



Wilton Junction MASTER PLAN

JUNE 2014

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EXECUTIVE SUMMARY

Introduction

Wilton Junction is a proposal for a new town housing some 35,000 people near Wilton in the Wollondilly Shire in New South Wales.

Wilton Junction will be a sustainable, 'garden city' for the 21st century that offers a high level of self-containment, integrating a modern urbanism within a unique natural and rural setting, cradled by the Razorback Range and infused with bushland, riverine and lakeside settings.

Wilton Junction comprises some 2,700 ha of land and will provide a range of housing options and price points supported by schools, shops, services, open space and employment opportunities.

Background

Following Council's support in 2011 four major land owners, Bradcorp (Wilton West), Governor's Hill, Lend Lease (Bingara Gorge), and Walker Corporation prepared a high level Master Plan demonstrating the likely development of a new area housing of some 35,000 people. The purpose of the high level Master Plan was to demonstrate the feasibility of developing this land and to seek the support of the Wollondilly Shire Council and the New South Wales Government to commence an appropriate zoning process to facilitate the development of Wilton Junction.

In December 2012, following community consultation, the Wollondilly Shire Council resolved to support a State Government led rezoning process.

Note: Although Bingara Gorge has been included in the Master Plan process, it does not require rezoning.

In May 2013 the New South Wales Government provided the proponents with Study Requirements (DGRs) for the Wilton Junction Precinct State Environmental Planning Policy (SEPP) to examine the potential for the land to be rezoned for Urban Purposes.

The high level Master Plan has now been refined in light of the investigations undertaken as required by the DGRs and in turn informs the more detailed rezoning proposal.

Vision

"Wilton Junction is a new community cradled in a unique landscape characterised by bushland, rivers, creeks, lakes and ridges set against the backdrop of the Razorback Range. By design, the place and the lives of its people are intertwined with the bush;

The community respects the location's rich bushland setting, engages with surrounding water features and embraces sustainability;

Inclusive and welcoming of diversity, it's a place to nurture relationships, grow a family - to put down roots;

Founded on a 21st century interpretation of timeless "Garden City " principles, Wilton Junction combines the best features of our most loved country towns with the facilities, services and technologies found in Australia's most successful, edgy, and vibrant Town Centres;

A safe place to visit - a healthy place to live - a great place to learn - a rewarding place to work - the local community takes pride in the strength of its cultural and civic life and the role of their town in Wollondilly Shire and the region"

Key Design Principles

- ▶ Create a place with a difference, making unique use of natural and man made attributes to create a distinctive human environment cradled by the Razorback Range, surrounding by nature with a built and aquatic beauty at its heart;
- ▶ Utilise central, prominent and visible locations for employment and Town Centre related uses and activities to ensure strong exposure and access;
- ▶ Utilise Wilton Junction and an enhanced critical population mass to act as a catalyst and platform to capture employment opportunities and reverse the under-represented south west commercial / office market;
- ▶ Establish a balanced employment base for the region which attracts investment and expenditure for the benefit of the whole Shire;
- ▶ Provide a range of housing types to service the widest possible extent of housing market niches;
- ▶ Create a community heart for every neighbourhood, co-located with recreation, retail and employment activities and accessible transport;
- ▶ Preserve and protect existing vegetation with conservation value and preserve and, where appropriate, integrate significant vegetation outside of vegetation protection areas into urban areas;
- ▶ Develop centres that are highly visible, permeable and accessible and act as the focal point of neighbourhoods;

Vision Response

The Master Plan addresses the vision for Wilton Junction in its protection and enhancement of high quality bushland, its relationship to natural waterways, manmade lakes and water features and in its creation of a sense of community through the development of neighbourhoods which provide for the education, recreation, community and commercial services typically required on a day to day basis at a scale that enhances a sense of community and belonging. The development of extensive employment opportunities, through the servicing of the growing local population and as a focus of regional employment at the confluence of two major road arteries, completes the self-containment capabilities of Wilton Junction and, hence, its desirability as a place to live, work and play.

- ▶ Centres developed with a high quality public realm, central village square and active thoroughfares that are flanked by a high level of activity and that emphasise the importance of the pedestrian;
- ▶ Create a sense of neighbourhood through the establishment of meeting places and spaces that foster and promote interaction;
- ▶ Seek to maintain the semi-rural setting of Wilton Township as a buffer to surrounding development, while recognising the need for some uplift in development capability;
- ▶ Utilise the iconic positioning of 'cross roads' as centres of activity and junctions which capitalise on the movement economy and integration of public transport, walking and cycling;
- ▶ Target self-containment in services and employment, promotion of work from home opportunities and integration of land uses to reduce trip numbers and length;
- ▶ Facilitate a bus network comprising local internal bus services to connect local residents with their Town Centre and community facilities, district routes to other centres (ie Picton, Tahmoor & Bargo etc) and regional services to connect higher order centres such as Campbelltown;
- ▶ Encourage and provide for non-vehicular movement options;
- ▶ Strive for coordinated infrastructure and services and, explore opportunities to share facilities costs, recognising the respective roles of Federal, State and local government, infrastructure agencies and the developers; and
- ▶ Favour infrastructure that provides opportunities for sustainable long term maintenance outcomes.

Wilton Junction MASTER PLAN

Assessment Process

A range of specific investigations were commissioned and informed the formulation of the Master Plan and in particular the spatial relationships and land uses. These studies covered areas of economy and employment, demography and social services, transport, infrastructure, environmental management (including bushfire) and heritage. These studies complemented early studies that informed the 2012 high level Master Plan and addressed the specific requirements of the Director General's Requirements.

Wilton Junction Master Plan

The Master Plan provides for a sustainable community of some 35,000 people. Wilton Junction will be a series of inter-related and integrated precincts including, centres, employment/enterprise areas, schools, residential (including rural living), entertainment and leisure, open space /bushland/ conservation, highway services and infrastructure.

Town Centre

Located in the north west quadrant of the Hume Highway / Picton Road interchange, the retail core is proposed to provide some 25,000m² of convenience and comparison shopping for the whole of Wilton Junction, a civic core, commercial and office functions, community facilities, leisure and entertainment functions and opportunities for short and long term accommodation options.

The Town Centre's retail core will be the focus of the private and public transport networks, including the delivery of a bus interchange. It will also be the focus of non-vehicular movement networks, with linkages to the surrounding residential precincts.

The core of the Town Centre is flanked to the north east with a bulky goods precinct, intended to serve both Wilton Junction and the extensive and growing passing trade on the Hume Highway. The bulky goods form part of the broader employment precinct in the area along the Hume Highway frontage, thereby providing flexibility in the location and delivery of this key investment.

Neighbourhood Centres

Neighbourhood centres, comprising a combination of retail and commercial facilities, community facilities, a primary school and areas of open space, are proposed to serve the 'neighbourhoods' of Wilton Junction. The Town Centre itself will act as a neighbourhood centre for the southwest. Other centres are proposed (or exist) as follows:

- Bingara Gorge
- Northern precinct of Wilton West
- South of Picton Road

In the case of the existing Wilton township, the existing local centre is retained and can expand over time. Each centre is intended to act as a focus for community activity and as the fulcrum of the public transport and pedestrian movement network.

Employment Precincts

The employment precincts include the town centre and neighbourhood centres, but also include dedicated areas to the north and south of Wilton Park Road, north and south of Picton Road, east of Hume Highway, adjacent the Maldon Dombarton rail corridor north west of the Hume Highway, the Bingara Gorge employment lands, the STP and substation site and, a small triangle of land at the corner of Picton Road and Almond Street.

Together with work from home opportunities these precincts deliver sufficient floorspace with potential to exceed 70% employment self-sufficiency in Wilton Junction.

The focus of these precincts will be on clean enterprises which cater for the emerging industries of the twenty first century in attractive landscaped environments.

Special Purpose Areas

The Master Plan identifies a preferred location for the potable water supply reservoir to serve the Wilton Junction community and incorporates the expanded STP and electricity substation within the defined light industry precinct. A new substation location is identified south of Picton Road and water treatment lakes are identified in the northern quadrant of Wilton Junction.

Land for an additional STP has been provided for in the south-eastern area of the site.

Residential Areas

Much of the gently undulating terrain is readily developable for residential purposes and has been identified as residential land in the Master Plan. Areas of scattered vegetation exist within these residential precincts and will need to be considered in greater detail in the formulation of subdivision plans.

Low density residential / rural residential areas are retained around Wilton Township to maintain the setting of that town and are proposed in areas where an existing low density environment already prevails as well as in areas providing a transition from residential to primary production.

Schools

Two K-12 schools (one public and one private) will be provided centrally to the development in the north-western quadrant. The public school will be near the district open space.

Three public primary schools are proposed in conjunction with the neighbourhood centres.

Open Space

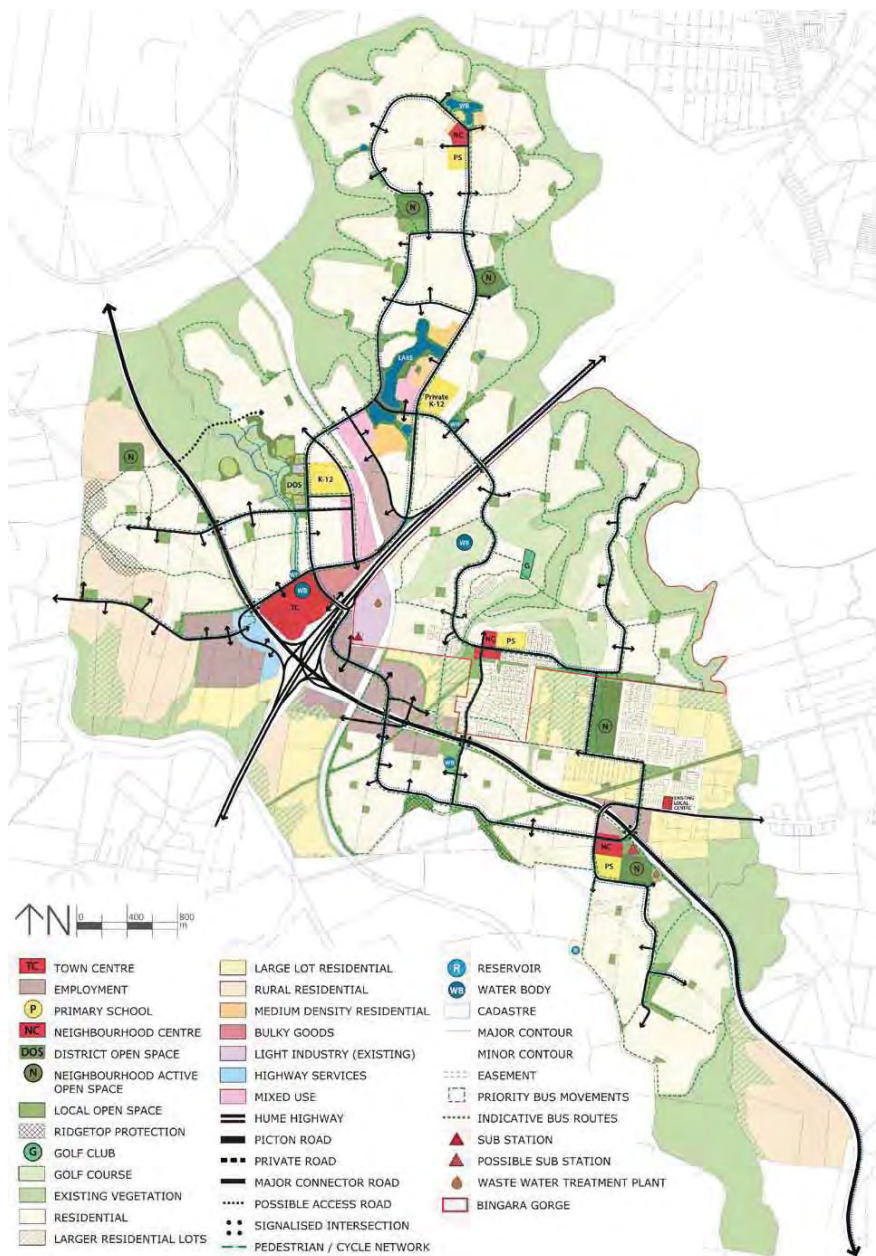
The Master Plan identifies substantial portions of the site to remain as vegetation protection areas while the inclusion of additional areas of open space provide informal passive and active recreational opportunities. These spaces include areas of scattered bushland, prominent ridgelines and pedestrian routes that provide connectivity between key facilities and areas of open space.

A pedestrian network is identified through Wilton Junction with strong connectivity with and between the centres, employment lands, community and recreation facilities and educational establishments.

The golf course is currently under construction within Bingara Gorge and will provide both a recreational opportunity and a visual outlook for many residents.

Vehicular Movement Network

The Master Plan delivers a network of roads that provides for movement within Wilton Junction, with good access to centres, employment, education, community facilities and recreation opportunities and vastly improved external connectivity by way of new on/off ramps to the Hume Highway.



Connectivity

Superior connectivity is provided by an extensive bicycle and walking trail network that connects key nodes throughout the development area.

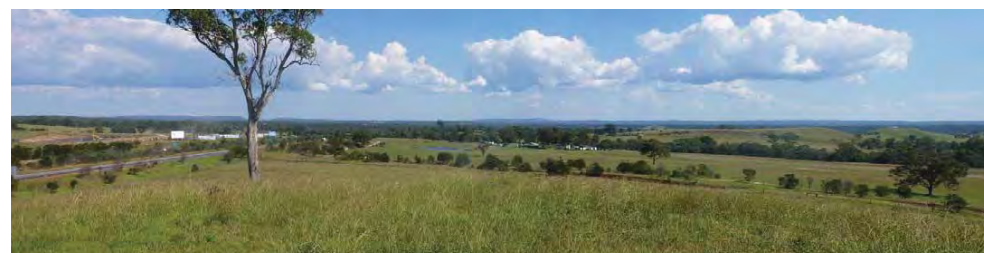
Development Metrics

The Master Plan makes allowance for the following development outcomes:

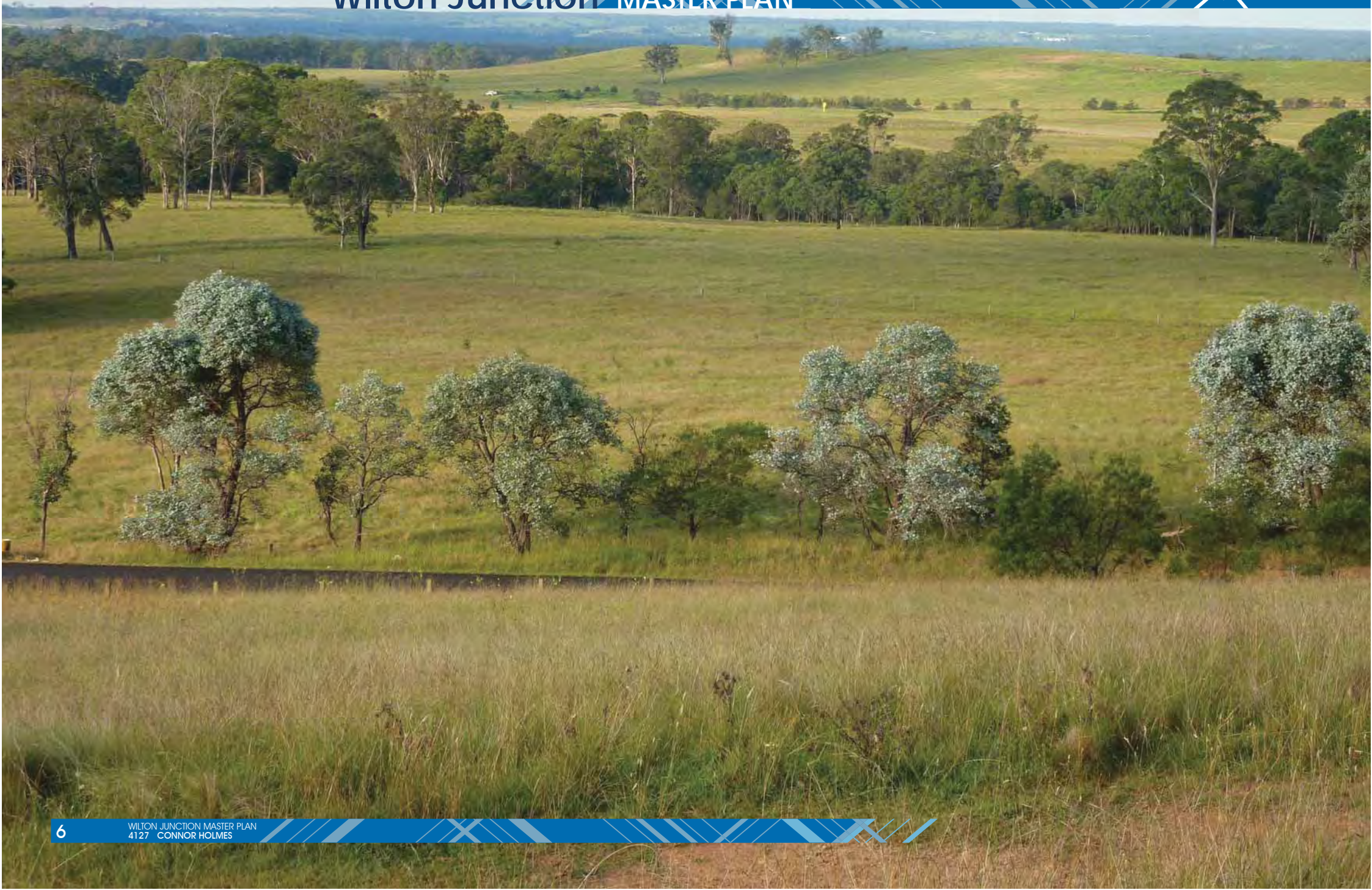
- 11,900 additional dwellings (there being approximately 500 in the study area (as at 1 January 2013);
- A population of around 35,000 persons; and
- More than 11,000 jobs

The retail and employment precincts make provision for the following floorspace delivery over the life of the project:

- 70,000 - 75,000m² of retailing/bulky goods (including retailing as part of highway services);
- 86,000 - 100,000m² of commercial floorspace;
- 335,000 - 385,000m² of light industry, warehousing, transport and logistics floorspace; and
- 20,000 - 25,000m² of community / civic / education floorspace.



Wilton Junction MASTER PLAN



1 INTRODUCTION

1.1 Background and Context

The Wilton Junction area comprises some 2700 ha of land and is located at the intersection of the Hume Highway and Picton Road approximately 80 km from the Sydney Central Activity District and 30km north-west of Wollongong. Wilton Junction is shown on Figure 1.1.

Following Council's support in 2011 the four major land owners Bradcorp (Wilton West), Governor's Hill, Lend Lease (Bingara Gorge), and Walker Corporation prepared a high level Master Plan demonstrating the likely development of a new area housing some 35,000 people. The purpose of the high level Master Plan was to demonstrate the feasibility of developing this land and to seek the support of the Wollondilly Shire Council and the New South Wales Government to commence an appropriate zoning process to facilitate the development of Wilton Junction.

In December 2012, following community consultation, the Wollondilly Shire Council resolved to support a State Government led rezoning process.

In May 2013 the New South Wales Government provided the proponents with Study Requirements (DGRs) for the Wilton Junction Precinct State Environmental Planning Policy (SEPP) to examine the potential for the land to be rezoned for Urban Purposes. (Note whilst Lend Lease has been part of the process as its Bingara Gorge Development lies within the area known as Wilton Junction no rezoning is required nor proposed over the Bingara Gorge development (455 ha)).

The high level Master Plan has now been refined in light of the investigations undertaken as required by the DGRs and in turn informs the more detailed rezoning proposal.

1.2 Study Requirements

By letter dated 2nd May 2013, the Deputy Director General advised:

"The Government has endorsed the Department of Planning and Infrastructure to lead the investigation of the Wilton Junction Precinct to examine the potential for the land to be rezoned for urban purposes."

This letter further advised that the proponents would be required to undertake the required study and listed in detail the requirements for the study and areas to be covered. This forms the DGRs for the project.

The proponents were required to investigate issues across the topics of:

- | | |
|---|---|
| › Strategic Context | › Heritage |
| › Land Uses and Planning Controls | › Roads, Traffic and Transport |
| › Demographic Profile and social infrastructure | › Bushfire |
| › Economic Development and Employment Strategy | › Contamination |
| › Ecologically Sustainable Development | › Noise |
| › Mine Subsidence | › Agricultural land suitability |
| › Topography, soils and geology | › Service Utilities |
| › Biodiversity | › Infrastructure and Housing Delivery |
| › Water and Air quality | › Planning Agreement(s) and developer contributions |
| | › Consultation |

Each of these matters has been investigated and relied upon as part of the Master Plan process.

Of particular interest to the Master Plan, the **Study Requirements** specifically require:

- › Justification of the mix, extent, staging and location of proposed land uses at the site;
- › Demonstration of sufficient demand for the proposed residential, retail, commercial and other employment land, including locational advantages;
- › Demonstration of how the proposed land use zoning and planning controls will complement surrounding existing land uses and incorporate any required buffers including (but not limited to) buffers for noise, bushfire, adjoining areas of high conservation value;
- › An outline of the Urban Design Principles employed in determining the proposed land uses and their location, particularly for integration with the proposed Maldon to Dombarton freight rail link and the Commonwealth Government proposed High Speed Rail alignment;
- › The staging and mix of proposed land uses and the accommodation of underground coal mining, including installation and operation of gas mine drainage equipment, additional exploration, installation and operation of subsidence monitoring and other mine related infrastructure such as ventilation shafts;

- › Consideration of future land use zones to reflect appropriate levels of protection for ridges, waterways and other natural features;
- › Detail of how asset protection zones can be achieved within future urban land; and
- › Details of access and egress options for evacuation and proposed emergency access roads.

The letter from the Deputy Director General is included as Attachment 1.

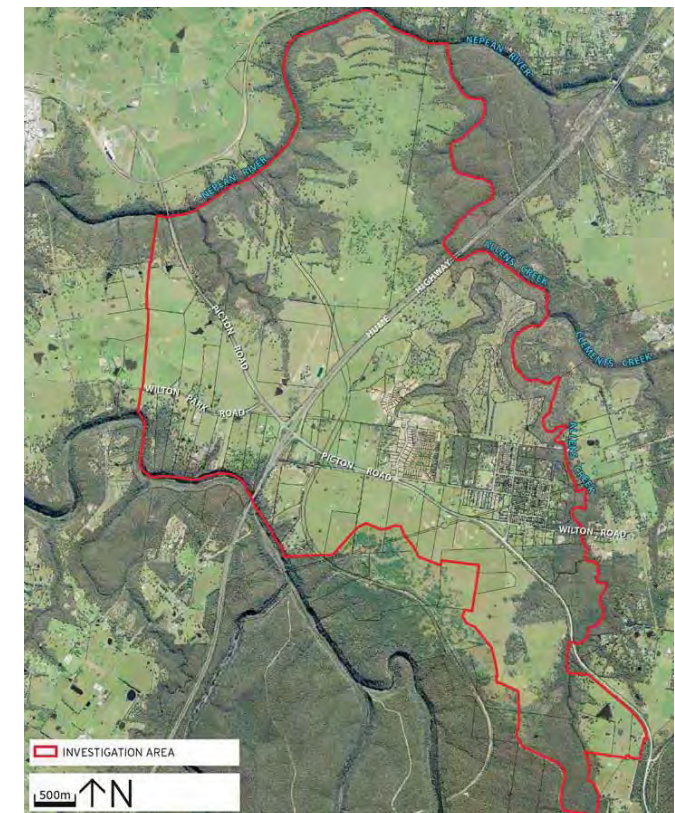


figure 1.1. Wilton Junction Investigation Area

Wilton Junction MASTER PLAN

Table 1.1 below references the section pertaining to each DGR.

DGR's	References
Justification of mix, extent, staging and location of proposed land uses.	Refer Sections 2.2, 2.3, 2.4.1, 2.5.5.1, 2.5.5.2, 2.6, 2.7, 2.8, 2.9, 3.2, 4.1, 4.2, 6, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9, 7.10, 7.11, 7.12, 7.13, 7.14, 7.15, 7.16, 7.17, 7.18, 8.2, 8.3
Demonstration of demand for retail, residential, commercial and other employment land, including locational advantages.	Refer Sections 3.2, 4.1, 4.2, 7.2 and 7.3
Demonstration of how proposed zoning and land use planning controls will complement surrounding existing land uses and incorporate any required buffers including (but not limited to) buffers for noise, bushfire and adjoining areas of high conservation value.	Refer Sections 2.1, 2.3, 2.4, 2.8, 7.13, 7.14, 7.15, 7.16
An outline of the Urban Design Principles employed in determining the proposed land uses and their location, particularly for integration with the proposed Maldon to Dombarton freight rail link and the Commonwealth Government proposed High Speed Rail Alignment.	Refer Sections 1.7, 2.3, 2.5, 6, 7.13, 7.14
The staging and mix of proposed land uses and the accommodation of underground coal mining, including installation and operation of open mine drainage equipment, additional exploration, installation and operation of subsidence monitoring and other mine related infrastructures such as ventilation shafts.	Refer Section 2.6, 6, 7.17
Consideration of future land use zones to reflect appropriate levels of protection for ridges, waterways and other natural features.	Refer Section 5.1.1, 6, 7.15
Detail of how APZ can be achieved within future urban land.	Refer Section 2.8, 7.15
Details of access and egress options for evacuation and proposed emergency access roads.	Refer Section 2.8; 5.1.8, 7.15

1.3 Purpose

This report forms part of the Wilton Junction Master Plan.

The Wilton Junction Master Plan provides a spatial foundation that addresses the DGR's and provides a basis for the rezoning of the Wilton Junction land.

This report provides the context for the investigations within the scope of the Director General's Requirements and outlines the key investigations, the issues identified, the design solutions considered and rationale employed in reaching the final preferred Master Plan.

1.4 Limitations

This report does not seek to provide justification for the findings of other studies which have informed the Master Plan. That justification is contained within the various original reports provided by the consultant team assembled for the preparation of the Wilton Junction Precinct SEPP as per the DGRs and as a follow on from the initial research undertaken to inform the original high level Master Plan.

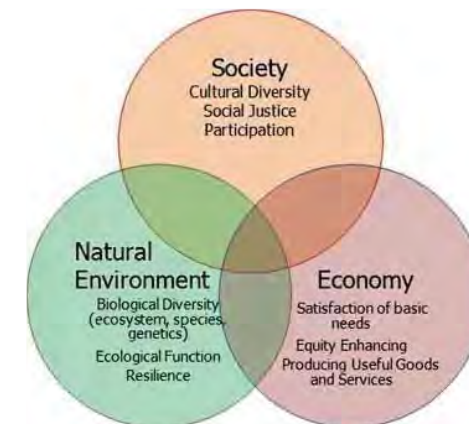
1.5 Vision

The vision for Wilton Junction is:

- Wilton Junction is a new community cradled in a unique landscape characterised by bushland, rivers, creeks, lakes and ridges set against the backdrop of the Razorback Range. By design, the place and the lives of its people are intertwined with the bush;
- The community respects the location's rich bushland setting, engages with surrounding water features and embraces sustainability;
- Inclusive and welcoming of diversity, it's a place to nurture relationships, grow a family - to put down roots;
- Founded on a 21st century interpretation of timeless "Garden City" principles, Wilton Junction combines the best features of our most loved country towns with the facilities, services and technologies found in Australia's most successful, edgy, and vibrant Town Centres;
- A safe place to visit - a healthy place to live - a great place to learn - a rewarding place to work - the local community takes pride in the strength of its cultural and civic life and the role of their town in Wollondilly Shire and the region.

1.6 Ecologically Sustainable Development

The vision for Wilton Junction is to deliver a sustainable, 'garden city' for the 21st century offering a high level of self-containment and integrating a modern urbanism within a unique natural and rural setting. It will be recognised for its relaxed, family lifestyle, natural landscape and high-quality service offerings. The Wilton Junction Landowners Group intends to deliver this vision by implementing a sustainability approach that balances environmental, social and economic considerations to achieve practical innovation and best practice outcomes.



Key sustainability objectives for Wilton Junction are:

- Aiming for a self-contained community that has a strong identity and provides local employment opportunities and social services for its residents;
- Establishing an innovative Environmental Trust to protect the site's biodiversity and encourage community stewardship, participation in and access to its natural bushland and aquatic areas;
- Providing innovative water and waste services and infrastructure to maximise recycling of natural resources;
- Developing a range of affordable and flexible housing lots and types that support family needs and allow for aging in place; and
- Designing an integrated transport strategy incorporating public and active transport networks and linkages to reduce reliance on private vehicles.



1.7 Design Principles

A series of overarching design principles were developed to underpin and guide urban growth and development at Wilton Junction. These are:

- › Create a place with a difference, making unique use of natural and man made attributes to create a distinctive human environment cradled by the Razorback Range, surrounding by nature with a built and aquatic beauty at its heart;
- › Utilise central, prominent and visible locations for employment and Town Centre related uses and activities to ensure strong exposure and access;
- › Utilise Wilton Junction and an enhanced critical population mass to act as a catalyst and platform to capture employment opportunities and reverse the under-represented south west commercial / office market;
- › Establish a balanced employment base for the region which attracts investment and expenditure for the benefit of the whole Shire;
- › Provide a range of housing types to service the widest possible extent of housing market niches;
- › Create a community heart for every neighbourhood, co-located with recreation, retail and employment activities and accessible transport;
- › Preserve and protect existing vegetation with conservation value and preserve and, where appropriate, integrate significant vegetation outside of vegetation protection areas into urban areas;
- › Develop centres that are highly visible, permeable and accessible and act as the focal point of neighbourhoods;
- › Centres developed with a high quality public realm, central village square and active thoroughfares that are flanked by a high level of activity and that emphasise the importance of the pedestrian;
- › Create a sense of neighbourhood through the establishment of meeting places and spaces that foster and promote interaction;
- › Seek to maintain the semi-rural setting of Wilton Township as a buffer to surrounding development, while recognising the need for some uplift in development capability;
- › Utilise the iconic positioning of 'cross roads' as centres of activity and junctions which capitalise on the movement economy and integration of public transport, walking and cycling;
- › Target self-containment in services and employment, promotion of work from home opportunities and integration of land uses to reduce trip numbers and length;
- › Facilitate a bus network comprising local internal bus services to connect local residents with their Town Centre and community facilities, district routes to other centres (ie Picton, Tahmoor & Bargo etc) and regional services to connect higher order centres such as Campbelltown;
- › Encourage and provide for non-vehicular movement options;
- › Strive for coordinated infrastructure and services and, explore opportunities to share facilities costs, recognising the respective roles of Federal, State and local government, infrastructure agencies and the developers; and
- › Favour infrastructure that provides opportunities for sustainable long term maintenance outcomes.

Wilton Junction MASTER PLAN



2 SITE ANALYSIS

2.1 Existing Uses and Zoning

The Wilton Junction area currently comprises the following Zones established under the Wollondilly Local Environmental Plan:

- ▶ **R2** Low Density Residential Zone;
- ▶ **RU2** Rural Landscape Zone
- ▶ **RU4** Rural Small Holdings Zone
- ▶ **IN2** Light Industry Zone
- ▶ **B4** Mixed Use Zone
- ▶ **RE1** Public Recreation Zone
- ▶ **E2** Environmental Conservation Zone
- ▶ **SP2** Infrastructure Zone

These existing Zones are identified spatially in figure 2.1.

The area is currently best described as a rural area but one that is undergoing change with the development of Bingara Gorge.

The majority of the land within Wilton Junction by area is used for grazing.

Rural living and hobby farm type activities, again mainly animal (horse) based predominate towards the southern end of Wilton Junction.

The existing township of Wilton is located within the broader Wilton Junction area and has township residential land uses including a recreation reserve, oval and courts and a small centre with limited shopping, dining/take-way and fuel services. There is a community centre located in association with the recreation facilities.

Bingara Gorge is currently a discrete low density urban development and includes services and facilities such as a primary school, community centre, golf course, parks, walking trails and community and public infrastructure. Over time there will be a wider range of shopping and facilities with the construction of a neighbourhood centre now underway.

Most of the existing Wilton and Bingara populations would be currently serviced out of Picton, Wollongong, Campbelltown and elsewhere.

The Sydney Skydiving Centre is located off Picton Road.



figure 2.1 Existing Zoning



2.2 Topography and Geotechnical Assessment

The Wilton Junction Investigation Area is generally elevated. The land is undulating and varies in height between 62m AHD and 302m AHD. This is reflective of the incised valleys and ridges traversing the site.

The site generally is more undulating to the extremities and along the watercourses with the balance being relatively flat (less than 10% slope).

