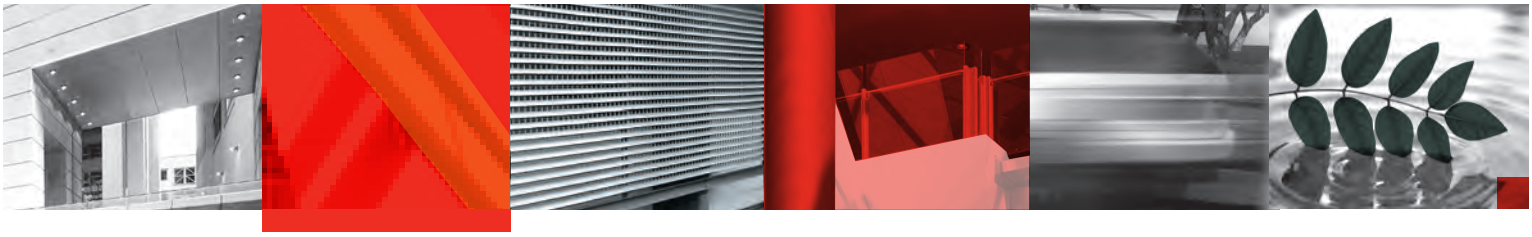
LEP Planning Proposal



Redbank at North Richmond

Submitted to Hawkesbury City Council
On Behalf of the North Richmond Joint Venture

March 2012 ▪ 11353

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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.

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Signature Date 12/03/2012

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Executive Summary

Redbank at North Richmond is a 180 hectare site comprising one torrens title lot which is wholly owned by the North Richmond Joint Venture (NRJV). The site is located at the western edge of the urban township of North Richmond and forms an extension of the existing urban footprint. The site is 'bookended' by existing housing.

Construction of the first stage of development of the overall site, which comprises the delivery of 197 Independent Living Units and an 80 bed nursing home facility, was commenced by the NRJV in August 2011. The nursing home facility and the first 25 of the Independent Living Units will be completed by 2013.

Council adopted the Hawkesbury Residential Lands Strategy on 10 May 2011. The Strategy, amongst other matters, has identified specific areas / localities that are considered by the Council as suitable for further investigation for urban expansion. The areas identified are located within and adjacent to existing settlements. At its meeting of 31 January 2012, Hawkesbury City Council resolved to confirm to the Department of Planning & Infrastructure that the Redbank at North Richmond site has been identified in the Hawkesbury Residential Land Strategy as having further investigation potential for urban expansion, is consistent with Council's planning framework, and from a physical, environmental and importance of the land for other uses perspective, is suitable for urban development - subject to the need to deliver supporting infrastructure, in particular road works.

Detailed site environmental investigations and urban capability analysis undertaken by the NRJV have demonstrated that the remainder of the site can accommodate a further 1,400 to 2,000 dwellings, approximately.

A preliminary Zoning Plan has been prepared based on the delivery of 1,400 dwellings (in addition to the seniors living development. An overall subdivision layout for the site and detailed subdivision and engineering designs for the first stages of the development are also available and confirm the ability for this potential yield to be met.

Subject to achieving a rezoning of the site, the NRJV is in a position to deliver approximately 150 dwellings per annum commencing in 2013.

Detailed site Infrastructure Servicing Plans and an Infrastructure Delivery Schedule have been prepared identifying the staging and timing of lot production and associated infrastructure services delivery for the key required infrastructure to support the development i.e. water, sewer, power and roads.

The commencement of production and the speed of delivery of housing to market will depend primarily on the timeframe taken to secure necessary planning approvals. Technical information is ready to DA level of documentation for the first stages of the development, enabling the NRJV to commit to bring a DA on line very quickly following, or even concurrently with the rezoning process.

It is intended to develop the site for a mix of housing product, with house and land packages matched to market and demographics. The general market for land in the Hawkesbury has been severely limited due to lack of supply and the demand for housing is strong. It is noted that the Defence Housing Authority has expressed ongoing interest to the NRJV in purchasing up to 300 lots over time at Redbank at North Richmond, which is located in close proximity to the existing RAAF base at Richmond.

As part of the process of preparing the LEP Planning Proposal, consultation has commenced with the Council and the community, as well as with Roads and Maritime Services (RMS), Sydney Water, Endeavour Energy, Office of Environment & Heritage (heritage and water), the Rural Fire Service and State Emergency Services.

Water, sewer and power utilities services infrastructure is currently available to the site boundaries. Fibre Optic is also available and this would be one of the first fully serviced sites on the National Broadband Network.

There is sufficient capacity in the existing utility services infrastructure to service the initial stages of residential subdivision (approximately 409 lots) without any augmentation. Augmentation of water and sewer services beyond the initial stages can readily be provided by the developer where required and via standard commercial arrangements with Sydney Water.

It is well understood and acknowledged by the NRJV that there are significant pre-existing road and traffic issues in the North Richmond locality. The RMS is currently undertaking studies to identify short to medium term solutions to these issues. Additionally it is exploring longer term corridors for connections to the M7 freeway.

It is clear that for development of Redbank at North Richmond to proceed in the short term, a road infrastructure works solution will be required to be delivered by the NRJV to ease existing traffic congestion and appropriately accommodate the traffic generated by the proposed development. The principle issue that needs to be addressed before the site can support increased residential density is in relation to road capacity between North Richmond and Richmond and the crossing of the Hawkesbury River.

Accordingly, as part of the rezoning proposal, the NRJV is proposing to provide additional east west traffic lane capacity across the Grose River via a new bridge crossing at Yarramundi, as recommended by preliminary independent traffic reports. The proposed location is essentially a shallow intermittent flowing section of the Grose River surrounded on both sides by large public reserves.

Preliminary studies have shown that the alternative bridge crossing would provide relief to current traffic congestion and spread the load of peak hour traffic. The alternate crossing would also provide adequate capacity to service the proposed development, and would deliver a significant benefit in terms of providing an alternative access route during certain periods when the existing bridge at North Richmond is inundated during flood events.

All works required to accommodate this new alternative crossing are proposed to be fully funded by the developer. The works can be delivered within existing road reservations and therefore do not require acquisition of land. Of additional benefit is that the road works do not require any services relocation, and will not affect existing traffic during construction and / or impact on existing residential areas. It is noted that the design and construction of the new bridge crossing would need to address potential impacts on the access and existing car parks in both Yarramundi Reserve and Navua Reserve, including potential noise and vegetation impacts.

In consultation with the RMS, Hawkesbury City Council and the Department of Planning & Infrastructure, the NRJV has commenced preparation of a Transport Management & Access Plan (TMAP) for the development.

The TMAP is being prepared on the basis of agreed intersection and road network modelling, and using traffic counts and signal data provided by the RMS to ensure consistency in modelling with that being undertaken by the RMS as part of the current Bells Line of Road Corridor Study and Richmond Bridge Study. The TMAP will determine the final scope of road network improvements to be delivered as part of the project.

Parts of the site are of State heritage significance from an historical, associative, aesthetic and technical perspective, for its role as one of the first of two demonstration farms where the Keyline dam system was developed in the 1950s.

A Conservation Management Plan (CMP) for the site has been prepared in consultation with the Office of Environment & Heritage (NSW Heritage Branch), and has been formally submitted to the Heritage Branch for endorsement by the NSW Heritage Council. It is understood that the Heritage Branch generally supports the findings of the CMP and intends to proceed with the listing of the site on the State Heritage Register on this basis. The LEP Planning Proposal is consistent with the CMP, which allows for adaptive re-use and redevelopment of the site with endorsed heritage management outcomes.

The following Planning Proposal forms the NRJV's request for a LEP Gateway determination. In summary, this report demonstrates that:

- There is a need to deliver 5,000 – 6,000 new homes in the Hawkesbury LGA to 2031, however there is only capacity in existing zoned areas within the LGA to accommodate approximately 600 more dwellings.
- The only other known release areas with the potential to deliver significant new housing within the Hawkesbury LGA are either on hold, substantially delayed in terms of lot production, or not due for release in the short to medium term (i.e Bligh Park 2, Pitt Town and Vineyard).
- The majority of land within the Hawkesbury LGA is highly constrained in terms of its environmental characteristics, including State and National parks and other significant vegetated areas, agricultural land values, flooding, bushfire and aircraft noise.
- By contrast, Redbank at North Richmond has been identified by the Council in its Residential Land Strategy (May 2011) as a 'High Priority Future Investigation Area' for urban release.
- Redbank is considered one of the safest sites in the LGA with respect to flood and bushfire.
- Redbank at North Richmond can provide up to approximately 30% of Council's housing target.
- North Richmond is well located to employment opportunities including the RAAF base, Penrith Regional Centre, Rouse Hill Town Centre, Marsden Park industrial estate, Norwest Business Park, University of Western Sydney and the equestrian and agricultural industries.
- The site cannot be left in its current state, nor continue to be used for existing low intensity grazing and at the same time achieve appropriate heritage protection.
- Water, sewer, power and telecommunications infrastructure is already available at the site boundaries.
- Redevelopment of the site provides a key opportunity to improve existing stormwater drainage issues that are present in existing adjoining residential areas.
- Road infrastructure improvements will be required to support the development. The developer is offering to fund a viable road works option to assist in resolving traffic issues in the locality.

1.0 Background

1.1 Introduction

Redbank at North Richmond is located at 108 Grose Vale Road, North Richmond and is legally described as Lot 27 in DP 1042890. The site is owned by the North Richmond Joint Venture (NRJV). It is a 180 hectare site located on the western edge of the North Richmond township, forming an extension of the existing urban footprint.

JBA Planning has prepared this Planning Proposal on behalf of the landowners, the NRJV. This Planning Proposal is submitted to Hawkesbury City Council (the Council) to request that the land be rezoned for urban uses. A draft Zoning Plan outlining the proposed zonings for the site is provided at **Appendix A**.

This Planning Proposal has been prepared in accordance with section 55 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and the guidelines prepared by the Department of Planning and Infrastructure entitled "A guide to preparing Planning Proposals", dated July 2009.

Specific matters that address the statutory guidelines for the rezoning are:

- Objectives and intended outcomes;
- Explanation of Provisions;
- Justification; and
- Community Consultation.

The Planning Proposal has had regard to the physical characteristics of the site and the social context of the surrounding area, and canvasses the key planning issues associated with the site to a level of detail appropriate to support a LEP Gateway determination by the Department of Planning & Infrastructure (DP&I).

An LEP Gateway determination will allow for any further detailed site investigation and concept planning to occur where necessary to inform the development of a final rezoning proposal for assessment by Council and the DP&I, as well as public exhibition. In particular an LEP Gateway determination will allow for the finalisation of a Transport Management & Accessibility Plan (TMAP) that is currently underway in consultation with Roads and Maritime Services (RMS), the Council and the DP&I.

In addition, it is intended that a site specific DCP concept layout for the site, and a draft Voluntary Planning Agreement for the delivery of local infrastructure will be prepared and publically exhibited as part of the final Planning Proposal.

1.2 Background

The site has been the subject of ongoing investigations for several years, with a submission originally made in 2009 requesting the site be listed on the Metropolitan Development Program.

In May 2011, the Council adopted a Residential Land Strategy for the LGA which identifies the Redbank at North Richmond site as a High Priority Future Investigation area for urban release.

Since this time, significant progress has been made with State agencies, and additional studies have been undertaken to determine the parameters of a draft Zoning Plan to support a rezoning proposal and preparation of a site specific DCP.

More recently construction has commenced on the Seniors Living Development on the site, and a submission has been made (November 2011) to the DP&I as part of the State government's Land Review.

Request for MDP Listing

In 2009, the NRJV made a request for the site to be listed on the Metropolitan Development Program. The submission was referred to the Planning Assessment Commission (PAC) for determination in July 2010.

At that time (July 2010) the PAC considered that any further assessment of the residential development of the site should await the preparation of an Heritage Conservation Management Plan, and the agreement on a conservation outcome between the Heritage Council, Hawkesbury Council and the owner. In accordance with this recommendation, as detailed at Section 2.7, the NRJV has prepared a CMP for the site in consultation with the NSW Heritage Branch, and has formally submitted it to the Heritage Branch for endorsement by the Heritage Council. The CMP proposes the retention of elements of the significant heritage fabric and adaptive re-use of the site for predominantly residential purposes, and supports the residential development yield for the project (1,400 additional dwellings) as identified in this Planning Proposal.

The PAC also considered that the proposal did not, at that time, meet the sustainability criteria spelled out in the draft NW Subregional Strategy for the assessment of new greenfield releases in relation to infrastructure provision, with specific reference to the potential impact of the proposal on the State road network in the Richmond and North West sector areas. The PAC identified that the site's infrastructure issues needed to be resolved as part of a comprehensive consideration of the development potential of the site and recommended that further consideration of the site's residential development potential and infrastructure needs should await the outcome of the preparation of the CMP.

At the time of making its determination, the PAC identified that the development areas of Bligh Park and Vineyard were forecast to produce 3000 dwellings within the Hawkesbury LGA by 2017/2018 and that therefore development of the Redbank site wasn't required for release onto the MDP at that stage to assist the Council in meeting the housing targets for the LGA set out in the draft NW Subregional Strategy. Since this time the combined development areas of Bligh Park and Vineyard have produced no dwellings at all and could not produce anywhere near the previously anticipated 3,000 dwellings within the short to medium term (i.e. 5 – 10 year time frame). It is quite clear that the assumption that the PAC made in July 2010 with respect to the anticipated delivery of alternative housing in the Hawkesbury LGA has not been realised.

In accordance with the PAC's recommendation that the rezoning of the site be sought through a rezoning application with the relevant planning authority, this Planning Proposal has been prepared for submission to Hawkesbury City Council. As identified by the PAC, the site is identified for further investigation for land release in Hawkesbury Council's Residential Land Strategy (which was a draft at the time of the PAC's consideration and is now adopted) and the process for this investigation set out in Council's Residential Land Strategy is in line with the provisions of the draft NW Subregional strategy.

Hawkesbury Residential Land Strategy

The Hawkesbury Residential Land Strategy (HRLS) is an overarching document to guide future residential development within the LGA, with the aim of accommodating between 5,000 and 6,000 new dwellings by 2031.

The Residential Land Strategy identifies that existing centres (capacity of existing zoned land) within the Hawkesbury only have the potential accommodate approximately 600 of the total 5,000 – 6,000 required new dwellings for the LGA.

The remaining 5,400 dwellings need to be provided from greenfield sites / extension of the footprint of existing urban villages.

Hawkesbury City Council has undertaken an Opportunities and Constraints Analysis at a strategic level for all land within the LGA to identify where future urban growth and development may potentially occurs. As part of this process, the Residential Land Strategy has identified the Redbank at North Richmond site as a 'High Priority Future Investigation Area' for urban release (refer to **Figure 1**).

The Residential Land Strategy recognises that urban growth in the Hawkesbury is severely limited by environmental constraints such as State and national parks, agricultural land values, flooding issues, noise constraints and limited development capacity within the existing centres. By contrast the Council's own preliminary Opportunities and Constraints analysis indicates that the site is relatively free from constraints (refer to **Figure 21** at Section 3).

As demonstrated by the flooding and aircraft noise maps at **Figures 15** and **19** at Section 2 the Redbank site is also unconstrained by these factors.

The Hawkesbury Residential Land Strategy provides that the future development of the site is subject to the resolution of detailed site investigations, and to demonstrating the provision of shops, transport infrastructure, community infrastructure and services outside the catchment. Key environmental and servicing issues identified (for all investigation areas) as requiring resolution are:

- Road access, traffic and transport issues;
- Investigation into bushfire prone areas;
- Detailed structure planning of the village and investigation areas; and
- Provision of an increased range of services and facilities.

As detailed in the Planning Proposal, the NRJV has undertaken the studies required to address these matters, and has considered these issues in developing the preliminary Concept Plan and draft Zoning Plan.

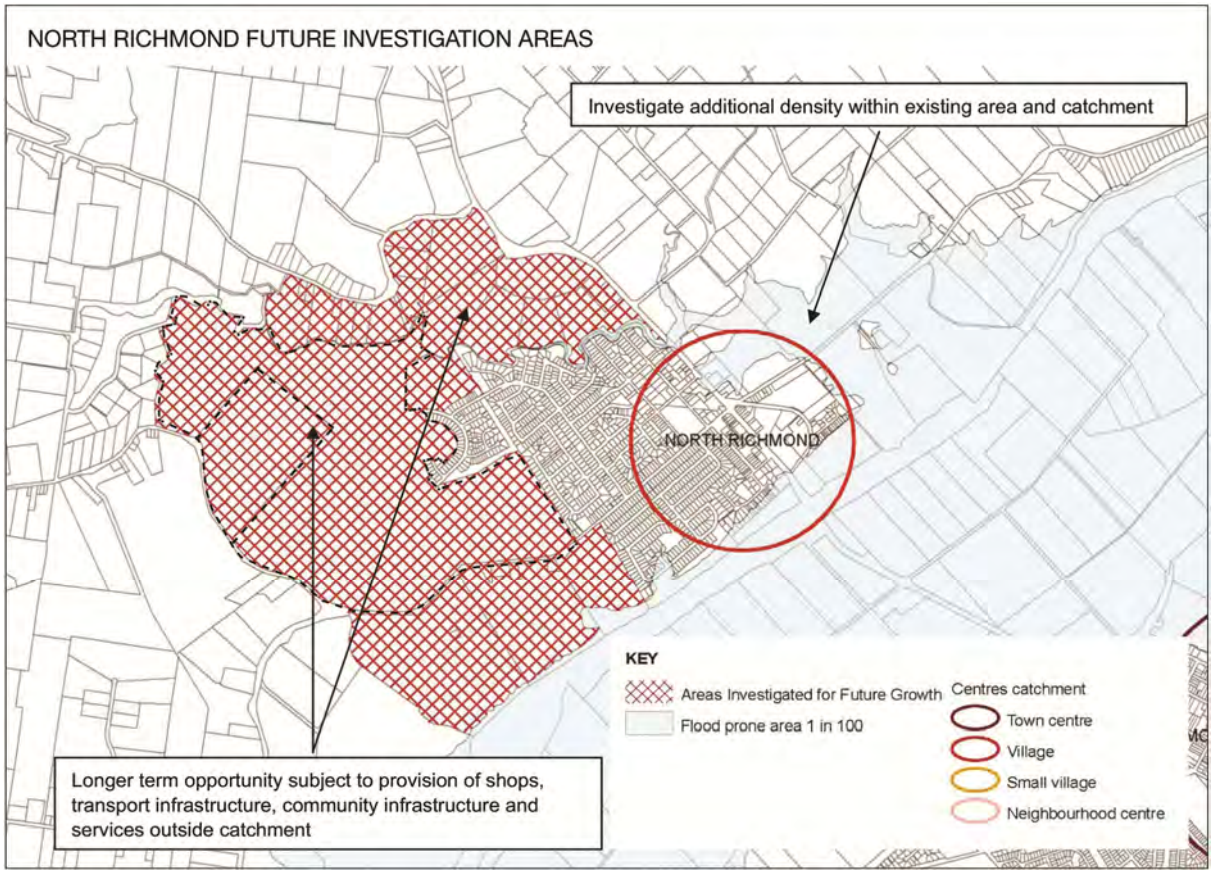

Figure 1 – Extract from Hawkesbury Residential Land Strategy

Source: *Hassel*

Seniors Living Development

In August 2011, construction commenced on Stage 1 of the Seniors Living Development (SLD).

The SLD was subject to a Site Compatibility Certificate issued by the DP&I which identified 28 hectares of the site as being urban capable for 467 dwellings plus aged care. A Development Application was subsequently approved by Council for the development of the first 15.7 hectares.

The approved facility will provide 197 Independent Living Units and an 80 bed aged care facility (refer to approved site layout at **Figure 6**). Stage 1 of the SLD development, which is due for completion by 2013, will deliver a minimum of 25 Independent Living Units and the whole of the nursing home.

The facility will be operated by RSL Life Care, a large scale not for profit aged care provider. As well as providing much needed aged care facilities in the Hawkesbury LGA, the SLD will provide approximately 30 jobs once complete, in addition to the 100 construction jobs generated during the first year of construction.

Land Review Submission

In November 2011, the NRJV lodged a submission to the DP&I as part of the State government's land review process. The submission detailed the site's capacity to make a significant contribution to the provision of housing in the Hawkesbury LGA.

Hawkesbury City Council was asked to comment on the Land Review submission by the DP&I, specifically in relation to Council's opinion on the prospects of the site delivering housing in the short term, local infrastructure requirements and implications for Council, and consistency with Council's planning framework.

At its meeting of 31 January 2012 Council considered these matters and resolved to send a submission to the DP&I in accordance with the recommendations of council officers. In summary, the key recommendations / comments to be forwarded by the Council to the DP& I in response to the Land Review Submission are as follows:

- The site has been identified as having further investigation potential for urban expansion under the Hawkesbury Residential Land Strategy adopted in May 2011;
- A preliminary review indicates that, from a physical, environmental and importance of the land for other uses perspective, the site is suitable for urban development;
- The initial assessment of whether the site fits Council's strategic planning has already been addressed via the Residential Land Strategy adopted in May 2011;
- The further investigation of the site for potential urban release is consistent with Council's planning framework;
- The consideration of a Planning Proposal and the delivery of housing to the site in the short term will be significantly influenced by the delivery of infrastructure, particularly the need for infrastructure (road upgrades) in the vicinity of North Richmond and Richmond;
- Any development of the size proposed at the site will require additional service infrastructure, including roads, open space, water, sewer etc as would typically be expected.

The outcome of the review process is expected to be made public by the end of March 2012. The NRJV has resolved to proceed with lodging the LEP Planning Proposal ahead of the release of the findings.

1.3 The Planning Process

The LEP Planning Proposal process is set out at **Figure 2**.

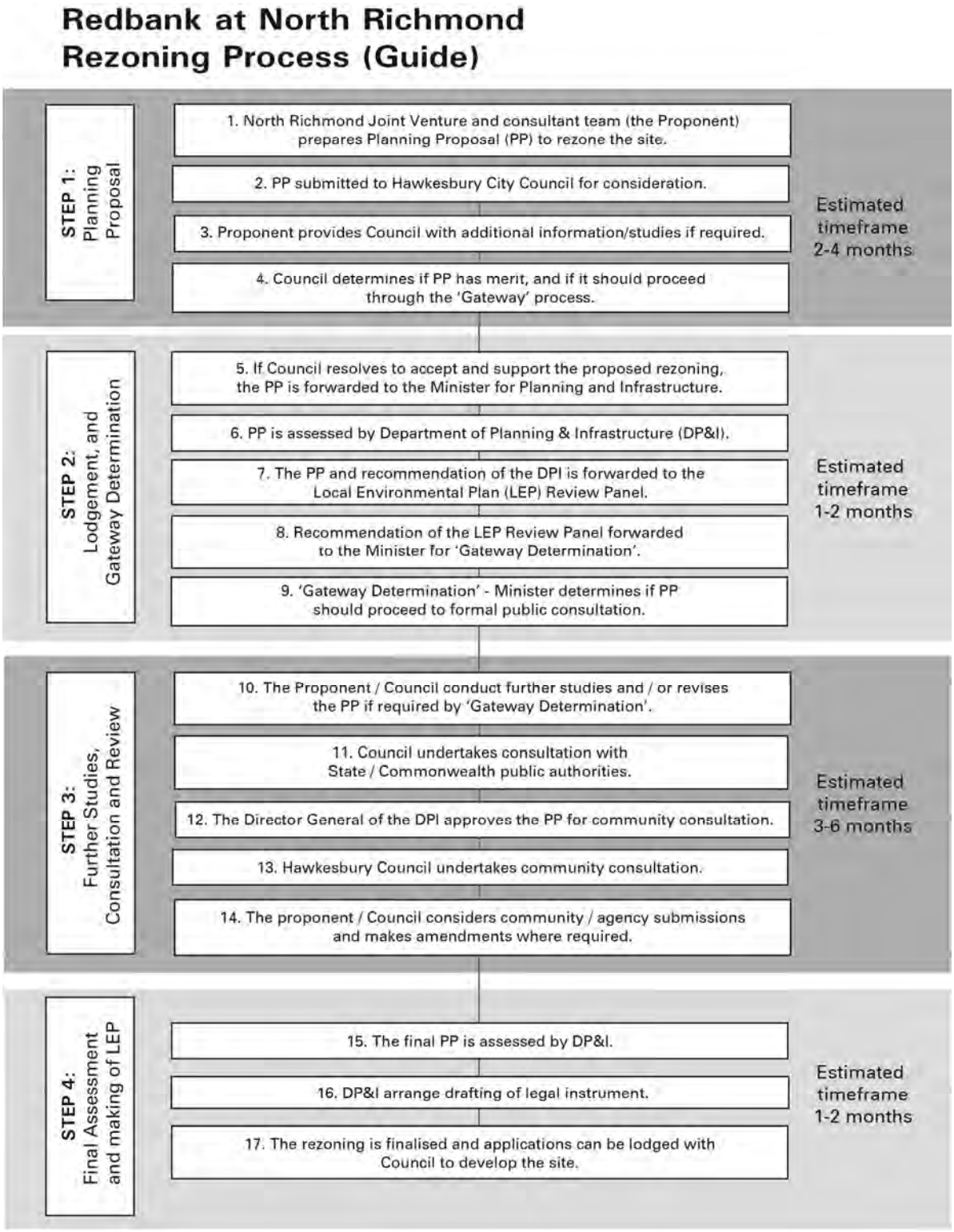

Figure 2 – Rezoning process guide

1.4 Stakeholder Involvement

The preparation of the Planning Proposal has involved ongoing active consultation with relevant State government agencies, as described below. Preliminary community engagement has also been undertaken.

Community Engagement

The NRJV has engaged Straight Talk, an independent community consultation company, to conduct a community engagement process. The outcomes of the process are detailed in Straight Talk's report at **Appendix B**.

In summary, the consultation process has utilised a number of tools to ensure widespread knowledge of the project, and that easy access to project information was provide. These measures include:

- Community newsletters;
- A project website;
- Stakeholder meetings;
- A display and discuss session (held on 26 October 2011); and
- A toll free (1800) number and email address.

The issues raised throughout the process primarily relate to traffic, water and sewage services. Other community members also questioned why the site was chosen, and the impact that the development would have on their quality of life. Additional concerns were raised around retention of the dams, bus services to local railways and proposed cycle ways linking to Richmond.

Other concerns were raised about housing design / type. These are matter of detail, and will form part of a future DCP for the site.

It is noted that some community members were positive about the proposal, with a number of people making enquiries about how to register for the seniors living development.

The NRJV intends to continue engaging with the community during the assessment of the planning proposal through regular updates of the project website, continued distribution of the community newsletter and maintenance of the 1800 number. In addition, it is anticipated that this Planning Proposal will be formerly publicly exhibited and that direction as to the nature and extent of the public exhibition will be given by the Minister as part of the LEP Gateway determination.

Public Agency Consultation

The following state agencies have been consulted and have provided comment on the draft rezoning proposal. A public agency consultation report prepared by J.Wyndham Prince is included at **Appendix C**. Copies of the most recent correspondence from each agency consulted are included at **Appendix C**. A brief summary of the views of public agencies is provided in **Table 1**. A more detailed summary of consultation with key agencies is provided below.

