



Modifications to North West T-Way at Meurants Lane, Glenwood

Review of Environmental Factors addendum to Environmental Impact Statement

RTA ENVIRONMENTAL TECHNOLOGY

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I Introduction and Methodology

I.1 Name of the Proposed Activity

Modifications to North West T-Way at Meurants Lane, Glenwood.

I.2 Local Government Area

Blacktown City Council

I.3 RTA Region

Sydney Region

I.4 Introduction

The NSW Roads and Traffic Authority (RTA) proposes to modify the design presented in the Environmental Impact Statement (EIS) of the North West Transitway (T-way) at Meurants Lane, Glenwood. The modification is to provide improved connection and integration of local bus services to the North West T-way services through the provision of a Bus Only Link Road, running from Meurants Lane and connecting to the T-way corridor along Old Windsor Road (the "Proposal") (refer to Figure 2.1 and **Appendices A and B**).

This Proforma I Review of Environmental Factors (REF) has been prepared by RTA Environmental Technology on behalf of RTA Transitways. For the purposes of these works, the RTA is the proponent and the determining authority under Part 5 of the *Environmental Planning and Assessment (EP&A) Act 1979*. **For consistency and understanding, this REF should be read in conjunction with the Environmental Impact Statement (EIS) (Sinclair Knight Merz 2002), Representations Report (RTA 2003) and Preferred Activity Report (PAR) (RTA 2003) prepared for the North-West Transitway Network.**

The purpose of the REF is to describe the Proposal, to document the likely impacts of the Proposal on the environment, and to detail protective measures to be implemented.

The description of the proposed works and associated environmental impacts have been undertaken in the context of Clause 228 of the *Environmental Planning and Assessment Regulation 2000*, the *Threatened Species Conservation (TSC) Act 1995*, the *Fisheries Management (FM) Act 1994*, and the (Commonwealth) *Environment Protection and Biodiversity Conservation (EPBC) Act 1999*. In doing so, the REF helps to fulfil the requirements of Section 111 of the EP&A Act, that the RTA examine and take into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of the activity.

This REF has been prepared in accordance with the RTA's Proforma I REF as presented in the RTA's *Environmental Impact Assessment Policy, Guidelines and Procedures, Version 4 2001*.

The findings of the REF would be considered when assessing:

- Whether the Proposal is likely to have a significant impact on the environment and therefore the necessity for an Environmental Impact Statement (EIS) under Section 112 of the EP&A Act.
- The significance of any impact on threatened species as defined by the TSC Act, in Section 5A of the EP&A Act and therefore the requirement for a Species Impact Statement (SIS).
- The potential for the Proposal to significantly impact a matter of national environmental significance or Commonwealth land and the need to make a referral to the Commonwealth Environment Minister in accordance with the EPBC Act.

1.5 Background

The RTA, in partnership with the NSW Ministry of Transport (MoT) is constructing and operating the North-West Transitway Network, which consists of two integrated rapid bus links: the Blacktown — Castle Hill and Parramatta — Rouse Hill links.

The Transitway consists of two integrated bus-only roadways and the creation of dedicated bus lanes on existing roads. The Blacktown — Castle Hill link would be approximately 15km in length and include 21 Transitway stations. The Parramatta — Rouse Hill link would be approximately 17km in length and include 19 Transitway stations (including Troubadour station).

An EIS, Representations Report and PAR were prepared and submitted to the Department of Infrastructure, Planning and Natural Resources (DIPNR) on 15 August 2003, seeking the Minister's approval for the Transitway proposal. In January 2004, the Director-General's Report, under Section 115C of the *Environmental Planning and Assessment (EP&A) Act 1979*, was released and recommended the approval of the Transitway proposal, subject to the Recommended Conditions of Approval. The Director-General's report contained 108 conditions of approval.

In order to reduce travel times and provide a more efficient T-way service, several modifications to the design plans assessed in the EIS are required. One such modification, the subject of this REF, involves the provision of a new access for local bus services from Glenwood to the T-way via Meurants Lane, Glenwood.

1.6 Methodology

The method in which this document has been prepared is as follows:

1. A discussion was held with the Project Manager to consider the Proposal.
2. An RTA Environmental Technology representative undertook a site visit on 1 December 2004 to provide an overview of the Proposal and to discuss any issues relevant to the completion of the REF.
3. The following agencies and RTA personnel were notified and/or consulted:
 - T-Ways Environmental Adviser;
 - RTA's Aboriginal Program Consultant, Sydney Region;
 - Blacktown City Council; and
 - Darug Custodian Aboriginal Corporation.

4. A desktop search was conducted on the following databases to identify any potential issues:
 - Australian Heritage Database;
 - NSW Heritage Office State Heritage Register and State Heritage Inventory;
 - National Native Title Tribunal;
 - DEC Aboriginal Heritage Information Management System (AHIMS);
 - DEC Atlas of NSW Wildlife - Threatened Flora and Fauna Records;
 - DEH Protected Matters (EPBC Act) Database;
 - DPI Noxious Weeds List
 - DEC Contaminated Land Records;
 - DEC Air Quality Records;
 - National Pollutant Inventory; and
 - DIPNR Acid Sulphate Soils Risk Map.
5. As part of the environmental assessment undertaken for this REF, a noise specialist study was undertaken to identify the Proposal constraints and to provide environmental safeguards. Details and findings from the investigation are further discussed in Chapter 8 of this REF with a copy of the specialist study included as **Appendix D** to this REF. An archaeological report was prepared for the Proposal to assess the claim that the Proposal site was the 'Seventh Hill' of Seven Hills, and is included as **Appendix C** to this REF.
6. A literature review and review of documentation was undertaken with regards to the following:
 - Landform, Geology, and Soils;
 - Groundwater;
 - Salinity;
 - Local Environment Plans;
 - Regional Environmental Plans; and
 - State Environmental Planning Policies.

2 Description of Proposal Site and Study Area

2.1 Location

The Proposal site is Meurants Lane at its intersection with Old Windsor Road, Glenwood, within the Blacktown Local Government Area (LGA). This area is characterised by low scale residential development, and existing non-urban land uses are mainly broadacre properties, generally used for grazing. The study area is bounded by Norwest Boulevard to the south, Old Windsor Road to the east, and the NSW Federation of Soccer Clubs State Head Quarters to the west (refer to **Figure 2.1**: Location of study area). The soccer headquarters consist of several buildings; playing fields and an outdoor swimming pool (refer to **Appendix A**). The Proposal site is the construction footprint and the study area is that area immediately surrounding the construction footprint that would be impacted upon by the proposed works.

