 10 to 15 metres wide, with some sections 25 metres wide, is required, as shown in **Figure 20**.
- Special Fire Protection Purpose (SFFP) development, as outlined in the Bushfire Protection Assessment, require a higher standard of bushfire protection due to the vulnerability of the occupants and the potential need for assisted evacuation. A minimum APZ ranging from 40 metres to 70 metres is required for any SFPP development adjoining the Regional Park boundary, depending on vegetation type and slope.
- APZs can contain managed vegetation and can be utilised as areas of public open space, recreational areas such as sportsgrounds, access ways such as roads, and ancillary parts of development such as yards and car parks.
- All bushland/development interface areas within the precinct are to be accessible by a perimeter access road linked to the internal road network at regular intervals. Some shorter sections of the interface may adjoin the bushland within the Regional Park without a public perimeter road in between, but these areas are to be limited where possible, and short in distance (eg a maximum 140m in length between possible hydrant locations in the public road network at either end).
- The building construction standard for future dwellings in the precinct (as per Table A3.3 within PBP, reproduced at **Appendix** 1 of the Bushfire Protection Assessment, shall be determined at the relevant DA stage.
- Public roads within 100 metres of the Regional Park boundary, collector and main roads servicing those parts of the precinct within 100 metres of the Regional Park boundary and perimeter fire trails are recommended to meet the accepted solutions within PBP, as listed in Tables 3 and 4 of the Bushfire Protection Assessment.
- All water, electricity, and gas supply services shall be provided and maintained in accordance with relevant standards and specifications.

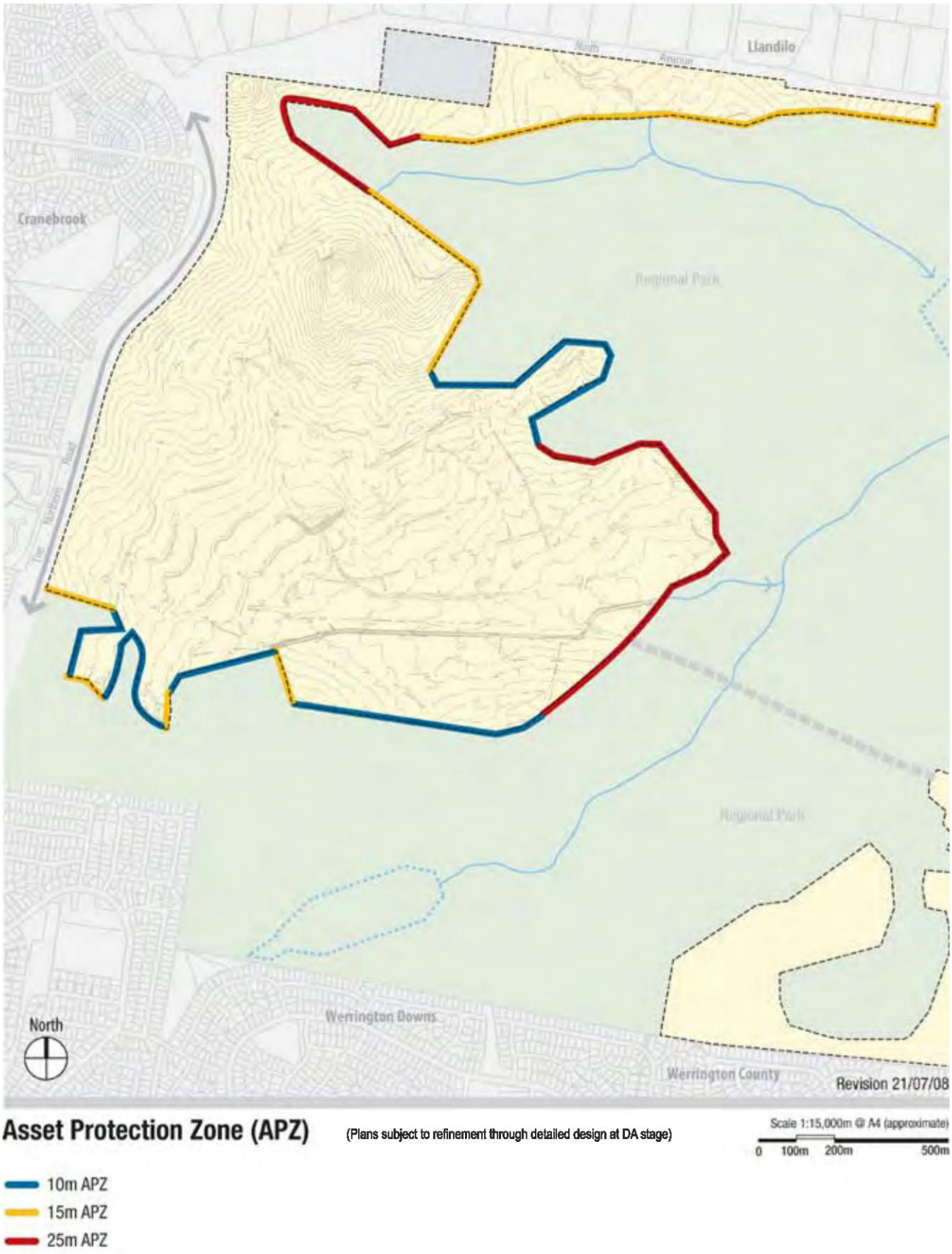


Figure 20 – Asset Protection Zone locations and dimensions

4.11 Water Cycle and Soils

Water Cycle Management, Drainage Management and Groundwater and Salinity

Based on the site characteristics of the Western Precinct, SKM has developed a detailed Catchment Management Strategy and a Soils, Groundwater and Salinity Management Strategy for the Precinct (see Water, Soils and Infrastructure Report at **Appendix F**).

Water Cycle Management

The Catchment Management Strategy is underpinned by the following objectives:

- Ensure peak flow rates do not increase for all storms up to the 100 year ARI event;
- Maximise source controls for runoff quantity and quality;
- Achieve a no net increase in the annual pollutant load exported from the site; and
- Achieve efficient use of water and minimise demand for potable water.

To implement these, measures that could be incorporated into the development include:

- Rainwater tanks on residential lots for private irrigation reuse;
- Recycled water (subject to on-going negotiations with Sydney Water) for toilet flushing, irrigation and other activities, such as car washing;
- Water saving fixtures within the buildings;
- Bioretention vegetated areas in open space areas;
- Gross Pollutant Traps;
- Constructed stormwater wetlands or dry infiltration bioretention basins; and
- Detention storage integrated into the wetlands or dry infiltration basin areas.

On the basis of past assessments and the proposed development of the Western and Central Precincts, SKM has estimated the volumes and areas required for detention and water quality purposes within each precinct. Following consultation with PCC, it has been agreed that the approach to watercycle management should be similar to past assessments, that is:

- Water quality is assessed for the Central and Western Precincts together at a discharge point situated at South Creek; and
- Water quantity is assessed for the Western and Central Precincts separately.
- The following components would make up the drainage system:
- Pit and pipe systems able to carry flows up to the 10 year ARI storm;
- Overland flows paths able to carry flows up to the 100 year ARI storm;
- Open channels able to carry flows up to the 100 year ARI storm; and
- Combined detention/wetland basins able to provide the necessary quality and quantity controls, while also coping safely with the 100 year ARI flow.

Four detention basins (A1, A2, C1 and C2) are proposed for the Western Precinct for peak flow mitigation for 2 year to 100 year ARI storm events. Three of these basins are located within the Western Precinct, whilst the remaining basin is situated outside the precinct boundary in a Drainage zone surrounded by the Regional Park. The location of these basins is shown at Figure 4-1 in the SKM report and **Figure 11** of this report.

These detention basins will be integrated into wetlands or dry infiltration basin areas which will supplement the treatment of stormwater provided by source controls and Gross Pollutant Traps. Two zoned basins outside of the precinct (I and B, as shown in Figure 4-1 of the SKM report) are required to achieve the project water quality objectives and would be progressively constructed during the development.

The estimated detention volume requirements and minimum land take for water quality purposes of each basin within the precinct will be refined at the detailed design stage.

Salinity and Groundwater

The Soils, Groundwater and Salinity Management Strategy addresses the need to ensure that there is no significant rise in the water table or in groundwater salinity as a result of the development.

