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WILTON TOWN CENTRE PRECINCT
NEW TOWN PRIORITY GROWTH AREA
NOISE AND VIBRATION PLANNING ISSUES

48.7130.R1:GA/DT/2018

Rev 01

Prepared for: NSW Department of Planning and Environment
Commissioned by
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1.0 Introduction

Atkins Acoustics was retained by *Macarthur Developments* on behalf of the *NSW Department of Planning and Environment* to conduct a review of potential noise and vibration issues associated with a vision for the Wilton Town Centre *(the Precinct).* The purpose of the review was to identify possible land uses and investigate possible strategies to accommodate future urban growth. The assessment includes planning principles that may be considered for incorporation into strategy policies that could be used for planning, assessing and managing noise and vibration associated with future development.

The Precinct forms part of consolidated 'green field' land identified as Wilton New Town Priority Growth Area. A number of studies were commissioned by the Wilton Junction Landowner Group between 2012 and 2015 to investigate possible strategies for future land uses. Planning strategies for Wilton Junction (as it was called at the time) identified potential areas to accommodate residential and commercial development.

Wilton Junction comprises four (4) major landowners:

- Governors Hill (The Town Centre Precinct)
- Bradcorp
- Lend Lease
- Walker Corporation.

A Noise and Vibration Management Assessment *(NVMA)* was prepared by Atkins Acoustics (44.6827.R1:GA/DT/2017 Revision 09 dated May 2014) to address the study requirements in collaboration with Elton Consulting *(Elton)* on-behalf of the Wilton Junction Landowners Group and set a framework and vision for future studies.

The *NSW Department of Planning and Environment* has requested the 2014 *NVMA* be reviewed to identify possible noise and vibration issues associated with the Precinct *(Figure 1)*, updated road traffic data and review more recent guidelines for planning and managing noise and vibration impacts.

It is noted that this report was prepared to identify possible noise and vibration issues associated with planning issues associated with the Precinct. The intent of the report is to assist with development of conceptual design elements for the Precinct. As planning strategies develop and progress, it is recognised that subsequently more detailed investigations will be required and submitted to relevant approving authorities including NSW Government and Wollondilly Shire Council.

It is recognised and understood that detailed planning, management and engineering noise control design will be required for individual precincts within the Precinct study area, if and when zoning approvals are granted. Individual precincts and site controls will depend on detailed investigations, environmental studies, statutory approval and pending conditions.

No part of the report should be used in any other context or for any other purpose without written approval from the *NSW Department of Planning and Environment* and *Atkins Acoustics. Atkins Acoustics* otherwise disclaims responsibility to any other person other than the *NSW Department of Planning and Environment* arising in connection with this report.