Table 1 – Summary of agency consultation

Environmental Agencies	
NSW Office of Water	In early 2009, consultation with DWE was undertaken to review the extent of existing watercourses across the site. Concurrence on a series of points was reached which then formed a General Terms of Agreement (GTA) between NOW and the NRJV covering the treatment for these existing watercourses. These GTA's have been included within Riparian Report by GHD. The operational impact of these GTA's was recently demonstrated in the approval of three Controlled Activity Applications for proposed civil works within and adjacent the proposed riparian corridor along the northern perimeter of the SLD. These works have regard for the future extension of this riparian corridor, as a primary trunk drainage corridor upstream through the proposed Redbank residential development.
Rural Fire Service	The RFS has been consulted as part of the original DA for the SLD. A subsequent modification application was made in consultation with the RFS, to ensure compliance with current standards. The NRJV will continue to consult with the RFS during the preparation and assessment of future applications for the residential development.
NSW Heritage Office	The NRJV has undertaken a site visit with representatives from the Heritage Branch and Hawkesbury City Council. A series of meetings with the Heritage Branch, including a site visit and a meeting on 28 September 2011 confirmed an intention to proceed with the listing of the site on the State Heritage Register. Heritage Officers also confirmed their support for the adaptive re-use of the site, and the role of the CMP as a sound basis for its ongoing management.
Transport Agencies	
Roads and Maritime Services	A series of meetings have been held with RMS since early 2009 regards both the SLD and the Redbank site. Several meetings with RMS since late 2010, have been specifically convened to discuss the overall Redbank project. The last two meetings in November 2011 and January 2012 were undertaken with DP&I, RMS, TfNSW and NRJV. These meetings discussed the current status of two Bells Line of Road corridor studies, as well as the existing local traffic infrastructure capacity issues. Early concept solutions arising from these meetings have been considered in the planning processes and are detailed in the Utilities and Traffic Infrastructure Report by J.Wyndham Prince (refer to **Appendix D** and Section 4.9).
Hawkesbury City Council	A number of meetings have been held with Council regarding the SLD component of the Redbank site. Many of the constraints and opportunities reviewed for the SLD have evolved into wider concept strategies for the whole site. There have also been several meetings with DP&I regarding the overall Redbank site, at which HCC has been present. Consultation has considered: the road connection to Belmont Grove, Grose Vale Rd & Arthur Phillip Drive pedestrian and vehicle access points, public transport services and future public road hierarchies.

Utilities Authorities	
Sydney Water	Several meetings have been held with Sydney Water regarding potable water and waste water across both the SLD and Redbank. Modelling of existing network capacity has been undertaken at SWC's offices in order to understand the capacity to service Redbank. The required strategies to support water and sewer servicing of Redbank have been relatively conclusive due to this network modelling. The availability of existing services and the requirements of augmentation works are detailed in the Utilities and Traffic Infrastructure Report by J.Wyndham Prince (refer to **Appendix D** and Section 4.10).
Endeavour Energy	Initial meetings have been held with Endeavour Energy to determine details of the capacity of its existing infrastructure and its requirements providing immediate supply to the initial Stage 3 lots as well as to the long term requirements to service all of Redbank. The availability of existing services and the requirements of works within the Redbank footprint have been considered in developing the zoning plan for the site, and are detailed in the Utilities and Traffic Infrastructure Report by J.Wyndham Prince (refer to **Appendix D** and Section 4.10).
Telstra	General discussions have been held with Telstra and NBN representatives along with utility service searches to establish that the site has extensive copper and fibre optic telecommunications cabling available. In accordance with National Broadband Network (NBN) policy, the NRJV will need to enter into an agreement with NBN to supply fibre optic services to the Redbank perimeter as well as reticulated throughout the overall project. The availability of existing services and the requirements of works within the Redbank footprint have been considered in developing the zoning plan and are detailed in the Utilities and Traffic Infrastructure Report by J.Wyndham Prince (refer to **Appendix D** and Section 4.10).
Jemena	There is no infrastructure to supply natural gas to North Richmond, nor is it envisaged to be available within the next five years.

Sydney Water

Several meetings have been held with Sydney Water regarding the provision of potable water and waste water for the SLD, and Redbank site more broadly.

For both potable water and waste water, modelling of existing network capacity was undertaken in SWC's offices in order to understand the capacity to service Redbank. The required strategies to support water and sewer servicing of Redbank have been relatively conclusive due to this network modelling. The availability of existing services and the requirements of augmentation works have been considered in developing the zoning plan and are detailed in the Utilities and Traffic Infrastructure Report by J.Wyndham Prince (refer to **Appendix D** and Section 4.9).

There is no recycled water infrastructure available to supply North Richmond, nor is it envisaged that is would be available within the next five years.

Heritage Branch

The NRJV has undertaken a site visit with representatives from the Heritage Branch and Hawkesbury City Council. A CMP has been prepared for the site and formally submitted to the NSW Heritage Branch for endorsement. The CMP identifies those elements on the overall site that are considered to have heritage significance, and also proposes adaptive re-use and management outcomes for those significant elements.

A meeting with the Heritage Branch on 28 September 2011 confirmed an intention to proceed with the listing of the site on the State Heritage Register. Heritage Officers also confirmed their support for the adaptive re-use of the site, and the role of the CMP as a sound basis for its ongoing management.

Through this review and ongoing consultation, resolution of heritage issues will be an iterative part of the overall site structure planning and rezoning process.

Roads and Maritime Services

There are pre-existing road infrastructure capacity issues within the Hawkesbury LGA. The RTA has advised that it is currently undertaking several studies to identify medium-long term solutions to these issues. These studies include the Bells Line of Road Corridor Study and the Richmond Bridge and Approaches Congestion Study.

The North Richmond Joint Venture met with the RTA, DP&I and Hawkesbury City Council on 18 October 2011 and then again on 31 January 2012 to discuss the proposed development, and the opportunity it presents to contribute to the resolution of the existing road infrastructure capacity issues in the Hawkesbury.

The NRJV is currently working with the RMS to finalise the scope of the TMAP that is to be prepared to support the proposal.

1.5 Project Management and Team

Development of the planning proposal, detailed investigations and environmental assessment has been undertaken by a team of specialist consultants, listed below:

Table 2 – Project team

Discipline	Consultant
Zoning Plan and Site Layouts	J.Wyndham Prince
Planning	JBA Planning
Transport and Accessibility	J.Wyndham Prince
Infrastructure and Utilities	J.Wyndham Prince
Stormwater Management	J.Wyndham Prince
Ecology / Riparian	GHD
Flooding	Molino Stewart
Bushfire	McKinlay Morgan & Associates
Landscape and Visual Analysis	Urbis
Geotechnical	Geotechnique
Social and Community Planning	Urbis
Community Consultation	Straight Talk
European Heritage	Urbis
Indigenous Heritage and Archaeology	Kelleher Nightingale
Agricultural Land Capability	Robert Montgomery Planning
Economic Impact and Employment	Urbis

2.0 Site Context

2.1 Site Location

Redbank at North Richmond (the site) is located approximately 55km north west of the Sydney CBD, and 1km west of the North Richmond town centre (refer to **Figure 3**). North Richmond is one of the three major towns in Hawkesbury LGA, the others being Richmond and Windsor.

The site is located some 600 metres north of the Hawkesbury River. The land sits within the basin defined by Grose Vale Road and Bells Line of Road, which both run along ridge lines. The site is gently undulating with a central saddle running approximately east-west which creates two distinct valleys. The land is currently used for cattle grazing and contains a residence and minor farm related structures.

More broadly, the surrounding area includes:

- existing residential housing of North Richmond and the large 9.5 hectare recreational area of Peel Park form the sites eastern boundary;
- Redbank Creek, a minor tributary of the Hawkesbury Nepean River, forms the northern boundary of the site;
- Grose Vale Road forms the southern boundary of the site and provides access to North Richmond, Richmond and Windsor to the east, and Bowen Mountain and Penrith further to the west; and
- the western edge of the site is adjacent to the recently developed rural residential community known as 'Belmont Grove Estate'. The adjoining site at Lot 26 in DP1042890 (35 ha), which adjoins Lot 27 on three sides, comprises grazing land, a home and farm buildings.

Figure 3 – Site context

2.2 Land Ownership and Legal Description

The site consists of a single lot in single ownership as shown at **Figure 4**:

- Lot 27 in DP 1042890, owned by the North Richmond Joint Venture.

The site is part of the land holding formally owned by the Kemsley Pastoral Company Pty Ltd. The Kemsley Pastoral Company Pty Ltd remains the owner of the 35 hectare site at Lot 26, DP1042890 which is bounded on three sides by the subject site.

The site has a total land area of 180 hectares and represents a considerable landholding in the Hawkesbury LGA that is largely unconstrained by environmental factors.

Figure 4 – Lot title and land ownership

Source: JBA Planning

2.3 Existing and Future Land Uses

The site is located at the western edge of the urban township of North Richmond and forms an extension of the existing urban footprint. It is 'bookended' by existing housing – large lot residential to the west, and standard blocks to the east, ranging in size from 450m^2-900m^2.

The site is largely cleared, and whilst there are no dairy facilities on the site, it has been used for grazing dairy cattle for many years.

There are 11 existing farm dams on the site, part of the former demonstration / experimental Keyline irrigation system that was developed by Yeomans on the site in the early 1950s. Refer to Section 2.7 for further detailed discussion on the Keyline system and its heritage significance.

The Keyline dams are identified by the numbering on **Figure 5**. The dam numbering system adopted in this Planning Proposal is consistent with that adopted by Urbis in the CMP that has been submitted to the NSW Heritage Branch for endorsement, which is based on the original system of dams on the site. It is noted that various sub consultant reports use different systems for referencing the dams. For ease of reference, **Table 3** below reconciles the various numbering systems used in the sub consultant reports.

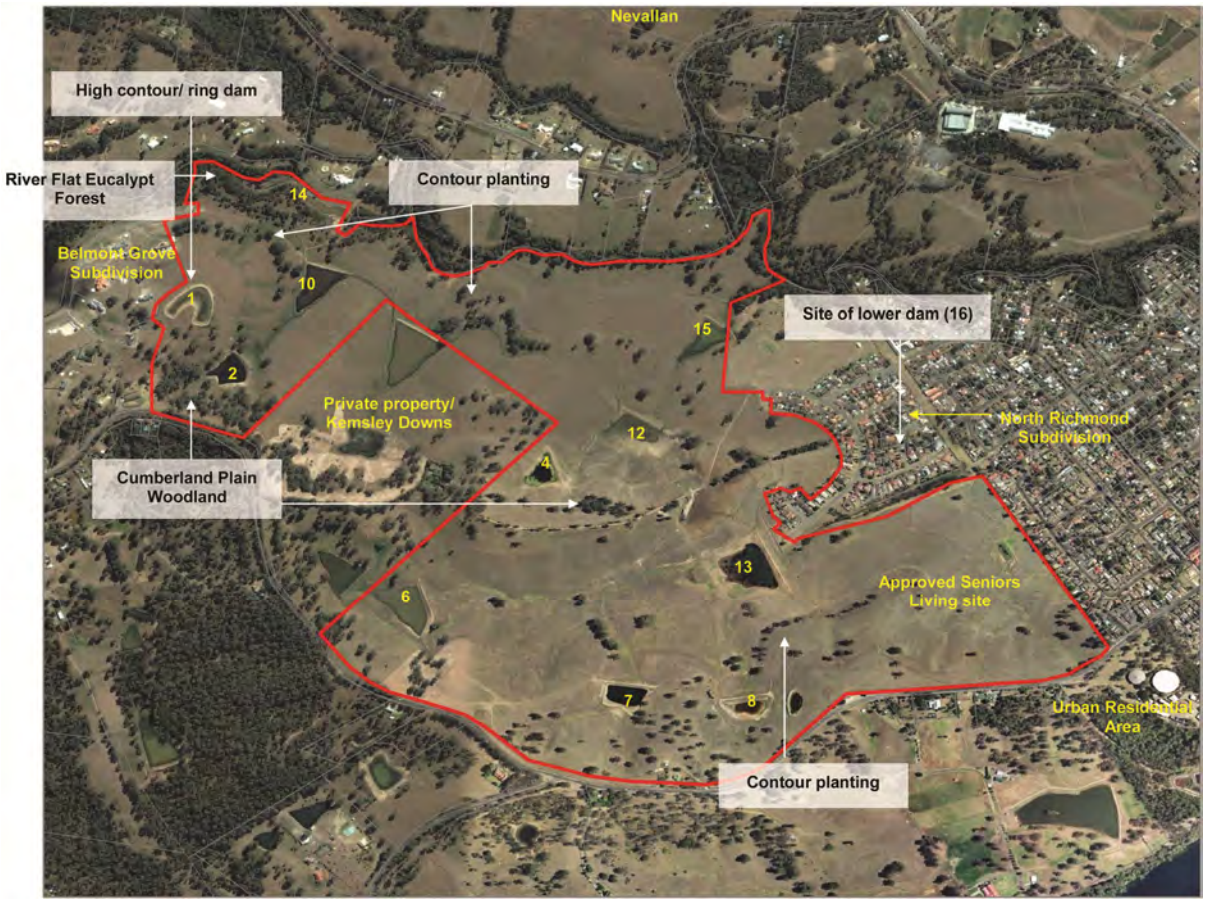

Figure 5 – Dam numbers

Source: *Urbis*

Table 3 – Dam references

Planning Proposal	Conservation Management Plan, Urbis)	Stormwater Management (J.Wyndham Prince)	Geotechnical (Geotechnique)	Environmental Constraints and Benefits Analysis (GHD)	Riparian Assessment (GHD)
1	1	1		8	
2	2	2		7	
4	4	4		13	
6	6	6	Dam A	11	
7	7	7		5	
8	8	8		2	
10	10	10		10	
12	12	12		14	
13	13	13	Dam B	1	
14	14	14		9	9
15	15	15		6	

In August 2011, construction began on Stage 1 of the Seniors Living Development. The approved facility will provide 197 Independent Living Units and an 80 bed aged care facility. Stage 1 of the SLD development, which is due for completion by 2013, will deliver 25 Independent Living Units and the whole of the nursing home.

Figure 6 illustrates the location and layout of the approved facility, and **Figure 7** illustrates the progress of construction works currently underway.

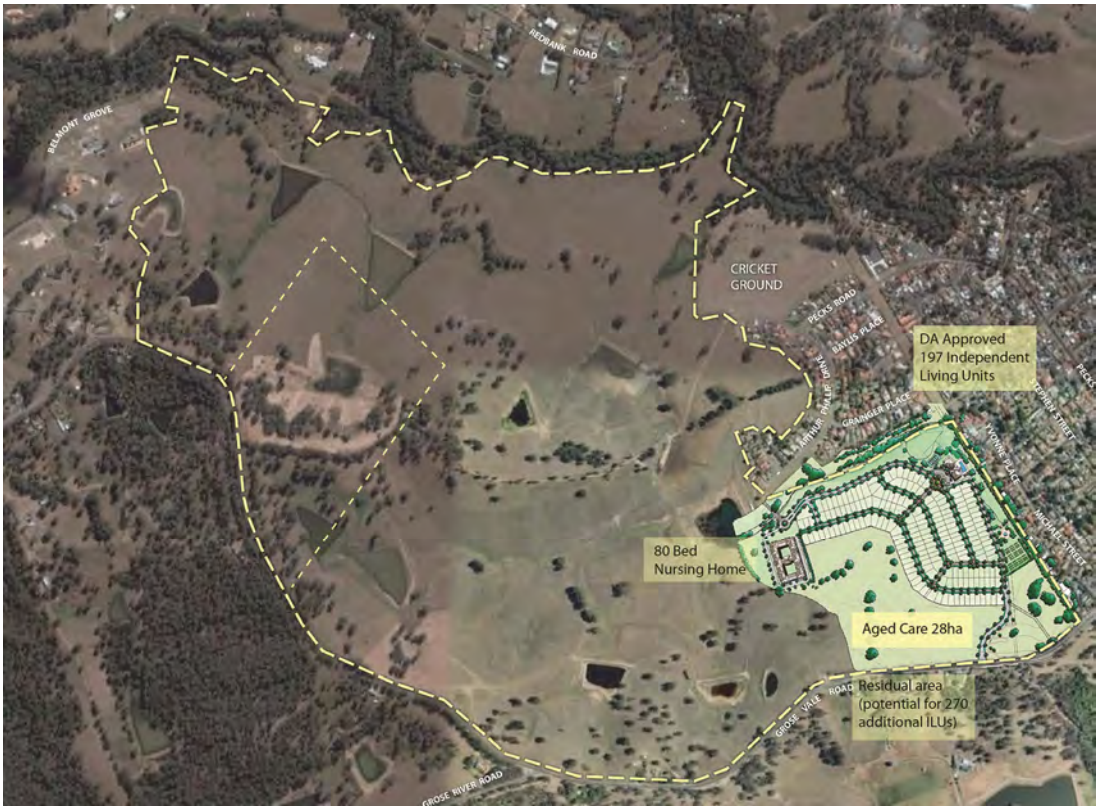

Figure 6 – Layout of approved SLD

Source: *Straight Talk and JBA*

Figure 7 – SLD under construction

Source: *Near Map*

2.4 Existing and Draft Land Use Zoning

The site is currently zoned Consolidated Land Holdings under Hawkesbury LEP 2011 and is proposed to be zoned RU4 Rural Small Holdings under draft Hawkesbury LEP 2011. Land adjoining to the north and south is proposed to be zoned RU1 Primary Production. The Belmont Grove estate to the west is to be zoned RU1 Primary Production, while other land to the west and south-west is to be zoned RU4 Small Holdings. Land adjoining to the east is proposed to be zoned R2 Low Density Residential and RE1 Public Recreation.

Figure 8 shows the zoning of the site and surrounding land under the draft Hawkesbury LEP 2011.

Currently the minimum allotment size proposed for the site under the draft LEP is 200 hectares, which effectively prohibits any subdivision of the land.

Land adjoining to the north, west and south has a proposed minimum lot size of 10 hectares, while land to north-east and south-west has a minimum permissible lot size of 4 hectares. The residential land adjacent to the east has a minimum lot size of 600m^2.

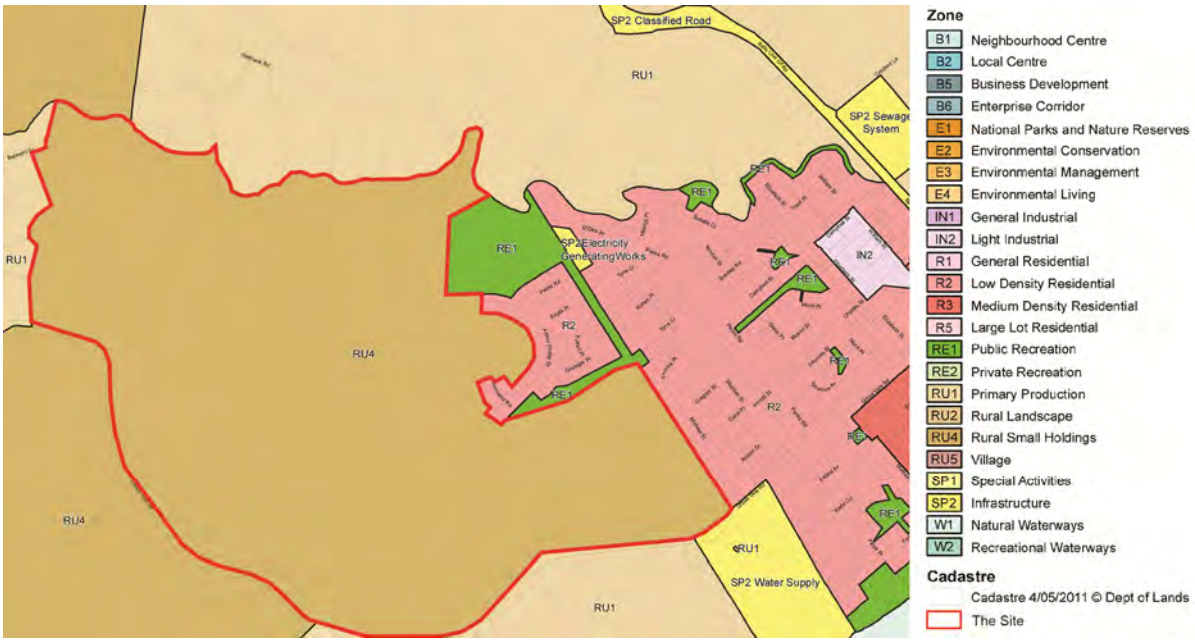

Figure 8 – Site and surrounding land use zones under draft HLEP 2011

Source: *Hawkesbury City Council*

2.5 Geotechnical Conditions

Geotechnique Pty Ltd has prepared a Preliminary Geotechnical Investigation to assess the subsurface conditions at the site (**Appendix E**). In doing so, Geotechnique has reviewed previous geotechnical studies undertaken for the site to ensure their accuracy, in particular the Preliminary Geotechnical and Environmental Assessment prepared by RCA Australia.

The report concludes that the site is suitable for residential development, with no constraints to the construction of residential buildings, or lightweight commercial structures. More detailed geotechnical and environmental investigations will be undertaken during each stage of development.

Topography

The land varies in height from approximately 60-90m AHD along Grose Vale Road to Redbank Creek which lies at approximately 30m AHD.

Soils and Geology

The Soil Landscape Map for Penrith indicates that the landscape for the eastern, central and northern portions of the site is likely to belong to the Blacktown Group and southern, south-eastern and western portions of the site to the Luddenham Group.

The Blacktown Group is characterised by gently undulating rises on Wianamatta Group shales. The sub-surface soil landscape is likely to be up to 3m thick, high plasticity, moderately reactive clays, with poor drainage.

The Luddenham Group is characterised by undulating to rolling low hills on Wianamatta Group shales often associated with Minchinbury sandstone. Soil is likely to be up to 1.5m deep, high plasticity, moderately reactive, locally impermeable and susceptible to high erosion hazards.

Based on the Geological Map of Penrith, bedrock in most of the site is anticipated to be Ashfield Shale, belonging to the Wianamatta Group shales and comprising dark grey to black shale and laminite. The northernmost portion of the site, near Redbank Creek, could be underlain by Hawkesbury Sandstone comprising medium to coarse grained quartz sandstone, very minor shale and laminite lenses.

Slope and Stability

The landslide risk of a site is assessed on the basis of the likelihood of a landslide, and the consequences of that event. Slopes on the site are generally 10-12 degrees, with a steep slope of up to about 20 degree noted in the western portion of the site. On this basis, and given that there was no evidence of slope failure across the site, the risk of slope instability has been as identified as very low to low.

Dam Stability

Two Dams (Dams 6 and 13 in **Figure 5** above) were inspected by Geotechnique in October 2007 and were identified as being unstable and unsafe, with evidence of water leaking from both dams. The dams were identified as being susceptible to high erosion hazard and containing sodic (dispersive) soils, which are generally dispersive.

The failure in Dam 6 was attributed to piping, resulting from washing out of dispersive soils from around the pipe after long periods of drought when the dam was nearly empty. Leaking in Dam 13 was attributed to washing away of dispersive soils from around the pipe (at the base of the dam) or through the body of the dam.

Groundwater

No groundwater or seepage was encountered to the excavated depths of the test pits (up to 3m).

Salinity

Mapping undertaken by the former Department of Planning and Natural Resources indicates that the site has moderate salinity potential. Areas mapped as having moderate salinity potential are generally on Wianamatta Shales and Tertiary Alluvial Terraces, and are often associated with the Blacktown and Luddenham Groups. Geotechnique concur that the site has moderate salinity potential. This will be subject to further investigation at detailed design stage.

Acid Sulphate Soils

A review of the Acid Sulphate Risk Map (Edition 2) for Kurrajong, prepared by Land and Water Conservation, indicates no known occurrence of acid sulphate soils on the site.

Contamination

Given the history of agricultural uses on the site, soil and water samples have been undertaken to determine the presence contaminants. Seven surface soil samples were analysed for metals and triazine herbicides and seven dam water samples were analysed for metals and nutrients. It was found that whilst copper levels exceeded the relevant provisional phytotoxicity based investigation levels set out in the *Guidelines for the NSW Site Auditor Scheme* which might impact on the growth of some plants, it would not present any risk of harm to human health.

2.6 Agricultural Land Capability

An Agricultural Land Study has been prepared by Montgomery Planning Solutions to assess the viability of the land for ongoing agricultural use and to identify the value of the land in the context of local and regional agricultural production (refer to **Appendix F**).

The site has been used for cattle grazing for many years, in association with several other cattle properties. However, the use of the site for grazing is no longer viable due to rising land values and subsequent increases in rates and taxes.

The land is identified as Class 3 agricultural land. The Agricultural Land Classification Atlas for the Sydney Basin and Lower Nepean – Hawkesbury Catchment defines Class 3 land as:

> *Grazing land or land well suited to pasture improvement. It may be cultivated or cropped in rotation with pasture. The overall level of production is moderate as a result of edaphic or environmental constraints. Erosion hazard, soil structural breakdowns, or other factors, including climate may limit the capacity for cultivation and soil conservation or drainage works may be required.*

The report notes that due to slope, high potential for soil erosion and general topography, the subject land is not suitable for cultivation or cropping. Further, the site is now 'book-ended' by urban development to the east and west, with the proximity of residential development preventing the intensification of agricultural uses due land use conflicts such as noise, odour, chemicals and visual intrusion that would arise.

The surrounding land uses, the soil profile of the land, and the statutory controls provide insurmountable constraints to the intensification of agriculture on the land. As a result, light grazing is identified as the highest agricultural value which can be placed on the land.

However, the gross margin for beef cattle in NSW on land with similar physical characteristics is $200 per head per year. This demonstrates that cattle grazing is no longer viable at sustainable stocking rates. Based on this, the subject land generates a gross margin on $36,000 per year, which is only a fraction of the fixed costs of rate and taxes.

The report concludes that the development of the site for urban uses would have no impact on primary production on neighbouring properties, essentially because the properties are residential or rural residential. With respect to the impact of the proposal on food production in the Sydney basin, the agricultural commodity value of the site is only 0.03% (or one 33rd of 1%) of the total value of agricultural production in the Sydney Basin, and so its redevelopment would have no impact.

2.7 European Heritage

The North West Subregion has a diverse cultural heritage which includes cultural landscapes, roadways, historic buildings and infrastructure. The Hawkesbury LGA has heritage that dates back to the earliest years of colonial settlement, including four of the Macquarie Towns.

Whilst the site is not currently listed as a heritage item under any statutory instrument, and is not proposed to be listed as a heritage item by the Council under its existing Draft Hawkesbury LEP 2011, it has associations with P.A Yeomans, a pioneer of the Keyline System of irrigation. A CMP has been prepared by Urbis to analyse the fabric and significance of the Redbank site (formerly called Yobarnie). The report can be found at **Appendix G**.

Background

The CMP has determined that the site has high historical significance at a State level for its role as one of the first of two demonstration farms where the Keyline system was developed in the early 1950s. Yeomans undertook experiments on his two North Richmond properties, known as Yobarnie and Nevallan, which informed the development of the system. The Keyline system has gone on to achieve recognition around the world, and whilst there are a number of contemporary permaculture groups and Keyline designers working on contemporary sites, the earlier systems and other Yeomans Keyline farms are considered to be of highest relevance.