The objective of the Groundwater and Salinity Management Strategy is:

- To satisfy the requirements of SREP 30 and EPS with respect to groundwater and land salinity issues at the site;
- To assess the existing salinity conditions in soil and groundwater at the site;
- To predict the potential impact of urban development of the site's landscape, especially the potential to increase surface runoff salt load and rising water table which might bring saline groundwater to the surface; and
- To provide mitigation and management measures to ameliorate potential salinity impacts in the proposed urban development.

SKM has concluded that the amount of salt that would be added as a result of the development would be negligible and that the impact of the planned development is unlikely to result in surface salinisation, due to existing low to moderate levels of salinity and through remedial measures proposed including raising the ground level by filling and limiting infiltration.

Measures proposed for groundwater and salinity management (as recommended by SKM at **Appendix F** and consistent with the DIPNR (2003) *Western Sydney Salinity Code Practice*) include:

- The design and installation of catchment-wide 'salt safe' stormwater plans prior to the development of individual subdivisions within the catchment;
- Shaping any filled landform as a cambered embankment to shed water rapidly and directing this runoff into graded natural watercourses and avoiding detention in ponds as far as possible;
- Reducing ground area available for rainwater infiltration, maximising use of paving in urban areas and preventing the accumulation of water on fill and former land surface interface;
- Collection of stormwater from paved areas and roofs and directing it to sealed drains to approved discharge points along natural drainage lines;
- Lining of basins and swales with an impermeable liner to prevent infiltration into groundwater; and
- In relation to house construction and landscaping:
  - encourage residents to use water and nitrogenous fertilisers sparingly in garden irrigation, especially where slightly saline recycled water is being applied

- encourage planting of drought and salt tolerant native species and, where possible, deep rooted trees
- fit buried pipes with leak proof junctions to accommodate shrink and swell movements in clay soils
- link downpipes to sealed stormwater drains or storage tanks and minimise unlined surface ponding

Salinity management for individual dwellings will be addressed through sailinity assessment at Subdivision DA stage and requirements such as s88B restrictions.

Flood Evacuation

As the Probable Maximum Flood (PMF) lies outside the Western Precinct, SKM has concluded that a Flood Evacuation Strategy for the precinct is not required (see Water, Soils and Infrastructure Report at **Appendix F**).

Soil and Water Management

Based on the site characteristics of the Western Precinct, SKM has developed a detailed Soil and Water Management Strategy for the precinct (see Water, Soils and Infrastructure Report in **Appendix F**) during the construction phase of the development.

This strategy is underpinned by an extensive set of objectives and management measures, which are to:

- Provide an overall erosion and sediment control concept for the proposed development;
- Control the erosion of soil from disturbed areas of the site;
- Limit the area of disturbance that is necessary;
- Protect downstream water quality; and
- Prevent any sediment-laden water from entering South Creek.

In addition to the measures within the Soil and Water Management Strategy, an Erosion and Sediment Control Plan will, at DA stage, address the relevant requirements of PCC and the Landcom "Blue Book" for Soils and Construction.

Further, during the construction phase it is proposed that detention basins/ ponds be utilised for temporary erosion and sediment control, with runoff appropriately treated prior to discharge.

In order to control sediment and erosion during construction and to minimise any adverse impacts from filling operations, the following controls would be implemented:

- Stabilised entry and exit point;
- Sediment filter fences;
- Weed-free straw bales;
- Barrier Fences;
- Diversion drain banks and channels;
- Check dams;
- Temporary sedimentation basins; and
- Top soil stockpiles.

Further detail is contained within the SKM report at **Appendix F**.

Riparian Corridors

Riparian corridors will be established along existing drainage lines identified in consultation with the Department of Water and Energy (DWE) (refer to **Figure 11**). The environmental outcomes for riparian corridor land are:

- Drainage lines are to be constructed and vegetated so that they approximate a natural state. Any modification of existing drainage lines should be done in a manner which has regard to the conservation of indigenous flora in and around the drainage lines.
- A continuous, viable Core Riparian Zone (CRZ) which emulates the native vegetation communities in the area, provides for the movement of flora and fauna species and facilitates the stability of the watercourse shall be provided.
- A vegetated buffer (VB) shall be provided either side of the CRZ of the identified watercourses. The VB is to protect the environmental integrity of the CRZ from weed invasion, micro-climate changes, litter, trampling and pollution by emulating the native vegetation communities in the area.
- There is to be no net impact upon the water quality in South Creek and Hawkesbury-Nepean Catchments.

Development within identified riparian corridors shall generally be limited to:

- Works relating to the creation of the riparian corridor.
- Environmental protection works.
- Drainage works. Detention basins and related works shall generally be located outside of the riparian corridors. However, such works can be located within the riparian corridor with the agreement of Council and the DWE.
- Crossings for roads, services and pathways:
  - Pedestrian and cycle paths should generally be located beyond the riparian corridor. However, consideration can be given to these works within the riparian corridor if it can be demonstrated to the satisfaction of Council and DWE that the environmental outcomes outlined above are achieved.
  - Indicative road crossings of the riparian corridors shown in the Framework Plan are to be constructed with no less than a box culvert design with adequate capacity for both water and fauna movements and have naturalized bases. The design of any additional road crossings will be subject to the agreement of DWE and PCC.
- APZs shall be located beyond the riparian corridor.

4.12 Efficient Resource Use Strategy

The St Marys EPS requires that this Precinct Plan incorporates an efficient resource use strategy (Section 9.4 of the EPS). The development of the Western Precinct is to be undertaken in a manner to ensure that the principles of ecologically sustainable development (ESD) will be achieved. The Framework Plan and Development Control Strategy are designed to ensure that development of the precincts is focussed on energy efficiency, waste management and air quality in the following manner:

- Facilitating orientation of lots that can ensure optimal solar access;
- Locating traffic generating land uses close to public transit corridors;
- Locating related land uses centrally to maximise the opportunity for multipurpose trips; and
- Assigning priority to energy efficient transport modes, such as public transport, cycling and walking by providing more direct routes for these modes.

The Framework Plan for the Western Precinct is designed to reduce distances travelled by private vehicles by:

- Providing for a grid-based street network with a high level of connectivity and permeability;
- Locating bus stops within 5 minutes walking distance of the majority of dwellings;
- Connecting public transport corridors to key local destinations, including retail and employment centres, educational and community facilities, and recreational and sporting facilities, as well as with the wider public transport system, including St Marys station;
- 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 cycleways to encourage bicycle usage.

At the detailed planning phase of the new neighbourhoods, the aspect, shape, topography and slope of the site will be taken into account to achieve energy efficiency objectives.

An education program undertaken by the developer will ensure that the future land owners and tenants are aware of the need for, and benefits of, energy efficiency and how to practically apply concepts such as the following:

- The use in buildings, wherever possible, of measures for minimising heat loss and the absorption of heat from outside, such as:
  - providing insulation for walls and roofs;
  - the use of appropriate building materials; and
  - providing fewer and smaller windows on the eastern and western facades of buildings.
- Waste reduction and management.
- Alternatives to car use, such as public transport, walking and cycling.
- The use of building designs that allow for cross ventilation as a means of removing stale air without resorting to air conditioners; cross ventilation can be achieved by:
  - positioning windows and doors opposite each other in rooms; and
  - providing fans and other forms of mechanical ventilation.

The following planning and design principles have been incorporated into the Western Precinct Development Control Strategy or will be encouraged during development to ensure that future development efficiently utilises resources:

- Building designs are to maximise solar access and minimise overshadowing.
- The use of shading devices on windows facing east or west, i.e. the orientations which are most intensely affected by sun.
- The use of building materials and construction methods which have low energy inputs into their production, i.e. a low 'embodied' energy.
- Integration of land use and transport planning.
- The selection of energy and water efficient building services, equipment and appliances, e.g. solar powered water heating.
- The use of mechanical and electrical systems that are designed and constructed to achieve the maximum energy efficiency achievable with current technology and best practice.

4.13 Cultural Heritage

Aboriginal Heritage

As outlined in Section 3.7, there is a significant conservation outcome for indigenous archaeological cultural heritage at the western end of the St Marys site, with the majority of land with high conservation value (Zone 1) falling within the Regional Park. In accordance with the SMM, it is proposed to investigate a representative set of landscapes from the Western Precinct to assist in the interpretation and management of archaeological resources.

Six salvage locations within the Western Precinct have been identified (as well as further location along the fenceline of the road the Central and Western Precincts), as shown in **Figure 21** below.