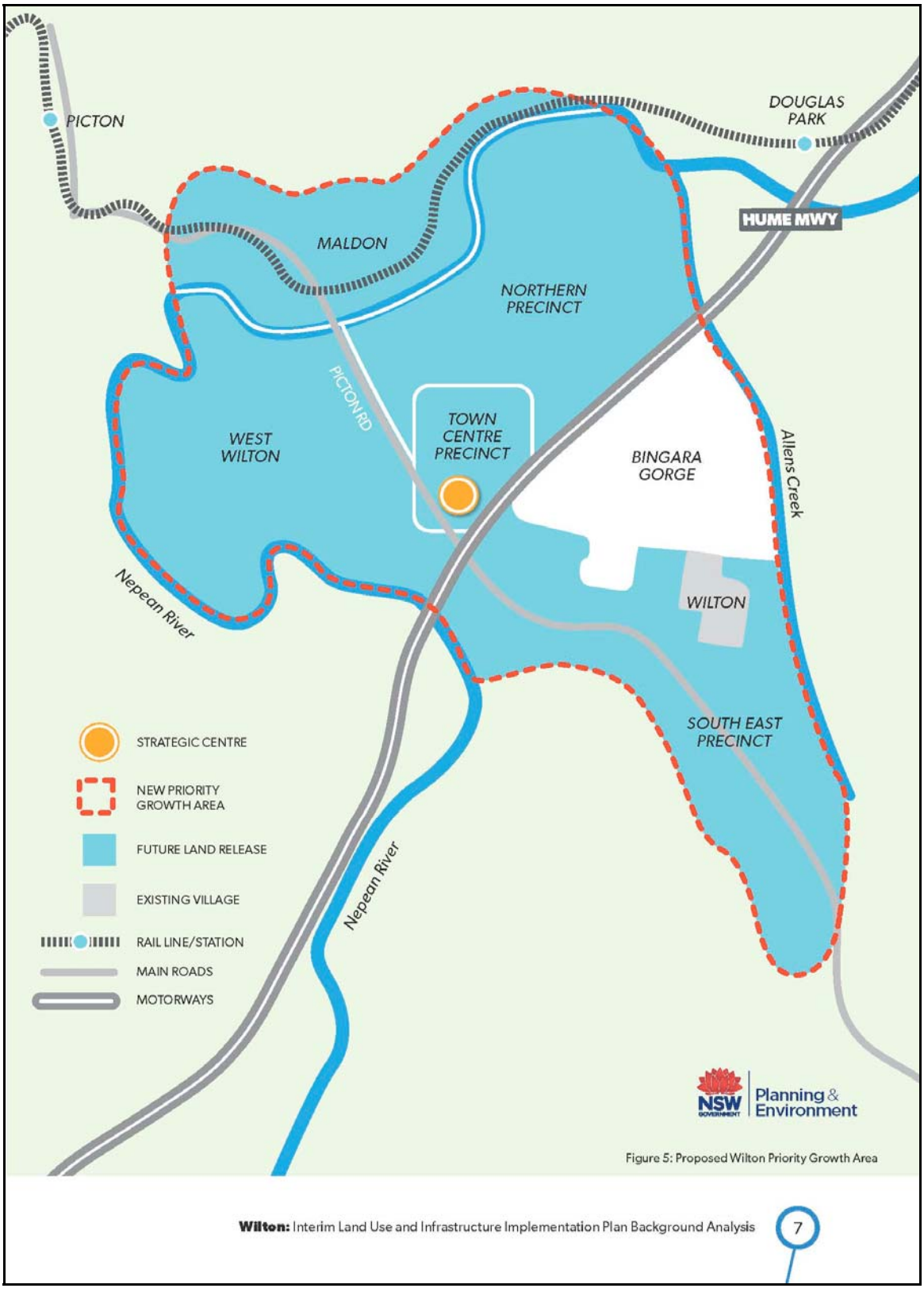
The services undertaken by *Atkins Acoustics* in connection with preparing the report were limited to those specifically detailed in the report and subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in the report are based on assumptions made by *Atkins Acoustics* described in Section 2. *Atkins Acoustics* disclaims liability arising from any of the assumptions being incorrect.

Atkins Acoustics has prepared the report on the basis of information provided by *Macarthur Developments* on behalf of *NSW Department of Planning and Environment*) and other who have provided information to *Atkins Acoustics. Atkins Acoustics* has not independently verified or checked information provided beyond the scope of the agreed scope of works. *Atkins Acoustics* does not accept liability in connection with such unverified information, including errors and omissions in the report which were caused by errors or omissions in that information.

Site conditions may change after the date of the report. *Atkins Acoustics* does not accept responsibility arising from or in connection with any change to site conditions. *Atkins Acoustics* is not responsible for updating this report if site conditions change.

Figure 1: Study Area



2.0 Study Guidelines

The assessment is based on the following assumptions:

- Information and data referenced from the previous NVMA has been assumed to be factual and relevant.
- Specific noise and vibration emissions from future development within the currently undeveloped areas of the Precinct are not known at this stage. For the preparation of the report generic noise sources have been assumed, based on the current zoning visions and possible future types of development expected.
- Future noise 'creep' from underdeveloped land uses or changes to operations could generate different noise outcomes to what has been assumed in this assessment.

For the purpose of assessing noise and vibration the following assessment procedures and guidelines have been considered:

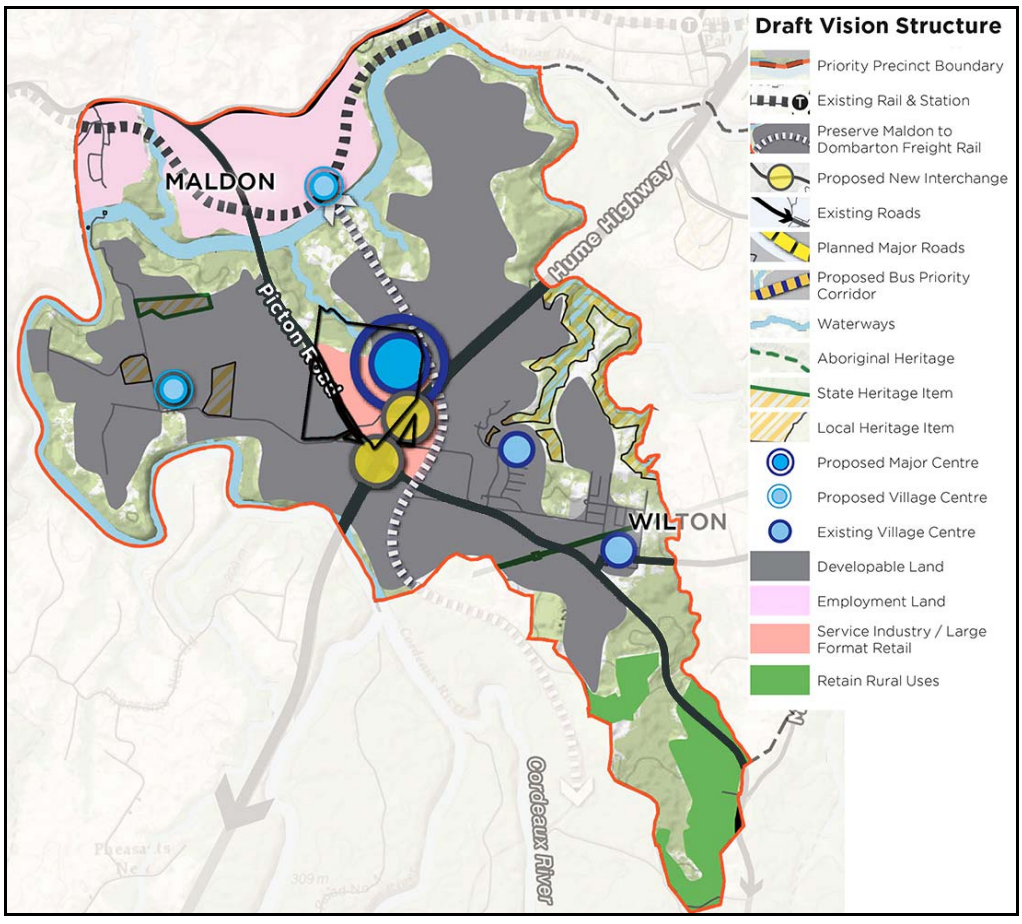
- *NSW Government State Environment Planning Policy (Infrastructure) 2007;*
- *Department of Planning - Development near rail corridors and busy roads - Interim Guideline (December 2008);*
- *Department of Environment, Climate Change and Water (DECCW) NSW Road Noise Policy (March 2011);*
- *NSW Environment Protection Authority, Rail Infrastructure Noise Guideline (May 2013);*
- *Rail Infrastructure Corporation - State Rail Authority - Interim Guidelines for Councils- Consideration of Rail Noise and Vibration in the Planning Process (November 2003;*
- *NSW, Environment Protection Authority, Noise Policy for Industry (October 2017;*
- *NSW, Department of Environment, Climate Change and Water, Noise Guide for Local Government (October 2010; and*
- *Campbelltown Growth Centre Precincts Development Control Plan (as an example of the potential applicable controls in the Precinct)*

3.0 Existing Noise Environment

The study area is located in an undeveloped semi rural area, northwest of the Hume Highway-Picton Road intersection (Figure 2). The Hume Highway lies to the southeast and Picton Road intercepts the southern portion of the site. A corridor for a Maldon-Dumbarton Freight Railway is located along part of the northeastern site boundary.

At the present time the northern portion of the site provides facilities for a skydiving business that operates from the aerodrome. With the change of land zoning the aerodrome will cease operations. We are advised that the skydiving business has made arrangements to relocate elsewhere.

Figure 2: Local Environs



3.1 Road Traffic Noise

Planning issues associated with off-site road traffic are addressed in the Noise and Vibration Management Assessment *(NVMA)* prepared by Atkins Acoustics (44.6827.R1:GA/DT/2017 Revision 09 dated May 2014) (Atkins [2014]). The Atkins [2014] assessment for off-site road traffic noise is based on projections available at the time of preparing the 2014 report and will require updating to address proposed design modification to the road network and updated traffic projections. However the outcomes in terms of noise exposure and conceptual mitigation options for the Precinct generally remain as discussed in Atkins [2014]. Atkins [2014] provides conceptual options for setbacks, noise walls/mounds and building treatments to accommodate future noise sensitive development.

3.2 Maldon-Dumbarton Freight Rail Corridor

Public accessible studies have investigated the business case to justify the construction of the Maldon-Dumbarton freight rail line. It is understood findings of these investigations show that the construction of a freight line was not economically viable at that time.