The Redbank at North Richmond site contains 11 of the 16 Yobarnie dams, with a further three dams intact on the adjacent Lot 26 (which is in private ownership and does not form part of the site). However, subdivision and new housing development has resulted in the loss of keyline elements at Yobarnie, and the system has lost its connectivity.

Assessment of Significance

Urbis has determined that the site has State Heritage significance for its historic, associative and aesthetic values, as well as for its research potential and rarity.

The site has associative significance at a state level for its direct link to Percival Yeomans, a significant contributor to innovation in agriculture. It also has associative significance at a local level with the Charley family, who built the nearby Belmont House and ran one of the most famous horse and cattle stations in Australia on land that included Yobarnie.

The site also has aesthetic / technical significance at a state level and retains key features including the dams, some roadways and contour and drainage lines. Disuse and subdivision however has compromised the technical integrity of the system as a whole as well as affecting individual contributing elements. The Keyline system at Yobarnie has not operated as intended since 1967. The remaining dams on Yobarnie also have some aesthetic interest as part of a rural landscape, however they have no more merit than non-Keyline dams aesthetically.

The site is of state significance for its research potential as the site of the experimental farm where Yeomans investigated soil conservation and water management techniques. The innovative system remains apparent in the landscape, albeit altered, and the site is likely to be of research value to the sustainable agricultural community and Permaculture groups.

As Yeomans' experiment farm, Yobarnie is rare at the state level for its ability to demonstrate experimentation in keyline techniques. Its rarity is enhanced by its scale, which was not readily developed by others due to received government subsidies and Yeomans contacts in earth moving.

Redbank also has social significance at a local level for the evidence of Aboriginal occupation of the site, with nine sites and one potential archaeological deposit being identified.

European Archaeology Potential and Significance

There is some limited potential for remnant infrastructure associated with early soil development experiments, for example drains, to be found on the site. It is understood that the bulk of these elements were removed when the Keyline was implemented, however elements may have been retained where these could be used in-line with the Keyline infrastructure. However, whether such remnants would be of value or be able to effectively demonstrate a holistic picture of past experimentation is questionable.

Adjoining Heritage Items

To the south of the site, on the opposite side of Grose Vale Road lies the former Belmont Estate. The Estate is now partly used as the St John of God Psychiatric Hospital. The former Belmont Park mansion, garden building and gatehouse (located on Grose Value Road) are listed as heritage items under Hawkesbury LEP 1989.

Conclusions and Recommendations

Although the significance of the site has been acknowledged, it does not warrant reconstruction. Subdivision and redevelopment of the site for residential uses is therefore considered appropriate to ensure protection of the heritage fabric.

In summary, the CMP provides the following conclusions / recommendations:

- Subdivision and redevelopment of the site for residential uses is appropriate in view of the redundant agricultural use and lack of viable economic use for other forms of agriculture.
- At a broad level, significant aspects of the natural topography and landforms should be retained, this includes the primary ridges and valleys and undulating slopes falling to Redbank Creek.
- A sample of interconnecting keyline elements be retained so as to interpret the system as a microcosm. A recommended sample of interconnected elements could include retention of Dams 10, 11 (located on adjoining Lot 26) and 12 and where possible, associated feeder and irrigation drains and spillways.
- Ongoing management, maintenance and monitoring of dams should be undertaken in conjunction with appropriate dam safety guidelines and consider remediation recommendations and geotechnical advice.
- Where possible, retention of some identified pre-Keyline features should be considered, as these features highlight the experimental nature of the site and the evolution of the Keyline system. Identified pre-Keyline features include the creek dam and ring dam (Dams 14 and 1). Retention of features should be considered provided they currently (or can be reasonably modified to) suit DSC, DECCW, Council and appropriate urban residential design standards.
- Subdivision and redevelopment should consider basic Keyline principles which are transferrable to the urban environment, including primary land shapes (primary ridges and valleys etc) with a high emphasis on sustainability as a driver for the new development.
- Consideration should be given to identification and retention of key views from the Grose Vale Road.
- A detailed Interpretation Strategy and Brief for the site should be prepared and implemented, to enable interpretation of how the system once worked. This may be achieved through retention and display of examples of removed fabric, signage, three dimensional modelling, soundscapes, public art, and development of heritage walks.

Subsequent meetings with the Office of Environment & Heritage on 28 September 2011 and 3 November 2011 have confirmed their support for the findings of the CMP, and their intention to proceed with the listing of the elements of the site on the State Heritage Register. Heritage officers have also confirmed their support for the adaptive re-use of the site, and the role of the CMP as a sound basis for its ongoing management.

The CMP has now been finalised and lodged with the Heritage Branch for formal endorsement. Resolution of heritage issues and the future layout of the site will be an iterative process, and will be ongoing as part of the overall site structure planning and rezoning process.

2.8 Aboriginal Cultural Heritage

The North West Subregion has a rich Aboriginal archaeological background, and contains many areas and sites which are highly significant. The site itself is located in an important archaeological corridor, forming part of the Hawkesbury-Nepean River system, where many significant archaeological sites are found. A Preliminary Archaeology Investigation and the Aboriginal Heritage Assessment has been prepared by Kelleher Nightingale Consulting Pty Ltd (refer to **Appendix H**). The original assessment is supported by a covering letter, also prepared by Kelleher Nightingale Consulting Pty Ltd, to confirm the currency of their original assessment (also provided at **Appendix H**).

The assessment has identified that:

- The survey identified 10 archaeological features, including nine sites and one potential archaeological deposit (PAD). Seven of these features (45-5-0510, 45-5-0512, 45-5-0513, 45-5-0514, 45-5-0515, 45-5-0516, NR PAD 1) are associated with Redbank Creek, and are contained within areas designated as riparian corridor (refer to **Figure 9**). These features will only require further assessment if they are impacted by the development.
- Three of the sites (NR8, NR9 and NR10) will be affected by the proposed residential development. These sites will require mitigation in the form of archaeological salvage prior to any impact. An Office of Environment and Heritage (OEH) Aboriginal Heritage Impact Permit (AHIP) or DP&I approval will be required prior to any impact on these sites.
- Site NR9 will not require mitigation, but will require an AHIP or DP&I approval prior to any impact.
- A consultation program conducted in accordance with the relevant OEH and DP&I requirements will need to be undertaken with the relevant Aboriginal community. It is noted that assessment to date has been undertaken in consultation with the Deerubbin Local Aboriginal Land Council, Darug Tribal Aboriginal Corporation, Darug Custodian Aboriginal Corporation and Darug Aboriginal Cultural Heritage Assessments.

Although archaeological material has been identified, the presence of these sites will not prevent development outside of the Redbank Creek riparian corridor. The areas of highest potential are associated with the creek line and immediate surrounds. Those sites outside of the creek line that will be disturbed can be managed appropriately.

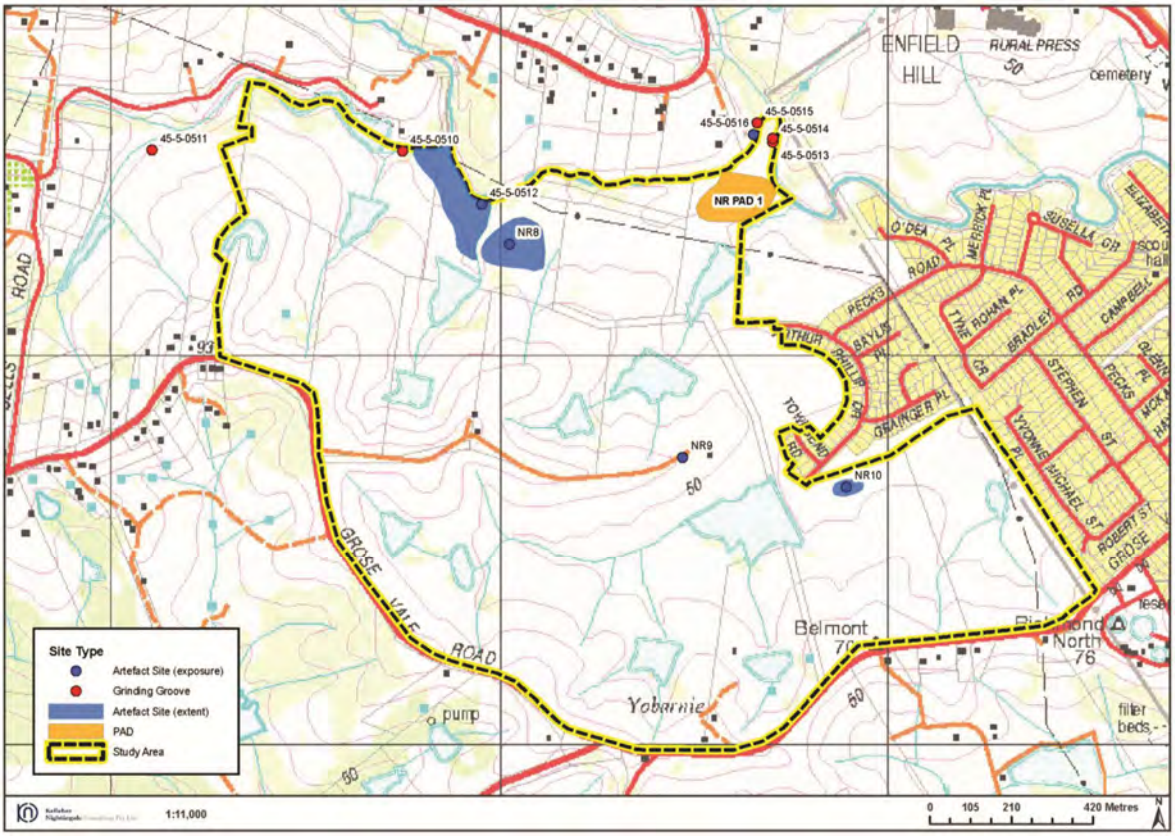

Figure 9 – Aboriginal Archaeological Heritage

Source*: Kelleher Nightingale*

2.9 Landscape, Visual and Open Space Values

A Visual Landscape Analysis of the site and its surrounds has been undertaken by Urbis, and is included at **Appendix I**. **Figure 10** illustrates the topography and visual catchment of the site. The site's landscape character is typified by the Redbank Creek corridor, and a series of open valleys, north facing slopes and ridgetops, with the heritage features also providing an important visual element.

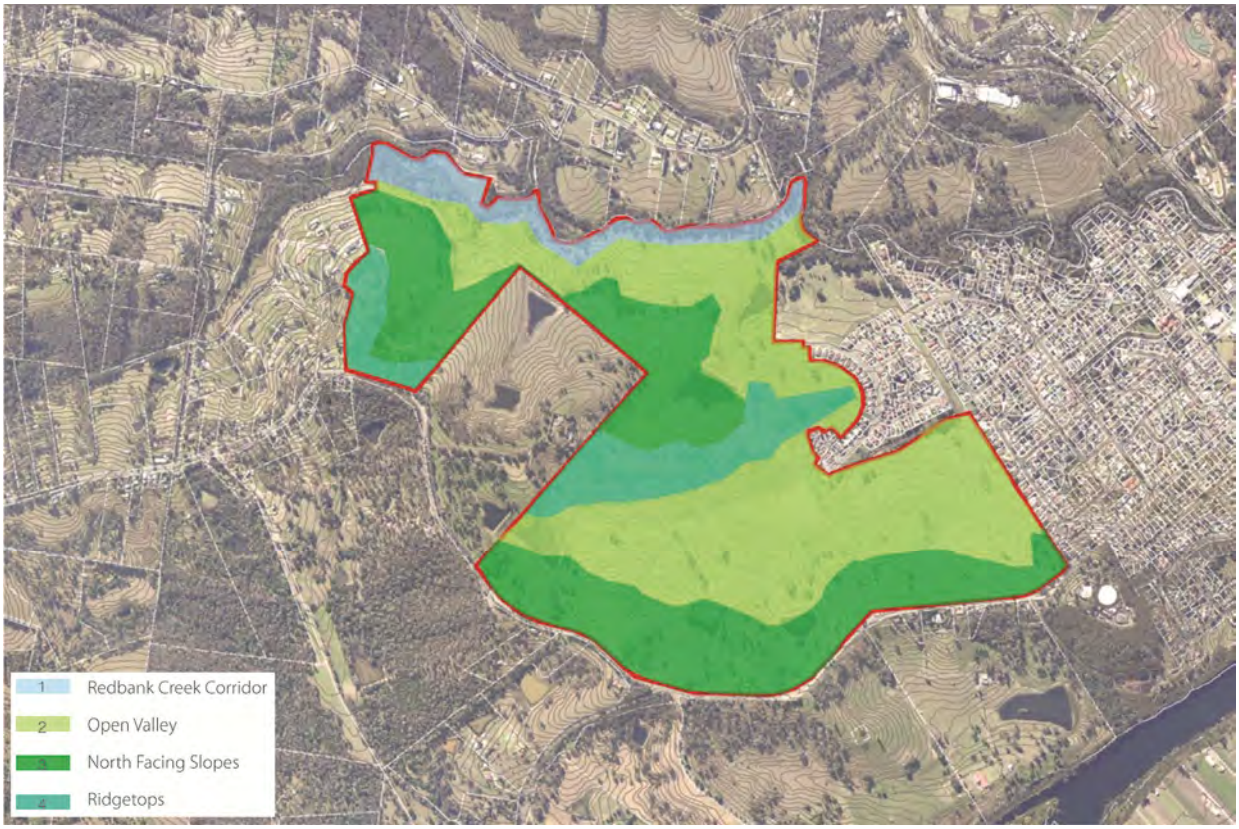

Figure 10 – Landscape Character Types

Source: *Urbis*

Key aspects of the landscape character of the site and its visual context to be considered and addressed in the project are as follows:

- The Redbank Creek corridor consists of a dense vegetated understory, with mature trees surrounded by grasses. This landscape feature forms a barrier between the subject site and existing development to the north, extending along the entire northern boundary. The retention of this feature will maintain consistency with how this landscape unit is treated on the eastern and western sides of the site.
- The open valleys are characterised by farm dams adjoining open gullies, surrounded by scattered trees and grasses. These areas have moderate to high capacity to change as the landscape is highly modified from its original state.
- The north facing slopes consist of intermittently spaced tree clusters, surrounded by grasses. These slopes have a moderate to high capacity to change as the landscape is substantially modified from its original state.
- The ridgetops consist of moderately vegetated ridgetops characterised by mature trees and grasslands. This landscape type has low to moderate capacity for change as the vegetation forms part of a layered view across the site and beyond. Sensitively placed development and landscape elements within this landscape are required to maintain the visual characteristics of these features, and mitigate visual impacts when experienced from a distance.

Visual sensitivity, and the visual impact of residential development, varies depending on the activity of the viewer, the duration of the view, the viewing distance and the landscape compatibility. The majority of the site is identified as having very low to low visual sensitivity, with moderately sensitive areas identified along Redbank Creek, the central ridgeline and parts of the site adjoining Grose Vale Road. **Figure 11** illustrates the overall visual sensitivity for the site.

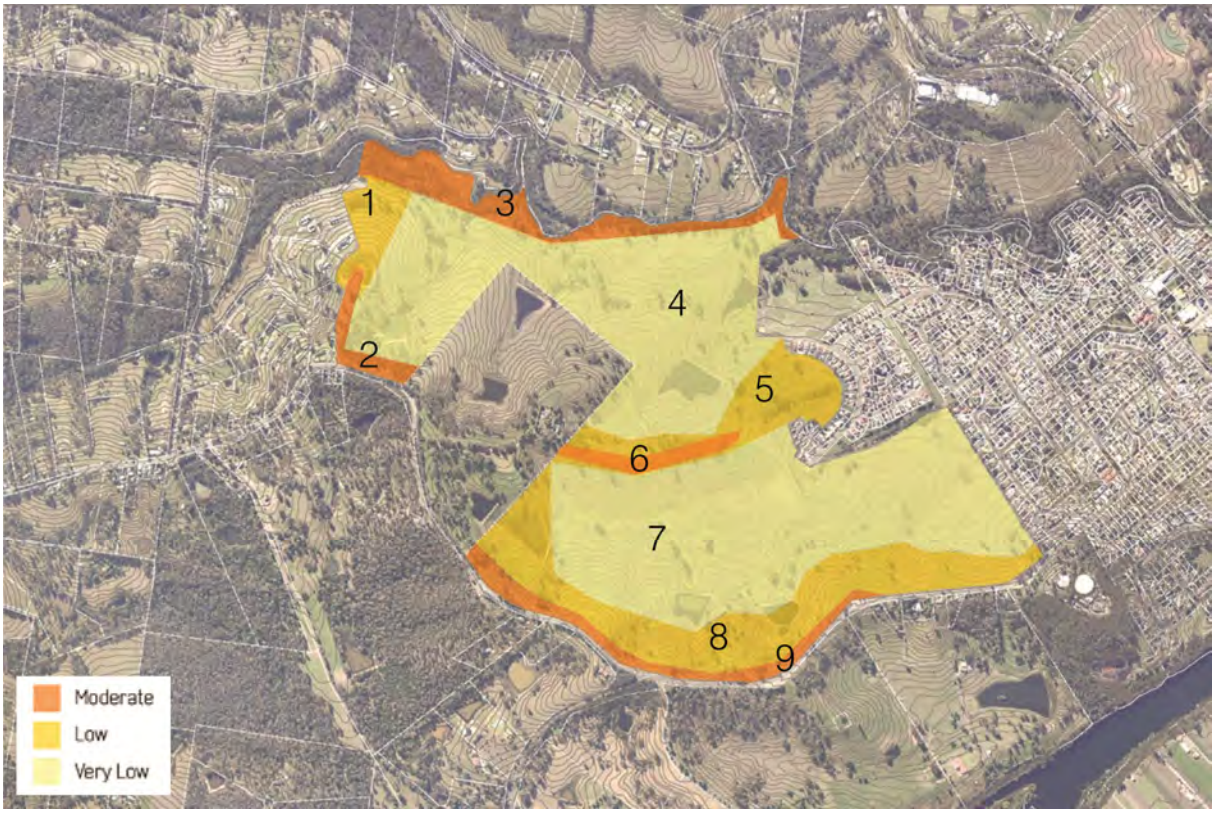

Figure 11 – Visual Sensitivity

Source: *Urbis*

2.10 Riparian Corridor Classification

A Riparian Assessment for the site was previously prepared by GHD in 2009 (refer to **Appendix J**). GHD has also prepared an addendum statement to ensure the currency of their original assessment (also at **Appendix J**).

A number of methodologies have been used in the Riparian Assessment to map streams and riparian corridors on the site. The classification of watercourses has been undertaken in accordance with the NOW's Riparian Corridor Management Study (RCMS) and the most recently published riparian corridor guidelines under the *Water Management Act 2000* (WM Act).

The guidelines published by under the WM Act are based on the methodology developed under the RCMS. The guidelines are based on the categoristaion of watercourses with a defined set of guidelines to establish a Core Riparian Zone (CRZ), Vegetated Buffer (VB) and an Asset Protection Zone (APZ).

The site has been divided into five catchments as shown in **Figure 12**. The drainage line occurs on the northern boundary of the site. A number of other drainage lines traverse the study area, all of which contain at least one dam.

For the purposes of riparian assessment, and in accordance with the guidelines under the WM Act, existing water courses have been classified in accordance with the Strahler categorisation system.

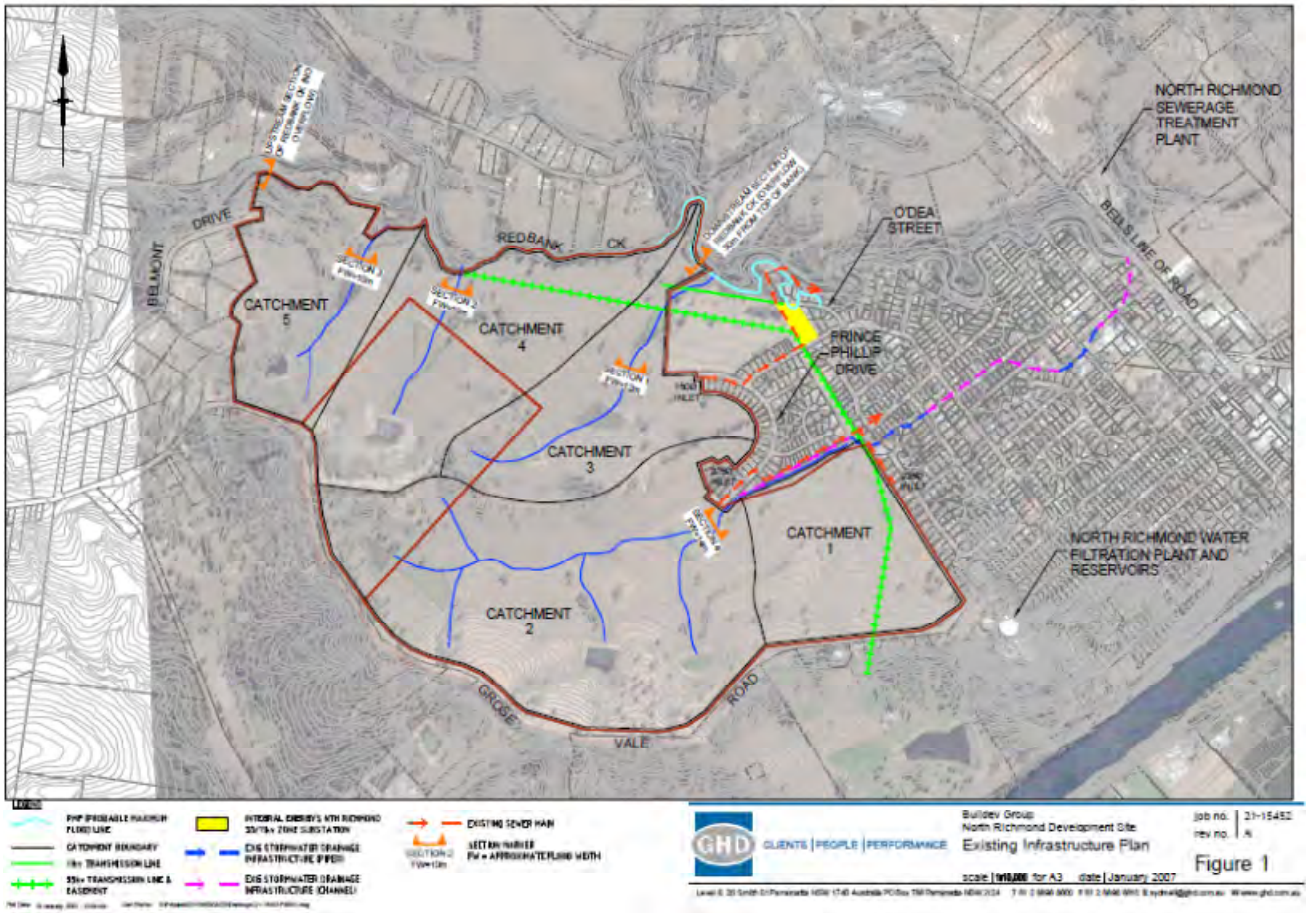

Figure 12 – Catchments

Source: *GHD*

This categorisation has been used as the basis for the riparian corridor network that forms part of the draft Zoning Plan (refer to Section 4.6). The Assessment recommends:

- Retention and rehabilitation of Redbank Creek as a 3rd order stream (DWE Category 1);
- Retention and extension of S1 as 2nd order stream (DWE Category 2) with a CRZ of 20m and a VB of 10m (where possible) on the southern side of the drainage line only. Additional areas of open space will also be designated outside the riparian corridor;
- Retention of S2 as a 2nd order stream with a CRZ of 20m and a VB of 10 either side of top of bank (based on 1:1.5 year flood event);
- Retention and extension of S3 as 2nd order stream (DWE Category 2) with a CRZ of 20m and a VB of 10 due to protection of corridor connection between high value Cumberland Plain Woodland (CPW) vegetation and Redbank Creek;
- Retention of T6 as a 2nd order stream ("S4") with a CRZ of 20m and a VB of 10 either side of top of bank;
- Retention of Dam 9 due to associated River Flat Eucalypt Forest (RFEF) vegetation, provision of habitat and protection for 'bats' and the open body of water;
- Removal of remaining farm dams throughout; and

- Removal and/or incorporation into WSUD strategy of drainage lines T1, T2, T3, T4 (a&b tributaries only), T5 &T7b. Where possible, these drainage lines will be relocated and incorporated into WSUD 'swales' to maintain drainage length as much as possible.

Since preparation of the original assessment, consultation has been undertaken with the NSW Office of Water (NOW). The outcomes of the assessment were agreed to at an onsite meeting with NOW. The current proposal is consistent with previous agreements with NOW.

2.11 Ecology

An Ecological Constraints and Benefits Analysis was previously prepared by GHD in 2009 (refer to **Appendix K**). This study has been supplemented by an addendum statement to take into account recent legislative changes (also at **Appendix K**).

The report concludes that the majority of the site has little conservation value due to clearing and the presence of exotic pasture. The site does however contain some larger stands of remnant vegetation and creek lines which contain threatened ecological communities, threatened fauna and habitat resources. The ecological features of the site are described below.

Vegetation Communities

Vegetation on the site is highly disturbed due to the long-term agricultural use and grazing of the site. Whilst there are a few scattered Eucalypt species across the site which are characteristic of Cumberland Plain Woodland (CPW), the highly modified nature of the site means that these trees do not constitute the CPW community.

Notwithstanding this, CPW was identified in two locations on the site, covering approximately 2% (4 hectares) of the total site area. The larger (3.5ha) stand is located on the site's western boundary. The smaller (0.5ha) more isolated stand is located in the central part of the site.

The site also contains River-Flat Eucalypt Forest on Coastal Floodplains (RFEF). RFEF is confined to the Redbank Creek riparian corridor. The north-western end of Redbank Creek was identified as regenerating RFEF, with distinct sandstone elements.

Figure 13 shows the distribution of existing vegetation community types and conditions within the site.