Wilton Junction generally falls from the highest areas along the south eastern boundary toward the tree line adjacent the waterways which marks the steeper more incised sections which fall to either the Nepean River to the west and north, or to Allens Creek and the Cataract River or their subsidiaries to the east and northeast.

A geotechnical assessment by Douglas Partners found:

- ▶ No evidence of hillside or slope instability within proposed development areas;
- ▶ Erosive soils on the site should not present significant constraints to development;
- ▶ The site is deemed free of significant salinity constraints;
- ▶ Soil that could be mildly aggressive to concrete is widespread over the site, however is considered to be manageable, with appropriate design and construction; and
- ▶ Sodic soils are widespread and will require management to avoid dispersion, erosion and, improve drainage.

Overall, the topography and geology of the site is suitable for large scale urban development.

2.3 Interfaces

2.3.1 Visual

The undulation of the site results in both internal and external views.

From various vantage points within the site, ie ridges and elevated areas, there are distant views to the north and north west to the Razorback Range and to the south to the Southern Highlands. To the west and east respectively there are also middle distance views to mining sites and St Mary's Towers.

Internally, the undulation of the site provides views over the golf course and to key stands of vegetation and gorges.

External views over the site are predominantly available from Picton Road and the approach along the Hume Highway from the north. These are not continuous views, being interrupted by both vegetation and the topography.

The area around the interchange is quite prominent from the roadways.

Development of the site has the potential to take advantage of distant views and, internal vistas can be created using lakes and prominent buildings. The high levels of exposure on approach to the interchange make these areas desirable for land uses with high visibility requirements such as commercial and retail uses.

Sensitive development around some ridgelines would be appropriate.

2.3.2 Noise

A Noise and Vibration Assessment was undertaken for Wilton Junction.

Potential noise sources are:

- ▶ Major roads (Hume Highway and Picton Road);
- ▶ The potential Maldon - Dombarton rail link; and
- ▶ The potential Very Fast Train.

Figure 2.2 shows these potential noise sources.

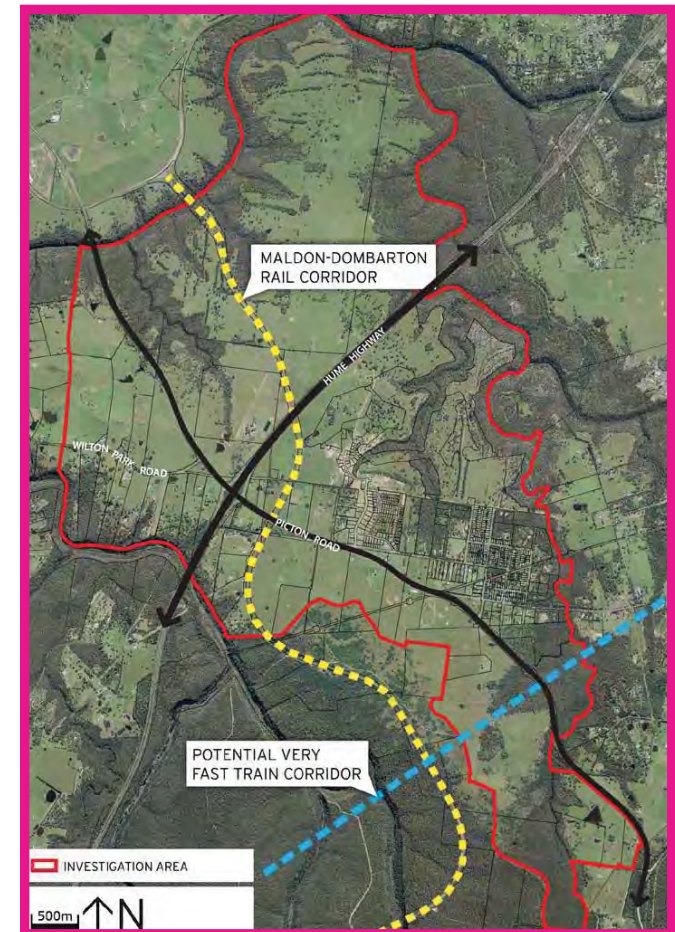


figure 2.2 Infrastructure Corridors

2.3.2.1 Road Noise

Acoustic treatment is proposed for both Picton Road and the Hume Highway.

Recommended noise treatment is as follows:

- ▶ a setback of 20m from Picton Road, west of the Hume Highway interchange to the western boundary of the site; plus some additional mitigation i.e. dwelling mitigation as appropriate due to landform;
- ▶ a setback of 20m from Picton Road, east of the interchange to the edge of the site; plus some additional mitigation i.e. dwelling mitigation as appropriate due to landform;
- ▶ a setback of 20m from the Hume Highway; plus other attenuation as appropriate due to the landform.

2.3.2.1 Maldon - Dombarton Rail Corridor

The Maldon-Dombarton Rail Corridor at present is a corridor only and there is no rail line in existence. In 1983 construction was commenced on the Maldon Dombarton rail line, a freight route linking Maldon in the southern highlands and Dombarton near Port Kembla. Some 35km of earthworks were undertaken until construction on the project ceased in 1988. The partially formed rail corridor traverses the Wilton Junction site as is shown on figure 2.3.

The corridor traverses the site, at grade, elevation and through cuttings as in shown on figure 2.4.

The corridor should be preserved and land uses along the corridor selected having regard to compatibility to potential prospective freight train movements.

Elton Consulting recommends, based on the fact that there is as yet no rail in place (and noting this may remain the case indefinitely) as follows:

- ▶ Proponents to preserve a 60 metre buffer zone from the rail corridor cadastre boundary to the front boundary of the **dwelling** for the future delivery of acoustic treatments.
- ▶ **Development to provide** acoustic building treatments within 160 metres of the rail corridor.
- ▶ **In future, once development has occurred at Wilton Junction**, TfNSW and Rail Operator to consider engineering and operational measures to reduce noise impacts.

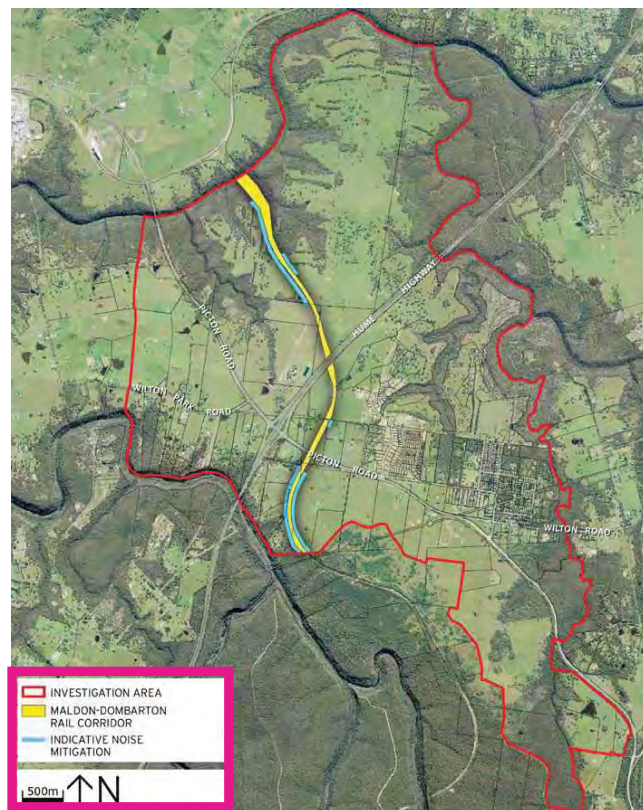


figure 2.3 Conceptual Sound Barrier Locations (Rail Noise)

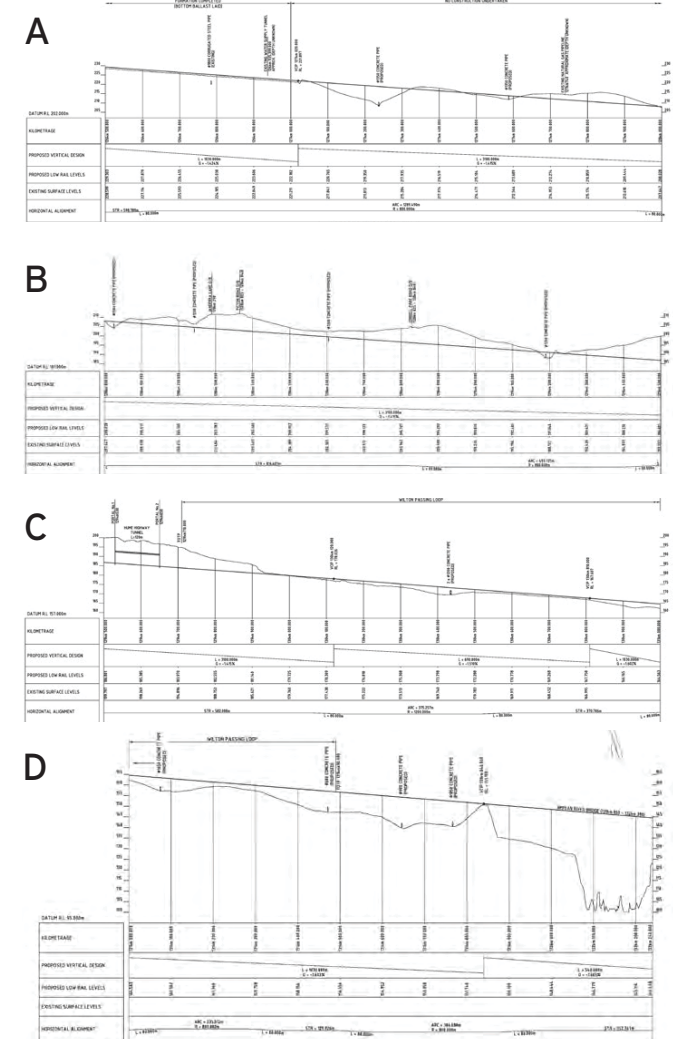


figure 2.4 Rail Cross Sections

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2.3.2.3 Fast Train Corridor

Early investigations are underway for a Very Fast Train (VFT) to link Melbourne and Brisbane. The prospective link is shown to traverse the south-east quadrant of the site as shown in figure 2.5.

It is likely however that if developed, the VFT will pass through the site underground and thus there should be no interface issues.



2.3.3 Air

Interfaces for the purposes of air quality can be managed by locating point sources and receptors away from each other and/or treatments to point sources. Setbacks, including vegetative buffers, can be determined as necessary at the detailed design stage.



figure 2.5 Possible high speed train alignment



2.4 Environment

2.4.1 Vegetation

The subject site comprises areas of native vegetation, cleared areas and modified pastures.

The plateaus and gently undulating elevated lands, being the flattest land of the development site, are cleared and modified pasture and grasslands.

The native vegetation (comprising open forest and woodland) is located predominantly in and around the steep gorges of the Nepean River and Allens Creek, as well as along the steeply incised drainage lines and watercourses that discharge into those major systems. Refer to figure 2.6.

This vegetation ranges from good to moderate condition (confined mainly to the steeper slopes with small areas on the plateaus and elevated undulating land), to disturbed and modified (generally located at the periphery of the more intact stands), and small copses and narrow strips (which are generally highly disturbed and suffer significant 'edge effects' due to their small size and circumstances).

Field surveys by SLR Consulting identified three threatened flora species. All of these are within the gully or steeper slope areas of the site and therefore are unlikely to be impacted by the proposed urban development.

The majority of the site appropriate for development is already cleared, and therefore the vast majority of the important vegetation around the creeks and gullies can be retained.

Where predominantly modified and disturbed vegetation is proposed for removal, the Environmental Offsets Strategy will deliver a broad array of biodiversity offsets and compensatory measures. (Refer to SLR Consulting's Ecological Assessment and Environmental Offsets Strategy report.)

2.4.2 Fauna

SLR Consulting's field investigations identified 11 threatened fauna species. The majority of these are dependent upon the open forest and woodland vegetation for their habitat.

The majority of the site appropriate for development is already cleared, and therefore impacts on fauna are not considered to be significant.

2.4.3 Contamination

The phase 1 Contamination assessment by Douglas Partners (2013) found although part of the site, Lot 2 in DP 702024, is an area that may be affected by unexploded ordnance (UXO) that "all land usage and development, within these areas, should continue".

Fifty-three areas of minor or potential environmental concern were identified, however, the report found that the potential for significant contamination at the site is low. The potential for groundwater contamination is also not considered significant.

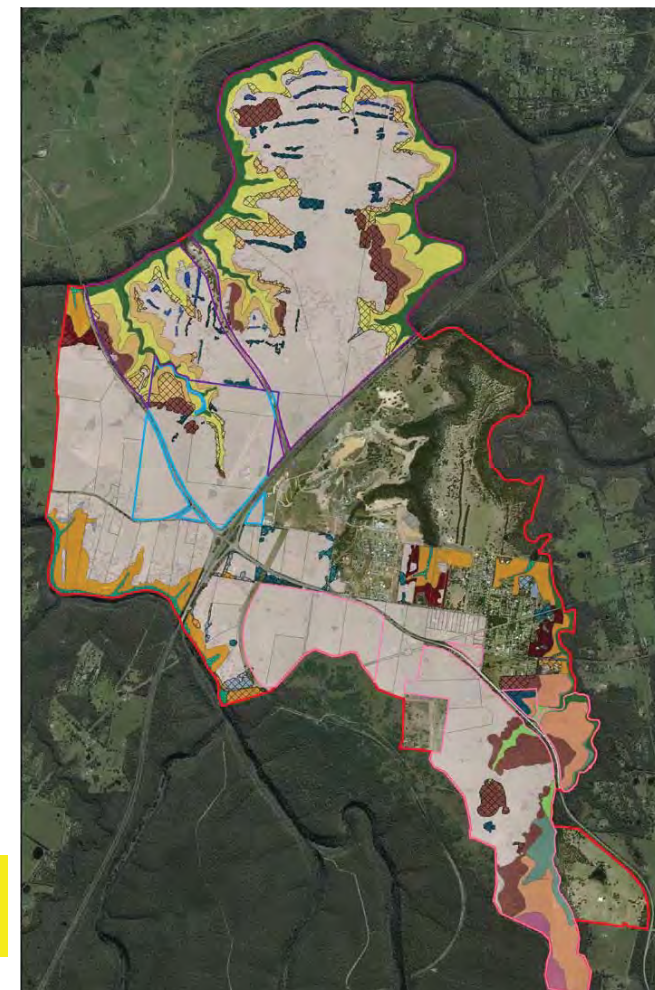


figure 2.6 Existing Vegetation Typology

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2.5 Infrastructure

2.5.1 Traffic and Access

To determine road capacities and requirements for the Wilton Junction development extensive modelling was undertaken by Parsons Brinckerhoff. This modelling was used to determine the configuration of the internal road network, the layout of intersections within the development, access points to and from Picton Road and appropriate upgrades to the Hume Highway/Picton Road interchange.

The resultant traffic generation for Wilton Junction is shown in Table 2.1.

Land use		Daily		AM Peak hour		PM Peak hour	
		In	Out	In	Out	In	Out
Residential	Work	10,481	10,481	1,021	4,085	2,317	772
	Education	382	382	68	270	116	39
	Shopping	9,201	9,201	333	1,333	1,901	634
	Other	8,635	8,635	252	1,007	1,943	648
	Local Primary School + Other	1,854	1,854	182	182	259	259
Retail	Bulky	2,935	2,935	0	0	289	289
	Small	8,302	8,302	291	291	582	582
	Large	4,649	4,649	231	154	385	385
Employment		8,849	8,849	3,783	1,261	544	3,084
Business Park		956	956	0	0	28	156
Total		56,245	56,245	6,161	8,584	8,365	6,847

table 2.1 Traffic Generation Figures

The AIMSUN modelling underlies a road network which seeks to maximise local access whilst minimising the impacts on Picton Road and at the Picton Road/Hume Highway Interchange.

The road network for the Project has been developed based on the need to:

- Separate state road traffic (Picton Road and Hume Highway) from local (internal) traffic;
- Provide a permeable network that reduces travel distances;
- Slow traffic as it moves through the village centre to improve amenity and pedestrian safety;
- Match road capacity and standard to the anticipated traffic volume;
- Facilitate access for trucks to employment lands without having to travel past residential properties;
- Enable the movement of bus services through the network; and
- Use minor local streets for short trips only.

Based on the above principals the key components of the network include:

- Hume Highway/Picton Road Upgrade
- Internal Connector Road
- North Facing Ramps (additional on/off to Hume Highway)
- Upgrades to Picton Road East.
- Grade Separation at Almond Street (to facilitate freight traffic on Picton Road).

Figure 2.7 shows the key components of the proposed Wilton Junction Road Network.



figure 2.7 Key Components of the Proposed Wilton Junction Road Network

Hume Highway/ Picton Road Interchange

The existing interchange has safety and capacity issues during peak times. An upgrade of the Hume Highway / Picton Road interchange is currently being considered by RMS.

A number of different upgrade options have been considered however, a preferred option is yet to be identified.

Internal Link Road

With a high level of job/trip containment expected within Wilton Junction, the need for a strong internal connector road is imperative. The proposed internal link road connects three of the land quadrants (dissected by the Hume Highway and Picton Road), allowing residents to travel within Wilton Junction without the need to use Picton Road. The proposed link road is shown in figure 2.8.

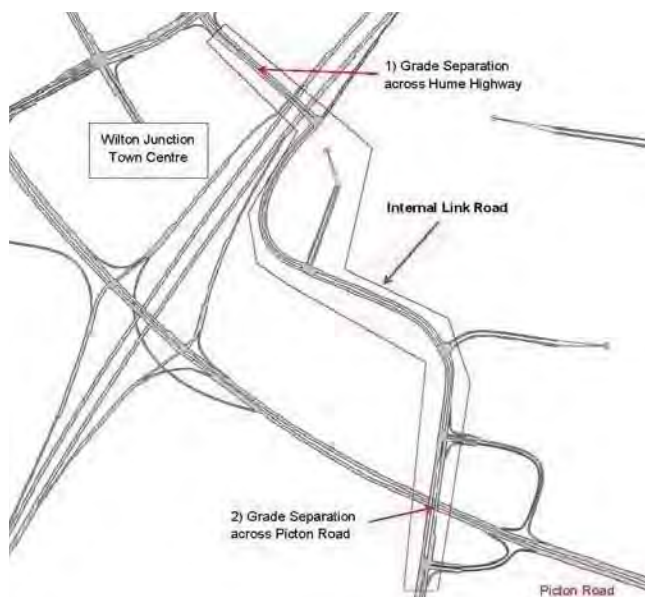


figure 2.8 Proposed internal link road

Grade separation across the Hume Highway and Picton Road maintains the integrity of Picton Road for longer and more strategic trips, such as the freight movement to Port Kembla, and provides benefit for internal trips which can move around without delaying vehicles on the Hume Highway and Picton Road.

North-facing ramps from Wilton Junction to Hume Highway, north of Picton Road

The north facing ramps (as shown in figure 2.9) provide access for Wilton Junction to and from the Hume Highway (north) without the need to use the Picton Road/Hume Highway Interchange, thereby preserving more capacity at this interchange for regional traffic. The north facing slip roads also link with the internal link road helping to minimise travel distance (reduce vehicle kilometres of travel) throughout Wilton Junction, whilst providing direct access to Wilton Town Centre.

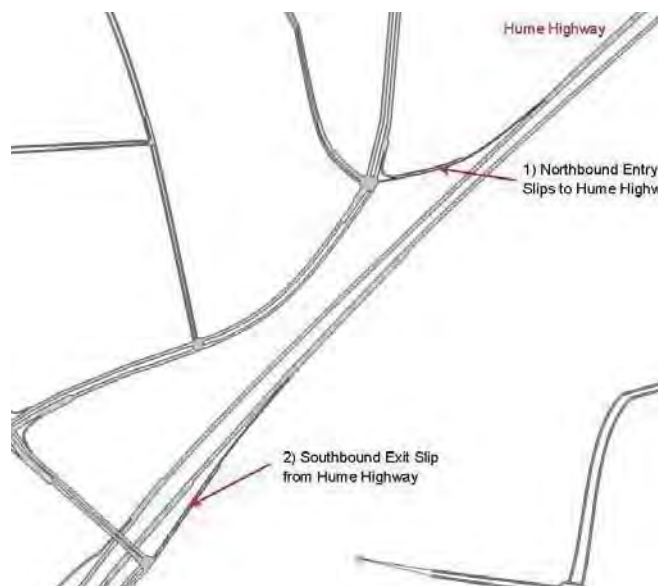


figure 2.9 Proposed north facing ramps

Grade Separation at Almond Street

In order to preserve the integrity of Picton Road it is proposed that Almond Street could be left-in-left-out, whilst providing a new grade separated link across Picton Road. The grade separation also links with the Wilton Junction internal link road.

Picton Road Upgrade

Picton Road, east of Pembroke Parade, would require upgrading to two lanes each way, as identified in the Picton Road Corridor Strategy (RMS, 2011). However, the upgrade is recommended sooner than indicated in the Strategy to maintain adequate performance, with or without the Wilton Junction Development*.

* It is noted that the proposed infrastructure upgrades indicated on the Master Plan are not approved by RMS, TfNSW, or Council. The Hume Highway / Picton Road interchange upgrade indicated on the Master Plan is not an approved design. The proposed layouts and configurations illustrated have been adopted for the purposes of traffic modelling / traffic assessment only.

Wilton Junction Road Hierarchy

The proposed hierarchy for roads within Wilton Junction based on the forecast traffic volumes of the morning and afternoon peaks, access requirements and the principles identified earlier are shown below on figure 2.10.

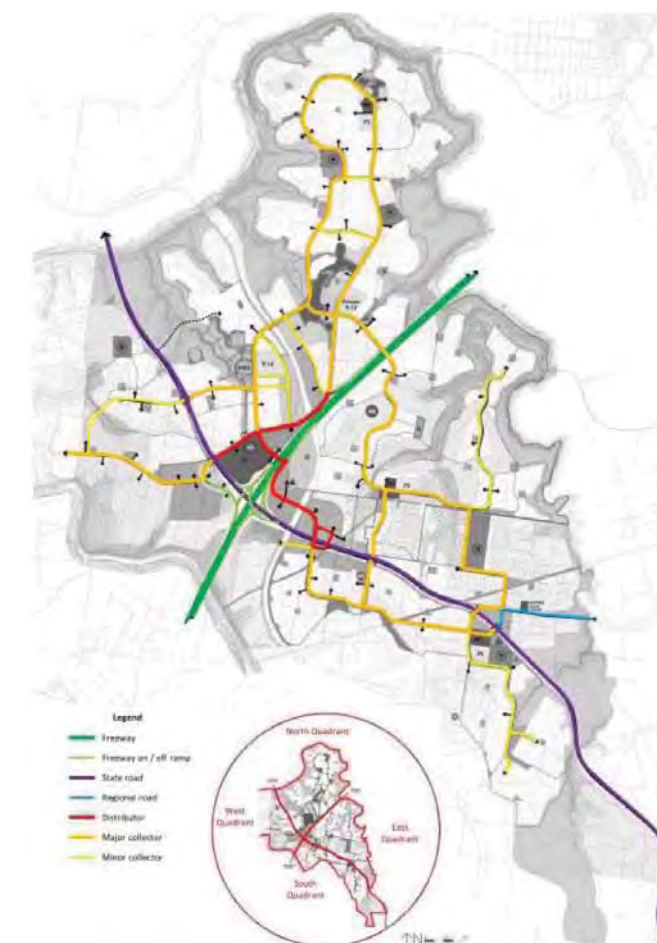


figure 2.10 Internal road hierarchy

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To provide enough capacity between intersections, some of the busiest road links within the development would require two traffic lanes in each direction. These roads are highlighted in figure 2.11. Other roads within the development would have one traffic lane in each direction plus parking, but would be constructed with sufficient width to be converted to two traffic lanes in each direction in the future.

The typical street cross-sections within Wilton Junction have been designed based on the RMS Road Design Guide, Wollondilly Shire Council standards, AMCORD, Australian Standard AS2890.5-1993 On-street Parking and examples of street design in practice.

Basic design elements for internal roads include:

- Lane width = 3.0m - 3.5m
- Kerbside parking lane width = 3.0m
- On-street cycle lane width = 1.5m
- Verge width = 4.0m
- Footpath width = 1.2m.

An access strategy has been developed that balances permeability, impacts on arterial traffic flow and, the need to protect the development streets from high levels of through traffic. The access arrangements and the proposed intersection controls within the internal road network are shown in figure 2.12.

2.5.2 Public Transport

The Wilton area currently has a lack of public transport that reinforces the reliance on car based travel for the majority of trips. The scale of Wilton Junction provides the opportunity to develop high quality alternative public transport services and infrastructure to substantially change the travel behaviour of residents and workers.

The development should include a regional interchange ideally located in the vicinity of the Town Centre that is supported by smaller locally focussed interchanges in proximity to the Neighbourhood Centres within the various quadrants of the development.

The public transport strategy seeks to strengthen connections to rail at stations with frequent services, to connect Wilton to the surrounding regional centres and to promote the self-sufficiency of Wilton Junction. Within the Development sites, footpaths and shared cycle paths and lanes, and on-street cycle lanes would be provided along with public bicycle parking facilities. The

provision of parking in the Development will also support sustainable travel behaviour. The provision of Park-and-Ride facilities will encourage the use of public transport. The sensible positioning of off-street parking will discourage multi-trips and encourage walking within the Town Centre.



figure 2.11 Number of lanes required

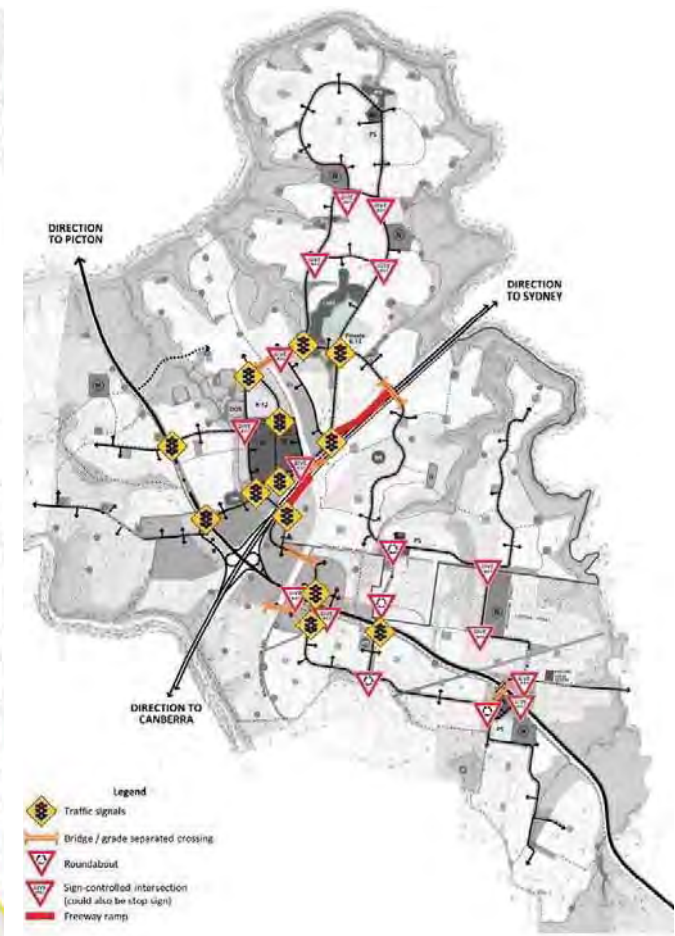


figure 2.12 Access locations and intersection control

2.5.3 Cycling

Wollondilly Council has planned a network of shared cycle and pedestrian paths. Currently, Picton Road, Almond Street, Camden Road, Argyle Street and Hornby Street in Wilton have been identified to form part of the cycle network. The new development will expand this network. The plan of the shared pedestrian and cycle routes is shown in figure 2.13. Bike routes would be designed in accordance with the RTA's NSW Bicycle Guidelines (July 2005).

The cycle routes are proposed with a mixture of shared paths, mixed traffic and on-street cycle lanes. This has been done to avoid mixing cyclists with traffic on the streets with the highest traffic volumes, where possible. **This cycling network also supports recreational cycling.**

2.5.4 Pedestrian Networks

Town Centre

Appropriate urban design and traffic management measures are planned along the streets within the Town Centre to reinforce the high pedestrian activity nature of the area and to improve pedestrian safety. Treatments proposed include entry thresholds (using textured pavement / pavers), road width changes, raised thresholds, street lighting and lower speed limits.

Local Facilities

The pedestrian and cycle networks are designed to have a greater level of permeability than provided to vehicles to further promote their greater use. Off-street shared paths are planned to complement Wollondilly Shire Council's cycle / pedestrian paths scheme and increase permeability for pedestrians and cyclists.

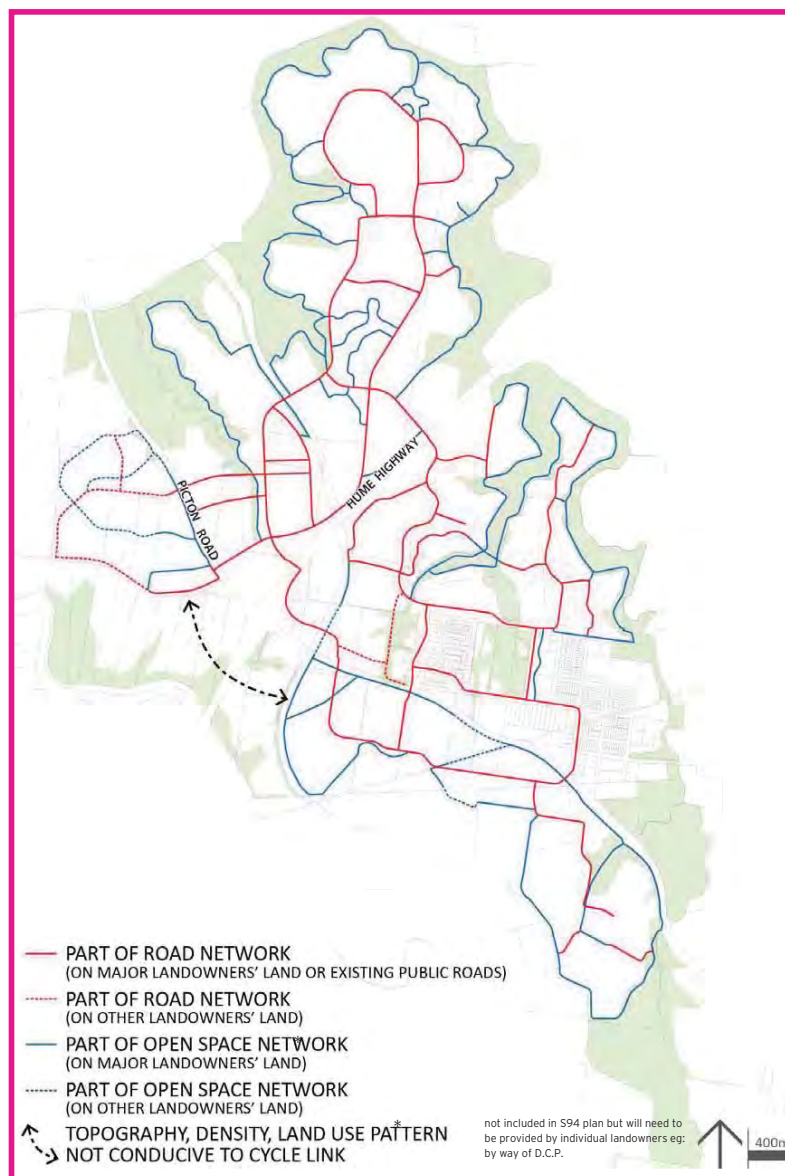


figure 2.13 Shared pedestrian and cycle routes



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2.5.5 Water, Sewer, Stormwater and Reuse

2.5.5.1 Water

Potable water is available for the initial stages of the development from the Macarthur Water Filtration plant in Appin. The trunk system currently has capacity for some 600 dwellings that could be serviced via the installation of a 375mm diameter lead to both Bradcorp and Governors Hill and a 200mm diameter lead to the Walker Corporation land from Picton Road. This would be supported by 4 boosters and would enable development to be undertaken on three new fronts as well as the continuation of Bingara Gorge.

Longer term there is a need for an upgrade to the trunk main along Wilton Road. There is also need for an additional 12ML of storage. A reservoir(s) will need to be constructed. These will need to be located in an elevation position ideally south of Picton Road.

This can be undertaken in stages as is shown in figure 2.14.