Planning issues associated with rail traffic are addressed in Atkins [2014]. The Atkins [2014] assessment of rail noise and vibration is based on projections available at the time of preparing the report. The finding in terms of noise and vibration exposure and conceptual mitigation options for the Precinct generally remains as discussed in Atkins [2014]. Atkins [2014] provides options for noise walls/mounds and building treatments to accommodate future noise sensitive development.

4.0 Noise Planning Issues

Greenfield areas like the Precinct provide opportunity for management flexibility for zoning and planning to accommodate noise sensitive development and minimise land-use conflicts. Figure 3 identifies indicative land uses where noise generating activities could be developed and separated by environmental conservation areas and playing fields to separated noise sensitive land uses.

In addition to the external road and rail infrastructure, the Precinct provides for internal service roads, the Wilton New Town Centre, mixed use precincts, highway service and enterprise precincts. The Town Centre Land Use Plan vision offers a range of activity precincts including retail, entertainment and hospitality development. Typical indicative development includes licensed premises, accommodation, education facilities, shop top housing, a public school, business, technology and health campus. The Centre Town Square and Main Street vision provides for cafe and restaurant opportunities. Mixed Use Precincts are expected to provide for big box retail and employment evolving to commercial, institutional and services type uses and shop top housing as demand warrants. The highway service and enterprise area vision provides for fast food, service station, allied automotive, bulky goods, light service type industries and commerce.

4.1 Residential

This zone will apply to the low and medium density residential precincts. The zone include uses that provide facilities or services to residents, including neighbourhood shops, community facilities, child care centres and respite day care centres.

4.2 Town Centre

This zone is for major centres that provide a range of uses including large-scale retail, health, businesses, entertainment and community uses. The Centre Town Square and Main Street will incorporate cafe and restaurant opportunities.

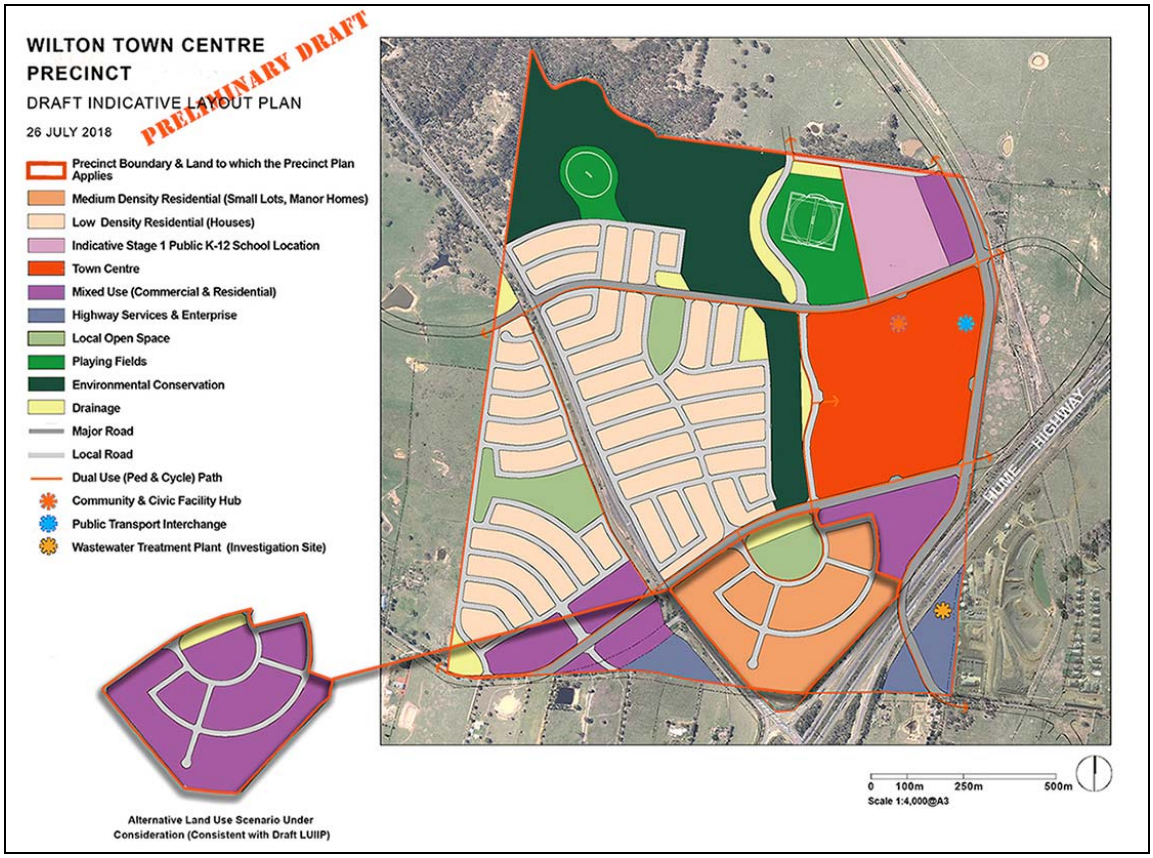
4.3 Mixed Use

The vision for the mixed-use precincts is relatively flexible in the range of uses and scale of buildings that they will be accommodated. The uses are expected to range from big box retail and employment evolving to commercial, institutional and service type uses and shop top housing as demand warrants.

