BLACKTOWN CITY COUNCIL

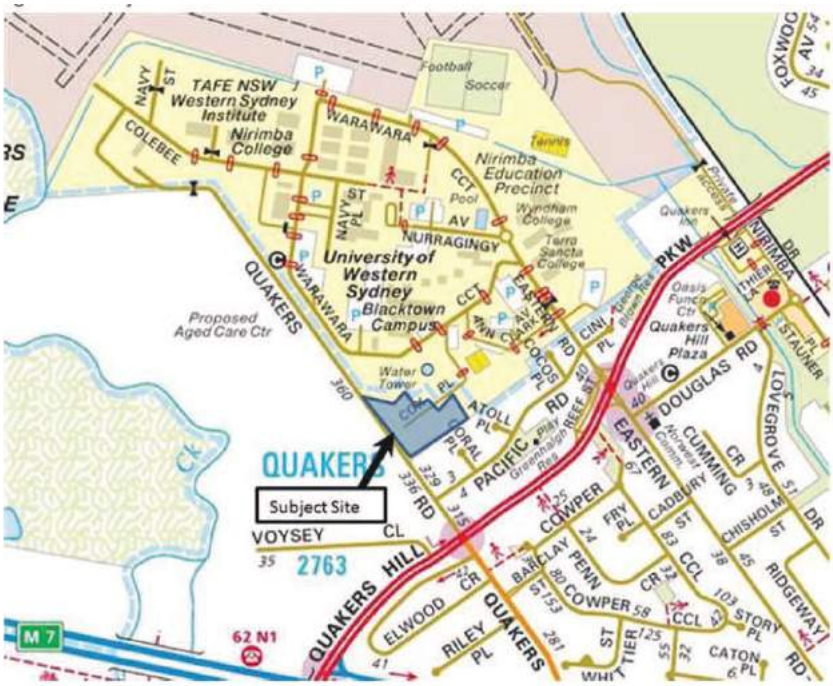
PLANNING PROPOSAL

Quakers Road and Cox Place, Quakers Hill - Nirimba Education Precinct - WSU

July 2016

INTRODUCTION

Blacktown City Council has received a request from JBA on behalf of Western Sydney University to amend *Blacktown Local Environmental Plan 2015* (the Blacktown LEP) to facilitate an amendment to *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (the Growth Centres SEPP) that rezones the Subject Site in the vicinity of Quakers Road and Cox Place, Quakers Hill within the Schofields Precinct of the North West Priority Growth Area.



The proposal specifically relates to a separately titled freehold parcel of land owned by Western Sydney University (WSU) comprising 12 stand-alone dwellings and zoned SP2 Infrastructure (Educational Establishment) under the Growth Centres SEPP in the southern most portion of the Nirimba Education Precinct (NEP).

The dwellings on this parcel are rented to private tenants as they have become surplus to WSU's current and future needs. The demand for on-site accommodation services has changed. A large portion of the student population commutes by train.

The rezoning of the site for residential uses will enable WSU to sell the existing dwellings or develop the land. This will generate revenue to facilitate growth and spending on new facilities and programs. The site adjoins existing and future low density residential uses making it an ideal location for the WSU to separate the land from the campus without having any impacts on the operation of the campus.

To facilitate the sale of the dwellings the University intends to rezone the site for residential uses. To rezone the land, it is required to amend *State Environmental Planning Policy (Sydney Region Growth Centres) 2006* (Growth Centres SEPP).

PURPOSE

The purpose of this proposal is to facilitate the amendment of Growth Centres SEPP to rezone a parcel of land which is surplus to the owner WSU, from SP2 Infrastructure (Educational Establishments) to R2 Low Density Residential. Relevant provisions of the SEPP including zone, height and density are also proposed to be amended for the subject site.

THE SITE

The subject site is located in the southernmost portion of the NEP within the southern part of the Schofields Precinct in the North West Priority Area. The site comprises a single parcel of land and is legally described as Lot 2 in DP 853847 Quakers Road, Quakers Hill. The subject site is approximately 1.69ha in area and comprises 12 detached single storey dwellings with direct frontage to Cox Place.

COUNCIL CONSIDERATION

The request from JBA on behalf of WSU to amend the Blacktown LEP to facilitate an amendment to the Growth Centres SEPP was reported to Council, at its Ordinary Meeting on 22 June 2016. At the meeting Council resolved that:

> *"1. Prepare and forward a planning proposal to the Minister for Planning and Environment seeking a Gateway Determination to amend State Environmental Planning Policy (Sydney Region Growth Centres) 2006 as it relates to Lot 2 in DP 853847, Quakers Road, Quakers Hill, to rezone from SP2 Infrastructure (Educational Establishment) to R2 Low Density Residential."*

Accordingly, this Planning Proposal has been prepared by Council Officers with the assistance of information provided by JBA, and in accordance with the Department of Planning & Environment format for planning proposals as outlined in *A guide to preparing planning proposals* dated October 2012.

Consequential amendments to relevant sections of the Blacktown City Council Growth Centre Precincts Development Control Plan (BCC-GC Precincts DCP) Schedule 5 are also required to be amended to reflect the proposed changes to zoning.

This Planning Proposal is accompanied by the following supporting documents:

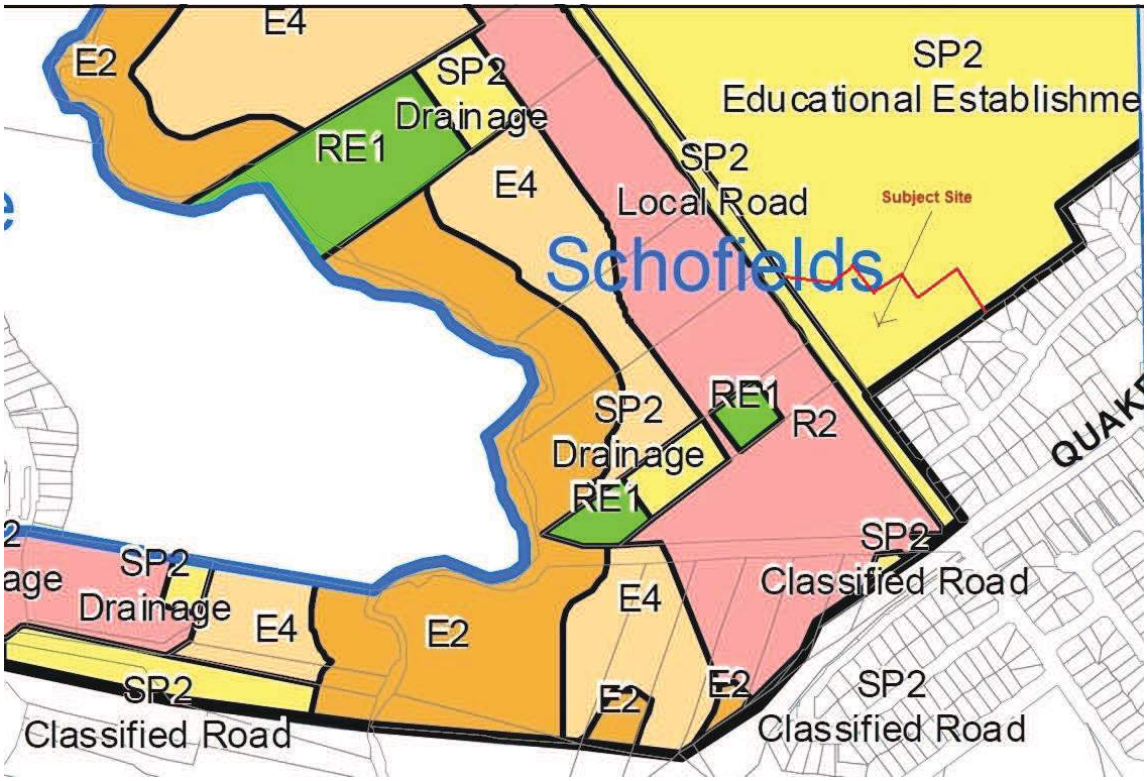
- Traffic Impact Assessment by GTA Planning
- Infrastructure and Services Statement Mott MacDonald
- Draft SEPP Maps

THE PLANNING PROPOSAL

PART 1 - Objectives and Intended Outcomes

The objective of this Planning Proposal is to facilitate an amendment to the Growth Centres SEPP 2006 as it relates Lot 2 DP 853847 Quakers Road, Quakers Hill to enable the redevelopment or sale of the existing dwellings on the site by the University.

The Planning Proposal intends to rezone the subject land zoned SP2 Infrastructure (Educational Establishment) to permit residential uses facilitating the University's income generation from the subdivision and sale of this surplus land which will in turn facilitate the ongoing operation and growth of WSU in accordance with its current strategic plan and NEP Structure Plan.



Current Zoning under the Growth Centres SEPP Subject Site

PART 2 - Explanation of Provisions

The effect of the Planning Proposal would be attained by amending the Blacktown LEP 2015 to facilitate an amendment to the Growth Centres SEPP in terms of zoning and other relevant provisions of the subject site as follows:

- Rezone the subject site from SP2 Infrastructure (Educational Establishment) to R2 Low Density Residential zone which adopts the same zoning as the adjoining land across the Quakers Road to maintain existing residential character, density, height and built form identified for the area under the Schofields Precinct Plan.

The existing and proposed SEPP controls are outlined in the table below.

	Existing	Proposed
Zone	The site is currently zoned SP2 Infrastructure (Educational Establishment)	The proposed zoning is R2 Low Density Residential
Maximum Building Height	There is currently no building height limit on the site	The proposed building height is 9m
Dwelling Density	There is currently no dwelling density control	The proposed dwelling density control is 15 dwellings per hectare

These changes will not affect the ability of these controls to maintain the development character in the vicinity.

The following map amendments would be required to achieve the objectives and intended outcomes of the Planning Proposal:

- Amendment of Growth Centres SEPP Land Zoning Map in accordance with the proposed zoning map shown at **Attachment 2;**
- Amendment of Growth Centres SEPP Height of Buildings Map in accordance with the proposed height map shown at **Attachment 3** which indicates a maximum permissible height of 9 metres within the subject site**;**
- Amendment of Growth Centres SEPP Residential Density Map in accordance with the proposed density map shown at **Attachment 4** which indicates a density of 15 dwellings per hectare on the subject site**;**

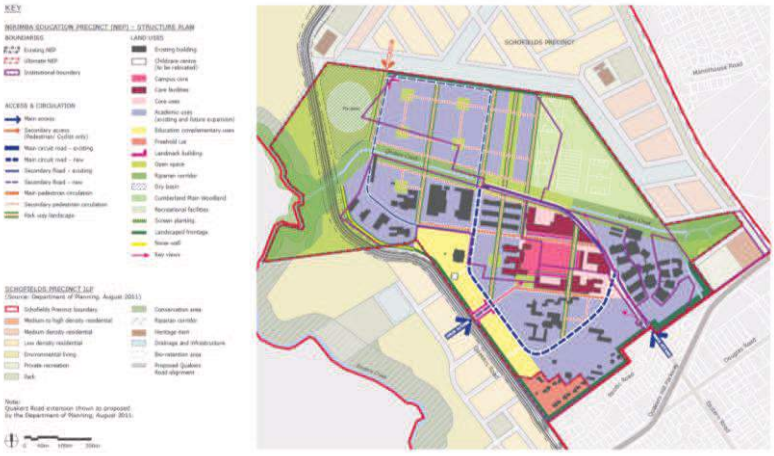
This will facilitate the purpose of a residential development which would accommodate approximately 25 low density residential dwellings and future internal road with the lot layout including lot sizes of approximately 250 to 300 sqm.

PART 3 - Justification

Section A – Need for the Planning Proposal

1. Is the Planning Proposal a result of any strategic study or report?

Strategic planning work was undertaken during the preparation of the Schofields Precinct Plan including the Indicative Layout Plan (ILP) and the SEPP Land Zoning Map. This Planning Proposal is a result of a different model for student accommodation adopted by the WSU which has resulted in the existing dwellings on the campus surplus to the University's current and future requirements. It aligns with the objectives of the Nirimba Education Precinct NEP Structure Plan and will facilitate investment in academic programs and development of the University's campuses. The residential use of the site is identified in the Structure plan and therefore supports this proposal.



NEP Structure Plan

The existing dwellings and the land would become an asset that can be leveraged to generate funding for WSU by rezoning to low density residential uses allowing the sale and potential redeployment of the land.

The application is supported by Traffic Impact Assessment prepared by GTA Planning, Infrastructure and Services Statement by Mott MacDonald and Draft SEPP Maps. (Refer **Appendices A, B & C**).

2. Is the Planning Proposal the best means of achieving the objectives or intended outcomes, or is there a better way?

Yes. This Planning Proposal is the best means of achieving the objectives and intended outcomes of the proposal, which is to permit residential development on the subject site to facilitate the sale or redevelopment of the site by the University.

This Planning Proposal seeks to amend Blacktown LEP, to facilitate the amendment of Growth Centres SEPP. Amendments to the zoning, height and density are proposed on the subject site. SEPPs, and any amendments thereto, are typically proposed and prepared by the Department of Planning & Environment (DP&E) for the Minister's consideration and ultimate approval by the Governor. Notwithstanding, Section 74 of the *Environmental Planning and Assessment Act 1979* provides that:

> *'An environmental planning instrument may be amended in whole or in part by a subsequent planning instrument whether of the same or a different type.'*

This clause provides Council with an ability to propose amendments to a SEPP via its LEP. A Planning Proposal is an established process that will allow consideration of the request for amendment to the SEPP by both Council and the DP&E through the LEP Gateway. This approach is considered to be appropriate given the manner in which the SEPP, and particularly the zoning and land use table, operate in Blacktown is similar to an LEP.

Hence, amending the Growth Centres SEPP via Blacktown LEP through a Planning Proposal is considered to be the best mechanism in this circumstance to make zoning and related amendments on the subject site.

Section B – Relationship to Strategic Planning Framework

3. Is the Planning Proposal consistent with the objectives and actions of the applicable regional or sub-regional strategy (including the Sydney Metropolitan Strategy and exhibited draft strategies)?

A Plan for Growing Sydney is the most current regional strategy which strengthens the growth of the North West Growth Centre and the retention and growth of educational precincts. The proposal supports this policy by creating additional housing in an appropriate location and strengthening the position of the University to grow into the future. This is also consistent with the Metropolitan Plan for Sydney 2036.

NSW State Plan 2021

The New South Wales State Plan sets the strategic direction and goals for the NSW Government across a broad range of services and infrastructure. The Plan nominates one of the key challenges for the State as being the planning challenges that arise from continued population growth.

The redevelopment of the site is consistent with the State Plan as it will provide new housing in an area which is highly accessible to public transport infrastructure and social services.

NSW Long Term Transport Plan 2012

The NSW Long Term Transport Plan 2012 has the aim of better integrating land use and transport. The planning proposal will serve the objectives of the Transport Plan by locating residential uses within close proximity to the Quakers Hill train station and a number of local bus services. This will promote the use of public transport and reduce reliance on private motor vehicles.

Metropolitan Strategy

In December 2014 the DP&E released *A Plan for Growing Sydney* (the Plan). The Plan supersedes the current Metropolitan Plan for Sydney 2036 and Draft Metropolitan Strategy for Sydney to 2031, and presents a strategy for accommodating Sydney's future population growth for the next 20 years.

In order to achieve the vision for Sydney to become 'a strong global city and a great place to live', the Plan establishes four goals for Sydney. The goals of the Plan are that Sydney will be:

1. a competitive economy with world-class services and transport;
2. a city of housing choice, with homes that meet our needs and lifestyles;
3. a great place to live with communities that are strong, healthy and well connected; and
4. a sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources.

To support these goals, the Plan sets out planning principles that will guide Sydney's growth. These include:

- increasing housing choice around all centres through urban renewal in established areas;
- stronger economic development in strategic centres and transport gateways; and
- connecting centres with a networked transport system.

The plan forecasts increased levels of growth in the employment and residential sectors. The strategy has increased residential dwelling targets by 22%, with an additional 664,000 new dwellings needed in Sydney by 2031.

The Blacktown LGA falls within the West Central Subregion/District under the Plan. The site falls within the North-West Growth Centre which is identified for continued delivery of housing, focused on infrastructure delivery when needed, housing choice, affordability and sustainability. The location of the site in close proximity to public transport, education and services will facilitate the supply of additional housing in an appropriate area, as envisaged by the Plan. As outlined in **Section C**, the site has appropriate access to roads and transport and has servicing infrastructure that is appropriate for residential development.

Specifically the proposal is consistent with Direction 1.10, to plan for education and health services to meet Sydney's growing needs. As outlined in **Section A** the planning proposal is consistent with the NEP Structure plan, which identifies the future growth needs and long term vision for the educational campus. The proposal is consistent with Action 1.10.2 of the plan, to support the growth of complimentary health and tertiary education activities in strategic centres. The proposal will facilitate an additional income stream for the University to fund new learning, teaching and research facilities. The ongoing operation of the NEP will provide a range of educational services to the entire region.

North West Structure Plan

The Structure Plan is the blue print for all development in the North West Growth Centre. The plan sets indicative development parameters for the Schofields Precinct and integrates services with other infrastructure. The figure below shows the site in context of the Structure Plan.

Subject Site -

4. Is the Planning Proposal consistent with a Council's Local Strategy or other Local Strategic Plan?

The planning proposal is consistent with the directions established in the Blacktown Community Strategic Plan 2030 as demonstrated below.

Blacktown City 2030

The proposal is consistent with the Strategic Directions established in the Blacktown City 2030 – Community Strategic Plan. The strategic directions outlined in the plan are also provided in the Blacktown Delivery Program 2013-2017ad Operational Plan 2015-'16 and include:

1. A Vibrant and Inclusive Community
2. A Clean and Sustainable Environment
3. A Smart and Prosperous Economy
4. A Growing City Supported by Infrastructure
5. A Sporting and Active City
6. A Leading City

Specifically the proposal is consistent with direction 3, to create a smart and prosperous environment. The proposal will facilitate the supply of additional housing in a way that will support the growth of WSU and its associated facilities by generating revenue for capital works and teaching and learning programs. Additionally, the site has services and infrastructure that is capable of accommodating residential development, in accordance with direction 4.

The site will be able to accommodate stormwater and ensure that pollutants are captured and not introduced into the environment (refer **Section 6.1.2**), achieving direction 2.

This planning proposal seeks to amend the Schofields Precinct Plan to strike a balance between the demand for urban development and the need for adequate infrastructure and facilities to service the development. The minor increase of residential development permissible on the site with supporting infrastructure will enable this balance to occur.

The proposed amendment will also complement Council's commitment to the conservation, restoration and enhancement of an environment that balances social, economic and environmental imperatives. The identified conservation area is to be respected by future development on the Subject Site.

5. Is the Planning Proposal consistent with the applicable State Environmental Planning Policies?

A review of State Environmental Planning Policies (SEPPs) has been undertaken and the consistency of the Planning Proposal with the applicable SEPPs is summarised in **Attachment 1**.

This Planning Proposal does not contain provisions that will contradict or would hinder the application of these SEPPs. Further assessment against the relevant SEPPs will be undertaken during the DA stage.

The principle planning instrument affecting the Subject Site is State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Growth Centres SEPP).

The consistency of the planning proposal with the aims of the Schofields Precinct Plan identified in Appendix 7 of the Growth Centres SEPP is addressed in the table below:

Aims of Precinct Plan	Consistency
to rezone land to allow for development to occur in the manner envisaged by the growth centre structure plan, and the indicative layout, for the Schofields Precinct	The proposal is consistent with the Schofields Precinct Plan as it adopts the same zoning and density of development permitted under the plan for the land on the opposite side of Quakers Road.
to deliver housing choice and affordability by accommodating a wide range of residential dwelling types that cater for housing diversity	The proposal will increase the supply and choice of housing in the precinct in a location that is close to public transport, services, education and jobs.
to guide the bulk and scale of future development within the Precinct	The site is identified as being part of the NEP in the Precinct Plan. Notwithstanding this the dwellings are surplus to Council's needs and are currently occupied as private dwellings. The planning proposal seeks to amend the Precinct Plan to provide future guidance for the development of the site.
to protect and enhance riparian corridors and areas of significant native vegetation by establishing development controls that prevent the clearing of existing native vegetation within the Precinct	The proposal is not located on land that is identified as a riparian corridor or area of significant vegetation. There is existing native vegetation on the site however this is not considered to form a constraint to the rezoning or redevelopment of the site.
to protect and enhance areas of local heritage significance by establishing development controls in order to maintain and respect the relationships between heritage sites and uses of adjacent sites.	As outlined in **Section C Q8**, the proposal is not a heritage item not is it located in a heritage area. Additionally the proposed rezoning is not anticipated to have any adverse impacts on the setting or scale of the Water Reservoir tower, a heritage item in the vicinity of the site.