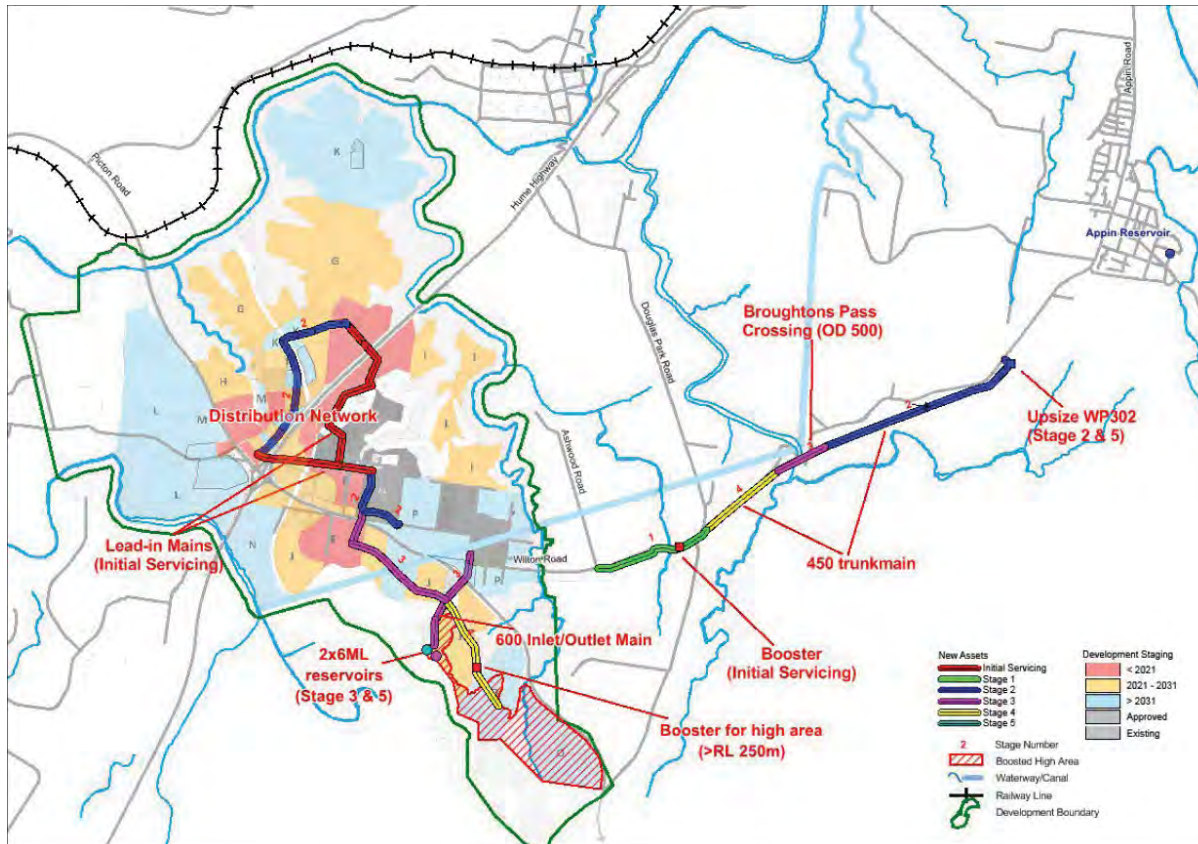


figure 2.14 Water provision and distribution network

2.5.5.2 Sewer

Although Wilton Junction is within the overall Sydney Water Corporation servicing area there is currently no publicly owned sewerage treatment or effluent disposal system currently available to provide for the development of Wilton Junction.

Bingara Gorge is serviced by a privately owned Sewerage Treatment Plant located near the Hume Highway close to the interchange with Picton Road. There is some spare capacity within this plant.

The approach to delivering sewer infrastructure has been to ensure that it is sustainable and adaptable over the longer term.

MWH reviewed options for sewerage treatment from Wilton Junction that provides for effectiveness, value to the developers and government, flexibility to service a number of development fronts concurrently and, minimises the risk of environmental overflows.

The recommended system is an MBR (Membrane Bioreactor) waste water treatment plan with tertiary media filters. The preferred location is near the existing Sewerage Treatment Plant servicing Bingara Gorge.

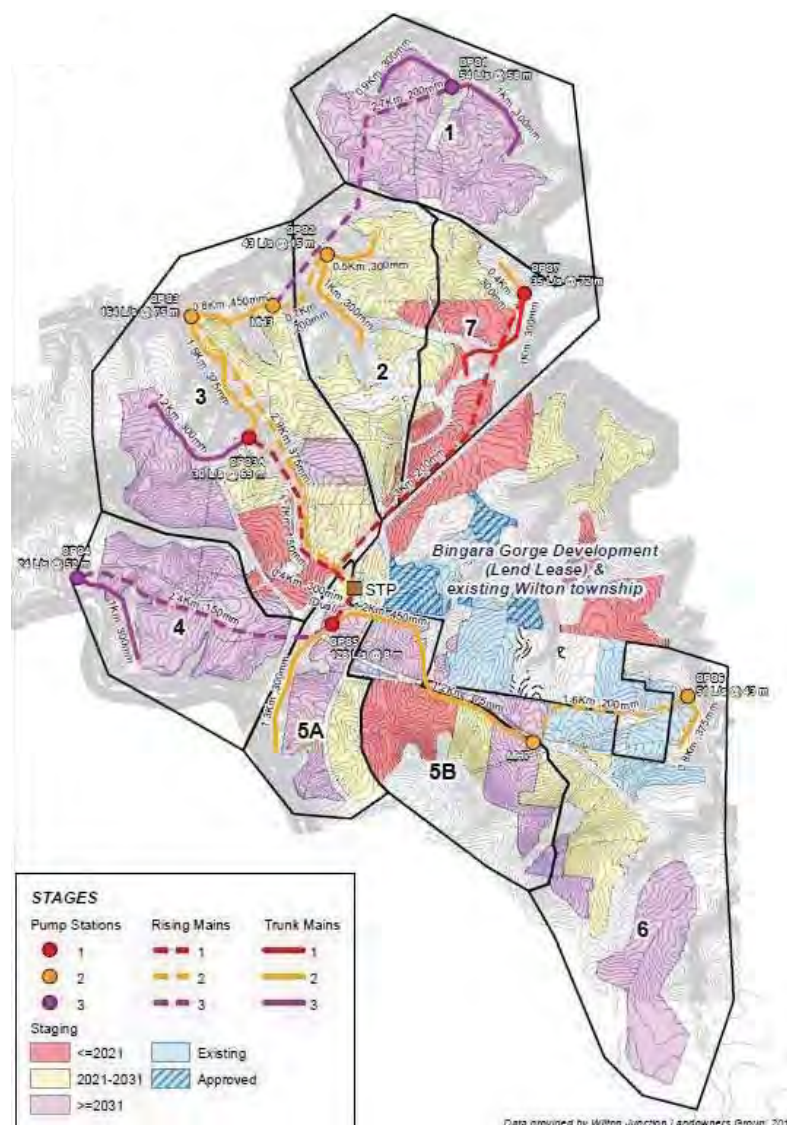
Collection of sewerage from properties would be via a pressure network with individual pots and pumps located on each property.

The level of effluent treatment provided by the Membrane Bioreactor (MBR) facility will enable the resultant water to be reused.

A total of 10.9 ha of land is required for water treatment as follows:

- The treated effluent train needs to be at a local high point to enable treated effluent to gravity feed via a rain garden system to a lake of some 46.25 ML (2.0ha surface area and 2.5m depth);
- Water will gravity feed from this lake to a larger lake at the bottom of the water body;
- This second lake needs to be 8.9 ha in area and a depth of 2.5m to store 204ML of water; and
- Pump stations will be associated with these lakes. These will have minimal siting and land take implications.

The proposed sewer network is shown in figure 2.15.



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figure 2.15 Sewer provision and distribution network

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2.5.5.3 Stormwater

The holistic approach to water management proposed for Wilton Junction requires stormwater to be treated to meet appropriate environmental standards and then for this and treated waste water to be extensively used on the site, minimising the need for external discharge.

2.5.5.4 Water Reuse

To achieve appropriate stormwater quality and discharge volumes, a treatment chain system is required at the allotment level, street level and development wide. The treatment chain will need to include:

- Proprietary gross pollutant traps at each stormwater discharge site;
- Approximately 75 bio-retention rain gardens with a total area of 149,900m²;
- Gravel soakway/level spreaders to distribute flows to the bushland perimeter;
- A regional detention basin (approximately 35,000m²) on-line with Allens Creek;

The water quality of treated effluent will meet public health standards and will be suitable for secondary contact activities (VKL Consulting in association with J Wyndham Prince). The treated effluent is proposed to be used partially as a resource, and to provide overall amenity by the creation of recreational water bodies, with some discharge to the Nepean River after progressing through rain gardens.

The recycled water management system comprises:

- Recycled water management system comprising:
- A cascading rain garden system of a total of 3,000m²
- Treatment/evaporation lakes.

The disposal system is shown spatially and schematically in figures 2.16 and 2.17 respectively.



figure 2.16 Effluent disposal system

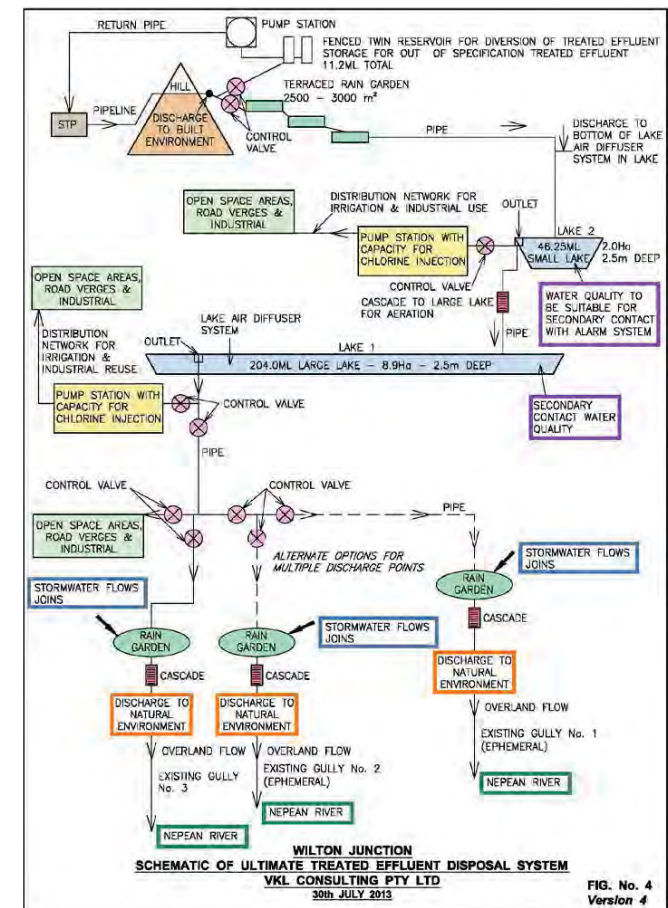


figure 2.17 Schematic of ultimate treated effluent disposal system

2.5.6 Gas

Gas can be provided to the site.

To provide gas however, the existing take off point will need to be upgraded or an additional take off point will be required.

Gas can be negotiated with the supplier at an appropriate future time.

2.5.7 Gas Pipeline

The Moomba-Wilton Gas Line (natural gas) and the Moomba-Botany ethane pipe line run in a 24m wide easement through Wilton Junction. See figure 2.18.

Verton & Associates and Elton Consulting (2013) report that the pipes are located, each approximately 6m from the edge of the easement and range in depth from approximately 750mm to 1.2m.

Management of the pipeline is required in accord with AS 2885.1 and a safety management study will be undertaken once the rezoning has occurred and as more detailed development proposals are formulated.

2.5.8 Electricity

An electricity substation at Condell Park Road, Bingara Gorge and a 66kV feeder line through Wilton West (adjacent to the Maldon Dombarton Rail Alignment) have been constructed to serve the Bingara Gorge development.

Increased development will increase demand and will require some major new infrastructure along with some upgrades and new feeds.

In the short term (2017), a new transmission line is expected to be required from Spring Farm to Douglas Park.

The Bingara Gorge substation has capacity for significant upgrade to provide an additional 1 - 3 transformers. Each transformer can subsequently be increased in size to increase capacity. A substation can typically support an area within a 3km radius. Each feed notionally can support 800 dwellings.

An additional sub-station will be required to support land in the south east of the Wilton Junction site. A flat site of between 0.5ha and 1 ha in size will be required to facilitate the development of this substation.

It is likely that this will be required in the southern quadrant.

2.5.9 Telecommunications

Main trunk telecommunication cables pass through the investigation area and can be augmented to provide fibre to the home.

The site can be serviced by the NBN at the appropriate stage(s) of development.



figure 2.18 Moomba-Wilton Gas Pipeline and Moomba-Botany Ethane Pipe Line alignment



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2.6 Mining

Wilton Junction lies within the Wilton Mine Subsidence District (MSD) and, within this, largely above the Appin Area 8 of Illawarra Coal's Bulli Seam Operation's underground long wall mining project.

The potential for the coexistence of mining and urban development has been considered from the standpoints of mine subsidence by MSEC and surface infrastructure and gas drainage by IMC.

Mine subsidence is ground movement that may follow underground coal extraction.

MSEC research reports the maximum subsidence is mostly likely to occur where the seam thickness is greatest near the northern most long walls. The seam varies in thickness in the north between 1.8m and 2.5m with an average thickness of 2.2m. Overlay of the Master Plan shows that the maximum subsidence is likely to occur in low density areas. **The Town Centre has to be located such that it is at the edge of the layout minimising the potential impacts of subsidence.** Subsidence in the area of the Town Centre and industrial lands is predicted to be between 750mm and 800mm. The maximum tilt is predicted to be less than 4mm.

Appropriate design of buildings, structures and associated infrastructure will enable mining and urban development to co-exist with the subsidence being manageable. It is expected that buildings would remain safe, serviceable and repairable, with damage, where it occurs, being cosmetic rather than structural with significant damage only in a very small number of cases.

Design will need to be to the satisfaction of the Mine Subsidence Board.

Gas drainage is an integral part of coal mining. Gas is drained to manage outburst risk and to maintain gas levels to within statutory specifications. Gas drainage can be achieved using predominantly underground methods; however surface based methods are generally more cost effective and safer. Surface drainage requires corridors and open areas as access sites. IMC has identified the potential for much of a surface gas system facilities to be located within bushland and Asset Protection Zones. Road easement could be utilised within the area of urban development, along with open space.

IMC has identified a number of areas within the Wilton Junction site that are potentially available to access and undertake surface based gas drainage and extraction and has therefore been able to demonstrate that technically feasible alternative solutions exist.

2.7 Cultural Heritage

2.7.1 Aboriginal Archaeology

Previous archaeological surveys have indicated that Wilton Junction is within an area of known historical Aboriginal activity.

A detailed analysis undertaken for the Wilton Junction site by Kayandel Archaeological Services, has confirmed this and identified a range of Aboriginal sites.

Forty-nine Aboriginal sites had previously been identified within the Subject Area. As a result of the survey and assessment undertaken for this present study an additional 30 previously unknown Aboriginal sites have been identified. These additional sites consist of seven artefact scatters, ten isolated finds, eight rock shelters with either PAD, art or artefacts and five

scarred trees that have been assessed to be the result of Aboriginal cultural practices. It is expected that the overall number of Aboriginal sites will increase once additional survey is undertaken within the conservation areas associated with the Nepean River and Byrnes Creek. Based upon the incidence of Rock Shelters within Stringy Bark Creek and Allens Creek additional (30-50) sites would not be unexpected. The majority of these additional sites would likely be Rock Shelters with Art and/or artefacts and would be in locations not subject to any direct development impacts and would not be disturbed but would be retained and conserved.



figure 2.19 Indicative Wilton Junction Goaf Drainage Layout using Vertical Wells

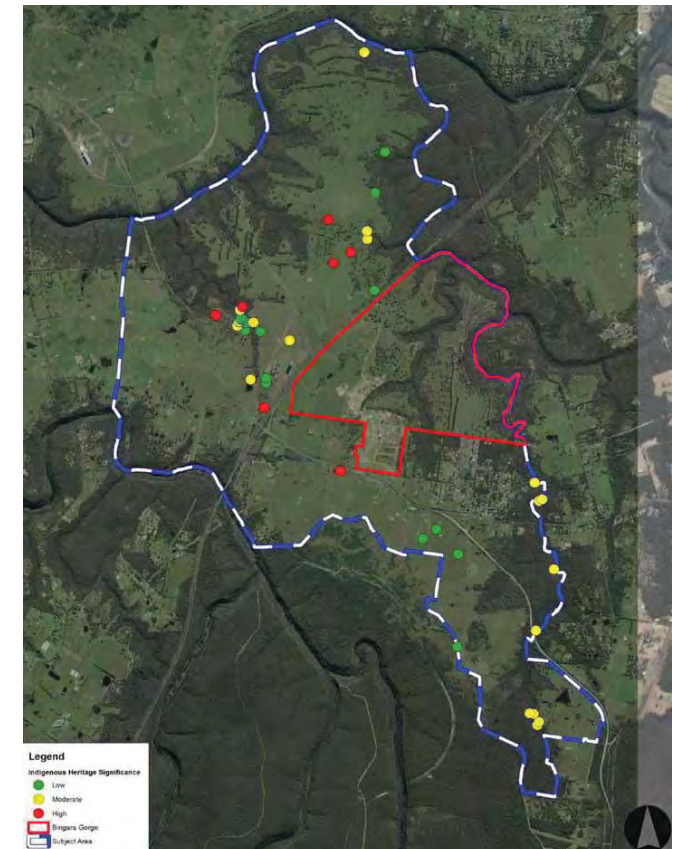


figure 2.20 Aboriginal heritage item significance

There are large portions of the Subject Area in which no evidence of Indigenous people use and occupation has been identified. Where this evidence does exist (principally as open context sites i.e. Artefact Scatters and Isolated Finds) they are in the main present within areas currently proposed for direct impact from development should the rezoning proceed. These sites will require additional assessment in the form of sub-surface investigations prior to an AHIP being sought from the Office of Environment and Heritage.

With regard to the Scarred Trees currently located within the proposed development area it is preferable that where these items are in good condition that they be incorporated into public open space or conservation areas. Where the item is in poor condition the Aboriginal community would support the item being removed and conserved at an alternate location. The Masterplan concept has considered the above, and all scarred trees in good condition have been incorporated into open space areas.

All future development within the vicinity of heritage items will need to comply with relevant legislative processes.

2.7.2 European (Non-Indigenous) Cultural Heritage

There are three locations on the State Heritage Register (SHR) that are particularly relevant to the Wilton Junction Subject Area. These are:

1. Part of the Upper Nepean Catchment System that traverses the eastern portions of the Subject Area ;
2. "Parkhall" or St Mary's Towers which was the original Land Grant to Thomas Mitchell, Surveyor General; and
3. The property of "Wilton Park" that is situated immediately west of the Subject Area.

As these locations are on the State heritage register it is important to consider the indirect impacts of the project i.e. the effect of development works upon the vistas both into and out from each place.

Immediately abutting the Subject Area boundary are also a number of Heritage Items that are listed in Schedule 5 of the LEP. Of note is a small cottage on the northern alignment of Wilton Park Road at the western extent of the Subject Area. Development in the immediate environs of this item will require the preparation of a Statement of Heritage Impact at the development application stage.

Previous studies have also identified a number of Historic Heritage items that do not appear on the Schedule 5 register. These include a small sandstone weir structure (Thornton's Weir) in the southern extent of Allens Creek and the Homestead of "Condell Park".

Figure 2.21 indicates the significant non-indigenous heritage items on the site.

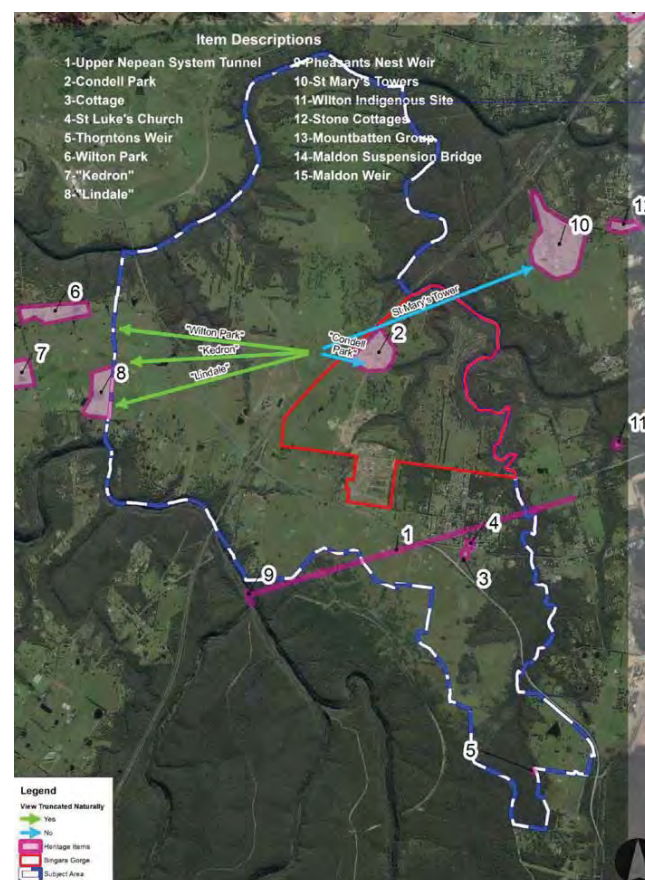


figure 2.21 Historic (non-indigenous) heritage items and sites

Heritage on and around the Wilton Junction site can be managed and all relevant legislation will be complied with.



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2.8 Bushfire

To manage the bushfire risk the location and extent of the Asset Protection Zone (APZ) has been established. The APZ has been established having regard to the topography of the site and the type of vegetation.

For assessment purposes the site has been divided in to three areas Wilton South, Wilton West and Wilton North. These areas are shown graphically on figure 2.22.

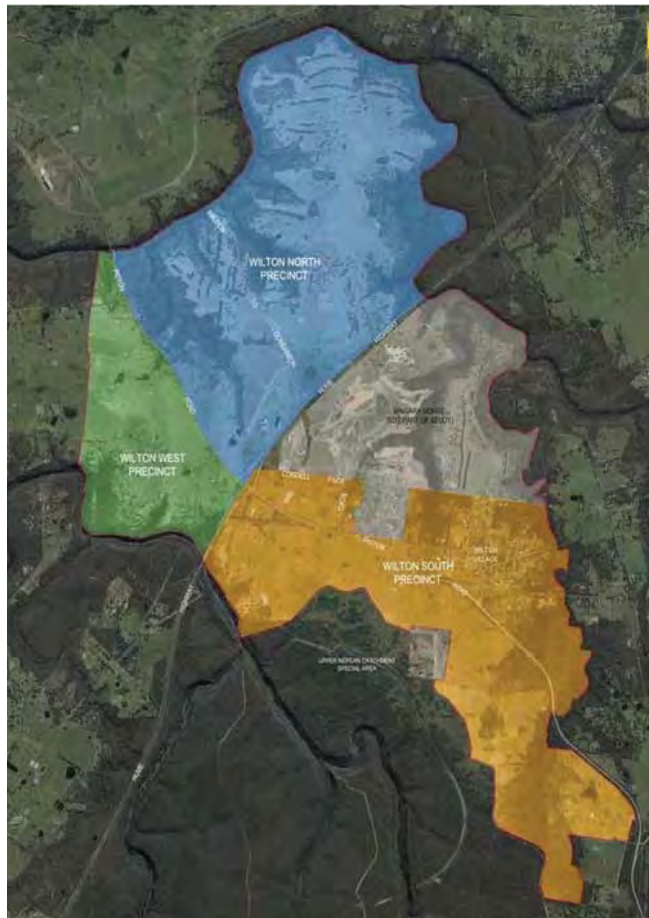


figure 2.22 Bushfire assessment areas

2.8.1 Wilton South

The vegetation varies along the perimeter of the Wilton South precinct, including extensive areas of 'Grassland' along the south western aspect and 'Forest' vegetation along the entire eastern boundary and parts of south western boundary surrounding the Hume Highway.

The effective slope of the land containing the bushfire hazard vegetation ranges between 0° - 5° and 15°+, with the predominant downslope vegetation being 0° - 10°. The APZ will need to range from between 50m and 60m.

2.8.2 Wilton West

The vegetation varies in the Wilton West precinct, comprising 'Grassland' along the entire western aspect and 'Forest' for the remainder of the perimeter area.

The resulting APZ will vary along the outer limits of the investigation area, between 25m and 60m.

The western aspect containing 'Grassland' vegetation has an effective downslope of < 18°. The recommended APZ in this area is 10m.



2.8.3 Wilton North

The primary vegetation classification within the northern precinct is 'Forest'. The recommended APZ will vary between 25m and 60m.

The resultant APZ is shown on figure 2.23. This plan shows both the APZ and an area that with management may form and outer APZ.

2.8.4 Bushfire Design Parameters

Physical protection measures include:

- ▶ Urban perimeter roads of at least two traffic lane widths (8m);
- ▶ Internal roads are at least 6.5m in width, with no parking to one side;
- ▶ Cul-de-sac design shall incorporate a turning circle of 24m for Category 1 NSW Rural Fire Service Tankers and NSW Fire Brigade Composite Appliances; and
- ▶ Minimum vertical clearance to a height of 4m above the road.



2.9 Suitability for Agriculture

New South Wales Agriculture (2002) recommends protecting highly productive agricultural land (Classified as Class 1, 2 and 3 and speciality class) from competing land uses such as urban development. Preference is given to the protection of Classes 1 and 2 over Class 3.

A study was undertaken by Harvest Scientific to determine the capacity of the Wilton Junction land for agricultural purposes.

This study found that there is no land within the Wilton Junction area classified as Class 1, Class 2 or Specialist Class. Approximately 620 ha of land classified as Class 3 was identified. Whilst this land is suitable for grazing and potentially pasture improvement, it was nevertheless constrained by soil fertility, potential erodibility issues, limited access to fresh water for irrigation and the potentially presence of threatened ecological communities.

It is therefore considered that the land at Wilton Junction is developed to near its agricultural capacity.

Notwithstanding, large lots in the south western quadrant are of a size that can support alternative agricultural pursuits such as horticulture.

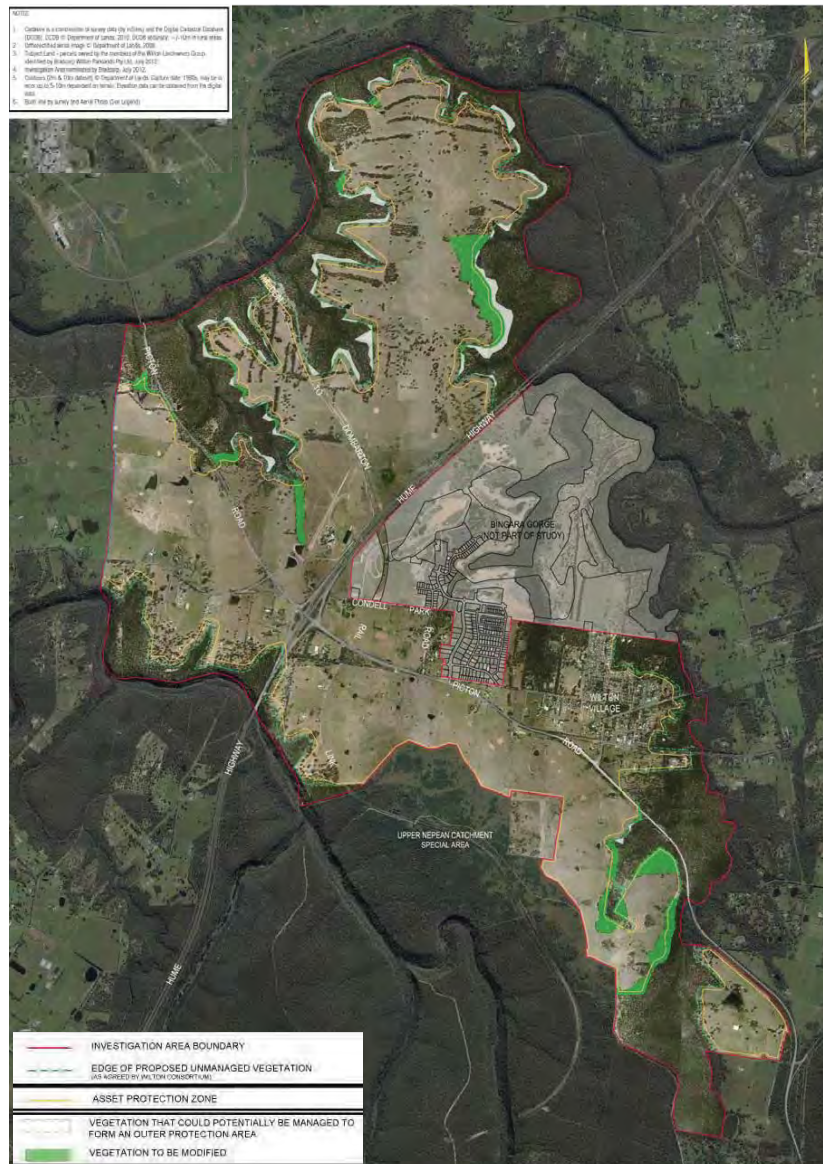
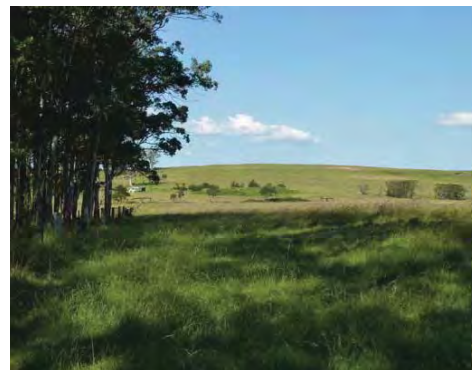


figure 2.23 Asset Protection Zone

Wilton Junction MASTER PLAN



3 DEMOGRAPHIC PROFILE

3.1 Existing Population Characteristics

Understanding the profile of the existing population of an area can help in predicting the characteristics of the new population attracted to development, as well as underpinning strategies to promote integration of new and existing communities.

Using the 2011 ABS Census of Population and Housing, the community profile of the immediate local area, and the village of Wilton have been compared with the Wollondilly LGA and Sydney (Greater Capital City Statistical Area).

Table 3.1 below provides a benchmark for comparison of the key demographic factors that are likely to influence social infrastructure needs and requirements as Wilton Junction grows and changes over the coming decades.

This demographic profile prepared by Macro Plan reveals that:

- › Wilton and Wollondilly LGA have relatively young populations, with a much smaller proportion of the population aged 65+ than Sydney as a whole.
- › Families are the most common household type, with a predominance of couple families with children;
- › Individual and household incomes in Wilton are well above the median incomes in Wollondilly and Sydney;
- › Consistent with the semi-rural character, housing forms in Wilton and Wollondilly LGA are almost exclusively detached dwellings, with only a small proportion of medium density dwellings compared to Sydney;
- › The proportion of the population paying off a mortgage is very high in both Wilton and Wollondilly LGA and the proportion of residents in rental housing in both Wilton and Wollondilly LGA is well below that of Sydney;
- › Levels of cultural diversity in Wollondilly as a whole are significantly lower than the Sydney metropolitan average; and
- › As is common in most semi-rural areas, most households have two or more motor vehicles (almost 80%) in both Wilton and Wollondilly LGA, a much higher rate than the Sydney average.

table 3.1. Characteristics of existing population

Population	Wilton Junction Local Area	Wilton Village	Wollondilly LGA	Greater Sydney
Population	697	1,890	43,261	4,391,676
Age Groups (%)				
0-4 years	5.4	7.4	7.3	6.8
5-11 years	9.9	10.7	11.1	8.7
12-17 years	8.9	7.8	9.2	7.4
18-24 years	7.9	8.2	9.0	9.5
25-54 years	39.4	42.6	40.6	43.8
55-64 years	15.1	12.8	12.0	10.8
65+ years	13.3	10.5	10.8	12.9
Median Age (years)	39.5	37	36	36
Family Structure (%)				
Couple with children	48.9	56.4	52.6	48.9
Couples without children	34.8	32.8	32.9	33.5
Single parent families	16.3	10.3	13.6	15.7
Other families	0.0	0.6	0.9	1.9
Household Type (%)				
Family household	84.2	87.1	82.2	73.1
Lone person	15.8	12.3	16.1	22.6
Group household	0.0	0.7	1.7	4.3
Average Household Size (no. people)	3.0	3.0	3.0	2.7
% born overseas	12.8	13.0	12.4	34.2

Population	Wilton Junction Local Area	Wilton Village	Wollondilly LGA	Greater Sydney
Income (\$)				
Median household income (\$ weekly)	1,396	1,807	1,487	1,447
Median Individual Income (\$ weekly)	601	714	617	619
Private occupied dwellings (%)				
Low density (separate house)	97.2	98.3	94.5	60.9
Medium density (Semi / Townhouse)	1.4	0.5	3.0	12.8
Higher density (Apartment)	0.0	0.5	1.6	25.8
Housing tenure (%)				
Fully owned	33.8	30.7	30.8	30.4
Being purchased	40.5	54.2	49.6	34.8
Rented	24.3	13.4	16.3	31.6
Number of Motor Vehicles (%)				
None	1.4	1.0	3.3	12.1
1+ motor vehicle	21.7	16.9	23.3	38.4
2+ motor vehicle	74.1	79.4	70.4	46.5

Source: MacroPlan Dimasi, 2013

3.2 Projected Demographic Composition

MacroPlan Dimasi has examined the demographic profile of comparable new estate regions in South West Sydney and derived a likely demographic profile of future residents in Wilton Junction.