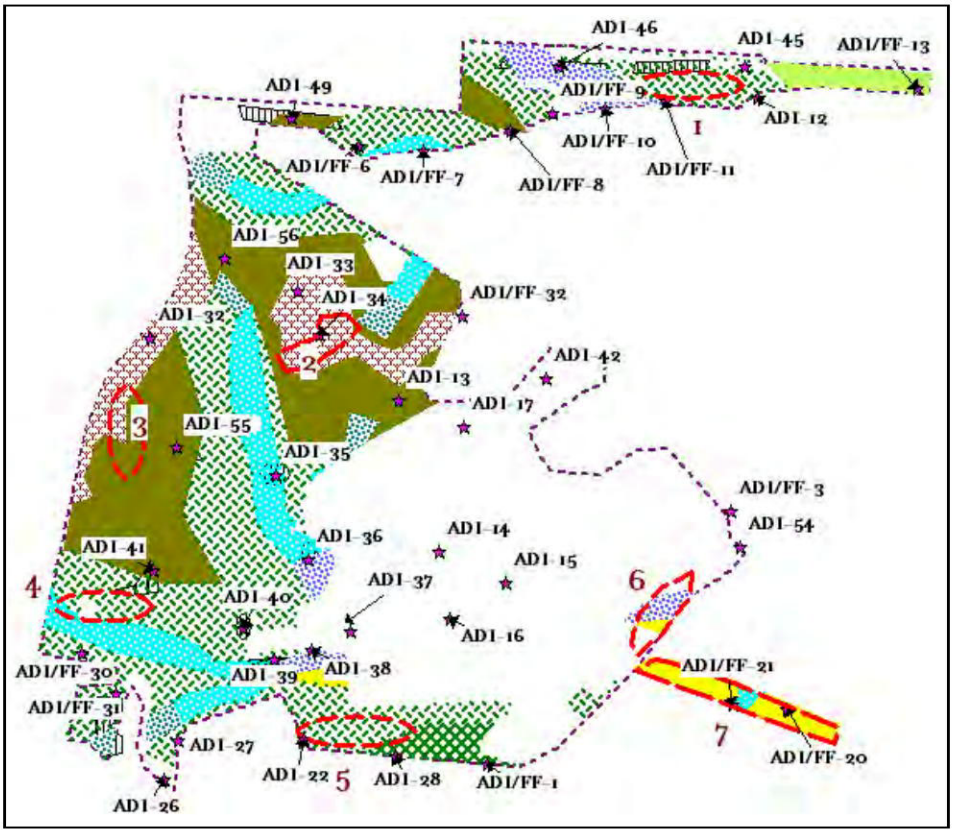


Figure 21 – Aboriginal Archaeological salvage areas

Jo Macdonald Cultural Heritage Management has therefore recommended that, depending on the timing of the proposed works programme, an application be made to DECC for a section 87 and 90 Consent with salvage for the entire precinct.

Upon the consent being granted, fieldwork for the sub-surface investigation of the salvage locations will be undertaken with the involvement of representatives of the four relevant Aboriginal groups.

European (Non-indigenous) Archaeology

The Western Precinct contains four non-indigenous archaeological sites identified in SREP 30. Casey & Lowe (see **Appendix N**) has advised that all of these will be impacted by the proposed development within the Precinct.

Casey and Lowe have concluded that Sites 14 and 15 have no heritage significance and accordingly do not warrant any further archaeological investigation or recording. Due to their disturbed nature, these remains will not constrain the development process.

Casey & Lowe have recommended for Sites 14 and 15 that:

- The potential presence of archaeological relics requires approval under s139 of the *Heritage Act 1977* and that an exemption under s139(4) should be applied for for these two sites. This could be made at the same time as the s140 application for Sites 9 and 16 (see below); and
- The Canary Island Palm tree at Site 14 should be retained as a planting and be interpreted as belonging to twentieth century plantings. It may be relocated if necessary.

In relation to Sites 9 and 16, these have been assessed by Casey & Lowe as being of local heritage significance and will require further archaeological investigation.

Casey & Lowe have recommended for Sites 9 and 16 that:

- These sites may be removed as part of the development of the Western Precinct as long as they are appropriately recorded prior to commencement of works;
- Archaeological testing should be undertaken to determine if archaeological remains survive and meet the local significance criteria;
- If testing identifies that no significant remains survive, a brief report to this effect will be required;
- If testing identifies significant archaeological remains, then the two sites should be archaeologically excavated and recorded as part of an open area excavation program;
- These archaeological works will need a Section 140 excavation permit application to the Department of Planning Heritage Branch;
- The remains should form an important component for interpreting the story of the pre-munitions period European occupation of the area to the public; and
- Any artefacts recovered from the site will need to be stored by the proponent.

4.14 Infrastructure and Services

The SKM report at **Appendix F** articulates and details consultations undertaken and advice received from the relevant utilities and services providers regarding the proposed servicing of development of the Precinct.

Sydney Water and Integral Energy have indicated that they are able to service the Western Precinct with extensions to their existing networks. Water supply will be available from the existing Cranebrook reservoir adjacent the site. Sewer is able to be transferred to the existing St Marys Sewage Treatment Plant via pumping stations, rising mains and carriers. Electricity is able to be extended from the existing zone substation at Cranebrook with the establishment of a temporary zone substation and the ultimate establishment of a permanent zone substation on the site. These proposed measures all achieve the SREP 30 objectives related to services infrastructure strategy.

The potential location of a future electrical substation located centrally within the Precinct has been identified. The exact location of the substation will be determined through further negotiation with Integral Energy and subject to relevant approvals.

Recycled water supply will be subject to negotiations with Sydney Water, while delivery of Fibre to the Premises (FttP) broadband will also be subject to negotiations with service providers.

4.15 Community Facilities and Services

The Community Plan by Elton Consulting (at **Appendix O**) has identified that the future population of the Western Precinct will require social infrastructure and services beyond that presently provided to the existing surrounding population. The provision of these services will help ensure that a socially sustainable community and social integration with existing neighbouring communities is achieved. This is consistent with both the St Marys EPS and Council's Sustainability Blueprint.

The Community Plan states that proposed strategies for the provision of human services, community facilities, open space and community development processes are based on the following social sustainability objectives:

- 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. It is recognised that these need to be provided from the outset of settlement and be flexible to adapt to changing needs;
- Encouragement of innovation, initiative and resourcefulness that will strengthen the capacity of the community to function in a sustainable and resilient way;
- Convenient and equitable access to schools and social and recreational facilities at the local level in the wider region;
- Encouragement for lifelong learning, through local provision of a range of learning opportunities and 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, 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; and
- Contribution to the amenity of the region by providing cultural and recreational resources which are accessible for all.

The proposed approach to the planning of social infrastructure aims to provide sufficient certainty about requirements to inform the Planning Agreement process, while allowing for innovation and flexibility in the provision of social infrastructure through on-going negotiation through the St Marys Human Services Consortium.

On this basis, the proposed baseline facilities and services to be provided for the Western Precinct are:

- Multi-purpose community resource centre;
- Temporary neighbourhood centre;
- Youth contribution;
- Aged and disability contribution;
- Library contribution;
- Cultural facilities;
- Public art levy;
- Resident Information Package;
- Community initiatives fund;
- Community facilities studies;
- Community Development Worker; and
- Community bus.

These facilities and services, and preliminary costing information provided in Table 11 of the Community Plan (at **Appendix O**), will form the basis of the relevant Planning Agreement contributions to be negotiated with PCC.

5.0 Part 5 – Development Control Strategy

5.1 Introduction

This part of the Precinct Plan contains specific development standards for urban design, built form and environmental management. These standards are designed to ensure that the development principles and key elements of the framework plan and environmental strategies identified in the preceding sections of the Precinct Plan are implemented.

5A Urban Structure & Subdivision

5.2 Street Types

The Western Precinct street network is to be developed in accordance with the requirements of SREP 30 and the EPS, namely establishment of a permeable grid and legible street hierarchy that reinforces the neighbourhood structure. The design principles for the road hierarchy are contained in Section 4.6.

The future street hierarchy in the Western Precinct reflects the street typologies developed in collaboration with PCC. The location of external road connection points and internal roads, as shown in the Framework Plan (see **Figure 11**) serve as an indication of the urban structure of the site. Detailed design and placement of these roads will need to take into consideration the drainage regime of the site and the configuration and layout of lots to promote flexibility at DA stage.

Table 2 outlines the street types to be provided in the Western Precinct. This table also refers to relevant street sections included in **Appendix C** which illustrate how these controls are to be implemented.