6. Is the Planning Proposal consistent with applicable Ministerial Directions?

The Section 117 Ministerial Directions (under Section 117(2) of the Environmental Planning and Assessment Act 1979) provide local planning direction and are to be considered when rezoning land. The proposed amendment is consistent with Section 117 Directions issued by the Minister for Planning and Infrastructure.

The following table outlines the consistency of the Planning Proposal to relevant Section 117 directions:

Consistency with Section 117 Ministerial Directions

Ministerial Directions	Consistent		N/A	Comment
	YES	NO		
1. Employment and Resources				
1.1 Business and Industrial Zones	✓			The Planning Proposal seeks to rezone land identified for educational purposes. While this land is not business or industrial zoned land, the land is surplus to the University's needs and will facilitate the growth of WSU to provide additional capital works and learning and teaching programs.
1.2 Rural Zones			✓	Not applicable
1.3 Mining, Petroleum Production and Extractive Industries			✓	Not applicable
1.4 Oyster Aquaculture			✓	Not applicable
1.5 Rural Lands			✓	Not applicable
2. Environment and Heritage				
2.1 Environment Protection Zones			✓	Not applicable, the site is not identified as a conservation or environmentally sensitive area.
2.2 Coastal Protection			✓	Not applicable
2.3 Heritage Conservation	✓			As outlined in **Section 6.1.3** the site is not identified as an item of heritage significance nor is it located within a heritage conservation zone. The site is located in the vicinity of a heritage water tower however the proposal will not have any adverse impacts on the setting or heritage significance of the item.
2.4 Recreation Vehicle Areas			✓	Not applicable
3. Housing, Infrastructure and Urban Development				
3.1 Residential Zones	✓			The site is zoned SP2 Educational Establishment with no residential development permitted. The Planning Proposal is consistent with this direction as it seeks to rezone

Ministerial Directions	Consistent		N/A	Comment
	YES	NO		
				the site to R2 Low Density Residential to permit residential development on the site. This will make better use of infrastructure and services on the site and will also increase the choice of building and housing types, in an area that is strategically located close to transport, services, employment and the educational uses.
3.2 Caravan Parks and Manufactured Home Estates			✓	Not applicable
3.3 Home Occupations			✓	Not applicable
3.4 Integrating Land Use and Transport	✓			The Planning Proposal, through permitting residential development on the site will improve access to housing, education facilities, jobs and services by walking, cycling and public transport. The proposal utilises the sites close proximity to public transport by permitting residential dwellings in close proximity. In light of this it is expected that the proposal will reduce travel demand including the number of trips generated by the development and the distances travelled, especially by car.
3.5 Development Near Licensed Aerodromes			✓	The site is not located in close proximity to a licensed aerodrome.
3.6 Shooting Ranges			✓	Not applicable
4. Hazard and Risk				
4.1 Acid Sulphate Soils			✓	The Schofields Precinct Plan contains acid sulphate soils provisions and this proposal does not seek to amend them. Acid sulphate soils investigations and analysis will accordingly be undertaken as part of any future development of the land in accordance with the requirements of the Schofields Precinct Plan.
4.2 Mine Subsidence and Unstable Land			✓	Not applicable
4.3 Flood Prone Land	✓			The site is not identified as flood prone land.
4.4 Planning for Bushfire Protection			✓	The site is not identified as bushfire prone land.

Ministerial Directions	Consistent		N/A	Comment
	YES	NO		
5. Regional Planning				
5.1 Implementation of Regional Strategies			✓	Not applicable
5.2 Sydney Drinking Water Catchments			✓	Not applicable
5.3 Farmland of State and Regional Significance on the NSW Far North Coast			✓	Not applicable
5.4 Commercial and Retail Development along the Pacific Highway, North Coast			✓	Not applicable
5.8 Second Sydney Airport: Badgerys Creek			✓	Not applicable
6. Local Plan Making				
6.1 Approval and Referral Requirements	✓			No new concurrence provisions are proposed.
6.2 Reserving Land for Public Purposes	✓			No new road reservation is proposed.
6.3 Site Specific Provisions	✓			The SEPP amendment does not impose any restrictive site specific provisions.
7. Metropolitan Planning				
7.1 Implementation of the Metropolitan Plan for Sydney 2036	✓			This proposal is consistent with the objectives and strategies of A Plan for Growing Sydney as outlined in **Section 5.2.1**.
7.2 Implementation of Greater Macarthur Land Release Investigation			✓	The proposal does not relate to land within the Greater Macarthur Land Release Investigation Area.

Accordingly, the proposed zoning amendment is consistent with the relevant Section 117 Directions.

Section C – Environmental, Social and Economic Impact

7. 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?

The planning proposal will not result in any adverse effects on critical habitat, threatened species populations or ecological communities or their habitats, given the site's urban location with no creek, riparian or reserve area in the vicinity.

8. Are there any other likely Environmental Effects as a result of the planning proposal and how are they proposed to be managed?

There are no unacceptable impacts likely to result from this proposal. The detailed assessment of the environmental impacts is provided below:

Traffic and Access

A Traffic Impact Assessment has been prepared by GTA Consultants to determine the appropriateness of the proposal from an access, traffic and parking perspective (refer to **Attachment 3**). The results of the assessment indicate that the impacts of traffic generated by rezoning of the site to residential uses and an increase in the current residential density on the site created by the proposal are considered relatively minor with respect to the existing road network and proximity to public transport, both existing and proposed. Furthermore it is considered that the proposal will not compromise the safety or function of the road network.

The Schofields Precinct Plan identifies that Quakers Road will be upgraded to provide a north-south connection between the release area, Quakers Parkway and the M7 Motorway. The precinct plan identifies Quakers Road as a sub-arterial road and restricts driveway access on the western side (opposite to the site). A short right hand turn bay is anticipated to be accommodated within the median island along Quakers Road. The Traffic Impact Assessment considers that some localised road widening will be required to accommodate this turning bay which may be further designed at the DA stage. The Assessment considers that there is a sight distance of more than 200m in each direction from Cox Place, which satisfies both the absolute and desirable Safe Intersection Sight Distance criteria. Additionally, Cox Place is located some 230m from the Quakers Road and Quakers Hill Parkway intersection which will allow cars to access Quakers Road during the AM peak which is expected to have a que length of 210m from the intersection.

The Assessment considers the potential number of vehicle trips generated as a result of the rezoning, in accordance with the RMS Guide to Traffic Generating Developments. The assessment anticipates that 25 residential dwellings on the site will generate the following trips:

- Typical AM Peak – 25 vehicle movements; and
- Typical PM peak – 24 vehicle movements.

The development of the site for 25 dwellings will result in a total of 268 vehicle trips per day. This is an increase from 128 vehicle trips per day currently generated from the site. The Assessment includes traffic surveys along Quakers Road which provide that the road currently accommodates 150 and 111 vehicles during the AM and PM peak hours respectively. The Assessment provides that the capacity for a local road is 200 vehicles per hour and as such the development will not generate additional traffic that will exceed the safe carrying capacity of the road. The upgrade works to turn Quakers Road into a Sub Arterial carriageway will significantly increase its capacity up to 20,000 vehicles per day. While this will be coupled with a significant increase in traffic, anticipated to be 1,439 vehicles per hour during the AM peak period (1,139 southbound, 300 northbound) and 1,285 vehicles per hour during the PM peak period (1,025 northbound, 260 southbound), the forecast traffic volumes will be well within the capacity of the road.

The assessment provides that each dwelling will be required to provide two car parking spaces, in accordance with the *Blacktown City Council Development Control Plan 2015*. The assessment considers that the future development of the site will be required to accommodate a 10.5m long Council garbage truck with the cul-de-sack required to accommodate an appropriate turning circle. The assessment considers that reinstating Cox Place with a cul-de-sack would comply with the DCP requirements for a local road carriageway.

The Assessment identifies that the traffic generated from the site is appropriate for the site and surrounding road network. In light of the sites close proximity to public transport and capacity in the surrounding road network, it is considered that the proposal is appropriate from a traffic, access and parking perspective.

This rezoning application will create a new intersection with Cox Place and Quakers Road. Council advised that a proper intersection design is required. The existing road reserve is insufficient for providing a right turn bay, therefore localised widening will be required at this intersection.

An addendum prepared by GTA Consultants includes the details of the proposed intersection design. As outlined in the addendum traffic response, Cox Place will serve up to 25 dwellings in a cul-de-sac arrangement. In accordance with the Blacktown DCP, a cul-de-sac may serve up to 30 dwellings and is required to be 7.5m wide with a 3.5m footpath on both sides. The existing Cox Place alignment is 7.3m wide and as such would not have any practical benefit in being widened by 200mm in order to meet the DCP requirement. Additionally, a footpath will be provided along the western side of the road. Footpaths on both sides of Cox Place would require the removal and realignment of the existing power poles and as such is not considered necessary or practical.

Stormwater management

In response to Council's comments the Infrastructure Services Assessment by Mott MacDonald was amended (**Attachment 4**). As detailed in that assessment the Schofields Precinct water quantity management plan uses 11 regional detention basins to limit downstream discharge peaks and velocities to avoid potential impacts or hazards in the precinct.

The site lies in catchment JWP43.00 of the proposed catchment plan used to design the detention basin storages for the ultimate design. Catchment JWP43.00 has been modelled with an 85% impervious area. Blacktown Council guidelines identify low density residential development to be modelled to have an 85% impervious area. As such, rezoning the site to low density residential would be in line with the parameters used in Schofields Precinct WCMP and is not expected to have an adverse effect on the regional water quantity management scheme. As such, OSD would not be required in a development of this type on the site. It is anticipated that any interim On-Site Detention be constructed within one of the proposed lots. Settlement of this lot would be delayed until such a point that the regional basins are operational and the interim detention can be removed.

In response to Council's comments Mott MacDonald addressed the issue of Stormwater management assets for both detention and water quality as follows.

As the majority of the site is already developed, rezoning of the land to low density residential would generally have no change to pervious/ impervious percentages. Pervious and impervious areas of the site were calculated to be used in a concept DRAINS model. Pre-developed impervious areas were measured by hand from satellite imagery. The developed impervious areas were calculated according to Blacktown Council's *Engineering Guide for Development* 2005. Council states that any low density residential development is to have an 85% impervious area.

The Schofields Water Cycle Management Strategy Report has assumed that 5% of pervious areas will be impervious, while 100% of impervious areas will be impervious. In order to keep results consistent with the report these assumptions have been used in the model.

From this it has been calculated that approximately 70m2 of detention may be required to limit flows from the site. It is anticipated that any interim On-Site Detention be constructed within one of the proposed lots. Settlement of this lot would be delayed until such a point that the regional basins are operational and the interim detention can be removed.

The utility service authority responses have been reviewed by Mott MacDonald and the respective requirements from each relevant authority have been incorporated into the design as detailed within the amended Infrastructure Services Assessment (**Attachment 4**).

Open space

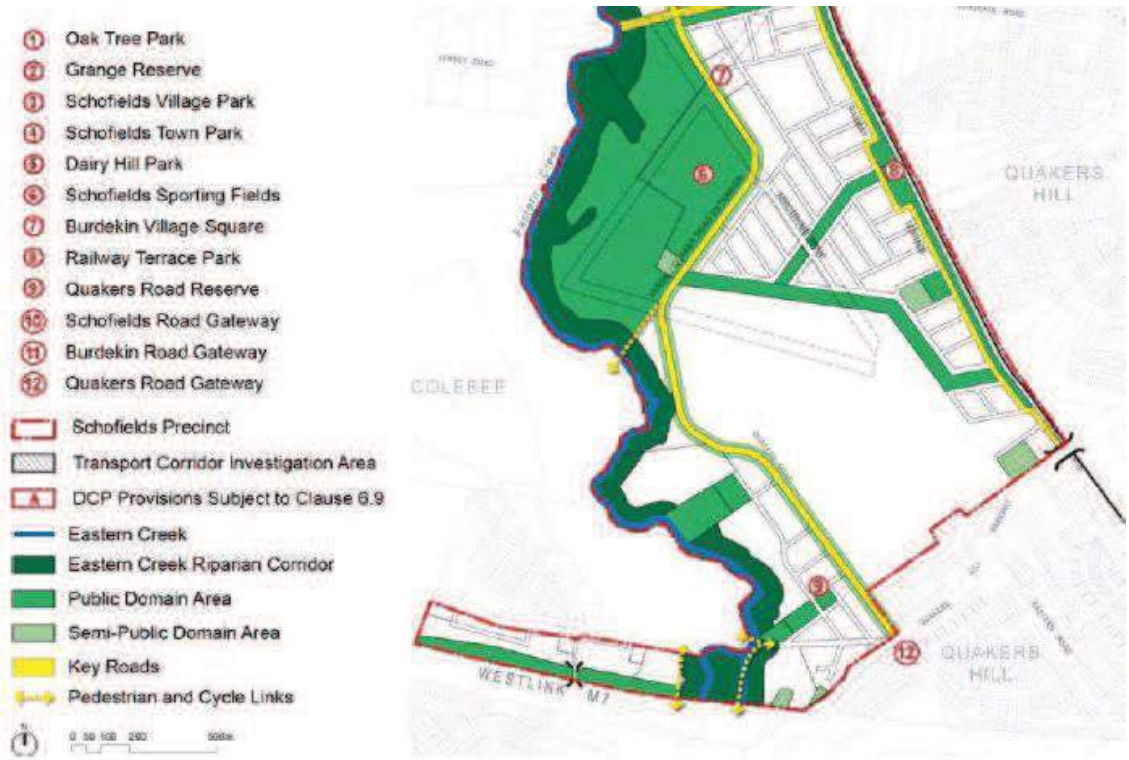
The planning proposal identifies an increase of approximately 15 dwellings in addition to the existing 12. Additional population could be roughly estimated as 43 people. This could in turn be translated that 0.1217ha of additional open space would be required.

The required additional open space for the anticipated population increase is less than half of a minimum park size defined by Council, which is 0.3ha. At the same time, there exists a nearby Council owned Reserve 380 which is within walking distance from the proposed residential site.

The site is well located in close proximity to a range of open space and identified public domain upgrades under the Schofields Precinct Plan. The proposed public open space network for the Schofields Precinct includes:

- 11 hectares of traditional and linear parks, suitable for passive recreation;
- 12 hectares of open space for active recreation, including two double playing fields; and
- 7 hectares of multi-use passive open space associated with Eastern Creek riparian corridor.

As shown below in the figure below the site is located in close proximity to the Eastern Creek Riparian Corridor and the Schofields Sporting Fields. The open space and public domain facilities in the proximity of the site are considered to be ample to serve the recreational and lifestyle needs of the residents created through the rezoning of the site.



The WSU and JBA acknowledged the Open Space requirements and agreed that the future DA for subdivision of the site will be subject to the Schofields Contribution Plan No. 24 Open Space and Recreation Facilities requirements. The Nirimba Education Precinct (NEP) is currently excluded from the contributions plan No. 24 and as such a minor amendment will be required to adjust the boundary of the NEP to exclude the subject site.

Heritage

The site is located in the proximity of a heritage listed water reservoir. The item is identified as having heritage significance in the Schofields Precinct Development Control Plan (Schofields DCP) however is not identified as an item of heritage significance in the Growth Centres SEPP therefore has no statutory heritage listing. The water Reservoir is located approximately 80m to the north of the site as shown in the figure below.

The site is also identified in the Schofields DCP as having moderate Aboriginal Archaeological sensitivity. Notwithstanding this, the proposed rezoning of the site from SP2 to R2 is not anticipated to have any significant adverse impact on the setting or heritage significance of the item.

The proposed low density residential zone, dwelling density and building height is commensurate with that of the future development in the Schofields Precinct and the existing residential development to the south of the site. Accordingly the site will form a similar context to the existing and future development and will not have a detrimental impact on the setting of the Water Tower. The Water Tower is located approximately 80m away from the site and is separated by mature trees that establish a buffer between the item and the site.

The proposed rezoning of the site will not permit a development that is out of scale or character of the area. Accordingly the Planning Proposal is not anticipated to have any significant adverse impacts on the heritage significance or setting of the Water Tower.

The site is identified in the Schofield Precinct Plan as having moderate Aboriginal Archaeological sensitivity. While the Planning Proposal will permit residential dwellings on the site, the existing SP2 zoning facilitates development on the site. The dwellings are as existing and may be sold with no further improvements. If the site is to be redeveloped, any significant excavation will be required to address potential archaeological relics on the site.

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

Social Impacts

The proposal will facilitate the delivery of residential dwellings in high demand and will not cause any significant adverse environmental impacts. Additionally the proposed rezoning of the site will enable WSU to provide funding for the provision of key capital works for the University to improve services and facilities on its campuses throughout the region.

- **Housing Supply and Affordability**

  Sydney is anticipated to accommodate an additional 664,000 new dwellings needed in Sydney between 2011to 2031. Housing affordability in Sydney is a significant issue with supply being a key affordability factor. The proposal will increase the supply of residential accommodation in a strategic location, within close proximity to public transport.

  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.

  The growth of the Schofields Precinct will require the delivery of residential to cope with the high levels of demand and growth projections. This Planning Proposal will facilitate a supply of housing in an appropriate location which is considered to result in an improved social outcome. It will also support the provision of additional housing and assist in meeting housing targets.

Economic Impacts

The proposed development will result in positive economic and social flow-on effects for the local area. The planning proposal will facilitate the sale or redevelopment of a site that is surplus to the University's requirements and therefore under-utilised. The sale of the land will create additional revenue for the University to be invested in academic programs and development of the University's campuses. The following economic benefits will be provided through the proposal:

- the provision of additional dwellings appropriately located in close proximity to open space, transport and services will increase housing supply and choice in the Schofields locality;
- the rezoning of the land by WSU will increase the value of the land to be sold hence generating greater revenue for the University to fund teaching, learning and research facilities on its campuses; and
- the rezoning and sale of surplus land will enable a higher order economic use of the land, stimulating economic growth in the area.

Given the above, it is evident that the proposal will deliver significant social and economic benefits. If the proposal were not to proceed, these benefits would not be realised.

Section D – State and Commonwealth Interests

10. Is there adequate public infrastructure for the Planning Proposal?

It is understood that the existing infrastructure has the capacity to accommodate development on the site. Accordingly, it is not anticipated that there will be any changes in demand from that associated with the approved DA development.

Any upgrades to infrastructure to support a future development on the site would be investigate and potentially form a condition of consent for the development.

The site is located in an established urban area and has access to a range of existing services. Further investigations will be undertaken as part of the preparation of the DA material to determine whether any upgrade of existing facilities is required.

An infrastructure Services Statement has been prepared for the site by Mott MacDonald and is provided at **Attachment 3**. The assessment provides an analysis of the existing and required servicing infrastructure on the site to accommodate a residential development of 25-30 dwellings. The Assessment also provides an analysis of the site stormwater constraints.

The Assessment identifies the following services that are existing on the site:

- **Potable water** – two Sydney Water potable water mains are located on the site. A reticulation network that services the 12 dwellings is also located on the site.
- **Sewer** – the site has a trunk sewer carrier with two service lines to service the existing dwellings.
- **Electrical** – the site is serviced by endeavour energy with an overhead network providing service lines to the existing dwellings.
- **Telecommunications** – the site appears to be serviced underground via the NEP.
- **Gas** – the dwellings are supplied with gas mains along each side of Cox Place.
- **Drainage** – the site currently drains to two kerb inlet pits along Cox Place. There are two sag pits located to the north-west of the site with the network continuing in this direction through the NEP.

The assessment provides a detailed image illustrating the location of the various services on the site, refer to **Attachment 3**. The assessment provides that feasibility applications and enquiries' have been submitted to the relevant service providers to determine the capacity of the existing services infrastructure to cope with a development on the site of 25 to 30 dwellings. The Assessment provides that the applications are still outstanding however anticipates that there is sufficient capacity in the existing servicing infrastructure for the dwellings on the site to operate in isolation from the NEP. Any upgrades to services would be assessed further at the Development Application stage.