Resident populations in new release areas are generally 'younger' and MacroPlan Dimasi believe that significant demand for Wilton Junction will come from first home buyers or young families. Based on MacroPlan Dimasi's forecasts approximately 70% of the population will be aged more than 50 years.

In addition, having regard for the aging nature of our population and the attractiveness to 'trade-down' from established cities, live near family and relocate to regions with high amenity, it is expected that Wilton Junction will draw more 65+ residents than current new release areas. The completion of the golf course in Bingara Gorge and the development of a new Town Centre with localised service provision will facilitate further inflows of 65+ persons. On this basis, MacroPlan Dimasi projects that 65+ residents will comprise in excess of 10% of Wilton Junction's population.

3.2.1 Household Occupancy Rates

In new estate regions, low density dwellings comprise about 3.2 occupants, while medium density dwellings (semi-detached, attached, terrace and villas) generally consist of 2.4 persons. Within Wilton Junction, a higher share of young couples with no children and more retiree households are expected to collectively drive down the average number of occupants per dwelling. Accordingly, occupancy rates are expected to be marginally lower than other new estate regions at 2.8-3.2 persons per household in low density development and 2.0 - 2.6 persons per household in Medium Density development. This equates to an average household size in the order of 2.93 persons per dwelling.

3.2.2 Lot Production

An average build out rate of approximately 370 - 380 lots per annum is anticipated over the life of the project and is based on the following assumptions:

- Rezoning of Wilton Junction achieved late 2014;
- A total production of 11,900 lots by 2039;
- An increase in residential land production generally across Sydney's south west.

Note that the build out rate of an average of 380 lots per annum includes construction at Bingara Gorge which commenced in 2008 at a slow rate but has accelerated in recent years.

Table 3.2 identifies projected lot production at Wilton Junction.

table 3.2 Projected Lot Production at Wilton Junction

Year	Average Annual Allotment Production	Cumulative Allotment Production
2016	140 ¹	1,230
2021	460	3,530
2026	520	6,130
2031	550	8,880
2036	470	11,230
2041	220 ²	11,900

¹ 9 years to 2016

² 3 years to 2039



3.2.3 Dwelling Completions

Lot production does not represent dwelling completions as population is only realised at the point of dwelling completion and occupation.

Accordingly, the following assumptions have been applied to derive projected dwelling completions:

- One lot equates to one dwelling (across all dwelling typologies);
- A two year lag is anticipated between lot production and dwelling completion and occupation; and
- Sales are achieved at the rate of production.

Table 3.3 presents total and annual average dwelling completions at five year intervals.

table 3.3 Average Annual Dwelling Completions

Year	Average Annual Dwelling Completions	Cumulative Dwelling Completions
2016	90 ¹	640
2021	370	2,490
2026	520	5,090
2031	540	7,780
2036	510	10,330
2041	310	11,900

¹ 7 years to 2016



The breakdown between detached and other forms of housing is depicted in table 3.4. Detached housing is anticipated to account for 90% of total dwelling production in 2016, before decreasing to 84% by 2041, reflecting an aging of the population and a growing propensity for the choice of 'other' dwelling forms over time.

3.2.4 Total Project Population

Based on projected dwelling completions and occupancy rates, the total resident population of Wilton Junction at completion is expected to total approximately 34,955. This includes a contribution from the existing Wilton Township and approved and future dwellings at Bingara Gorge.

The table below presents total forecast population at Wilton Junction by age, over five year intervals (excluding the existing Bingara Gorge resident population of 341 persons).

This demographic analysis provides the basis upon which planning for infrastructure, social services, open space, retail centres and locations of the above has been undertaken.

table 3.4 Projected Housing Typology (dwellings) at Wilton Junction

Lot Type	2016	2021	2026	2031	2036	2041
Dwellings (number)						
Detached	576	2,216	4,479	6,769	8,884	9,996
Other*	64	274	611	1,011	1,446	1,904
Total	640	2,490	5,090	7,780	10,330	11,900
Proportion (%)						
Detached	90%	89%	88%	87%	86%	84%
Other*	10%	11%	12%	13%	14%	16%
Total	100%	100%	100%	100%	100%	100%

* Includes townhouse, villa, apartment and shop-top housing
Source: MacroPlan Dimasi, May 2014

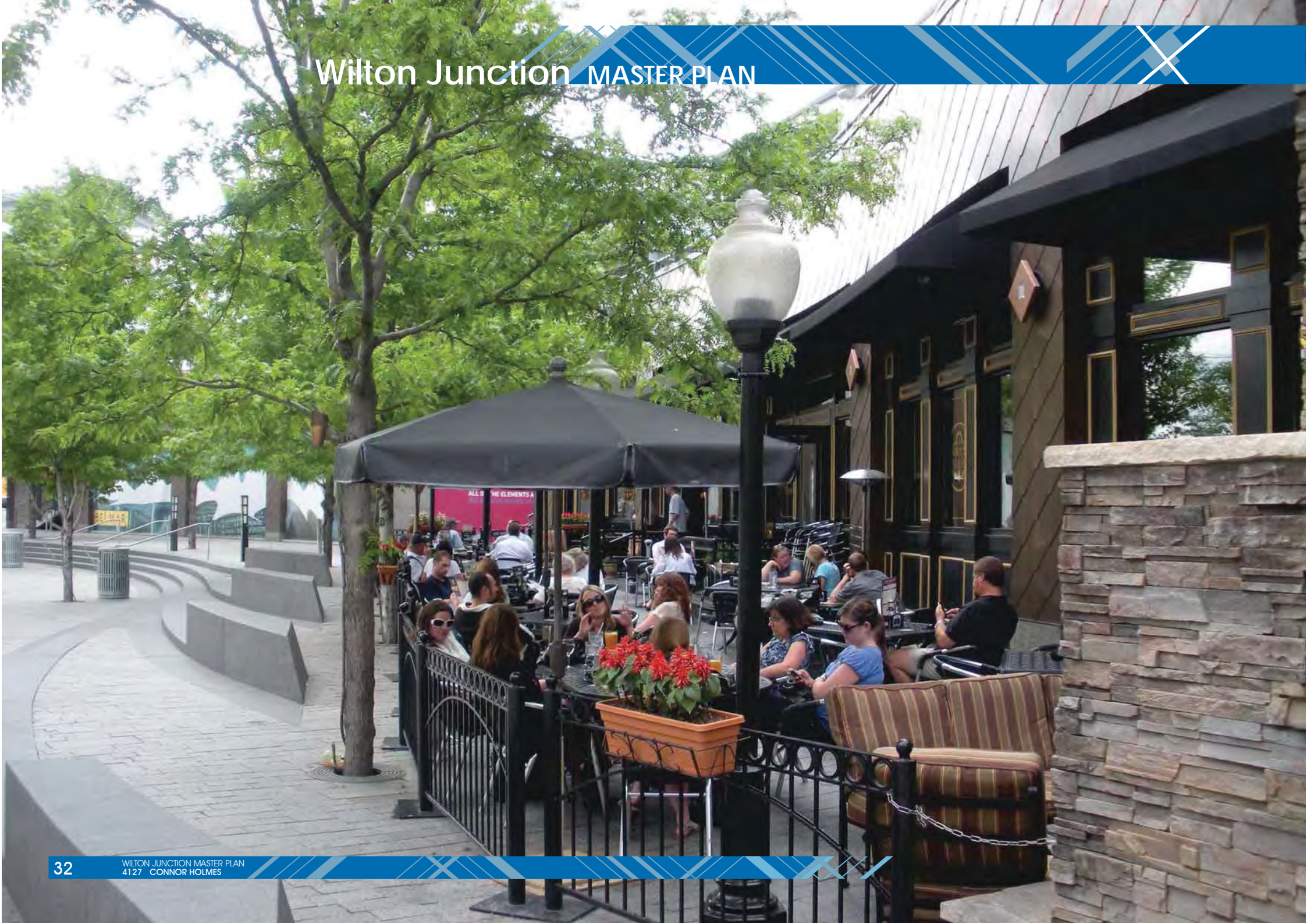
table 3.5 Total Forecast Population at Wilton Junction

Period	Total Population (persons)				
	2020	2025	2030	2035	2041*
0-19	2,287	4,444	6,695	8,936	10,645
20-34	1,469	2,907	4,407	5,902	7,041
35-49	1,597	3,035	4,535	6,029	7,169
50-64	1,147	2,441	3,792	5,137	6,162
65+	595	1,458	2,358	3,254	3,938
Total	7,095	14,285	21,786	29,259	34,955

*Extended one year to include completion year
Source: MacroPlan Dimasi, May 2014



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4 MARKET ANALYSIS

4.1 Employment

In order to generate employment forecasts, MacroPlan Dimasi has projected a job composition for Wilton Junction (at completion). The distribution of jobs by industry considered:

- ▶ The current job composition in Wollondilly LGA and the Outer South West Sydney Region (OSWSR);
- ▶ Emerging market trends and industries;
- ▶ Wilton Junction's comparative business advantage; and
- ▶ The impact of Wilton Junction's final resident population.

Table 4.1 provides a breakdown of projected job composition at full development of Wilton Junction.

table 4.1 Job Composition at Wilton Junction

Industry	Proportion*
Retail Trade	20%
Health Care and Social Assistance	11% - 12%
Other Services	6% - 7%
Professional, Scientific and Technical Services	6% - 7%
Education and Training	6% - 7%
Transport, Postal and Warehousing	6% - 7%
Wholesale Trade	6% - 7%
Manufacturing	6% - 7%
Construction	5% - 6%
Public Administration and Safety	5% - 6%
Accommodation and Food Services	4% - 5%
Administrative and Support Services	4% - 5%
Electricity, Gas, Water and Waste Services	1% - 2%
Financial and Insurance Services	1% - 2%
Arts and Recreation Services	1% - 2%
Information media and Telecommunications	< 1%
Rental, Hiring and Real Estate Services	< 1%

Based on MacroPlan Dimasi, June 2014

* Based on 11,770 jobs

Overall, MacroPlan Dimasi projects that of the 34,955 residents, approximately 12,000-13,000 will be workers¹ (full-time and part-time). Effectively, this translates into an overall participation rate of about 70% in Wilton Junction.

¹ excludes retiree and young age cohorts and applies typical participation rates

According to Census 2011 data, approximately 1,093 or 5.1% of Wollondilly's employed persons nominated they work from home. The ABS Locations of Work (2008) publication suggests 7% of persons in the Outer South West Sydney Region work from home. Considering advances in technology, it is expected that 15% of jobs will be undertaken from home or no fixed location.

Table 4.2 provides a breakdown of jobs in Wilton Junction in 2041 and confirms that approximately 8,400 - 9,240 jobs would be required and can be anticipated in Wilton Junction to achieve a target employment self-sufficiency ratio of 70% as encouraged by the Department of Planning & Infrastructure in the Metropolitan Plan 2036 (2010).

table 4.2 Population and Jobs in Wilton Junction (2041)

	Count
Total Residents	34,955
Employed Residents	12,000 - 13,200
Jobs in Wilton Junction	10,440 - 11,770
Employed residents working in Wilton Junction	8,400 - 9,240
- Work from home and not fixed	1,566 - 1,766
- Work in designated EL	6,834 - 7,474

Source: MacroPlan Dimasi, June 2014

Total employment land provision in Wilton Junction has been calculated by MacroPlan Dimasi by considering the quantity of jobs in Wilton Junction and the density at which these workers will occupy these premises.

The majority of expected employment will be in the form of service based industries that cater for the needs of the Wilton Junction population. Although less in absolute terms, other 'extended' industries are also expected to locate at and generate jobs in Wilton Junction.

Retail trade is anticipated to be the dominant employing industry in Wilton Junction, comprising around 2,400 workers of which 1,680 jobs are projected to be taken up by residents. Health care & social assistance (1,400) and education and training (800) constitute the next highest employing industries. Of all industries requiring industrial premises, transport, postal & warehousing and manufacturing are expected to be the largest employers - forecast to employ 790 persons each.

To calculate required floor space provision for employment lands MacroPlan Dimasi has utilised industry benchmark employment densities for each employment land use type. The least dense employment land type is industry and enterprise, with around 100 - 150m² per worker. Retail has been calculated at 35m² per employee and office slightly higher at 20m² of space per employee.

On this basis, MacroPlan Dimasi anticipates that a provision of 141 - 163 hectares (Gross) is required for employment land purposes (including retailing) at Wilton Junction.

Table 4.3 Employment Land Need, Wilton Junction

Type	GFA		FSR		Land (hectares)	
	Lower	Upper	Lower	Upper		
Retail	70,000	75,000	0.3	0.3	21.0	25.0
Commercial*	86,343	101,592	1.0	1.0	8.6	10.2
Industrial	334,305	384,285	0.3	0.3	111.4	128.1
Total	490,648	560,877	1.6	1.6	141.1	163.3

* Other excludes existing Township

Notes:

- Excludes schools/education

- Floor Space Ratio (FSR) applied to Gross Floor Area (GFA)

Source: MacroPlan Dimasi, June 2014

Notwithstanding, when calculating land supply budgets it is essential that a buffer is built into forecasts for supply to take into account land that has been designated for future development that typically may not become available for development. Achieving employment land targets may require supply in excess of target requirements. Uncertainty as to the action of land owners (private and Government), the need for competition and choice in the market, the likelihood of environmental, buffer and other constraints, and the risk of changes in policy direction (ie response to local community concerns) necessitates that available supply exceed demand. Accordingly, a buffer (of say 20%) should be adopted and applied when calculating and designating land for employment purposes.

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4.2 Retail

MacroPlan Dimasi identified a trade area catchment for Wilton Junction that comprises a key primary sector and three secondary sectors. The combination of the primary and secondary sectors forms the main trade area, which is the area from which the majority of retail turnover will be generated.

The main trade area and traditional retail competition in the region is identified in figure 4.1 below.

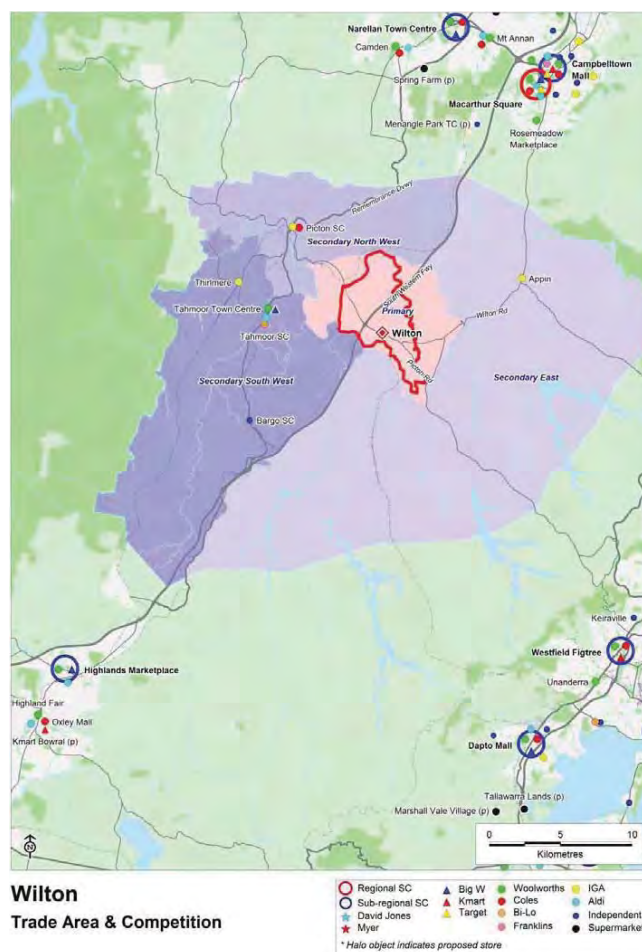


figure 4.1 Trade area and competition
Source: MacroPlan Dimasi, June 2014

The main trade area and bulky goods retail competition in the region is identified in figure 4.2 below.

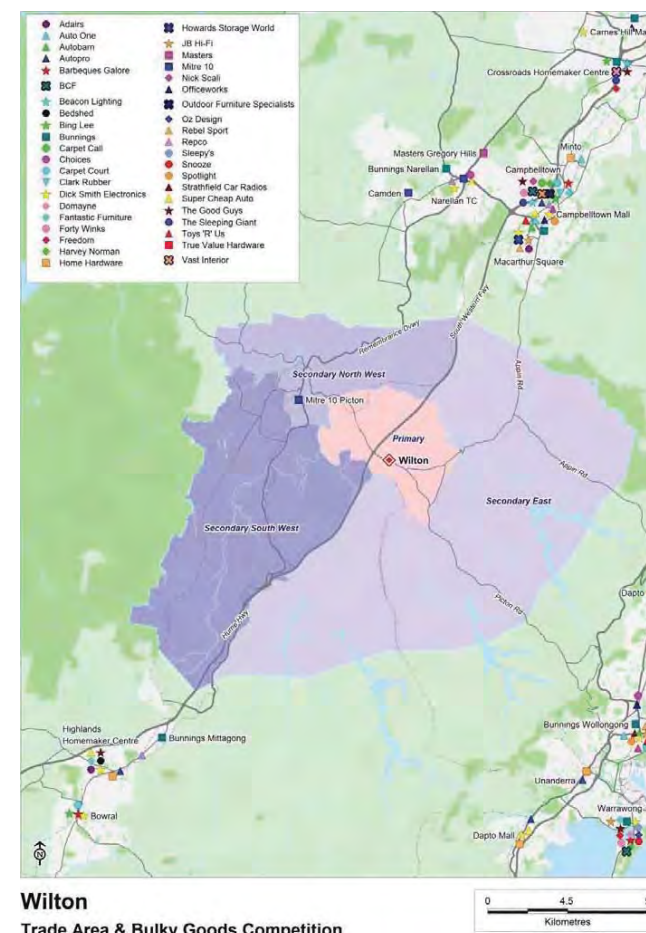


figure 4.2 Main trade area and bulky goods retail competition
Source: MacroPlan Dimasi, June 2014

The main trade area population at June 2012 was approximately 30,100 persons of which 3,150 persons are situated within the key primary sector.

MacroPlan Dimasi estimate that the primary sector population will reach about 39,300 persons once the Wilton Junction investigation area reaches capacity at about 2046, growing at an average annual rate of 7.7%. Across the whole main trade area, the population is expected to reach about 74,970 persons by 2046, growing at about 2.7% per annum, on average.

The main trade area population comprises a mix of residents that are slightly lower in affluence than metropolitan benchmarks, have much higher levels of home ownership and are fairly typical in terms of family composition.

The current retail expenditure of the main trade area population is estimated at \$365 million, including \$40 million in the primary sector, and is projected to increase to \$1.12 billion by 2046 at a rate of about 3.6% per annum.

In order to provide an accurate picture of the retail floor space demand generated by the main trade area population, the available retail expenditure is translated into an estimate of retail floor space.

Floor space estimates are generated by applying appropriate thresholds of desired turnover levels per m² of floor space, normally referred to as retail turnover densities (RTD's) to the available retail expenditure volume.

The main trade area residents currently generate total retail floor space demand of approximately 56,900m² across all retail categories and this is estimated to increase by about 3,900m² per year on average, reaching 150,700m² by 2046.

Notwithstanding, not all of the retail demand generated by main trade area residents will be captured within Wilton Junction or within the main trade area. Although there are existing retail facilities at Picton, Tahmoor and Wilton, totalling close to 36,000m², there would currently be expenditure escaping, particularly for higher order retail and bulky goods, to centres such as Campbelltown and Liverpool as well as other locations across metropolitan Sydney.

Further, retail facilities at Wilton Junction would be expected to capture a proportion of annual sales turnover from beyond the main trade area. Given its location on both sides of the Hume Highway at the intersection of Picton Road, beyond trade area expenditure could be quite significant, although it would also be quite dependent upon the accessibility and locations of retail facilities within the precinct as well.

Having examined the surrounding competitive retail network, MacroPlan Dimasi consider that 105,706m² of retail floorspace (see table 4.4 below) is supportable at Wilton Junction assuming that a large scale bulky goods development (either several individual large format tenants, or a dedicated bulky goods centre) will be developed beyond 2026 and that this will have the effect of increasing the trade area market shares as well as the extent of the trade area for this type of retail. This is accounted for by a 50% beyond trade area assumption.

table 4.4 Wilton Junction Indicative Supportable Floor space (m²) (2016-2046)

Year Ending June	Supermarket (m ²)	Other Retail (m ²)	Total Retail (m ²)
2016	2,595	2,931	5,526
2021	5,387	5,902	11,289
2026	11,734	14,391	26,124
2031	16,914	52,880	69,794
2036	21,897	67,215	89,112
2041	25,247	76,688	101,935
2046	26,277	79,430	105,706

Source: MacroPlan Dimasi, June 2014

Assuming a more modest beyond trade area assumption of 20%, the supportable floorspace reduces to some 74,000m², as identified in the following table 4.5:

table 4.5 Wilton Junction Indicative Supportable Floor space (m²) (2016-2046)

Year Ending June	Supermarket (m ²)	Other Retail (m ²)	Total Retail (m ²)
2016	2,545	3,332	5,876
2021	5,281	6,979	12,260
2026	11,504	22,762	34,266
2031	16,583	31,976	48,558
2036	21,467	40,809	62,277
2041	24,752	46,736	71,488
2046	25,761	48,582	74,343

Source: MacroPlan Dimasi, June 2014



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The recommended composition and mix of retail floor space by MacroPlan Dimasi includes a main Town Centre (which is likely to include a major dining and entertainment precinct) as well as a range of non-retail commercial uses and retail provision that might include:

- Two (2) or more full-line supermarkets;
- One (1) - two (2) discount department stores; and
- In excess of 100 specialty retailers as well as possible mini-major tenants.

The Town Centre could accommodate **at least** 25,000m² of retail floor space.

Two to three smaller village centres are also recommended at in-board locations, servicing localised catchments. These centres could support up to 5,000m² of retail space plus supporting commercial and other non-retail uses to encourage and maximise community benefits. Centres of this size would be sufficient to accommodate full-line supermarkets and supporting retail specialty tenants.

Other smaller neighbourhood shops could establish as the precinct develops, with the market able to determine appropriate locations.

The population of Wilton Junction will also reach sufficient levels of critical mass to support a range of bulky goods retail. This format of retail is most successful if developed with good exposure, high visibility and accessibility and critical mass.

Bulky goods development within Wilton Junction would be supportable over the longer term and could range between 20-30,000 m² depending upon its location within the precinct (ie a much larger provision if located close to the Picton Road and Hume Highway intersection).

MacroPlan Dimasi identify that in the order of **25-30** hectares of land (net) is required to serve the retail floorspace demands of Wilton Junction which represents approximately **30-35** hectares (Gross) with allowance for local roads and civic parks and plazas etc.

An indicative retail floor space composition and staging is provided in Table 4.6.

table 4.6 Wilton Junction Indicative Retail Composition

Centre	Role & Function	Size (GFA sqm)	Land Area (ha)	Timing	Land Uses
Town Centre	Primary retail & commercial centre	25,000 sqm	7.5 - 10 ha	2017 onwards (various stages)	1 x DDS, 2 x supermarkets, specialty retail & secondary retail
Bulky Goods	Local services & employment as well as serving passing traffic	30,000 sqm	7.5 - 10 ha	2020 onwards	Bulky goods & highway oriented retail
Village Centre/s	Supporting convenience retail & business services	10,000 - 12,000 sqm	4-5 ha	2026-2036	Small supermarket/s plus retail & non-retail specialties
Shop/s, other retail uses	Retail (food/convenience related) supporting immediate surrounding non-retail uses	10,000 sqm	3 - 4 ha	2020 onwards	Shops, cafes, restaurants, and convenience retail
Total Wilton Junction Retail Floorspace		70,000-75,000 sqm	25 - 30ha*		

*Net of local roads and parks etc.

NB Town centre FSR = 0.35; village centre FSR = 0.4; bulky goods FSR = **0.5**
Source: MacroPlan Dimasi, June 2014

Note that the above land area allowance for bulky goods would increase substantially under the supportable floorspace model that assumes a 50% trade area allowance.

Note also that the floorspace allowances for village centres and local shops / mixed use are totals for these categories of development and assume the provision of a number of centres in these categories.

4.3 Social Infrastructure

The Wilton Junction Social Infrastructure Background Investigations Report prepared by Elton Consulting has identified the social infrastructure requirements for the proposed new town at Wilton Junction.

Elton Consulting identify that the development of Wilton Junction provides an opportunity to address some of the social infrastructure issues prevalent in Wollondilly Shire, as these issues are linked with the small and dispersed population of the Shire and its fringe location. Wilton Junction will help create a critical population mass that can support the viability of transport services, employment opportunities and social infrastructure, thereby benefitting the Shire as a whole.

Existing facilities, services and recreation opportunities in the surrounding area are limited, consistent with the relatively small and dispersed population of the Shire. Wilton Sportground, which includes playing fields, courts and a community centre, is located within Wilton Township. Other than some of the new facilities being developed at Bingara Gorge, there are no existing facilities and services that will have capacity to meet demand generated by development at Wilton Junction.

This means that a range of new facilities, services and open space will need to be developed within Wilton Junction, consistent with the goal of creating a self-contained new town.

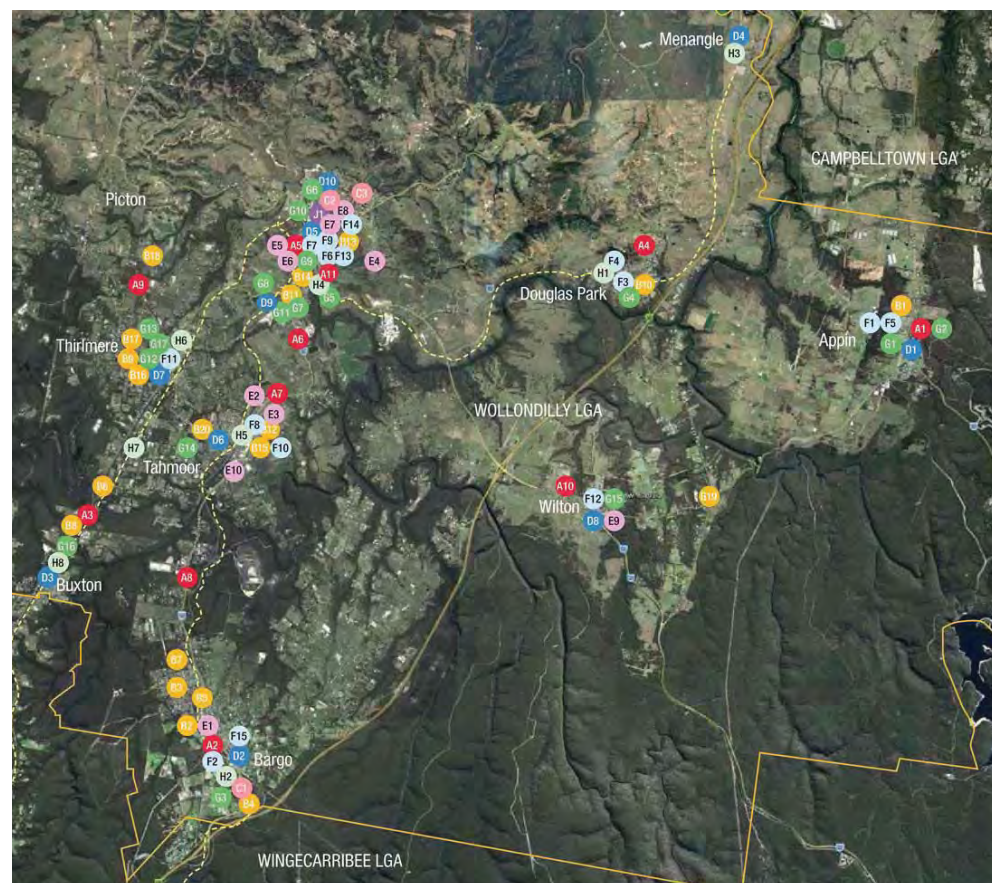
Figure 4.3 identifies existing Social and Community Infrastructure within the Wollondilly LGA. In addition, the following new facilities have been provided or are planned for Bingara Gorge:

- A new government primary school, which opened at the beginning of 2011;
- A country club, providing bar, dining and lounge facilities, Community function and meeting space totalling 577m²;
- A temporary community facility, to function until the permanent community function and meeting space is provided;
- A leisure centre, likely to comprise a gym, tennis courts, studio space and leisure pool;
- 18 km of walking paths and trails;
- An 18 hole golf course;
- Sporting facilities, provided through an upgrade of Wilton Sportground;
- A further 8.12 ha of recreational open space, in the form of local and neighbourhood parks;
- A private sector child care centre;
- Medical practice; and
- Chemist.

Note that some facilities are only available to Bingara Gorge residents.

Many of the social needs of the Wollondilly population for higher order facilities and services are met by facilities located in Camden and Campbelltown, and these have not been mapped in Figure 4.3.

figure 4.3 Existing Community Infrastructure



Source: Elton Consulting

- PUBLIC TRANSPORT FACILITY**
- H1 Douglas Park Railway Station
 - H2 Bargo Railway Station
 - H3 Menangle Railway Station
 - H4 Picton Railway Station
 - H5 Tahmore Railway Station
 - H6 Thirimeria Railway Station
 - H7 Couridjah Railway Station
 - H8 Buxton Railway Station
- LIBRARIES**
- J1 Wollondilly Library and Information Service - Picton

- OPEN SPACE AND RECREATION**
- G1 Gordon Lewis Oval / Appin AIS Sportground
 - G2 Appin Park Reserve
 - G3 Bargo Sportground
 - G4 Douglas Park Sports Ground
 - G5 Glenrock Reserve Picton
 - G6 Hume Oval Picton
 - G7 Wollondilly Leisure Centre and Swimming Pool Picton
 - G8 Crown Reserve Picton
 - G9 Victoria Park Picton
 - G10 Apex Park Picton

- G11 Bridge Street Reserve Picton
 - G12 Thirimeria Sportsground
 - G13 Lin Gordon Reserve Thirimeria
 - G14 Tahmore Sports Ground
 - G15 Hannerford Oval Wilton / Wilton Sportsground
 - G16 Tolopos Park Buxton
 - G17 Thirimeria Memorial Park
- LGA Boundary
— Railway Line

SCHOOLS

- A1 Appin Public School
- A2 Bargo Public School
- A3 Buxton Public School
- A4 Douglas Park Public School
- A5 Picton Primary School
- A6 Picton High School
- A7 Tahmore Public School
- A8 Wollondilly Anglican College Tahmore
- A9 Thirimeria Primary School
- A10 Wilton Public School
- A11 St Anthony's Primary School Picton

CHILD CARE FACILITIES

- B1 Step by Step Appin
 - B2 Bargo Child Care Centre
 - B3 Little Elms Childcare Centre Bargo
 - B4 Kids Korner Childcare Centre
 - B5 Bargo USMC
 - B6 Pioneer Preschool Buxton
 - B7 Little Elms Childcare Centre Bargo
 - B8 Little Possums Early Learning Centre Buxton
 - B9 Fidgety Frogs Early Learning Centre Thirimeria
 - B10 Fidgety Frogs Early Learning Centre Douglas Park
 - B11 Busy Bees Preschool and Long Day Care Picton
 - B12 Presbyterian Child Care Centre Tahmore
 - B13 Sugar and Spice Pre School and Long Day Care Picton
 - B14 Picton Pre School Kindergarten LTD
 - B15 Rainbow Playhouse Pre-School Tahmore
 - B16 Thirimeria Pegasus Early Education Centre
 - B17 Thirimeria Preschool
 - B18 Two Little Feet / Winsome Farm Thirimeria
 - B19 Cath's Kindy Wilton
 - B20 Tahmore Pre-School Kindergarten
- Note: Haven't include family day care facilities

LICENSED LEISURE FACILITIES

- C1 Bargo Sports Club
- C2 Picton Bowling Club
- C3 Antill Park Country Golf Club Picton

EMERGENCY SERVICES

- D1 Appin Fire Station
- D2 Bargo Rural Fire Service
- D3 Buxton Rural Fire Service
- D4 Menangle Rural Fire Service
- D5 Picton Rural Fire Service
- D6 Tahmore Rural Fire Service
- D7 Thirimeria Rural Fire Service
- D8 Wilton Rural Fire Service
- D9 Picton Police Station
- D10 Picton Fire Station

MEDICAL AND HEALTH FACILITIES

- E1 Bargo Surgery
- E2 Optimum Medical Services Tahmore
- E3 Challender Robert Tahmore
- E4 Dr Rowland Bagg Picton
- E5 Dr Newton N G Picton
- E6 Dr John Chiang Picton
- E7 Picton Family Medical Centre
- E8 Dr Mark G Lerche Picton
- E9 Dr Bernd Ruyter Wilton
- E10 Wollondilly Community Health Centre Tahmore

COMMUNITY FACILITIES

- F1 Appin Community Hall
- F2 Bargo Community Hall
- F3 Douglas Park Progress Hall
- F4 Douglas Park Community Centre
- Incl children's services facilities, a sports and community hall space and change rooms.
- F5 Appin Sportsground Clubhouse
- F6 Shire Hall Picton
- F7 Picton Community Centre
- F8 Tahmore CWA Hall
- F9 Picton District AH and I Hall
- F10 Tahmore Community Centre
- F11 Thirimeria Community Hall
- F12 Wilton Community Centre
- F13 Wollondilly Shire Hall
- F14 Wollondilly Shire Council
- F15 Bonnie Cottage Bargo

4.3.1 Social Infrastructure Objectives

Based upon contemporary trends and leading practice for social infrastructure, the following principles are proposed to guide the provision of community facilities and human services within Wilton Junction.