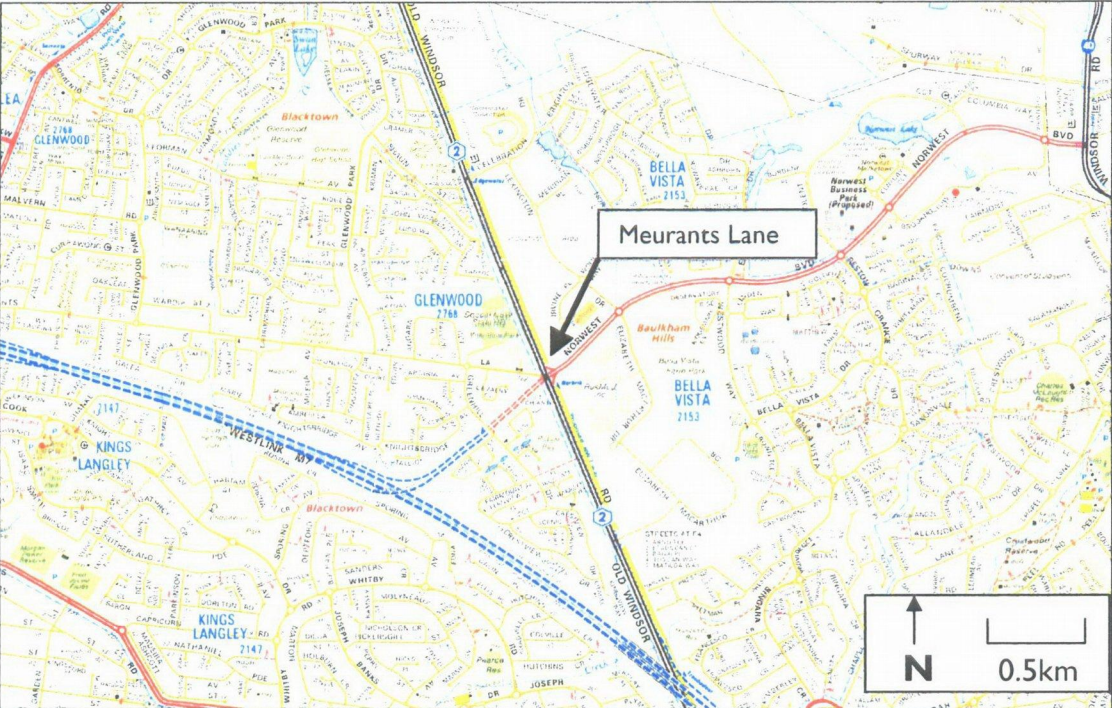


Figure 2.1 Location of study area.

Source: Sydney

2.2 Description of the Existing Environment

2.2.1 General

The Proposal site is characterised by a remnant stand of vegetation that is highly modified due to past road works along Old Windsor Road and current construction of the Western Sydney Orbital. To the west of the Proposal site is land owned by the NSW Soccer Federation including playing fields, buildings and a swimming pool, to the east is Old Windsor Road, and to the south is Meurants Lane and the Norwest Boulevard Extension (currently under construction).

2.2.2 Topography and Landform

The topography of the study area is undulating to rolling rises and low hills; local relief is 20 – 80m and slopes 10 – 25%. This area is characterised by highly modified remnant Cumberland Plain Woodland, which is in poor condition. There are no naturally occurring drainage lines within the study area.

2.2.3 Geology and Soils

The soil of the study area is described as Luddenham type, on Wianamatta Group shales associated with Minchinbury Sandstone. Soils of the study area have high clay content, are shallow to moderately deep (<100cm), and consist of siliceous sands and leached sands. These soils are characterised by high soil erosion hazard, localised highly plastic subsoil and are moderately reactive (Bannerman & Hazelton 1990). There is no dry land salinity risk or hazard, or any acid sulphate soil risk surrounding the study area due to its elevation and remoteness from sulphide-bearing estuarine muds (DIPNR 2004, SKM 2002).

2.2.4 Climate

The closest weather station to the study site is located at Seven Hills, approximately 4 km southwest of the study site. The mean daily maximum temperature ranges from 17.4 °C in July to 28.4 °C in December and mean daily minimum temperature ranges from 4.5 °C in July to 17.0 °C in February. Mean rainfall ranges from 44.5mm in September to 110.9mm in February. (BOM 2004.)

Winds are predominately from the west, east and southeast on an annual basis. During summer, the westerly winds dissipate but the majority of winds still come from the east and southeast. (Holmes Air Sciences 2002.)

2.2.5 Drainage and Watercourses

The nearest water bodies are Detention Basin approximately 1.5km to the northeast, Parklea Reservoir approximately 1km to the east, and ponds in Macarthur Creek approximately 1km to the north of the study area. Lalor Creek is located approximately 1.3km to the south, Macarthur Creek approximately 600m to the northeast, and Caddies Creek approximately 1km to the north of the study area. There are no drainage lines within the study area.

2.2.6 Biodiversity

The vegetation of the Proposal site is unclassified, yet described in the EIS as remnant Cumberland Plain Woodland in poor condition with weeds prevalent. The vegetation is dominated by an overstorey of Narrow-leaved Ironbark (*Eucalyptus crebra*), Rough-barked Apple (*Angophora floribunda*) and Forest Red Gum (*Eucalyptus tereticornis*). There is a moderate coverage of native shrubs such as Native Blackthorn (*Bursaria spinosa*), Prickly Moses (*Acacia ulicifolia*) and Native Indigo (*Indigofera australis*), as well as native weeds such as Boneseed (*Chrysanthemoides monilifera* subsp. *monilifera*). Groundcover is moderately dense with several native grasses and herbs including Weeping Grass (*Microlaena stipoides*), Kidney Weed (*Dichondra repens*), and Many-flowered Mat-rush (*Lomandra multiflora* subsp. *multiflora*). No tree hollows were observed during the site visit.

No fauna species were identified during the site visit. The area has been modified by recent road works, and any potential impact of the Proposal on the biodiversity of this area would be minor.

2.2.7 Sensitive Noise Receptors

The nearest sensitive noise receptors are located along Meurants Lane (refer to Figure 2.1). The dominant noise source in the area is general road traffic along Meurants Lane and, to a lesser extent, that along Old Windsor Road. Noise measurements in this area are typical of locations influenced by high road traffic volumes (refer to **Appendix E**).

2.2.8 Air Quality

The closest DEC air quality monitoring station to the Proposal site is located at Westmead, approximately 5.5km south east of the site. The most recent year of data published by the DEC is that for July 2003 – June 2004. The monthly average data are summarised in Table 2.2.8 below, with monitoring results for carbon monoxide, nitrogen dioxide and particulate matter.