The Assessment considers that the future development of the site would not require the provision of on-site Detention as it would likely comply with the 85% impervious area control in accordance with the Schofields Precinct Water Quality Management Plan. The Assessment provides an analysis of the potential impervious areas on the site and finds that a detention area of up to 70m^3 may be required to limit the flow of stormwater from the site.
Additionally the Assessment recommends the use of rainwater tanks, bio-retention ponds and Gross Pollutant Traps to minimise the potential for pollutants in the stormwater runoff from the site.

Mott MacDonald confirms that the site is suitable for the proposed residential zoning and anticipates that the existing infrastructure and services will be capable of accommodating the future development. Additionally the site is capable of accommodating stormwater runoff and minimising pollutants in the stormwater.

11. What are the views of State and Commonwealth public authorities consulted in accordance with the Gateway determination?

As this rezoning is of a minor nature it is not considered necessary for the proposal to be referred to State and Federal public authorities. Consultation with the relevant State and Commonwealth public authorities can be undertaken in conjunction with the exhibition of the Planning Proposal following the Gateway Determination. Any future DA will be referred to the relevant authorities as required.

Part 4 – Mapping

The Planning Proposal is accompanied by the following relevant maps:

- Location Plan of the Subject Site
- Existing Land Zoning Map
- Proposed Land Zoning Map
- Existing Height of Buildings Map
- Proposed Height of Buildings Map
- Existing Residential Density Map
- Proposed Residential Density Map

These maps are compiled as **Attachment 2** to this Planning Proposal.

Part 5 - Community Consultation

The Gateway Determination will stipulate the nature and extent of required community consultation in accordance with the document 'A guide to preparing local environmental plans'.

The usual exhibition of an LEP is 28 days which is considered to be reasonable in the circumstances.

Public consultation will take place in accordance with the Gateway Determination made by the Minister for Planning in accordance with Sections 56 & 57 of the *Environmental Planning & Assessment Act 1979*.

Part 6 – Project Timeline

The draft project timeline has been included with the intent to provide a mechanism to monitor the progress of this planning proposal. The anticipated timeframes and dates have been assigned to each milestone of the Gateway process.

Mile Stones	**Anticipated on the Week Commencing**
☐ Forward Planning Proposal to the Department	☐ 25 July 2016
☐ Date of LEP Review Panel Meeting	☐ 22 August 2016
☐ Date of Gateway Determination	☐ 19 September 2016
☐ Completion of required technical information & Government agency consultation (Pre-exhibition)	☐ 17 October 2016
☐ Commencement of public exhibition	☐ 14 November 2016
☐ Completion of public exhibition	☐ 12 December 2016
☐ Completion of consideration of submissions & Government agency consultation (Post-exhibition)	☐ 09 January 2017
☐ Report to Council (outcome of exhibition & recommendations)	☐ 23 January 2017
☐ Council's consideration & resolution on the report	☐ 20 February 2017
☐ Date of submission to the Department to finalise the LEP	☐ 06 March 2017
☐ Finalise the LEP by the Department and Parliamentary Council	☐ 27 March 2017
☐ Publish the LEP	☐ 10 April 2017

ATTACHMENT 1

CONSISTENCY WITH SEPPs

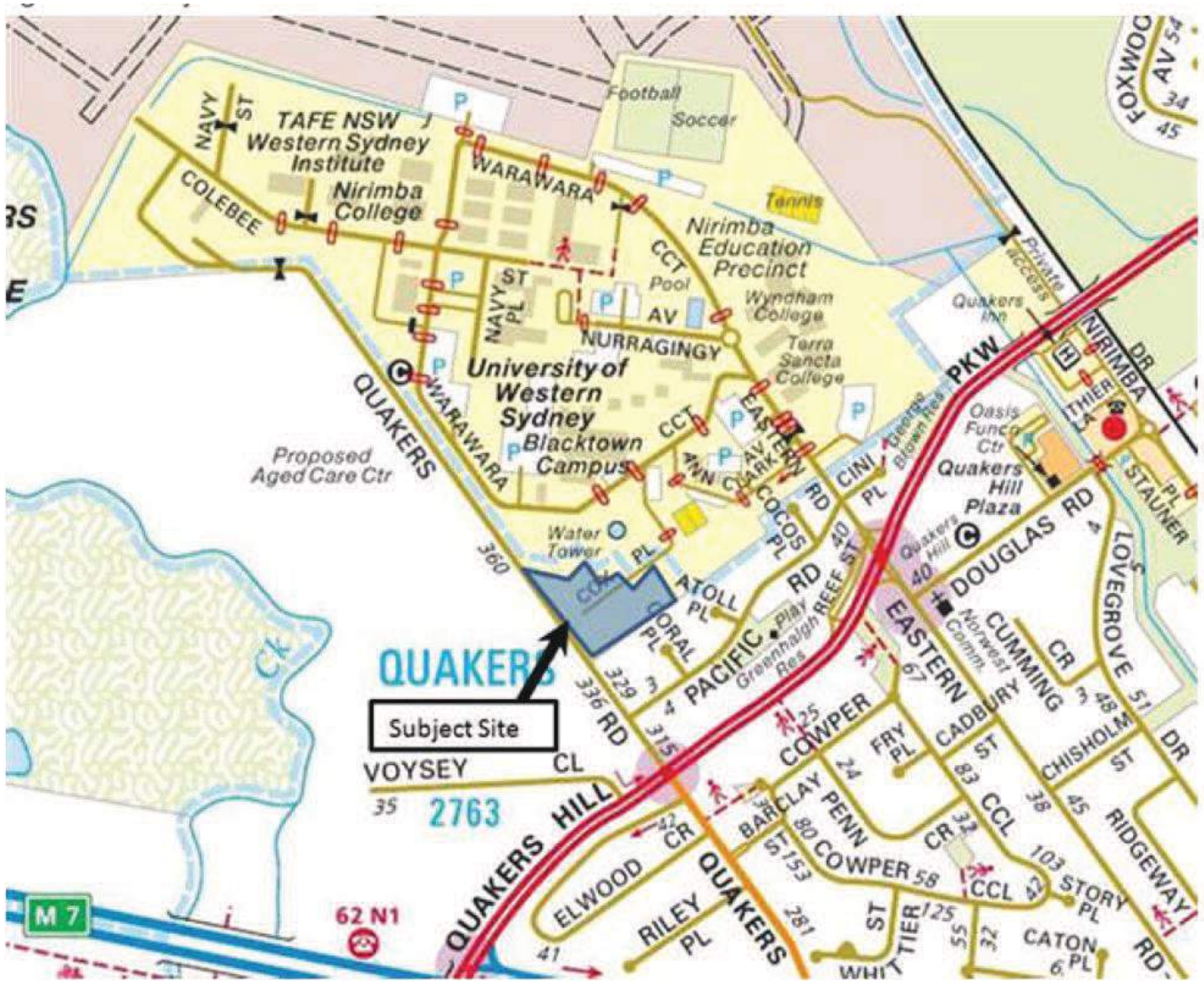
State Environmental Planning Policies (SEPPs)	Consistent		N/A	Comment
	YES	NO		
SEPP No 1 Development Standards			✓	The Provisions of SEPP 1 do not apply to the site pursuant to Clause 1.9(2) of Appendix 7 of the Growth Centres SEPP.
SEPP No 4 Development Without Consent and Miscellaneous Exempt and Complying Development			✓	SEPP (Exempt and Complying Development Codes) 2008 applies to the site however is not relevant to the Planning Proposal.
SEPP No 6 Number of Storeys			✓	The Standard instrument definition for the number of storeys applies.
SEPP No 32 Urban Consolidation (Redevelopment of Urban Land)	✓			The planning proposal is consistent with SEPP 32 in providing for the opportunity for the development of additional housing in an area where there is existing public infrastructure, transport, and community facilities, and is close to employment, leisure and other opportunities.
SEPP No 55 Remediation of Land			✓	The site has been occupied by the existing residential dwellings for a number of years. This type of use is not listed in Table 1 to the Contaminated Land Planning Guidelines. The site is unlikely to be contaminated. Notwithstanding this, contamination will be further addressed at the DA stage.
SEPP No 60 Exempt and Complying Development			✓	SEPP (Exempt and Complying Development Codes) 2008 applies to the site however is not relevant to the Planning Proposal.
SEPP No 64 Advertising and signage			✓	SEPP 64 is not relevant to the Planning Proposal. The SEPP may be relevant to future DAs.
SEPP No 65 Design Quality of Residential Flat Development	✓			Residential flat buildings are not permitted in the R2 zone under the Growth Centres SEPP and accordingly SEPP 65 will not apply to the future development of the site
SEPP No.70 Affordable Housing (Revised Schemes)			✓	SEPP 70 is not relevant to proposed amendment.
SEPP (Affordable Rental Housing) 2009			✓	SEPP (Affordable Rental Housing) is not relevant to proposed amendment.
SEPP (BASIX) 2004	✓			Detailed compliance with SEPP (BASIX) will be demonstrated in a future development application for the scheme facilitated under this Planning Proposal.
SEPP (Exempt and Complying Development Codes) 2008	✓			SEPP (Exempt and Complying Development Codes) may apply to the future development of the site.

State Environmental Planning Policies (SEPPs)	Consistent		N/A	Comment
	YES	NO		
SEPP (Infrastructure) 2007	✓			SEPP (infrastructure) may apply to the future development of the site.
SEPP (State and Regional Development) 2011	✓			The future development of the site is not likely to be deemed as 'regional development' and Council will likely act as the determining authority.
Sydney Regional Environmental Plan No 18– Public Transport Corridors			✓	This SREP does not apply to the Blacktown LGA.
Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005	✓			The proposed development is not located within the foreshores and waterways area boundary. Any potential impacts as a result of development on the site, such as stormwater runoff, will be considered and addressed appropriately at DA stage.

ATTACHMENT 2

MAPS

- Location Plan of the Subject Site
- Existing Land Zoning Map
- Proposed Land Zoning Map
- Existing Height of Buildings Map
- Proposed Height of Buildings Map
- Existing Residential Density Map
- Proposed Residential Density Map

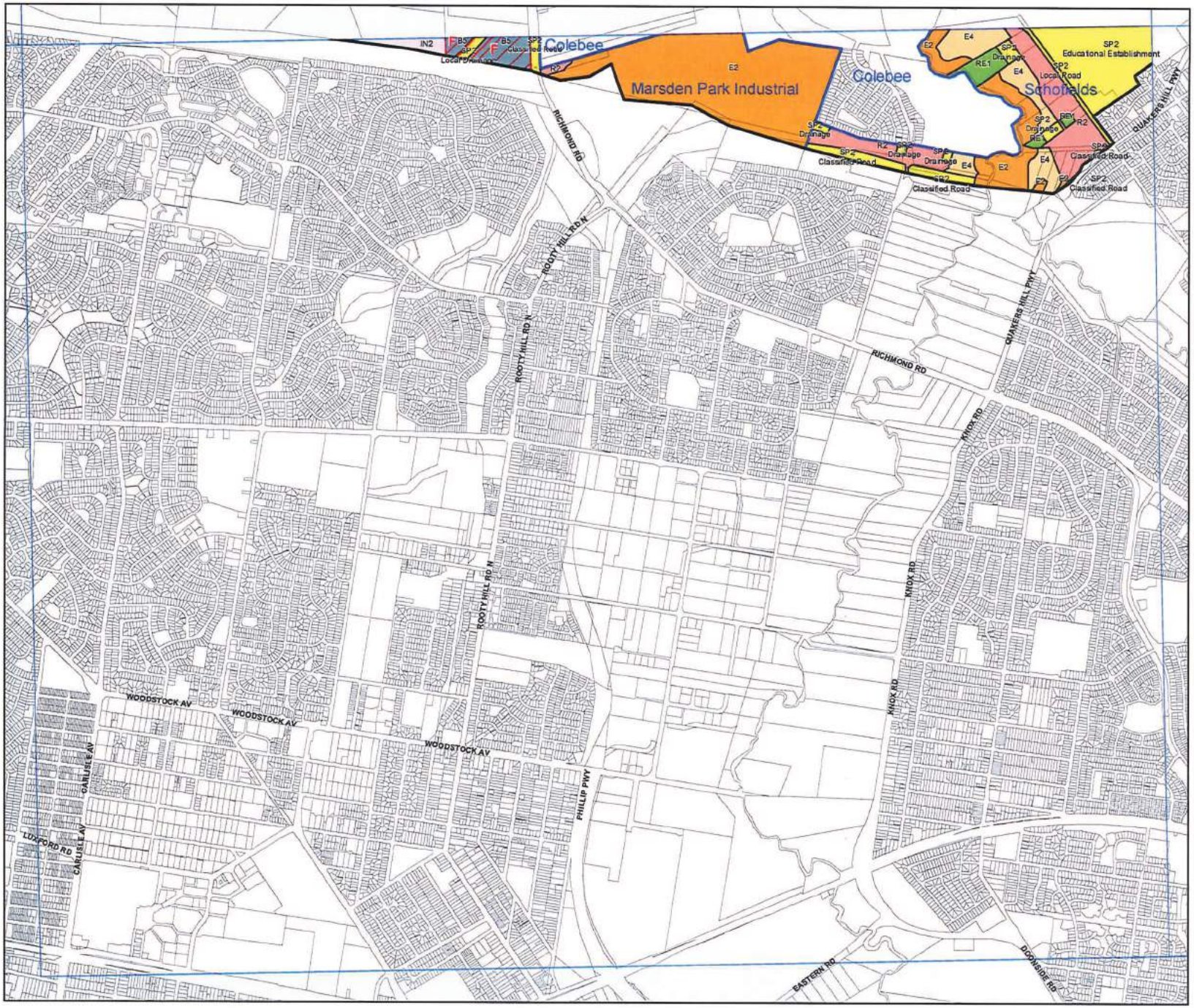


Location Map

NSW GOVERNMENT Planning & Infrastructure

State Environmental Planning Policy (Sydney Region Growth Centres) 2006

North West Growth Centre Land Zoning Map - sheet LZN_006



LEGEND

Zone

B1	Neighbourhood Centre	IN1	General Industrial
B2	Local Centre	IN2	Light Industrial
B4	Mixed Use	R1	General Residential
B5	Business Development	R2	Low Density Residential
B7	Business Park	R3	Medium Density Residential
E2	Environmental Conservation	RE1	Public Recreation
E3	Environmental Management	RE2	Private Recreation
E4	Environmental Living	SP2	Infrastructure

Special Provisions

- A — Low Density Residential (multi-dwelling housing) - Appendix 4, clause 2.5
- B — Riverstone Scheduled Lands - Appendix 4, clause 6.8
- C — Green & Golden Bell Frog Habitat - Appendix 4, clause 6.9
- D — Additional Uses - Appendix 3, Clause 6.5
- E — Additional permitted uses. (Clause 13)
- F — Take Away Food and Drink Premises permitted with consent Appendix 5, (Schedule 1, Clause 1)
- G — Low Density Residential (multi-dwelling housing) - Appendix 7, clause 2.5
- H — Transport Corridor Investigation Area - Appendix 7, Clause 6.9

Original SEPP Zones

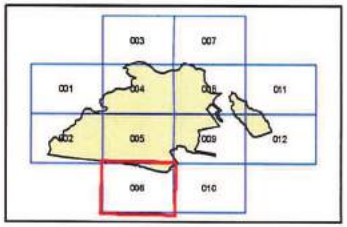
- Environmental Conservation
- Public Recreation - Regional

Growth Centres Boundaries

- North West Growth Centre Boundary
- North West Growth Centre Precinct Boundary

Cadastre

- Cadastre 01/03/12 © Land and Property Information (LPI)



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Projection: GDA 1994 Zone 56

Map Identification Number
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NSW GOVERNMENT Planning & Infrastructure

State Environmental Planning Policy (Sydney Region Growth Centres) 2006

North West Growth Centre Land Zoning Map - sheet LZN_006

LEGEND

Zone

B1	Neighbourhood Centre	IN1	General Industrial
B2	Local Centre	IN2	Light Industrial
B4	Mixed Use	R1	General Residential
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- Public Recreation - Regional

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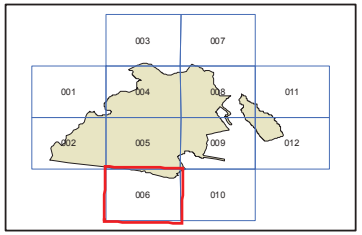
- North West Growth Centre Precinct Boundary

Cadastre

- Cadastre 01/03/12 © Land and Property Information (LPI)



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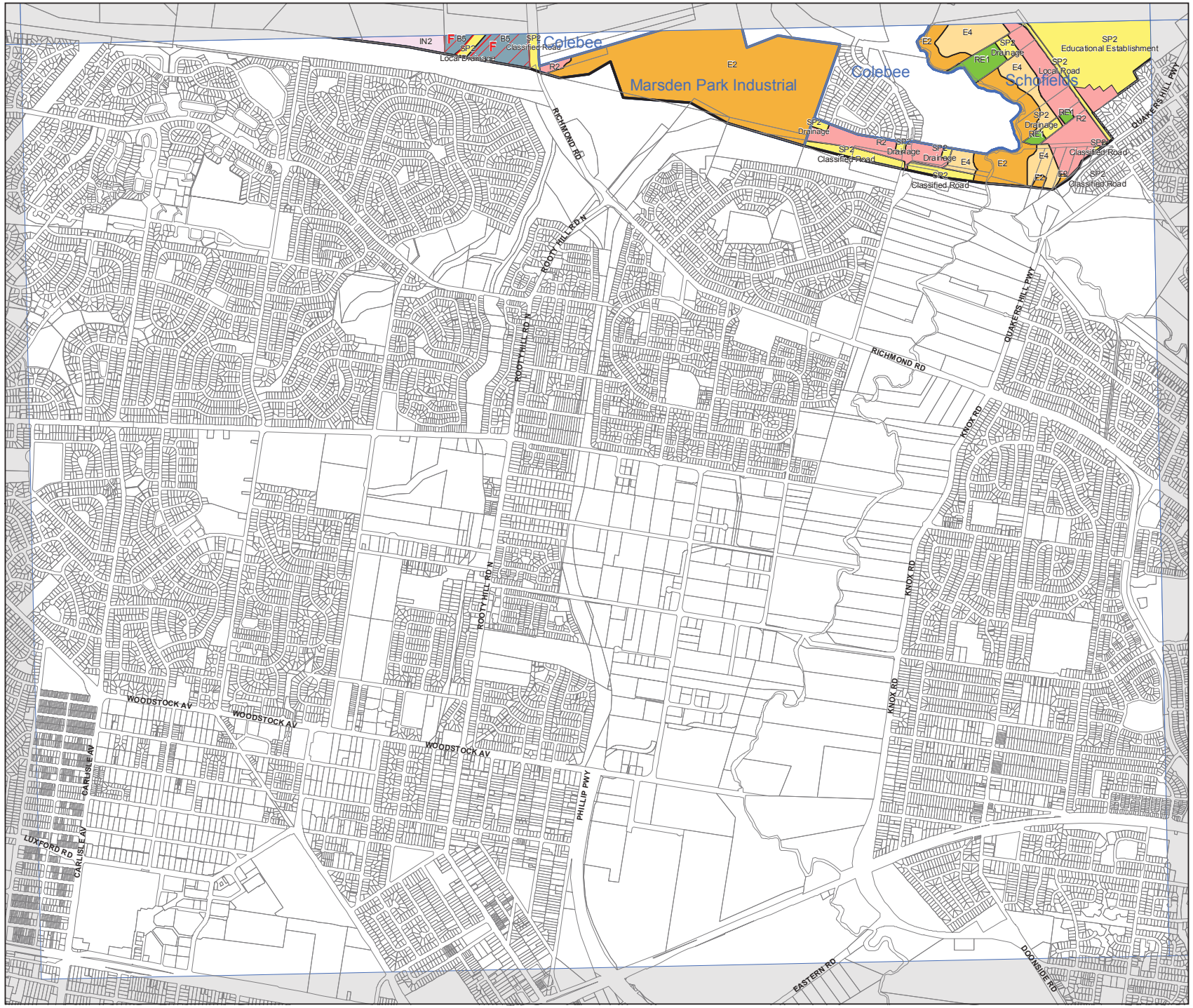