Community facilities should be designed to:

- ▶ Respond to local needs and reflect the local community's identity, values and aspirations;
- ▶ Contribute to the health, well-being and quality of life of residents, support their lifestyle needs and choices and encourage the development of social capital;
- ▶ Make the most efficient use of limited resources, where appropriate being multipurpose, co-located with other facilities and able to accommodate shared and multiple use arrangements;
- ▶ Be provided in an efficient, timely and coordinated way, ensuring that they are available to residents as early as possible and residents are not disadvantaged through delays in delivery;
- ▶ Ensure flexibility in their use, so they can respond and adapt as needs change (ie where appropriate, buildings should be capable of delivering a range of services, rather than designated for single uses or specific target groups that may quickly become out dated);
- ▶ Promote equitable access for all sections of the population, through the distribution, design and management of facilities;
- ▶ Comply with Crime Prevention through Environmental Design principles and reduce risks of vandalism and poor security through consultation with police concerning the design and location of facilities;
- ▶ Promote innovation and creativity in the way agencies come together to deliver services, recognising the need for collaborative planning and partnerships to achieve effective and efficient delivery of human services;
- ▶ Be accessible for all user groups, with all facilities meeting accessibility standards; and
- ▶ Develop sustainable ownership, governance, management and maintenance arrangements for facilities.

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The location of community facilities should be guided by the following criteria. Community facilities should be:

- Central to their catchment population and easily accessible by the majority of their users;
- Visually prominent, with a main street location and presentation to the street;
- Accessible by public transport, and located to maximize access for pedestrians and cyclists;
- Located to enhance a sense of community, vibrancy and local civic identity, and to help create a focal point or hub for the community;
- Where appropriate, clustered together or co-located on a single site to provide opportunities for shared use of resources (management, parking, meeting rooms, amenities, play equipment) and for convenience, visibility and capacity for a “one stop shop”;
- Located to provide a high level of safety and security, particularly at nights and weekends (ie achieved through high levels of activity, casual surveillance, lighting and proximity to public transport etc);
- Where possible, located adjacent to open space to allow for larger outdoor community events, spill over activities and children’s play; and
- Located to ensure access to safe and convenient parking, including shared parking with surrounding land uses where appropriate.

The population of Wilton Junction will be large enough to require a variety of both local and district level facilities and services, and to support the viability of a range of commercial, as well as publicly provided, facilities and services.

The facilities required are listed in Table 4.7.

Level	Catchment	Facility	Size	Location	Comment
District	Wilton Junction	District Community Hub Includes multipurpose community centre and library	Community Centre 1,360 sqm GFA Library 1,476 sqm GFA	Town Centre	Prominent town centre location linked to town square/public open space
		Child care	500 sqm GFA 2,000 sqm site	Adjacent to Neighbourhood centre	Identification of site only. Service to be provided by private sector. Could be integrated with school site
		K-12 Public School	9 ha site area (may be reduced to 7-8ha)	Adjacent Library / Community Hub	Located to enable sharing with playing fields and indoor recreation facilities
		Independent K-12 school	9 ha site area (may be reduced to 7-8ha)	Bradcorp (Wilton West)	
		Regional Integrated Primary and Community Care Centre	8,000 - 10,000 sqm GFA	Town Centre	Could be co-located with district community hub
		Aquatic / Gym / Indoor Sports Centre	4,000 - 6,000 sqm GFA	Adjacent to Town Centre, school, or lake precinct	Location with public K-12 school may enable greater shared use of facility with possibility of shared costs
		Courthouse	1,500 sqm GFA	Town Centre	Possibility of co-location of Police and Courthouse and of Fire and Ambulance
		Police	4,000 sqm GFA	Town Centre fringe	
		Fire	2,000 sqm site	Fringe of commercial area with access to arterial roads	
Local	Wilton West (Bradcorp)	Ambulance	3,000 sqm GFA	Light industrial with access to arterial roads	
		Local multipurpose community centre	687 sqm GFA	Neighbourhood Centre	Floor area could be distributed across two facilities - one in neighbourhood centre and one in lake precinct
		Public Primary School	3 ha site	According to DEC requirements	
	Bingara Gorge	Child care	500 sqm GFA 2,000 sqm site	Adjacent to Neighbourhood centre	Identification of site only. Service to be provided by private sector. Could be integrated with school site
		Local multipurpose community centre		Neighbourhood centre	Already included as part of existing VPA
		Public Primary School	3 ha site	According to DEC requirements	
	Walker Corporation	Child care	500 sqm GFA 2,000 sqm site	Adjacent to Neighbourhood centre	Identification of site only. Service to be provided by private sector. Could be integrated with school site
		Local multipurpose community centre	476 sqm GFA	Neighbourhood centre	
		Public Primary School	3 ha site	According to DEC requirements	
Governor's Hill		Child care	500 sqm GFA 2,000 sqm site	Adjacent to Neighbourhood centre	Identification of site only. Service to be provided by private sector. Could be integrated with school site
		No local facilities provided but contribution to district level			

Note: Master Plan does not distinguish between Section 94 contribution facilities and privately provided facilities

table 4.7 Social and Community Infrastructure Requirements

Source: Elton Consulting, June 2014

4.4 Recreation and Open Space

Wilton Junction will need to provide open space and recreational resources for a wide range of incoming users and various age groups, at both district and local levels.

The establishment of the type, quantum and distribution of open space and recreational facilities for Wilton Junction has therefore been determined through a review of standards, guidelines, national trends in participation rates in sports, as well as an understanding of the existing landscape and urban fabric.

From the perspective of design of a new township, the master plan prepared by Connor Holmes identifies the need for:

- › A variety of accessible local parks for informal play and passive recreation that support family and community activity and that provide a diversity of recreation settings and opportunities for all age groups and all abilities;
- › High quality parks with well maintained facilities such as paths, play equipment, fencing, landscaping and shelter from sun, wind and rain;
- › Outdoor areas for larger gatherings and cultural events e.g. extended family and group picnics, amphitheatre, markets;
- › Multi-purpose playing fields suitable for a variety of field sports, and able to accommodate both junior and adult sporting activities for males and females;
- › Access to both outdoor and indoor courts for court sports;



- › Indoor spaces for activities such as dance, martial arts, yoga, fitness, gym. Access to recreation, entertainment and leisure opportunities and meeting places that target young people, including public spaces that are safe and welcoming and allow for social interaction and informal games;
- › Access to aquatic facilities that include a variety of leisure and fitness activities and programs consistent with local needs and preferences;
- › A network of walking and cycling tracks linked to key destinations and recreation nodes;
- › Options to enhance fitness in parks and trails;
- › Opportunities for adventure based activities, such as mountain biking, trail bikes, horse riding, rock climbing.
- › Opportunities to enjoy bushland, water and other natural settings, for picnics, bushwalking and as spaces for reflection, rest and relaxation;
- › Opportunities that increase incidental physical activity, through design of footpaths, road networks and accessible, safe and well lit walking and cycling tracks.

It is necessary that these needs be satisfied by local and district facilities to be provided within Wilton Junction.



The provision of open space and recreational facilities should also achieve the draft *Wollondilly Shire Council Open Space, Recreation and Community Facilities Report* (2013) objective and strategies (page 122 - 124) which are:-

- › Central to catchment and equitable access
- › Clustered or collocation
- › Flexibility and multiple use
- › Contribute to public domain and sense of place
- › Sustainability
- › Location to promote accessibility and visibility
- › Connected to public transport, pedestrian and cycle networks
- › Of sufficient size and design to enable expansion and adaption
- › Safety and security
- › Avoidance of conflicts with neighbouring uses
- › Celebrate cultural and heritage, and
- › Conserving natural systems

The approach to open space in Wilton Junction is to focus on the provision of quality passive and active recreational facilities, rather than the strict adherence to a quantum. This approach achieves the objectives set out by Wollondilly Council.

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The approach to open space in Wilton Junction is to focus on the provision of quality passive and active recreational facilities, rather than the strict adherence to a quantum. This approach achieves the objectives set out by Wollondilly Council.

For the purposes of open space planning, a population of 31,533 was used. This excludes consideration of open space that has been provided at Bingara Gorge to meet the needs of the approved 1,165 dwellings. It includes the additional 635 dwellings proposed to be provided at Bingara Gorge by Lend Lease, but only in terms of district level facilities, as all local facilities have been assumed to have been provided.

To achieve the Council's strategic objectives and to ascertain quality open space suitable for the population, other factors other than quantum were considered. Connor Holmes in the assessment considered the site's ridgelines, view sheds and areas of vegetation as well as the retention/protection of approximately 620ha of bushland (although not formally open space) to form part of the development' passive and active open space network.

The open space network will also include 100% of flood prone land, riparian corridors or other areas where a proposed detention basins is to be included as part of the quantum of passive open space, but only if it is legitimate open space of good quality and constructed to Council's requirements.

Using the traditional standard as a starting point, and also considering the unique qualities of the Wilton Junction site, plus understanding Council's strategic objectives, 89ha of open space is to be provided in Wilton Junction.

This amount of open space is not inclusive of the recreational and leisure facilities in the outer protection zone area on the bushland areas, nor any linear parks adjacent to railway lines or easements.

The justification for the local open space quantum is:-

- A qualitative and responsive approach to providing local open space where local open space is generally 400 metres from any residence.
- The provision of active and passive local open space is to be of a high standard and is to incorporate the recreational facilities and functions based on the future population's needs rather than a basic land area calculation approach.
- The full complement of playing fields, playgrounds, kick-about areas, picnicking areas and other leisure facilities will be provided irrespective of the open space land area. This will be complemented by a network of pathways through the residential areas and trails within the adjacent bushland.
- Active open space areas will be larger open spaces for formal sporting activities and smaller parks will be of a size to accommodate informal active recreation (i.e. ball sports)
- Passive open space areas will include larger open spaces that connect with creeks and bushland areas to provide strong connections to paths, cycling links and bush trails.
- Smaller parks with an area of 3000m² or greater will also be provided in suitable locations to ensure all residences have accessible local open space. Whilst not defined as open space, the adjoining bushland will have a recreational function that will create a diverse range of recreational and leisure opportunities through Wilton Junction.
- Specific consideration of participation rates for indoor and outdoor courts, cricket pitches and playing fields will allow for the establishment of multi-purpose facilities to optimise the recreational offering to meet demand. The provision of a higher quality may also negate the need to over provide open space areas.
- Providing an average 50% active open space and 50% passive open space is a good design principle in recognition of increasing trends towards individual pursuits identified in current research.

Preliminary requirements are based on the opportunity to maximise the effectiveness of active open space through the potential to share facilities.



The proposed facilities are set out below:

► District Level Facility

One District Level Facility (active open space facilities) approximately 10ha including courts (tennis and netball), ovals (AFL, cricket), pitches, fields (rugby, soccer, hockey), change rooms, club rooms, and an indoor recreation facility.

► Neighbourhood Facilities

table 4.8 Neighbourhood Facilities

Facility	Proposed Provision
One sports facility on Walker Corporation land	Approx. 5ha
One sports facility on privately owned land	Approx. 5ha
One active open space area on Governor Hill land	Approx 3ha
Two sports facilities on Bradcorp land	Approx 4ha and 5ha
Active open space around the lake/s on Bradcorp land	Approx 5ha
Local active and informal kick about areas across the area	Approx 3ha
Total	Approx. 30ha

These areas will include formalised (active) oval spaces (AFL, cricket), playing fields (rugby, soccer, hockey), courts (tennis and netball), change rooms, and playgrounds.

► Local Facilities

It is likely that 15 - 30 local parks are also required (based on a size range of @ 0.2 - 1.0ha excluding bush land protection areas) across the site providing approximately 33ha of passive open space. These areas will range in size.



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5 OPPORTUNITIES AND CONSTRAINTS SUMMARY

5.1 Overview

A range of issues impact upon the subject site's suitability and influence design for urban development purposes. These include the following site characteristics:

- › Topography
- › Vegetation
- › Fauna
- › Cultural heritage
- › Mining subsistence
- › Contamination
- › Agriculture
- › Bushfire management
- › Infrastructure
- › Traffic and transport
- › Non-vehicular movement
- › Noise
- › Visual interfaces
- › Existing development interfaces

Additionally, a range of human service requirements arise out of the development of the land for urban development purposes and require consideration in any design response for the site. These include the need to provide for:

- › A range of housing opportunities;
- › A range of employment opportunities;
- › Retail, commercial, community, education, recreation and entertainment facilities commensurate to the population to be served; and
- › Infrastructure requirements including roads, public transport, power, water, waste water disposal, stormwater management, gas supply, telecommunications and the like.

Most of these issues have been discussed in previous sections of this report and, accordingly, those details are not reiterated here. However, it is relevant to consider the design responses to those issues. These are discussed in the following paragraphs and where relevant are illustrated on the accompanying opportunities and constraints map for the whole study area (see figure 5.1) and for the area around the Hume Highway/Picton Road intersection (see figure 5.2 over the page).

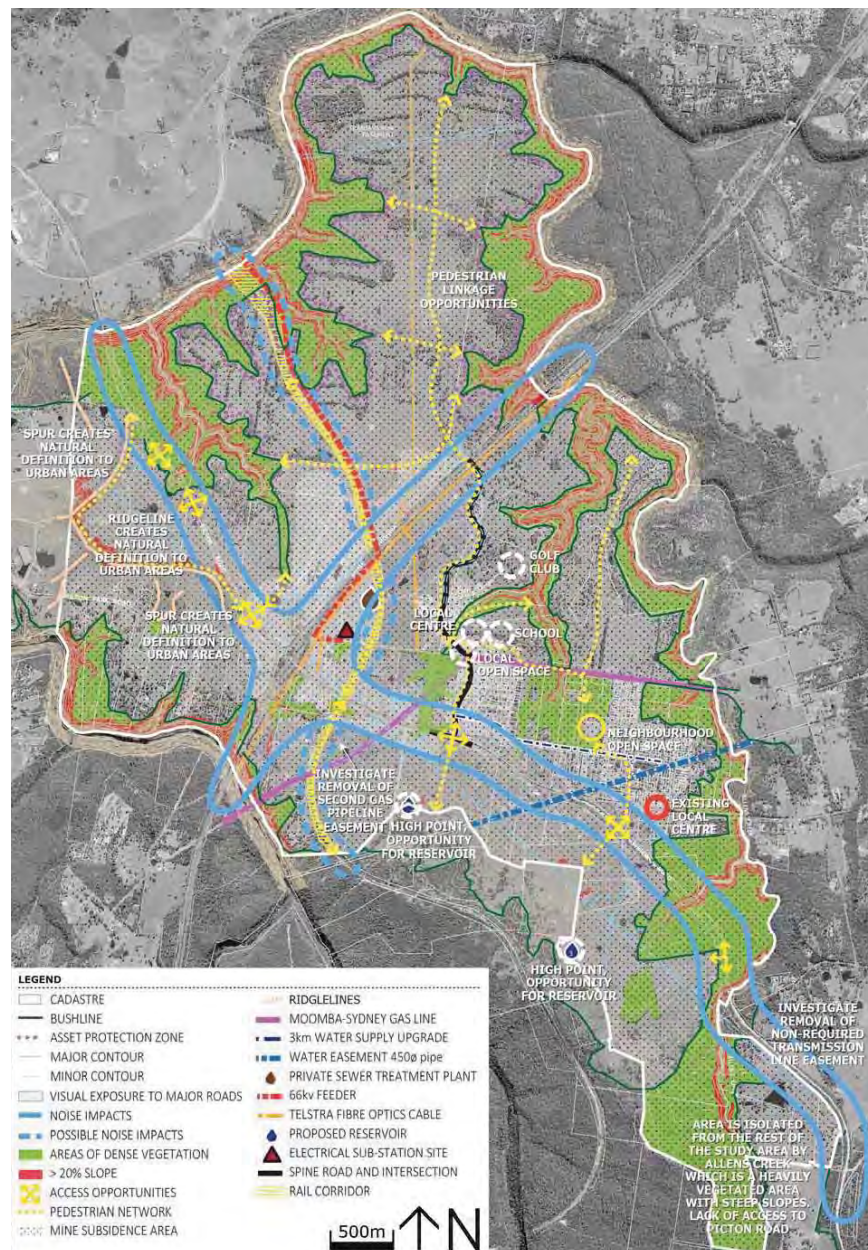
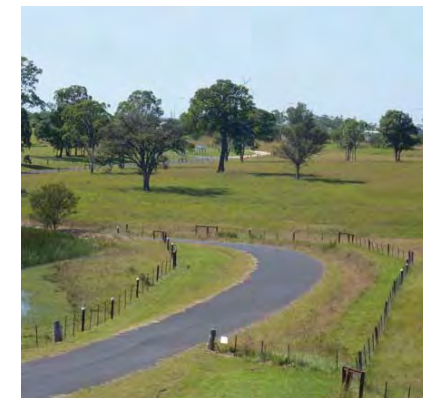


figure 5.1. Site Opportunities and Constraints



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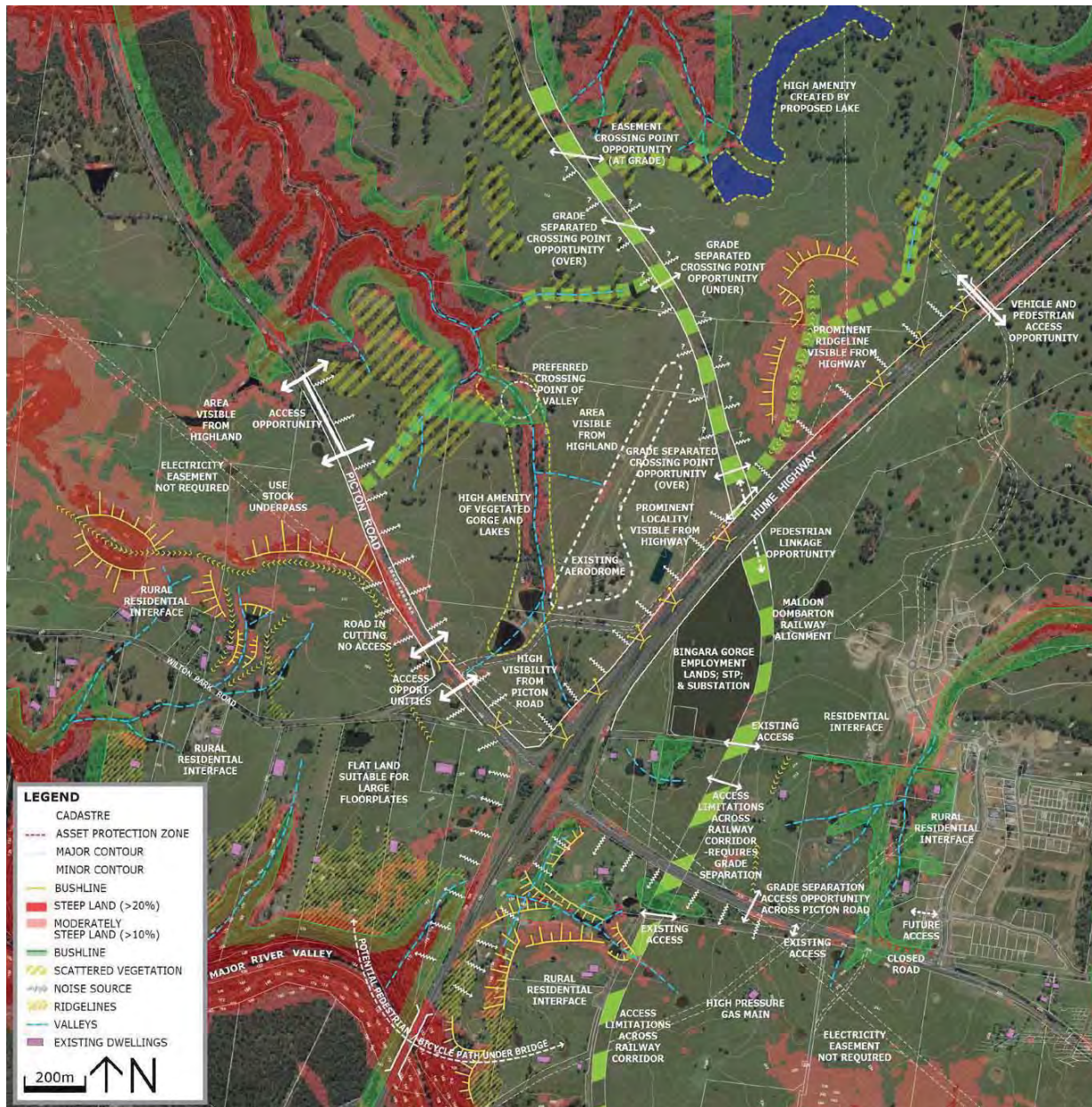


figure 5.2 Opportunities and Constraints - Hume Highway / Picton Road

5.1.1 Topography

- The vast majority of the site is suitable for urban development purposes, with the gorges providing the only land too steep for development;
- The flattest land is most suitable for large floor plate structures such as employment and retail buildings;
- Flatter land is also desired for active playing fields; and
- Some of the prominent ridgelines within the site provide an opportunity for open space and walking trails with attractive views over the surrounding area.

5.1.2 Vegetation

- Substantial portions of the site are recognised as retaining significant dense bushland and these areas are defined through the ecological studies conducted by SLR Consultants;
- Some areas of scattered vegetation outside of the bushline are worthy of preservation;
- More substantial areas of vegetation and key individual trees of note should be incorporated into future urban design outcomes wherever practicable; and
- Opportunities exist for the use of vegetation offsets in some locations, and this is identified in the SLR report.

5.1.3 Fauna

- Protection of major bushland areas, particularly towards the edge of the site, will assist with the protection of fauna habitat and corridors.

5.1.4 Cultural Heritage

- Key Indigenous and European heritage sites may require protection and management. In most instances, urban development can be designed to avert impact on these elements.

5.1.5 Mining Subsidence

- Parts of the entire study area are potentially at risk from mine subsidence;
- Since a substantial portion of the land is already zoned for urban development (Bingara Gorge Estate and Wilton Township), the adopted mine subsidence parameters for this locality are the same as applying across all of the urban release areas in Camden, Campbelltown and Bingara Gorge; and
- The Mine Subsidence Board Guidelines provide for development opportunities.

5.1.6 Contamination

- Contamination from agricultural use of the subject land is minimal. No munitions from the former Douglas Park testing range have been found nor does the former range impose a likely impediment to development. Accordingly, the Master Plan does not identify any contamination risk areas.

5.1.7 Agriculture

- Investigations have identified that the subject land would be currently at near capacity for agricultural purposes.

5.1.8 Bushfire Management

- Asset protection zones and bushfire management strategies will be required and will need to be part of detailed investigations and design at a later stage of this process; and
- Asset protection zones have been ground truthed and have been adopted for the purpose of the Master Plan.

5.1.9 Infrastructure

- Development in the vicinity of the Moomba - Botany ethane pipeline and the Moomba - Wilton gas pipeline will be required to meet AS 2885.1;
- The existing electricity substation location on Condell Park Road will be retained and additional transformers added;
- A second sub-station will be required eventually to serve the south of the study area;

- The actual route of the 66kV feeder line to the Bingara Gorge sub-station has obviated the need for the empty transmission easement located generally south of Picton Road. This should be extinguished so as not to become an unnecessary constraint on future development;
- There is an existing Sewerage Treatment Plant (STP) adjacent to Bingara Gorge. A membrane bioreaction (MBR) facility located adjacent the existing STP is the preferred option to service the balance of the development;
- The STP will incorporate odour control and noise control facilities and enable the facility to be located relatively close to residential areas; and
- Water will be supplied via a pipeline from the Macarthur Water Filtration Plant at Appin. It will require an additional reservoir(s) storage at a high point south of Picton Road.

5.1.10 Traffic and Transport

Modelling of traffic and access with Wilton Junction has identified the following key traffic interventions:

- Hume Highway Picton Road intersection upgrade (RMS is currently considering design options to accommodate existing traffic conditions).
- Construction of a **grade separated** internal link road connecting the four quadrants of Wilton Junction without the need to traverse Picton Road.
- Construction of additional north facing on/off ramps to the Hume Highway north of the current Picton Road interchange to reduce the need for Wilton Junction residents to use the existing interchange.
- Grade separation at Almond Street, to preserve the integrity of Picton Road as per the Government's strategy.
- Public Transport. Wilton Junction provides an opportunity to enhance public transport. A main public transport interchange will be provided in proximity to the Town Centre with small public transport hubs at smaller centres.

5.1.11 Non Vehicular Movement

- A comprehensive pedestrian and cycle network is required in order to promote fitness, provide access to key services and facilities and to avoid the unnecessary use of vehicles within the proposed urban area;
- A low impact pedestrian network is identified in sensitive gorge areas; and
- Connectivity across the Hume Highway is important.

5.1.12 Noise

- The Hume Highway and Picton Road are existing noise sources that require management. These roads are in cuttings for parts of their length and, hence, noise characteristics are modified in these locations;
- The Maldon-Dombarton railway alignment, if activated, could become a further noise source that requires management; and
- The VFT alignment if activated is likely to be below ground level and therefore will not be a noise source.

5.1.13 Visual Interfaces

- Land in the vicinity of the Hume Highway / Picton Road interchange, in particular, has high levels of exposure / visibility to passing traffic and therefore has a propensity for the accommodation of land uses that can take advantage of that high exposure (and accessibility).

5.1.14 Existing Development Interfaces

- The existing Wilton township, by maintaining the existing township should experience minimal change;
- The character of the low density rural lands and rural residential lands should be retained as far as practicable with suitable urban interfaces; and
- Infrastructure needs to be positioned in a manner that either provides an aesthetic benefit i.e. detention, water storage and treatment lake, or is located away from existing and/or sensitive land uses.

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6 DESIGN PRINCIPLES

The design philosophy and principles for Wilton Junction have been developed in response to an assessment of:

- › Land capability (vegetation, topography, soils, bushfire management, fauna, etc) to establish urban and non-urban lands;
- › Commercial imperatives;
- › Transport access requirements;
- › Infrastructure accessibility and delivery; and
- › Existing uses and cultural constraints.

The key principles applied in respect of the location and design of the major master plan elements are summarised as follows:

Town Centre

- › Flat/gently sloping land;
- › Visual exposure to Hume Highway;
- › Central to the whole population of Wilton Junction;
- › Good transport access/located on major internal road network;
- › Sufficiently large to accommodate a range of Town Centre uses and surrounding supporting uses;
- › Facilitates multi-purpose trips by combining land uses; and
- › Focus of non-vehicular and public transport network.

Employment

- › Flat/gently sloping land;
- › Visual exposure to Hume Highway/Picton Road;
- › Good transport access/ located on major internal road network;
- › Synergy with Town Centre; and
- › Buffer to existing light industry zone.

Light Industry

- › Relatively flat or gently sloping land;
- › Fixed location;
- › Opportunities to buffer potential noise sources i.e. Maldon-Dombarton Rail Corridor;
- › Range of sites to accommodate a diversity of employment; and



- › Existing zone established to accommodate the power supply sub-station and the waste water treatment plant (both existing).

Neighbourhood Centres

- › Relationship to Town Centre;
- › Flat/gently sloping land;
- › Central to the neighbourhood population served by the centre;
- › Linked to a primary school, community facilities, local open space and, public transport;
- › Focus of local non-vehicular network;
- › Located on a major collector road; and
- › Serving a population that underpins the viability of a supermarket based shopping centre and associated services and facilities.

District Open Space

- › Flat/gently sloping land for playing fields;
- › Central to the Wilton Junction population;
- › Accessible from the Town Centre and by public and private transport networks;
- › Linkage to the passive recreation opportunities of the bushland/gorge network;
- › Linked to the Government K-12 school to provide synergies in the delivery of sports and recreation facilities; and

- › An area of 10ha is sufficient to accommodate:

- 2 full size cricket (AFL) ovals
- 10 netball / tennis courts
- 4 rugby/hockey/soccer pitches
- 4 practice cricket nets

Neighbourhood Open Space

- › Flat/gently sloping land for playing fields;
- › Central to the neighbourhood population served by the neighbourhood open space;
- › The Neighbourhood Open Space will be sufficient to accommodate:
 - 1 full size cricket (AFL) oval
 - 2 - 6 netball/tennis courts
 - 2 rugby/hockey/soccer pitches
 - 2 - 4 practice cricket nets
- › Recognition of the existence of the Wilton recreation grounds and the commitment of Bingara Gorge to its upgrade; and
- › Recognising the proposed location of the District Open Space.

Local Open Space

- › Accessible to the local population;
- › Where possible, all dwellings to be within walking distance (400-500m) of an area of local open space;
- › Active open space generally flat/gently sloping land;
- › Passive open space;
- › Geographic spread of spaces to maximise accessibility; and
- › Enhance visual amenity.

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Schools

- › Flat/gently sloping land;
- › Central to the population they serve:
 - K-12 or high schools central to Wilton Junction
 - Primary schools central to individual neighbourhoods
- › Linking of K-12 government school to District Open Space;
- › Away from bushfire prone areas;
- › Away from major arterial roads; and
- › Provision of three street frontages for good accessibility.

Mixed Use

- › Specific locations to achieve particular outcomes:
 - Lakeside recreation and entertainment focus
 - Neighbourhood Centres
 - Adjacent to employment areas
 - Buffer to Maldon-Dombarton Rail Line.



Residential

- › Provide for a wide range of housing types and densities, including retaining areas of rural residential character;
- › Facilitate retirement living and villages;
- › Facilitate affordable housing options; and
- › Provide for large lot residential to address topography, vegetation and rural interfaces.

Medium Density Residential

- › Generally in proximity to Town Centre, neighbourhood centre or other focus of services and facilities; and
- › Maximise the number of persons within walking distance of Town Centre, neighbourhood centres, public transport, and other areas of activity.

Residential Density and Mix

- › Provide for a wide range of residential densities and product types to deliver housing affordability and choice for the widest possible range of market segments;
- › Generally seek to deliver higher densities, incorporating mixed residential and commercial development other than detached dwellings and close to the Town Centre and neighbourhood centres; and
- › Utilisation of low density land and housing products on steeper land, in areas where scattered vegetation is to be retained and at the interface with agricultural lands.



Highway Services

- › Highly accessible to homeward bound journeys;
- › High passing traffic volumes; and
- › High visual exposure.

Road Interface

- › Use non-residential land uses along major road alignments wherever practicable; and
- › Use a range of mechanisms to reduce the impact of noise and pollutants from arterial roads on residences, including setbacks, vegetated screenings, mounds, barriers and increased depth to residential allotments.

Maldon Dombarton Railway Alignment

- › Flanked by commercial and mixed land uses for the maximum extent to act as visual and noise buffers.

High Speed Rail Alignment

- › Recognise the potential alignment of the high speed rail proposal between Sydney and Canberra and ensure that development does not conflict with its possible future alignment.