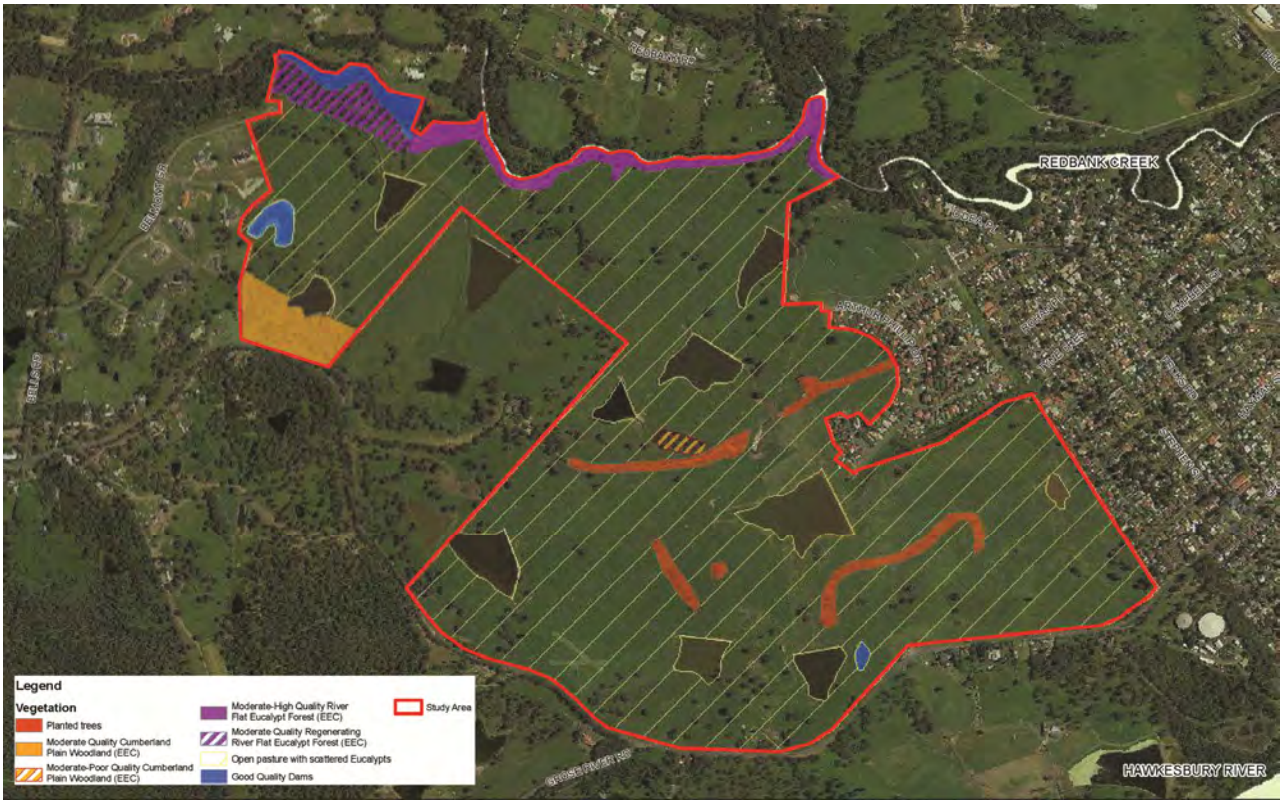

Figure 13 – Vegetation communities

Source: *GHD*

Conservation Significance

Since the original assessment was undertaken, CPW has been upgraded to a Critically Endangered Ecological Community under both the *Threatened Species Conservation Act 1995* (TSC Act) and the Commonwealth *Environmental Protection and Biodiversity Conservation Act 1999* (EPBC Act).

RFEF is listed as an Endangered Ecological Communities (EECs) under the NSW *Threatened Species Conservation Act 1995* (TSC Act). It is not listed under Federal legislation.

The conservation significance of existing vegetation in the study area and on surrounding land is shown at **Figure 14**. Vegetation along Redbank Creek has been mapped as Core Habitat while regenerating vegetation at the western end of the Creek is mapped as Support for Core. The remnant CPW on the western boundary has also been mapped as Support for Core.

The areas mapped in **Figure 14**, are generally consistent with those areas identified as comprising significant vegetation, or connectivity between significant vegetation in draft Hawkesbury LEP 2011.

Figure 14 – NPWS Conservation Significance Mapping (2002)

Source: *GHD*

Threatened Species and Populations

No threatened flora species were identified during the survey, however a number of threatened flora species and populations have been recorded within the locality. These include:

- *Acacia Bynoeana*
- *Acacia Gordonii*
- *Allocasuarin Glareicola*
- *Cynanchum Elegans*
- *Dilwynia Tenuifolia*
- *Epacris Sparsa*
- *Eucalyptus Benthamii*
- *Grevillea Juniperina*
- *Leucopogon Fletcheri*
- *Micromyrtus*
- *Nodding Geebung*
- *Primelea Spicata*
- *Pterostylis Saxicola*
- *Pultenaea Parviflora*
- *Tetratheca Glansulosa*
- *Zieria Involucrata*

The status of these species under the TSC Act and EPBA Act is summarised in Table 3 of the Ecological Constraints and Benefits Analysis at **Appendix K**. Due to the highly modified nature of the site, none of these species are considered likely to occur.

A number of threatened fauna species (37) have been identified as occurring in the locality:

- *Australasian Bittern*
- *Barking Owl*
- *Black Bittern*
- *Black-shinned Honeyeater*
- *Black-necked Stork*
- *Black-tailed Godwit*
- *Broad-headed Snake*
- *Cumberland Plain Land Snail*
- *Diamond Firetail*
- *Eastern Bentwing-bat*
- *Eastern Falsistrelle*
- *Eastern Freetail-bat*
- *Freckled Duck*
- *Gang-gang Cockatoo*
- *Glossy Black Cockatoo*
- *Giant Dragonfly*
- *Greater Broad-nosed Bat*
- *Green and Golden Bell Frog*
- *Yellow Bellied Glider*
- *Grey-Headed Flying-fox*
- *Koala*
- *Large-eared Pied Bat*
- *Large Footed Myotis*
- *Masked Owl*
- *Painted Honeyeater*
- *Pink Robin*
- *Powerful Owl*
- *Red-crowned Toadlet*
- *Regent Honeyeater*
- *Sooty Tern*
- *Speckled Warbler*
- *Spotted-tail Quoll*
- *Square-tailed Kite*
- *Squirrel Glider*
- *Superb Parrot*
- *Swift Parrot*
- *Turquoise Parrot*

Three threatened bat species (Large-footed Myotis, Eastern Bentwing-bat and Eastern Freetail Bat) were recorded in the study area. This would require further assessment as part of the future development of the site.

Threatened fauna with the potential to occur on the site are most likely to utilise habitat along Redbank Creek or the pockets of CPW. Whilst some species may forage over cleared areas of the site, these are most likely to occur only on an occasional, transient or migratory basis.

The status of these species under the TSC Act and EBCA Act is summarised in Table 5 of the Ecological Constraints and Benefits Analysis at **Appendix K**.

Migratory Species

One species listed as migratory under the EPBC Act was recorded within the study area, the Cattle Egret (*Ardea ibis*). Great Egret (*Adrea alba*), also listed as migratory, may also occur at the site. These species are considered Matters of National Environmental Significance. An assessment of potential impacts under the EPBC Act will need to be undertaken as part of any future development application.

Riparian and Aquatic Values

GHD has assessed the habitat value and condition of Redbank Creek, as well as the drainage lines associated with the Keyline Dam system. The Creek, although substantially modified, is the most ecologically important feature of the site, providing terrestrial and aquatic habitat.

The condition of the dams on the site was assessed as being very poor to good. Generally, dams were surrounded by common pasture species and contained minimal in-stream species, however two of the dams (Dams 8 and 9) were of notably good condition and included native in-stream and ephemeral vegetation, sheltering sites within fringing or adjacent areas and standing trees or stags on dam edges.

2.12 Flooding and Stormwater

Flooding

A Flood and Bushfire Safety Evaluation was prepared by Molino Stewart in August 2009 (refer to **Appendix L**). This study has been supplemented by an addendum statement, to ensure consistency with the revised Zoning Plan (also at **Appendix L**).

At North Richmond, the 1 in 100 year flood level is 17.5m above sea level and the probable maximum flood (PMF) is 26.5m above sea level.

As identified on Council's flood constraints map, the site is free from any direct risk of flooding from the Hawkesbury Nepean River (refer to **Figure 15**). However, low-lying areas, including Redbank Creek and other ephemeral water courses on the site, are liable to flooding. These would rise and fall over the space of a few hours and the maximum depth of flooding is only likely to be a few metres. **Figure 16** shows the extent and depth of the 1 in 100 year flood depths across the site and its immediate surrounds.

The minimum level of the land to be developed is above the PMF. The area of land below the PMF (approximately 2% of the site) lies along Redbank Creek, and would not be developed without the relevant studies, approvals and limited fringe earthworks to ensure there are no adverse impacts upstream or downstream.

As riverine flooding does not pose a direct threat to the site, and local flooding would only impact a small number of properties in the most extreme events, the impact of either type of flooding is unlikely to trigger mass evacuation of the site.

Notwithstanding this, major or extreme floods would have impacts on the site and North Richmond more broadly, including cutting road access across the Richmond Bridge, and cutting electricity and telephone communications. The effects on the site would be no worse, and in many cases would be less severe, than on areas on the floodplain to the east of the River.

If the site were required to be evacuated due to restricted access or reduced services, a safe, flood free access route would be available at all times.

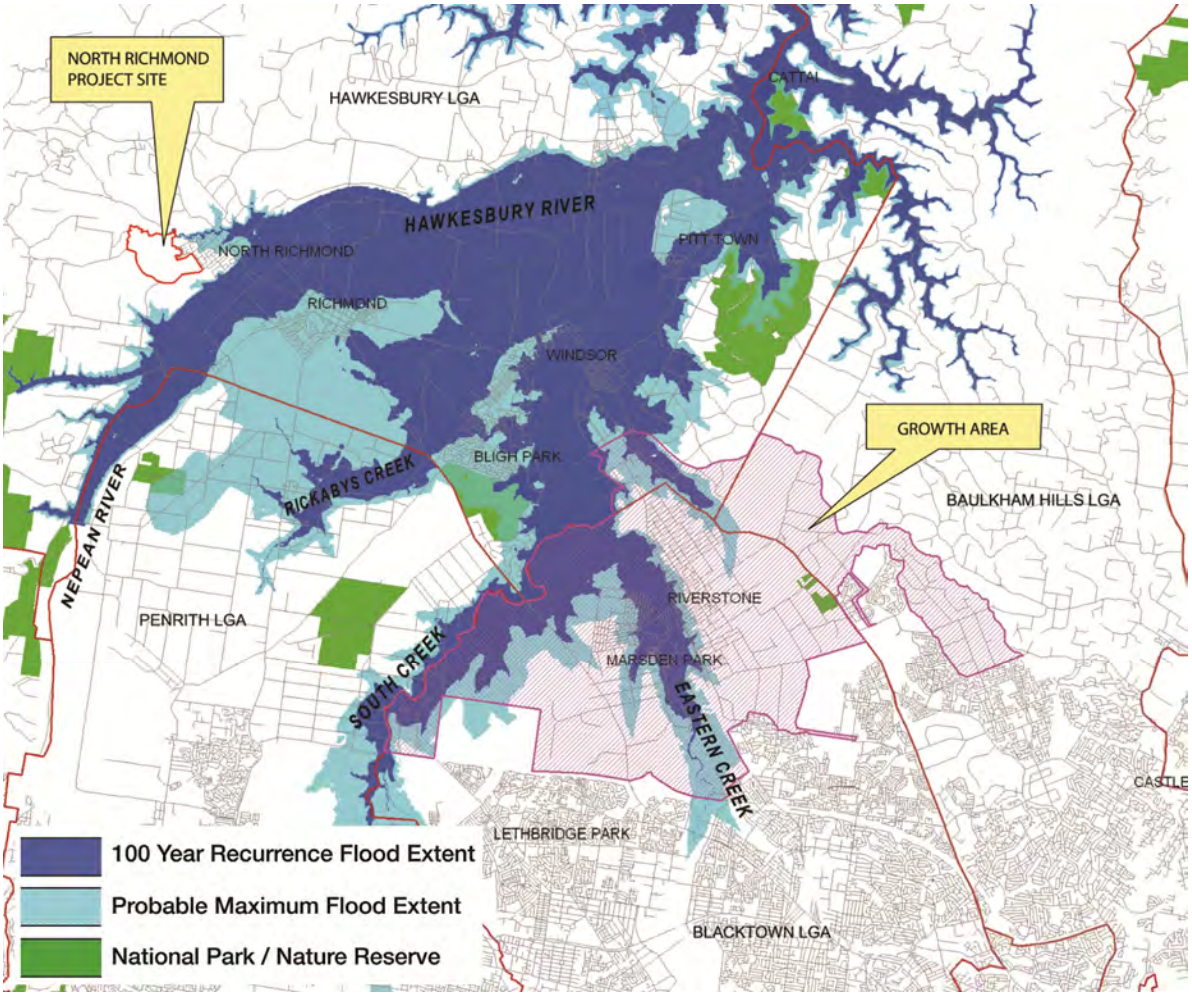

Figure 15 – Flood constraints map

Source: *Hawkesbury City Council*

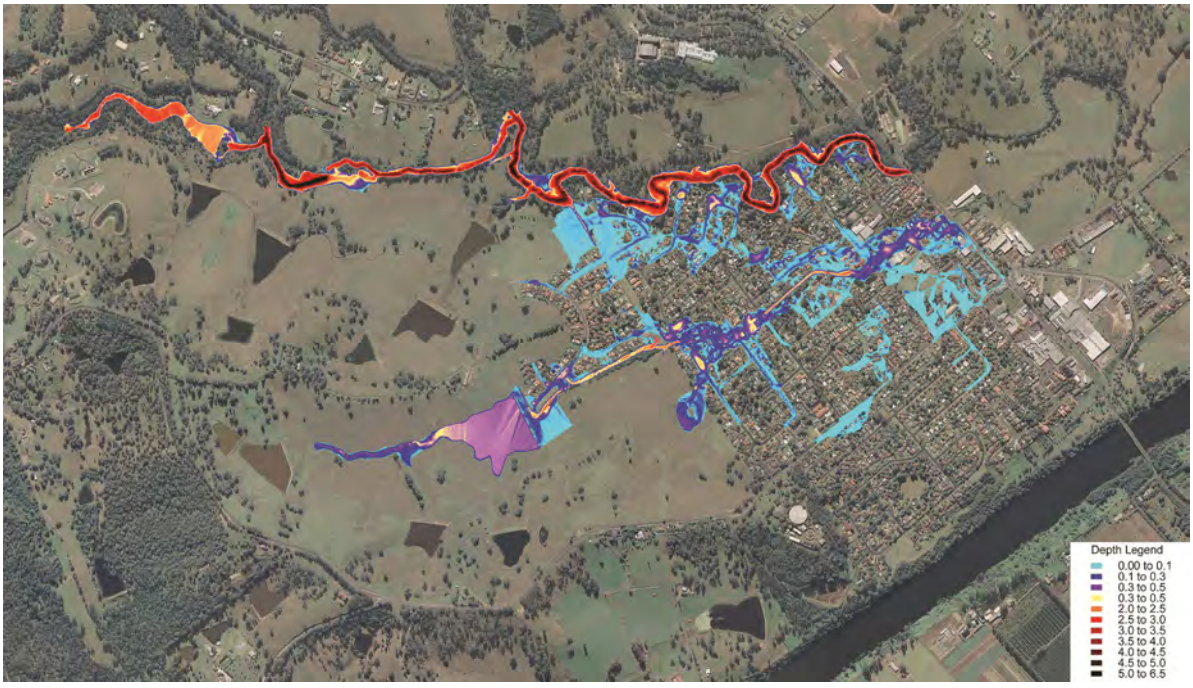

Figure 16 – 1 in 100 year ARI flood depth and extent

Source*: J. Wyndham Prince*

Stormwater

The site is divided into four main catchments (refer to **Figure 17**). The three northern catchments drain to Redbank Creek via a series of channels and farm dams. The southern catchment drains in an easterly direction to the existing channel that runs between the approved Seniors Living Development and the existing residential development of Kemsley Downs. The extent of the catchments has generally been preserved without significant diversions.

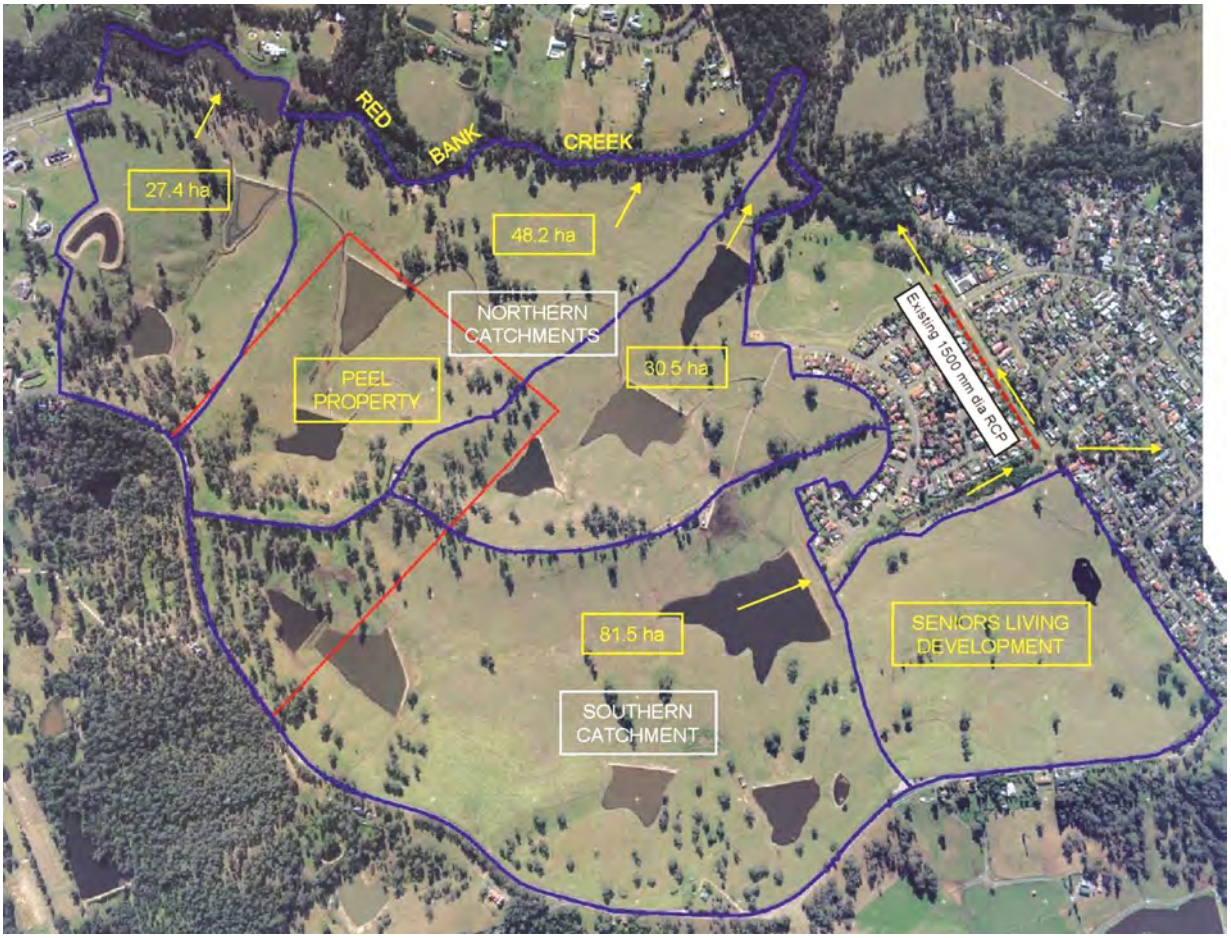

Figure 17 – Existing catchment boundaries

Source*: J. Wyndham Prince*

The redevelopment of the site represents the opportunity to:

- Integrate open space areas and stormwater treatment devices;
- Ameliorate existing flooding of residential properties downstream of the site;
- Consider opportunities for storage and re-use of water as a resource for maintenance and watering purposes;
- Maintain supply of stormwater (quality and quantity) to downstream users and environment; and
- Integrate the heritage and environmental values of the key-line system dams as focal points in the surrounding community and drainage corridors.

2.13 Bushfire

A Bushfire Planning Assessment was previously undertaken by Australian Bushfire Protection Planners Pty Limited (refer to **Appendix M**). An addendum statement has been prepared by McKinlay Morgan and Associates to ensure the currency of the initial assessment (also at **Appendix M**). The assessments concur that the site is generally cleared of native vegetation, except for remnant shade trees and a narrow corridor of vegetation along Redbank Creek, and has been used for grazing and other agricultural land uses for many years.

Figure 18 shows existing bushfire prone land, as identified on Council's Bushfire Prone Land map. Both Bushfire Assessment Reports at **Appendix M** highlight the inaccuracies in Council's mapping. The grassland vegetation within the site has been mapped by Hawkesbury Council as a Bushfire Prone Area with Category 2, Group 3 Bushfire Prone Vegetation. The NSW Rural Fire Service's (RFS) mapping guidelines state that if the vegetation is an area of managed grassland, it is excluded from Groups 1-3. The vegetation mapped by Council as Category 2, Group 3 is grazed and managed, and so is not appropriately classified.

Similarly, the isolated pockets of vegetation across the site have been mapped as Category 1 Bushfire Prone Vegetation. This vegetation is managed by grazing the grassed understorey and therefore, in accordance with the RFS guidelines, is excluded from both Category 1 and 2 vegetation classifications.

Whilst some land to the south of the site (on the opposite side of Grose Vale Road) has been appropriately mapped as Category 1 vegetation, similar inconsistencies have been identified on other land adjoining the site.

In light of the above, it is requested as part of the Planning Proposal that Hawkesbury Council review the existing mapping to be consistent with the RFS mapping guidelines, as the setbacks required by the current categorisations have the potential to constrain future development on the site.

The vegetation along Redbank Creek is mapped as being Category 1 Bushfire Prone Vegetation. This vegetation forms a continuous corridor of vegetation within an area of more than 1 hectare, and is therefore appropriately mapped.

Molino Stewart has undertaken a bushfire evacuation review (refer to **Appendix** L. The review concludes that it is unlikely that bushfire would cause the site to be evacuated, and it is noted that there is no bushfire evacuation plan in place for the North Richmond area. However, it is recognised that in the most extreme events, many people may voluntarily choose to leave, or may be instructed to do so by the NSW Rural Fire Service.

The most likely impact of major bushfires to the north-west, west and south-west of North Richmond would be increased smoke concentrations, which may cause breathing difficulties, particularly for people with pre-existing respiratory problems. This indirect bushfire impact can be mitigated by:

- People evacuating North Richmond until the smoke has abated; and
- People staying indoors with the building sealed until the smoke has abated.

If evacuation was required, it is reasonable to assume that the Bells Line of Road to the west of North Richmond has the greatest risk of being cut by bushfires. There is a negligible risk of the roads to the east and across the floodplain to Richmond being cut by bushfires.

As a result, if residents want to leave, or are instructed to evacuate North Richmond, they would able to do so safely at any time.

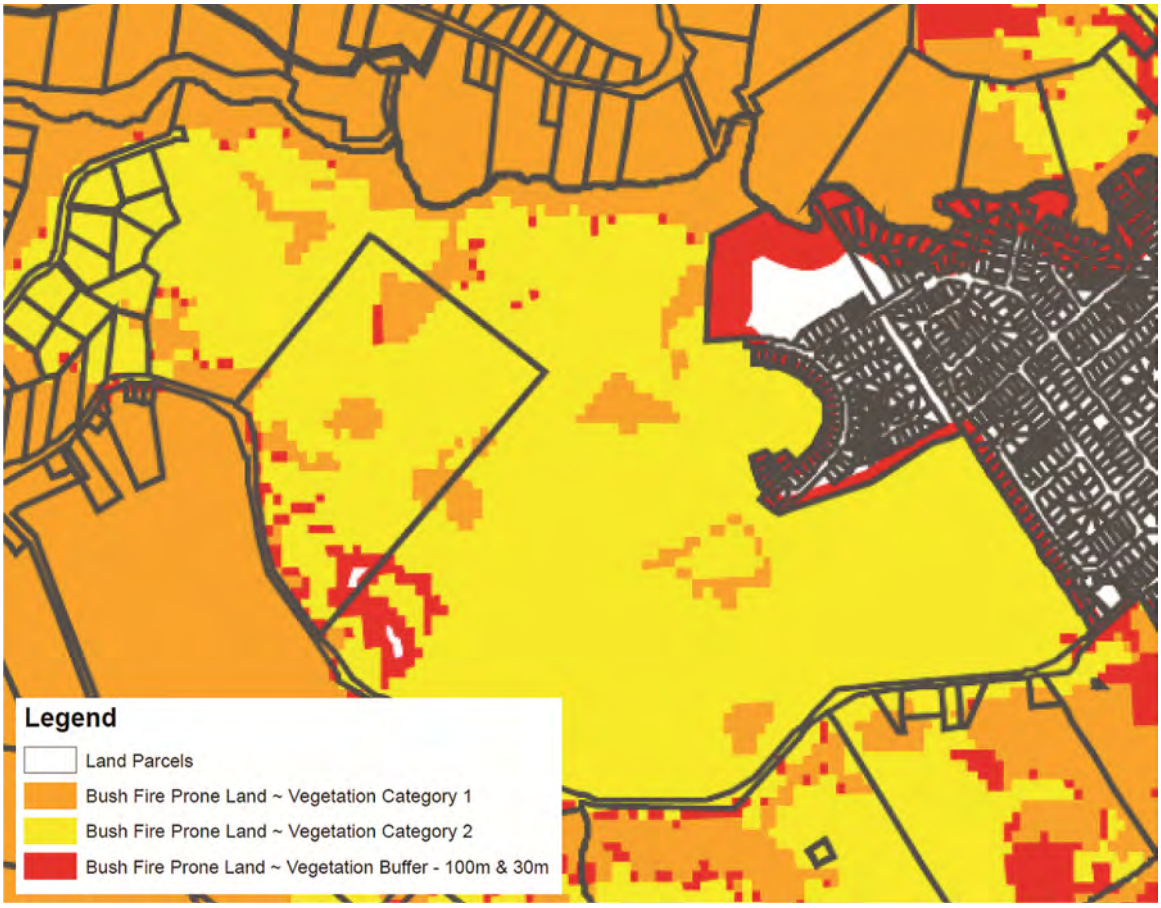

Figure 18 – Hawkesbury Bushfire Prone Land Map

Source: *Hawkesbury City Council*

2.14 Richmond RAAF Base

Excessive noise generated by aircraft associated with the RAAF Base in Richmond restricts development in the surrounding areas. Areas immediately surrounding Richmond, from McGraths Hill to North Richmond are affected by air craft noise exposure forecast (ANEF) ranging from 20-35 (refer to **Figure 19**). Council's HRLS states that new release areas should not be located in areas affected by noise levels above 20 ANEF.

The site is located outside of the ANEF contour and is therefore unaffected by potential aircraft noise. The site is acceptable for development of all buildings types without additional noise mitigation.

The site is not located within the Obstacle Limitation Surface Area of the airport.