NSW GOVERNMENT | Planning & Infrastructure

State Environmental Planning Policy (Sydney Region Growth Centres) 2006

North West Growth Centre Height of Buildings Map - sheet HOB_006

LEGEND

Maximum Building Height (m)

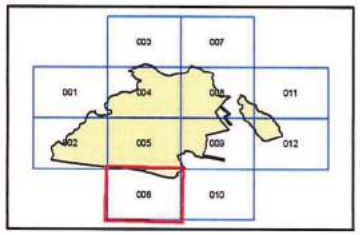
I	8.5
J	9.0
M	12
N	14
O	16
P	18
P1	17
P2	17.5
P3	18.5
R	21
S	24
T	26

Growth Centres Boundaries

- North West Growth Centre Boundary
- North West Growth Centre Precinct Boundary

Cadastre

- Cadastre 06/03/12 © Land and Property Information (LPI)



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Scale: 1:20,000 @ A3

Projection: GDA 1994
Zone 56

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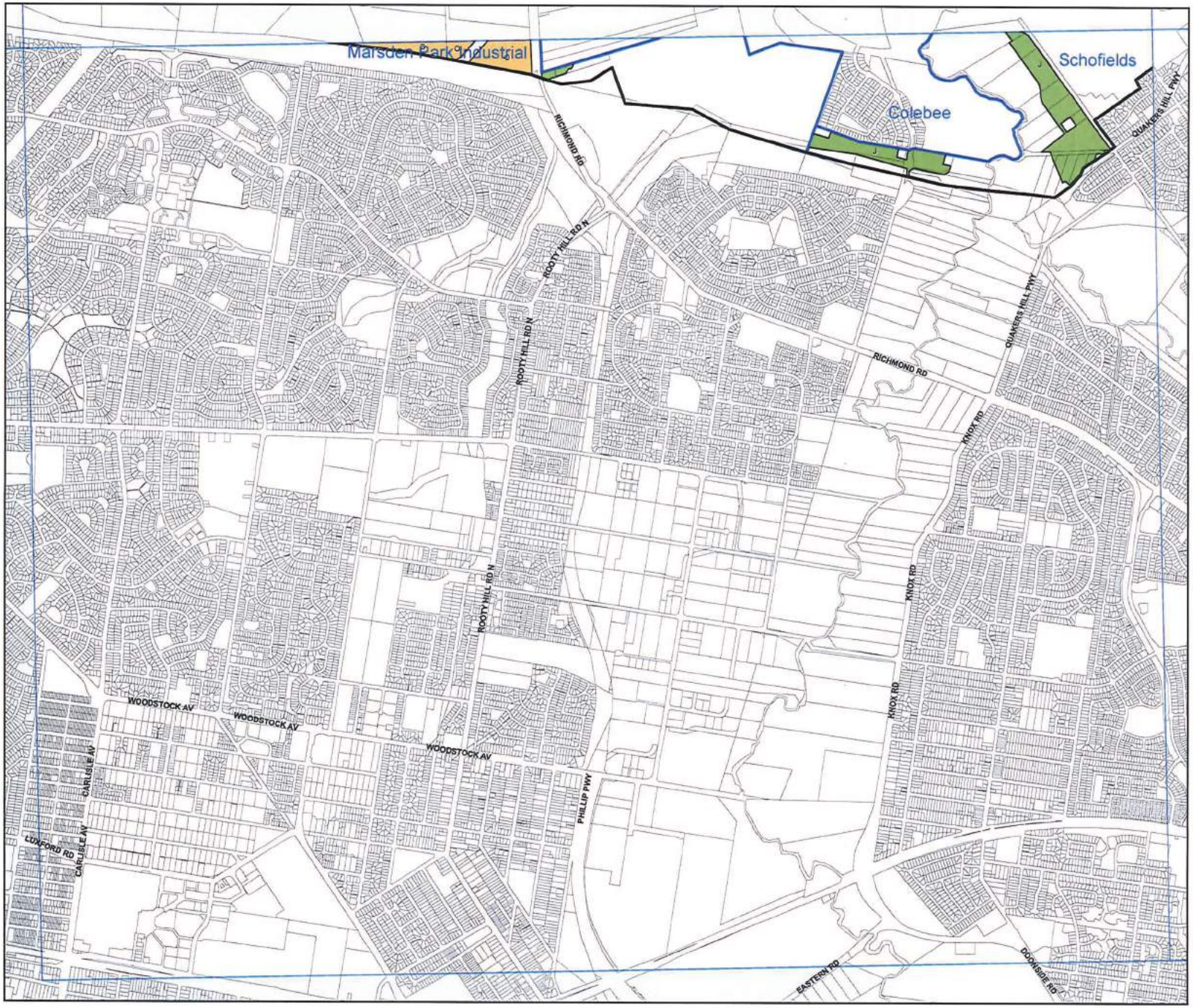

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State Environmental Planning Policy (Sydney Region Growth Centres) 2006

North West Growth Centre Height of Buildings Map - sheet HOB_006

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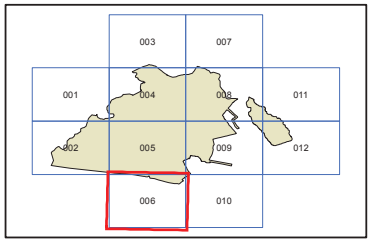
North West Growth Centre Boundary

North West Growth Centre Precinct Boundary

Cadastre

Cadastre 06/03/12 © Land and Property Information (LPI)



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Zone 56

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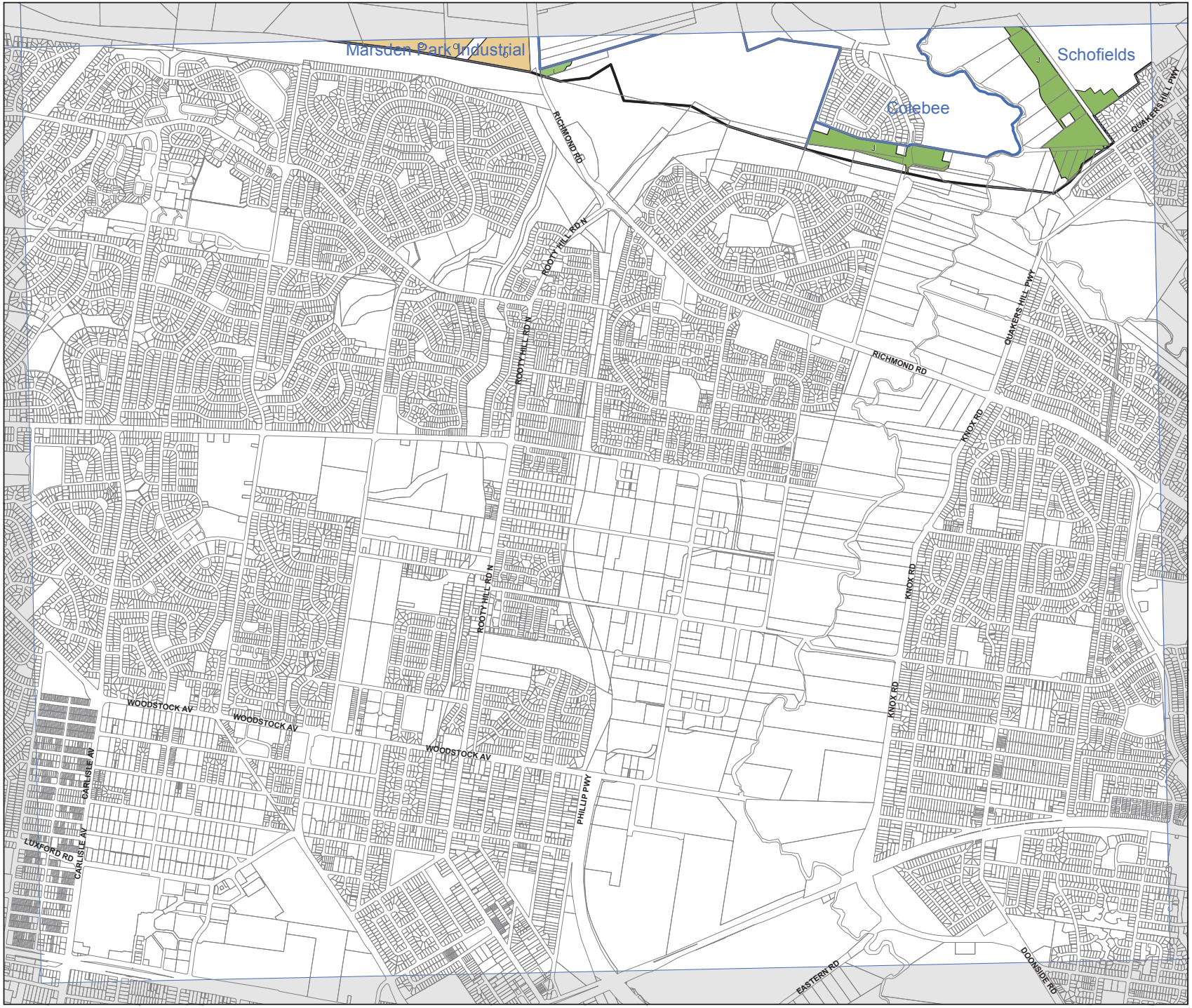


NSW GOVERNMENT Planning & Infrastructure

State Environmental Planning Policy (Sydney Region Growth Centres) 2006

North West Growth Centre Residential Density Map - Sheet RDN_006

LEGEND

Dwelling Density (per hectare)

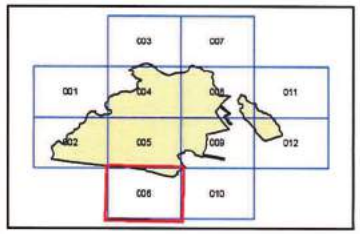
M	12.5
O	15
Q	20
T	25
U	30
W	40
X	45

Growth Centres Boundaries

- North West Growth Centre Boundary
- North West Growth Centre Precinct Boundary

Cadastre

- Cadastre 01/03/12 © Land and Property Information (LPI)



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NSW GOVERNMENT Planning & Infrastructure

State Environmental Planning Policy (Sydney Region Growth Centres) 2006

North West Growth Centre Residential Density Map - Sheet RDN_006

LEGEND

Dwelling Density (per hectare)

M	12.5
O	15
Q	20
T	25
U	30
W	40
X	45

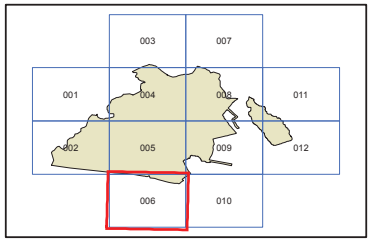
Growth Centres Boundaries

North West Growth Centre Boundary

North West Growth Centre Precinct Boundary

Cadastre

Cadastre 01/03/12 © Land and Property Information (LPI)



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Projection: GDA 1994 Zone 56

Map Identification Number: SEPP_SRGC_NW_RDN_006_020_20120316

ATTACHMENT 3

Traffic Impact Assessment

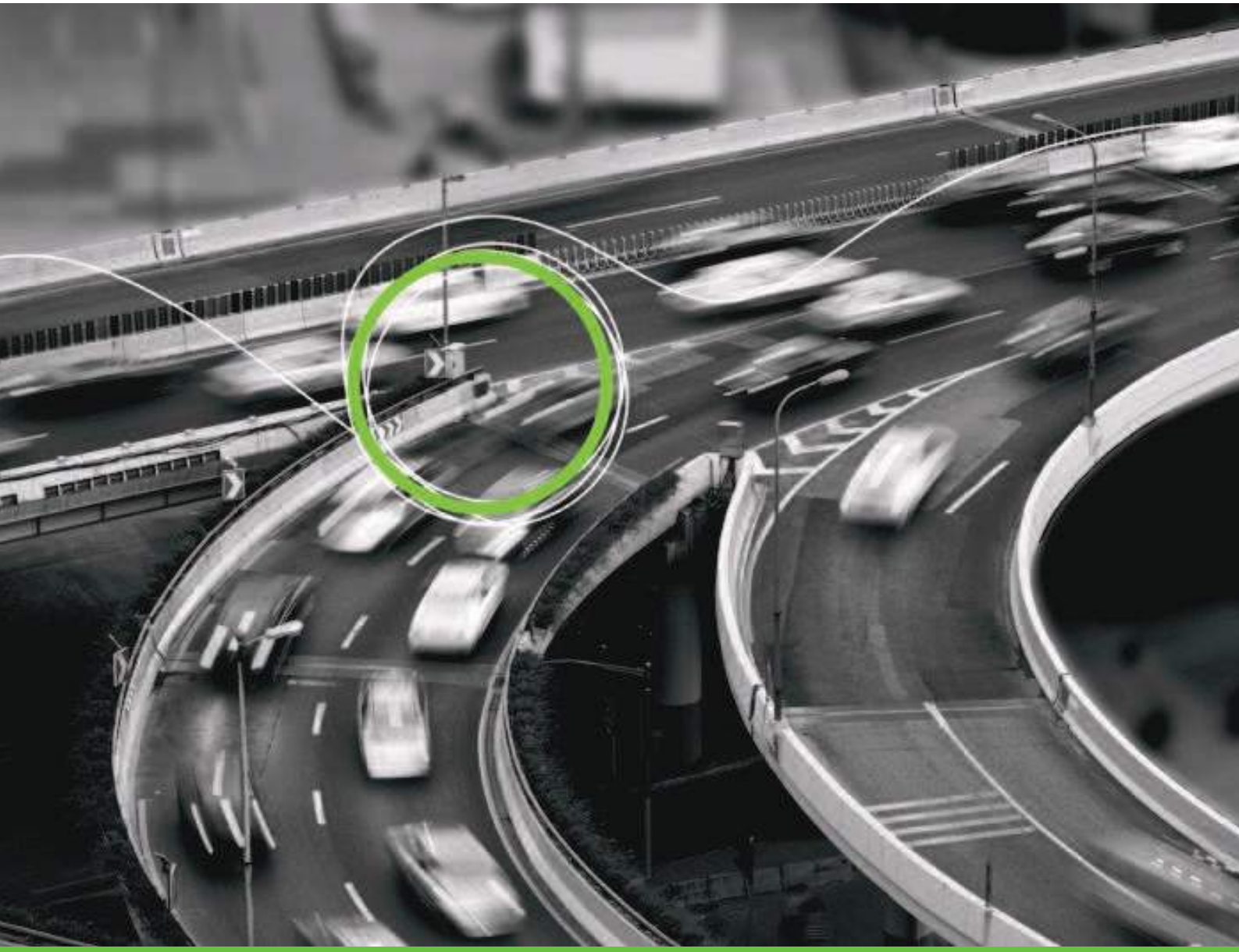
&

Addendum

By

GTA Planning

GTAconsultants



Nirimba Education Precinct, Quakers Hill, Western Sydney University

Planning Proposal

Transport Impact Assessment

Client // JBA Urban Planning Consultants Pty Ltd
Office // NSW
Reference / 16S1275000
Date // 16/12/15

Nirimba Education Precinct, Quakers Hill, Western Sydney University

Planning Proposal

Transport Impact Assessment

Issue: A 16/12/15

Client: JBA Urban Planning Consultants Pty Ltd
Reference: 16S1275000
GTA Consultants Office: NSW

Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A	16/12/15	Final	Ayushi Sahay	Wayne Johnson	Ken Hollyoak	

GTAconsultants
Melbourne | Sydney | Brisbane
Canberra | Adelaide | Perth
Gold Coast | Townsville

Table of Contents

Appendices

Figures

Tables

1. Introduction

1.1 Background

It is understood that a Planning Proposal is to be lodged with Blacktown City Council to facilitate the rezoning of land located within the southern portion of Nirimba Education Precinct (NEP). This land has become surplus to Western Sydney University (WSU) needs. The subject site is separately titled and held in freehold ownership by the WSU. The site is currently accessed through the NEP campus.

WSU's long term plans are to develop the land for an increased density residential land use.

JBA Urban Planning Consultants commissioned GTA Consultants on behalf of Western Sydney University (WSU) to undertake a transport impact assessment for the proposed development to accompany the rezoning application.

1.2 Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed development, including consideration of the following:

i existing traffic and parking conditions surrounding the site
ii suitability of the proposed access arrangements for the site
iii the traffic generating characteristics of the proposed development
iv the transport impact of the development proposal on the surrounding road network.

It is emphasised that this report does not assess the internal layout of the proposed subdivision in detail. It is expected and understood that such detail will be examined in subsequent applications for the development.

1.3 References

In preparing this report, reference has been made to the following:

- Blacktown City Council Development Control Plan (DCP) 2015
- Blacktown City Council Growth Centre Precincts Development Control Plan (DCP) 2010
- Blacktown City Council Growth Centre Precincts Development Control Plan (DCP) 2010 /February 2013 – Schedule 5 (Schofields)
- Schofields Precinct Indicative Layout Plan, Department of Planning and Infrastructure, April 2012
- Schofields Precinct Transport Access Strategy, AECOM, 2011
- traffic survey undertaken by Tracsis as referenced in the context of this report
- other documents and data as referenced in this report.

2. Existing Conditions

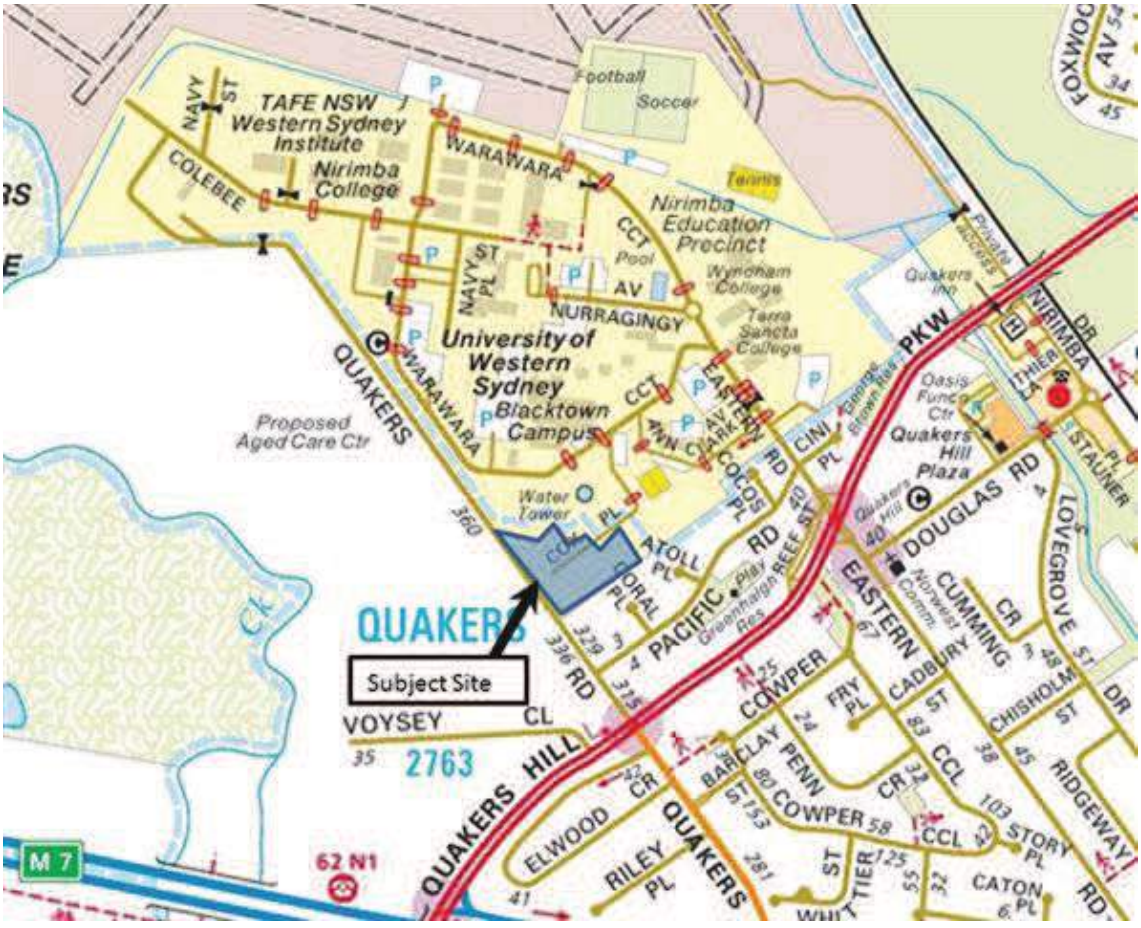
The subject site is located on Quakers Road, Quakers Hill. The site has an area of 1.73 hectare and a frontage of approximately 150m to Quakers Road.