Table 2.2.8 DEC monitoring data for Westmead (July 2003 – June 2004)

NEPM standard level	Westmead Monthly Average (Monthly maximum)					
	CO		NO ₂		TEOM-PM ₁₀	
	8-hour average = 9ppm		1-hour average = 12pphm		24-hour average = 50µg/m ³	
Month	Parts million (ppm)	per No. of days above goal	Parts per hundred million (pphm)	No. of days above goal	µg/m ³	No. of days above goal
July 2003	0.2 (2.1)	0	1.6 (6.7)	0	18 (84)	0
August	0.0 (1.3)	0	1.4 (4.9)	0	18 (104)	0
September	0.0 (0.8)	0	1.4 (5.6)	0	23 (171)	1
October	0.1 (1.3)	0	1.2 (3.5)	0	15 (108)	0
November	0.3 (1.8)	0	1.1 (4.6)	0	17 (74)	0
December	0.3 (1.5)	0	1.0 (3.9)	0	18 (56)	0
January 2004	0.3 (1.2)	0	1.0 (3.3)	0	22 (267)	0
February	0.3 (1.4)	0	1.0 (3.9)	0	24 (120)	0
March	0.5 (2.1)	0	1.3 (4.0)	0	23 (182)	0
April	0.4 (1.9)	0	1.4 (3.7)	0	21 (163)	0
May	0.5 (2.3)	0	1.6 (4.5)	0	25 (115)	0
June	0.6 (3.8)	0	1.4 (4.2)	0	20 (105)	0
Annual Average	0.3		1.3		20	
Annual Maximum	1.8		4.4		129	

The maximum level of NO₂ measured at Westmead in the period July 2003 – June 2004 was 6.7pphm (July 2003), which is well below the National Environment Protection Measures (NEPM) goal of 12pphm. The maximum level of carbon monoxide recorded was 3.8ppm (June 2004), well below the NEPM goal of 9ppm.

The annual average level of TEOM-PM₁₀ is 20µg/m³ which is below the NEPM standard level (24-hour average) of 50µg/m³.

The major sources of pollution in decreasing order are: motor vehicles, domestic/commercial solvents/aerosols, ceramic product manufacturing, lawn mowing and other chemical product manufacturing (NPI 2005).

2.2.9 Visual Amenity

The visual amenity of the study area would be moderate, given that it is a remnant area of vegetation alongside a major road (refer to **Appendix A**).

2.2.10 Existing and Forecast Traffic

Traffic data for Old Windsor Road contained in the EIS for the T-ways proposal (SKM 2002) is reproduced in Tables 2.2.10a and 2.2.10b below. The construction of the T-ways is expected to reduce traffic along Old Windsor Road.

Table 2.2.10a. Existing and forecast peak traffic count along Old Windsor Road north of Seven Hills Road, without T-way

Direction	2002		2006		2016	
	AM peak	PM peak	AM peak	PM peak	AM peak	PM peak
Northbound	750	1209	996	1349	1077	1359
Southbound	1684	835	972	478	1987	1129

Table 2.2.10b Forecast peak traffic count along Old Windsor Road north of Seven Hills Road, with and without T-way

Direction	2006 without T-way		2006 with T-way		% change	
	AM peak	PM peak	AM peak	PM peak	AM peak	PM peak
Northbound	996	1349	933	1036	-11%	-14%
Southbound	972	478	863	410	-16%	-23%

2.2.11 Non-indigenous Heritage - the 'Seventh Hill' of Seven Hills

The Blacktown and District Historical Society has made the claim that part of the study area *i.e.* the intersection of Meurants Lane and the old alignment of Old Windsor Road, is the location of the 'Seventh Hill' of the Seven Hills district. An archaeological report has been prepared to assess this claim and is included in **Appendix E**.

3 Description of the Proposal

3.1 Description of the Proposal

The Proposal is for modifications to the design presented in the EIS for the North West T-way (SKM 2002) at Meurants Lane, Glenwood. The modifications include the provision of a single lane (minimum 4m wide) bus-only access road from Meurants Lane to connect to the T-way corridor along Old Windsor Road. A 6.5m wide service road would maintain access to properties on the southern side of Meurants Lane. The eastern end of Meurants Lane would remain closed to general traffic (refer to **Appendix B**).

3.2 Construction Activities

3.2.1 Construction Processes and Work Methodology

Construction activities would be the same as for the approved T-ways project, and would include:

- *Earthworks*: the majority of earthworks would be in cut: approximately 4,500m³;
- *Drainage*: drainage structures such as pipes and pits would be constructed in the new works and connected to the existing drainage structures;
- *Pavement construction*;
- *Line marking*;
- *Landscaping*; and
- *Signposting*.

3.2.2 Construction Equipment

Construction equipment would be the same as for the approved T-ways project, and would include:

- Excavator;
- Loader;
- Dozer;
- Roller;
- Trucks;
- Rockbreaker;
- Compactor;
- Cranes;
- Hand tools;
- Paving machine;
- Concrete agitators;
- Linemarking machine;
- Truck mounted crane;
- Backhoe;
- Post drivers; and
- Bobcat.

3.2.3 Access

Construction vehicles would enter and exit the Proposal site via the T-way corridor, in order to avoid disruption to Meurants Lane residents and road users.

3.2.4 Property Acquisition

The Proposal requires the acquisition of 1,995m² of land owned by the NSW Soccer Federation (refer to Section 8.7 of this REF).

3.2.5 Source of Material

Materials to be used in construction include:

- *General fill* – won from cuttings at or near the site from the construction of the North West T-way; Blacktown City Council quarry in Schofields Road, Rouse Hill.
- *Select fill* – unweathered shale from quarries at Rouse Hill and Riverstone; sandstone tunnel spoil from road and rail projects in the Sydney region.
- *Processed roadbase* – from quarries in Prospect, Wallgrove and Penrith Lakes.
- *Coarse aggregate* – from a supplier at Penrith Lakes.
- *Concrete* – from local suppliers.
- *Asphalt* – from local suppliers.
- *Topsoil* – reclaimed from roadside areas affected by cutting and filling.
- *Water* – sourced from Sydney Water mains.

Materials would be stored at the nominated existing T-ways stockpile site, assessed as part of the approved project.

3.2.6 Additional Truck Movements

Construction vehicle access would be via the T-way corridor. Any impact due to an increase in the number of construction vehicles within the local area due to the Proposal would be minor, as the proposed works would be undertaken concurrently with the main T-way construction.

3.2.7 Stockpile and Compound Sites

The Proposal would not require the establishment of separate stockpile and/or compound sites. Existing stockpile and compound sites, established for construction of other sections of the T-way project, would also be used for the Proposal.

3.3 Workforce and Working Hours

The workforce would comprise approximately ten personnel.

It is anticipated that working hours for the Proposal would be undertaken during standard working hours adopted by the RTA as detailed below:

Standard Working Hours:

Monday – Friday:	7.00am to 6.00pm
Saturday:	8.00am to 1.00pm
Sunday and Public Holidays:	No work.

Should work be required outside of the standard working hours, the procedure contained in the RTA's *Environmental Noise Management Manual 2001*, "Practice Note vii – Roadworks Outside of Normal Working Hours" would be followed.

3.4 Commencement of Works

Works are scheduled to commence in July 2005.

3.5 Period of Construction

Construction is expected to be six weeks in duration. No staging of works is proposed.