4.4 Highway Service and Enterprise

This zone is to provide for fast food, service station, allied automotive, bulky goods, light service type industries and commerce that require large floor areas in locations that are close to and support the viability of the centre.

Figure 3: Indicative Site Layout



4.5 Alternative Land Use Options

At the present time land use options are being considered for the medium density residential precinct shown in Figure 3 (southeastern corner). Options being considered include the amalgamation of the medium density residential precinct with the mixed use commercial/residential precincts to the northeast and southwest. The outcome in terms of noise exposure and mitigation would be similar for both options.

5.0 Noise Control Planning Strategies

The precinct has the potential to be exposed to noise from road and rail traffic, and future commercial/retail/community developments.

Guidance for the management of noise from commercial/retail/community development is provided from procedures in the EPA, Noise Policy for Industry. The assessment procedures include for the assessment of both noise intrusive and amenity to protect noise impacts and manage the total noise for potential sensitive receptors.

In addition it is normal accepted practice to develop Development Control Plans (DCP) for Local Government Areas. DCP's normally address specific land use developments and present interface controls to assist with the amelioration of adverse impacts from proposed developments.

For the purpose of controlling and assessing environmental noise impacts in developing areas, the *NPfI* recommends acceptable levels *(NPfI. Tables 2.2 and 2.3)* that have been established to represent the ideal total level of noise from industry/commercial premises that should be met by any further development of the area.

To limit continuing increases to noise exposure 'noise creep', the ambient noise levels within the study area from all industrial/commercial noise sources combined should remain below the recommended amenity levels presented in Table 1, where feasible and reasonable.

5.1 Procedures for Managing Noise Amenity

Where several developments are proposed for an area, these are to be assessed as a group. This approach allows project specific noise levels to be set for a proposed development, so that the cumulative noise from all proposed and potential developments does not cause noise amenity to deteriorate. In most instances where a number of noise producing developments are proposed, the amenity criteria which set a 'cap' for the cumulative noise from these sources, will be more stringent than intrusive criteria. Thus in that case the project-specific noise levels for individual development is derived from the amenity criteria.

Table 1. Recommended Amenity Noise Levels

Receiver	Noise Amenity area	Time of Day	Recommended L_{Aeq} Acceptable Noise Level dB(A)
Residential	Rural	Day	50
		Evening	45
		Night	40
	Suburban	Day	55
		Evening	45
		Night	40
	Urban	Day	60
		Evening	50
		Night	45
Hotels, motels, caretakers' quarters, holiday accommodation, permanent resident caravan parks	See column 4	See column 4	5dBA above the recommended amenity noise level for a residence for the relevant noise amenity area and time of day
School classrooms - internal	All	Noisiest 1 hour	35 (see notes for table)
Hospital ward internal external	 All All	 Noisiest 1 hour Noisiest 1 hour	 35 50
Place of worship- internal	All	When in use	40
Areas specifically reserved for passive recreation (e.g. national parks)	All	When in use	50
Active recreation areas (e.g. school playground, golf courses)	All	When in use	55
Commercial premises	All	When in use	65
Industrial premises	All	When in use	70
Industrial interface (applicable only to residential noise amenity areas)	All	All	Add 5dBA to recommended noise amenity area

Notes:

1. The recommended amenity noise levels refer only to noise from industrial (commercial) sources. However they refer to noise from all such sources at the receiver location, and not only noise due to a specific project under consideration. The levels represent outdoor levels except where otherwise stated.
2. Types of receivers are defined in the NPfI (Table 2.3).
3. Time of day is defined as follows;
   - day – the period from 7 am to 6 pm Monday to Saturday or 8 am to 6 pm on Sundays and public holidays
   - evening – the period from 6 pm to 10 pm
   - night – the remaining periods.