The subject site's land zoning is currently SP2 Infrastructure (Educational Establishment) and comprises 12 existing dwellings currently leased by WSU to the private rental market.

Vehicle and pedestrian access to the NEP campus is currently via a single entry point on Eastern Road that links to Quakers Hill Parkway.

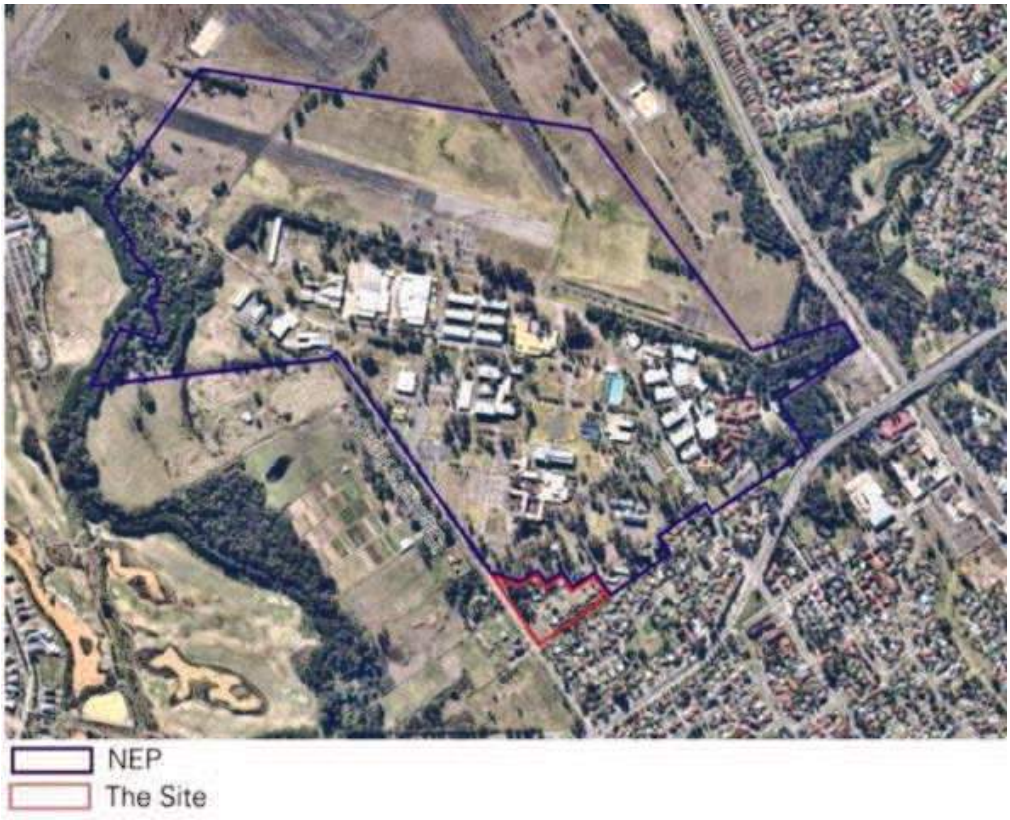
The location of the subject site and its surrounding environs is shown in Figure 2.1 and Figure 2.2.

Figure 2.1: Subject Site and Its Environs



Source: Sydway Publishing Pty Ltd

Figure 2.2: Subject Site in relation to the WSU Campus



Source: JBA Urban Planning Consultants Pty Ltd

The surrounding properties predominantly include R2 Low Density Residential, SP2 Infrastructure (Educational Establishment) and RE1 Public Recreational uses. The location of the subject site and its surrounding land use zoning is shown in Figure 2.3.

Figure 2.3: Subject Site and Its Surrounding Land Zoning

Source: https://maps.planningportal.nsw.gov.au/Map accessed November 2015

2.1 Road Network

Quakers Hill Parkway

Quakers Hill Parkway is classified as an Arterial Road south of the site and is aligned in an east-west direction. It provides a divided carriageway with two lanes in each direction with additional turn bays at major intersections. Quakers Hill Parkway connects with Quakers Road south of the site and the M7 Motorway and Richmond Road to the south and west respectively. Quakers Hill Parkway is shown in Figure 2.4 to Figure 2.5.

Figure 2.4: Quakers Hill Parkway (looking west)

Figure 2.5: Quakers Hill Parkway/ Quakers Road Intersection (looking east)

Quakers Road

Quakers Road is classified as a Local Road and in the vicinity of the site is aligned in a north-south direction. Within the vicinity of the subject site, Quakers Road is a two-way road configured with a single-lane in each direction, 6.25 metre wide carriageway and set within an approximately 20 metre wide road reserve.

South of Quakers Hill Parkway, Quakers Road is configured with 2 lanes in each direction, 12 metre wide carriageway and set within an approximately 20 metre wide road reserve.

The speed limit along Quakers Road is 60km/h.

Quakers Road as it currently exists is shown in Figure 2.6 and Figure 2.7.

Figure 2.6: Quakers Road (looking North)

Figure 2.7: Quakers Road (looking North)

The relevant planning instrument is the State Environmental Planning Policy (Sydney Region Growth Centres) 2006, the adopted Schofields Precinct Plan and the Blacktown Growth Centres Development Control Plan (DCP) 2010. The Schofields Precinct Plan shows that Quakers Road is proposed to be upgraded to a Sub-arterial Road. Quakers Road is planned to be configured with a road reserve of 22.5 metres, a 6 metre wide carriageway and a landscaped median. The upgrade of Quakers Road is discussed further within Section 5.3.

Cox Place

Cox Place is classified as a Local Road and in the vicinity of the site is aligned in an east-west direction. It is a two-way road configured with two-lanes and an approximately 7 metre wide carriageway.

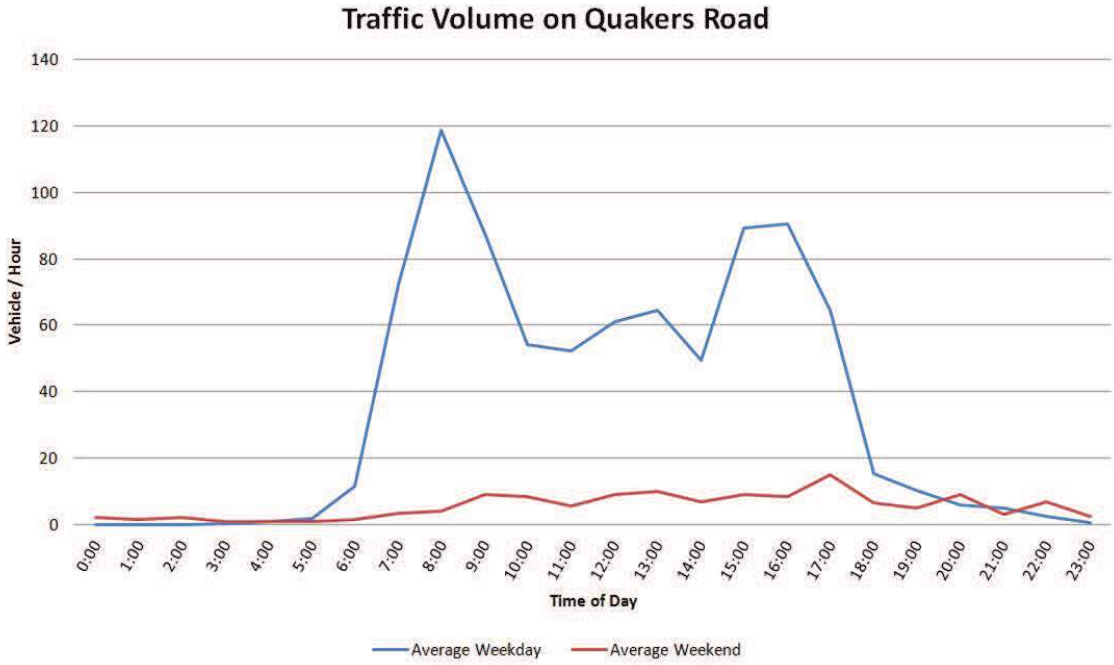
Kerbside parking is not permitted along both sides of Cox Place, with indented parking bays located along the road for car parking (90 degree). The speed limit along Cox Place is 40km/hr.

2.2 Traffic Volumes

GTA Consultants commissioned a 7-day tube count along Quakers Road (approximately 150m north of Quakers Hill Parkway) to provide baseline traffic volume data along Quakers Road. Data was collected between Thursday 3rd December and Wednesday 9th December 2015.

The traffic volume profiles for the average weekday and weekend are presented in Figure 2.8, with full results contained in Appendix A. It represents combined two-way (southbound and northbound) vehicle movements on this section of Quakers Road.

Figure 2.8: Existing Average Weekday & Weekend Traffic Volumes on Quakers Road



The survey shows that traffic volumes are currently low with an average weekday flow of 119 vehicles per hour and an average weekend flow of 15 vehicles per hour.

2.3 Public Transport

The site is located approximately a 15-20 minute (1.5km) walking distance from Quakers Hill Railway Station, which is serviced by the T1 Western Line & T5 Cumberland Lines to Sydney CBD. Services depart every 20 minutes during peak times.

A number of bus services are available within a 15-20 minute walk of the site. The closest stop is located within the NEP campus and is a 5 minute walk from the site.

A review of the public transport available in the vicinity of the site is summarised in Table 2.1.

Table 2.1: Public Transport Provision

Service	Route #	Route Description	Location of Stop	Distance (m)	Frequency On/Off Peak
Bus	740	Plumpton/Stanhope Gardens to Macquarie Park via M2	Nirimba Education Precinct	350m	25-30 minutes morning peak / only two services in the afternoon
Bus	T72	Blacktown to Quakers Hill via Pye Road	Quakers Hill Station, Pearce Road	1.2km	15-30 minutes peak / 30 minutes off peak
Bus	752	Blacktown to Rouse Hill via Quakers Hill	Quakers Road near Elwood Crescent	1.2km	15 minutes peak
Train	T1 Western Line & T5 Cumberland Line	Emu Plains to City/ Richmond to City, Campbelltown to Schofields	Quakers Hill Railway Station	1.5km	15-25 minutes peak / 20 minutes off peak

2.4 Pedestrian and Cycle Infrastructure

There are currently no existing pedestrian paths located within the vicinity of the site.

A shared path is provided along Quakers Hill Parkway and Warawara Circuit (within NEP campus) is mixed-traffic. The cycling infrastructure in the vicinity of the site is shown in Figure 2.9.

Figure 2.9: Cycle Routes

Source: http://www.sydneycycleways.net/map/ accessed November 2015

3. Proposal

A Planning Proposal is to be lodged with Blacktown City Council to facilitate the rezoning of land located within the southern portion of the Nirimba Education Precinct (NEP) from SP2 Infrastructure (Educational) to R2 Low Density Residential.

The University's future intent is to develop this separately titled parcel for the purpose of low density detached residential dwellings albeit at an increased density to the existing dwelling configuration (approximately 25 detached residential dwellings).

Vehicle access to the site is proposed via reinstating Cox Place as a public road with access provided from Quakers Road. A cul-de-sac is proposed at the eastern end of Cox Place to disconnect it from the internal NEP campus road network. This will restrict all vehicle access to the site via Quakers Road. Access to all lots will be provided via Cox Place (i.e individual lots will not directly access Quakers Road.)

4. Car Parking

The required number of on-site car parking spaces for a detached residential dwelling is set out in the Blacktown City Council Development Control Plan (DCP) 2015.

The DCP requires a minimum of 2 car parking spaces per detached residential dwelling to be provided behind the building line on each residential allotment.

The development proposal ensures that the DCP requirements can be met.

5. Traffic Impact Assessment

5.1 Traffic Generation

Traffic generation estimates for the proposed development have been sourced from the Roads and Maritime Services (RMS) *Guide to Traffic Generating Developments*, updated traffic survey (2013).

The RMS Guide provides the following trip generation rates for low density residential dwellings:

- Daily vehicle trips – 10.7 trips per dwelling
- Weekday average evening peak hour vehicle trips – 0.99 trips per dwelling
- Weekday average morning peak hour vehicle trips – 0.95 trips per dwelling.

The proposed development is for the subdivision of land into approximately 25 residential lots, with access via Cox Place, Quakers Hill.

Estimates of peak hour and daily traffic volumes resulting from the proposal are set out in Table 5.1.

Table 5.1: Traffic Generation Estimates

Access	No. of Dwellings	Design Generation Rates			Traffic Generation Estimates		
		Peak Hour AM	Peak Hour PM	Daily	Peak Hour AM	Peak Hour PM	Daily
Cox Place	25	0.95 vehicle movements / dwelling	0.99 vehicle movements / dwelling	10.7 vehicle movements / dwelling	24 vehicle movements / hour	25 vehicle movements / hour	268 vehicle movements / day

Table 5.1 indicates the proposed development could be expected to generate approximately 268 vehicle movements per day and 24 and 25 vehicle movements during the AM and PM peak hour respectively on a typical weekday.

By way of comparison, the existing development in theory generates in the order of 11-12 vehicles during the morning and afternoon peak hour and 128 vehicles per day. As a result, the proposal will generate an additional 13-14 vehicles during the morning and afternoon peak hour and 140 vehicles per day.

5.2 Traffic Impact

Quakers Road currently carries a maximum of 150 and 111 vehicles during the AM and PM peak hour respectively and 1,018 vehicles per day. The RMS Guide states that the environmental capacity for a Local Road is 200 vehicles per hour during the peak period, or approximately 2,000 vehicles per day. Therefore, against the existing traffic volumes along Quakers Road, the additional traffic generated by the proposed development could not be expected to compromise the safety or function of the surrounding road network.

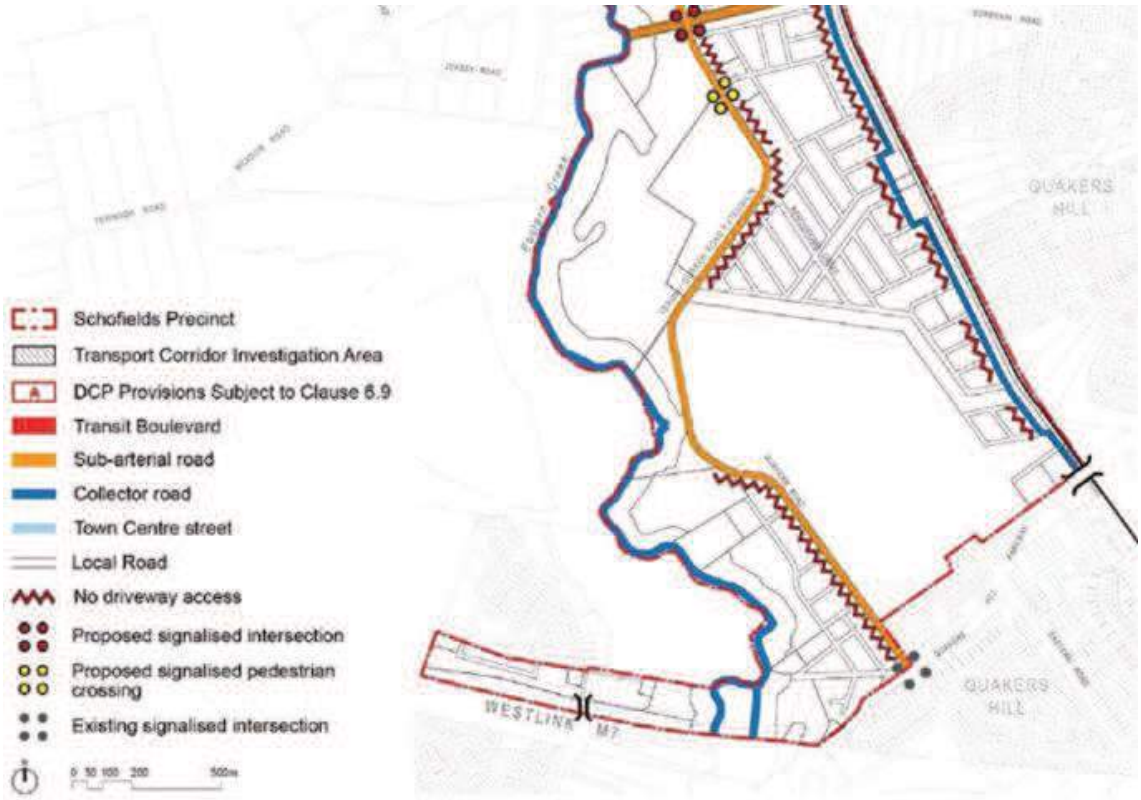
Notwithstanding the above, Quakers Road is proposed to be upgraded as part of the Schofields Precinct Indicative Layout Plan (ILP) that has been developed from the North West Growth Centres. The traffic volumes and implications after the upgrade are discussed further within Section 5.3.

5.3 Quakers Road Upgrade

The subject site is located within the Schofields Precinct, one of 16 precincts within the North-West Growth Centre. The Schofields Precinct was released as part of the North West Growth Centre. At the time, the Department of Planning and Environmental (DoPE) released the Schofields Indicative Layout Plan 2012 (ILP) which highlighted the Schofields Precinct boundary, location of private and public lots, key access points and the internal road network. The ILP was supported with a Transport Access Strategy (AECOM, 2011) which made recommendations and highlighted key transport infrastructure requirements of the ILP.

Quakers Road is currently classified as a local road. Quakers Road is to be upgraded to a Sub-arterial Road past the subject site, as shown in Figure 5.1.

Figure 5.1: Schofields Precinct Road Network and Hierarchy



Source: Blacktown City Council Growth Centre Precincts Development Control Plan (DCP) 2010/February 2013 – Schedule 5 (Schofields)

The RMS and DoPE have developed guidelines for classification of roads. Table 5.2 summarises the RMS classification system.

Table 5.2: Functional Classification of Roads (RMS)

Road Type	Traffic Volume (AADT)	Through Traffic	Inter-Connections	Speed Limit (km/h)
Sub-Arterial	<20,000	Some	Arterial/Collector	60-80
Local	<2,000	No	Collector	40

Source: AECOM Transport Access Strategy, 2011.

This shows that by upgrading Quakers Road to a Sub-arterial Road it will significantly increase its maximum traffic volume carrying capacity from 2,000 to 20,000.

The DoPE have also developed a "Growth Centre Development Code Classifications" that is more suited for road types within growth centres and is consistent with RMS classifications. Table 5.3 summarises the functional classifications.

Table 5.3: Functional Classification of Roads (DoPE)

Road Type	AADT	Functions and Connections	Speed Limit
Sub-Arterial	10,000-35,000	Arterial roads to town centres Carries major bus routes	Up to 70km/h
Local	1,000-3,000	Priority to pedestrians and cyclists Designed to slow residential traffic	Up to 50km/h

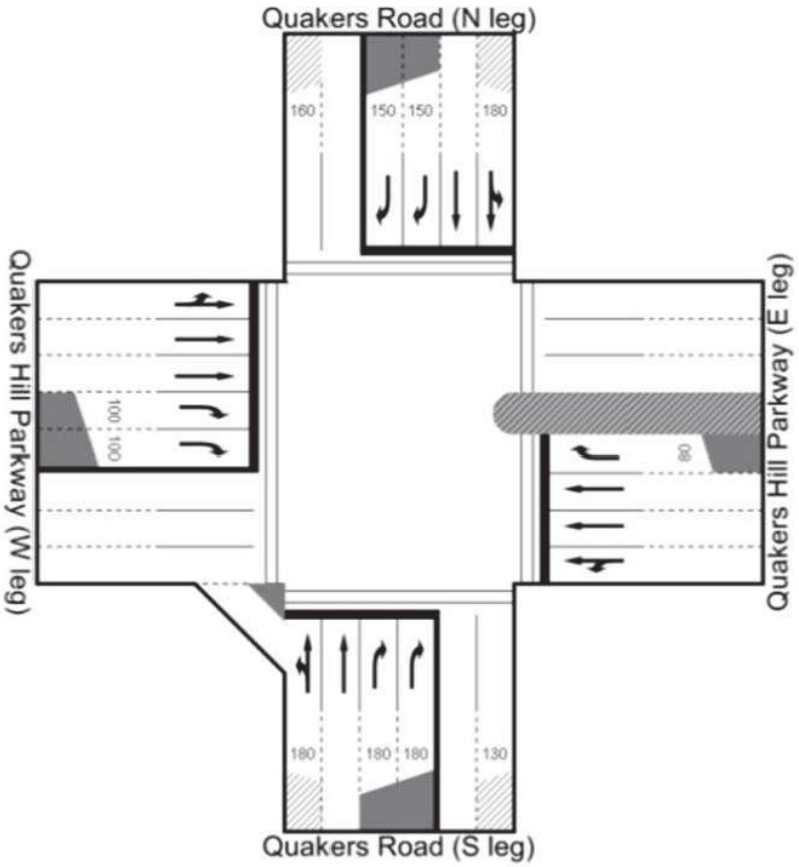
Source: AECOM Transport Access Strategy, 2011.