3.6 Proposal Cost and Source of Funds

The North West T-way project cost is \$520,000,000, funded by the State government's *Action for Transport 2010* plan. The estimated cost of construction of this section of the North West T-way is approximately \$1,000,000.

4 Statutory Position

4.1 Local Environmental Plans

4.1.1 *Blacktown Local Environmental Plan (LEP) 1988*

The Proposal is located within the Blacktown Local Government Area (LGA). Blacktown City Council regulates land use within this LGA through the *Blacktown Local Environmental Plan (LEP) 1988*. Within the Proposal site, the Proposal passes through one land use zoning: Zone 6(b): Private Recreation Zone. The objective of this zone is:

- *To identify land where private recreation and related facilities are or may be provided*

Within the land use zoning 6(b), development consent from Blacktown City Council is required for the purposes of the proposed T-Ways modifications at Meurants Lane, Glenwood.

However, the *State Environmental Planning Policy No. 63 – Major Transport Projects* does apply to the proposed works and removes the need for development consent. Refer to Section 4.2 below.

4.2 State Environmental Planning Policies (SEPPs)

State Environmental Planning Policy No. 19 (SEPP 19) – Bushland in Urban Areas

Blacktown LGA is listed under Schedule 2 of SEPP 19 as an area where this policy applies. SEPP19 aims to protect and preserve bushland within urban areas. Under this policy, “bushland” means land on which there is vegetation which is either a remainder of the natural vegetation of the land or, if altered, is still representative of the structure and floristics of the natural vegetation. This SEPP applies to bushland zoned or reserved for public open space. As the study area is zoned as an area for private recreation, SEPP 19 does not apply to this Proposal.

State Environmental Planning Policy No. 63 (SEPP 63) – Major Transport Projects

The North West Sydney Transitway Network is listed under Schedule 1 of SEPP 63 as a major transport project to which this SEPP applies. The aim of this SEPP is to avoid the situation where major transport proposals require development consent or are prohibited for certain locations of their route. This SEPP makes development associated with the major projects listed under Schedule 1 permissible without development consent. Therefore, consent from Blacktown City Council would not be required for the proposed modifications to the North West T-way at Meurants Lane, Glenwood. Environmental assessment under Part 5 of the EP&A Act is still required.

4.3 Confirmation of Part 5 Position

All relevant statutory planning instruments have been examined for the Proposal. It is concluded that SEPP 63 operates to remove the need for development consent, thereby permitting assessment of the Proposal under Part 5 of the EP&A Act.

5 Strategic Stage

5.1 Strategic Planning

The NSW government's *Action for Transport 2010*, released in November 1998 by the Minister for Transport and Minister for Roads, outlines a fully-funded construction timetable for major infrastructure projects including new rail lines and roads to service Sydney's growing population.

Due to its very rapid growth in population and commercial activity, western Sydney's demand for new and improved public transport infrastructure was a focal point for the *Action for Transport 2010* plan. The plan recognised the growing trend for western Sydney residents to travel to centres within western Sydney to work, rather than the CBD, and that new and improved public transport could reduce the dependence of western Sydney residents on cars for their daily travel needs.

Another key NSW government document, *Action for Air* (EPA 1998) also recognises the need for an enhanced public transport system in western Sydney for the sustainability of development within Sydney. Both the *Action for Transport* and *Action for Air* plans identify the growing importance of rapid transport systems using high quality, environmentally-friendly buses.

The North-West T-way Network is made up of two integrated links of the rapid bus network (Blacktown – Castle Hill and Parramatta – Rouse Hill), and will service Sydney's growing northwest sector. The Parramatta – Rouse Hill link will connect the Parramatta city centre with the proposed Rouse Hill regional centre at Mungerie Park. The bus-only T-way link will be approximately 17km in length and include 19 stations.

5.2 Need for the Proposal

The proposed modifications to the North West T-way at Meurants Lane are required to improve the connection and integration of local bus services to the North West T-way services, resulting in a reduction in travel times and distance. The Proposal would reduce bus travel times in line with the objectives the State Government's *Action for Transport 2010* and *Action for Air*.

6 Concept Stage

6.1 Proposal Objectives

The aims of the Proposal are:

- To improve integration of local bus services and the T-way services within the Glenwood area; and
- To reduce bus travel times for services to and from Glenwood.

6.2 Options Considered

Option 1 – Do nothing

Under the 'Do Nothing' option, buses would be required to travel via Greenhill Drive, the Norwest Boulevard extension and Old Windsor Road before being able to access the T-way near the Norbrik access. This would result in additional travel time and distance.

Option 2 – Narrow service road access

This option would allow buses to access the T-way from Meurants Lane via a narrow service road (width 3.5m), and would contain all other works within the existing road reserve. This option was not acceptable to Blacktown City Council, as there was no provision for on-street parking.

Option 3 – Loop road

This option would provide a loop road for buses from the Meurants Lane *cul-de-sac*. This option would have a much greater impact on NSW Soccer Federation land, would result in the demolition of the Caretaker's cottage and septic tank, and was extremely close to the swimming pool and playing fields.

Option 4 – Bus only link road & bus turnaround

This option is very similar to the preferred option, but had greater impact on NSW Soccer Federation land.

Option 5 – Preferred Option

The preferred option is for a bus-only link road, from Meurants Lane connecting to the T-way corridor along Old Windsor Road. A 6.5m wide service road would maintain access to properties on the southern side of Meurants Lane. This is the preferred option based on the minimum requirements for bus bays, and required the least amount of property acquisition.

7 Background Investigations and Consultation

7.1 Background Investigations and Database Searches

The following results were obtained from desktop database searches conducted for the study area. The information below provides a summary of the search results. Copies of all the search results are provided in **Appendix D**.

Australian Heritage Database

The DEH Australian Heritage Database was searched on 4 April 2005 for the suburb of Glenwood. One result was returned: Old Windsor Road Section, Old Windsor Road, Kellyville, listed on the Register of the National Estate (RNE). The area covered by this listing is the entire Windsor Road Reserve, from its intersection with Seven Hills Road to its intersection with the new Windsor Road at Kellyville. The Proposal site is included within this area. The RNE places no statutory obligations on the RTA. Refer to Section 8.3 of this REF for further discussion.

NSW Heritage Office State Heritage Register/Inventory

The NSW Heritage Office State Heritage Register/Inventory was searched on 8 December 2004 for Glenwood. There were no items listed under the *NSW Heritage Act*, and four items listed by Local Government. None of these listed items would be impacted upon by the Proposal.

National Native Title Tribunal

A search of the National Native Title Tribunal claims register on 15 May 2005 revealed that there are no native title claims within the study area. The nearest claim is to a section of land approximately 3.5km south of the study area, which would not be impacted by the proposed works.

NSW DEC Aboriginal Heritage Information Management System (AHIMS)

A NSW DEC AHIMS search was conducted on 6 May 2005 for Glenwood. The search returned a total of two records of Aboriginal objects/ places near the Proposal site, none of which would be impacted upon by the Proposal.