Road Network

- › Separate state road traffic (Picton Road and Hume Highway) from local (internal) traffic;
- › Provide a permeable network that reduces travel distances;
- › Slow traffic as it moves through the town and neighbourhood centres to improve amenity and pedestrian safety;
- › Match road capacity and standard to the anticipated traffic volume;
- › Facilitate access for trucks to employment lands without having to travel past residential properties;
- › Enable the movement of bus services through the network; and
- › Use minor local streets for short trips only.
- › Address predicted traffic volumes;
- › Address predicted traffic desire lines;
- › Utilise existing intersections on Picton Road:
 - Wilton Park Road
 - Pembroke Parade
 - Almond Avenue
- › Recognise the location of new intersections must:
 - deliver separation from existing intersections;
 - provide suitable vertical/horizontal alignments
- › Allow **at grade** crossings of MDRL; and
- › Avoid major increases in vehicular movements on existing residential streets (ie use minor local streets for short trips only).

Public Transport

- › Public transport accessibility, efficiency and self-sufficiency;
- › Integrated with other transport modes; and
- › Land use arrangements that support effective public transport delivery.

Non-Vehicular Network

- › Provide connectivity within and between neighbourhoods;
- › Provide connectivity to the Town Centre and Employment Lands for the whole of Wilton Junction;

- › Provide a safe movement network focussed upon local/neighbourhood shopping, community services, primary schools and recreation areas; and
- › Provide an alternative to the utilisation of vehicles wherever possible.

Influence of Existing Development

- › Manage the interface with existing development; and
- › Seek to **minimise** impact on existing development with incompatible land uses.

Aboriginal Archaeology

- › Protection and/or management of sites of archaeological significance in accordance with relevant legislation, including recording;
- › Design of urban development around significant sites where relevant; and
- › Documenting lesser sites where retention is not possible.

European Heritage

- › Protection and/or management of **current or future** heritage listed sites in accordance with relevant legislation; and
- › Design of surrounding urban development to have regard to heritage listed sites where relevant.

Spatial Requirements of Infrastructure (Lake, Rain Gardens, Waste Water, Treatment, Sub-Station, Easements)

- › Set aside areas required for infrastructure provision; and
- › Recognition of key infrastructure corridors, including crossing the Maldon-Dombarton Rail Line, while acknowledging the ability to utilise current and future road reserves for many infrastructure connections.
- › Efficiency in the provision of service infrastructure;
- › Utilisation of existing supply opportunities in the first instance;
- › Augmentation and/or development of services on a staged basis as required;
- › Utilise opportunities for stormwater and waste treatment and reuse; and
- › Treatment and detention of all stormwater to facilitate acceptable quality and quantity release to natural watercourse system.

Reservoir

- › Highest location available to facilitate gravity feed to the whole of Wilton Junction; and
- › Screened from view either by its positioning or through subsequent vegetative screening.

Bushfire Risk

- › Create a safe environment for residents, workers and visitors;
- › Provide buffers between high fire risk environments and urban development; and
- › Promote access for emergency vehicles to the urban and forest interface and occupants away from the interface.

Environmentally Sensitive Areas

- › Protection of areas of consolidated undisturbed natural vegetation, as far as practicable;
- › Protection of areas of threatened or endangered flora and fauna species and their habitat, as far as is practicable;
- › Maintenance of fauna movement corridors; and
- › Maintenance of significant topographic features.

Mining

- › Design for the co-existence of mining and urban development;
- › Use building controls to ensure suitable structural integrity for buildings; and
- › Make provision for gas drainage, extraction and ventilation.



7 LAND USE AND DESIGN OPTIONS

7.1 Town Centre

Location of the Town Centre is the single-most commercially significant design element of the Wilton Junction Master Plan. Much of the structure of the urban area is derived from or influenced by that location, notably, the distribution of neighbourhood centres, community facilities and district open space, the focus of the road network, the public transport, open space and pedestrian/cycle linkages and the relationship of employment lands, mixed uses and medium density residential to the Town Centre.

Key urban design parameters influencing the location of the Town Centre are summarised as follows:

- A location readily accessible to Hume Highway and Picton Road;
- A location readily visible to the maximum passing trade;
- A location geographically as central as possible to the Wilton Junction population, both in terms of vehicular traffic and as a focus for non-vehicular movement networks and public transport;
- A location readily accessible to the Wilton Junction population;
- A site with minimal slope to facilitate large floorplate buildings;
- A site with dimensions sufficient to accommodate a substantial Town Centre and all land uses likely to congregate with the Town Centre;
- An ability to encourage multi-purpose trips by virtue of the congregation of a range of land uses;
- A site that avoids the complications of multiple land ownership;
- A site that is close to existing infrastructure to facilitate its early start up; and
- A site located on land where the impact of subsidence is less.

Because of the physical scale of Hume Highway and Picton Road and their traffic movement priority, it was never going to be realistic to straddle either of these roads with the Town Centre, hence, one of the quadrants of the intersection of these roads would be the logical choice to locate the Town Centre. The Hume/Picton intersection general locality provides centrality and accessibility capability.

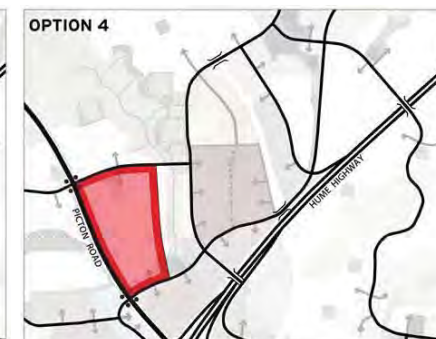
Each of the south west, south east and north east quadrants are limited by their multiple ownership circumstances. Fragmented ownership is considered to be a major limiting factor in delivering a coordinated Town Centre which develops in a logical sequence and provides all required land use opportunities. The north west quadrant provides a single ownership capability, good visibility to Hume Highway and relatively flat land.

The north west quadrant provides a number of large expanses of land capable of achieving the desired dimensions for the Town Centre and associated uses. The evolution of the road network, with its addition of 'northern' ramps to Hume Highway, has further enhanced the accessibility of the chosen site.

The options considered for the Town Centre location are shown.

Option 1 was chosen over the alternatives on the following basis:

- Optimum visibility from Hume Highway and Picton Road;
- early staging for retailing and jobs;
- Flat site;
- Regular dimensions;
- Good relationship potential with surrounding land uses;
- Direct linkages to Hume Highway and all quadrants of Wilton Junction;
- Buffers residential land uses from the Hume Highway / Picton Road interchange;
- Best location with respect to mining layout.



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7.2 Employment Lands

The location of employment lands has been based upon similar principles to those supporting the Town Centre, which of course, is likely to become the single largest focus of employment in its own right (in terms of job numbers) in Wilton Junction.

Essentially, the key urban design parameters for employment land are considered to be:

- Localities with ready access to Hume Highway or Picton Road;
- Localities with good visibility to Hume Highway or Picton Road;
- Good access to a suitable internal major collector road network; and
- Flat to gently undulating land to facilitate large floorplate buildings.

Other relevant considerations include:

- The ability to utilise employment lands as a buffer to transport corridors, especially to the Hume Highway and to the Maldon Dombarton Rail Corridor;
- The ability to utilise employment lands as a buffer to the existing Light Industry Zone which contains the electricity substation and the waste water treatment plant;
- The desirability of juxtaposing employment lands with the Town Centre and other commercial precincts such as bulky goods and highway services to build on the commercial, operational and visitation synergies of these land uses; and
- The undesirability of locating certain types of employment lands immediately adjacent to sensitive residential land uses.

The introduction of the northern access/egress ramps on/off the Hume Highway create a further opportunity for accessible employment lands associated with the alignment of the major collector roads to/from these access/egress points.

The quantum of employment land to be provided is linked to the desired level of self-sufficiency in employment sought for Wilton Junction, tempered by the commercial reality of delivering those employment opportunities in this region. Macroplan has established a realistic target of 70% employment self-sufficiency and has determined a likely demand for around 140 - 163 hectares (gross) to provide for a range of employment types.

Employment land includes the existing Light Industry Zone which has potential for further expansion of employment opportunities.

The following plan identifies the area of land most suited for employment purposes based upon the previously stated urban design principles. It totals around 350 hectares (figure 7.1), hence the subsequent plan identifies the actual employment land now proposed for Wilton Junction which reduces this area to around 229 hectares (gross), including school sites (figure 7.2).

The neighbourhood/local employment precincts are associated with centres serving local and neighbourhood level needs. Their location is a function of delivering accessibility to services and facilities required on a daily or weekly basis by a more localised community.

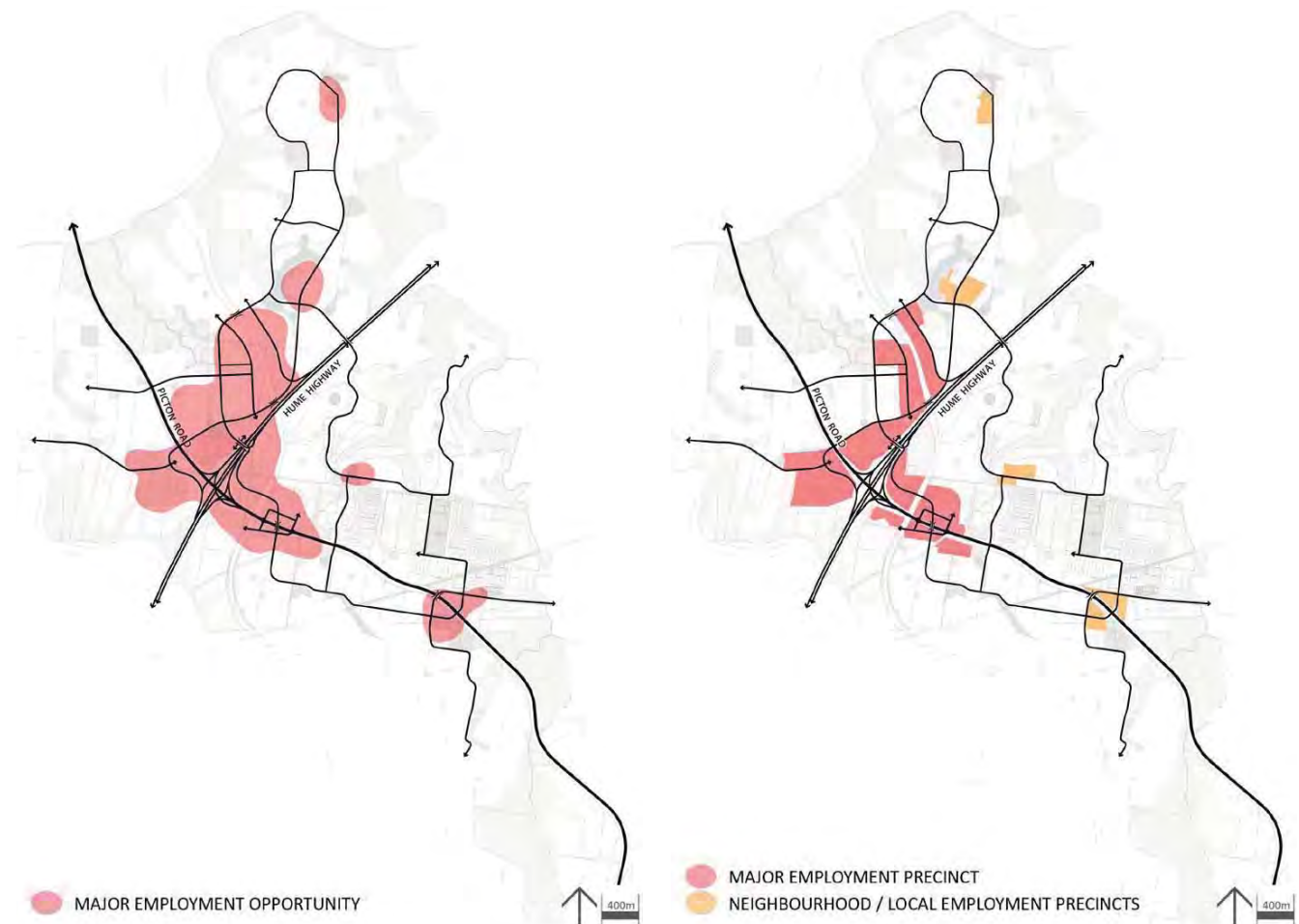


figure 7.1 Major Employment Opportunity

figure 7.2 Employment Precincts

7.3 Neighbourhood Centres and Other Commercial Precincts

The location of neighbourhood centres has been influenced by the following design principles:

- Relationship to Town Centre;
- Flat/gently sloping land;
- Central to the neighbourhood population served by the centre;
- Linked to a primary school, community facilities, local open space and, public transport;
- Focus of local non-vehicular network;
- Located on a major collector road; and
- Serving a population that underpins the viability of a supermarket based shopping centre and associated services and facilities.

The actual choice of locations provides a spacing that ensures a fully developed catchment of around 5,000-10,000 persons for each centre. The Town Centre sits over the neighbourhood centres and captures higher order spending from throughout Wilton Junction and beyond. However, in serving its neighbourhood, it plays a similar role in providing for daily, weekly and the main grocery trip purchases.

Smaller local centres and mixed use precincts are subservient to the neighbourhood centres, but provide for a range of special circumstances, for example:

- Serving the existing Wilton Township population;
- Providing a recreation/entertainment/hospitality hub on the lake; and
- Providing supporting land use opportunities adjacent to the Town Centre.

The mixed use precinct on the lake, while providing a recreation/entertainment/hospitality hub focussed upon the adjacent water body, also provides a lower level daily/weekly purchase option for patrons residing in the area between the District Centre and the northern Neighbourhood Centre.

While the Highway Services precinct is primarily intended to serve the significant passing trade from its arterial road frontage, it can also be expected to provide for daily and emergency purchases for the population off Wilton Park Road, through the basic purchase options typically available from such centres.

These minor retailing opportunities greatly assist in improving walkability to facilities for a larger number of residents.

Ninety nine percent of residents will be located within 2 km of a centre, with only the south eastern most and south western most rural residential areas located beyond a 2 km radius of a centre. (Refer to figure 7.3). These areas have very low population densities and could not be expected to sustain separate retail facilities. While there is considerable overlap in the 2 km radii around the respective centres, the limitations of access, particularly across the Hume Highway, drive a closer spacing of centres.

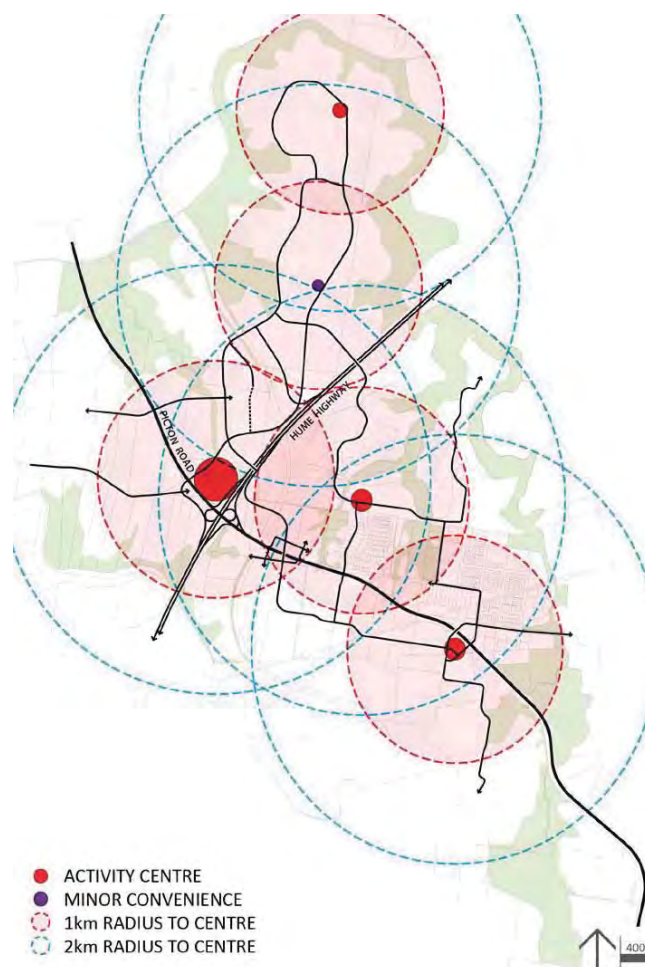


figure 7.3 Proximity to Activity Centres

Figure 7.4 identifies indicative catchment areas at the neighbourhood centre level, recognising that the Town Centre will also serve the whole of Wilton Junction (and beyond) at a higher functioning level.



figure 7.4 Activity Centre Catchments

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7.4 Schools

Criteria for the location of schools can be summarised as follows:

- Flat/gently sloping land;
- Central to the population they serve:
 - K-12 or high schools central to Wilton Junction
 - Primary schools central to individual neighbourhoods
- Linking of K-12 government school to District Open Space.

Investigations undertaken by Elton Consulting determined that the following number and type of schools would be required:

- 1 public K-12 school (kindergarten/primary/secondary);
- 1 private K-12 school (kindergarten/primary/secondary); and
- 3 public primary schools (including the existing school at Bingara Gorge).

This quantum allowed for a co-location of primary schools in close proximity to neighbourhood centres (as is already the case at Bingara Gorge) and the central location of K-12 schools (particularly the high schools) to serve the entire Wilton Junction population, with the primary component of the K-12 public school needing to be well located to serve the resident population in the vicinity of the Town Centre and south of Picton Road and west of the Hume Highway.

Proximity to the Town Centre for the K-12 public school is desirable to take advantage of transport systems (public, private and non-vehicular) focussed on the Town Centre and to facilitate multi-purpose trips involving school drop off and pick up.

A central location for the K-12 private school is also desired but proximity to the Town Centre is less essential given the choice involved in selecting a private school education. The private school could be expected to attract enrolments from well outside the Wilton Junction boundaries.

Figure 7.5 identifies the sites considered for K-12 public school location and discussed with representatives of the Department of Education. These discussions highlighted some additional key location criteria that assisted in the selection of the preferred school locations, including:

- Avoidance of a location adjacent to an arterial road;
- Avoidance of a location adjacent to a high fire risk environment; and
- Set back a distance from the Maldon Dombarton Railway Alignment.

From this plan, a number of sites were deleted on the basis of the Education Department criteria (Sites 2, 4, 6 and 8). Of the remaining sites, Site 7 was omitted due its greater commercial usability, while Sites 1, 9 and 10 were considered too remote from the Town Centre for the K-12 public school.

The preferred K-12 public school site (Site 5) delivers the following advantages:

- Relatively flat land;
- Close proximity to, but not within, the Town Centre;
- Direct access to public transport routes and collector road network;
- Direct access to the District Open Space and associated use of sports facilities;
- Away from arterial roads; and
- Avoids a high fire risk environment.

The preferred K-12 private school site (Site 9) delivers the following:

- Close proximity to the mixed use/lakeside precinct;
- At the confluence of two collector roads providing public transport routes and good access to the north-south and east-west;
- Good linkage to the land east of the Hume Highway via the existing farm bridge crossing; and
- Relatively central to the Wilton Junction population.

Other sites, including Sites 1, 3 and 10, represent acceptable sites for a private K-12 school.



figure 7.5 Potential K-12 school sites

7.5 District Open Space

The location of the District Open Space has been predicated upon the following:

- Flat/gently sloping land;
- Central to the Wilton Junction population;
- Accessible from the Town Centre and associated public and private transport networks;
- Linkage to the passive recreation opportunities of the bushland/gorge network;
- Linked to the Government K-12 school to provide synergies in the delivery of sports and recreation facilities; and
- 10ha is sufficient to accommodate:
 - 2 full size cricket (AFL) ovals
 - 4 rugby/hockey/soccer pitches
 - 10 netball/tennis courts
 - 4 practice cricket nets

While not essential, proximity to the naturally vegetated open space network provides advantages for linkages to the pedestrian/cycle trail network and the opportunities provided for informal recreation, picnicking and social enjoyment.

The location of the K-12 public school has influenced, and has been influenced by the location of the District Open Space. Because of the scale of the combined school/open space site (being around 15-20 hectares in total) locational options are restricted and have been influenced by the positioning of key road connections, especially the limited access points available from Picton Road and across the Maldon Dombarton Railway alignment.

Figure 7.6 identifies a range of sites considered for the District Open Space. Once the preferred K-12 public school site was determined, only Sites 3, 4 and 5 remained proximate to the school. Site 3 provides the greatest potential for integration with the school and has links to the civic centre and Town Centre, providing potential for increased overlap with the development of community and commercial facilities including a possible indoor recreation centre, aquatic centre, library, meeting rooms and club facilities.

The preferred location (Site 3) facilitates direct access to the K-12 public school (a natural low point could deliver a grade separated link to the school), close proximity to public and private transport.

Figure 7.7 depicts an indicative layout for the development of the District Open Space, which demonstrates the ability to deliver all required facilities within the allotted area. (Note that the western-most cricket / football oval is not a required District Open Space facility.)



figure 7.6 Potential District Open Space sites



figure 7.7 Indicative District Open Space Layout

7.6 Residential Development

Residential land uses are proposed across a large portion of the study area and generally represent all of the areas not required for commercial, employment, community or recreational use and not limited by vegetation, topography, drainage or infrastructure requirements.

The extent of residential development seeks to optimise the scale of the new township and provide the critical mass necessary to underpin the delivery of a full range of commercial, community and recreation services and facilities. Greatest densities are expected around the Town Centre, around neighbourhood centres and in mixed use precincts while lower densities are anticipated toward the peripheral of the site, especially where there is an interface with existing rural land uses.

Many of the areas identified for lower density residential development (either large lot residential or rural residential) coincide with:

- Areas of scattered vegetation, where it is desirable that much of the vegetation is retained (1);
- More steeply sloping land, where allotments need to be larger to accommodate cut and fill driveway access (2);
- Areas with limited vehicle access and consequential restriction on the number of lots to be served (3);
- Areas adjacent to rural activities where a lesser intensity of residential development is desirable from the perspective of retaining a more rural character and ensuring the agricultural practices of nearby farms do not adversely impact residents (4);
- Areas adjacent to employment/light industrial activities or major highways where the larger allotments provide for an increased setback opportunity (5); and
- Allotments in areas (3), (4) and (5) provide opportunities for agricultural pursuits.

These are depicted on the following plans in figure 7.8. Land around Wilton Township is discussed separately.

The area in Figure A, south of Wilton Park Road, was considered for a range of residential, rural residential and employment related land use options. The employment options were specifically seeking to take advantage of the flat land and proximity to the Hume Highway/Picton Road interchange. These concepts, illustrated in figure 7.9, were rejected on the basis of preserving the greater extent of scattered tree cover and minimising the impact on the number of existing homesteads in the Wilton Park Road area.



Figure A



Figure B

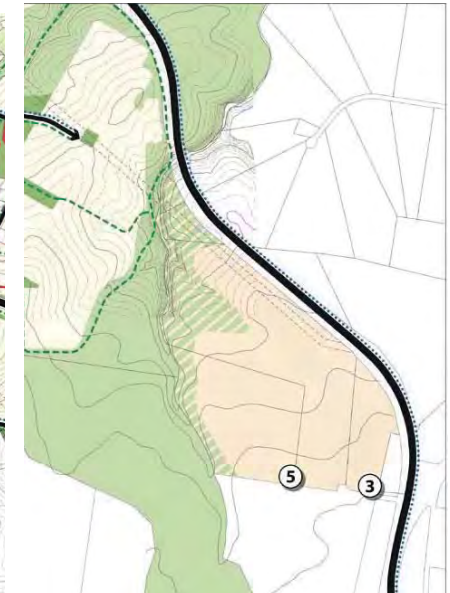


Figure C

figure 7.8 Low density Residential Development



figure 7.9 Residential and Employment Land Use Options

7.7 Wilton Township Perimeter

The existing township could be wholly integrated into the larger Wilton Junction urban development or be cocooned by bushland, waterways and lower density residential or rural land uses around its perimeter to maintain its village character and setting.

The chosen approach has been to seek to maintain the semi-rural setting of Wilton Township as a buffer to surrounding development, while recognising the need for some uplift in development capability around the town.

The key initiatives that maintain the semi-rural feeling of Wilton Township include:

- Maintaining of the reserve on the northern side of the township as a buffer to Bingara Gorge (refer to (1) on the following figure);
- Maintaining Allens Creek and associated vegetation as a buffer to adjoining activities (2);
- Promoting lower density residential development along the township boundaries rather than traditionally sized residential lots (3); and
- Providing the road connection between Hornby Street and Bingara Gorge to the west of the Neighbourhood Open Space, thereby reducing vehicular traffic within the township itself (4).

On the other hand, the entrance to the township (5), which is focussed around the Picton Road/Almond Avenue intersection, represents the area of greatest interaction, accessibility and visibility and has been identified as an area with potential for the development of a small employment precinct which complements the Neighbourhood Centre proposed to the south of Picton Road and collectively provide the focal point for the south eastern quadrant of Wilton Junction.



figure 7.10 Wilton Township Perimeter Land Uses



7.8 Road Network

The key road network design issues relate, firstly, to the availability of connection points to the existing arterial road network, secondly, to the distribution of traffic within Wilton Junction and, thirdly, the traffic volume implications of a greater or lesser number of external connection points and a greater or lesser number of internal collector road options.

Currently there are no direct access points from Hume Highway to the site, the only access to the Hume being via the Picton Road interchange and thence via the key intersections along Picton Road at:

- Wilton Park Road;
- Pembroke Parade; and
- Almond Avenue

Initial designs (Options 1 and 1a in figure 7.11) sought to utilise the Picton/Hume interchange as the sole Hume Highway access point. This resulted in very large traffic numbers predicted through that interchange and a lack of spread of traffic movement within the study area.

The subsequent investigation of opportunities for an additional set of access/egress ramps for north bound entry to and south bound exit from the Hume Highway (Options 2, 2a, 3 and 3a in figure 7.11) has transformed the arrangement of vehicular movement within the study area, facilitating a more even spread of traffic volumes and improved internal access across the Hume Highway and Picton Road via a grade separated internal collector road network. This approach ensures the free flow of freight traffic along Picton Road east and to the Hume Highway.

Key design considerations have been:

- The need for at least two access points from Picton Road into the subject site, to the west of the Hume Highway.
- Two access points have been chosen:
- slightly north west of the existing Wilton Park Road/Airport access road junction; and
 - the area north west of the Picton Road cutting, where horizontal and vertical road alignments facilitate delivery of a safe intersection
- A third 'optional' access point has been identified further north west along Picton Road where good horizontal and vertical alignments coincide with an area of reduced tree cover, but would require an expensive alignment across an incised creek valley.

The two preferred access points provide good access into the proposed town centre, schools and recreation facilities and provide a necessary road

capacity to support the 6000+ residences expected to be located in the north west quadrant of Wilton Junction.

The two preferred access points also provide access options for the Wilton Park Road community that is currently limited to a single exit point (Wilton Park Road). This is an important fire safety feature as well as providing for improved traffic movements.

- The need for at least two major access points from Picton Road into the subject site, to the east of the Hume Highway.

Two existing access points are available at the Pembroke Parade junction and the Almond Avenue junction. Both can be readily converted to four way intersections providing access to the proposed residential community south of Picton Road.

An additional left in/left out access arrangement to/from Picton Road to provide access to the Hume Highway's proposed northern ramps access-road delivers maximum value from the northern ramps access road and facilitates access to the eastern employment precinct without the need for a convoluted access arrangement through residential areas.

A possible fourth access point off Picton Road could be provided to deliver improved access to the south eastern most residential precinct. The alternative is the continuation of the collector road network within the residential area south of Picton Road, which is preferred from a road safety perspective.

- The need for at least two crossing points across the Maldon Dombarton Railway alignment, north west of the Hume Highway.

High traffic volumes generated by the Town Centre and the level of residential development in this quadrant necessitate two crossing points to provide an appropriate distribution of traffic and the avoidance of a 6 lane road within a residential environment.

A number of alternative 2 and 3 crossing point options have been considered, with the proposed arrangement representing a sound compromise between optimum accessibility and cost of delivery of grade separated railway crossings. The master planning process considered utilization of the existing 'accommodation crossing' for farm animals and vehicles, but resolved that the were more direct routes that better addressed predicted traffic flows.

- The need for a key crossing point across the Maldon-Dombarton Railway alignment, south east of the Hume Highway.

The creation of the new northern off ramp from the Hume Highway and its connection to the land south of Picton Road provides a highly desirable link within the Wilton Junction road framework. To do so, however, requires a crossing of the Maldon-Dombarton Rail alignment. An existing crossing point exists at Condell Park Road, however alternative crossing points are likely to provide for improved road geometry.

- The desirability of two crossing points over the Hume Highway.

An existing farm bridge provides one immediate opportunity for the crossing of the Hume Highway and the interconnection of east and west.

The second location takes advantage of connection opportunities to the proposed Hume Highway northern access ramps and provides direct connectivity to the Town Centre and links to the area south of Picton Road via the northern ramps access road.

The third option is a location south of the Hume Highway Picton Road intersection. This option is more problematic in terms of a larger/longer crossing point across the Hume Highway and a lesser propensity to capture east west traffic, being removed from the Town Centre. This option has been rejected.

- Internal interconnectivity.

Key internal connections are provided throughout the site. Alternative internal connections have been identified but rejected on the basis of physical constraints or the implications of large increases in traffic on existing road networks where it is unreasonable to expect existing residents to tolerate those increases.

The following plans identify the options considered for the primary road network and the likely scale of those roads (by number of lanes). The final plan (figure 7.11a) identifies the primary vehicle connections to and within the subject land, as well as the alternative access options considered but not forming part of the current Master Plan.

- Provision of an improved Hume Picton Interchange design which facilitates key traffic movements.

Design refinements are continuing for this interchange but a key element for the internal design of the Wilton Junction network has been the introduction of a north west bound exit from Hume Highway onto Picton Road which provides accessibility to a Highway Services precinct in the south western quadrant of the interchange and easy access into the Town Centre.

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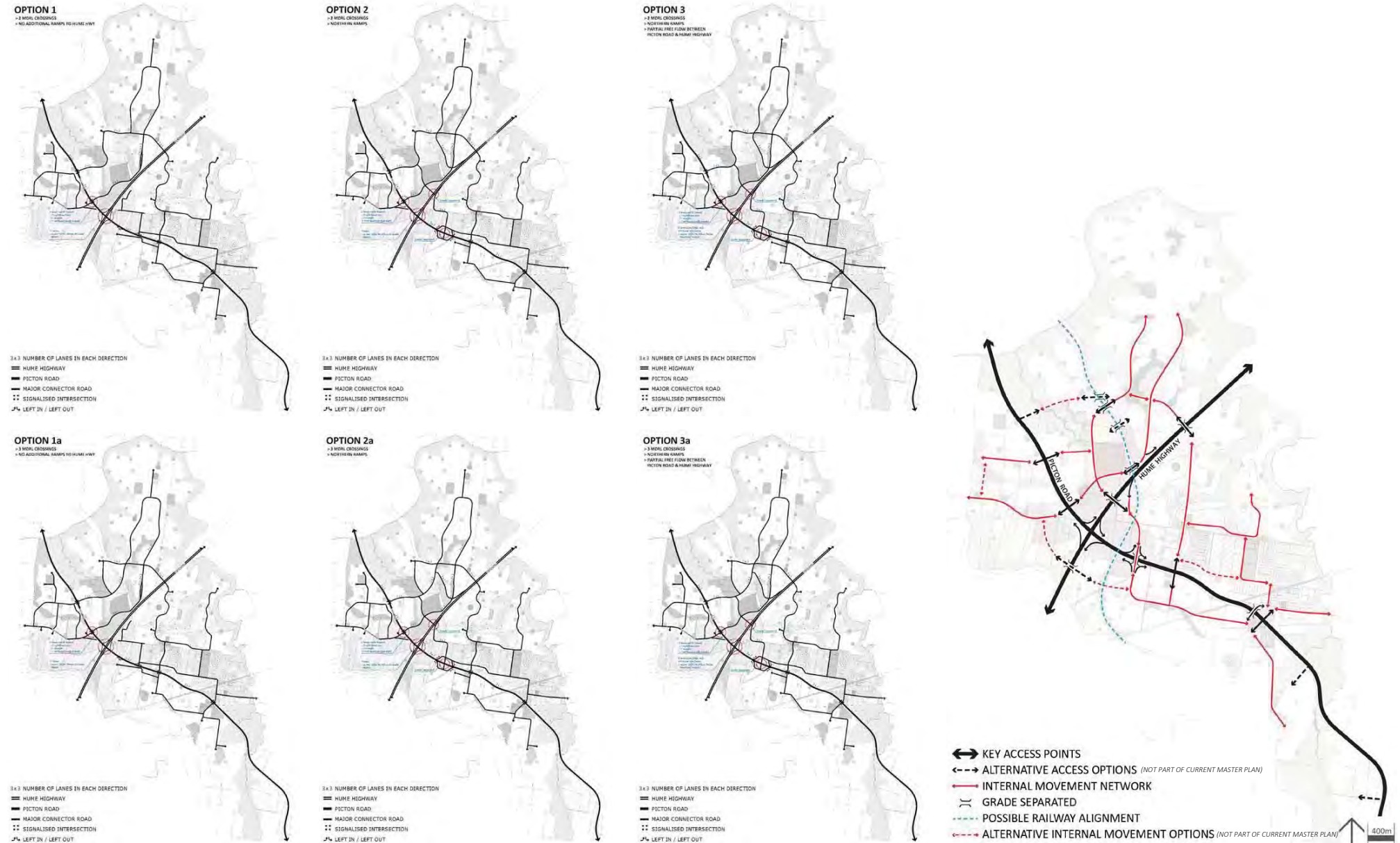


figure 7.11 Options considered

figure 7.11a Primary Vehicle Connections

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7.9 Public Transport Network

The public transport network is a response to the land use arrangement and road network opportunities provided by the Master Plan. All key focal points and major residential populations within Wilton Junction are to be connected by the proposed public transport network, both internally, and externally to key destinations such as Picton, Wollongong and Campbelltown and beyond.