NPfI (Fact Sheet E) Worked case studies - provides procedures for assessing and managing noise from new major development near an urban area. Implementation of this approach involves the following steps:

1. Determine the number of development proposals to be assessed.
2. Determine the amenity level (ANL).
3. Determine the project amenity noise levels to be achieved by each development at the receiver from each development, so that, when added logarithmically, the resultant total level of noise from industry/commercial at any affected receiver will meet the amenity level identified at Step 2."

Due to a number of unknown factors at the time of preparing the report, such as the type of future development, lot sizes, layout of subdivisions, building locations and design, etc. project specific amenity noise level contributions for individual developments have not be determined. When more definitive planning information is made available, an assessment to determine individual project amenity noise levels should be undertaken.

5.2 Maximum Noise Level Events

NPfI provides guidance for assessing sleep disturbance from maximum noise level events from premises during nighttime hours. Sleep disturbance is considered to be both awakening and disturbance to sleep stages.

NPfI recommends that where subject premises emit noise during nighttime hours at a residential location that exceed:

- $L_{Aeq\ 15min}$ 40dBA or the prevailing RBL plus 5dB, which ever is greater, and/or
- L_{AFmax} 52dBA or the prevailing RBL plus 15dB, which ever is greater.

a detailed maximum noise level event assessment should be undertaken, and refers to guidance on possible impact referenced in the NSW Road Noise Policy.

6.0 Noise and Vibration Planning Issues

6.1 Road and Rail Traffic

Procedures, guidelines and goals for assessing rail and road traffic noise are published in the State Environmental Planning Policy (Infrastructure) 2007, the Campbelltown City Council Growth Centre Precinct DCP, the Department of Planning *Development near Rail Corridors and Busy Roads – Interim Guideline,* the NSW and the EPA, Road Noise Policy (RNP).

6.1.1 State Environment Planning Policy (Infrastructure) 2007

SEPP Infrastructure (2007) Clause 87 refers to assessing noise and vibration on land for residential accommodation that is adjacent to rail corridors and Clause 102 refers to road traffic noise.

6.1.1(a) Mandatory requirements

Clause 87 refers to rail corridors and mandatory requirements to assess impacts from noise and vibration on-rail development. Clause 102 refers to road corridors where mandatory requirements apply to roads carrying an Annual Average Traffic Volume (AADT) greater than 40,000 vehicles.

From the RMS Traffic Volume Viewer (2018) the ADT count for the Hume Highway north of Picton Road (Count Station 07737) is 52,323, south of Picton Road (Count Station 07736) the ADT is 38,027.

6.1.1(b) Non-mandatory recommendations

For new residential accommodation along road corridors carrying between 20,000 and 40,000 AADT, it is expected that in most situations road traffic noise could adversely impact these locations. For these road corridors there are no mandatory requirements to assess mitigation options to address road traffic noise and as 'best practice' the SEPP internal noise levels should be considered.

At the present time the 2018 ADT count for Picton Road west is less than 20,000. Considering a ten (10) year growth factor the projected ADT traffic volume for Piction Road west is expected to be less than 40,000.

6.1.1(c) SEPP (Internal) Design Noise Levels

The SEPP (Infrastructure) 2007 rail and road traffic noise design assessment goals for residential accommodation are:

(a). in any bedroom in the residential accommodation - 35dBA at any time between 10.00pm and 7.00am; and

(b). anywhere else in the residential accommodation (other than the garage, kitchen, bathroom or hallway) - 40dBA at any time

In addition the NSW Department of Planning ' Development near Rail Corridors and Busy Roads - Interim Guideline) states:

> *'If internal noise levels with windows and doors open exceed the criteria by more than 10dBA, the design of ventilation for these rooms should be such that the occupants can leave windows closed, if they so desire, and meet the Building Code of Australia (BCA) ventilation requirements'.*

6.1.2 Campbelltown Growth Centre Precincts Development Control Plan

As a case study for assessing road traffic in addition to the SEPP (Infrastructure) 2007 requirements, the Campbelltown City Council Growth Centre Precincts DCP (DCP) (Table 4-7) sets out the following non-mandatory internal target noise goals for residential accommodation. Where a naturally ventilated/windows open condition cannot be satisfied, the internal design goals apply with the addition of mechanical ventilation compliant with AS1668 and the Building Code of Australia.