NSW DEC Atlas of NSW Wildlife - Threatened Flora and Fauna Records

The NSW DEC Atlas of NSW Wildlife – Threatened Flora and Fauna Records were searched on 20 December 2004, for the Proposal site with a buffer of five kilometres. The nearest record is located approximately 1.5km northeast of the Proposal site. The Proposal is not expected to impact upon any threatened species.

DEH Protected Matters (EPBC Act) Database

The DEH Protected Matters database was searched on 8 December 2004 for the Proposal site with a buffer of five kilometres. The results were:

World Heritage Properties	None
National Heritage Places	None

Wetlands of International Significance (Ramsar Sites)	1
Commonwealth Marine Areas	None
Threatened Ecological Communities	2
Threatened Species	24
Migratory Species	8
Places on the Register of National Estate	5
Critical Habitats	None
Listed Marine Species	12

These results are further discussed in Chapter 8 of this REF.

NSW DPI Noxious Weeds List

The NSW DPI Noxious Weeds List was searched on 8 December 2004 for the Hawkesbury River County Council (which includes Blacktown Local Government Area). A complete list is included in **Appendix D**. No noxious weeds were identified during the site visit.

NSW DEC Contaminated Land Records

The NSW DEC Contaminated Land Records were searched on 5 May 2005 for the Blacktown City Council LGA. The search revealed two current notices, neither of which within the vicinity of the Proposal site.

NSW DEC Air Quality Information

The NSW DEC Air Quality Information website was searched on 5 May 2005. Air quality data was gathered for the Westmead monitoring site, the closest to the Proposal site. Further discussion of air quality is provided in Section 2.2.8 of this REF.

The DEH National Pollutant Inventory

The DEH National Pollutant Inventory (NPI) was searched on 5 May 2005 for the Blacktown LGA. Results from the search were:

- 56 substrates from 50 sources were found.
- 26 facilities were reported to the NPI.
- Diffuse data was collected for 35 sources.
- The indicative top source was motor vehicles.

Refer to **Appendix D** for a full report.

DIPNR Acid Sulphate Soil Risk Mapping

DIPNR Acid Sulphate Soil Risk Mapping was searched on 15 December for the Proposal site with a 5km buffer. No acid sulphate risk surrounds the Proposal site.

7.2 Government and Community Consultation and Involvement

7.2.1 Government and stakeholder consultation

Blacktown City Council (BCC) and the major landowner, NSW Soccer Federation, have both been consulted in regard to the Proposal. This consultation has included several meetings between the RTA and BCC and the RTA and NSW Soccer Federation. The

preferred option for the Proposal has been arrived at after negotiations with both BCC and NSW Soccer Federation.

7.2.2 Community Consultation and Involvement

Potentially affected residents in Meurants Lane have been informed of the Proposal via a letterbox drop (refer to **Appendix C**). Residents were provided with a description and justification of the Proposal, and invited to comment on the Proposal.

8 Environmental Assessment

8.1 General

This section of the REF provides a detailed description of the potential environmental impacts associated with the Proposal during both construction and operation, and provides site-specific safeguards to ameliorate the identified potential impacts.

The environmental safeguards predominantly outline additional site-specific requirements which are not covered by the RTA's *QA Specifications – Environmental Protection (Management Plan) G36* for inclusion into the Contractors Environmental Management Plan (CEMP) and the Project Environmental Management Plan (PEMP). These safeguards would be implemented prior to construction, during construction and post construction in addition to those relevant safeguards and Conditions of Approval outlined in the *Northwest T-way Network Representations Report* and the *Director-General's Report under Section 115C of the Environmental Planning and Assessment Act 1979*. The CEMP and PEMP would be reviewed by the RTA's Transitways Environmental Adviser prior to the commencement of work.

8.2 Biodiversity

Potential Impacts

Database searches revealed no threatened flora or fauna species present within the study area. The Proposal would result in an additional loss of less than 0.4ha of unclassified remnant bushland (DEC database), described in the EIS as remnant Cumberland Plain Woodland that is in poor condition. The impact of the T-ways project on Cumberland Plain Woodland (an *Endangered Ecological Community* under the *TSC Act*) was assessed in the EIS, and no further impact is expected from the Proposal. A reduction in the number of trees present would reduce the habitat available for bird species to forage and nest. However, these impacts would be minor given the proximity of the study area to other parks and reserves in the Blacktown LGA (refer to Figure 2.1). No tree hollows were observed during the site visit.

Site Specific Safeguards

- Topsoil potentially containing weed propagules would be removed from the Proposal site and disposed of at a licenced landfill facility. Weed infested or contaminated topsoil would not be reused for the proposed works or for revegetation works and would not be stockpiled adjacent to any areas of native vegetation.
- All vegetation to be retained would be clearly highlighted on site and on site plans and would be protected with fencing. Protective fencing would be erected beyond the drip-line of trees and erected prior to the commencement of works. All staff would be informed and inducted of the limits of vegetation clearing and the areas of vegetation to be retained.
- Should trees containing hollows be removed, they would be removed during the hottest part of the day; to minimise the effects of torpor induced by low temperatures.
- Should native arboreal species be found inhabiting hollow trees proposed to be removed, the use of nest boxes and/or relocation would be investigated in consultation with the RTA's Transitways Environmental Adviser.

8.3 Non-Indigenous Heritage

Potential Impacts

The entire Old Windsor Road reserve from its intersection with Seven Hills Road to its intersection with the New Windsor Road at Kellyville is listed on the Register of the National Estate. However this listing does not place any statutory requirements on the RTA. The Proposal would have no additional impact on the heritage values of the listing, to the approved project. The Proposal would have no further impact on the heritage alignment of Old Windsor Road.

An archaeological report was prepared for the Proposal on the location of the 'Seventh Hill' of the Seven Hills district, and is included in **Appendix E**. The report concluded that the Seventh Hill is most likely located at the intersection of Old Windsor Road and Meurants Lane/Norwest Boulevard, *i.e.* within the study area. Even if the 'Seventh Hill' is located within the study area, any impact of the Proposal on the heritage significance of the area would be minimal, given the highly modified nature of the area.

Site Specific Safeguards

- Should archaeological remains be uncovered during construction, all works would cease within the vicinity of the material/find and the RTA's Transitways Environmental Adviser contacted.

8.4 Indigenous Heritage

Potential Impacts

A search of the DEC AHIMS database revealed two records of Aboriginal objects and places near the study area. None of these would be impacted upon by the Proposal. A representative of the Darug Custodian Aboriginal Corporation undertook a site visit on 6 December 2004. No objections were raised to the Proposal (refer to **Appendix C**).