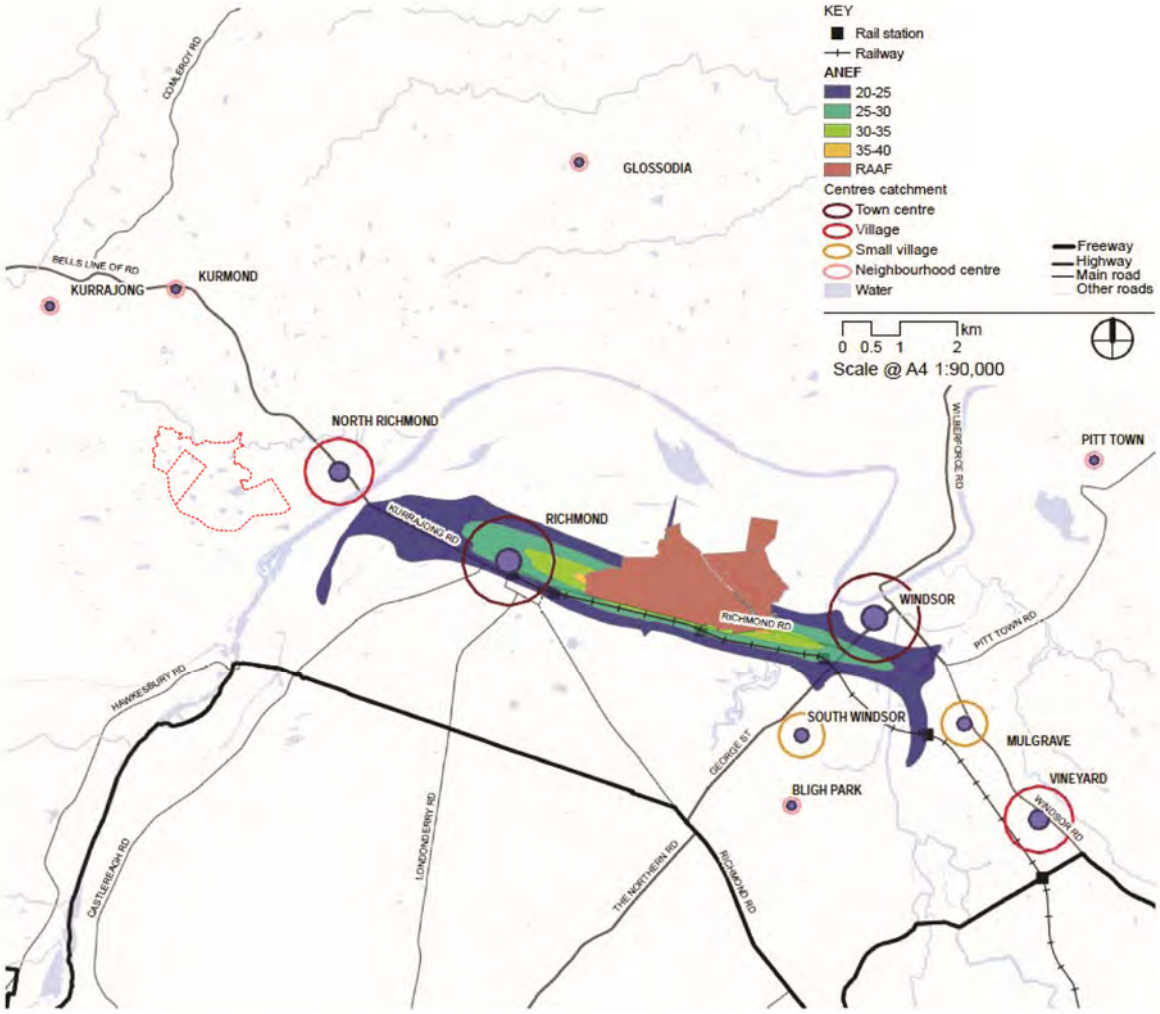

Figure 19 – Richmond RAAF Base and ANEF Contours

Source: *Hawkesbury City Council*

2.15 Access and Transport

A Utilities and Transport Report has been prepared by J.Wyndham Prince and is included at **Appendix D**.

As noted previously, there are significant pre-existing road and traffic issues in the area. The RMS has advised that it is currently undertaking several studies to identify short to medium term solutions to these problems / congestion issues. These studies include the Bells Line of Road Corridor Study and the Richmond Bridge and Approaches Congestion Study (refer to the Richmond to North Richmond Corridor Study Map at **Figure 20**). The RMS is also exploring future corridor locations for long term planning.

It is widely acknowledged that an additional east-west crossing of the Hawkesbury River would help to improve these issues, however the RMS has indicated that State government funding is not available to undertake the works required in the short term.

An overview of the existing access and transport situation is provided below.

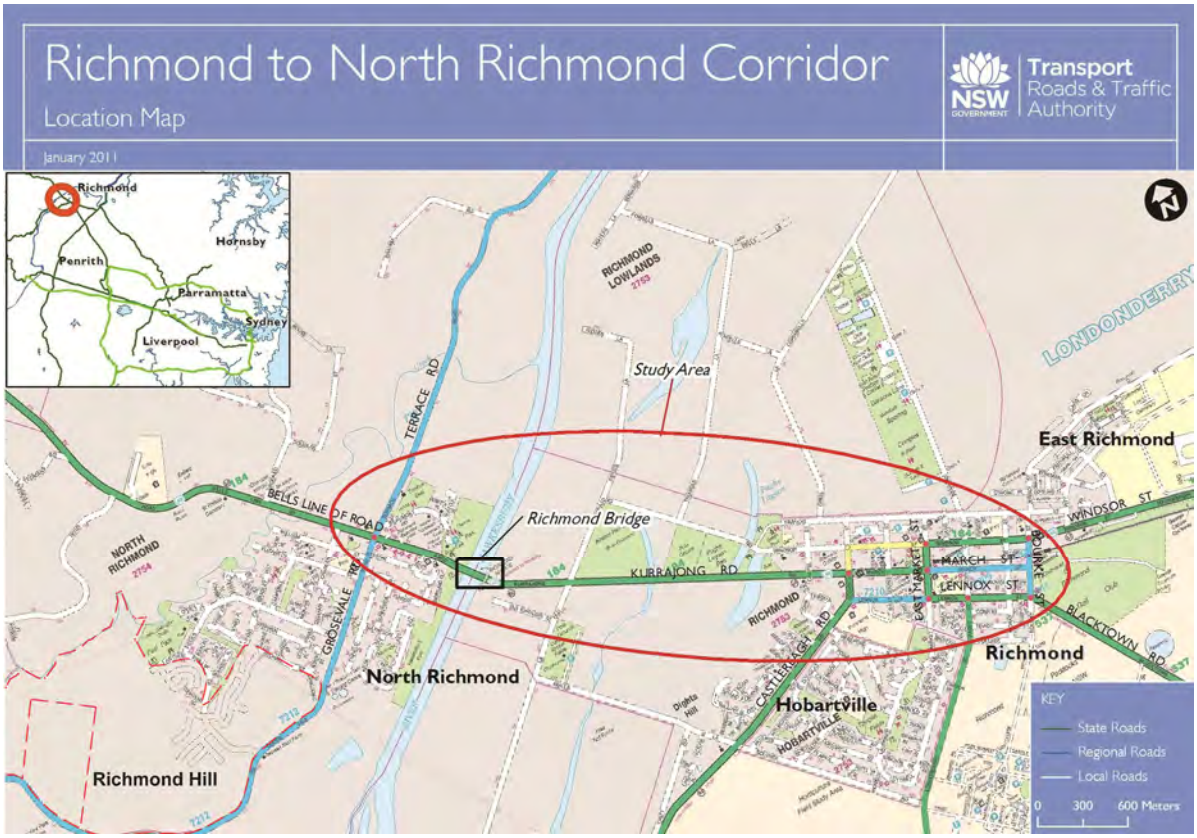

Figure 20 – Richmond to North Richmond Corridor Study Map

Source: *RMS*

Existing Road and Transport Infrastructure

Existing major road infrastructure within the immediate vicinity of the development consists of:

- Grose Vale Road runs along the site's southern boundary, and is an undivided regional 2 lane road under the control of Hawkesbury Council. Grose Vale Road is configured as a loop road, providing access to Bells Line of Road for the communities of North Richmond, Grose Vale, Grose Wold and Kurrajong.
- Bells Line of Road (State Route SR 40) is an arterial road under the control of the RMS. Bells Line of Road provides a secondary crossing of the Blue Mountains supporting the Great Western Highway. In the vicinity of the site, Bells Line of Road is a 2 lane road with local widening at intersections.
- The intersection of Grose Vale Road and Bells Line of Road is controlled by multi-phase traffic signals, and has recently been upgraded with additional turning lanes.
- Richmond Bridge over the Hawkesbury River is a 2 lane bridge, and is currently experiencing capacity problems during peak periods.

Existing Transport Infrastructure within the regional vicinity of the development consists of:

- Richmond Railway Station and Bus interchange is accessed via the four Westbus bus routes which service the Richmond / Windsor area. Bus route 680 travels along Grose Vale Road, adjacent to the site.

Existing Road Network Performance

Intersection of Grose Vale Road and Bells Line of Road
Base data provided by RMS, and modeling undertaken by J.Wyndham Prince shows the following overall traffic volumes at this intersection.

Year	8am-9am Volume	4pm-5pm Volume
2012 without SLD	2,724	2,685
2012 with SLD	2,849	2,810

The NRJV is undertaking works to the intersection as part of the SLD approval. However, it is noted that existing traffic volumes already significantly exceed serviceable capacity parameters. Further upgrade works are limited due to the proximity of property boundaries and infrastructure.

Richmond Bridge
It is acknowledged that Richmond Bridge currently experiences capacity problems during peak periods. Based on the modeling of the Grose Vale Road / Bells Line of Road intersection (which showed that the AM peak generates higher traffic numbers) J.Wyndham Prince has calculated that the following traffic volumes travel east from the intersection to the Bridge:

Year	8am-9am Volume
2012 without SLD	1,621
2012 with SLD	1,702

Analysis of traffic signal data indicates that during the morning peak hour, approximately 700-900 vehicles travel south or south-east from Kurrajong Road after crossing the Richmond Bridge. Further, 400-500 of these vehicles (or a third of all traffic crossing the bridge) are currently using the Yarramundi Lane 'rat run' to bypass Richmond to travel south and south west.

In terms of mid-block arterial capacities, Bells Line of Road should have a minimum level of service (LOS) of D, as a 4U road under the RMS's road network hierarchy. Existing volumes exceed the E/F LOS, and falls within the failure criteria by a considerable margin.

This demonstrates that the existing Richmond Bridge requires augmentation by either an upgrade, or establishment of a second crossing. Planning for this augmentation should consider:

- Upgrading both the intersection and the bridge concurrently;
- Alternatives which do not rely on access to the bridge via the Bells Line of Road and Grose Vale Road intersection, due to their relative proximity to each other; and
- Linking with regional roads, being The Northern Road, Springwood Road and Kurrajong Road.

Key Transport Opportunities

Based on RTA parameters and estimated project development yield, traffic volumes heading east from the intersection of Grose Vale Road and Bells Line of Road will increase from 10% in 2012 to 22% in 2015 and 30% in 2020 during the morning peak period, as a result of the proposed development.

To ensure that the proposed development is satisfactory in terms of traffic and transport issues, the NRJV is proposing a road infrastructure works solution as part of this Planning Proposal.

The proposal is discussed at Section 4.9, and provides the opportunity to:

- Provide an alternative east-west river crossing that will alleviate existing traffic congestion at Richmond Bridge;
- Divert traffic away from the already congested Grose Vale Road / Bells Line of Road intersection, by providing an alternative route for traffic travelling south and south west (which currently accounts for approximately one third of traffic using the intersection); and
- Provide flood free access for an extended period of time.

2.16 Utilities and Services Infrastructure

J. Wyndham Prince has prepared a series of Infrastructure Site Servicing Plans for the site (refer to **Appendix N**) to determine the availability of enabling infrastructure, and the works required to service each stage of the development.

Water and Sewer

Modelling using Sydney Water's network analysis systems for both waste water (sewer) and potable water has confirmed that there is existing capacity to service the first stage (Stage 3A) of the residential development, without the need for any infrastructure upgrades.

Augmentation to potable water and sewerage specific infrastructure points to support later stages of the project can readily occur, and will be an ongoing commercial agreement with Sydney Water.

It is noted that consultations with Sydney Water have confirmed that there is existing capacity to service the whole development, without limiting the provision of water and sewer infrastructure in the North-West Growth Centre or elsewhere.

Power and Telecommunications

There is sufficient capacity to supply power to the whole of the development, without the need to augment existing infrastructure. The infrastructure and staging plans set out the indicative locations for new substations within each stage of the development.

In addition, the site will be serviced by fibre optic cabling, and will be one of the first fully serviced sites on the National Broadband Network. This will provide opportunities for residents to work from home, reducing travel and increasing daytime activity in the area.

Natural Gas

Natural Gas (supplied by underground reticulation) is not available to service the site now, or within 5 years.

2.17 Community Facilities and Human Services

A Community Needs Assessment has been prepared by Urbis, and is included at **Appendix O**. The Assessment has determined the facilities required to support the development, which will increase the local population by up to 3,920 people over a 10 year period.

The Assessment identifies North Richmond as a significant and self-sufficient community in the Hawkesbury LGA. The site itself is well located to access and support a range of health, education, community and recreation facilities, as well as human services and open space.

The surrounding region also offers a large variety of district and regional facilities and services. Notwithstanding this, some additional infrastructure is required to service the future population.

The NRJV is proposing to provide a multi-purpose community facility (approximately 300m^2) adjacent to Peel Park. The building will help to relieve pressure on existing community facilities, as well as providing services that are lacking in the area, such as a men's shed service, potential space for youth activities, and a heritage facility. The men's shed will provide a valuable service to residents of both the proposed development and the adjacent seniors living development.

In addition to the above, the social infrastructure assessment has identified a need for the following infrastructure:

- Ensure that the community building provides a flexible space, including lockable storage space along with limited kitchen and bathroom facilities, as well as parking and shade sails appropriate to its location by Peel Park;
- Improve connectedness of the site to the surrounding areas through investigation of additional roadways to North Richmond village and Richmond town, aligned with Councils Mobility Plan; and
- Consideration to the provision of social programs in the wider area to build on the strong social capital of the area, and improve connectedness between the development and North Richmond village.

The proposed development has the capability to accommodate the necessary social infrastructure to sustain any future residential community. The increased population will also support the viability of a range of local facilities (including primary schools) which are experiencing reduced enrolments, and will provide the critical mass required to support additional local transport facilities.

Urbis has also recommended that due to the potential increase in secondary school age children at the site, and the limited capacity at the existing secondary school, further consultation is undertaken with the Regional Education Director to identify the Department's response to this matter. It is noted that the Department of Education and Training would be responsible for addressing the issue of capacity and catchments for secondary students.

The provision of these facilities will form part of a future local VPA offers. The VPAs will incorporate a comprehensive range of human services infrastructure responding to the identified demands of the incoming population. Refer to Section 5.

3.0 Strategic Justification

This section provides the strategic justification for the development of Redbank at North Richmond. The site is identified in local strategic planning documents as having the potential to make a significant contribution towards meeting Government housing targets for the Hawkesbury LGA. The relevant Strategic planning framework is discussed below.

It demonstrates that:

- The project is sustainable in environmental, social and economic terms;
- The Project is consistent with the Hawkesbury Residential Land Strategy and meets each of the Sustainability Criteria set out at Appendix 1 of that Strategy;
- The Project can underpin the supply of residential land in the Hawkesbury;
- The Project is supported by a viable implementation strategy that will utilise available access to existing infrastructure capacity, provide structural enhancement to the regional infrastructure base and deliver savings and efficiencies in Government infrastructure expenditure;
- The project can be delivered and serviced independently of the North-West Growth Centre;
- The site is relatively free of major physical and environmental constraints and is suitable for the land uses proposed. It is compatible with surrounding existing and future land uses and is satisfactory with respect to management of environmental constraints;
- Urban development represents the most viable and effective future use of the land and the adaptive re-use and redevelopment of the site is a cornerstone of the Conservation Management Plan;
- The Project has significant public benefit and is in the public interest having regard to its heritage conservation outcomes, social and community benefits, contribution to local and regional economic growth and job creation and sustainability measures.

The following sections draw upon the detailed site analysis documented in Section 2, particularly with respect to the implications of the site's regional land use planning context and its urban land capability.

3.1 Housing Affordability

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

Recent pronouncements by all levels of Government agree that the contributing factors to the housing affordability crisis are inadequate housing supply in the market, complex planning systems and high infrastructure levies.

All levels of Government have developed policy frameworks to address housing affordability across Australia.

Housing is a reform priority of COAG which has identified housing affordability as a "pressing issue for Australians".

The NSW State Plan (Goal 5) articulates the State's response to Housing affordability: it acknowledges that one of the factors affecting affordability is housing supply and recognises that there is a need to ensure there is competitive tension in the supply of land so that there is a continuing flow of new properties into the market.

The NSW State Plan provides a commitment to partner with local councils to ensure that targets for housing and growth are reflected in relevant planning proposals and local planning instruments. It also commits to promote expanded supply of land for housing by continuing to set local targets for each LGA.

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

Within the Hawkesbury Region key issues include an undersupply of housing relative to anticipated demand, housing stress and housing affordability concerns (particularly for low to moderate income households) and a lack of diversity in housing stock to meet the needs of a changing and ageing population.

Recent analysis undertaken by the Centre for Affordable Housing (2009) shows that a large number of residents in the Hawkesbury LGA are experiencing housing stress. Whilst housing in the Hawkesbury LGA is slightly more affordable for both renters and purchasers than the Sydney Statistical Division, housing remains unaffordable for very low, low and moderate income earners, and there is an immediate need to identify an alternative source of land supply to satisfy housing demand and control housing prices.

Council's Residential Land Strategy notes that "housing affordability to purchase a house is a significant issue for low and very low-income residents and to a significant proportion of moderate income residents". It anticipates that housing stress and housing affordability will be improved through increasing supply to satisfy demand, and by delivering housing products that meet the market's ability to pay.

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

- Median income is lower than the Hawkesbury LGA average, however is slightly higher than the NSW average;
- Mortgage repayments are generally higher than the NSW average;
- A high rate of household formation, and therefore a high demand for dwellings;
- The population of Hawkesbury LGA is expected to increase by 15,800 by 2026;
- A relatively high proportion of Indigenous people;
- A history of relative social and economic disadvantage when compared to the Hawkesbury LGA;
- A larger proportion of family households than the Hawkesbury LGA and NSW;
- An ageing population and workforce;
- A historically itinerant and transient population , however the population is now stabilising; and
- A largely rural and agricultural community which is transitioning with population and technological changes and metropolitan growth.

In this context a significant component of new housing in the Hawkesbury must be targeted at entry level product with amenity and infrastructure that is in the financial reach of the lower income earners, retirees and itinerant workers. Whilst it is projected that demand for medium density dwellings will make up 28% of total dwellings in 2031 (compared to 11% in 2006) and demand for detached dwellings will decline, there is a high proportion of family households in the locality that need to be catered for.

The Redbank at North Richmond site will deliver a range of housing products to maximise diversity, affordability and choices at the lower and median end of the market. The site will also provide opportunities for larger rural-residential development, ensuring diversity across the community. Housing products will be designed to suit the requirements of the households and match the ability of the market to pay.

These will be delivered in a master planned community, which will ensure the quality of the housing products is maintained. Delivery of this diversity of product relies on scale through master planned communities and innovation through product development.

Hawkesbury Population Growth Status Update

The Department of Planning and Infrastructure's Population Predictions 2006-2036 have been examined as part of the demographic analysis. The projections are based on 2006 Census data and the latest figures on fertility, mortality and migration.

The document provides the following growth data for the Hawkesbury:

- The population of Hawkesbury LGA will increase by 15,800 people between 2006 and 2026, equivalent to a 25% increase over 20 years;
- The 65-69 year age group will experience the largest increase in population, increasing by 1,740 people by 2036, equivalent to a 92% rise;
- The age group which will experience the largest proportional increase in population is the 85 years and over population, which will increase by 1,130 people by 2036, equivalent to a 166% increase;
- The over 65 years population will increase by 6,970 people, taking the proportion of people over 65 years old from 9% of the total population to 16% of the total population; and
- The age group with the lowest total and proportional increase is the 45-59 year population, which is forecast to increase by only 70 people, or 2%.

The projected population increase results in the demand of 5,642 dwellings (based on the current average of 2.8 persons per household). This figure could be expected to rise even further given the overall trend of the reduction in household size.

3.2 Residential Land Supply

3.2.1 Metropolitan Plan for Sydney 2036

The Metropolitan Plan 2036 (the Plan) is the strategic plan that guides Sydney's growth to 2036. The Plan is an integrated, long-term planning framework that will significantly manage Sydney's growth and strengthen its economic development to 2036, while enhancing its unique lifestyle, heritage and environment.

The Plan sets five central aims to manage Sydney's growth by enhancing the city's liveability, strengthening economic competitiveness, ensuring fairness, protecting the environment and improving governance.

The Plan projects Sydney's population to grow by 1.7 million to almost 6 million people by 2036. To support the population growth, Sydney will need an additional 770,000 homes by 2036. In addition to the housing targets, employment growth is envisioned at 760,000 jobs across the City. The Plan sets capacity targets for each subregion to facilitate housing and economic growth through providing more jobs closer to home.

The Plan anticipates the North West to provide an additional 169,000 dwellings and 145,000 jobs by 2036.

3.2.2 Draft North West Subregional Strategy

The Metropolitan area is too large and complex to resolve all the planning aims and directions down to a detailed local level. The Metropolitan Plan has been developed to set the framework targets for 10 Metropolitan subregions to provide for major growth in housing and employment.

The North West subregional planning strategy, which covers the LGA of Baulkham Hills, Blacktown, Blue Mountains, Hawkesbury and Penrith, sets the broad direction for additional dwelling and employment growth. The target for the North West is 140,000 additional dwellings and 130,000 new jobs by 2031 (note that the discrepancy between these figures and those outlined above is attributable to the timeframe).

The draft subregional strategy provides for the Hawkesbury LGA to accommodate an additional 5,000 dwellings in this timeframe. Within this context the draft subregional strategy acknowledges that the Hawkesbury LGA is largely constrained by the Hawkesbury Nepean flood plain, with limited capacity for additional growth to the south of the Hawkesbury River due to the risk of flooding. The draft subregional strategy identifies and assumes that the majority of future housing growth within the LGA will need to occur on land located predominantly to the north of the River, in association with existing local centres.

The Vineyard Precinct is the only part of the Hawkesbury LGA that is located within the North West Growth Centre. Whilst Vineyard has the potential to accommodate 1,000-1,500 dwellings (not all of which are in the Hawkesbury LGA), it is understood that this land is not due to be released by the State government for urban development in the short to medium term.

3.2.3 Hawkesbury Residential Land Strategy

As identified at Section 1.2, in May 2011, Hawkesbury City Council adopted the Hawkesbury Residential Land Strategy (HRLS). The Strategy is an overarching document to guide future residential development within the LGA, with the aim of accommodating between 5,000 and 6,000 new dwellings by 2031.

The Residential Land Strategy identifies that existing centres (capacity of existing zoned land) within the Hawkesbury only have the potential accommodate approximately 600 of the total 5,000 – 6,000 required new dwellings for the LGA.

The remaining 5,400 dwellings need to be provided from greenfield sites / extension of the footprint of existing urban villages.

Hawkesbury City Council has undertaken an Opportunities and Constraints Analysis at a strategic level for all land within the LGA to identify where future urban growth and development may potentially occurs. As part of this process, the Residential Land Strategy has identified the Redbank at North Richmond site as a 'High Priority Future Investigation Area' for urban release (refer to **Figure 1**).

The Residential Land Strategy recognises that urban growth in the Hawkesbury is severely limited by environmental constraints such as State and national parks, agricultural land values, flooding issues, noise constraints and limited development capacity within the existing centres. By contrast the Council's own preliminary Opportunities and Constraints analysis indicates that the site is relatively free from constraints (refer to **Figure 21**).

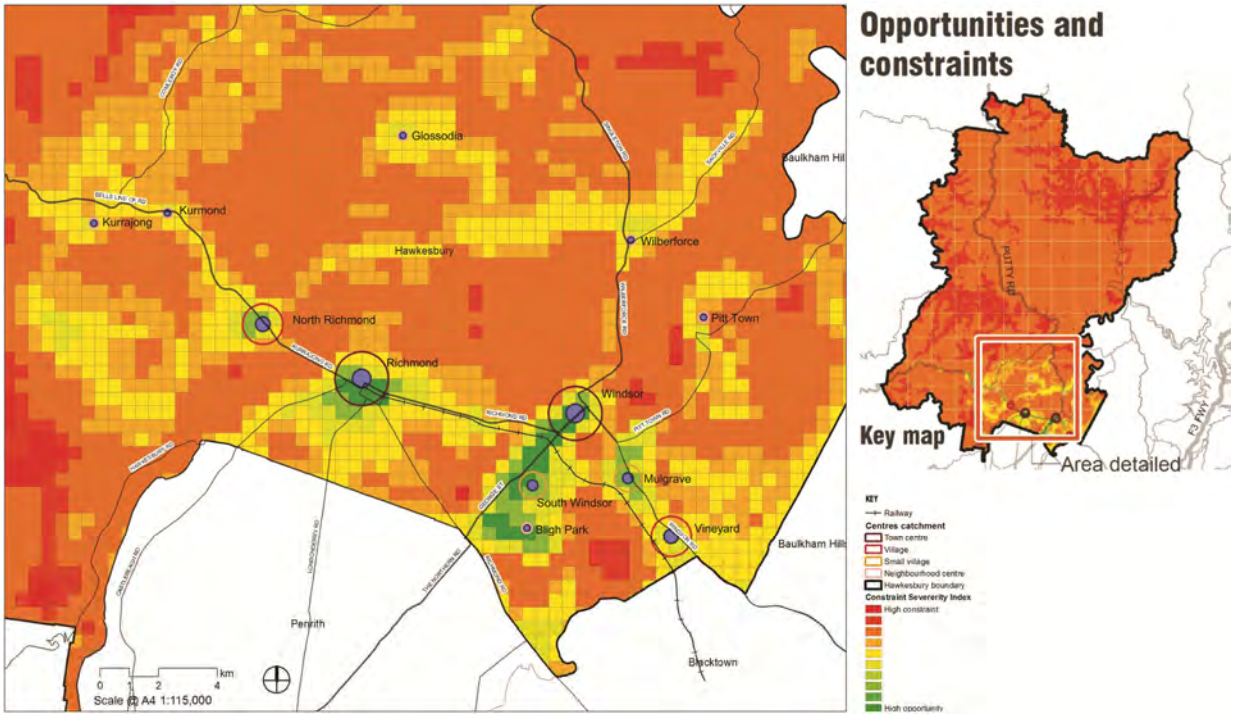

Figure 21 – Opportunities and constraints map

Source: *Hawkesbury City Council*

Hawkesbury Residential Land Strategy Sustainability Criteria

The HRLS provides sustainability criteria for the consideration of new release areas. The Sustainability Matrix establishes a minimum level of service and facilities for each type of centre. The matrix nominates the character and level of service provision in terms of numbers of dwellings, types of retail and employment, infrastructure requirements, public transport provision and level of community service.

Consistency with the Sustainability Criteria is addressed in the table at **Appendix P**. As demonstrated at **Appendix P**, the Project meets or is capable of meeting, all of Council's requirements.

3.2.4 Contribution of Redbank at North Richmond to Subregional Housing Supply

The Redbank at North Richmond site presents the opportunity to provide over 1,400 residential dwellings within the timeframe of the Metropolitan Plan and draft Subregional Strategy.

Once fully realised, the Redbank at North Richmond site would contribute approximately 32% of the housing target that has been set for the Hawkesbury LGA by the State government.