Table 2 – Street Types to be provided in the Western Precinct

Street Type		Carriageway					Verge		
Collector Road		Travel Lanes	Median	On-street Cycle Lane No.	Parking	Carriageway Width	Verge Width	Total Reserve	Footpath
C1	**Collector with parking both sides**	7 (3.5+3.5m)	0	0	5 (2.5+2.5m)	***12***	***8*** (4m each side)	**20 m**	3 (1.5+1.5m)
C2	**Collector with median and parking both sides**	7 (3.5+3.5m)	4	0	5 (2.5+2.5m)	***16***	***8*** (4m each side)	**24 m**	3 (1.5+1.5m)
C3	**Collector Main Street with parking and cycle lanes**	7 (3.5+3.5m)	0	2	5 (2.5+2.5m)	***14***	***12*** (6m each side)	**26 m**	8 (4+4m)
C4	**Collector Main Street angle parking with median**	7.4 (3.7+3.7m)	4	0	11.2 (5.6m each side for 45 degree)	***22.6***	***12*** (6m each side)	**34.6 m**	8 (4+4m)

Tree pits may be incorporated into the carriageway width to delineate parking and define pedestrian priority zones and crossing points or other nodes along the main street. When this occurs, the kerb will be brought out and around the tree to integrate the planting with the verge.

Street Type		Carriageway					Verge		
Local Street		Travel Lanes	Median	On-street Cycle Lane No.	Parking	Carriageway Width	Verge Width	Total Reserve	Footpath
L1	**Minor Local Street with parking both sides**	3	0	0	5 (2.5+2.5m)	***8***	***7.6*** (3.8+3.8m)	**15.6 m**	3 (1.5+1.5m)
L2	**Pedestrian Priority Local Street with parking both sides** (inc. tree pits, defined pkg, dish drain and double tree planting)	3	0	0	5 (2.5+2.5m)	***8***	***9*** (5.0+4.0m)	**17 m**	4 (2.5+1.5m)
L3	**Local Street possible bus route with parking both sides**	6	0	0	5 (2.5+2.5m)	***11***	***7.6*** (3.8+3.8m)	**18.6 m**	3 (1.5+1.5m)

This is the predominant street type, allowing for a range of use patterns, and fostering pedestrian priority. These streets connect Collector Roads with open spaces through the residential neighbourhoods. On some roads, tree pits will be incorporated into the carriageway width. This will also help to soften the character of the street. When this occurs, the kerb will be brought out and around the tree to integrate the planting with the verge.

Street Type		Carriageway					Verge		
Accessway		Travel Lanes	Median	On-street Cycle Lane No.	Parking	Carriageway Width	Verge Width	Total Reserve	Footpath
A1	**Accessway (rear loaded no parking)**	3.5	0	0	0	***3.5***	***5*** (2.5+2.5m)	**8.5 m**	0
A2	**Accessway parking one side (parkland)**	3.5	0	0	2.5	***6***	***3.5*** (2.5+1m)	**9.5 m**	0

Accessways provide rear access to allotments along roads with limitations on front driveway access.

General Notes:

1) Cyclepaths are to be provided as per the Pedestrian and Cycle Network Plan in the Precinct Plan, and may be on street or off road. On street cycle lane 1m wide each direction. Off road share hike and bike trail 2.5m wide and adds 1m to road reserve total width.
2) Median adds 4m to road reserve and allows central tree planting.
3) Angle parking can be used for high intensity activity areas such as the Village Centre, streets adjpoining the District Park and Regional Park access points.
4) Option for 1 sided footpath on local streets.
5) Local Street one sided parking reduces pavement width by 1.5m.
6) Upright kerb to be used, higher kerb to be used along parkland edges.

5.3 Public Domain

This section details the proposed landscape characters, landscape presentations, and public domain materials and treatments.

5.3.1 Landscape Characters

The landscape character of the open space areas within the Western Precinct, as identified in the Open Space Masterplan in Section 4.8, is to reflect one of the following landscape characters:

- Bushland;
- Woodland;
- Parkland;
- Open Space Water; and
- Urban Plazas / Squares.

Bushland Character

The Bushland character is the key landscape theme for open spaces within the Precinct due to its context surrounding by the Regional Park. This will provide a direct visual and ecological link to the plant communities of the Regional Park, and its deployment through the development open space will provide green corridor linkages of flora and fauna habitat, and fauna movement. This will be the dominant landscape character through the public realm in the Western Precinct.

The Bushland character will generally be associated with low levels of recreational use, pedestrian cycle access paths being the key use other than interpretive / educational access. The bushland environments will generally be self sustaining in terms of maintenance (other than weed monitoring and bushfire management).

Woodland Character

The Woodland character provides a transition from Bushland areas to Parkland character. Woodland generally retains a strong visual context to the native bushland of the Regional Park through its retention and enhancement of native tree canopy. The Woodland areas will focus on understorey regimes incorporating trees in native grass and groundcover understorey. This is aimed at maintaining sightlines for safety and security and reducing understorey level fuels for bushfire risk.

Built form may be incorporated through the use of structures and awnings to provide shade and shelter, along with high quality paving, street furniture, lighting, signage, public art and water elements.

Parkland Character

The Parkland character will vary between open spaces based on existing features, their context within the urban development, and usage. The essential elements of the Parkland character will be trees in maintained grass, predominantly native canopy to further reflect the indigenous bushland context of the Regional Park. Non native trees may be used in select locations such as parks within denser urban areas to provide winter solar access. Parkland character will involve recurrent maintenance of recreational grassed areas. Sportsfields may also be irrigated.

Built form may be incorporated in these areas and may include change rooms, public amenities, structures and awnings to provide shade and shelter, along with high quality paving street furniture, lighting, signage, and public art.

Open Space Water

A variety of water bodies and elements are proposed as part of the open space network as part of Water Sensitive Urban Design, landscape and stormwater management measures. The Open Space Water character will be located adjacent to other landscape character abutting open space water bodies. The designs of Open Space Water will vary to include both soft and hard edge designs. The selection of options will be based on habitat corridors, maintenance requirements and salinity constraints.

Urban Plazas / Squares

The Urban Plazas / Squares character aims to complement the village centre by providing urban spaces for the relevant density of built form and range of uses and will seek to provide a focus for community gatherings and events and may be developed as an integrated public access with commercial sites.

The maintenance of these structured landscapes will be inherently higher commensurate with their higher intensity of usage.

Deciduous trees may be used in select locations (such as civic spaces) to provide winter solar access.

5.3.2 Landscape Presentation

The landscape presentation reflects the level of landscape detail that is proposed to embellish open space areas. The presentation is typically linked to landscape character. There are three landscape presentations proposed, Urban Presentation, Suburban Presentation, and Natural Presentation. The presentation and maintenance standards for these are detailed in the separate Landscape Maintenance and Handover Plan at **Appendix R**.

Urban Presentation

The Urban Presentation is proposed in the Parkland, Plazas/Squares, and Open Space Water Landscape Characters, or a combination of these.

The Urban Presentation will apply to those open space areas within the Precinct that lie within the denser development zones, and which serve a higher intensity and recurrence of community use.

The levels of presentation are higher than other spaces to meet the usage demands and to compliment the urban character of their locations. Parks within the Precinct that would fall within the urban presentation category include:

- Selected area of the Central Basin Park (Park B) at the Village Centre interface.

Suburban Presentation

The Suburban Presentation is proposed in the Woodland, Parkland and Open Space Water Landscape Characters, or a combination of these.

It will apply in to active and passive recreational use spaces catering for moderate levels of usage including family use, social gatherings, fitness and exercise activities, and playgrounds. The level of presentation will be dependent upon the character type and level of usage it receives.

It will also apply to Bushfire Protection Zones where recurrent maintenance is required to address fuel management requirements.

Open Space / Parks within the Precinct that would fall within the suburban presentation category include:

- Neighbourhood Parks generally; and
- Local and Pocket Parks not adjoining vegetation corridors or the Regional Park (eg Parks 4,5, and 6).

Natural Presentation

The Natural Presentation is proposed in the Bushland, Woodland and Open Space Water Landscape Characters, or a combination of these.

It applies to low level and intensity of use spaces that incorporate and adjoin natural systems. Green corridors and interface areas adjoining parks fall into this category. Retention of existing vegetation and revegetation (where applicable) with indigenous species will provide a generally self sustaining landscape with low recurrent maintenance demands.