Table 2. Internal Road Traffic Noise Levels

Description	Sound Pressure Level dBA	
	Sleeping Areas	Living Areas
Naturally ventilated/windows open to 5% of the floor area (mechanical ventilation or air-conditioning systems not operating)	$L_{Aeq\ 15\ Hours}$ 40dBA $L_{Aeq\ 9\ Hours}$ 35dBA	$L_{Aeq\ 15\ Hours}$ 45dBA $L_{Aeq\ 9\ Hours}$ 40dBA
Doors and windows shut (mechanical ventilation or air-conditioning systems are operating)	$L_{Aeq\ 15\ Hours}$ 43dBA $L_{Aeq\ 9\ Hours}$ 38dBA	$L_{Aeq\ 15\ Hours}$ 48dBA $L_{Aeq\ 9\ Hours}$ 43dBA

NOTE:
These levels correspond to the combined measured level of external sources and ventilation system operating normally.
Where a naturally ventilated/windows open condition cannot be achieved it is necessary to incorporate mechanical ventilation compliant with AS1668 and the Building Code of Australia

6.1.3 Department of Planning - Development near Rail Corridors and Busy Road - Interim Guideline

The NSW Department of Planning - Development near Rail Corridors and Busy Road - Interim Guideline (December 2008) *(DPIG)* provides target noise levels for assessing rail and road noise for residential and non-residential buildings. A summary of the Department of Planning *(DoP)* target assessment levels is provided in *Table 3.* For sensitive development adjacent to a road with an average daily traffic volume of 20000-40000 vehicles, *DPIG* refers to the target assessment levels for providing best practical advice.

Table 3. Internal Target Noise Levels for Rail and Road Traffic

Type of Occupancy		Noise Level dBA	Applicable time period
Residential Buildings			
Sleeping Areas (bedrooms)		35	Night 10.00pm to 7.00am
Other habitable rooms (excl. garages, kitchens, bathrooms and hallways		40	Anytime
Non-Residential Buildings			
Type of Occupancy		Recommended Max Noise Levels dBA	
Educational Institutions including child care centre			40
Place of Worship			40
Hospitals	Ward		35
	Other noise sensitive areas		45

If internal target design levels from rail or road infrastructure with windows/doors open exceed the criteria *(Table 3)* by more than 10dBA, the *DPIG* recommends that the design of ventilation for the exposed rooms should be such that occupants can leave the windows/doors closed, if they desire, and also meet the ventilation requirements of the Building Code of Australia. With windows/doors open for natural ventilation, typical noise attenuation across exposed building facades would be in the order of 10dBA. Standard window/door configurations with standard weight per size glazing typically attenuate external noise by 20dBA with the windows/doors closed.

6.1.4 Outdoor Living Areas

Where reasonable and feasible outdoor living areas should be located on the opposite side of the building from adjacent or exposed road corridors. Alternatively, the design of outdoor living areas could include onsite structures or solid continuous fences to mitigate exposure to road and rail traffic noise.

6.1.5 Project Traffic Noise Assessment Objectives

From the above, the mandatory SEPP Infrastructure (2007) requirements Clauses 87 and 102 apply to rail traffic noise and vibration from the Maldon-Dumbarton Rail Corridor and road traffic noise from the Hume Highway and associated road network.

With respect to road traffic on Picton Road west and the Precinct internal collector roads the Campbelltown City Council Growth Centre Precincts DCP internal target levels *(Table 2)* address road traffic noise.

6.2 Commercial, Mixed Use and Highway Enterprise

Commercial, mixed use and highway enterprise precincts can have a significant effect on noise-sensitive receivers in close proximity to residential and noise sensitive development. Research has shown that both increases in noise levels above background levels, as well as absolute levels are important factors in how communities respond to noise from industrial/commercial sources.

The intrusiveness of a noise is assessed against the background level to protect against significant changes in noise levels, whilst the amenity noise level seeks to protect against cumulative noise impacts and maintain amenity for particular land uses. The application of the most stringent requirement ensures that both intrusive noise is limited and amenity is protected. Section 5.1 refers to procedures for managing noise amenity.

6.3 DCP Planning

It is recognised that on-site noise sources generated by internal road traffic, mechanical plant, commercial/retail development, sporting fields, schools, child care centres, hospitals, etc have potential to impact on noise amenity. Residential/non-residential interface is one of the main issues with respect to noise control planning and management As the range of land uses permitted in the zoning for the Precinct is quite varied it will be necessary to address issues to manage and minimise possible impacts.

In order to manage exposure for noise-sensitive development, site specific Development Control Plans (DCP's) will be required to address specific noise issues. The development and management of DCP's will be a dynamic and progressive requirement that addresses identified noise issues. A summary of development types and land uses that should be considered include:

- Residential Flat Buildings and Mixed Use Development
- Industrial, Warehouse Development, Workshops.
- Commercial Development

- Shared Accommodation, Backpackers and Boarding Houses.
- Outdoor Dining.
- Child Care Centres
- Licensed and Late-night Trading Premises.
- Neighbourhood Shops.
- Places of Public Worship.
- Service Stations.
- Fast Food Outlets.