A significant increase in traffic volumes is anticipated within the '*Schofields Precinct Transport and Access Strategy*' (TAS) on Quakers Road near Quakers Hill Parkway in Year 2036.

This document indicated that the anticipated future two-way volumes on Quakers Road for Year 2036 are 1,439 (1,139 southbound, 300 northbound) vehicles per hour during the morning peak period and 1,285 (1,025 northbound, 260 southbound) vehicles per hour during the afternoon peak period. If the peak hour volumes are multiplied by a factor of 10 to forecast the AADT volumes, the forecasted AADT volumes would be well within the AADT volume range for a sub-arterial road, as shown in Figure 5.4.

The future layout of the Quakers Road and Quakers Hill Parkway intersection includes a 180m long left turning bay along Quakers Road (N Leg) and two 150m long right turn bays as shown in Figure 5.2.

Figure 5.2: Proposed Intersection Layouts



TAS indicated that the intersection of Quakers Road and Quakers Hill Parkway intersection will operate at a level of service E (near capacity) during the morning and afternoon peak periods in Year 2036.

We note that Cox Place is positioned approximately 230m from Quakers Hill Parkway, as shown in Figure 5.3.

Figure 5.3: Cox Place Proximity to Quakers Hill Parkway

Background Source: Nearmap

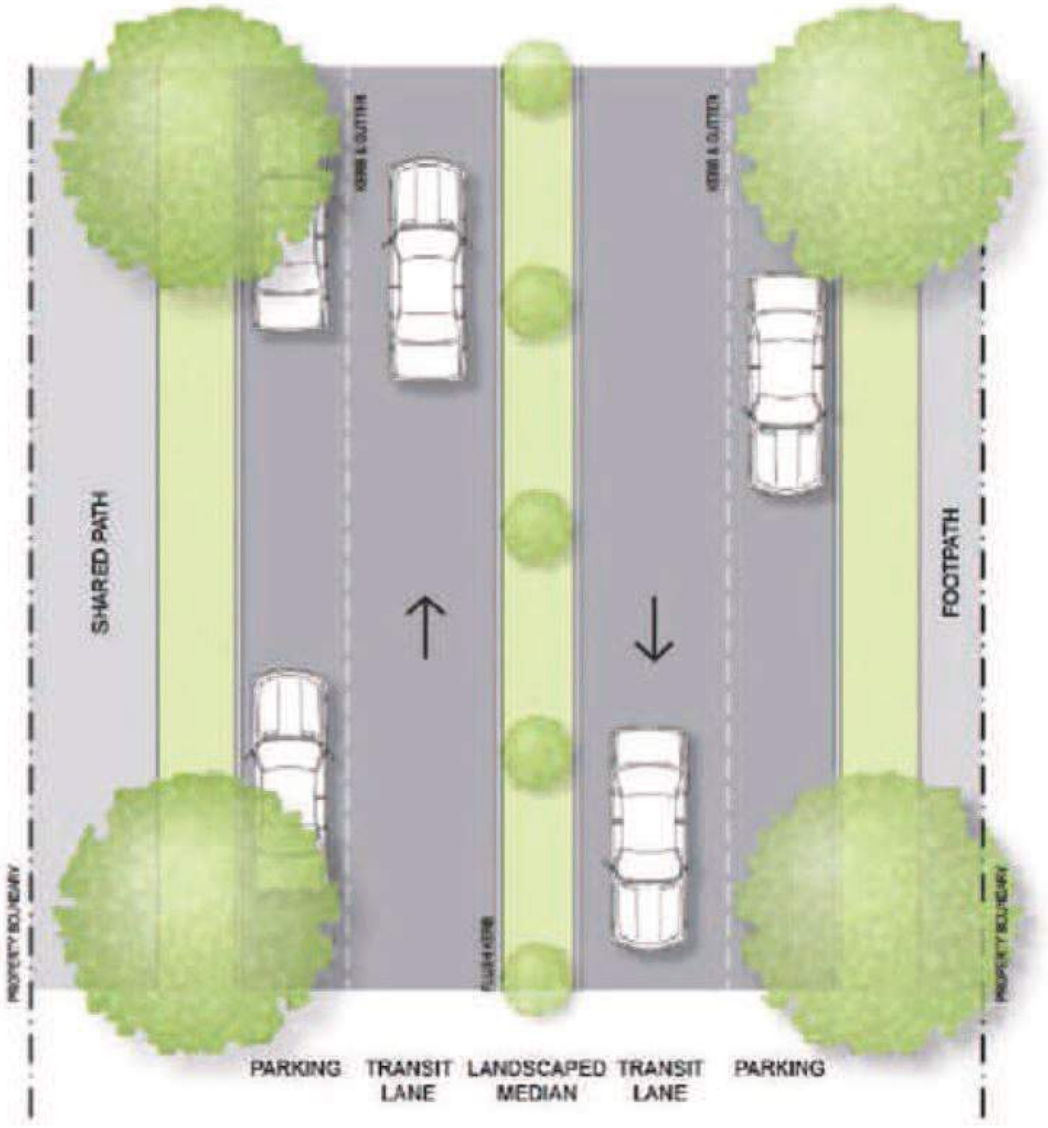
The Year 2036 Sidra model results show that the 95% queue length on the Quakers Road (N leg) during the morning and afternoon period are anticipated to be as follows:

- Morning peak period - approximately 210m
- Afternoon peak period – approximately 35m

Given Cox Place is located 230m from Quakers Hill Parkway, the Quakers Road southbound queue on approach to Quakers Hill Parkway is unlikely to extend past Cox Place. As such, vehicles entering and exiting Cox Place would be able to do so relatively freely.

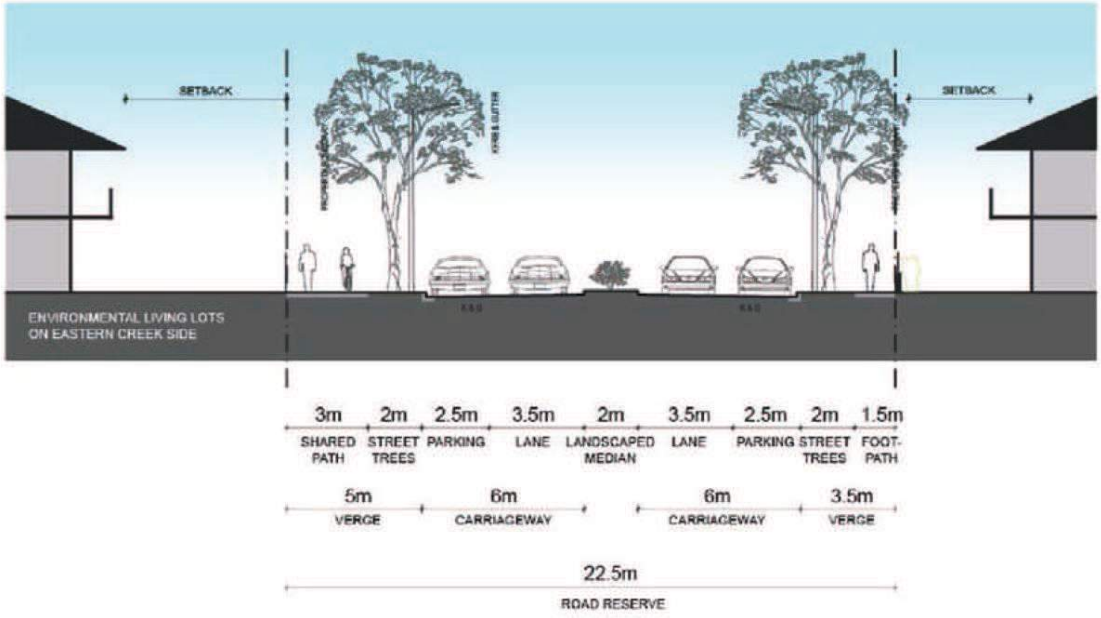
The Council's Growth Centre Precincts DCP 2010 for Schofields Precinct indicates that for a Sub-arterial Road (main north-south road), a 2m wide medium strip and a 3m wide shared path on western side of Quakers Road would be provided, as shown below in Figure 5.4 and Figure 5.5.

Figure 5.4: Sub-Arterial Road Cross Section (Plan)



Source: Blacktown City Council Growth Centre Precincts Development Control Plan (DCP) 2010/February 2013 – Schedule 5 (Schofields)

Figure 5.5: Sub-Arterial Road Cross Section



Source: Blacktown City Council Growth Centre Precincts Development Control Plan (DCP) 2010/February 2013 – Schedule 5 (Schofields)

The proponent proposes to provide an all turning movement at the intersection of Quakers Road and Cox Place. In light of this, a short right turn bay would be provided to accommodate right turn movements from Quakers Road to Cox Place and from Cox Place to Quakers Road.

Given the proposed median island on Quakers Road is to be 2m wide some localised road widening would be required at the intersection to accommodate a short right turn bay. A concept design layout of the intersection, including the right turn bay would be prepared as part of the development application.

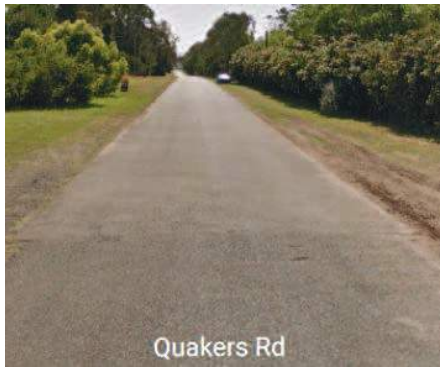
5.4 Sight Distance

The observed sight distance from Cox Place along Quakers Road in both directions is in excess of 200m.

Following the upgrade of Quakers Road to a Sub-arterial Road the posted speed limit is likely to increase to 80km/hr (or 70km/hr). The '*RMS Road Design Guide – Part 3 Geometric Design*' indicates that on a road with a posted speed limit of 80km/hr a Safe Intersection Sight Distance (SISD) of181m is required. As such, both the absolute and desirable SISD's are satisfied.

Figure 5.6: Quakers Road – View South

Figure 5.7: Quakers Road – View North



5.5 Service Vehicles

All waste will be collected on-street by a 10.5m Council garbage truck. The proposed cul-de-sac at the end of Cox's Place would be designed to accommodate a 10.5m Council garbage truck.

5.6 Suitability of Internal Road Network

The required road widths for residential developments are set out in Blacktown City Council's 'Development Control Plan' (2015).

The DCP requires provision of two travel lanes with parking permitted for a cul-de-sac that serves a maximum of 30 dwellings. The carriageway is required to be 7.5m wide with 3.5m wide footways, set within a 14.5m wide road reserve.

Reinstating Cox Place as a public access road for the proposed development as a cul-de-sac would be built so as to comply with Council's DCP requirement.

6. Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

i This traffic report supports a Planning Proposal to rezone land located within the southern portion of Nirimba Education Precinct (NEP) into approximately 25 residential lots.

ii The anticipated traffic generation of the development proposal on a typical weekday is approximately 268 vehicle movements per day or 24 and 25 vehicle movements during the AM and PM peak hours respectively.

iii The existing development in theory generates in the order of 11-12 vehicles during the morning and afternoon peak hour and 128 vehicles per day.

iv The proposal will generate an additional 13 vehicles during the morning and afternoon peak hour and 140 vehicles per day onto the local road network.

v There is adequate capacity in the surrounding road network to cater for the traffic generated by the proposed development.

vi Vehicle access to the residential development is proposed via reinstating Cox Place as a public road with access provided to Quakers Road.

vii A cul-de-sac is proposed at the eastern end of Cox Place to disconnect it from the internal NEP campus road network, thus restrict all vehicle access to the site via Quakers Road.

viii Quakers Road is proposed to be upgraded as part of the Schofields Precinct Indicative Layout Plan. The Schofields Precinct Transport Access Strategy recommended increased capacity at the intersection of Quakers Road and Quakers Hill Parkway intersection. The upgrade of Quakers Road would include a 2m wide median island which will require localised road widening at the Quakers Road and Cox Place intersection.

ix The '*RMS Road Design Guide – Part 3: Geometric Design'* provides guidance that 181m of safe intersection sight distance is required on a road with a posted speed limit of 80km/hr. In excess of 200m of sight distance is provided in both directions from Cox Place and therefore sufficient sight distance is available.

x The DCP requires provision of two car parking spaces for each detached residential dwelling. The development proposal ensures the Council's DCP requirement can be met.

In summary, the application is supportable on traffic planning grounds. The application will not result in any material change in the performance of the local road network.

Appendix A

Survey Results

Job No	N2111
Client	GTA
Road	Quakers Rd - north of Pacific Rd
Location	Quakers Hill
Site No.	1
Start Date	3-Dec-15
Description	Volume Summary
Direction	NB

Average Weekday	443
7 Day Average	334

Time	Day of Week							Ave W'day	7 Day Ave
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	7-Dec	8-Dec	9-Dec	3-Dec	4-Dec	5-Dec	6-Dec		
AM Peak	108	93	82	119	79	6	3		
PM Peak	24	37	26	40	33	7	7		
0:00	0	0	0	0	0	1	2	0	0
1:00	0	0	0	0	0	0	1	0	0
2:00	0	0	0	0	0	1	0	0	0
3:00	0	0	0	0	0	1	0	0	0
4:00	0	2	0	0	1	0	1	1	1
5:00	2	1	1	1	1	1	0	1	1
6:00	9	4	6	14	5	1	1	8	6
7:00	65	56	59	58	69	2	2	61	44
8:00	108	93	82	119	79	1	1	96	69
9:00	69	78	49	77	54	6	3	65	48
10:00	19	32	34	55	32	5	2	34	26
11:00	25	31	35	36	12	4	1	28	21
12:00	24	17	26	23	26	7	3	23	18
13:00	23	37	26	40	33	4	4	32	24
14:00	23	27	15	36	14	3	5	23	18
15:00	13	21	18	19	14	4	5	17	13
16:00	17	23	10	28	24	5	2	20	16
17:00	15	23	13	19	15	7	7	17	14
18:00	7	0	7	8	5	4	4	5	5
19:00	6	1	4	3	7	2	2	4	4
20:00	2	3	3	1	2	6	3	2	3
21:00	1	3	3	4	2	0	2	3	2
22:00	2	2	0	2	0	3	4	1	2
23:00	0	0	0	0	1	3	0	0	1
Total	430	454	391	543	396	71	55	443	334
7-19	408	438	374	518	377	52	39	423	315
6-22	426	449	390	540	393	61	47	440	329
6-24	428	451	390	542	394	67	51	441	332
0-24	430	454	391	543	396	71	55	443	334

Job No	N2111
Client	GTA
Road	Quakers Rd - north of Pacific Rd
Location	Quakers Hill
Site No.	1
Start Date	3-Dec-15
Description	Volume Summary
Direction	SB

Average Weekday	415
7 Day Average	316

Time	Day of Week							Ave W'day	7 Day Ave
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	7-Dec	8-Dec	9-Dec	3-Dec	4-Dec	5-Dec	6-Dec		
AM Peak	26	26	23	31	30	7	3		
PM Peak	73	88	78	83	81	9	7		
0:00	0	0	0	0	0	0	1	0	0
1:00	0	0	0	0	0	2	0	0	0
2:00	0	0	0	0	0	2	1	0	0
3:00	0	1	0	0	0	1	0	0	0
4:00	0	1	0	0	0	0	1	0	0
5:00	0	1	0	0	2	1	0	1	1
6:00	5	3	4	6	1	1	0	4	3
7:00	12	8	9	17	8	2	1	11	8
8:00	26	18	17	31	20	3	3	22	17
9:00	16	16	18	31	30	6	3	22	17
10:00	12	21	12	27	27	7	3	20	16
11:00	17	26	23	31	25	4	2	24	18
12:00	47	48	33	32	30	5	3	38	28
13:00	33	24	34	37	36	6	6	33	25
14:00	29	36	17	35	16	2	4	27	20
15:00	73	88	78	66	56	4	5	72	53
16:00	71	56	59	83	81	5	5	70	51
17:00	38	56	55	52	37	9	7	48	36
18:00	10	11	10	12	6	4	1	10	8
19:00	7	3	6	6	8	2	4	6	5
20:00	1	3	4	5	6	6	3	4	4
21:00	1	3	4	3	1	1	3	2	2
22:00	3	3	0	0	1	3	4	1	2
23:00	0	0	0	1	1	1	1	0	1
Total	401	426	383	475	392	77	61	415	316
7-19	384	408	365	454	372	57	43	397	298
6-22	398	420	383	474	388	67	53	413	312
6-24	401	423	383	475	390	71	58	414	314
0-24	401	426	383	475	392	77	61	415	316

Job No	N2111
Client	GTA
Road	Quakers Rd - north of Pacific Rd
Location	Quakers Hill
Site No.	1
Start Date	3-Dec-15
Description	Volume Summary
Direction	Combined

Average Weekday	858
7 Day Average	651

Time	Day of Week							Ave W'day	7 Day Ave
	Mon	Tue	Wed	Thu	Fri	Sat	Sun		
	7-Dec	8-Dec	9-Dec	3-Dec	4-Dec	5-Dec	6-Dec		
AM Peak	134	111	99	150	99	12	6		
PM Peak	88	109	96	111	105	16	14		
0:00	0	0	0	0	0	1	3	0	1
1:00	0	0	0	0	0	2	1	0	0
2:00	0	0	0	0	0	3	1	0	1
3:00	0	1	0	0	0	2	0	0	0
4:00	0	3	0	0	1	0	2	1	1
5:00	2	2	1	1	3	2	0	2	2
6:00	14	7	10	20	6	2	1	11	9
7:00	77	64	68	75	77	4	3	72	53
8:00	134	111	99	150	99	4	4	119	86
9:00	85	94	67	108	84	12	6	88	65
10:00	31	53	46	82	59	12	5	54	41
11:00	42	57	58	67	37	8	3	52	39
12:00	71	65	59	55	56	12	6	61	46
13:00	56	61	60	77	69	10	10	65	49
14:00	52	63	32	71	30	5	9	50	37
15:00	86	109	96	85	70	8	10	89	66
16:00	88	79	69	111	105	10	7	90	67
17:00	53	79	68	71	52	16	14	65	50
18:00	17	11	17	20	11	8	5	15	13
19:00	13	4	10	9	15	4	6	10	9
20:00	3	6	7	6	8	12	6	6	7
21:00	2	6	7	7	3	1	5	5	4
22:00	5	5	0	2	1	6	8	3	4
23:00	0	0	0	1	2	4	1	1	1
Total	831	880	774	1018	788	148	116	858	651

7-19	792	846	739	972	749	109	82	820	613
6-22	824	869	773	1014	781	128	100	852	641
6-24	829	874	773	1017	784	138	109	855	646
0-24	831	880	774	1018	788	148	116	858	651

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GTAconsultants

Reference: #16S1275000

8 April 2016

Western Sydney University
C/-JBA Urban Planning Consultants Pty Ltd
Level 7, 77 Berry Street
NORTH SYDNEY NSW 2060

Attention: Mr. Matthew Norman

Dear Matthew

WESTERN SYDNEY UNIVERSITY

I refer to the recent meeting with Blacktown Council in relation to the above site.