Open space within the Precinct that would include (but generally not solely comprise) the natural presentation category include:

- Selected areas of Local and Pocket Parks adjoining vegetation corridors of the Regional park (eg Parks 3, 7, A, B, C and D).

5.3.3 Public Domain Materials and Treatments

Objectives

- Enhance the visual and functional elements of public domain areas through the appropriate provision of street furniture.
- Enhancing the character, identity and appearance of the public domain, whilst minimising on-going maintenance requirements for public domain materials and treatments.
- Enhance the identity and character of the public domain and landscape through the integration of public art.

Controls

- Provide street furniture items, including seats, bins, and picnic tables at locations where users are most likely to require them, including open space areas identified in the Western Precinct Open Space Masterplan.
- Signage, street furniture and lighting is to be:
  - designed to reinforce the distinct identity of the development;
  - coordinated in design and style; and
  - located so as to minimise visual clutter and obstruction of the public domain.
- Footpath and cycle path paving should provide a hard wearing, cost effective and maintainable surface. The range of materials should be limited to make maintenance, renewal and extension works cost effective. Potential paving materials include quality stone, asphalt and exposed aggregate.
- Opportunities for integration of public art into the public domain should be identified through on-going design at the relevant DA stage.

5.3.4 Street Tree Planting

Objectives

- To reinforce the street hierarchy with appropriate native and cultural street tree planting considering scale, form, arrangement and amenity.
- To ensure landscape treatments reflect the civic and visual importance of collector streets and their role in the street hierarchy.

Controls

- Landscape treatment of streets is to:
  - be consistently used to distinguish between public and private spaces and between different street types within the road hierarchy;
  - minimise risk to utilities and services;
  - be durable and suited to the road environment and, wherever practicable, include endemic native species; and
  - maintain adequate lines of sight for vehicles and pedestrians, especially around driveways and street corners.
- Collector streets should incorporate a strong/formal avenue planting of a larger, evergreen tree species that reinforce the higher order of these streets in the hierarchy and that provide visual continuity and legibility of the route throughout the development.
- Local streets should incorporate native tree species that are of a height and form that reinforce the lower order of these streets in the hierarchy.
- The landscape treatment should provide a continuous street tree canopy located within the road reserve between the footpath and the kerb.
- Ground surfaces to verges and medians are to vary from maintained native grasses (adjoining the Regional Park) to maintained garden bed, pavement or turf. Soft landscape treatments, where provided, should be kept simple to reduce recurrent maintenance needs.
- Design features such as blisters and neckdowns can be used to provide additional space for landscaping and tree planting, where appropriate.

5.3.5 Lighting

Objectives

- Provide adequate lighting to streets to ensure pedestrian and traffic safety.
- To ensure a high quality, functional, safe and attractive public domain reinforced with appropriate lighting.

Controls

- Vehicular street lighting is to meet relevant RTA and Austroads standards.
- Pedestrian lighting should be provided close to footpath lighting, typically 3.5 to 4.5 metres at 20 metre intervals, to provide optimum illumination.
- Pedestrian lighting is to be pole mounted to meet relevant Australian Standards.
- Major cycle routes and pedestrian access paths are to be lit for night time usage.

5.4 Character Areas

Future Character Areas are shown in **Figure 13** and outlined in Section 4.3.

Table 3 outlines the Planning and Design Principles for each Character Area.

5.5 Concept Plans

A concept plan showing the indicative urban structure of the Precinct is required to be submitted with the first subdivision DA for the Precinct. The concept plan shall demonstrate indicative information relating to:

- Road layout and subdivision pattern.
- Pedestrian and cycle network.
- Open space network.
- Location and type of non-residential uses.
- Development staging.

The concept plan shall be revised, as required, and lodged with subsequent relevant subdivision DAs as agreed with Council.

Table 3 – Planning and Design Principles for the Urban Character Areas

	Urban Area/ Neighbourhood	Village Centre	Parkland Node	The Northern Road Interface	Ninth Avenue Interface	Bushland Edge
Character	Residential scale and character.	Urban scale, higher density and diverse built form resulting from pattern of use.	Residential character with increased density surrounding parkland node.	Residential character with appropriate arterial road interface e.g. landscape treatment and setbacks subject to noise assessment at DA stage.	Residential character with lot size and setbacks to provide and appropriate urban transition to the adjoining rural residential character.	Residential character with layout and setting that responds to bushland setting and interface.
Predominant Land Uses	Residential.	Mixed use with residential, commercial, retail, community and education use.	Residential.	Residential.	Residential.	Residential.
Typical Built Form Typology and Design)	Range of attached to detached dwellings. Dwellings to be designed to address the street and enhance passive surveillance.	Range of attached and detached dwellings, shop-top, warehouse and urban sleeve dwellings, apartments, retail and commercial shops, education and community buildings. Building frontages to address public space and promote passive surveillance and active streets.	Range of attached and detached residential dwellings, but increased density adjacent to neighbourhood parks. Dwellings to be designed to address the street and enhance passive surveillance and views across parkland.	Range of attached and detached residential dwellings. Dwellings to be designed with consideration to Northern Road Interface potentially including relevant acoustic attenuation.	Generally detached residential dwellings 1,600sqm+. Dwellings to be designed to be oriented towards Ninth Avenue.	Generally detached residential dwellings. Dwellings to be designed to address the street and activate parkland edges enhancing passive surveillance and views across parkland. Design will be required to accommodate APZ requirements.
Typical Building Heights	1-2 storeys.	2-4 storeys.	1-2 storeys.	1- 2 storeys.	1-2 storeys.	1-2 storeys.
Open Space	Local/neighbourhood parks generally within 5min walk.	District Park part of and adjacent to the village centre, Regional Parkland terminates the main street axis, other local parks generally within 5min walk.	Neighbourhood park.	Local/neighbourhood parks generally within 5min walk.	Local/neighbourhood parks generally within 10min walk, Regional Parkland setting within 5min walk.	Regional Parkland setting within 5min walk, Local/neighbourhood parks generally within 5min walk.
Public Transport	Generally within 5-10min walking distance of a bus stop.	Generally within 5min walking distance of a bus stop.	Generally within 5-10min walking distance of a bus stop.	Generally within 5min walking distance of a bus stop.	Generally within 10min walking distance of a bus stop.	Generally within 5-10min walking distance of a bus stop.

5B Built Form Housing

Housing diversity is a key element of a vibrant and sustainable urban neighbourhood. A broad mix of housing types can be developed through the provision of a range of lot sizes and flexible development standards and by providing, where appropriate, the opportunity for some higher density housing types.

Flexible development standards enable responsiveness to evolving market demands, thereby facilitating housing supply and choice. Housing choice builds into the community the opportunity for various levels of affordability, house size and family structure to be accommodated. Allowing for a range of housing and building types also facilitates the creation of a well-integrated and cohesive community.

To achieve these outcomes the Western Precinct will provide a mixture of the following dwelling types:

- Detached dwellings (front and rear access);
- Semi-detached dwellings (front and rear access);
- Warehouse dwellings;
- Attached dwellings (front and rear access);
- Apartments;
- Urban sleeve dwellings;
- Live / Work dwellings; and
- Shop-top dwellings.

The applicable controls for these dwelling types are outlined in **Table 4**, which details the requirements for a range of lot sizes, frontages and dimensions, private open space requirements, setbacks, height and car parking. This table should be read in conjunction with the information provided below regarding each typology. The figures appended in **Appendix D** illustrate how these controls may be applied relevant to each dwelling type.

Further design guidelines for all home typologies are provided in Section 5.6, covering such issues as materials, landscaping, privacy, fences and walls, garages, safety, solar access, energy efficiency, servicing and adaptability.