Typical sources of noise associated with non-residential land uses include;

- internal and external activities,
- machinery, air conditioning plant,
- operating/trading hours;
- traffic movements,
- delivery hours,
- use of car parks, and
- garbage collection.

7.0 Conclusion

Atkins Acoustics was retained by *Macarthur Developments* on behalf of the *NSW Department of Planning and Environment* to conduct a review of potential noise and vibration issues associated with the Wilton Town Centre Precinct. The purpose of the review was to identify possible land uses and investigate possible noise management strategies to accommodate future urban growth. The assessment includes planning principles that may be considered for incorporation into strategy policies that could be used for planning, assessing and managing future development.

The assessment is based on information and data referenced from previous reports. Specific noise and vibration emissions from future development within the currently undeveloped areas of the Precinct are not known at this stage. For the preparation of the report generic noise sources have been assumed, based on the current zoning visions and possible future types of development expected.

The Precinct is located in an undeveloped semi rural area, northwest of the Hume Highway-Picton Road intersection (Figure 2). The Hume Highway lies to the southeast and Picton Road intercepts the southern portion of the site. A corridor for a Maldon-Dumbarton Freight Railway is located along part of the northeastern site boundary.

Planning issues associated with off-site road and rail traffic noise and vibration are addressed in the Noise and Vibration Management Assessment *(NVMA)* prepared by Atkins Acoustics (44.6827.R1:GA/DT/2017 Revision 09 dated May 2014) (Atkins [2014]).

At the present time traffic projections for the Hume Highway and Picton Road west were not available to address minimum ten (10) year growth projections. When provided the traffic projections will be reviewed to assess final noise control strategies and address the SEPP Infrastructure requirements. However the expected outcomes in terms of noise exposure and conceptual mitigation options for the Precinct remain as discussed in Atkins [2014]. Atkins [2014] provides conceptual options for setbacks, noise walls/mounds and building treatments to accommodate future residential development.

In terms of rail noise and vibration exposure and conceptual mitigation options for the Precinct the findings generally remain as discussed in Atkins [2014]. Atkins [2014] provides options for noise walls/mounds and building treatments to accommodate future residential development.

With respect to road traffic on Picton Road west and the Precinct internal collector roads the Campbelltown City Council Growth Centre Precincts DCP internal target levels *(Table 2)* address road traffic noise. Noise mitigation options available for noise-sensitive development include noise walls/mounds and building treatments. When traffic projections are available for these roads, the data will be reviewed to assess final noise control strategies for noise-sensitive development.

Greenfield areas like the Precinct provide opportunity for management flexibility for zoning and planning to accommodate noise sensitive development and minimise land-use conflicts. Figure 3 identifies indicative land uses where noise generating activities could be developed and separated by environmental conservation areas and playing fields to separated noise sensitive land uses.

The vision for the Precinct provides for internal service roads, the Wilton New Town Cente, mixed-use precincts and highway service and enterprise precincts. The Town Centre Land Use Plan offers a range of activity precincts including retail, entertainment and hospitality development. Typical indicative development includes licensed premises, accommodation, education facilities, shop top housing, a public school, business and technology, health campus. The Centre Town Square and Main Street vision provides for cafe and restaurant opportunities. Mixed Use Precincts are expected to provide for big box retail and employment evolving to commercial, institutional and services type uses and shop top housing as demand warrants. The highway service and enterprise area vision provides for fast food, service station, allied automotive, bulky goods, light service type industries and commerce.

Guidance for controlling and management of noise from commercial/retail/community development is provided from procedures in the EPA Noise Policy for Industry. The assessment procedures include the assessment of both intrusive and amenity criteria that are designed to protect noise impacts and manage the total noise for potential noise sensitive receptors.

In addition it is normal practice to develop Development Control Plans (DCP's) for Local Government Areas. DCP's normally address specific land use developments and present interface requirements and controls to assist with the amelioration and management of adverse impacts from development.

The final noise mitigation strategies and options for the Precinct would be dependent on requirements of individual land owners/developers, noise exposure, the site location, site topography, location and finished floor levels of residential development. Final detailing will depend on site specific requirements and negotiations, and reviewed during the detailed planning design assessment phase of the project. The design and planning recommendations from those investigations will be incorporated into the site development and site specific DCP's developed for the Precinct.