In particular, we were asked to reconsider the layout of the proposed intersection of Quakers Road with Cox's Place.

Blacktown Council pointed out that when Quakers Road is upgraded in the future, the proposed Cox's Place intersection would be restricted to left in/left out. In the meantime however, and until Quakers Road is upgraded, they would allow a right turn into and out of Cox's Place.

Consequently, GTA has produced a drawing (attached) which provides a safe right turning facility largely within the existing road. This facility will be removed when Quakers Road finally gets built.

With regard to the design of Cox's place, we note that it will serve up to 25 dwellings in a cul-de-sac. According to Blacktown Councils Development Control Plan, a cul-de-sac can accommodate a maximum of 30 dwellings. On this basis, Cox's Place would need to be 7.5m wide with 3.5m footway on both sides to accord with the DCP.

Local street Minor loop roads and culs-de-sac serving more than 30 allotments including corner lots	9	3.5	16	2 travel lanes and 2 parking lanes
Cul-de-sac Serving a maximum of 30 dwellings / dwelling units (not lots), with no residues, superlots or medium density sites at the end of a cul-de-sac	7.5	3.5	14.5	2 travel lanes, parking permitted

Measurements of the existing Cox's Place show it to be 7.3m wide. Consequently, we consider that it is not necessary to widen Cox's Place by 200mm to reach the DCP requirement as the widening would provide negligible practical benefit. We recommend therefore that the road is left in its existing configuration.

melbourne
sydney
brisbane
canberra
adelaide
gold coast
townsville
perth

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t// +612 8448 1800

www.gta.com.au

Notwithstanding this, a footpath will also be provided on the western side of the road which will be an improvement compared to the existing situation.

I trust that this is acceptable. Please call me if you require further information.

Yours sincerely

GTA CONSULTANTS

Ken Hollyoak
Director (NSW)

encl.

PLOTTED BY : wendy.zheng ON 1/04/2016 AT 12:03:49 PM 16S1275000-01-P2.dgn

GTAconsultants

PRELIMINARY PLAN

NIRIMBA EDUCATION PRECINCT, QUAKERS HILL
COX PLACE AND QUAKERS ROAD INTERSECTION
CONCEPT PLAN

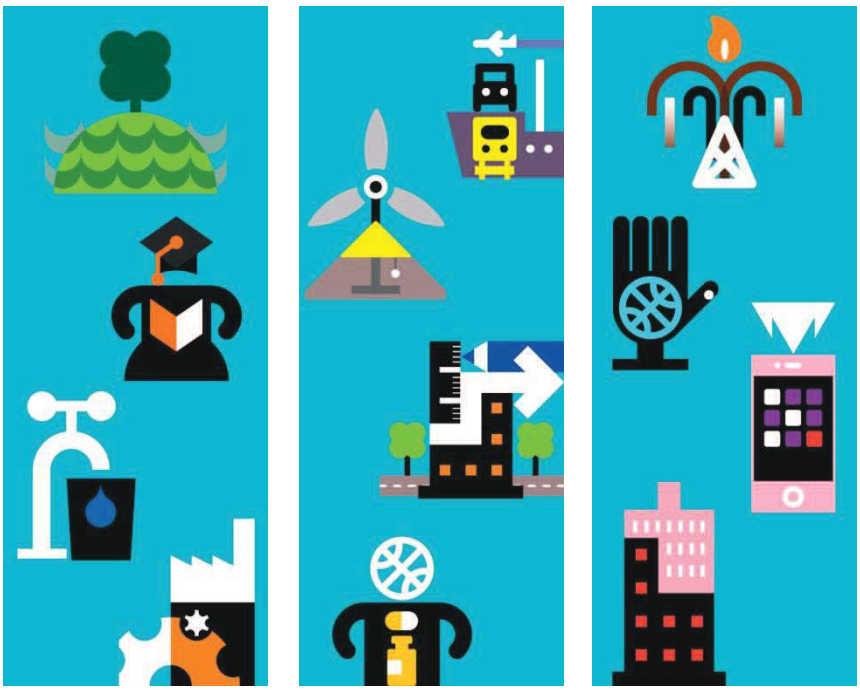
DATE:	SCALE:	
1/04/2016	1:500@A3	
APPROVED:	DRAWING NO.	SHEET:
KTW	16S1275000-01-P2	01 OF 01

ATTACHMENT 4

Infrastructure & Services Statement (Revised)

By

Mott McDonald



Lot 2, DP 853847, Quakers Hill, Nirimba Education Precinct

Infrastructure Services Assessment

March 2016

Western Sydney University

Mott MacDonald

Lot 2, DP 853847, Quakers Hill, Nirimba Education Precinct

Infrastructure Services Assessment

March 2016

Western Sydney University

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Issue and revision record

Revision	Date	Originator	Checker	Approver	Description
A	07.12.15	J. Kafes	J.Taylor	C. Avis	Draft for client comment
B	08.12.15	J. Kafes	J.Taylor	C. Avis	Final – with minor comments
C	11.03.16	J. Kafes	J.Taylor	C. Avis	Final – Council comments addressed

Information class: Standard

Contents

1 Introduction

Mott MacDonald have undertaken this infrastructure report in support of the Proposed Rezoning of Lot 2 DP 853947 located in the Nirimba Education Precinct, Quakers Hill for the Western Sydney University.

The purpose of this report is to address the following items:

- Identify the existing infrastructure and future servicing requirements for a possible subdivision of 25-30 lots.
- Assess stormwater issues related to the subject site and demonstrate compliance with the relevant statutory requirements. In particular, the following items are discussed:
  - Water Quantity; and
  - Water Quality.

2 Existing Site Description

The site is situated in the southern corner of the Nirimba Education Precinct (NEP) of Western Sydney University and covers an area of approximately 1.69ha. The subject site is bound by the NEP campus to the north, Quakers Road to the west and a mix of social housing and privately owned dwellings to the south east. The site is within the Blacktown Local Government Area and is part of the Schofields Precinct, a release area of the North West Growth Centre. Currently the site contains 12 single story dwellings which are privately leased.

It was also observed on-site that there is currently construction works being undertaken on the opposite side of Quakers Road on an apparent subdivision.

Figure 2.1: Site Area

Source: SIX Maps

3 Existing Infrastructure

A Dial Before You Dig enquiry was undertaken on the site area with the following observations from the supplied information.

3.1 Potable Water

Two 100mm mPVC Sydney Water potable water mains are located near the site. The first line runs on the western side of Quakers Road the full length of the site. The second line runs on the eastern side of Quakers Road coming from the south and ending before the southern site boundary.

A reticulation network servicing the existing 12 dwellings within the site runs along the southern verge of Cox Place. It receives supply from the Sydney Water main on the western side of Quakers Road.

3.2 Sewer

A trunk Sydney Water sewer carrier lies along the south western boundary within the site. The reinforced concrete pipe appears to drain from the south western side of the site to the east. The line enters the site as a 750mm diameter and approximately half way across the site increases to 900mm diameter before exiting the site.

Two lines service the existing dwellings both draining to the west, with the first running along the southern side of Cox Place, and the second running at the rear of dwellings on the northern side of Cox Place. They both join a common line at the west of the site which appears to drain towards the north and out of the site.

3.3 Electrical

Endeavour Energy has an overhead network along the Western side of Quakers Road. Electrical supply to the existing dwellings is via an overhead network on the south side of Cox Place. Supply to the site is from the Endeavour Energy Quakers road network, entering at the intersection of Quakers Road and Cox Place.

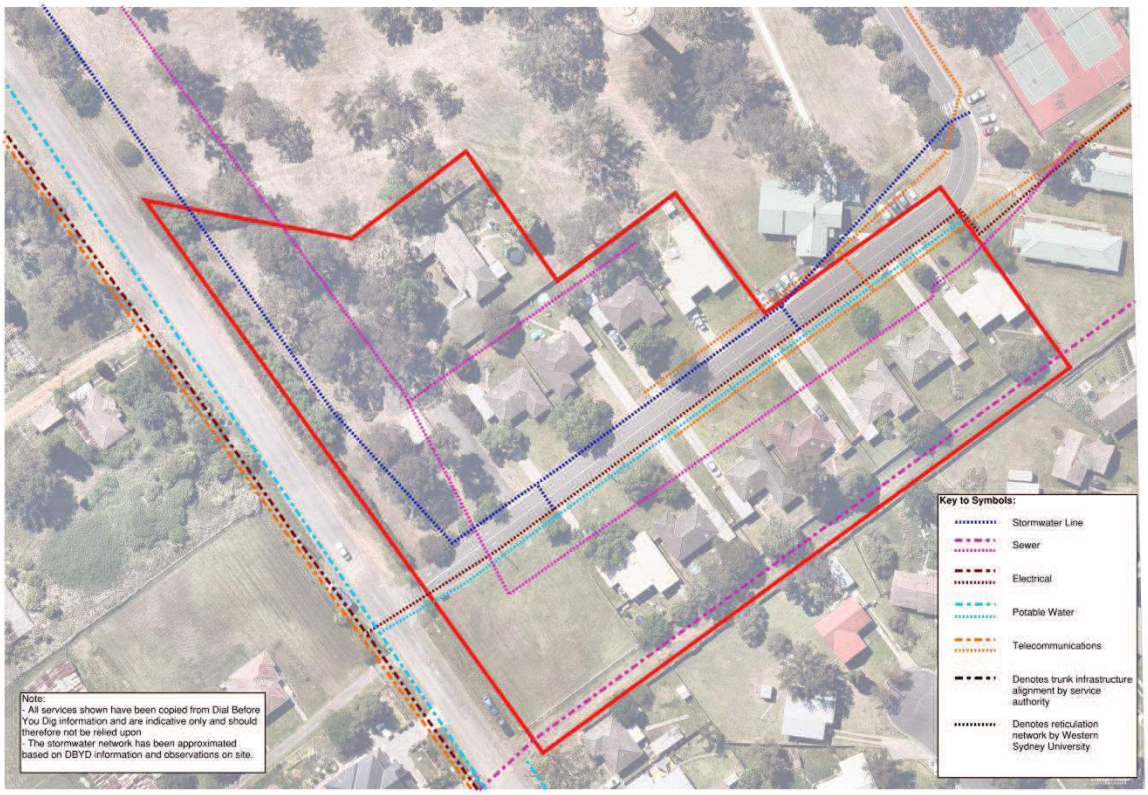
3.4 Telecommunications

Telstra's communication cable mains lie in the western side of Quakers Road in a dual underground and overhead network. Although it is unclear, it appears the site is serviced from the north east through an underground network from the Nirimba Education Precinct. Dwellings are serviced by an apparent underground line running on the south side of Cox Place.

3.5 Gas

A 100mm steel (210kPa) Jemena supply main runs along the eastern verge of Quakers Road. A 25mm steel reticulation main (210kPa) branches from the supply main at Quakers Road into the site which runs along the south side of Cox Place. A second reticulation line connects to this and runs along the north side of Cox Place. The existing dwellings are supplied with gas from this service.

Figure 3.1: Existing Services

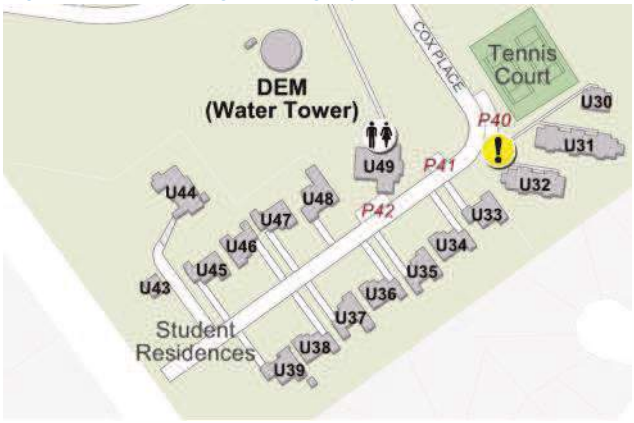


Source: Dial Before You Dig

3.6 Drainage

The site has a constant grade from the north east of Cox Place to the south west. From the south west section of Cox Place to the site drains north west into the open area east of Quakers Road. A sag point is found in the open area north west of a stand-alone garage (building U43), approximately halfway along the western boundary.

Figure 3.2: Existing dwelling layout



Source: Nirimba Campus Map, Western Sydney University

From observations on-site the drainage network generally starts at P40 with two kerb inlet pits and appears to pick up roof drainage from U30-U32, (refer to figure 3.1). Traveling south west in Cox Place to U39/U45 where it is directed north west towards U43 where a series of sag pits exist in the open space, as described above. From here it appears the network continues to the north west, exiting the site, though remaining in the NEP

4 Proposed Servicing

Feasibility applications were lodged with the service authorities. Their responses can be found in Appendix A.

4.1 Potable Water

Sydney Water have advised that the site can be serviced by one the existing 100mm drinking water main on the Eastern or Western side of Quakers Road.

4.2 Sewer

Sydney Water have advised that the trunk wastewater system has capacity to service the proposed development. A new main will need to be constructed to service each lot with a connection to be made to the existing 750mm main (WO 36519) at the south of the site.

4.3 Electrical

Endeavour have indicated that the existing HV network will have sufficient capacity for the site. To supply the proposed development, it is anticipated a ring-main padmount substation and associated electrical reticulation will be required.

4.4 Telecommunications

At this early stage Telstra was unable to comment on the capacity of the existing services. The development would be required to be registered with Telstra Smart Community by applying for an Application for Reticulation. This will inform Telstra of the development so they can take appropriate action. This would be undertaken at Development Application stage for subdivision of the site. Considering other subdivisions taking place adjacent the site it is not expected that there would be an issue providing telecommunication supply to the site, though this would need to be confirmed at DA stage.

4.5 Gas

Jemena have indicated that suitable Natural Gas mains are available in the vicinity and have sufficient capacity for the site.

4.6 Separation of Services from WSU network

A future subdivision would likely require the removal of existing reticulation lines servicing the existing dwellings so as to be independent of the University network with the installation of new services in accordance with the relevant service authority.

4.7 Stormwater Management

Analysis has been undertaken to identify any water quantity and quality measures which may be required for a future low density residential subdivision on the site. It is understood that a future subdivision of the site would maintain Cox Place generally in its current alignment, with the lot layout being based around the existing roadway.

4.7.1 Water Quantity

4.7.1.1 Stormwater Policy and Guidelines

The proposed development falls into the Schofields Precinct of the North West Growth Centre and from discussions with council, the area is part of a regional facilities catchment area. Because of this the stormwater drainage for the proposed development is to be designed to comply with the following guidelines:

- Blacktown City Council *Growth Centre Precincts Development Control Plan (DCP) 2010*;
- Schofields Precinct *Water Cycle Management Report Incorporating Water Sensitive Urban Design Techniques 2012;*
- Blacktown City Council *Engineering Guide for Development 2005;* and
- Australian Rainfall and Runoff 2001;

4.7.1.2 On-Site Detention (OSD)

Precinct Plan – Ultimate Scenario

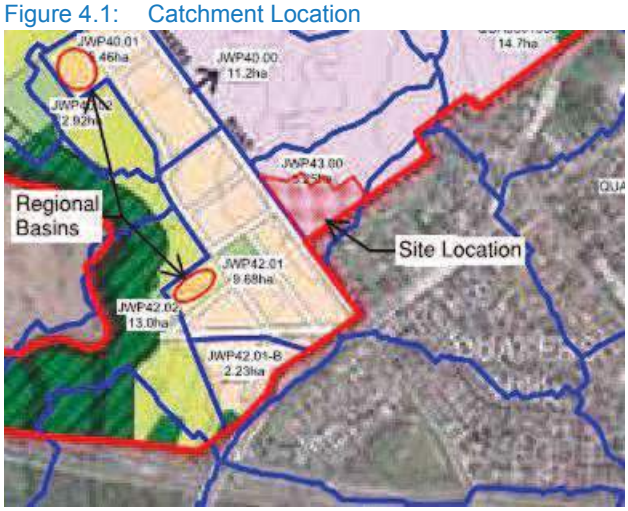
The Schofields Precinct water quantity management plan uses 11 regional detention basins to limit downstream discharge peaks and velocities to avoid potential impacts or hazards in the precinct. According to Figure 3 of the Schofields Precinct Water Cycle Management Report 2012, the site lies in catchment JWP43.00 of the proposed catchment plan used to design the detention basin storages for the ultimate design (refer

Figure 4.1). Catchment JWP43.00 has been modelled with an 85% impervious area. Blacktown Council guidelines identify low density residential development to be modelled to have an 85% impervious area. As such, rezoning the site to low density residential would be in line with the parameters used in Schofields Precinct WCMP and is not expected to have an adverse effect on the regional water quantity management scheme. As such, OSD would not be required in a development of this type on the site.

Table 4.1: Impervious Area Design Parameters

	Schofield Precinct WCMP	Blacktown Council Guidelines
Impervious Area	85%	85%

Figure 4.1: Catchment Location



Source: Schofields Precinct Water Cycle Management Strategy Report Incorporation Water Sensitive Urban Design Techniques 2012

Interim Scenario

From discussions with Council, it is understood that the regional facilities servicing the site are not anticipated to be constructed until 2016-17. If no development is to take place until 2016-17 when the regional facilities are constructed, no interim measures would be required. However, in the event development is desired to take place prior to regional facilities being constructed, consideration has been given to an interim scenario concept detention strategy.

Blacktown Council Growth Centre Precincts Development Control Plan specifies that the developed 1% AEP peak flow is to be reduced to pre-development flows through the incorporation of stormwater detention and management devices. As the majority of the site is already developed, rezoning of the land to low density residential would generally have no change to pervious/ impervious percentages. This is with the exception of the open area west of U39 and U45 (refer Figure 3.2 and Figure 4.2). As such, a pre-post analysis has been undertaken on this area to determine an interim detention volume.

Figure 4.2: Developable Area

Source: NearMap

Pervious and impervious areas of the site were calculated to be used in a concept DRAINS model. Pre-developed impervious areas were measured by hand from satellite imagery. The developed impervious areas were calculated according to Blacktown Council's *Engineering Guide for Development* 2005. Council states that any low density residential development is to have an 85% impervious area. Measured/ calculated areas have been tabulated below.

Table 4.2: Pervious and Impervious Areas

	Pre-Developed	Developed
Pervious	4,681m^2	803m^2
Impervious	956m^2	4,834m^2
Total	5,637m^2	5,637m^2

The Schofields Water Cycle Management Strategy Report has assumed that 5% of pervious areas will be impervious, while 100% of impervious areas will be impervious. In order to keep results consistent with the report these assumptions have been used in the model.

Table 4.3: Percentage Pervious and Impervious Areas

	Pervious Percentage	Impervious Percentage
Pervious Area	95%	5%
Impervious Area	0%	100%

Concept modelling of the site in DRAINS has provided the following results:

Table 4.4: DRAINS Output Flow Rates – 100 Year Peak Flow

Pre-Developed	Developed (No OSD)
231 l/s	292 l/s

From this it has been calculated that approximately **70m^3** of detention may be required to limit flows from the site.

It is anticipated that any interim On-Site Detention be constructed within one of the proposed lots. Settlement of this lot would be delayed until such a point that the regional basins are operational and the interim detention can be removed.

4.7.2 Water Quality

The stormwater management system for the site is to comply with the Blacktown City Council *Growth Centre Precincts Development Control Plan (DCP) 2010*. Council's policy requires improved water quality of the stormwater flow from the developed site prior to discharge into the authority's drainage network.

4.7.2.1 Water Quality Objective

In accordance with the Blacktown City Council Growth Centre Precincts Development Control Plan (DCP) 2010, we note that the following targets have been set in relation to stormwater quality:

- Reduction in annual average suspended solids (SS) - 85%;
- Reduction in annual average total phosphorus (TP) - 65%;
- Reduction in annual average total nitrogen (TN) - 45%; and
- Reduction in annual average gross pollutant (GP) - 90%

4.7.2.2 Precinct Plan – Ultimate Scenario

The site is part of the Schofields precinct of the North West Growth Centre which has an ultimate water quality plan for the precinct. As the site is part of the Nirimba Education Precinct, the water cycle management plan has not accounted for the proposed land, assuming that the NEP will have its own local water quality devices. As such water treatment measures will be required for any future subdivision.