Table 4 – Residential Development Controls

		Integrated Housing (g+i)											
Allotment Type		**Attached**	**Semi-detached**	**Detached**	**Detached**				**Warehouse**	**Urban-Sleeve**	**Live Work**	**Shop-Top**	**Apartments**
Allotment Size (m2)		125-300sqm	125-350 (each lot)	150-269sqm	270-500sqm	501-999sqm	1,000sqm+ (e)	1,600sqm+ (e)	150-300sqm	80-120sqm	180+	120m+	N/A
Typical Frontage (m)		5-10m	5-20m	7-15m	9-20m	16-25m	20m+	40m+	10-15m	5-10m	5-15m	6m min.	
Typical Depth (m)		25-30m	15-30m	14-25m	25-30m	25-40m	30m+	40m+	15-20m	8-16m	20-30m	20m+	1 bed 55sqm, 2 bed 80sqm, 3 bed 100sqm
Setbacks													
Primary	Building Frontage	3	3	3	4.5	4.5	6	9	0	0	0	0	2
	Garage Frontage	5.5	5.5	5.5	5.5	5.5	7	10	0.5	0.5	0.5	0.5	2.5
	Articulation Setback	2	2	2	3.5	3.5	5	8	N/A	N/A	N/A	-1.5	1
Secondary	Building Frontage	1.5	1.5	1.5	1.5	1.5	3	5	0	0	0	0	2
	Garage Frontage	2.5	2.5	2.5	2.5	2.5	4	5.5	0.5	0.5	0.5	0.5	2.5
	Articulation Zone	1	1	1	1	1	2	4	N/A	N/A	N/A	0	1
Side	Internal	0	zero/0.9	zero/0.9	zero/0.9	0.9	0.9	4m min (total combined min. 10m both sides)	0	0	0	0	0.9
Rear	Building	3	3	3	3	3	6	6	0	0	0	N/A	0.9
	Garage (Rear Loaded)	0.9	0.9	0.9	0.9	0.9	1.5	1.5	0	0	0	0.5	0.5
Zero Lot Line	max. m	N/A	N/A	13m	13m	0	0	0	N/A	N/A	N/A	N/A	N/A
Open Space													
	Private (k)	15%	15%	15%	20% (l)	20%	35%	35%	15%	15%	10%	10%	10sqm balcony
	Min. width	3m	3m	3m	3m	3m	3m	3m	3m	3m	2.5m	2.5m	2.5m
Height													
Max. Height.	Storeys	2 (3)	2	2	2	2	2	2	2	4	2 (3)	4	4 (h)
Parking (spaces)													
	Overall	1 to 2	1 to 2	1 to 2	1 to 2	2	2	2			2		
	1 Bed								1	1		1 / dwelling	1 / dwelling
	2 Bed								1	1		1.5 / dwelling	1.5 / dwelling
	3 Bed								2	2		2 / dwelling	2 / dwelling
	Visitor												1 space / 5 dwellings
Typical Character Areas (e)													
	Urban Area/Neighbourhood				✔	✔	✔				X	X	X
	Village Centre Zone (j)	✔	✔	✔	✔	✔			✔	✔	✔	✔	✔
	Parkland Node	✔	✔	✔	✔	✔							
	The Northern Road Interface				✔	✔							
	Ninth Avenue Interface							✔					
	Bushland Edge				✔	✔	✔						
Indicative % of Overall Dwelling Mix		3-4%	1-2%	6-8%	60-70%	20-25%	1-2%		Refer to Integrated Housing - Attached			1%	1%

General Notes:

a) All housing types except apartment, urban sleeve and shop-top buildings: max. 2 storeys (plus attic) unless otherwise stated.

b) Non-residential developments including mixed-use developments with a construction cost of $1 million or more are to demonstrate a commitment to achieving no less than 4 stars under Green Star and 4.5 stars under the Australian Building Greenhouse Rating system.

c) All dwellings including those dwellings in a mixed-use building and serviced apartments intended or are capable of being strata titled, are to demonstrate compliance with the State Environmental Planning Policy – Building Sustainability Index (BASIX).

d) Table to be read in conjunction with building envelope plans and built form typology plans - Refer Appendix D in Precinct Plan report.

Notes:

e) Lots 1600sqm+ generally suitable for Ninth Avenue Interface Character Area.

f) "Typical Character Areas" refer to character areas in which each dwelling type would generally occur. This provision does not override the permissible development provisions in the Urban zone, as per cl. 40 of SREP 30.

g) Integrated Housing means dwellings and lots subject to a single DA.

h) 6 storey height limit may be considered on agreed key landmark sites identified in consultation with PCC in the Village Centre Character Area based on individual merits of the DA.

i) Integrated Development may be considered in other character areas (excluding Ninth Avenue Interface Character Area) subject to the criteria identified in Section 5.5 of the Precinct Plan report.

j) No building setback required for retail/commercial buildings in the Village Centre Character Area

k) Private Open Space % can be made up of several individual open spaces so long as the minimum dimension is achieved. This may include open space in the front setback where appropriate screening or privacy and a connection to internal living spaces can be achieved.

l) Private Open Space may be 15% for single storey dwellings on detached lots 270-500sqm with a depth of 30m or less.

5.6 Dwelling Types

5.6.1 Detached Dwellings

The detached housing typology includes a wide range of residential types and configurations. The lot sizes suitable for this dwelling type range from 150 square metres to greater than 2,000 square metres and may include houses with zero lot line setbacks on single side boundaries to houses with dual frontages with garages as part of the rear entry to the property. The broad range of lot sizes and associated development standards are aimed at providing the flexibility that permits the development of houses with varying degrees of affordability able to suit a range of family types.

Detached dwellings with rear access are to incorporate a primary pedestrian access from the street, where visitor parking may be located, and secondary access from the rear access way or driveway. Zero lot line dwellings may require maintenance easements, to be controlled through s.88B covenants. Detached dwellings are suitable for all Character Areas. Detached dwellings on 150-250sqm lots will be provided in groups of 2 or more and subject to a single DA.

Typical configuration and building footprints for detached dwellings are shown in Figures D5 to D15 in **Appendix D**. Lots greater than 1,000 square metres are generally suitable for the Ninth Avenue Interface Character Area.

5.6.2 Semi-Detached Dwellings

Semi-Detached dwellings comprise 2 individual dwellings which share a common wall, providing an affordable alternative to traditional detached dwelling options. This form of housing is well suited to all areas of the Western Precinct, but is particularly well suited to (but not limited to) corner sites within the development pattern and areas of increased density such as the Village Centre and Parkland Node Character Areas. Semi-detached dwellings have distinct entries for each dwelling which may be located on different street frontages.

The garage for each dwelling may also be accessed from different sides of the building, such as a primary and secondary street or can be rear loaded. Semi-detached dwellings with rear access are to incorporate a primary pedestrian access from the street, where visitor parking may be located, and secondary access from the rear access way, lane or driveway. Semi-detached dwellings are suitable for all Character Areas. Semi-detached dwellings will be integrated and subject to a single DA.

Typical configuration and building footprints for semi-detached dwellings are shown in Figure D3 and D4 in **Appendix D**.

5.6.3 Attached Dwellings

Attached housing includes traditional row houses, dwellings with ground floor home business uses, and shop-house style housing with ground floor retail/ commercial uses.

Attached dwellings are characterised by buildings built to a zero lot line on both side boundaries and may provide for parking with a rear loaded garage accessed from a mews, street, parking court or a driveway. Attached dwellings with rear access are to incorporate a primary pedestrian access from the street, where visitor parking may be located, and where possible a secondary access from the rear access way, lane or driveway. Attached dwellings with front access may be provided as an opportunity to increase densities without always requiring a rear access lane, to enable the integration of private open space with living areas, and to provide the opportunity to deliver housing choice and affordability.

Attached housing may be provided in groups of 2 or more dwellings if such groups are the subject of a single DA. Where a zero lot line is created for attached housing adjacent to another lot, a maintenance easement will be required on the affected property to be controlled through s.88B covenants.