Site Specific Mitigation Safeguards

- All personnel working on site would receive training in their responsibilities under the *National Parks and Wildlife Act 1974*.
- Should Indigenous heritage items be uncovered during works, all works in the vicinity of the find would cease and the RTA's Aboriginal Programs Consultant, Transitways Environmental Adviser, DEC representative and relevant LALC representative would be contacted. Works would not re-commence until appropriate clearance has been received.

8.5 Noise

A specialist noise assessment has been prepared for the Proposal by SKM Pty Ltd (2005), and is included in **Appendix E**. The specialist study investigates the impact of the Proposal on noise levels during operation. An assessment of the noise impacts during construction was included in the EIS, relevant sections of which are included below.

The Proposal involves the provision of a new access for bus services travelling from Glenwood to the T-way along Meurants Lane. Meurants Lane is currently an arterial road connecting Sunnyholt Road and Old Windsor Road. However, it is planned to make Meurants Lane a *cul-de-sac* in the near future, and residential development along the road has progressed with view to this future change. Road traffic noise was measured at two locations: 268 Meurants Lane (near Old Windsor Road) and 284 Meurants Lane (further away from Old Windsor Road), and predictions made assuming a *cul-de-sac*.

Operational Noise

Meurants Lane is currently an arterial road, connecting Sunnyholt Road and Old Windsor Road, Glenwood. Following the construction of the Western Sydney Orbital, Meurants Lane would become a local traffic road with no connection for general motor vehicles at Old Windsor Road. The only through-traffic would be the proposed Transitway connecting buses. The proposed bus movements through Meurants Lane are as follows:

- Eight buses per hour during peak periods (7.00 — 9.00 and 16.30 — 18.30);
- One bus every half hour during off-peak periods;
- First bus service to commence at 6.30; and
- Bus traffic to increase to 10 buses per hour by the year 2016.

With Meurants Lane as a *cul-de-sac*, the major noise source at 268 Meurants Lane would be traffic on Old Windsor Road. The contribution from traffic on Old Windsor Road to the noise levels at 284 Meurants Lane would be less. The impact of the Proposal (additional bus traffic along Meurants Lane) on the predicted noise levels along Meurants Lane was investigated in the specialist study. Noise impacts from the Western Sydney Orbital were not considered in the specialist study.

Under the DEC's *Environmental Criteria for Road Traffic Noise* (ECRTN), this section of the T-way is best described as *redevelopment of an existing freeway/ arterial road*. The ECRTN base criteria for this section of road for daytime noise levels is a $LA_{eq(15 \text{ hour})}$ of 60dB(A) and for night-time noise level is a $LA_{eq(9 \text{ hour})}$ of 55dB(A). Where the criteria is already exceeded, the ECRTN states that the redevelopment should be redesigned so as not to increase existing noise levels by more than 2dB(A).

Table 8.5.1. Existing traffic noise levels for daytime and night time verses the road traffic noise goal.

Residential Receptor	Day LA_{eq} (15hr) dB(A)	Noise Goal Day LA_{eq} (15hr) dB(A)	Noise Goal Exceedance dB	Night LA_{eq} (9hr) dB(A)	Noise Goal Night LA_{eq} (9hr)	Noise Goal Exceedance dB
268 Meurants Lane	66	60	6	61	55	6

Daytime $Leq(15hr)$, the Leq noise level for the 15 hour period between 7am and 10pm.

Night time $Leq(9hr)$, the Leq noise level for the 9 hour period between 10pm and 7am.

The existing noise levels at Meurants Lane exceed the ECRTN base criteria for road noise (refer to Table 8.5.1). The recorded levels are largely influenced by traffic on Meurants Lane and, to a lesser degree, by traffic on Old Windsor Road. These levels are typical of locations influenced by high road traffic volumes during the day, with decreasing, yet consistent, traffic numbers during the evening and night.

Table 8.5.2. Estimation of road traffic volumes used in the noise assessment, taken from the North West Transitway EIS, and reproduced below for Old Windsor Road, north of Seven Hills Road.

Direction	15 Hour			9 Hour		
	2002 Base	2006	2016	2002 Base	2006	2016
Northbound	11,191	11,984	12,890	1,665	1,675	1,802
Southbound	12,771	6,454	13,329	2,846	1,438	2,971

The traffic mix along Meurants Lane would be changed as a result of the T-way and other road projects within the area (e.g. Western Sydney Orbital), and as a result only local traffic would use Meurants Lane. In addition, the construction of the T-way and other road projects within the area would result in less traffic on Old Windsor Road.

Table 8.5.3. Predicted traffic noise levels for 2016 with and without the proposed realignment.

Residential Receptor	Year	Scenario	Predicted LA _{eq} (15 hour) dB(A)	Predicted LA _{eq} (9 hour) dB(A)
268 Meurants Lane	2016	Without Modifications	57	53
268 Meurants Lane	2016	With Modifications	57	53
284 Meurants Lane	2016	With Modifications	53	49

The closure of Meurants Lane would result in a substantial improvement to the noise environment experienced by Meurants Lane residents (refer to Tables 8.5.1 and 8.5.3). Although there is a predicted increase in noise from bus traffic along Meurants Lane in 2016, there is no predicted increase in traffic noise levels at 268 Meurants Lane (near Old Windsor Road) (refer to Table 8.5.3), as the increase in bus traffic noise would be off-set by the predicted decrease in Old Windsor Road traffic noise.

Table 8.5.4. Predicted traffic noise levels for daytime (LA_{eq} 15hr) verses the road traffic noise goal.

Residential Receptor	2016 dB(A) without modifications	2016 dB(A) with modifications	Noise Goal Exceedance dB(A)
268 Meurants Lane	57	57	Nil
284 Meurants Lane	—	53	Nil

Daytime Leq(15hr), the Leq noise level for the 15 hour period between 7am and 10pm.

Table 8.5.5. Predicted traffic noise levels for night time ($LA_{eq\ 9hr}$) verses the road traffic noise goal.

Residential Receptor	2016 dB(A) without modifications	2016 dB(A) with modifications	Noise Goal Exceedance dB(A)
268 Meurants Lane	53	53	Nil
284 Meurants Lane	—	49	Nil

Night time $Leq(9hr)$, the Leq noise level for the 9 hour period between 10pm and 7am.

At 284 Meurants Lane (further away from Old Windsor Road), residents would be less affected by Old Windsor Road traffic noise, and the representative receptors at 268 and 284 Meurants Lane (with Meurants Lane as a *cul-de-sac*) would be below the ECRTN criteria for daytime and night time traffic noise levels.

Construction Noise

Plant and machinery likely to be used during construction are listed in Section 3.2.2 of this report.

Construction hours would be as per the Conditions of Approval outlined in the Decision Report/Conditions of Approval, *i.e.*

Monday – Friday: 7.00am to 6.00pm

Saturday: 8.00am to 1.00pm

Sunday and Public Holidays: No work.

No night works are proposed.

Construction works would be approximately 10m from the last six houses on Meurants Lane (near Old Windsor Road). A construction noise assessment was completed in the EIS, and the relevant information reproduced below.