Figure 7.12 depicts proposed day-time and peak bus networks for Wilton Junction in 2041.

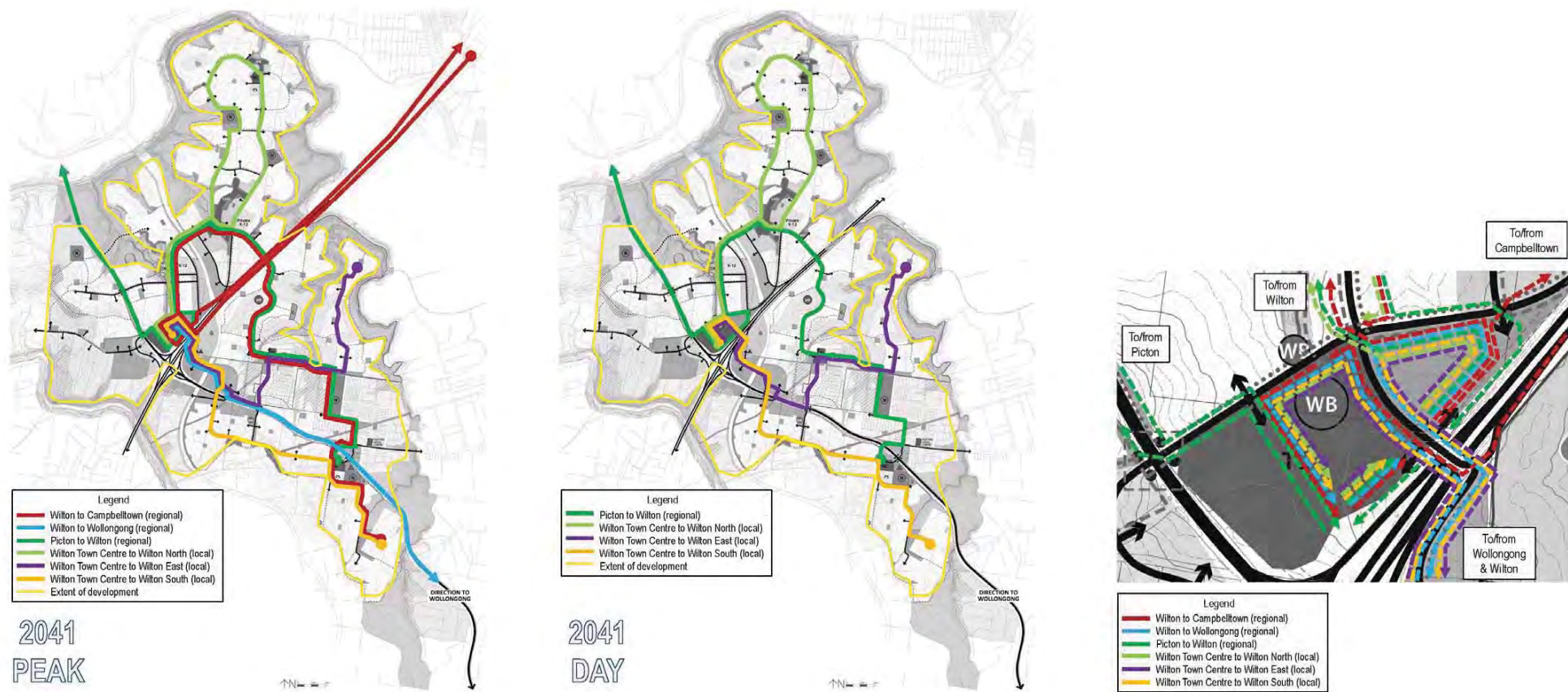


figure 7.12 Proposed Bus Networks (at full development)

7.10 Non-Vehicular Network

The key design objectives for the non-vehicular movement network have been to:

- ▶ Provide connectivity within and between neighbourhoods;
- ▶ Provide connectivity to the Town Centre and Employment Lands for the whole of Wilton Junction;

- ▶ Provide a safe movement network focussed upon local/neighbourhood shopping, community services, primary schools and recreation areas; and
- ▶ Provide an alternative to the utilisation of vehicles wherever possible.

The following plans identify, firstly, the key linkages sought to be achieved and, secondly, the resultant network having regard to the location of roads, reserves and other non-vehicular access opportunities.

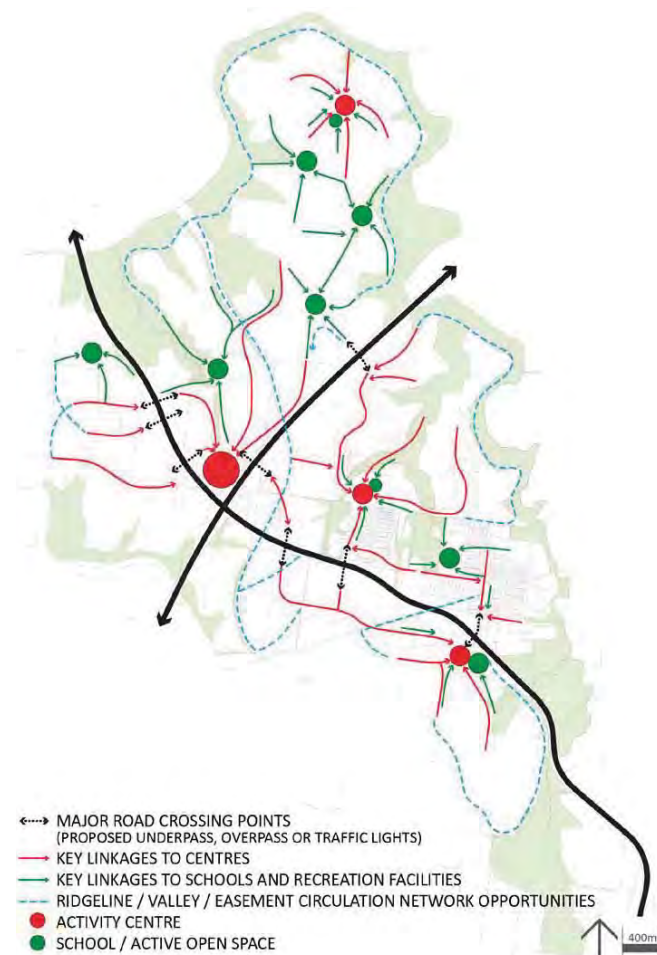


figure 7.13 Key Non-vehicular Linkages

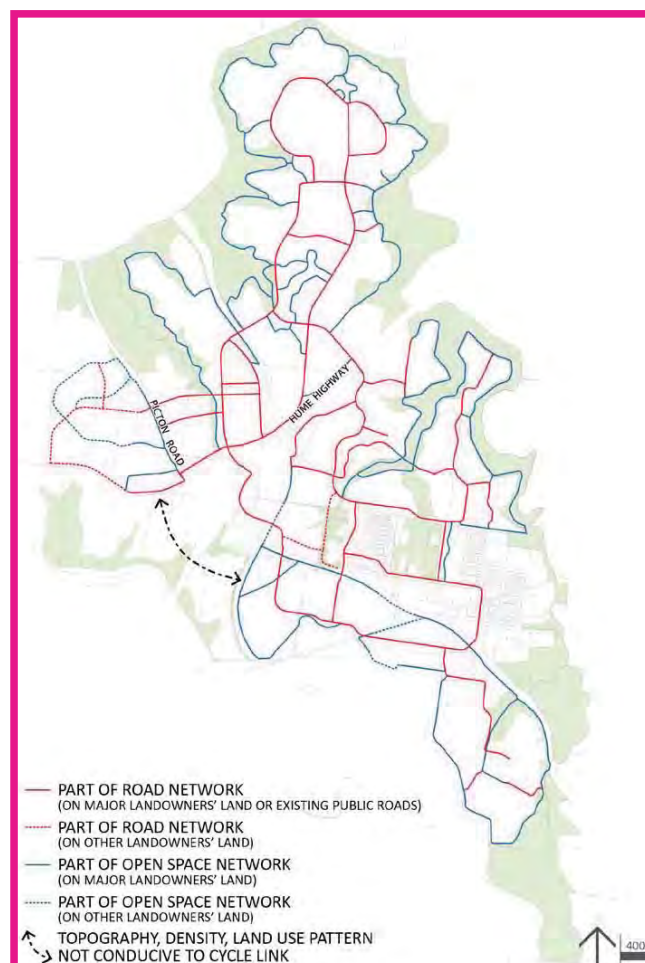


figure 7.14 Non-vehicular Network



figure 7.15 Pedestrian and Cycling Crossings

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7.11 Neighbourhood Open Space

The location of neighbourhood level open space has been based upon the following:

- **Generally**, flat/gently sloping land;
- Central to the neighbourhood population served by the neighbourhood open space;
- The Neighbourhood Open Space will be sufficient to accommodate:
 - 1 full size cricket (AFL) oval
 - 2 rugby/hockey/soccer pitches
 - 2-6 netball/tennis courts
 - 2-4 practice cricket nets
- Recognition of the existence of the Wilton recreation grounds and the commitment of Bingara Gorge to their upgrade; and
- Recognising the proposed location of the District Open Space.

Based upon the Open Space Study undertaken by Connor Holmes, there is a need for a total of 5 neighbourhood level outdoor sports facilities (in addition to the facilities provided by the District Open Space) to meet future population demand for sporting ovals and courts.

Given the fixed location of the existing Wilton recreation grounds, the other neighbourhood facilities have been located to provide an accessible distribution of facilities, having regard to the location of other significant active recreation spaces (ie the District Open Space, schools and the proposed recreation lake) and the location of non-residential land uses which do not require the same level of access to outdoor sports facilities. These are identified on the following plan.



figure 7.16 Active Open Spaces

7.12 Scale, Density and Height

The greatest intensity of activity is anticipated in the Town Centre and generally grading down in intensity towards the periphery of the site. Larger building forms are also likely in the Town Centre and surrounding employment areas and the mixed use precincts.

Building heights will **generally** be up to 12.5m in the town centre and in the mixed use and employment precincts and generally limited to 9.5m (2 storeys) in all residential areas. **Residential flat buildings may achieve three storeys in some locations.**

The scale of built form in the Town Centre, employment and mixed use precincts could include very large floorplates and a range of moderate and smaller floorplates, reflecting the diversity of land uses and types of operation anticipated in these areas. Allotment sizes will also vary and provide a diversity of densities which will relate to the character of particular areas within the site.

Residential areas will predominantly involve smaller floorplates, notably detached dwellings on individual allotments, but will also deliver around 12.5% of dwellings in the form of townhouses, row houses and semi-detached building forms and around 3.5% in the form of apartments and shop top houses.



7.13 Road and Rail Interface

The approach to the road and rail interface combines a land use and design response. Wherever practical, non-residential land uses have been utilised along the Maldon Dombarton Rail Alignment and along the major roads (Hume Highway and Picton Road). In fact all of the land from the northern access/egress ramps to/from Hume Highway, south to the Hume Highway/Picton Road interchange is designated non-residential.

The approach already adopted by Bingara Gorge is to allocate deep allotments along the Hume Highway to create a setback to housing, while a noise wall has been utilised along Picton Road.

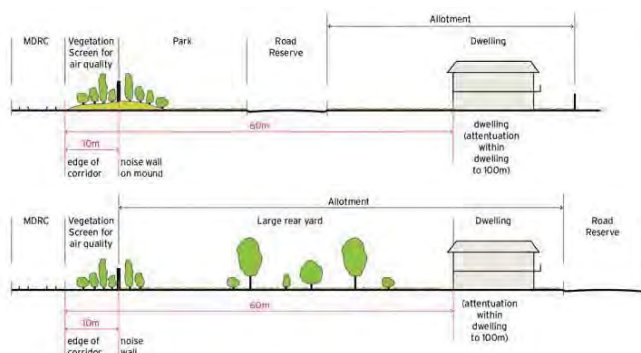
Noise walls are preferably avoided from an urban design perspective, but are sometimes necessary in confined locations. However, they are not particularly useful in undulating landscapes where housing sits above the height of the wall. This is the case for much of the length of the southern side of Picton Road, both east and west of the Hume Highway.

A combination of vegetation screening (especially for airborne pollutants) and minor setback is the preferred approach while the use of deeper allotments is an acceptable alternative, particularly where no allowance is required for pedestrian/cycle networks or service infrastructure.

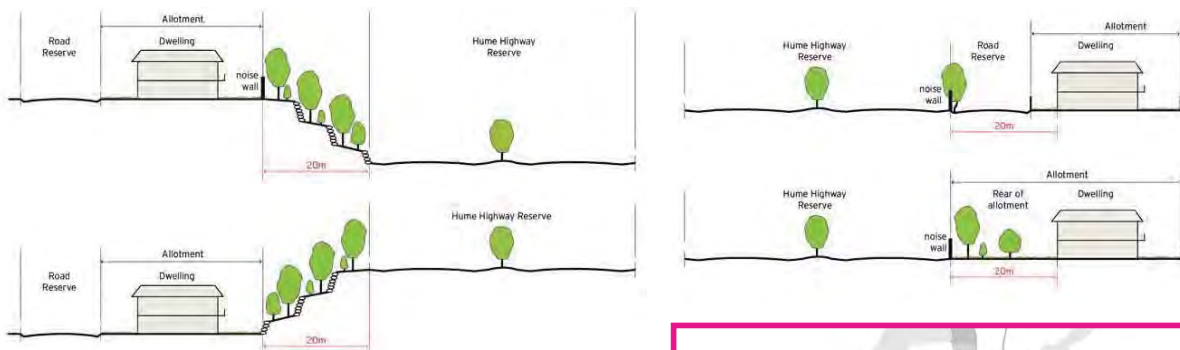
With regard to the possible alignment of the High Speed Rail, we anticipate that its vertical alignment is likely to be well below natural surface level where it notionally passes through the residential section of the study area and have therefore not provided for setbacks or amelioration measures at this stage. As further information about the alignment is made available, this position could be refined.

The following cross sections identify possible approaches to the key road and rail interfaces.

Residential Setback to Maldon-Dombarton Rail Alignment



Residential Setback to Hume Highway



Residential Setback to Picton Road

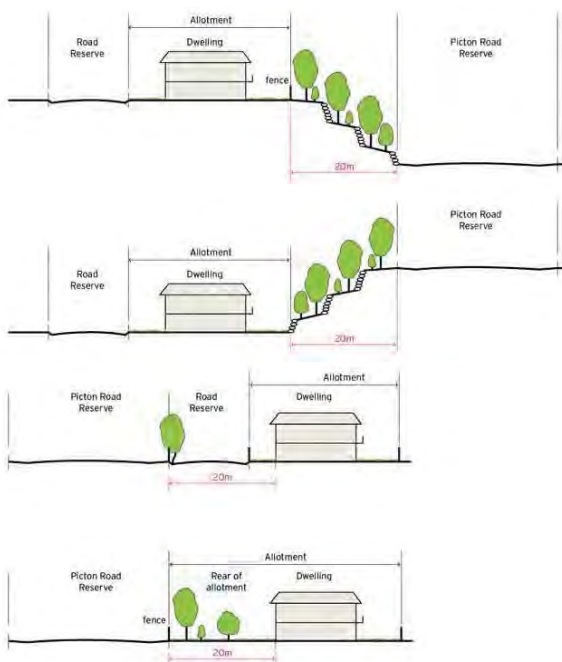


figure 7.17 Interface Cross Sections

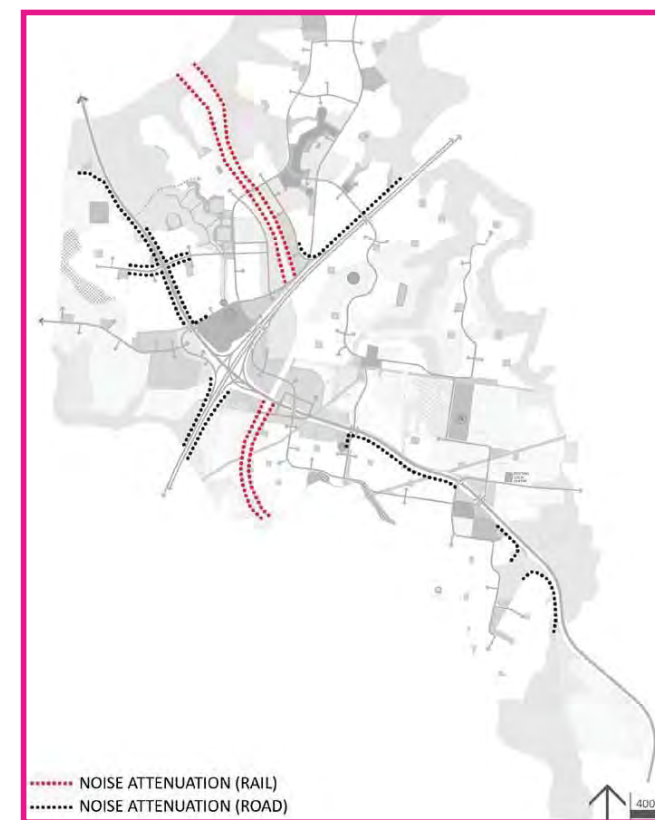


figure 7.18 Road and Rail Interfaces

7.14 Interface with Surrounding Land

Wilton Junction is a substantially self-contained precinct being bound for the majority of its perimeter by the Nepean River or by Allens Creek or by the ridgeline of the tallest local hills to the south.

The extensive uninhabited bushland along these riverine and ridge top environs provide a natural interface between the urban development of Wilton Junction and any surrounding land uses. The interface issue in these circumstances is the manner in which the proposed urban development of Wilton Junction interfaces with the bushland itself. This issue is discussed elsewhere under the section entitled "Areas of Environmental Sensitivity and Bushfire Risk".

The only areas of direct interface with surrounding rural communities are along the western most boundary in the area of Wilton Park Road and, to a much lesser degree, in the south eastern corner of the site.

In each case, the proposed method of interface is to provide for a transition in density from the higher densities in the central urban areas of Wilton Junction to the provision of rural residential allotments along the two boundary interfaces. These large lots will ensure a sense of openness is retained, substantive vegetation can be protected where relevant, and alternative low impact agricultural land uses can occur. The large lots provide a buffer interface.

Within Wilton Junction there are some areas where the interface between potential light industrial activities and adjacent residential land uses requires management. These interfaces will typically involve the development of vegetated screens, public parks or larger private allotments that facilitate suitable setback distances between incompatible land uses.

Figure 7.19 identifies both internal and study area boundary interfaces.

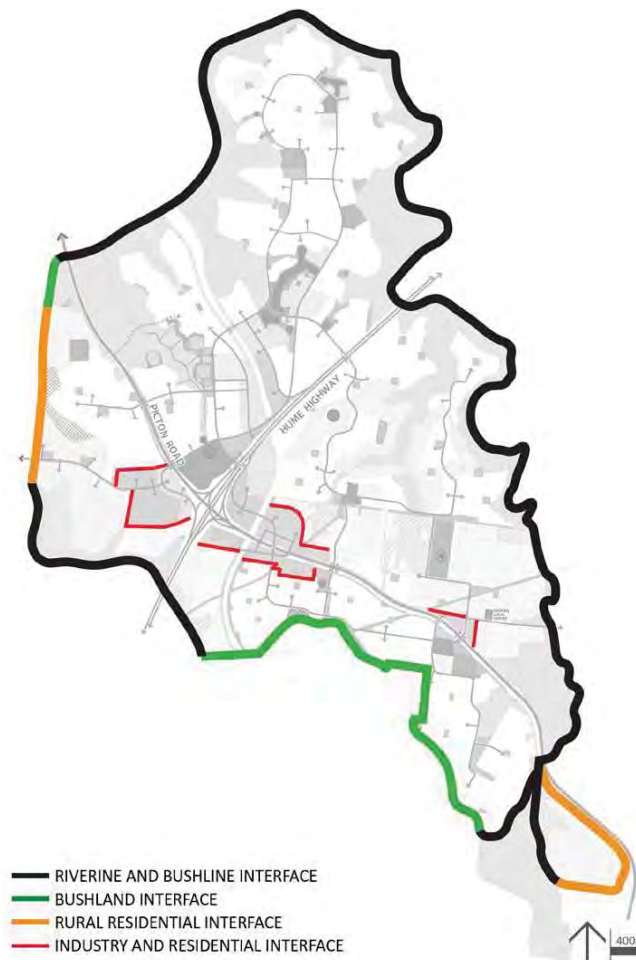
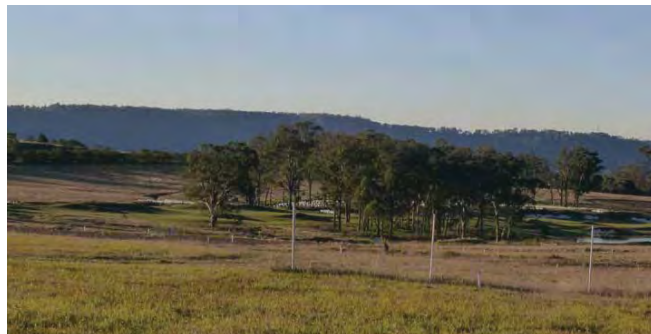


figure 7.19 Site Interfaces

7.15 Environmentally Sensitive Areas and Bushfire Risk

The design approach has been derived from extensive survey work conducted by SLR Consulting to identify areas of the site that warrant protection from urban development to preserve sensitive or significant vegetation, fauna, fauna habitats, wildlife corridors, riverine environments or topographical features.

There has been little consideration of alternative design options in that most of the areas of environmental protection are relatively self-evident and coincide with the areas of consolidated forest or woodland where prior modification or disturbance has been limited. These areas typically correspond with the gorges of the Nepean River and Allens Creek and sometimes extend to the edge of the plateaus surrounding the gorges. These areas of environment protection form a continuous link around the site, providing wildlife refuge and movement corridors (refer figure 7.20).

The only areas of design conjecture are those areas along the interface between forest/woodland and grazing land and the appropriate definition of that boundary between environmental protection and urban development.

This evaluation has been undertaken by SLR Consulting, Whelan Insites and Australian Bushfire Protection Planners and has involved, firstly, an evaluation of the environmental qualities of the vegetation / habitat and, secondly an evaluation of forest/woodland density, land slopes and direction of orientation to establish fire risk and resultant desired width of separation between vegetation and urban areas.

With regard to the vegetation analysis, SLR Consulting has produced an analysis of forest and woodland which is to be retained on the site and has identified vegetation which may be removed from the site (subject to a comprehensive environmental offset strategy). Refer to figures 7.21 and 7.22. This advice has provided a fundamental direction to the master plan in defining the farthest extent of the urban area and has provided the starting point for the investigation of Asset Protection Zones.

This approach to APZs provides easy access to the urban/forest interface for emergency vehicles and easy access away from the interface for residents fleeing a dangerous situation. Further, the notion of a perimeter road provides two escape route options for all residents.

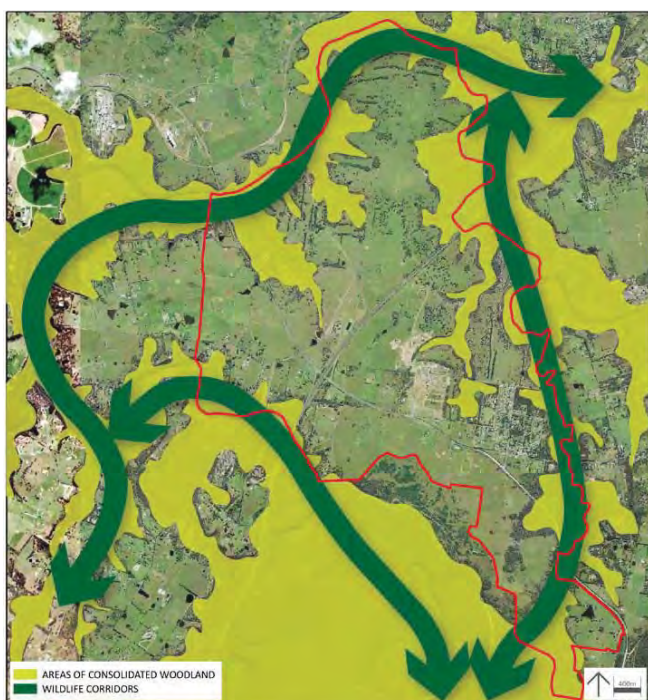
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figure 7.22 Forest and Woodland to be removed

Wilton Junction MASTER PLAN

7.16 Archaeology

Design refinements have been necessary to ensure a number of rock shelters are protected from urban development in the vicinity of Byrnes Creek. Specifically the location of the northern entry road off Picton Road has been moved to avoid these shelters, scattered artefacts and a scar tree, and the boundaries of the District Open Space adjusted to provide a separation from the shelters. These changes are evident in figure 7.24.

The major lake proposed for receiving of treated water has been redesigned to avoid a key scar tree in the vicinity of the lake. Refer to figure 7.25.



figure 7.23 Transition between APZ and Allotments



figure 7.24 District Open Space Evolution

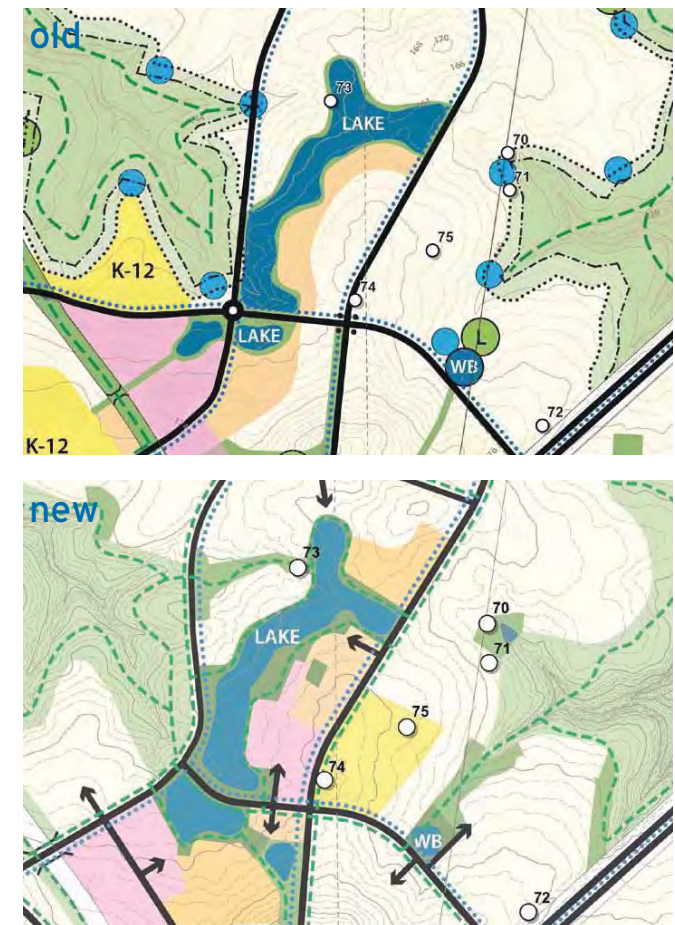


figure 7.25 Recreation Lake Evolution

7.17 Mining

The MSEC report advises that the greatest subsidence is likely where coal seams are thickest and that occurs at the northern end of the Wilton Junction site. This area is predominantly low density residential development with limited supporting neighbourhood commercial, community and recreation facilities.

The larger and more complex building forms of the Town Centre and Employment Precincts around the Hume/Picton Interchange are located in a 'lower subsidence risk' environment and/or in areas not subject to the Illawarra Coal Bulli Seam Operation.

The design approach is based upon the co-existence of urban development and mining and the implementation of a suitable management, approvals and building control regime, as is already successfully demonstrated within Wilton Junction at Bingara Gorge.

In respect to gas drainage a range of options exist. Drainage can be largely accommodated using open spaces, and perimeter bushland for drill sites and the pedestrian / cycleways and roads for the drainage lines. Access to this drainage infrastructure will need to be provided. This can be addressed via the D.C.P.

7.18 Infrastructure

Key infrastructure design issues addressed as part of the master planning process have included:

- ▶ Identification of locations for key spatially extensive infrastructure provision;
- ▶ Consideration of buffer requirements to sensitive land uses;
- ▶ Opportunities to take advantage of the aesthetic qualities of some infrastructure; and
- ▶ The opportunities to utilise existing roads and easements and future roads for infrastructure transmission.

The existing STP remains the logical location to expand operations to provide primary waste water treatment to serve the whole of Wilton Junction and accordingly is proposed to do so. Its operation, however, is reliant upon a number of spatially extensive water bodies which deliver additional treatment capacity to facilitate the increased waste water capacity needs. These have been located to provide a focal point and a strong aesthetic quality to the largest area of residential development within Wilton Junction. The water bodies do not require setbacks and thus become integral to the urban development and parkland network.

Other aesthetic water bodies are proposed around the site to provide further interest and minor catchment capacity. Rain gardens are identified at low points throughout the site to collect, cleanse and manage the outfall of stormwater to the natural creek systems.

The existing electricity substation location will be maintained and built upon with additional transformers over time. An additional substation is expected to be required in the long term in the south east of the study area. A relatively flat site of 0.5-1.0 hectare with good maintenance vehicle accessibility has been chosen south of Picton Road and west of Allens Creek. Access to the site will not be via Picton Road, but via the internal road network.

Gas supplies, telecommunications and NBN have little relevance to the Master Plan itself in that they do not have particular spatial impacts or requirements. However, the Moomba-Wilton Gas Line and the Moomba-Botany Ethane Line have consequences for the location of sensitive land uses and, accordingly, the Master Plan provides for low density residential and employment lands along the gas pipeline corridor. The pipeline easement is proposed to become a reserve as part of the process of development of surrounding areas and suitable setback distances will be invoked for adjacent land uses.



Wilton Junction MASTER PLAN



8 THE MASTER PLAN

8.1 Evolution of the Master Plan

The Master Plan has evolved through a series of iterations which have responded to:

- ▶ The initial evaluation of opportunities and constraints;
- ▶ The emergence of new information;
- ▶ The preferences of major and individual landowners;

- ▶ The requirements of, or in response to matters raised by, Council, State Government, agencies and the community;
- ▶ The development of infrastructure solutions; and
- ▶ The viability of project delivery.

The following plans (figures 8.1 to 8.3) chart the evolution of the Master Plan. While on the surface, the current Master Plan (figure 8.4) retains most of the key aspects of the original Master Plan, there are subtle but significant distinctions reflecting the resolution of a range of details that deliver a high level of confidence regarding the workability of the final Master Plan.