Attached housing is suitable for all Character Areas, but is particularly well suited to areas of increased density such as the Village Centre and Parkland Nodes. Typical configuration and building footprints for attached housing are shown in Figure D1 and D2 in **Appendix D.**

5.6.4 Integrated Housing

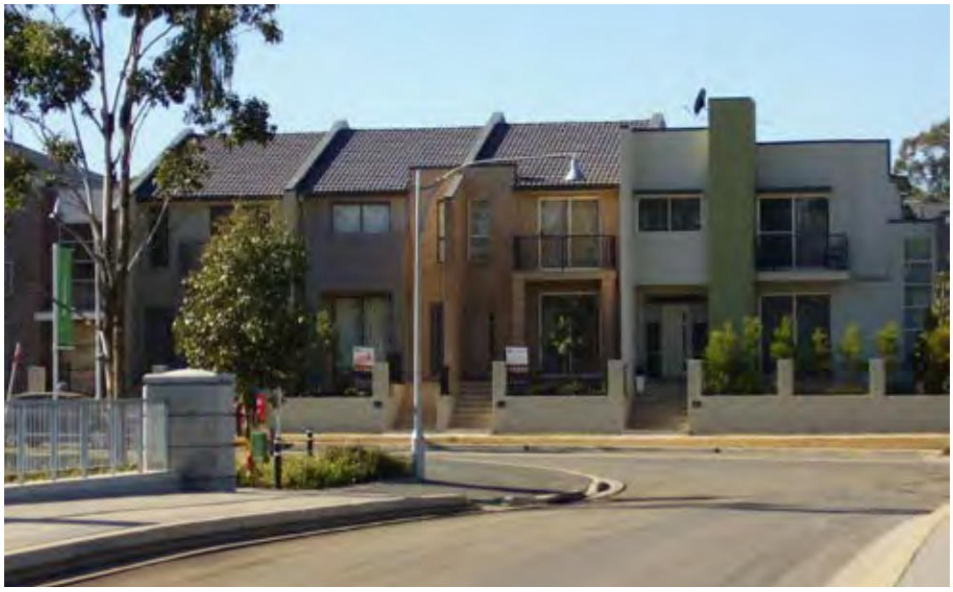
Integrated Housing refers to dwelling types that require a single DA for both subdivision to create the allotment and construction of the dwelling. These include attached dwellings on 125-300m2 lots, semi-detached dwellings on 125-350m2 lots and detached dwellings on 150-269m2 lots.

Integrated housing types provide smaller lot products that deliver greater housing choice and contribute to more affordable housing stock.

Given their smaller lots, integrated housing products are intended to be predominantly located in the Village Centre and Parkland Node Character Areas, where higher densities and a more urban scale are envisaged.

However, integrated housing could also be considered in other character areas. Where proposed in other areas, consideration should be given to the following locational and design criteria:

- Integrated housing is most suitable for corner lots in order to create a built form that positively addresses both street frontages;
- Integrated housing is most suitable for lots oriented north-south on an east-west street to maximise solar access to living areas and private open space;
- There should be consistency in architectural language between the dwellings, however, identical repetition of elevations is to be avoided; and
- All frontages to the street should be articulated with a variety of design elements such as windows, balconies and verandahs, and adequate landscape treatment provided.



5.6.5 Studio Units

Detached, semi detached and attached dwellings with rear access may also incorporate a studio unit above the ground level garage at the rear of the lot in appropriate locations in order to provide additional housing diversity. They also provide the opportunity to increase passive surveillance opportunities of streets.

Studio units should:

- Provide a varied elevation where attached;
- Have a minimum size of 45 m^2;
- Have 25 m^2 of private open space;
- Provide 1 car space;
- Be a maximum of 1 floor above garage; and
- Meet BCA standards.

5.6.6 Warehouse Dwellings

Warehouse dwellings will:

- Provide an open plan style of home that provides occupants the opportunity to work and live within the same building;
- Generally address streets including dual frontages in order to contribute to the passive surveillance of these spaces;
- Be of a contemporary urban character; and
- Have garages located at the front of the house, with private open space located at the rear of the allotment.

Warehouse dwellings may be provided in groups of 2 or more dwellings if such groups are the subject of a single DA. Warehouse dwellings are suitable in the Village Centre Character Area. Typical configuration and building footprints for warehouse dwellings are shown in Figure D16 in **Appendix D.**

5.6.7 Apartments

Apartments are appropriate in the Village Centre Character Area on sites where a greater density is appropriate and desirable for the creation of a more balanced and vibrant community. Apartments are suited to areas of higher amenity and locations in proximity to parks, bus stops, amenities and services.

The provision of apartments allows the creation of housing options for people looking for a low maintenance, urban, and potentially more affordable housing alternatives to traditional detached house forms. Apartments can be provided in a range of sizes from one bedroom apartments up to three plus bedroom family apartments.

The scale of apartment buildings is to be compatible with the mass and character of adjacent building types. Articulation of facades is required to mitigate the bulk and mass of apartment buildings.

Apartments are to be designed to accommodate parking on site, including underground where appropriate. Typical configuration and building footprints for apartments are shown in Figure D19 in **Appendix D.**

5.6.8 Urban Sleeve Dwellings

The Urban Sleeve dwellings will generally be located in the Village Centre Character Area adjacent to non-residential built form, shielding inactive frontages from areas of public access including streets, lanes and parking lots with the intention of activating these frontages and creating a more diverse village centre. These building typologies will also provide opportunities for local business and enterprise.

Urban sleeve dwelling provide additional options for occupants to live and work within the same dwelling with a larger, more formalised work space on the ground level and private uses on upper levels. In some instances urban sleeve dwellings will have dual frontages, and if so garages will be located on the secondary frontage. Private open space may be located on terraces above street level.

Groups of Urban Sleeve dwellings will be the subject of a single DA. Subdivision of groups of Urban Sleeve Dwellings is to be approved as part of the single DA. Typical configuration and building footprints for urban sleeve dwellings are shown in Figure D17 in **Appendix D.**

5.6.9 Live / Work Dwellings

Live / Work Dwellings will:

- Be appropriately located, generally within the Village Centre Character Area with the intention of supporting functional, liveable, and safe live/work environment.
- Encourage building design that emphasizes the pedestrian realm and interface with the street through reduced front setbacks and well articulated frontages.
- Be urban in character and add to the diversity and mix of allotments, creating variety and interest in the streetscape and increasing housing choice to a broad range of families.
- Encourage flexibility of use which will accommodate either residential or business uses.

Live / work dwellings are proposed to accommodate a wide array of uses. Uses that could affect the amenity of surrounding residential areas with noise, vibration or odour are strongly discouraged. Potential amenity impacts are to be considered during the assessment of any development application for a live/work dwelling.

Typical configuration and building footprints for live/work dwellings are shown in Figure D18 in **Appendix D**.

5.6.10 Shop Top Dwellings

The shop top dwelling typology will:

- Be provided above retail and other commercial uses in the Village Centre Character Area to add to the activity and vitality within this area;
- Have a range of dwelling sizes to cater for a variety of households and opportunity for affordable housing options;
- Have a distinct and clear entry for the dwellings, located on the primary street frontage wherever possible to add to the activity in the locality; and
- Locate Private Open Space on terraces and balconies above street level and in locations that can add to the passive surveillance of the locality.

Articulation of building frontages over the public footway may be permitted subject to there being a suitable agreement with Council. Building articulation and street tree placement would be coordinated to remove potential conflict.

5.7 General Housing Siting and Design Controls

General planning and design controls for residential dwellings are provided in the following sections. These controls are relevant to all residential development in the Western Precinct.

5.7.1 External Built Form and Materials – Private Domain

Dwelling facades should display a variety of materials, colours and shading structures, with garages integrated into the overall architectural form and design.

The Design Guidelines to be administered by the developer will address material and finishes for use for such items as fences, walls, garages, paving, planting, roofs and building colour schemes. The Building and Siting Guidelines will be enforced under the developer covenants, and details of external materials and finishes are to be submitted with a DA. Further detail on specific elements is also provided in the following sections.

5.7.2 Landscaping

Objectives

- Landscaping is to contribute to effective management of stormwater, biodiversity, energy efficiency and to improve visual amenity.
- Encourage the use of native species of flora and low maintenance landscaping.
- Retain and integrate existing landscape elements such as vegetation and topographic features, where appropriate, in the design of new development.

Controls

- Trees planted on the north side of private open space areas and habitable rooms are encouraged to be deciduous.
- A minimum of one tree is to be provided where possible within the front setback area of every residential allotment. This may include existing trees that are to be retained within the front setback area.
- Planting of vegetation at the front of higher density development must consider the need for passive surveillance. Excessively dense vegetation that creates a visual barrier should be avoided.
- A Landscape Plan is to be lodged with all DAs for dwellings, and is to provide the following details:
  - the location of any existing trees on the property, specifying those to be retained and those to be removed; and
  - the position of each shrub and tree species proposed to be planted. Each plant is to be identified by a code referring to a plant schedule on the plan.

5.7.3 Visual and Acoustic Privacy

Objectives

- Ensure buildings are designed to achieve acceptable levels of visual and acoustic privacy.
- Protect visual privacy by minimising direct overlooking of habitable rooms and private open space.
- Contain noise within dwellings and minimise noise from outdoor areas.