The construction noise objective for the Proposal, as contained in the Decision Report/Conditions of Approval, is to manage noise from construction activities so it does not exceed the background LA_{90} noise level by more than 5dB(A).

The tenth percentile background noise level (*i.e.* the LA_{90} noise level) measures the existing noise near the Proposal site. Background noise levels were measured for 14 Highgate Place, Glenwood.

Table 8.5.6. Tenth percentile background noise level dB(A).

Receptor	Day LA_{90} dB(A)
14 Highgate Place, Glenwood	48

Construction hours: 7am to 6pm

For the Proposal, 48 + 5dB(A) is taken to be the project specific construction noise level goal.

Table 8.5.7. Construction noise objectives and the predicted construction noise levels (note the predicted levels are to be representative of ‘worst case’).

Noise catchment area (as described in EIS)	Predicted Construction Noise Levels L ₁₀ dB(A)	Project Specific Construction Noise Goals L _{A90} dB(A)
NCPRH I5a	51 dB(A) to 80 dB(A)	53

Construction hours: 7am to 6pm

The predicted construction noise levels would, at times, be likely to exceed the project specific noise goals.

Site Specific Safeguards

- Potentially affected residents would be contacted prior to the commencement of works and would be informed of the proposed works, working hours, and the period of construction. Residents would also be provided with a contact name and number should they wish to register any complaints.
- The idling of machinery and equipment when not in use and for prolonged periods of time would be prohibited.
- Best management practices would be adopted that are consistent with the RTA’s *Environmental Noise Management Manual, 2001*.
- Should reversing alarms be identified as causing noise disturbance then alternative options would be explored in accordance with OH&S requirements and in consultation with the OH&S officer.
- Noisy activities, particularly rockbreaking or concrete breaking with a hydraulic hammer, if required, would be carried out between 9am and 12 noon and 2pm 5pm, in accordance with the Conditions of Approval.
- All machines would be in good working condition, with particular attention to exhaust silencers, engine covers and other noise reduction devices.

8.6 Visual Amenity / Landscape

Potential Impacts

Operation

The removal of a small area of highly disturbed remnant vegetation would have a moderate negative impact on the visual amenity of the study area.

Site Specific Safeguards

- The construction site would be kept tidy and rubbish free.

8.7 Socio-economic Considerations

Potential Impacts

The Proposal would require the acquisition of approximately 1,995 m² of land from the NSW Soccer Federation. At times during construction, noise levels are expected to exceed the current DEC guidelines. The Proposal is expected to have no impact on noise levels for Meurants Lane residents during operation. The predicted noise impacts for 2016 from the T-way are estimated to be less than the ECRTN criteria for daytime and night time noise levels for a redeveloped road.

The reduced travel times on the T-way service offered by the Proposal would benefit the community through providing a more efficient T-way service, and encouraging the use of public transport over private cars. A reduction in the number of cars on the roads would alleviate existing traffic congestion on main roads (such as Old Windsor Road) and benefit the environment via a reduction in car exhaust fumes which negatively impact upon air quality.

Site Specific Safeguards

- All property acquisitions would be negotiated in accordance with the RTA's Land Acquisition Policy, and compensation in accordance with the *Land Acquisition (Just Terms Compensation) Act, 1991*. Property acquisitions would be resolved between the RTA and property owners prior to the commencement of works.
- Access, or alternative access to residential and commercial properties would be maintained at all times.
- Consultation would be undertaken with potentially affected residences prior to the commencement of works and would be undertaken in accordance with the RTA's *Community Involvement Practice Notes and Resource Manual, 1988*. In addition, consultation would include but not limited to door knocks, newsletters or letter box drops providing information on the proposed works, working hours adhered to and a contact name and number should any complaints wish to be registered.
- A Traffic Control Plan would be prepared in accordance with the RTA's *Traffic Control at Work Sites Manual 2003*, and approved by the RTA prior to implementation. The Traffic Control Plan would include the notification of any traffic alterations or closures.

8.8 Waste Minimisation and Management

Potential Impacts

Waste streams associated with the Proposal during construction include: excavated material, excess concrete, vegetation, topsoil, excess asphalt and gravel, oil/grease, metals, hydraulic fuels and liquids, diesel fuel, paper/cardboard packaging, plastic wrapping/containers, food and other miscellaneous wastes.

Waste streams associated with the Proposal during operation include: pesticides, general litter, food and other miscellaneous wastes, green wastes from landscape maintenance, road maintenance wastes (e.g. asphalt maintenance material).

Site Specific Safeguards

- A Waste Management Plan would be prepared in accordance with RTA's QA Specifications and in accordance with RTA's *Waste Minimisation & Management Guidelines, 1998* and the principles of the WARR Act.
- Trees to be removed would be assessed for their value as millable timber.
- Leaf material and small branches of native vegetation would be chipped and used as mulch in revegetation works.
- There would be no burning of waste.
- All noxious weeds and exotic plant species removed would be bagged and disposed of at a licenced landfill facility.
- All construction materials, surplus soils and wastes generated from the Proposal would be stockpiled and stored at the compound site prior to reuse, recycling or disposal.
- Wastes would not be stored for long periods during construction of the Proposal. Empty drums of fuels, oils or chemicals and fluids would not be stored on site during construction.

In addition, the Resource Management Hierarchy principles of the WARR Act would be adopted as follows:

1. Avoid unnecessary resource consumption as a priority;
2. Avoidance is followed by resource recovery (including reuse of materials, reprocessing recycling, and energy recovery; and
3. Disposal is undertaken as a last resort.

8.9 Summary of Beneficial Effects

The Proposal would have the following beneficial effects:

- Improved connection and integration of local bus services and the T-way services within the Glenwood area; and
- Reduced bus travel times for services to and from Glenwood.

8.10 Summary of Adverse Effects

The Proposal would result in some adverse effects that would include:

- The removal of no more than 0.4ha of highly modified bushland;
- The reduction of NSW Soccer Federation land by 1,995m²; and
- Increased noise levels during construction of the Proposal.

9 Implementation Stage

9.1 Summary of Proposed Environmental Safeguards

Environmental safeguards outlined in this document would be incorporated into the detailed design phase of the Proposal and during construction and operation of the Proposal. These safeguards would minimise any potential adverse impacts arising from the proposed works on the surrounding environment. All safeguards described in this REF and the Decision Report/ Conditions of Approval would be incorporated into the Contractor's Environmental Management Plan (CEMP) and the Project Environmental Management Plan (PEMP).

The CEMP and PEMP (if required) would be developed in accordance with the specifications set out in the RTA's Environmental Protection (Management Plan) – QA Specification G36.

Table 9.1: Site Specific Environmental Safeguards (additional to those contained in Decision Report/Conditions of Approval).