The table at **Appendix Q** shows land supply data for the Hawkesbury region. The table identifies information relating to lot and dwelling production (actual and forecast) from the most recently published Metropolitan Development Program (MDP) 2008/09 Report. The lot and dwelling production (actual and forecast) figures have been adjusted to reflect more recent information documented in Council's recently adopted Residential Land Strategy, and known market activity. The table shows that the MDP lot production forecasts since 2008 / 09 have not been met, and there is little likelihood that the lot production forecasts can be met in the short to medium term. As is clearly illustrated, land supply and housing production in the Hawkesbury LGA is severely limited.

The Redbank at North Richmond site provides an opportunity to make a significant contribution to the delivery of housing in the short to medium term (to 2017/18).

With other release areas such as Vineyard in the North West Growth Centre not due for release in the short term, and other significant Greenfield release areas within the Hawkesbury LGA such as Bligh Park 2 on-hold with no known timeframe for commencement of lot production, the development of the Redbank at North Richmond site is much needed.

The development of the site for housing is consistent with the State and local strategic planning framework, and has the potential to make a significant contribution to the Hawkesbury LGA's housing targets in the short to medium term without detracting from the future housing supply to come from other sites in the North West Growth Centre, nor from other land identified on the MDP.

3.2.5 Housing Market and Positioning of Redbank at North Richmond

Due to the location of the site, and the style of development proposed, the Redbank site will cater for a different submarket to other MDP listed sites.

The general market for land in the Hawkesbury has been severely limited due to lack of supply. The most recent sales have been in the Pitt Town "Vermont Living" estate. Prices have ranged from $330,000 to $440,000 for land sizes ranging from 750m^2 to 1,300m^2.

Within North Richmond only 5 recent vacant land sales have been recorded since 2010, achieving $300,000 to $320,000 for sloping 600m^2 to 900m^2 lots.

The indicative price range for Redbank is $280,000 to $350,000 for the majority of lots. Lot sizes will range from 450m^2 to 1,200m^2 on average. Larger lots of 2,000m^2 to 4,000m^2 that are likely to be provided in one small section of the site (for environmental reasons) would be in the order of $450,000 to $550,000 per lot.

An opportunity arises to create smaller clusters of integrated low maintenance housing and reduce house land package prices into the $400,000 to $500,000 price range. These would appeal to the growing numbers of lone households, couples with no children and first home buyers in the local demographic submarket.

In comparison a 450m^2 lot in "The Ponds" Kellyville achieves $320,000 on average and up to $410,000 for land in North Kellyville.

A unique requirement for housing is also generated by the Defense Housing Authority (DHA). Due to the proximity of the Richmond RAAF base to the site, the DHA has advised the site is the most suitable location for additional housing stock. Additional stock is required to meet the demands of existing and projected personnel at the base and to dispose of redundant older housing that does not meet current DHA standards.

The DHA have indicated a potential need for 20 to 30 dwellings per annum for 10 years, or up to 300 dwellings.

Richmond RAAF is one of the largest employers in the Hawkesbury LGA maintaining considerable local employment opportunities. Additional DHA housing would bolster the local economy.

3.3 Infrastructure Delivery

A series of Infrastructure Site Servicing Plans prepared by J. Wyndham Prince are included at **Appendix N** and detailed at Section 4 of this report.

The NRJV is committed to funding all water, sewer, power and road infrastructure required to service the development that is identified on the Infrastructure Delivery Schedule (also at **Appendix N**).

The NRJV intends to enter into a Voluntary Planning Agreements with State and local governments for the delivery of both regional and local physical and community infrastructure. Single developer control of the site provides the opportunity for delivery as works in kind, ensuring control over implementation and meeting community requirements in a timely manner.

The Proposal demonstrates the advantages of delivery through single control over the land holding:

- A single point of responsibility for delivery and implementation;
- Efficient internal utilities distribution networks with good connectivity;
- Integrated transport and land use delivery;
- Co-ordinated landscape and open space places, public domain and urban design;
- Opportunity for innovative services delivery model for learning, including initiatives such as utilisation of spare capacity that presently exists in nearby local primary schools;
- Co-ordinated community/children's/health services delivered through a multipurpose, flexible community centre; and
- Avoidance of need for co-ordination and management of multiple landowner monetary, in-kind and land contributions into infrastructure and service delivery outcomes.

3.4 Economic Growth, Employment and Retail Impact

3.4.1 Economic Growth

An Economic Impact Assessment prepared by Urbis in support of the Planning Proposal is included at **Appendix R**.

The Economic Impact Assessment estimates the level of economic activity that will be generated by the project and assesses the contribution of the project to local employment. The assessment considers the direct and indirect economic impacts generated during the construction and occupation phases, and takes into account both the residential and seniors living development.

The net present values (NPV) of economic impacts and revenues have been quantified over a 20 year period, in accordance with the NSW Treasury's *Guidelines for Economic Appraisal*. It is noted that the expected construction period for the development is only 10 years, and therefore the impacts of construction will occur within the first 10 years, resulting in higher NPV's compared to if the construction impacts were realised over the entire 20 year period.

The Economic Impact Assessment concludes that the development will generate substantial economic benefit, much of which will be captured within the Hawkesbury LGA and surrounding region. The key outcomes of the Assessment are summarised as follows (note that all figures are given in NPV):

- The project will generate $473 million in output (total market value of goods and services produced) over the 10 year construction period.
- Resident expenditure and the operation of the seniors living development will generate $366 million in output over a 20 year period.
- The project will generate $583 million gross value added (total market value of goods and services produced, less the cost of delivering those goods and services) over a 20 year period from construction and resident expenditure.
- 'Leakages' or losses from the Hawkesbury LGA will be minimised by selecting local labour and suppliers for the development where possible.
- The project will assist in maintaining existing employment positions, particularly in the construction, manufacturing, and professional, scientific and technical services industries through the generation of 579 direct and indirect FTE jobs during each year of construction (10 years). With construction and manufacturing being the two largest employers in the Hawkesbury LGA, the development will generate significant job opportunities for local residents and contribute to increasing levels of employment self-sufficiency in the region.
- Once all dwellings are constructed, direct and indirect jobs generated by resident expenditure and operation of the seniors living development will reach 1,079 FTE (approximately 108 during each year of construction) and these jobs will be sustained for as long as dwelling are occupied. This includes 400 FTE jobs within the proposed local centre.
- The increase in housing mix and affordability has the potential to attract new residents with a different demographic profile to existing residents, thereby generating a range of benefits including an ability to fill local jobs, retaining incomes and expenditure in the local area.

Government Revenues

Urbis has considered the Government revenues that would be generated by the development. The development will provide a revenue stream to State and local government in the form of stamp duties, Goods & Services Tax (GST) and Council rates. In summary:

- *Stamp Duty* - $42.5 million over a 20 year period, based on stamp duties generated from the initial sale of the lots and the resale of dwellings (assuming properties are sold every 7 years on average).
- *GST* - $76.4 million over a period of 20 years based on GST on building materials and labour during the construction phase, and GST payments generated from resident retail expenditure.
- *Council rates* - $9.9 million over a 20 year period. It is noted that the site is currently subject to the payment of Council rates, and so this figure is not a net increase on existing rates.

3.4.2 Employment

Under the draft North West Subregional Strategy 3,000 jobs are to be accommodated in the Hawkesbury LGA by 2031. As detailed above, the residential and seniors living developments will generate significant employment on the site.

With regards to the availability of jobs in the locality more broadly, Hawkesbury Council's Employment Lands Strategy identifies the following employment characteristics:

- A high proportion of residents (greater than 50%) work within the LGA. This compares with a figure of approximately 30% for the Penrith LGA. Only 3% of the workforce travels to Sydney CBD.
- Key industries include the RAAF base, mushroom farming, the University of Western Sydney, the equestrian industry and agriculture. There is also a high level of self-employment.
- The LGA has a strong network of villages and town centres. North Richmond and Richmond are typified by retail and industrial uses.

North Richmond is well located to employment opportunities in the north-west region and western Sydney more broadly. The site:

- Is within a 30 minute drive to the Penrith Regional Centres;
- Is within a 30 minute drive of the Rouse Hill Town Centre and the new Marsden Park industrial estate at M7;
- Is within 40 minutes of the Norwest Business Park; and
- Has rail links to Blacktown and Parramatta via the North-West Growth Centre.

The site is also within close proximity to the Sydney Business Park in Blacktown LGA. Once complete, the business park will accommodate approximately 1,425,000m^2 of bulky goods, industrial and commercial floor space, offering many employment opportunities for future residents.

These characteristics demonstrate that the site has good access to employment opportunities in the Hawkesbury LGA, and western and north-western Sydney generally.

3.5 Alternative Land Uses

The Redbank at North Richmond site is located immediately west of the existing urban footprint of North Richmond. The proposal is both compatible with, and complementary to, surrounding and future land uses.

The main alternate use for the Redbank at North Richmond site is ongoing agricultural (low intensity grazing) use, consistent with its current zoning and use. However, as detailed in the Agricultural Land Study prepared by Montgomery Planning Solutions (refer to **Appendix F** and Section 2.6) the land is no longer viable for agricultural purposes. This is due to increasing land values (and associated rises in rates and taxes) and the presence of residential development immediately to the east and west of the site, which would prevent any intensification of agricultural uses.

In light of this, the redevelopment of the site for urban purposes is the most appropriate outcome. The redevelopment will not only make a significant contribution to the Hawkesbury's housing targets, but will also enable a heritage conservation outcome that could not otherwise be achieved.

The redevelopment of the site is supported by the draft Conservation Management Plan prepared by Urbis (**Appendix G**) which states that although the site has been identified as having heritage significance, it is not considered appropriate to retain the site as museum piece and an appropriate reuse must be found. The CMP concludes that the subdivision and redevelopment of the site for residential uses is appropriate in view of the redundant agricultural use and the lack of a viable alternative agricultural use. Further, without the redevelopment and on-going management of the site, the heritage fabric on the site would gradually degrade and the heritage significance would be lost.

3.6 Sustainability

The Redbank at North Richmond project demonstrates sustainability as follows:

- Integrated planning and design that coordinates social, physical and economic outcomes;
- Delivery of a range of densities, lot sizes and dwelling types as a key social sustainability outcome to create a diverse community that is demographically balanced;
- Provision of a variety of housing forms will provide opportunities to respond to changing life cycle, lifestyle and work requirements over time, it also provides opportunities for aging in place;
- Retention and adaptation of key heritage features;
- Retention and enhancement of existing riparian corridors;
- Sustainable transport and access;
- Water Sensitive Urban Design measures that will result in a net improvement in water quality in retained on-site dams and Redbank Creek; and
- Energy sustainability through consumer demand initiatives including BASIX requirements for dwelling design.

3.7 Road Transport Network Improvements

As detailed above, there are significant pre-existing road and traffic issues in the area. The development has the potential to act as an impetus for improved road transport infrastructure that will not only accommodate the development, but will also contribute to the resolution of the existing road infrastructure capacity issues in the Hawkesbury.

As discussed at Section 4.9, the NRJV is proposing to construct a fully funded bridge across the Grose River at Yarramundi. The alternative crossing utilises the existing Yarramundi Bridge to the south of the site, and will require the construction of a new simple concrete span bridge near Springwood Road (refer to plans of the proposed access route at **Appendix S**). The land required to construct the bridge is owned by the Crown, and is not zoned under Hawkesbury LEP 1989 (refer to zoning extract at **Figure 26** at Section 4.9).

The proposal will deliver a number of road transport network improvements, including:

- Support the development of Redbank;
- Reduce current peak hour congestion on the Bells Line of Road corridor;
- Reduce the traffic load on the 'rat run' which accommodates more traffic volume during the peak hour than was planned for this road (borne by recent widening and safety measures applied to this public road); and
- Provide an alternate flood free east / west access for North Richmond in the event of an emergency blockage of Richmond Bridge.

3.8 Community Net Benefit

A Community Net Benefit Assessment prepared by Urbis (**Appendix T**) presents an assessment of the effects of the proposed rezoning on net community benefit.

In summary, the proposed rezoning will result in a net community benefit by facilitating a new development which will generate a number of social and economic benefits for the local area. These comprise:

- A range of improvements to the road network, including the additional road/bridge linkage with the site, will greatly alleviate road congestion existing and potential new residents.
- Opportunities are identified for enhancement of public transport through increased demand.
- View corridors which are identified as an important community value are proposed to be protected and enhanced as a result of the proposed development.
- The proposal allows for retention and enhancement of areas of conservation value, including elements of the Yeomans Keyline System and areas of CPW habitat, and for the appropriate interpretation of these.
- The proposal includes the provision of trunk drainage areas which will perform a tertiary function as passive open space. This will improve the rural feel of the development, and provide space for passive recreation.
- The proposal includes the landscape embellishments, including vegetation, walking and cycling paths, signage and street furniture. This will promote access, and the active and passive use of open space and provide opportunities to improve wellbeing and social interaction.

- Embellishments to Peel Park, including the provision of a community building nearby, will enhance participation in active and passive recreation and create an asset of potentially regional significance. The provision for a community building which will include flexible space which can be used by a number of currently under provided for groups. This will provide a significant benefit to the local community.
- The development will provide a heritage facility which will improve the engagement of the wider community, including the significant Aboriginal community, and provide greater understanding and access to the significant heritage assets in the area.
- The provision of a small local shopping centre, with commercial land, will provide valuable amenity for local residents.
- The creation of a significant number of jobs within the Hawkesbury LGA during construction and operation phases of the development.
- There is a potential to capitalise upon the 'strong well of social capital' in the community through community development activities linking the existing and new communities, including community environmental education programs, planting days, 'green transport' planning, etc.
- Developing the potential for intergenerational activities associated with proposed community facilities adjacent to the residential aged care facility, for example child care provision.
- Substantial flood mitigation benefits for existing residents of North Richmond township have been identified as a result of the proposed development.
- The proposal allows for completion of the original 'plan' for North Richmond township, potentially providing for a more cohesive, safer community with enhanced amenities and services.
- There will be substantial employment opportunities associated with the proposed development both during the 10 year staging of development and post-development. These are important in the context of the Sydney Metropolitan Strategy for the provision of local employment and for strengthening the economic wellbeing of the local community.

4.0 Concept Plan & Environmental Management Strategies

To support the proposed rezoning of the site and in response to the detailed investigations that have been undertaken in relation to the site, a preliminary Concept Plan and draft Zoning Plan have been prepared.

The preliminary Concept Plan has been prepared by the NRJV's heritage consultant Urbis, in consultation with the Heritage Branch. The Plan establishes the framework for the retention and adaptation of key heritage features.

The draft Zoning Plan provides a planning framework and workable urban structure to assist in determining the rezoning parameters and outcomes for the future development of the site.

The Concept and Zoning Plans respond to the Site Analysis at Section 2 and seeks to balance the key environmental site planning issues including site management of heritage conservation outcomes, riparian and water cycle management strategy, traffic and access, and infrastructure servicing.

It is anticipated that the Plans will be used as the basis from which to prepare both the land use zoning and a site specific DCP for the project.

Detailed planning and design for urban development will be addressed as part of a series of future applications for subdivision, open space and infrastructure works that will be submitted as part of a staged process over time.

4.1 Concept Development

A preliminary Concept Plan and draft Zoning Plan, as well as a series of indicative layout plans are provided at **Appendix A**. A copy of the two plans is provided at **Figures 22** and **23**.

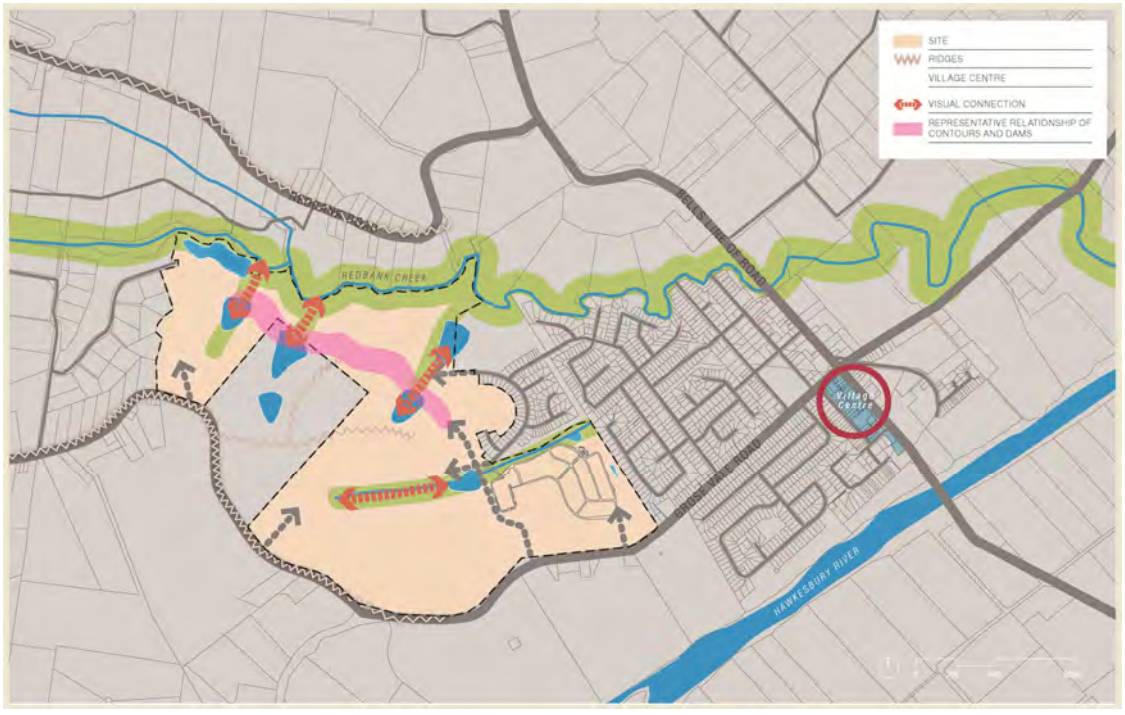

Figure 22 – Preliminary Concept Plan

Source: *Urbis*

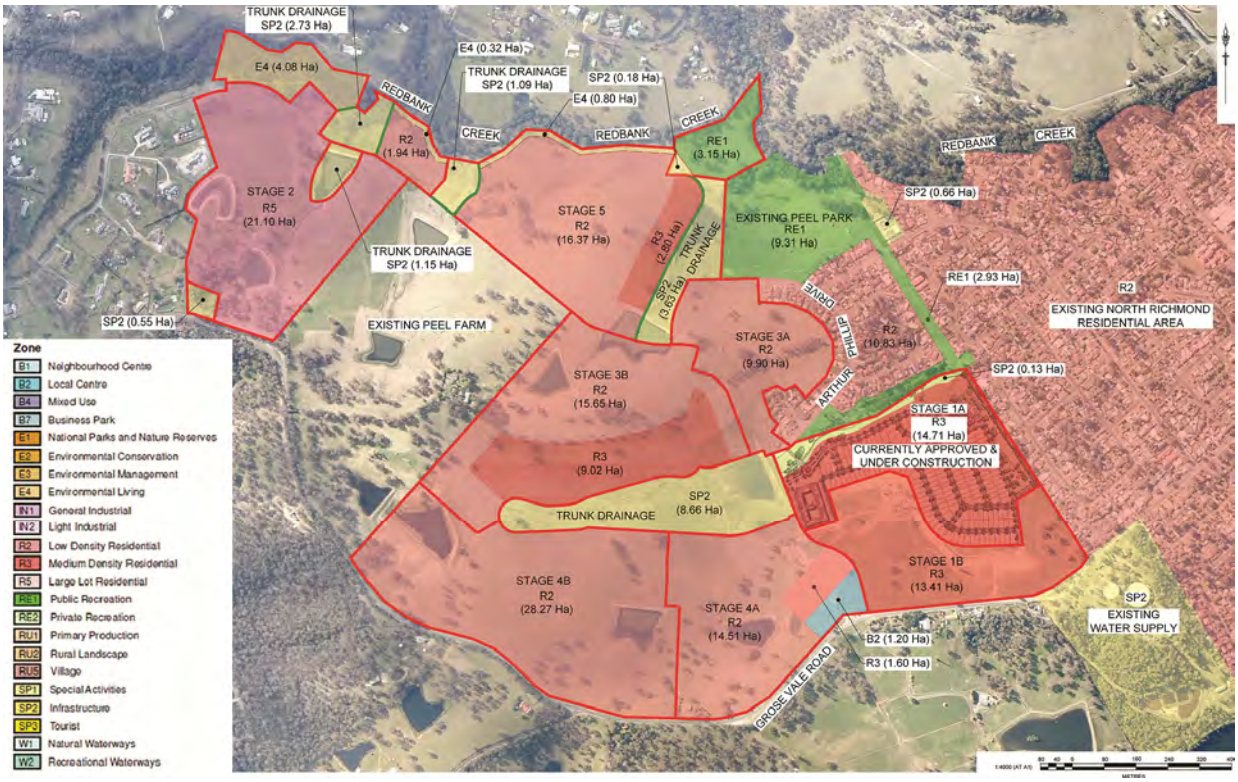

Figure 23 –Draft Zoning Plan

Source: *J. Wyndham Prince*

The draft Zoning Plan provides for the following:

- Approximately 1,400 homes in addition to the Seniors Living Facility currently under construction;
- Local Council roads including bus route;
- Small scale local centre of approximately 1.0Ha;
- Retention and modification of three (3) – four (4) existing farm dams within the project site to become open water bodies;
- Construction of four (4) primarily trunk drainage corridors (with a secondary riparian and tertiary open space function) separating planned residential areas;
- Retention of an existing farm dam on Redbank Creek and vegetation improvement to the primarily riparian corridor along the south bank of Redbank Creek, which extends along the project site perimeter;
- Capacity improvements to a key component of existing stormwater infrastructure along with water quantity management downstream of the project site, discharging to Redbank Creek;
- An alternate east-west access to North Richmond providing a significant improvement in vehicle traffic road capacity and the duration of available flood free access for the local area; and
- Multiple road connections to existing Grose Vale Road (3), Arthur Phillip Drive (2), Townsend Rd (1) but no connection to Belmont Grove.

The Indicative Layout Plans included at **Appendix A** set out:

- The areas set aside for reticulated water and sewer services infrastructure;
- The road layout network and hierarchy for the site;
- The open space network and layout for the site, including the general location and function of passive and active open space areas to serve the future population; and
- The provision of associated infrastructure including water, sewer, power and telecommunications.

Subject to achieving a rezoning of the site, the NRJV is in a position to deliver approximately 150 dwellings per annum commencing in 2013.

Development will continue progressively until 2020, when all dwellings will be completed and occupied, subject to market take up.

The delivery of transport, infrastructure, utility servicing and community and social infrastructure is detailed at Section 4.9 and 4.10.

The preliminary Stage 3A layouts also demonstrate the ability to provide over 100 new dwellings as part of the first stage of development, which could be constructed within 12 months of works commencing on the site.

Notwithstanding the indicative layouts that have been prepared, the final layout and yield will need to be the result of further consultation with the Heritage Branch to ensure that the heritage fabric is managed and preserved in an appropriate manner. During consultation to date (refer to Section 1.4), the Heritage Branch has expressed a desire to see more medium density development on the site, to enable the retention of more heritage fabric, and a larger open space network.

4.2 Urban Design Concept

The key features of the preliminary Concept and draft Zoning Plans are:

- Delivery of a sustainable development in terms of social and environmental outcomes.
- A range of densities, lot sizes and dwelling types providing housing choice to satisfy the needs of a wide spectrum of households, at different life stages and from varying socio-economic circumstances and lifestyle preferences.
- Provision of housing solutions to support the creation of a diverse community, with dwellings ranging from large lot housing to the more traditional detached homes and smaller attached houses.
- Creation of an appropriate interface with the adjoining North Richmond urban area and the rural living development Belmont Grove.
- Integration of existing historic fabric and ecological features.
- A street hierarchy that promotes permeable connections and accessibility, trip containment, walking and cycling.
- Provision of an extensive passive and active open space and landscape / vegetation network that shapes an identity and character responsive to the setting and heritage features of the site, and integrates a network of parks and corridors. Open space and landscape features will utilise the diverse landforms and views, providing continuity and connectivity that optimises the community's mobility and interaction.

- Use of water bodies, performing both an aesthetic and functional (water sensitive urban design) purpose, as a contributing element of the public domain.

To ensure the site's landscape features are treated appropriately, and that the visual impact of the development is mitigated, the following recommendations of the Visual Landscape Analysis (refer to **Appendix I**) are to be adopted in the future development:

- The use of carefully sited landscape elements such as native tree planting and landscape buffers to mitigate the visual impact of the built form in more visually sensitive area, such as adjacent to Grose Vale Road;
- The use of street tree planting along all roads to mitigate the visual impact of built form;
- The provision of a minimum buildings setback (to be determined at master planning stage) from Grose Vale Road, to enable views across and over the subject site to distant hills, and to reduce the visual impact of buildings in the landscape setting;
- Avoiding buildings cited directly on top of ridges;
- Retention of individual native mature trees where possible and practical;
- Retention of tree lines along ridge tops to maintain the layering of the landscape;
- The use of road alignments to frame views of key landscape and topographic features including the central ridgeline, the foothills of Tabaraga Ridge and retained features of the keyline system;
- Retention of the prominent rural character along the ridgeline that Grose Vale Road is located on, including avoiding buildings interrupting the tree line when viewed from key vantage points;
- Positioning of buildings along existing contours where possible to minimise cut and fill;
- Retention of the Redbank Creek corridor and treeline; and
- Framing of views from Peel Park to the foothills of Tabaraga Ridge, and Keyline dams at the central ridgeline via road alignments connecting to Peel Park.

4.3 Land Uses and Distribution

The anticipated residential yield for the site is approximately 1,400 dwellings.

The overall development will deliver lot sizes and dwelling types that ensure diversity in housing mix, and an appropriate response to the site and surrounds.

The area of the site identified for residential purposes has a net developable area of 111 hectares, providing 54 hectares of roads and open space.

The indicative yield of 1,400 dwellings represents 13 dwellings per net hectare across the residential development. The gross yield is 8 dwellings per hectare. This is generally consistent with the yield requirements for the Growth Centres, and is appropriate given the limitations presented by the site's heritage fabric.

The schedule at **Appendix U** outlines the indicative yield for the site.

Within the residential areas, residential lot sizes will generally range from 450m^2 to 900m^2. Larger lots of 2,000m^2 to 4,000m^2 are likely to be provided in one small section of the site due to environmental sensitivities.

The proposed lot sizes will accommodate a wide range of detached housing product, including larger rural residential lots, traditional detached housing residential lots and a variety of smaller, more affordable detached housing product. It will also accommodate a variety of medium density attached and multi dwelling housing types.

The final layout and yield will also be the result of consultation with the Heritage Branch to ensure that the heritage fabric is managed and preserved in an appropriate manner.

4.3.1 Non-Residential Uses

A small area of land (approximately 1 ha) is proposed to be provide for a small local centre providing for a range of small scale retail, commercial and business uses to cater for the convenience shopping and services needs of the incoming population.

It is anticipated that the largest tenancy would be a convenience supermarket of approximately 700m^2.

The Local Centre is proposed to be located on Grose Vale Road adjacent to one of the main site vehicular access roads.

The mix and layout of non-residential uses will form part of detailed design of the site, and will largely be driven by market demand.