4.7.2.3 Water Quality Devices

The removal and treatment of the above pollutants can be achieved through the use of water quality treatment devices which may be included as part of the development application. The following treatment devices could be used as part of a treatment train.

Rainwater Tank

Rainwater tanks are a primary treatment device used to remove stormwater from the treatment train. The water stored by the tanks provides the development with reusable water for toilet flushing, laundry and gardening purposes. By reusing water you are able to remove flow from the system, leaving less stormwater to be treated further along the treatment train.

Gross Pollutant Trap (GPT)

GPT are a primary treatment device used to remove litter, vegetative matter and sediment from stormwater before a secondary or tertiary treatment device is used. GPTs are able to come in a range of sizes to achieve required pollutant rate reductions depending on catchment areas and flow rates.

Bioretention

Bioretention is a secondary treatment device used to remove fine suspended solids and dissolved pollutants. The system works by filtering stormwater through water tolerant plant species and a filter

media to provide nutrient removal. They are often constructed as linear swales and are designed to capture and treat first flush volumes.

4.7.2.4 Water Quality Design

Using the same assumption as used for stormwater management in section 4.6.1.2, only the open area next to Quakers Road will be considered for the design as it will be the only area where a change in pervious/ impervious percentages will occur.

For the purpose of this study the impervious area of the site was divided into three source nodes, roof areas, road areas and other areas. In order to calculate the area for each of these source nodes, existing dwelling layouts were used to derive an average area split which is shown in table 4.4.

Table 4.5: Percentage of Total Impervious Area

Source Nodes	Percentage of Total Impervious Area
Roof	55%
Road and Driveways	40%
Other	5%

From this, areas for each category were estimated and used in a MUSIC model to design the treatment train.

Table 4.6: MUSIC model Areas

Source Nodes	Area (ha)
Roof Areas	0.266
Road Areas	0.193
Other Impervious Areas	0.024
Pervious Areas	0.093
Total	**0.576**

An example treatment train has been prepared to show the possibility of meeting Blacktown Council's water quality objectives using a MUSIC model with the above source nodes.

Rainwater Tank

Tanks would be located at each lot collecting stormwater from roofs. In order to keep results consistent with the Schofields Water Cycle Management Strategy, 3000 litre rainwater tanks have been used in the MUSIC model.

Gross Pollutant Trap (GPT)

A generic GPT has been used in this study. Further investigation can be done at the development application stage.

Bioretention

For the developable area, it has been calculated that approximately **100m^2** bioretention would be able to achieve council's water quality objectives.

Using the treatment train suggested above, the following reductions in pollutants are achieved.

Table 4.7: MUSIC model Results

Pollutants	Percentage Reduction (%)
Total Suspended Solids	93.4
Total Phosphorus	66.1
Total Nitrogen	67.1
Gross Pollutants	99.9

4.7.3 Other Considerations

It is important to note that the above Quantity and Quality modelling illustrates one possible configuration used to meet Council requirements. Considering the size of the development and that the regional facilities are not yet constructed, opportunities exist to increase the size of these facilities to negate on-site measures through Section 94 contributions. This would need to be discussed with council.

4.7.4 Existing System Augmentation

The main line which appears to discharge flows from the site currently runs through the open land fronting Quakers Road. This line may require augmentation/ relocation considering it lies in the primary developable land. Additionally, the future Quakers Road upgrade and connection to Council's system for discharge to the regional OSD facility would need to be considered at the DA stage once a lot layout is finalised.

5 Summary

Although formal responses are yet to be received from the authorities, when considering the existing services surrounding the site, developments taking place on neighbouring land and the relatively minor anticipated net increase of 13-18 lots on the site, it is not expected that there will be any major hurdles in servicing a future subdivision.

The report has highlighted possible OSD and Water Quality measures for a low density residential subdivision on the site, in line with the proposed rezoning. Particular details including location on or off-site would be confirmed at the DA stage once a lot layout is finalised.

From the findings of the assessment, the site is expected to be able to support a low density residential subdivision of 25-30 lots.

Appendices

Appendix A. Service Authority Responses

Sydney Water Response

Case Number: 150744

20 January 2016

JBA Urban Planning Consultants
C/- Mott Macdonald Australia

FEASIBILITY LETTER

Developer:	**JBA Urban Planning Consultants**
Your reference:	**364726**
Development:	**Lot 2 DP853847 Quakers Road, Quakers Hill**
Development Description:	**Currently the site contains 12 single story dwellings used for student housing which has become surplus to the campus requirements. It is currently zoned as Educational Establishment SP2 which the owner of the property is currently proposing to be rezoned to Low Density Residential R2, which would allow a subdivision to accommodate additional 13-18 lots (25-30 lots total including the existing 12 dwellings).**
Your application date:	**2 December 2015**

Dear Applicant

This Feasibility Letter (Letter) is a guide only. It provides general information about what Sydney Water's requirements could be if you applied to us for a Section 73 Certificate (Certificate) for your proposed development. **The information is accurate at today's date only.**

If you obtain development consent for that development from your consent authority (this is usually your local Council) they will require you to apply to us for a Section 73 Certificate. You will need to submit a new application (and pay another application fee) to us for that Certificate by using your current or another Water Servicing Coordinator (Coordinator).

Sydney Water will then send you either a:

- Notice of Requirements (Notice) and Developer Works Deed (Deed) or
- Certificate.

These documents will be the definitive statement of Sydney Water's requirements.

There may be changes in Sydney Water's requirements between the issue dates of this Letter and the Notice or Certificate. The changes may be:

- if you change your proposed development eg the development description or the plan/ site layout, after today, the requirements in this Letter could change when you submit your new application; and

- if you decide to do your development in stages then you must submit a new application (and pay another application fee) for each stage.

What You Must Do To Get A Section 73 Certificate In The Future.

To get a Section 73 Certificate you must do the following things. You can also find out about this process by visiting www.sydneywater.com.au > Plumbing, building & developing > Developing > Land development.

1. **Obtain Development Consent from the consent authority for your development proposal.**

2. **Engage a Water Servicing Coordinator (Coordinator).**

   You must engage your current or another authorised Coordinator to manage the design and construction of works that you must provide, at your cost, to service your development. If you wish to engage another Coordinator (at any point in this process) you must write and tell Sydney Water.

   For a list of authorised Coordinators, either visit www.sydneywater.com.au > Plumbing, building & developing > Developing > Providers > Lists or call **13 20 92.**

   The Coordinator will be your point of contact with Sydney Water. They can answer most questions that you might have about the process and developer charges and can give you a quote or information about costs for services/works (including Sydney Water costs).

3. **Developer Works Deed**

   It would appear that your feasibility application is served from existing mains and does not require any works to be constructed at this time. Sydney Water will confirm this with you after you have received Development Approval from Council and your Coordinator has submitted a new Development application and Sydney Water has issued you with a formal Notice of Requirements.

4. **Water and Sewer Works**

   4.1 **Water**

   Your development must have a frontage to a water main that is the right size and can be used for connection.

   Sydney Water has assessed your application and found that:

   - The drinking water main available for connection is the 100mm main on the Eastern or Western side of Quakers Road.

   - **You must provide a water service connection and property service (also known as a "property service (main to meter)") at your cost for all lots off the water main construction required above and your Coordinator must manage the work. See section below for details.**

- The existing water property service and meter may be used as a property service (main to meter) for one of the proposed lots if it is located in an appropriate position. Your Coordinator will be able to provide further advice regarding this.

- **Property Service (Main to Meter) Installation Details**

The property service connection must be carried out by a Sydney Water listed Driller and the installation of the property service must either be carried out or supervised by a licensed plumber. They must meet the:

(a) Administrative requirements of the New South Wales Code of Practice for Plumbing and Drainage; and
(b) Sydney Water Property Service (Main to Meter) Installations Technical Requirements.

- **Before the Certificate can be issued, your Coordinator must give Sydney Water certification that the property service works comply with Sydney Water's requirements.**

4.2 Sewer

Your development must have a sewer main that is the right size and can be used for connection. That sewer must also have a connection point within your development's boundaries.

Sydney Water has assessed your application and found that:

- The trunk wastewater system has capacity to serve the proposed development. The Developer is to design and construct a wastewater main (connecting to the 750mm main constructed under WO 36519), which will provide a point of connection at least 1m inside all the property boundaries.
- Where proposed works are in close proximity to a Sydney Water asset, the developer may be required to carry out additional works to facilitate their development and protect the wastewater main. Subject to the scope of development, servicing options may involve adjustment/deviation and or compliance with the Guidelines for building over/adjacent to Sydney Water assets. Refer to your WSC for details of requirements.

5. Ancillary Matters

5.1 Asset adjustments

After Sydney Water issues this Notice (and more detailed designs are available), Sydney Water may require that the water main/sewer main/stormwater located in the footway/your property needs to be adjusted/deviated. If this happens, you will need to do this work as well as the extension we have detailed above at your cost. The work must meet the conditions of this Notice and you will need to complete it **before we can issue the Certificate**. Sydney Water will need to see the completed designs for the work and we will require you to lodge a

security. The security will be refunded once the work is completed.

5.2 Entry onto neighbouring property

If you need to enter a neighbouring property, you must have the written permission of the relevant property owners and tenants. You must use Sydney Water's **Permission to Enter** form(s) for this. You can get copies of these forms from your Coordinator or the Sydney Water website. Your Coordinator can also negotiate on your behalf. Please make sure that you address all the items on the form(s) including payment of compensation and whether there are other ways of designing and constructing that could avoid or reduce their impacts. You will be responsible for all costs of mediation involved in resolving any disputes. Please allow enough time for entry issues to be resolved.

OTHER THINGS YOU MAY NEED TO DO

Shown below are other things you need to do that are NOT a requirement for the Certificate. They may well be a requirement of Sydney Water in the future because of the impact of your development on our assets. You must read them before you go any further.

Stamping and approval of your building plans

Please note that the building plans must be stamped and approved when each lot is developed. This can be done at a Quick Check agency. For an agency list visit www.sydneywater.com.au > Plumbing, building & developing > Building > Quick Check agents or call 13 20 92).

This is not a requirement for the Certificate but the approval is needed because the construction/building works may affect Sydney Water's assets (e.g. water, sewer and stormwater mains).

Where a Sydney Water stormwater channel, pipe or culvert is located within ten (10) metres of your development site it must be referred to Sydney Water for further assessment.

Your Coordinator can tell you about the approval process including:

- Possible requirements;
- Costs; and
- Timeframes.

Backflow Prevention Water supply connections

A backflow prevention containment device appropriate to the property's hazard rating must be installed at the property boundary. The device is to be installed on all water supplies entering the property, regardless of the supply type or metering arrangements. It is needed to reduce the risk of contamination by backflow from these supplies.

A licensed plumber with backflow accreditation can advise you of the correct requirements for your property. To view a copy of Sydney Water's Backflow Prevention Policy and a list of backflow accredited plumbers visit www.sydneywater.com.au > Plumbing, building & developing > Plumbing > Backflow prevention.

The water service for your development

Sydney Water does not consider whether the existing water main(s) talked about above is adequate for fire fighting purposes for your development. We cannot guarantee that this water supply will meet your Council's fire fighting requirements. The Council and your hydraulic consultant can help.

You must make sure that each dwelling/lot has its own 20mm meter.

When access to the water supply is required, the property owner or agent must apply to Sydney Water online. Sydney Water must install a water meter before any water is used. It is illegal for anyone other than a Sydney Water employee to remove the locking mechanism on the water meter.

The online application can be found by visiting our website www.sydneywater.com.au **>** Plumbing, building & developing > Plumbing > Connections & disconnections. The applicant will need to have the:

1. Account (Property) Number which can be obtained from the Coordinator; and
2. Serial Number which can be found on the metal tag on your property service.

You can find more information by using the "Ask Sydney Water" section of our website.

Fire Fighting
Definition of fire fighting systems is the responsibility of the developer and is not part of the Section 73 process. It is recommended that a consultant should advise the developer regarding the fire fighting flow of the development and the ability of Sydney Water's system to provide that flow in an emergency. Sydney Water's Operating Licence directs that Sydney Water's mains are only required to provide domestic supply at a minimum pressure of 15 m head.

Disused Water Service Sealing
You must pay to disconnect all disused private water services and seal them at the point of connection to a Sydney Water water main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed plumber. The licensed plumber must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Disused Sewerage Service Sealing
Please do not forget that you must pay to disconnect all disused private sewerage services and seal them at the point of connection to a Sydney Water sewer main. This work must meet Sydney Water's standards in the Plumbing Code of Australia (the Code) and be done by a licensed drainer. The licensed drainer must arrange for an inspection of the work by a NSW Fair Trading Plumbing Inspection Assurance Services (PIAS) officer. After that officer has looked at the work, the drainer can issue the Certificate of Compliance. The Code requires this.

Soffit Requirements
Please be aware that floor levels must be able to meet Sydney Water's soffit requirements for property connection and drainage.

Other fees and requirements

The requirements in this Notice relate to your Certificate application only. Sydney Water may be involved with other aspects of your development and there may be other fees or requirements. These include:

- plumbing and drainage inspection costs;
- the installation of backflow prevention devices; and
- council fire fighting requirements. (It will help you to know what the fire fighting requirements are for your development as soon as possible. Your hydraulic consultant can help you here.)

No warranties or assurances can be given about the suitability of this document or any of its provisions for any specific transaction. It does not constitute an approval from Sydney Water and to the extent that it is able, Sydney Water limits its liability to the reissue of this Letter or the return of your application fee. You should rely on your own independent professional advice.

END

Endeavour Energy Response

11 February 2016

Endeavour Energy Ref: ENL2579 – 2015/10297/001

Mott MacDonald
Level 10, 383 Kent Street
SYDNEY
NSW 2000

Attention: Jonathon Kafes

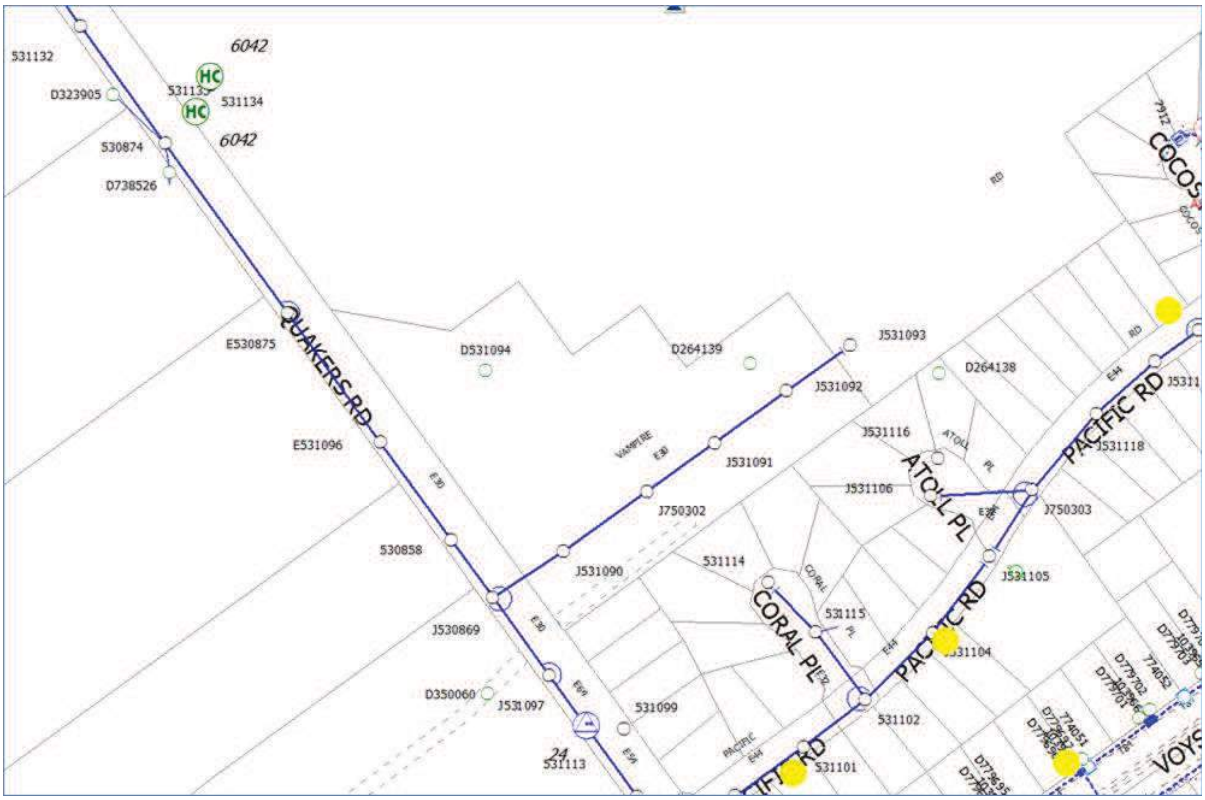
ENL2579 – LOT 2 DP 853847, Cox Place, QUAKERS HILL

Dear Jonathon,

Thank you for your enquiry regarding the proposed residential development at the above address. This enquiry has been registered under our reference numbers – ENL2579. Please quote this number for all future correspondence.

Endeavour Energy acknowledges that at present the proposed development site contains 12 single story dwelling (student housing) will be rezoned to create additional 13-18 lots, hence ultimately there will be 25-30 lots in total including the existing 12 dwellings.

Presently the dwellings on the properties are supplying from the LV overhead mains sourced from Pole Substation 24 in Quakers Road. (See GIS plot on next page)



Preliminary analysis indicates that existing HV network has sufficient capacity to support the proposed development and it is anticipated a ring-main padmount substation is required to be established on the property and associated electrical reticulation in order to supply existing and future lots.

In order to program this connection, I recommend you to submit an application for Connection of Load and engage the services of a Level 3 ASP to prepare and provide an electrical design to Endeavour Energy in the form of a Proposed Metho of Supply. This activity is customer funded contestable work and you will need to pay for it.

A list of the Accredited Service Providers is available at the NSW Trade and Investment website: *http://www.energy.nsw.gov.au/electricity/network-connections/contestable* or can be obtained via phone 13 77 88.

Hope this assists for the meantime and this advice provided is in response to an enquiry only and does not constitute a formal method of supply. An application must be submitted and subsequent designs have been certified or approvals granted will Endeavour Energy reserve capacity on the network.

Should you have any questions regarding this response to your request for technical review, please contact me.

Yours faithfully,

David HO

David Ho
Contestable Works Project Manager
Network Connections

☎ Direct: (02) 9853 7901 | 🗐 Fax: (02) 9853 7925

✉ Email: david.ho@endeavourenergy.com.au

Jemena Gas Networks Response

Jemena Limited
ABN 95 052 167 405

11/12/2015

Mott Macdonald
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Greg Knight
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Tumbi Umbi NSW 2261
M: 0402 060 241
E: greg.knight@jemena.com.au
www.jemena.com.au

Att: Mr. Jonathon Kafes

Dear Sir:

RE: **PROPOSED DEVELOPMENT OF THE WESTERN SYDNEY NIRIMBA EDUCATION PRECINCT**

Natural Gas is available in the vicinity and could be extended to supply this proposal.

Our policy is to extend gas mains to all developments wherever possible, depending upon economic viability.

In consideration of our shareholders' interests and under NSW regulation, Jemena Gas Networks (NSW) Ltd is required to ensure that any extension of the natural gas distribution system is commercially viable and therefore must assess each request for supply on an individual basis.

Upon the provision of the final approved layout and gas Load configurations for the development a full economic evaluation can be undertaken to determine the availability of natural gas to the site.

A contribution may be required to assist in the economic viability of the proposal.

To assist in the planning of supply to the development

- I can confirm that suitable mains exist in the immediate vicinity to supply this development and sufficient capacity is available at this time to service the site.
- To enable a thorough economic evaluation to be undertaken we will require the base road & lot layout designs in dwg format and the preliminary electrical design in pdf format for the subdivision as soon as they are available.
- In order to enhance the viability of gas supply to the site the developer should allow for the provision of all trenching required throughout the site at no cost to Jemena.

Jemena Gas Networks looks forward to providing the many benefits of Natural Gas to this proposal; if you could provide the relevant drawings to me as soon as they are available I will undertake a full supply assessment.

Thank you for your enquiry. If further information or assistance is required, please do not hesitate to contact me on 0402 060 241.

Yours faithfully

Greg Knight

Greg Knight
Network Development Manager