Controls

- Direct overlooking of main habitable areas and private open space should be minimised through building layout, window and balcony location and design, and the use of screening devices, including landscaping.
- As far as practicable the windows of habitable rooms shall be screened or adequately separated from walkways, footpaths, communal areas, driveways, windows of other dwellings and balconies above. Courtyard walls, walls of the building, screen walls and the like are an acceptable method of screening of windows.
- Where overlooking of habitable rooms and private open space cannot be avoided, additional visual privacy may be achieved by:
  - offsetting adjacent windows;
  - fixed window screening;
  - providing sill heights of at least 1.5m above floor level; or
  - providing fixed obscure glazing.
- The design of attached dwellings must minimise the opportunity for sound transmission through the building structure, with particular attention given to protecting bedrooms and living areas.
- Living areas and service equipment must be located away from bedrooms of neighbouring dwellings.
- In attached dwellings, bedrooms of one dwelling are not to share walls with living spaces or garages of adjoining dwellings, unless it is demonstrated that the shared walls and floors meet the noise transmission and insulation requirements of the Building Code of Australia.
- Noise sensitive areas are to be located away from noise emitting sources.

5.7.4 Fences and walls

Objectives

- To ensure fences and walls improve amenity for existing and new residents and contribute positively to streetscape and adjacent buildings.
- To ensure boundary fences and walls between allotments provide visual privacy without affecting the amenity of those allotments in terms of views, sunlight and air movement.
- To ensure materials used in fences and walls are in keeping with the existing streetscape character and character of the dwelling type.
- To ensure fences and walls are sympathetic to the topography.

Controls

- Front fences and walls should not be higher than 1.5 metres. However, front fences and walls can be built up to 1.8 metres in height in the Northern Road Interface Character Area for noise attenuation.
- The design and materials of front fences and walls is to be compatible with the desired character of the streetscape.
- Side and back fences and walls can be built up to 1.8 metres in height to achieve privacy for the rear yard.

5.7.5 Garages

Objective

- Design of garages must not dominate the frontage of the house.

Controls

- Garages should not take up more than 50 percent of the building frontage for lots 12m wide or less, unless the dwelling is integrated housing.
- Materials and colours should blend the garage doors into the main building.
- For 2 storey dwellings, rooms with windows or balconies should be built above garages where possible.
- Garages are to be limited to a maximum capacity of two cars, with tandem garages permitted.
- Garages are to be set back behind the front most element of the house and fully integrated into the front facade.

5.7.6 Safety

Objectives

- To ensure that the siting and design of buildings and spaces contributes to the actual and perceived personal and property safety of residents, workers and visitors and decreases the opportunities for committing crime in an area.
- To ensure development encourages people to use and interact in streets, parks and other public places without fear or personal risk.
- To increase the perception of safety in public and semi public space including streets and parks.
- To maximise actual and perceived safety within the community.
- To encourage the incorporation of principles of crime prevention through urban design and landscaping into all developments.

Controls

- Dwellings should be designed to overlook streets and other public or communal areas to provide casual surveillance.
- For residential dwellings, roller shutters are not be used on doors and windows facing the street. Security railings must be designed to complement the architecture of the building.
- Pedestrian and communal areas are to have sufficient lighting to ensure a high level of safety. These areas must be designed to minimise opportunities for concealment.
- All developments are to incorporate the principles of Crime Prevention Through Environmental Design, in accordance with Penrith City DCP 2006. When assessing applications, Council must give consideration to Planning NSW guidelines for Crime Prevention and the Assessment of Development Applications.
- Avoid the creation of areas for concealment and blank walls facing the street.

5.7.7 Solar Access

Objective

- Dwellings should be designed to maximise solar access.

Controls

- Areas of private outdoor space should receive at least 3 hours of sunlight between 9am and 3pm at the winter solstice.
- Dwellings should also be designed to avoid overshadowing of adjacent properties and to protect sunlight access to any habitable room or private outdoor living space of adjacent buildings to less than 4 hours between 9am and 3pm at the winter solstice (21 June).

5.7.8 Energy and Water Efficiency

Objectives

- To ensure ecologically sustainable development.
- To incorporate best practice energy management and implement energy efficient principles to fulfil several objectives:
  - to maximise the benefits of passive solar design;
  - to improve the energy efficiency of dwellings;
  - to minimise the need for mechanical heating and cooling appliances;
  - to promote the installation of greenhouse responsive hot water systems and other energy efficient appliances; and
  - to maximise the use of natural light and limit energy use for interior lighting.
- To minimise unnecessary water production during design and construction.
- To minimise adverse impacts on air quality.

Controls

- BASIX Certificate is to accompany DAs for new dwellings.
- The design of dwellings should minimise heat loss and the absorption of heat through measures such the use of insulation in walls and roofs.
- The design of dwellings should minimise heat loss and the absorption of heat by limiting the size of windows on the western facades of buildings.
- Dwellings should be designed to allow cross ventilation, where appropriate, by positioning windows and doors opposite each other within rooms and providing fans and alternative forms of mechanical ventilation (other than air conditioners).
- Dwellings should be designed to face living spaces to the north, sleeping areas to the east or south, and utility areas to the west or south.
- Dwellings should be designed with north facing windows.
- Dwelling design should consider shading of north, east and west facing windows through use of elements such as shading devices, including eaves, verandas, pergolas, and awnings.
- Dwellings should utilise energy efficient fixtures such as solar hot water systems or star rated appliances.
- Dwellings should be designed so that:
  - hot water systems are located as close as possible to wet areas;
  - wet areas are clustered to minimise pipe runs;
  - external clothes drying areas are provided, with access to sunlight and breezes; and
  - reflective or light coloured materials are used and/or dwellings are painted in light colours.

5.7.9 Servicing

Objectives

- To ensure that adequate provision is made for site facilities.
- To ensure that site facilities are functional and accessible to all residents and are easy to maintain.
- To ensure that site facilities are thoughtfully integrated into development and are unobtrusive.

Controls

- Development must demonstrate that the design takes into account waste storage and collection without reducing the amenity of the dwelling or neighbouring lots.

5.7.10 Adaptability

Objective

- To provide practical and flexible housing and urban spaces that are designed and constructed to ensure durable and long-term adaptability to maximise access and liveability, consistent with AS 4299.

Controls

- Residential dwellings shall be designed with key design features that may achieve:
  - direct access;
  - spaces for car parking;
  - adequate access and circulation widths; and
  - main facilities at ground floor level.

5C Non Residential Built Form

5.8 Non Residential Buildings (Village Centre)

Non residential built form in the Village Centre Character Area will include a variety of uses including retail, commercial, mixed use, community and education buildings. Where such development takes place a number of principles will be observed in order to enhance the urban design outcomes in the village centre. These principles are listed below.

Mix of Uses

A range of uses including office, community, educational, residential and recreational uses may be considered within a mixed use building. Mixed uses can be arranged horizontally, vertically or in a combination. Horizontal mixed-use development in the Village Centre will locate retail and commercial uses along street frontages with residential use to the rear or along secondary streets and accessways. Vertical mixed-use development will locate retail and commercial uses at street level, so as to maximise street activation, with commercial and residential uses located on upper levels.

Conflict between uses will be minimised through appropriate siting or via the application of appropriate building materials to eliminate noise transmission and other conflicts. Loading bays, site storage and access points for waste collection will be located away from public spaces, streets and residential areas to minimise amenity issues associated with cooking exhausts, waste, plant rooms and service vehicles.

Street Frontages/Entrances

Non-residential uses will be located on the street with ground floor uses and upper floor windows facing the street to activate these edges and provide passive surveillance. Primary entrances will generally be provided off the main street. Access points will be compatible with the overall façade of the building but will be clearly defined and identifiable for vehicles and pedestrians.

Retail buildings will be designed to address the street to ensure high quality pedestrian connectivity between all uses in the Village Centre. Larger stores may be sleeved by smaller specialty shops and offices with frontages to surrounding streets. Vehicle access will be provided away from the main street frontage. Parking and passenger drop off will be located adjacent to building entrances. Carparking will be shared and co-located where possible to minimise land take and enhance walkability and maximise pedestrian connections.

Building Form

Buildings will be designed to face the street with particular attention paid to the rear of the building and its relationship to accessways and adjacent buildings. Built form should relate to the public domain and its form and scale. Façade treatment should avoid the use of blank walls and should break up excessive bulk and scale. The façade of large buildings will be articulated in terms of volume and surface treatments, to reflect the existing scale of the street and adjacent development.

Building Depth

Building depth should be adequate in order to maximise natural light, ventilation and circulation unless specific building use requires otherwise. This depth will allow optimum circulation and room layout while minimising artificial lighting at the building core.