4.4 Heritage Conservation

The preliminary site Concept Plan (refer to Section 4.0) has been specifically designed to retain the site's significant heritage values and in accordance with the CMP that has been submitted to the Heritage Branch for assessment and endorsement. Heritage values will be retained by implementing the conservation policies outlined in the CMP. Key to the conservation of the site's heritage values is the effective interpretation and appropriate retention of some fabric, including Keyline elements such as tree plantings and drains, and the retention of a selection of appropriate dams.

In accordance with the recommendations of the CMP, Dams 10, 11 (located on adjoining Lot 26) and 12 will be retained as a sample of interconnecting Keyline elements. Other Dams will be modified within the trunk drainage, open space and riparian corridors within the development site. Refer to Section 4.5 for further detail.

The final interpretation strategy and site layout will be determined in consultation with the Office of Environment & Heritage. This consultation is well underway as part of the finalisation of the Conservation Management Plan.

Through this review and ongoing consultation during the development of the Concept and Zoning Plans for the site, resolution of heritage issues will be an iterative part of the overall site structure planning and rezoning process.

The NRJV and its heritage consultant, Urbis, are now investigating options to present to the Heritage Council having regard to the site's opportunities and constraints, as well as examples of the types and densities of development proposed on the site.

4.5 Water Cycle & Riparian Corridor Management

Stormwater Drainage

J. Wyndham Prince has developed a Stormwater Management Strategy for the site (refer to **Appendix V**). In developing the Strategy, the following investigations have been undertaken to ensure that the development of the site will have no adverse effect on land downstream:

- Hydrological assessment of the catchments to determine the magnitude of a range of storm flows and evaluate the requirements of any detention storage facilities for the site;
- Hydraulic assessment of the proposed detention storage outlet configurations to determine capacity requirements; and
- Water quality modelling to ensure post development pollution concentrations match pre-development conditions.

The stormwater drainage strategy includes the construction of four (4) primarily trunk drainage corridors (with a secondary riparian and tertiary open space function) separating planned residential areas. The strategy for the site, given the Keyline dam system in place, is to have predominantly online and possible cascading water bodies (wet detention basins) that serve a trunk drainage purpose. The CRZs will provide the water quantity control (detention basins) and the VBs will provide for water quality (rain gardens), both of which perform a trunk drainage function. All of the retained elements of the Keyline dam system will provide a water quality function as a component of the overall trunk drainage system.

The draft Zoning Plan at **Figure 24** illustrates the overall trunk drainage proposal.

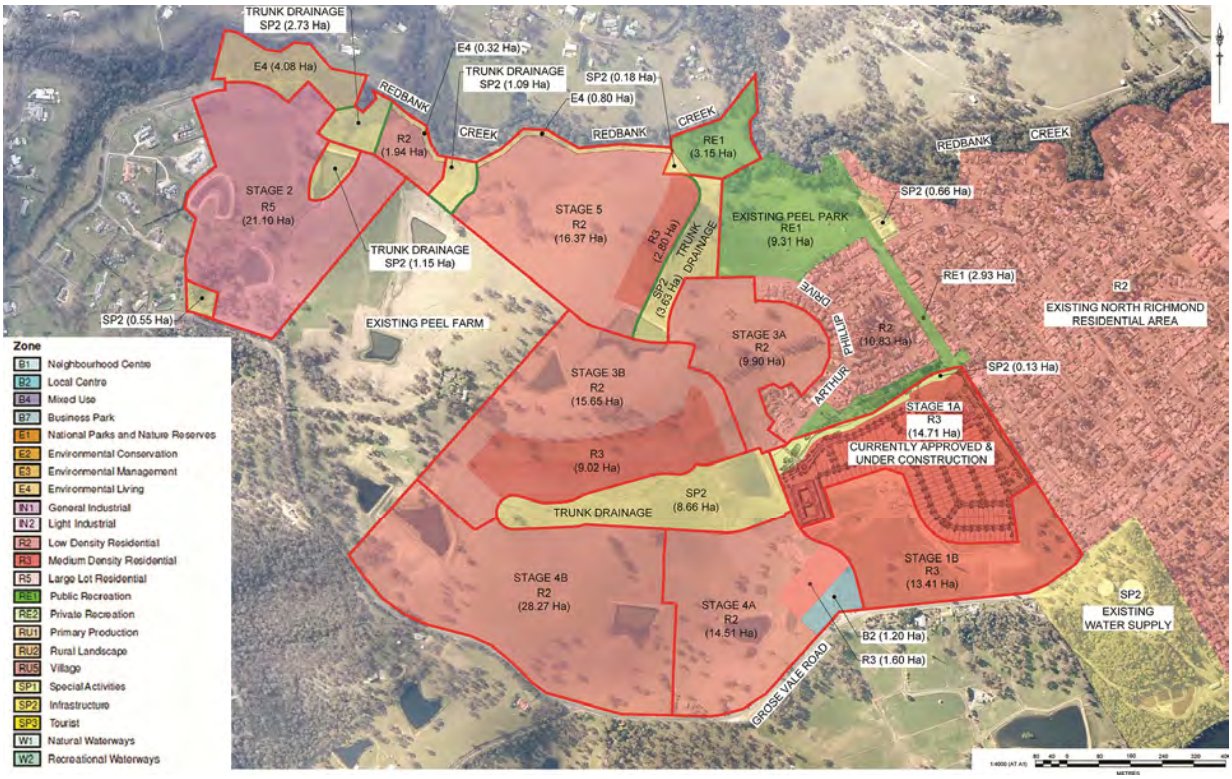

Figure 24 – Draft Zoning Plan showing trunk drainage proposal

Source: *J. Wyndham Prince*

The riparian corridor and associated open space along Redbank Creek has an area of approximately 11 hectares. The four other riparian corridors and areas of open space throughout the site total approximately 14.5 hectares.

Dam 13 will be modified substantially and will be utilised as a constructed wetland with detention storage capacity. The safety of the dam will be assessed in accordance with the NSW Dam Safety Committee (DSC) requirements at development application stage.

The land and infrastructure required for the stormwater drainage system is proposed to be dedicated to the Council free of cost (refer to Section 5). Under existing State Government Policy, riparian corridor land can be transferred into public ownership in accordance with the principles of Section 94 where, in addition to conservation, river health or corridor values, the riparian corridor also has another public purpose eg drainage, cycleways or open space etc. This is demonstrated to be the case for those elements of the existing riparian corridor network on the site that comprise a part of the site stormwater management plan.

As noted above, all retained riparian corridors primarily serve a trunk drainage purpose, with additional embellishment works proposed to meet riparian objectives and support a dual purpose open space function (predominantly on the perimeter, with some connectivity across the corridors in select locations). Refer below.

Redbank Creek Riparian Corridor

At this stage it proposed that part of the Redbank Creek riparian corridor land be retained in private ownership to be maintained by the owners of individual lots in the release area. Ongoing contributions for maintenance of the riparian land on this title would come from the future residents. Accordingly, the riparian corridors would provide 'private open space' or 'recreation area' only available to residents who own the title. The NRJV will prepare a Vegetation Management Plan for the Redbank Creek riparian corridor to be registered on the title of the relevant private allotments.

The Stormwater Management Strategy prepared by J. Wyndham Prince outlines the initiatives that will be adopted to reduce stormwater volume and improve stormwater quality (refer to **Appendix V**).

The strategy comprises a range of on-lot, street level and sub-catchment / subdivision scale treatments:

On-Lot Treatments

- Adoption of appropriate water wise landscaping practices;
- Implementation of BASIX compliant water efficient fittings and appliances in all dwellings; and
- Provision of BASIX compliant rainwater tanks where appropriate to supplement demand management measures.

Street Level Treatments

- gross pollutant traps will be installed at the outlet of stormwater pipes to filter litter, vegetative matter, coarse and fine sediment and oils and greases from roadways prior to discharging to water quality devices or Redbank Creek.

Sub-Catchment / Subdivision Scale Treatments

- Bio-retention rain gardens and bio-swales will treat the first-flush (3 month ARI) discharges from the catchments and act as filters for fine particulates and nutrients;

- An on-line constructed pond is proposed within the open space area to provide additional storage above the static water level of the pond for detention purposes and improve visual amenity; and
- Detention basins within the southern catchment will control stormwater quantity prior to discharging to the downstream drain age infrastructure, to ensure that post-development peak flows do not exceed pre-development peak flows.

To achieve these outcomes, the proposed stormwater strategy adopts on-lot treatments, street level treatments and sub-catchments / subdivision scale treatments. Sub-catchments / subdivision scale treatments include bio-retention rain gardens, constructed ponds and detention storage basins.

Initial investigations indicate that there is adequate capacity within the site to achieve the required performance objectives for stormwater management. The proposed stormwater improvement works will see that stormwater discharges, and hence the properties along Redbank Creek, are not adversely affected by the proposed development. Importantly, the infrastructure upgrade works are expected to improve existing conditions downstream in the North Richmond township. Current flooding within the North Richmond township will be alleviated through the duplication of the existing 1500mm dia. RCP drainage line. This duplication will divert flows from the Southern Catchment northwards to Redbank, via the proposed Peel Park Basin.

4.6 Public Open Space

The open space strategy for the project centres on the retention of existing open water bodies within a dual purpose open space and drainage network for the site. A fundamental component of the onsite drainage system is the integration of the heritage and environmental values of the key-line system dams as focal points within the drainage corridors that can serve a dual purpose open space function.

It is intended to provide for embellishment works within the site trunk drainage corridors (eg boardwalks, perimeter tables / seating), combined with riparian vegetation, and perimeter open space embellishment to the retained key line dams in accordance with the site CMP once endorsed by the Heritage Council.

In addition, it is proposed to undertake embellishment works to the existing immediately adjoining Peel Park to provide for an enhanced facility.

4.7 Retention of Vegetation

As discussed in Section 2.11, there are two key areas of existing vegetation within the site that have been identified for retention. These are the vegetation along the Redbank Creek corridor and the area of Cumberland Plain Woodland (CPW) in the western part of the site.

As far as possible, the draft Zoning Plan has been developed to protect areas where these species occur, to ensure that these species will not be adversely affected as a result of the proposed rezoning and future residential development.

The RFEF will be protected within the Redbank Corridor. At this stage it proposed that part of the Redbank Creek riparian corridor land be retained in private ownership to be maintained by the owners of individual lots in the release area. Ongoing contributions for maintenance of the riparian land on this title would come from the future residents. Accordingly, the riparian corridors would provide 'private open space' or 'recreation area' only available to residents who own the title.

The NRJV will prepare a Vegetation Management Plan for the Redbank Creek riparian corridor to be registered on the title of the relevant private allotments.

Similarly, the intact area of CPW in the site's western corner is proposed to be managed in private ownership. This area of the site is proposed to be zoned R5 Large Lot Residential, and whilst a small area of CPW is proposed to be removed to accommodate water infrastructure, the remaining area will be appropriately managed through a Vegetation Management Plan. As with the Plan to manage the vegetation in the Redbank Creek riparian corridor, the management plan for the CPW will be prepared by the NRJV and will be registered on the title of the relevant private allotments.

A preliminary Seven Part Test has been conducted by GHD (see **Appendix K**) to determine the impact of the proposal on CPW. The development will require the removal of 1.05ha of CPW. This comprises an isolated (0.5ha) patch of moderate to poor quality, and 0.55ha of a larger, more intact patch in the western corner of the site.

The preliminary Seven Part Test concludes that the proposal is unlikely to result in a significant impact on CPW, pursuant to s.5A of the EP&A Act. Notably, the proposed removal represents only 0.23% of the CPW that is mapped as occurring in the locality, and 0.07% of what is mapped as occurring in the LGA. As a result, the removal would be unlikely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

The limited removal of CPW will be facilitated by the following measures, at development application stage:

- Assessment of significance of direct and indirect impacts on a critically endangered ecological community to meet the requirements of the EPA Act and the EPBC Act;
- Determination of the need for a Referral under the EPBC Act; and
- Determination of the need for biodiversity offsets to satisfy both NSW and Federal requirements.

4.8 Bushfire Asset Protection Zones

As detailed at Section 2.13, the primary bushfire hazard on the site is the vegetation along Redbank Creek. The re-vegetated riparian corridors also present a hazard. Potential bushfire hazards adjoining the site are limited to vegetation to the south of Grose Vale Road.

As a result, Asset Protection Zones will be required.

The final extent of the APZs will be subject to final land uses and detailed design, and will be design in accordance with Planning for Bushfire Protection guidelines.

The draft Zoning Plan has been designed to incorporate Bushfire Asset Protection Zones that respond to the identified hazard, and other identified hazards both on and off the site. Future development will give consideration to:

- Separation distances for those dwellings adjoining the Redbank Creek;
- The requirements of the Planning for Bushfire Protection Guidelines 2006 in the design and construction of any landscaping within any required future asset protection zone; and

- The requirements of the Planning for Bushfire Protection Guidelines 2006 in the design and construction of any landscaping within internal drainage and open space systems.

4.9 Access and Transport

As detailed previously, there are significant pre-existing road and traffic issues in the area, and the NRJV is committed to ensuring that the proposal does not unduly impact on existing road infrastructure.

The NRJV is already undertaking the road upgrade works that are required to be delivered as part of the conditions of approval of the SLD that is currently under construction. These approved works include works to upgrade the intersection of Bells Line of Road / Grose Value Road commenced in February 2012, and will be complete at the end of 2012 when the first stage of the SLD is finished.

It is noted that the NRJV has been discussing road infrastructure since 2008. In 2009, as part of the SLD approval process, the RMS wrote to Council indicating that there is potential for a larger development of up to 2,000 dwellings, and that this development may trigger upgrades to the intersections and bridge. The proposed alternative river crossing is detailed below.

4.9.1 Alternative River Crossing

It is widely acknowledged that an additional east-west crossing of the Hawkesbury River would help to improve existing traffic issues, however the RMS has indicated that State government funding is not available to undertake the works required.

In light of this, the NRJV has been consulting with both the Council and the RMS to determine an appropriate alternative river crossing to accommodate the additional traffic generated by the proposal, and to alleviate pre-existing traffic issues.

The proposed alternative crossing utilises the existing Yarramundi Bridge to the south of the site, and will require the construction of a new simple concrete span bridge near Springwood Road (refer to plans of the proposed access route at **Appendix S** and overview at **Figure 25**). The land required to construct the bridge is owned by the Crown, and is not zoned under Hawkesbury LEP 1989 (refer to zoning extract at **Figure 26**).

Figure 25 – Overview of proposed access route and Yarramundi Bridge crossing

Source: *J. Wyndham Prince*

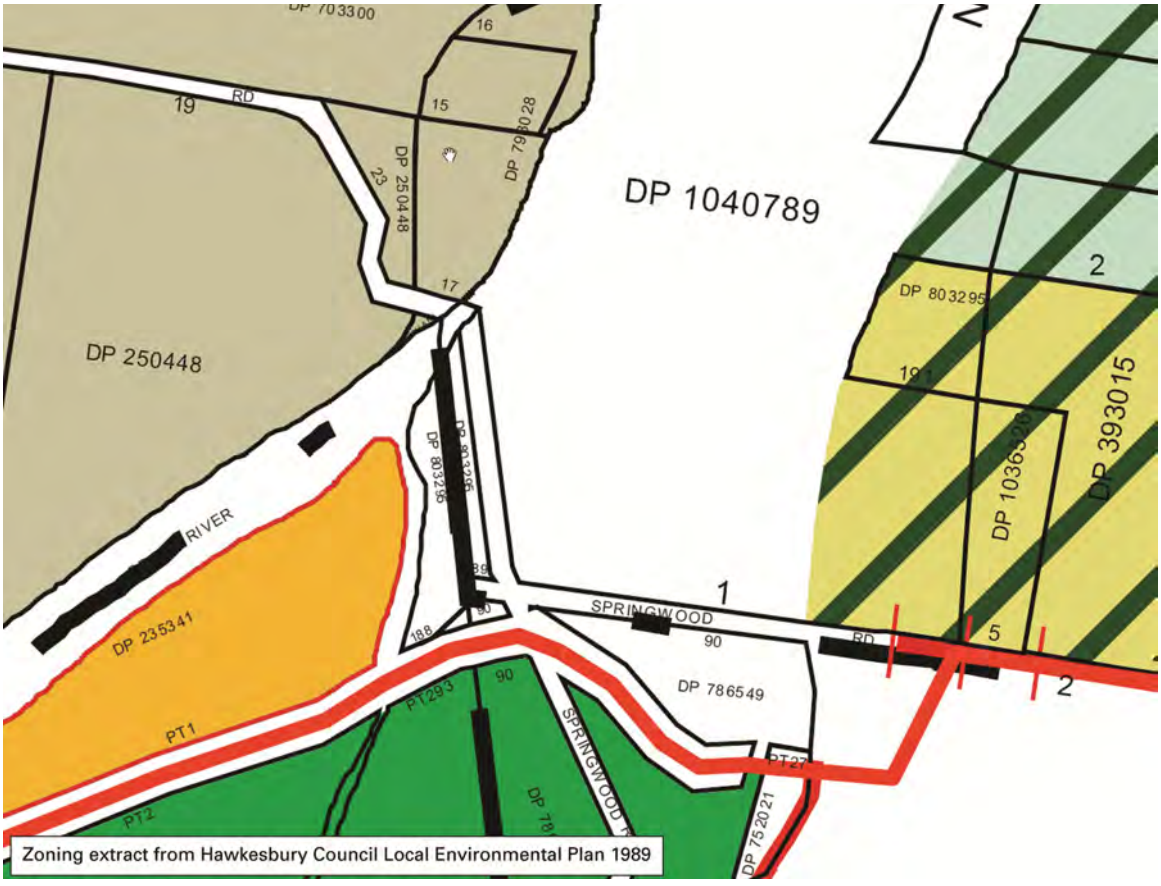

Figure 26 – Zoning extract from Hawkesbury LEP 1989

Source: *Hawkesbury City Council*

Preliminary traffic studies detailed in Section 2.15 indicate that existing traffic congestion on the western side of the Hawkesbury River is centred on the intersection of Bells Line of Road / Grose Vale Road. Data suggests that of the 1,621vehicles that pass through this intersection every hour during the morning peak period, approximately 700-800 travel south or south-west once they have crossed the river. Of these vehicles, 400-500 use the Yarramundi Lane 'rat-run' to travel to Penrith and Western Sydney. An additional crossing at Yarramundi would facilitate these vehicles being redirected, relieving pressure on the Bells Line of Road / Grose Vale Road intersection, and freeing the existing bridge crossing for commuters travelling east.

At this stage, the Infrastructure Delivery Schedule (**Appendix N**) identifies the new bridge as the proposed alternative crossing, would be opened following completion of the 459th dwelling on the site (i.e. at the completion of the second stage, Stage 3B). The new bridge and other road upgrade works associated with the proposed alternative crossing would be fully funded by the NRJV, and preliminary studies have shown that it would be effective in alleviating traffic impacts associated with the development of the site, as well as existing congestion issues. Further detailed analysis will be undertaken as part of the TMAP process (to commence post Gateway determination, and be submitted prior to public exhibition of the Planning Proposal).

Details of the TMAP process are provided below.

4.9.2 Flood Free Access

Molino Stewart has undertaken a review of existing bridge levels to determine the role of the proposed bridge in providing flood free access (refer to **Appendix W**). The review, based on the alternative bridge deck being between 11.0m AHD and 13.5m AHD, demonstrates that the bridge would provide a significant benefit, providing an evacuation route when other existing bridges would be inundated.

The existing North Richmond Bridge is at 8.4m AHD, the existing bridge at Yarramundi is at 5.4m AHD. Both of these bridges would be cut more frequently than a 1 in 5 year flood (the 1 in 5 year flood level is 12.5m AHD at North Richmond). Whilst the Bells Line of Road to the west would remain operable, this route involves significantly longer travel times.

Based on the assumption that the bridge approaches will be at the same level or higher than the proposed bridge, the bridge target level of between 11 and 13.5m AHD, will be closer to (or possibly higher than) the 1 in 5 year design flood event, and therefore the bridge will be much less likely to flood than the existing bridge. The statement concludes that the proposed alternative route will:

- Significantly reduce the frequency upon which the proposed development will be isolated from travel to the east;
- Reduce, by one to two days, the time that the long route west along Bells Line of Road to cross the river would need to be taken;
- Reduce travel times by 90 minutes when compared to the Bells Line of Road; and
- Reduce the evacuation time to 6 hours provided at least one of the existing routes remains open.

During the most recent flood event, on 3 March 2012, the peak flood level was approximately 7.48m at North Richmond. Whilst the bridge was not inundated, it was closed to traffic for engineering reasons. If the proposed alternative access was in places, it would have still been operational, providing flood free access across the river.

4.9.3 Public Transport and Pedestrian Access

Bus services are currently in place and are to be maintained in the future along Grose Vale Road, with Westbus wiling to upgrade services, should demand arise.

Public links, both vehicular and pedestrian can be provided to the Richmond Railway / Bus Interchange as well as the opportunity for upgrading these facilities to accommodate increased future demand.

4.9.4 TMAP

In their letter dated 15 December 2011, the RMS suggested that the NRJV prepare a TMAP to determine the infrastructure upgrades required and measures to support public transport, walking and cycling. The RMS also requested that a PCG be established to oversee the development of the TMAP.

Following an initial PCG meeting in January 2012, a second meeting has been arranged with the RMS for mid-March. At this meeting the terms of the Study Brief will be confirmed and the RMS's existing data will be issued to the NRJV, enabling the TMAP process to commence.

The Study Brief, subject to confirmation with the RMS, will ensure that the TMAP addresses:

- Existing transport and accessibility infrastructure and deficiencies;
- Possible transport and accessibility infrastructure opportunities; and
- Proposed solutions and funding apportionments to inform a VPA agreement and implementation program.

4.10 Infrastructure Servicing

J. Wyndham Prince has prepared a series of Infrastructure Site Servicing Plans for the site (refer to **Appendix N**) to determine the availability of enabling infrastructure, and the works required to service each stage of the development.

An Infrastructure Delivery Schedule has also been prepared to demonstrate when various infrastructure works will be provided (refer to **Appendix N**).

Water and Sewer

Several meetings have been held to date between the NRJV and Sydney Water between 2008 to the present to discuss the delivery of water and sewer infrastructure to the site.

Augmentation to potable water and sewerage specific infrastructure points to support later stages of the project can readily occur, and will be an ongoing commercial agreement with Sydney Water.

The primary piece of infrastructure required to service the development is a new water reservoir.

The water reservoir will be constructed with the third stage of development (Stage 3B), but become operational with Stage 1B. Stage 3B will be serviced for water pressure by a booster pump set required to support the new supply carrier and mains when completed. The new reservoir will be located in the western corner of the site, with the provision to zone the reservoir SP2 Infrastructure.

There is also the requirement to support both Stage 2 and 5 with the provision of a Sewer Pump Station and Rising Main in order to convey waste water to the reticulation connection to Stage 3A.

Modelling using Sydney Water's network analysis systems for both waste water (sewer) and potable water has confirmed that there is existing capacity to service the first stage (Stage 3A) of the residential development, without the need for any infrastructure upgrades.

The Servicing Plans demonstrate the works that will be required to service each subsequent stage of the development, including the provision of new potable water mains and sewer infrastructure.

It is noted that consultations with Sydney Water have confirmed that there is existing capacity to service the whole development, without limiting the provision of water and sewer infrastructure in the North-West Growth Centre or elsewhere.

Power and Telecommunications

There is sufficient capacity to supply power to the whole of the development, without the need to augment existing infrastructure. The infrastructure and staging plans set out the indicative locations for new substations within each stage of the development.

In addition, the site will be serviced by fibre optic cabling, and will be one of the first fully serviced sites on the National Broadband Network. This will provide opportunities for residents to work from home, reducing travel and increasing daytime activity in the area.

Natural Gas

Natural Gas (supplied by underground reticulation) is not available to service the site now, or within 5 years.

4.11 Multi-Purpose Community Facility

The NRJV's approach is that the proposed multi-purpose community facility will have inbuilt flexibility to provide accommodation for whatever services, activities and programs will be required to meet the needs of the future population as they can be identified (i.e as people move into Redbank).

The inclusion of funding for a community development worker provides a mechanism to help identify precise needs for services and activities and to organise for their provision as they are needed.

5.0 Local Development Contributions & Infrastructure and Delivery Proposal

5.1 Proposed Local Development Contributions

Hawkesbury City Council's (HCC's) existing Section 94A Development Contributions Plan 2006 requires a contribution equivalent to 1% of the development cost for all new development (except for dwelling houses with a value of less than $150,000) within the LGA. Contributions are collected towards the provision of commercial facilities infrastructure, communications infrastructure, public amenity infrastructure, transportation infrastructure, community buildings, recreation facilities and park improvements.

It is considered that application of Council's existing Section 94A Plan to the development of Redbank at North Richmond would not provide the best outcome in terms of delivering the local infrastructure that will be required to support the development and its future population.

Accordingly, the preferred strategy for the delivery and implementation of local development contributions for the Project is the use of a commercially binding Voluntary Planning Agreement (VPA).

This Planning Proposal includes a formal offer by the NRJV to enter into a VPA, should HCC agree.

The NRJV proposes that the local VPA will:

- Operate in place of and exclude the application of Sections 94 and 94A of the Environmental Planning & Assessment Act;
- Provide for the provision / delivery of all local public amenities and services required to meet the demand of the development and its future population (roads and transport, open space and recreation, community facilities and drainage);
- Enable the NRJV to meet its obligations with respect to the provision of local infrastructure via a combination of the:
  - dedication of land free of cost to the Council (with an initial maintenance and handover plan),
  - carrying out of works in kind both on and off-site, and
  - payment of monetary contributions towards the embellishment of existing local infrastructure in the locality as appropriate;
- Establish a baseline standard of works, facilities and services that is equivalent to like services throughout the Hawkesbury LGA;
- Provide for the progressive delivery of the land and works in proportion with the rate of development and / or identified milestones for the project;
- Require the NRJV to provide details with respect to the proposed carrying out of works, and any land to be dedicated to HCC, at the time of the application relating to each stage of the development. Any land within each stage to be dedicated to the Council will be shown on the relevant plan(s) of subdivision; and
- Meet its obligations with respect to the above, material public benefits and land transfer) prior to the registration of subdivision plans on a staged / milestone basis.

Given the relatively early stage that the project is at in terms of the overall rezoning process, further detailed information will need to be provided to the Council once site investigations and assessment of the urban development potential of the site is further progressed. In particular, it is noted that the extent of local off-site road network improvements cannot be finally determined until after the TMAP that is currently being prepared has been finalised and recommended works agreed.

Accordingly, it is intended that a full and detailed VPA offer would be made to the Council by the NRJV following a LEP Gateway determination by the DP&I. The detailed VPA would be formally publicly exhibited as part of the final LEP Planning Proposal documentation.

To demonstrate the commitment of the NRJV to the provision of appropriate local infrastructure to support the future development, and to provide sufficient information to inform the Council's initial assessment of the Planning Proposal, a preliminary outline VPA offer is included in this submission.

The preliminary outline VPA offer proposes development contributions towards:

- Local internal and other external road transport network improvements;
- Land, facilities and initial maintenance for local community facilities;
- Land, facilities and initial maintenance for local open space and recreation; and
- Land, facilities and initial maintenance for local drainage infrastructure.