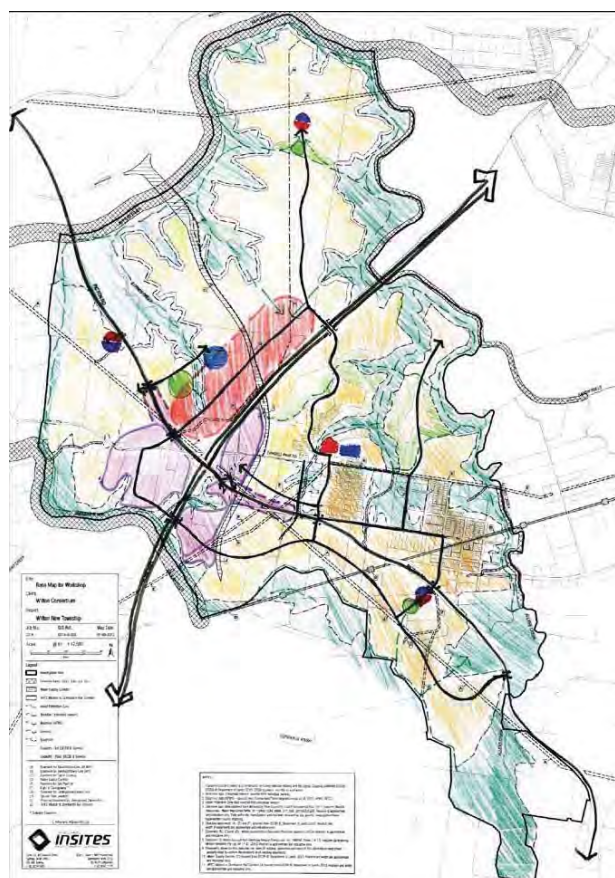


figure 8.1. Workshop Master Plan 8.8.12

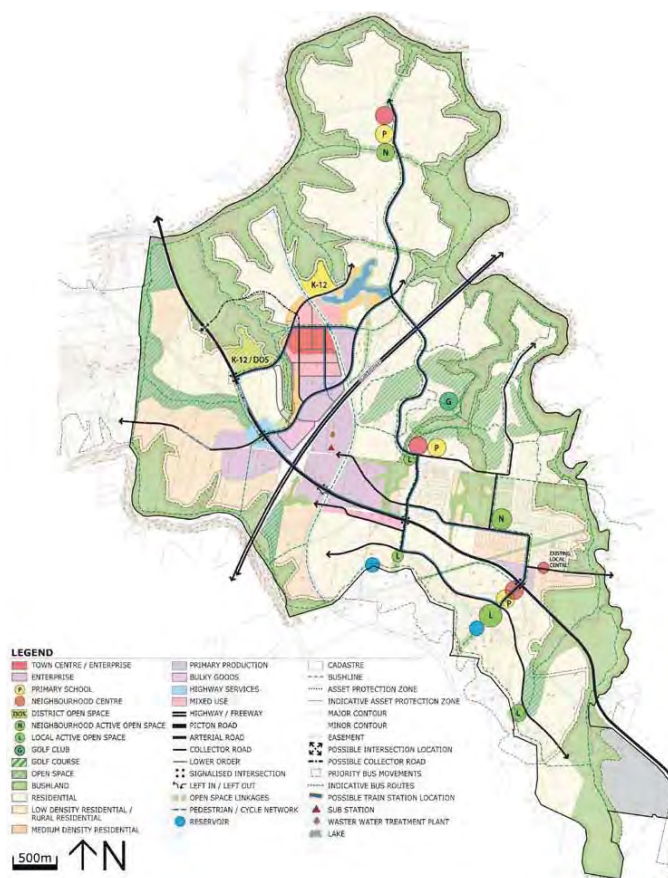


figure 8.2. High Level Master Plan 21.9.12

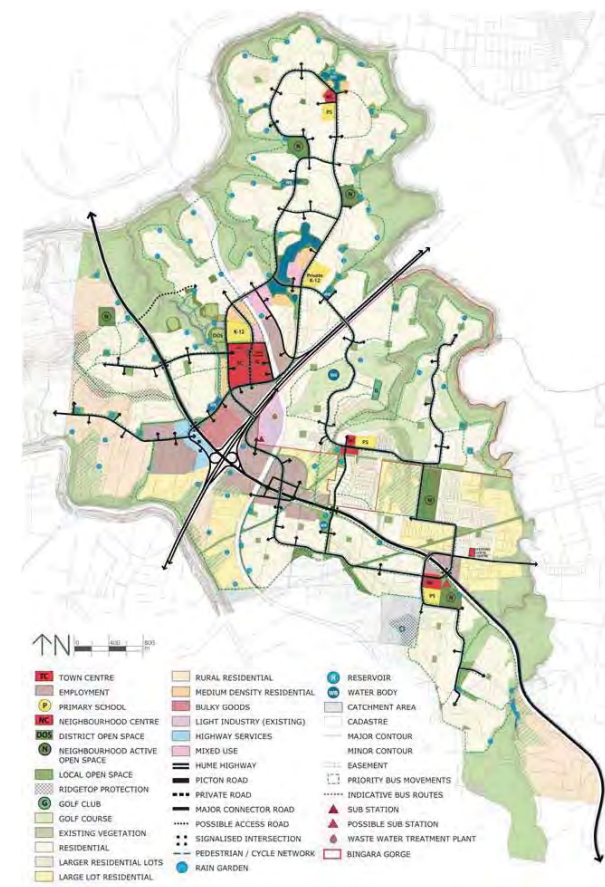


figure 8.3. Detailed Master Plan 8.11.13

Wilton Junction MASTER PLAN

8.2 Key Elements

The Masterplan for Wilton Junction comprises the following key elements:

- › Town centre
- › Employment lands / enterprise precincts
- › Mixed use precincts
- › Neighbourhood centres
- › Local centres
- › Schools / education facilities
- › Active recreation areas , including:
 - district open space
 - neighbourhood open space
 - recreation and aesthetic lakes
- › Passive open space and recreation areas
- › Protection areas / bushland areas
- › Residential areas
 - › Medium density residential areas
 - › Low density residential areas
 - large residential allotments
 - rural residential allotments
- › Vehicular and non-vehicular movement corridors and infrastructure corridors / sites
- › Special purpose areas (reservoirs, substations and STPs)

These elements are identified on Figure 8.3 and are discussed in the following paragraphs.

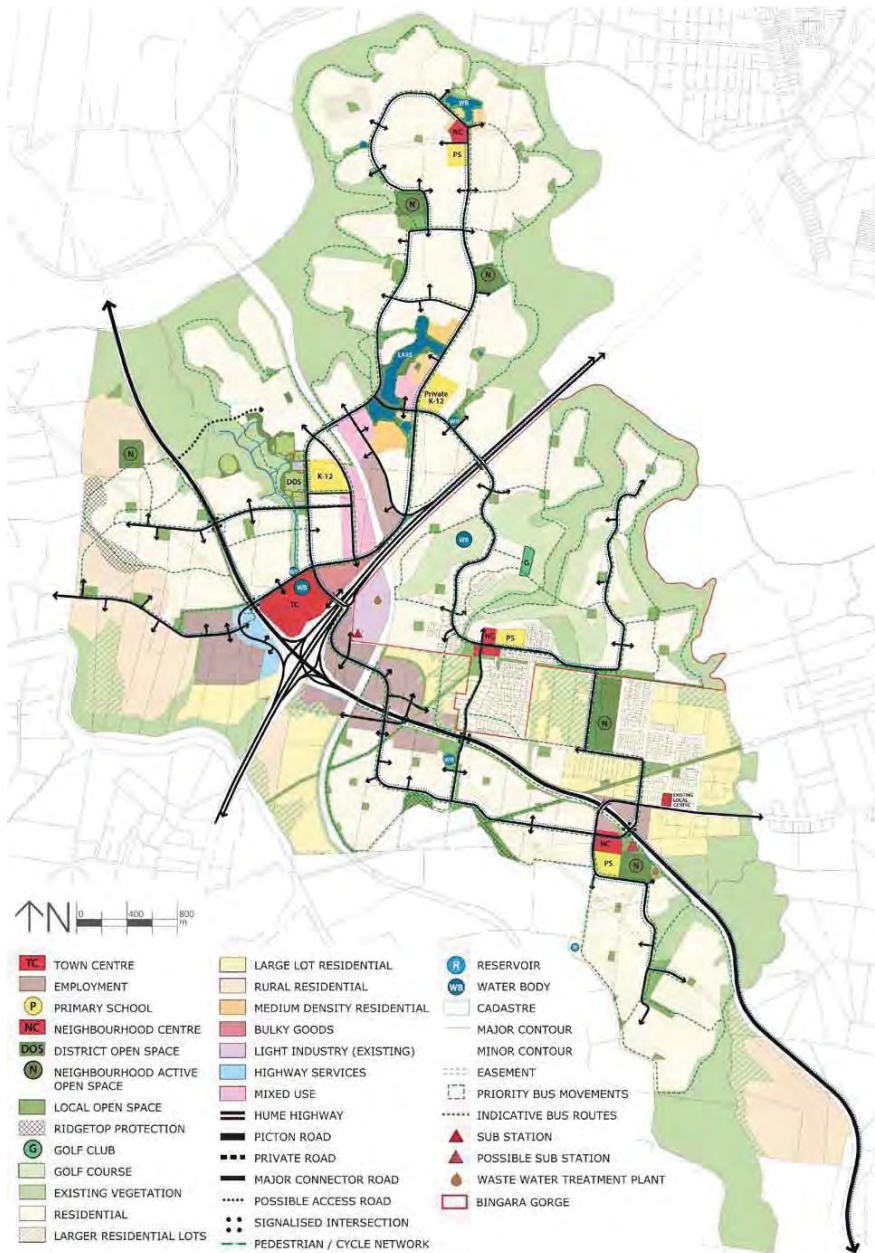


figure 8.3 Detailed Master Plan 30.05.14

8.2.1 Town Centre

The town centre comprises a range of precincts which may include a wide variety of uses, including the following. Note that this does not imply that all of the following uses will be provided.

› Retail

- Supermarkets
- Specialty shops
- Discount department stores
- Mini-majors
- Cafés, restaurants, take-aways
- Retail services

› Leisure / Recreation

- Bars, cafés, restaurants
- Hotels/Taverns
- Cinemas
- Gaming / amusements
- Bowling
- Gymnasium
- Clubs / nightclubs
- Leisure Centre / indoor recreation / aquatic facilities
- Hospitality
- District playing fields

› Civic

- Administration
- Function centre
- Library
- Community centre
- Meeting hall

› Commercial

- Offices
- Post office
- Bank
- Personal services
- Professional services

- Conference centre

› Education

- Child care
- Early learning / pre-school
- Primary school
- High school
- TAFE
- University
- Special education
- Training

› Accommodation

- Medium density housing
- Mixed residential / commercial
- Motel/ conference centre
- Guest house
- Retirement village
- Aged care / nursing home

› Highway Services

- Petrol filling station
- Truck stop
- Automotive repairs and supplies
- Fast food, cafés
- Motel
- Car cleaning / detailing
- Service trade premises

› Community Services

- Community centre
- Youth services
- Aged services

- Employment services
- Not-for-profit groups
- Government agencies

› Health Services

- Hospitals
- GP Plus
- GP Clinic
- Specialist clinics
- General practitioners
- Dental / physio / chiro
- Visual / hearing
- Veterinarian
- Massage
- Dietician
- Paediatrics / Child health

› Special Services

- Police
- Fire
- Ambulance
- Courts
- Funerals

› Transport

- Car parking
- Multi-deck garages
- Transport interchange



Wilton Junction MASTER PLAN

Because the Town Centre is intended to be a comprehensive multi-purpose centre providing for a range of uses well beyond that of a retail centre, its scale is deliberately large to make provision for the development of that full-range of uses over time.

A centrally located retail core is proposed to provide convenience and comparison shopping for the whole of Wilton Junction, a civic core, commercial and office functions, community facilities, leisure and entertainment functions and opportunities for short and long term accommodation options.

The Town Centre's retail core will be the focus of the private and public transport networks, including the delivery of a bus interchange. It will also be the focus of non-vehicular movement networks, with linkages to the surrounding residential precincts.

The Town Centre is flanked by a bulky goods precinct that is adjacent a mixed use precinct. These precincts provide for an overflow of lesser scaled activities from the town centre and an increasing focus on community facilities, health facilities, commercial and office space, an increasing proportion of residential development and a range of leisure and entertainment activities that take advantage of their high amenity locations.

A substantial enterprise employment precinct is proposed which will have an increased focus upon employment, offices and footloose operations seeking a business park type environment. Expansive space users such as private hospitals and higher education facilities would also be appropriately located in this precinct. The opportunity exists to facilitate start up businesses through a business incubator facility and to focus on the capture of businesses seeking to integrate the workplace with high amenity and recreational opportunities.

Accommodation in and around the Town Centre might include medium density housing, mixed residential / commercial developments, motels, guest houses, retirement villages and aged care / nursing home establishments.

At the periphery of the mixed use precinct and focussed upon the exposure and accessibility provided by Hume Highway and Picton Road, are highway related services and facilities and a bulky goods precinct intended to serve both Wilton Junction and the extensive and growing passing trade on those major roads. The bulky goods precinct will form an element of the broader employment precinct in the area along the Hume Highway frontage, thereby providing flexibility in the location and delivery of this key investment.

A K-12 public school is also proposed to the north of the Town Centre, adjacent the district open space. This location just outside of the town centre provides an opportunity for students to take advantage of bus routes and pedestrian and cycle networks that focus on the town centre and riparian corridor and also increases the propensity for multi-use trips which incorporate the school drop off / pick up trips.

The agglomeration of these activities provide a broader propensity for multi-use of services and facilities and a potential reinforcement of the commerciality of the Town Centre.

The Town Centre as a whole will be a very substantial employment hub in its own right.

Figure 8.4 provides an indicative land use and built form arrangement for the Town Centre.





8.2.2 Employment Precincts

- The employment precincts include the town centre but also include the following areas:
 - North and south of Wilton Park Road
 - North and south of Picton Road, east of Hume Highway
 - The Bingara Gorge employment lands, STP and substation site
 - A small triangle of land at the corner of Picton Road and Almond Street
 - Prospective developments within the neighbourhood centre sites identified within Wilton Junction
- Together with the town centre (and work from home opportunities) these precincts deliver sufficient floorspace potential to exceed 70% employment self-sufficiency in Wilton Junction; and
- The focus of these precincts will be on clean enterprises which cater for the emerging industries of the twenty first century in attractive landscaped environments. Some light industrial activities are anticipated as well as an element of transport, warehousing and logistics, which capitalises on the site's strategic location, and food and agricultural product processing, packaging and distribution, which focusses on serving the region's agricultural base.

figure 8.4 Town Centre Concept

Wilton Junction MASTER PLAN

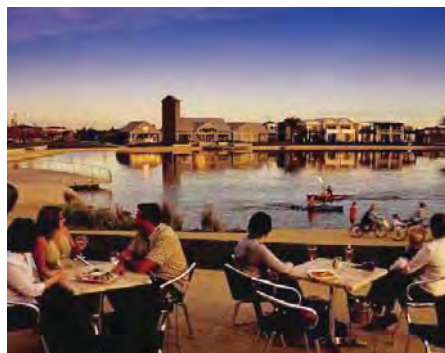
8.2.3 Neighbourhood Centres

► Neighbourhood centres, comprising a combination of retail and commercial facilities, community facilities, a primary school and areas of open space, are proposed to serve the 'neighbourhoods' of Wilton Junction. The Town Centre itself will act as a neighbourhood centre for the southwest. Other centres are proposed (or exist) as follows:

- Bingara Gorge
- Northern precinct of Wilton West
- South of Picton Road

► In the case of the existing Wilton township, the existing local centre is retained and can expand over time and the Wilton Community Centre and Oval complex will be enhanced as the focal point of community and recreational activities;

► Each centre is intended to act as a focus for community activity and as the fulcrum of the public transport and pedestrian movement network.



8.2.4 Mixed Use Precincts

A number of mixed use precincts are proposed, including areas adjacent to the town centre, which provide a transition from the scale and intensity of activity in the town centre to the adjacent residential areas, areas which provide an opportunity for small scale business development in precincts of predominantly residential activity and a lakeside location which provides an opportunity to combine medium density residential development with smaller scale retail, hospitality and entertainment activities focussed upon a lakeside swimming beach.

8.2.5 Special Purpose Areas

► The master plan identifies a preferred location for the potable water supply reservoir to serve the Wilton Junction community and incorporates the expanded STP and electricity substation within the defined light industry precinct. A new substation location is identified south of Picton Road and water treatment lakes are identified in the northern quadrant of Wilton Junction.



figure 8.5 Lake Concept and Mixed Use Precinct



8.2.6 Residential Areas

- › Much of the gently undulating terrain is readily developable for residential purposes and has been identified as residential land in the master plan;
- › Areas of scattered vegetation exist within these residential precincts and will need to be considered in greater detail in the formulation of subdivision plans;
- › Increasing residential density is anticipated in and around the town centre;
- › Low density residential / rural residential areas are retained around Wilton Township to maintain the setting of that town and are proposed in areas where an existing low density environment already prevails as well as in areas providing a transition from residential to primary production;
- › The master plan makes a provision for the following housing markets:
 - Family housing as a priority
 - A component of executive housing to attract managers and CEO's of footloose businesses
 - Affordable housing choices
 - Pre-retirement housing for empty nesters
 - Retirement living products for active retirees
 - Aged care accommodation for the elderly
- › The mix of densities, housing types, siting choices and price points provides Wilton Township with a market distinction and social mix potential which is quite distinctive from competing marketing in south west Sydney.



8.2.7 Open Space

- › The Master Plan identifies substantial portions of the site to remain as vegetation protection areas while the inclusion of additional areas of open space provide informal passive and active recreational opportunities. These spaces include areas of scattered bushland, prominent ridgelines and pedestrian routes that provide connectivity between key facilities and areas of open space;
- › A pedestrian network is identified through Wilton Junction with strong connectivity with and between the centres, employment lands, community and recreation facilities and educational establishments; and
- › The golf course is currently under construction within Bingara Gorge with the first nine holes scheduled for completion mid 2014, and this will provide both a recreational opportunity and a visual outlook for many residents.

8.2.8 Natural Environment

The natural environment is a major attribute for the proposed township and provides a lifestyle opportunity for residents that is not available elsewhere. It is a feature that will be used to provide the emerging community that will focus on the natural environment which will be promoted by an environmental trust funded by the major landowners. The Trust will be responsible for the care and protection of the natural environment both within the urban lands and the bushland.

8.2.9 Vehicular Movement Network

- › The Master Plan delivers a network of roads that provides for movement within Wilton Junction, with good access to centres, employment, education, community facilities and recreation opportunities and vastly improved external connectivity by way of new on/off ramps to the Hume Highway; and
- › The connectivity of the northern ramps to the Town Centre, to the major residential precincts to the north west and south east and the employment lands near the Hume / Picton Interchange encourage movement within and beyond the site without the need to use Picton Road and the Hume / Picton Interchange for many vehicle trips, thereby facilitating and maintaining the freight movement priority between Wollongong and Sydney.

8.3 Development Sequencing

The sequencing of development at Wilton Junction is a function of the availability and location of key headworks infrastructure, the desirability of encouraging competition between landowners and the need to deliver a range of land use types to the market to provide opportunities for the early development of a range of services and facilities rather than a residential mono-culture.

The following figures highlight the broad indicative sequencing of development for residential and employment land uses.

Development staging is focussed upon the fact that all required urban infrastructure is currently available to serve the Bingara Gorge development and that a progressive sequencing of development radiating out from that location is the most cost and resource efficient approach to development.

This approach therefore envisages the simultaneous development of the following:

- › The continued progressive development of Bingara Gorge in a northerly direction from the existing subdivision and then subsequently heading eastward;
- › The connection of the Bingara Gorge development on the east side of Hume Highway with the Bradcorp land to the west of the Hume Highway. This represents a logical extension of road and service infrastructure across the existing bridge over the Hume Highway and delivers upon a contractual commitment between Lend Lease and Bradcorp;
- › The southern extension of existing infrastructure from the intersection of Pembroke Parade and Picton Road into the Walker Corporation land and then subsequently heading east and west;
- › The commencement of residential development adjacent to Picton Road in the north western quadrant of the Hume Highway/Picton Road intersection, together with an initial development of highway services and bulky goods, as a means of financial underpinning to the early delivery of access and services by Governor's Hill to the major Town Centre site and as a means of facilitating the delivery of early employment opportunities;
- › The extension of large lot residential development as a simple extension of services from the adjacent Bingara Gorge subdivision.

The waste water treatment plant and the electricity supply substation, central to this early development. The water supply reservoir is not required in the short term. Its location will be at a high point of the development to facilitate gravity feed to the whole of Wilton Junction.

The central location of early development facilitates the utilisation of existing road infrastructure without the need for duplication or augmentation. As development proceeds, new road infrastructure will be required, with the Hume Highway's northern access/egress ramps providing linkages that open up additional employment lands for development after 2022.

Generally, development is expected to proceed from the centre of Wilton Junction towards its outer extremities, with land in the far north west, south west and south east requiring the longest service connections and being the last to be developed.

The indicative development sequencing strategy provides for a logical progression of service extension, while facilitating competition and product mix between the individual landowners. By facilitating up to five development fronts, there is a propensity for a mix of residential allotment sizes, price points and estate distinctions. Increased affordability can be expected through, firstly, competition between the landowners to sell their products and secondly as a result of the competitive bidding processes of service providers and contractors developing the estates.

We anticipate that multiple development fronts will deliver more allotments (and housing) sooner than a single development front by virtue of the wider market appeal of differing products, by avoiding the financial risks and scale of funding limitations where development is concentrated in a single ownership and by avoiding the logistical difficulties of delivering a large number of allotments through a single company, project management process and contractor.

The consequences of increased allotment delivery are manifold:

- › More rapid response to the urgent need for housing
- › Reduced pressure upon the upward spiral of land and housing prices
- › Early creation of a critical mass that facilitates the delivery of desired retail, commercial, community, education and recreation outcomes
- › The underpinning of a commencement of the town centre
- › Increased propensity for the establishment of businesses and employment linked to the construction process
- › The underpinning of an earlier delivery of permanent employment opportunities.

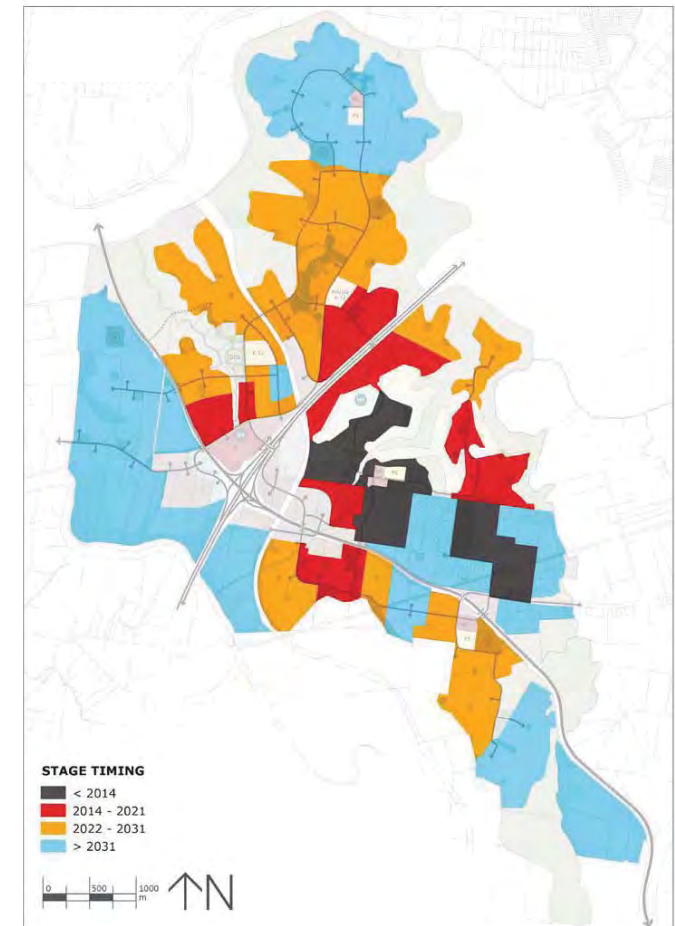


figure 8.6 Residential Development Sequencing

The following tables summarise the predicted delivery of housing, retailing and employment over the life of the Wilton Junction project (beyond that already provided in Wilton township and surrounding rural areas).

table 8.1. Dwellings and Population by Stage

Stage	Timing	Dwellings	Cumulative Dwellings	Population*	Cumulative Population
0	2014	300	300	881	881
1	2021	2,190	2,490	6,433	7,314
2	2031	5,290	7,780	15,539	22,853
3	2041	4,120	11,900	12,102	34,955
Total		11,900		34,955	

table 8.2. Retail Floorspace

Stage	Timing	Total m ²	Cumulative Total m ²
0	2014	2,000	2,000
1	2021	11,000	13,000
2	2031	32,000	45,000
3	2041	25,000	70,000
Total		70,000	

table 8.3. Total Employment Floorspace (including Retail)

Stage	Timing	Total m ²	Cumulative Total m ²
0	2014	4,000	4,000
1	2021	87,000	91,000
2	2031	224,000	315,000
3	2041	205,000	520,000
Total		520,000	

The above retail and employment floorspace can be summarized as follows:

➤ Retail, including bulky goods and some highway services	70,000m ²
➤ Commercial	90,000m ²
➤ Community / Civic (including Schools)	25,000m ²
➤ Light Industrial, transport / warehousing / logistics	335,000m ²
➤ Total	520,000m²

Note: these all fall within the range provided by MacroPlan Dimasi.

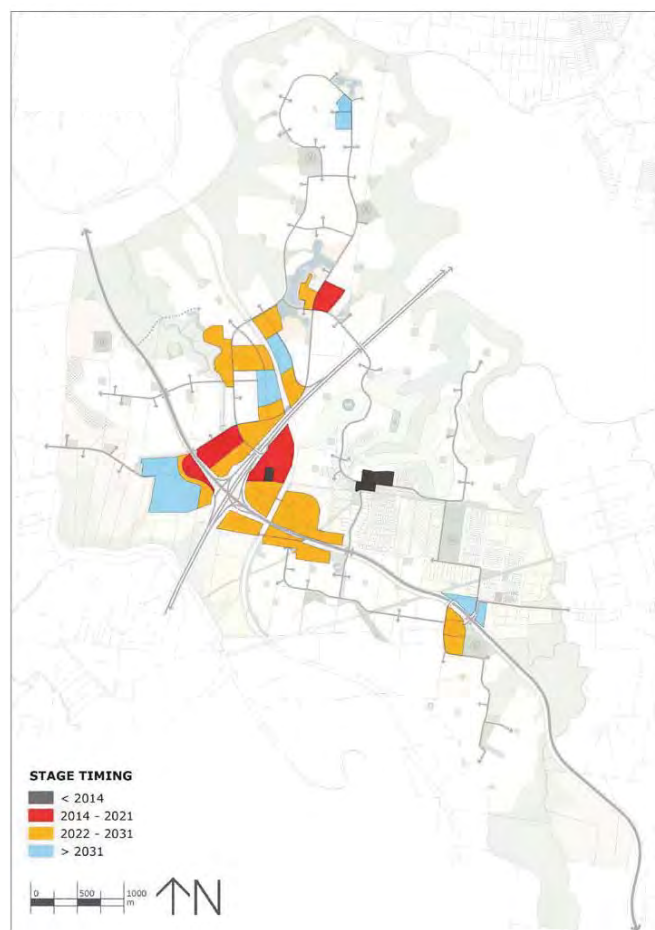


figure 8.7 Employment Development Sequencing



figure 8.8 Retail Development Sequencing

Wilton Junction MASTER PLAN

8.4 Land Budget

The following table provides an indicative breakdown of land area allocations to each land use category identified in the Master Plan. Note that the whole of the land in the Study Area is contained within this table, including Wilton Township, Bingara Gorge and the existing Hume Highway, Picton Road and Maldon Dombarton Rail alignments. Note also that land areas should be considered approximate only as the master plan is conceptual and will be refined over time.

Note also that open space areas are not limited to the area allocations for S94 purposes.

table 8.4. Land Use breakdown

LAND USE	TOTAL AREA (ha)
Active Open Space	52
Passive Open Space	91
District Open Space	12
Bushline	674
Golf Course	83
Boating Lake / Waste Water Treatment	11
Town Centre	18
Other Centres	9
Highway Services	10
Employment	97
Light Industry	13
Bulky Goods	7
Mixed use	27
School	26
Residential	993
Existing Residential	58
Medium Density	16
Rural Living	207
Large Lot Residential	174
Road Reserves / Railway/ Balance Land	163
TOTAL	2,741



To summarise:

- 1,069 hectares is residential (including existing residential areas of Wilton Township and Bingara Gorge (39.0%);
- 381 hectares is large lot residential and rural residential (much of which is already rural residential) (13.9%)
- 921 hectares is devoted to open space, recreation, areas that will not be developed for urban purposes and retained bushland (33.6%);
- 207 hectares is retail, commercial, community services and employment land (7.6%); and
- 163 hectares is devoted to expanded major road reserves, railway corridors and other land not otherwise defined (5.9%).

8.5 Development Metrics

The Master Plan makes allowance for the following development outcomes:

- 11,900 additional dwellings (there being approximately 500 in the study area (as at 1 January 2013);
- A population of around 35,000 persons; and
- More than 11,000 jobs

The retail and employment precincts make provision for the following floorspace delivery over the life of the project:

- 70,000 - 75,000m² of retailing/bulky goods (including retailing as part of highway services);
- 85,000 - 100,000m² of commercial floorspace;
- 335,000 - 385,000m² of light industry, warehousing, transport and logistics floorspace; and
- 20,000 - 25,000m² of community / civic / education floorspace.

These floorspaces deliver an employment outcome capability which exceeds the 70% target self-containment figure, confirming that the Master Plan delivers the spatial capacity necessary for Wilton Junction to meet or exceed its stated self sufficiency target.

Based upon conservative employment yield estimates per hectare of available land, the Master Plan makes provision for around 11,600 jobs assuming all development is single storey with at grade car parking. This figure excludes opportunities for work from home employment, which is separately estimated between 1,566 and 1,766 jobs.

By assuming that all development in the town centre, mixed use precinct and employment precincts surrounding the town centre are developed at two storeys and decked parking is provided where required, the employment capacity of Wilton Junction increases to almost 20,000 jobs (excluding work from home opportunities).

These calculations are based upon the following assumptions:

- ▶ **Retail** - Total Area less 25% for roads and open space, x 30% site coverage x 85% net to gross floor area x 3 employees per 100m² net.
- ▶ **Bulky Goods** - Total Area less 25% for roads and open space, x 50% site coverage x 85% net to gross floor area x 3 employees per 100m² net.
- ▶ **School** - Number of class rooms x 1.5-2.0 (Primary-Secondary), No floorspace calculation.
- ▶ **Office / Commercial** - Total Area less 25% for roads and open space, x 50% site coverage x 85% net to gross floor area x 4 employees per 100m² net.
- ▶ **Mixed Use** - Same as Office / Commercial x 50% of area for non-Residential plus total area less 25% for roads and open space x 50% site coverage x 85% net to gross x 3 levels x 50% for residential.
- ▶ **Highway Services** - Total area less 25% for roads and open space x 40% site coverage (reflecting combination of retail - 30% and commercial - 50%) x 85% net to gross floor area x 3 employees per 100m² net.
- ▶ **Light Industry** - Total area less 25% for roads and open space x 30% site coverage x 95% net to gross floor area x 1.0 employees per 150m² of manufacturing/warehouse space plus 4 employees per 100m² of office space with a ratio of 10:1 manufacturing / warehouse to office space (equivalent to 1 employee per 100m²).
- ▶ **Civic** - Same as office / commercial.

8.6 Residential Densities

Residential densities vary greatly across the site because of all the influence of topography and vegetation and the introduction of rural residential and large lot precincts.

Net densities in areas without topographic or vegetation constraint are expected to typically be **12-15** dwellings per net residential hectare. Medium density environments can be expected to achieve **20-35** dwellings per net residential hectare.

Areas of retained scattered vegetation might achieve 5-10 dwellings per net residential hectare, while rural residential areas might typically achieve only 0.5-1.0 dwellings per net residential hectare, with some areas proposed for lower densities.



8.7 Conclusion

The Master Plan represents the culmination of a design process that commenced in 2011 with Council's support for four key land owners to develop a Master Plan for Wilton Junction that would demonstrate the potential for establishing a significant new urban centre.

The Master Plan process has been underpinned by the undertaking of comprehensive assessments of a range of key factors, issues and circumstances, in accordance with the State Government's DGRs. It has involved evaluation and synthesis of those matters to form a coherent urban strategy that resolves competing and complementary issues. It has resulted in the delivery of a well designed, sustainable concept that will be a credit to the landowners who evolved it, the Council and State who have progressed it and the community who will eventually live, work and play within its boundaries.

Wilton Junction will realise the opportunity that the site presents as a place of difference which makes use of unique natural and manmade attributes to create a distinctive human environment cradled by the Razorback Range, surrounded by nature with a built and aquatic beauty at its heart.



Appendix 1

Letter from Deputy Director General

Wilton Junction MASTER PLAN

Wilton Junction MASTER PLAN

Letter from Deputy Director General

Appendix 2

High Resolution Sub-Consultant plans