The transport works, community facilities, open space and recreation, and drainage works proposed to be delivered are described in principle in the preliminary Schedule at Table 4 below. At this stage the schedule outlines a number of aspects of the proposed contributions in general terms only.

The preliminary outline schedules will need to be further detailed in consultation with HCC as part of the next stages of the process to provide, prior to public exhibition of the Planning Proposal:

- Detailed descriptions of the scope facility and requirements, including baseline standards;
- Confirmed cost estimates for the construction / establishment and on-going maintenance of infrastructure;
- Timing, including threshold staging as relevant;
- Estimated value of each item to a level of detail that would ordinarily be contained within a Section 94 Plan or VPA.

The land proposed for transfer to HCC is limited to open space, WSUD elements and pathways (cycle and pedestrian) in open space, drainage and community facilities, all of which are clear public purpose uses. To assist the Council in its consideration of the preliminary Planning Proposal, the public purpose to be met by each of the identified items is also identified in the outline Schedule.

The intended implementation process relating to works, facilities and services approvals, maintenance and handover procedures is also further outlined below.

Table 4 – Preliminary VPA Schedule

Item	Type	Scope / Detail	Timing	Public purpose
Transport contributions				
1	New east – west bridge crossing at Yarramundi Reserve	To be confirmed following completion of TMAP	To be confirmed following completion of TMAP	Road transport and flood evacuation improvements for broader North Richmond population and proposed development
2	Off-site road network improvements	To be confirmed following completion of TMAP	To be confirmed following completion of TMAP	Road transport
3	Bus stops and bus shelters within site	To provide for all dwellings to be within 400m walking radius of bus stop, on collector road system	At relevant subdivision stage	Public transport
Community facilities				
1	Multipurpose community centre on site	Approx. 300 m^2 multipurpose space for youth, aged and children's services, including kitchen and heritage interpretation. Includes landscaping, fit out, parking and site works. Land dedicated to Council at no cost.	At the relevant subdivision stage	Community meeting space / services
2	Social programs	Notionally, part time worker	To commence 12 months after occupation of 1st lot for 5 years	Community establishment; Place making
3	Resident information package	To be provided to households as residents move into dwellings	To be confirmed	Community establishment; Place making
Open space and recreation				
1	Open space in conjunction with Peel Park / Redbank Creek	Dedication and landscape embellishment of approximately 3.15 ha including part of the Redbank Creek riparian corridor	Stage 5	Dual use of trunk drainage corridor for local open space / recreation in associated with Peel Park
2	Open space embellishments in conjunction with trunk drainage corridor S1	Landscape embellishment works (walk / cycle paths, signage, street furniture etc) to be confirmed. Note land dedication is included at Drainage Item 3 below.	Stage 5	Dual use of trunk drainage corridor for local open space / recreation, providing connectivity to Peel Park and Redbank Creek
3	Open space embellishment in conjunction with trunk drainage corridor S2	Landscape embellishment works (walk / cycle paths, signage, street furniture etc) to be confirmed. Note land dedication is included at Drainage Item 4 below.	Stage 5	Dual use of trunk drainage corridor for local open space / recreation, providing connectivity to Redbank Creek
4	Open space embellishment in conjunction with trunk drainage corridor S3	Landscape embellishment works (walk / cycle paths, signage, street furniture etc) to be confirmed. Note land dedication is included at Drainage Item 5 below.	Stage 2	Dual use of trunk drainage corridor for local open space / recreation, providing connection to Redbank Creek
5	Open space embellishment in conjunction with trunk drainage corridor S4	Landscape embellishment works (walk / cycle paths, signage, street furniture etc) to be confirmed. Note land dedication is included at Drainage Item 6 below.	Stage 4A	Dual use of trunk drainage corridor for local open space / recreation, providing

Open space and recreation				
6	Embellishments to Peel Park	Facility improvements eg shade cloths, car park, cricket pitches etc	At relevant subdivision stage as works in kind	Local open space / recreation
Drainage				
1	Duplicate stormwater drainage pipe	Construction of a duplicate 1500 mm stormwater pipe along power transmission to convey 1:100 yr ARI discharge; including 20,000m3 dry detention basin within Peel Park	Stage 3A	Off-site stormwater drainage improvements for broader North Richmond population
2	Retention S1 as Category 2 Stream, including Dams 12 and 15 and part of Redbank Creek corridor	Dedication of approx. 3.63ha including 20m CRZ + 10m VB on southern side of drainage line; rehabilitation works; substantial modification of Dam 12 as a constructed wetland with detention storage capacity and bio retention rain gardens	Stage 5	Multi-purpose environmental, trunk drainage, WSUD and public open space function; retained Dams provide OSD for northern site catchment draining directly to Redbank Creek
3	Retention S2 as Category 2 Stream	Dedication of approx. 1.09 ha including 20m CRZ + 10m VB either side of top of bank based on 1:1.5 yr flood event; rehabilitation works; bio retention rain gardens	Stage 5	Trunk drainage
4	Retention and extension of S3 as Category 2 Stream, including Dam 10	Dedication of approx. 3.88 ha including 20m CRZ + 10m VB either side; rehabilitation works; retained Dam provides OSD for northern site catchment draining directly to Redbank Creek; bio retention rain gardens	Stage 2	Multi-purpose environmental, trunk drainage, WSUD and public open space function
5	Retention T6 (S4) as Category 2 Stream, including modified Dam13	Dedication of approx. 8.66 ha including 20m CRZ + 10m VB either side of top of bank; rehabilitation works; incorporates OSD basins and bio retention raingardens totalling over 11,000 m^2 in bed area; Modification of Dam to convert to a constructed pond with detention	Stage 4A	Trunk drainage; Off-site stormwater drainage improvements for broader North Richmond population
6	Dedication of existing formed channel at northern boundary of Seniors Living development	Dedication of existing formed channel (approx.. 0.13 ha)	Stage 1A	Trunk drainage
7	Relocation and incorporation of T1, T2, T3, T4 (a&b tributaries only), T5 and T7b into WSUD strategy	Dedication of site water management strategy / WSUD	At relevant subdivision stage	Local drainage

Works, facilities and services approvals, maintenance and handover procedures

The following general principles are proposed by the NRJV, subject to discussion and agreement with the Council, to apply for approvals, maintenance and handover procedures:

- The final works, facilities and services (description and value) to be delivered would be detailed in the Schedules;
- The NRJV and the Council would agree the level of embellishment/works for the items in the Schedules - this would occur through the preparation of user brief, concept and detailed design documentation as part of the statutory planning approvals process for each relevant stage of the project;
- The usual statutory works approvals processes relevant to the works would apply at the relevant stage;
- Works-in-kind, including design, construction, certification, authority approvals, construction and initial maintenance, will be the proponent's responsibility;
- The NRJV will maintain open space and drainage works for a period (tbc) from the date of practical completion of the works;
- The NRJV will maintain buildings for a period (tbc) from the date of practical completion; and
- The NRJV will "handover" open space and drainage within 3 months of the end of the maintenance period. Prior to handover, "handover inspections" will be held. These inspections will confirm the scope, condition and functionality of the asset to mutual agreement.

5.2 Implementation and Delivery Proposal

An Infrastructure Delivery Schedule prepared by J. Whyndham Prince and is included at **Appendix N**.

The project will be delivered in eight (8) stages (including the SLD) as show at **Figure 27**. The Infrastructure Delivery Schedule presents a comprehensive proposal for the staging, implementation and delivery of infrastructure, services and facilities for the Redbank at North Richmond site.

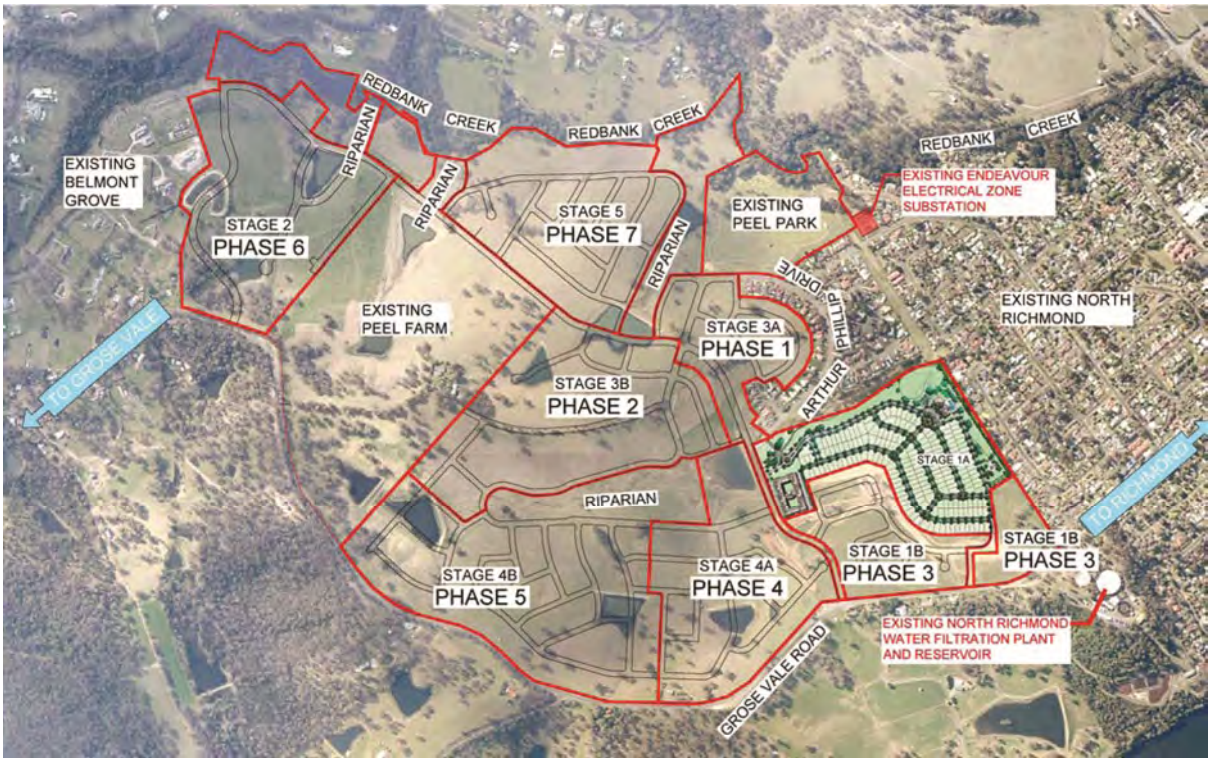

Figure 27 – Proposed staging

Source: *J. Wyndham Prince*

J. Whyndham Prince has undertaken a significant investigation into how the site can be serviced. The infrastructure and servicing strategy aims to:

- Demonstrate a viable implementation strategy with timely provision of facilities and services;
- Control of land required for infrastructure delivery;
- Leverage ready access to existing infrastructure capacity;
- Minimise implementation risk and cost to Government; and
- Enhance existing services and contribute to a wider regional network of community resources.

The need for new services and infrastructure presents an opportunity to:

- Provide infrastructure and high quality new facilities in a timely manner based on leading practice sustainability principles that are tailored to the needs of the future community;
- Alleviate existing road and traffic congestions issues in the locality through the provision of an alternative bridge crossing; and
- Guide the provision of integrated service delivery, efficient use of resources and equitable access through shared or co-located facilities, joint use arrangements and convenient locations.

Staging sequences have been created to demonstrate that the area can be developed logically and economically with the full suite of utility services. The Schedule at **Appendix N** contains delivery methodologies with estimated of timeframes.

6.0 Planning Proposal

The Planning Proposal has been prepared in accordance with the NSW Department of Planning and Infrastructure *A Guide to Preparing Local Environmental Plans* (July 2009). The Proposal is structured as follows:

- Objectives and Intended Outcomes;
- Explanation of Provisions;
- Justification;
- Environmental, Social & Economic Impact;
- State and Commonwealth Interests;
- Proposed Voluntary Planning Agreement;
- Supporting Studies; and
- Community Consultation.

6.1 Objectives and Intended Outcomes

The general objectives of the Planning Proposal are to:

- Rezone the land from Consolidated Land Holdings to a range of urban uses (R2, R3, R5, B2 and SP2) as well as recreation and environmental uses (RE1 and E3) to accommodate residential development on the site;
- Meet increasing demand for additional housing supply and choices with the addition of 1,400 – 2,000 dwellings;
- Provide development on land that will not significantly impact upon environmentally sensitive land;
- Provide the opportunity for the protection and adaptive re-use of significant heritage fabric;
- Create no public infrastructure costs; and
- Contribute to achieving important objectives and directions in Government planning strategies and policies by providing future growth in the North West Subregion.

6.2 Explanation of Provisions

Land to which the Plan will Apply

The Planning Proposal applies to the site known Lot 27 DP 807555, at 108 Grose Vale Road, North Richmond.

Relationship to Existing Local Planning Instruments

It is anticipated that the LEP amendment will relate to the current draft Hawkesbury LEP 2011, which is expected to be gazetted in the near future.

Land Use Zoning

The Redbank at North Richmond Site is proposed to be zoned predominately residential, with a range of other zonings proposed to accommodate ancillary urban uses, infrastructure, recreation and environmental management.

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

- R2 Low Density Residential;
- R3 Medium Density Residential;
- R5 Large Lot Residential;
- B2 Local Centre;
- E4 Environmental Living;
- RE1 Public Recreation; and
- SP2 Infrastructure (Trunk drainage).

The range of permitted land uses would be consistent with Council's existing draft LEP 2011 land use zones.

A draft Zoning Plan illustrating the intended location of each proposed land use zone is provided at **Appendix A** and **Figure 23**.

As detailed on the Draft Land Zoning Map and, the residential zones have been selected to ensure flexibility in the types of dwellings provided, whilst protecting sensitive environmental features and minimising the visual impact of the development.

The proposed SP2 (Trunk Drainage) Infrastructure Zone incorporates land within the site that have a critical drainage function. This includes all of the riparian corridors that are proposed to be retained under the Stormwater Management Strategy, with the exception of an area of the existing Redbank Creek riparian corridor which is proposed to comprise open space as a natural extension of Peel Park.

Those parts of the Redbank Creek corridor that are to be retained in private ownership, will be incorporated into larger residential lots along the Creek frontage. It is proposed to be zoned E4 Environmental Management in recognition of the ongoing conservation and management required.

Key Development Standards

Minimum lot size
A minimum lot size of 375 m^2 is proposed for the R2 Low Density Residential Zone, and of 180 m^2 for the R3 Medium Density Residential Zones.

These minimum lot sizes are consistent with the dwelling product that is currently being delivered throughout Metropolitan Sydney in new urban release areas including within the Growth Centres, and within the Blacktown and Penrith LGAs (eg Ropes Crossing and Jordan Springs). It is also consistent with the State government's objectives with respect to the residential density to be achieved in new release areas.

The residential housing market in Sydney is changing in response to affordability issues. It is essential that a variety of housing product can be delivered to market at a price point that meets the capacity of the local population to enter the market.

A range of detached dwelling house product can be readily delivered on blocks of 375m^2. The minimum 180 m^2 block size for the medium density zone allows for a range of attached product.

No minimum lot size is proposed for the B2 Local Centre Zone.

Maximum building height
A maximum building height of 10 metres is proposed for the R2 Low Density Residential Zone, and of 12 metres for the R3 Medium Density Residential Zone.

7.0 Summary and Recommendations

This Planning Proposal has been prepared to support the proposed rezoning of the land at 108 Grose Vale Road to predominately residential zonings.

The Proposal has identified key planning issues having regard to the physical characteristics of the site and the social context of the surrounding area. Where further assessment will be required, these studies will be prepared to support the final Planning Proposal under the Gateway.

This Planning Proposal has been prepared in accordance with and to address the relevant matters set out in the DP&I's document *A guide to preparing planning proposals.*

It is requested that the Council forward the Planning Proposal for the Gateway Approval process to rezone Redbank at North Richmond as residential land, under section 54(2) of the *Environmental Planning and Assessment Act* 1979.

To assist the Council in its deliberations, a summary response to the key questions identified in the *Guide to preparing planning proposals* follows:

Need for the Planning Proposal

The strategic justification for the Planning Proposal is set out in detail at Section 3 of the Planning Proposal.

Is the Planning Proposal a result of any strategic study or report?
The Planning Proposal seeks to rezone land to enable residential development to occur. There is a need to deliver 5,000 – 6,000 new homes in the Hawkesbury LGA to 2031 however there is only capacity in existing zoned areas within the LGA to accommodate approximately 600 more dwellings. The remaining 5,400 dwellings need to be provided from greenfield sites / extension of the footprint of existing urban villages.

The majority of land within the Hawkesbury LGA is highly constrained in terms of its environmental characteristics, including State and National parks and other significant vegetated areas, agricultural land values, flooding, bushfire and aircraft noise. By contrast, Redbank at North Richmond has been identified by the Council in its Residential Land Strategy (May 2011) as a 'High Priority Future Investigation Area' for urban release.

The development has a yield of 1,399 dwellings and will make a significant contribution to the Hawkesbury LGA's housing targets. The Redbank at North Richmond site will achieve a yield of 13 dwellings per net hectare across the residential development. The gross yield is 8 dwellings per hectare. This is generally consistent with the yield requirements for the Growth Centres, and is appropriate given the limitations presented by the site's heritage fabric.

The use of the LEP Gateway determination process will enable the strategic outcome of the Sub-Regional Strategy and Hawkesbury Residential Land Strategy by streamlining the plan making process to the Minister. This will provide an opportunity for finalisation of the new land use zoning and key development standards for the site.

Is the Planning Proposal the best means of achieving the objectives or intended outcomes, or is there a better way?
The Planning Proposal to have the Redbank at North Richmond site rezoned from Rural to Residential is a key means of achieving the State and Regional objectives and strategic outcomes within the Hawkesbury LGA, specifically the housing targets set by the HRLS and the North-West Subregional Strategy.

Will the net community benefit outweigh the cost of implementing and administering the planning proposal?
As detailed in Section 3.8 and in the Community Net Benefit Test at **Appendix T**, the development of the site for residential purposes would deliver significant public benefits that would outweigh the cost of implementing the planning proposal.

The benefits of the proposal include, but are not limited to:

- A range of improvements to the road network, including the additional road/bridge linkage with the site, will greatly alleviate road congestion existing and potential new residents.
- Opportunities are identified for enhancement of public transport through increased demand.
- The proposal allows for retention and enhancement of areas of conservation value, including elements of the Yeomans Keyline System and areas of CPW habitat, and for the appropriate interpretation of these.
- The proposal includes the provision of trunk drainage areas which will perform a tertiary function as passive open space. This will improve the rural feel of the development, and provide space for passive recreation.
- Embellishments to Peel Park, including the provision of a community building nearby, will enhance participation in active and passive recreation and create an asset of potentially regional significance. The provision for a community building which will include flexible space which can be used by a number of currently under provided for groups. This will provide a significant benefit to the local community.
- The development will provide a heritage facility which will improve the engagement of the wider community, including the significant Aboriginal community, and provide greater understanding and access to the significant heritage assets in the area.
- The provision of a small local shopping centre, with commercial land, will provide valuable amenity for local residents.
- The creation of a significant number of jobs within the Hawkesbury LGA during construction and operation phases of the development.
- Substantial flood mitigation benefits for existing residents of North Richmond township have been identified as a result of the proposed development.
- The proposal allows for completion of the original 'plan' for North Richmond township, potentially providing for a more cohesive, safer community with enhanced amenities and services.
- There will be substantial employment opportunities associated with the proposed development both during the 10 year staging of development and post-development. These are important in the context of the Sydney Metropolitan Strategy for the provision of local employment and for strengthening the economic wellbeing of the local community.

Relationship to Strategic Planning Framework

Is the Planning Proposal Consistent with the applicable Regional or Sub-Regional Strategy?

The draft subregional strategy provides for the Hawkesbury LGA to accommodate an additional 5,000 dwellings by 2031.

Within this context the draft subregional strategy acknowledges that the Hawkesbury LGA is largely constrained by the Hawkesbury Nepean flood plain, with limited capacity for additional growth to the south of the Hawkesbury River due to the risk of flooding. The draft subregional strategy identifies and assumes that the majority of future housing growth within the LGA will need to occur on land located predominantly to the north of the River, in association with existing local centres.

The Vineyard Precinct is the only part of the Hawkesbury LGA that is located within the North West Growth Centre. Whilst Vineyard has the potential to accommodate 1,000-1,500 dwellings (not all of which are in the Hawkesbury LGA), it is understood that this land is not due to be released by the State government for urban development in the short to medium term.

The Redbank at North Richmond site presents the opportunity to provide over 1,400 residential dwellings within the timeframe of the Metropolitan Plan and draft Subregional Strategy.

Once fully realised, the Redbank at North Richmond site would contribute approximately 32% of the housing target that has been set for the Hawkesbury LGA by the State government.

Is the Planning Proposal consistent with the local Council's strategic plan?
The Residential Land Strategy identifies that existing centres (capacity of existing zoned land) within the Hawkesbury only have the potential accommodate approximately 600 of the total 5,000 – 6,000 required new dwellings for the LGA. The remaining 5,400 dwellings need to be provided from greenfield sites / extension of the footprint of existing urban villages.

As part of this process, the Residential Land Strategy has identified the Redbank at North Richmond site as a 'High Priority Future Investigation Area' for urban release.

The Residential Land Strategy recognises that urban growth in the Hawkesbury is severely limited by environmental constraints such as State and national parks, agricultural land values, flooding issues, noise constraints and limited development capacity within the existing centres. By contrast the Council's own preliminary Opportunities and Constraints analysis indicates that the site is relatively free from constraints.

An assessment of the proposal against Council's Sustainability Criteria is provided at **Appendix P**.

Is the Planning Proposal consistent with applicable State Environmental Planning Policies?
The State Environmental Planning Policies directly applicable to the Planning Proposal are addressed in the table included at **Appendix V**. As demonstrated, the proposal is consistent with all relevant applicable State Environmental Planning Policies.

Is the Planning Proposal consistent with application S.117 Directions?
The Section 117 Direction that are relevant to the Planning Proposal are addressed in the table included at **Appendix V**. As demonstrated, the proposal is consistent with all relevant applicable Section 117 Directions.

Environmental, Social & Economic Impact

Is there any likelihood that critical habitat or threatened species, populations or ecological communities, or their habitats, will be adversely affected as a result of the proposal?

As discussed in Section 4.7, key flora and fauna species include Cumberland Plain Woodland (CPW) and River-Flat Eucalypt Forest (RFEF). CPW has been upgraded to a Critically Endangered Ecological Community under both the TSC Act and the EPBC Act. RFEF is listed as an Endangered Ecological Communities under the TSC Act. It is not listed under Federal legislation.

As far as possible, the draft Zoning Plan has been developed to protect areas where these species occur, to ensure that these species will not be adversely affected as a result of the proposed rezoning and future residential development.

The RFEF will be protected within the Redbank Corridor. At this stage it proposed that part of the Redbank Creek riparian corridor land be retained in private ownership to be maintained by the owners of individual lots in the release area. Ongoing contributions for maintenance of the riparian land on this title would come from the future residents. Accordingly, the riparian corridors would provide 'private open space' or 'recreation area' only available to residents who own the title. The NRJV will prepare a Vegetation Management Plan for the Redbank Creek riparian corridor to be registered on the title of the relevant private allotments.

Similarly, the intact area of CPW in the site's south western corner is proposed to be managed in private ownership. This area of the site is proposed to be zoned R5 Large Lot Residential, and whilst a small area of CPW is proposed to be removed to accommodate water infrastructure, the remaining area will be appropriately managed through a Vegetation Management Plan. As with the Plan to manage the vegetation in the Redbank Creek riparian corridor, the management plan for the CPW will be prepared by the NRJV and will be registered on the title of the relevant private allotments.

A preliminary Seven Part Test has been conducted by GHD, which concludes that the proposal is unlikely to result in a significant impact on CPW, pursuant to s.5A of the EP&A Act.

Are there any other likely environmental effects as a result of the Planning Proposal and how are they proposed to be managed?

As assessment of the key environmental issues, and the draft Zoning Plan's response to each of them, is addressed at Section 4. The likely environmental effects include:

- Housing and employment opportunities;
- Heritage;
- Infrastructure;
- Transport and access;
- Visual impact; and
- Vegetation and ecological.

As detailed in Section 4, it is anticipated that a solution can be reached for each of these issues.

How has the Planning Proposal adequately addressed any social and economic effects?

The Planning Proposal has examined the potential social and economic effects of the rezoning. Social and Economic Impact Assessments have been prepared, and are discussed at Sections 2.17 and 3.4 respectively. In summary:

Social Impacts

- Providing housing to accommodate population growth of North Richmond and the Hawkesbury.
- Providing a range of housing forms and sizes that respond to the needs and aspirations of a changing population, which requires a variety of new living situations to meet lifestyle choices.
- Providing improved infrastructure services for residents of the new development and the broader North Richmond community.
- Providing convenient and ready access to community facilities and services for the wider community.

Economic Impacts

The development will generate substantial economic benefit in terms of jobs, output, and gross added value. In summary:

- The project will generate $473 million in output (total market value of goods and services produced) over the 10 year construction period.
- Resident expenditure and the operation of the seniors living development will generate $366 million in output over a 20 year period.
- The project will generate $583 million gross value added (total market value of goods and services produced, less the cost of delivering those goods and services) over a 20 year period from construction and resident expenditure.
- 'Leakages' or losses from the Hawkesbury LGA will be minimised by selecting local labour and suppliers for the development where possible.
- The project will assist in maintaining existing employment positions, particularly in the construction, manufacturing, and professional, scientific and technical services industries through the generation of 579 direct and indirect FTE jobs during each year of construction (10 years). With construction and manufacturing being the two largest employers in the Hawkesbury LGA, the development will generate significant job opportunities for local residents and contribute to increasing levels of employment self-sufficiency in the region.
- Once all dwellings are constructed, direct and indirect jobs generated by resident expenditure and operation of the seniors living development will reach 1,079 FTE (approximately 108 during each year of construction) and these jobs will be sustained for as long as dwelling are occupied. This includes 400 FTE jobs within the proposed local centre.

The development will also provide a revenue stream to State and local government in the form of stamp duties, Goods & Services Tax (GST) and Council rates.

State and Commonwealth Interests

Is there adequate public infrastructure for the Planning Proposal?

As detailed at Section 4.10 above, the full range of utility services, including power, telecommunication, water and sewer are currently available to support the first stage of the development, without the need for infrastructure upgrades.

Augmentation to potable water and sewerage specific infrastructure points to support later stages of the project can readily occur, and will be an ongoing commercial agreement with Sydney Water.

Services Infrastructure can be provided without limiting the provision of water and sewer infrastructure in the North-West Growth Centre or elsewhere.

As discussed at Section 2.15 above, there are pre-existing road and traffic issues in the locality. The NRJV is consulting with both the Council and the RMS to determine an appropriate alternative river crossing to accommodate the additional traffic generated by the proposal, and to alleviate pre-existing traffic issues.

The proposed alternative crossing utilises the existing Yarramundi Bridge to the south of the site, and will require the construction of a new simple concrete span bridge near Springwood Road. An additional crossing at Yarramundi would relieve pressure on this intersection, and would free the existing bridge crossing for commuters travelling east.