Impact	Environmental Safeguards
Biodiversity	<ul style="list-style-type: none">• Topsoil potentially containing weed propagules would be removed from the Proposal site and disposed of at a licenced landfill facility. Weed infested or contaminated topsoil would not be reused for the proposed works or for revegetation works and would not be stockpiled adjacent to any areas of native vegetation.• All vegetation to be retained would be clearly highlighted on site and on site plans and would be protected with fencing. Protective fencing would be erected beyond the drip-line of trees and erected prior to the commencement of works. All staff would be informed and inducted of the limits of vegetation clearing and the areas of vegetation to be retained.• Should trees containing hollows be removed, they would be removed during the hottest part of the day; to minimise the effects of torpor induced by low temperatures.• Should native arboreal species be found inhabiting hollow trees proposed to be removed, the use of nest boxes and/or relocation would be investigated in consultation with the RTA's Transitways Environmental Adviser.
Non-Indigenous Heritage	<ul style="list-style-type: none">• Should archaeological remains be uncovered during construction, all works would cease within the vicinity of the material/find and the RTA's Transitways Environmental Adviser contacted.
Indigenous Heritage	<ul style="list-style-type: none">• All personnel working on site would receive training in their responsibilities under the National Parks and Wildlife Act 1974.• Should Indigenous heritage items be uncovered during works, all works in the vicinity of the find would cease and the RTA's Aboriginal Programs Consultant, Transitways Environmental Adviser, DEC representative and relevant LALC representative would be contacted. Works would not re-commence until appropriate clearance has been received.
Noise	<ul style="list-style-type: none">• Potentially affected residents would be contacted prior to the commencement of works and would be informed of the proposed works, working hours, and the period of construction.

Impact	Environmental Safeguards
	<p>Residents would also be provided with a contact name and number should they wish to register any complaints.</p> <ul style="list-style-type: none"> • The idling of machinery and equipment when not in use and for prolonged periods of time would be prohibited. • Best management practices would be adopted that are consistent with the RTA's <i>Environmental Noise Management Manual, 2001</i>. • Should reversing alarms be identified as causing noise disturbance then alternative options would be explored in accordance with OH&S requirements and in consultation with the OH&S officer. • Noisy activities, particularly rockbreaking or concrete breaking with a hydraulic hammer, if required, would be carried out between 9am and 12 noon and 2pm 5pm, in accordance with the Conditions of Approval. • All machines would be in good working condition, with particular attention to exhaust silencers, engine covers and other noise reduction devices.
Visual Amenity / Landscape	<ul style="list-style-type: none"> • The construction site would be kept tidy and rubbish free.
Socio-Economic Considerations	<ul style="list-style-type: none"> • All property acquisitions would be negotiated in accordance with the RTA's Land Acquisition Policy, and compensation in accordance with the <i>Land Acquisition (Just Terms Compensation) Act 1991</i>. Property acquisitions would be resolved between the RTA and property owners prior to the commencement of works. • Access, or alternative access to residential and commercial properties would be maintained at all times. • Consultation would be undertaken with potentially affected residences prior to the commencement of works and would be undertaken in accordance with the RTA's <i>Community Involvement Practice Notes and Resource Manual, 1988</i>. In addition, consultation would include but not limited to door knocks, newsletters or letter box drops providing information on the proposed works, working hours adhered to and a contact name and number should any complaints wish to be registered. • A Traffic Control Plan would be prepared in accordance with the RTA's <i>Traffic Control at Work Sites Manual 2003</i>, and approved by the RTA prior to implementation. The Traffic Control Plan would include the notification of any traffic alterations or closures.
Waste Management & Minimisation	<ul style="list-style-type: none"> • A Waste Management Plan would be prepared in accordance with RTA's QA Specifications and in accordance with RTA's Waste Minimisation & Management Guidelines, 1998 and the principles of the WARR Act. • Trees to be removed would be assessed for their value as millable timber. • Leaf material and small branches of native vegetation would be chipped and used as mulch in revegetation works. • There would be no burning of waste. • All noxious weeds and exotic plant species removed would be bagged and disposed of at a licenced landfill facility. • All construction materials, surplus soils and wastes generated from the Proposal would be stockpiled and stored at the compound site

Impact	Environmental Safeguards
	<p>prior to reuse, recycling or disposal.</p> <ul style="list-style-type: none"> • Wastes would not be stored for long periods during construction of the Proposal. Empty drums of fuels, oils or chemicals and fluids would not be stored on site during construction. <p>In addition, the Resource Management Hierarchy principles of the WARR Act would be adopted as follows:</p> <ul style="list-style-type: none"> ➤ Avoid unnecessary resource consumption as a priority; ➤ Avoidance is followed by resource recovery (including reuse of materials, reprocessing recycling, and energy recovery; and ➤ Disposal is undertaken as a last resort.

9.2 Licences and Approvals

Protection of the Environment Operations Act, 1997

The Proposal is not a scheduled works under the *Protection of the Environment Operations Act 1997*, and would therefore not require an Environmental Protection Licence (EPL) for the activity.

Sydney Water Restrictions

Sydney Water has provided the RTA with conditions of approval for use of water for:

- The establishment of new lawn, gardens and vegetation cover by commercial contractors, including the allowed watering times and durations for new works; and
- Construction and maintenance activities, vehicle washing and by professional high pressure cleaning operators.

The conditions are specified in RTA's Environmental Direction 19 February 2004 – Sydney Water Restrictions – Reminder of Conditions. The RTA would ensure that all staff are aware of these conditions and procedures are put in place to ensure compliance with the conditions.

10 Consideration of State and Commonwealth Environmental Factors

10.1 Clause 228(2) Factors (NSW Legislation)

The factors which need to be taken into account when considering the environmental impact of an activity are listed in Clause 228(2) of the *Environmental Planning and Assessment Regulation, 2000*. Those factors have been addressed in Table 10.1 below to ensure that the likely impacts of the proposed activities on the natural and built environment are fully considered.

Table 10.1: Compliance with Clause 228(2) of the EP&A Regulation 2000.

Clause 228(2) Factors	Impact
<p>a) Any environmental impact on a community?</p> <p>The Proposal has the potential for a short-term increase in noise during construction.</p> <p>In the long-term, a positive environmental impact is expected from the Proposal, as it would lead to a reduction of cars along Old Windsor Road, and associated air quality benefits.</p>	<p>Short term negative</p> <p>Long term positive</p>
<p>b) Any transformation of a locality?</p> <p>The Proposal would result in a long-term positive transformation of the locality, as it would help provide an efficient and quick public transport network that would service the local community and improve access to the area.</p>	<p>Long term positive</p>
<p>c) Any environmental impact on the ecosystem of the locality?</p> <p>The Proposal would result in the loss of no more than 0.4ha of remnant bushland. Given the poor quality of this bushland and the presence of bushland nearby which is in better condition, the environmental impact of this loss would be minor.</p>	<p>Minor negative</p>
<p>d) Any reduction of the aesthetics, recreational, scientific or other environmental quality or value of a locality?</p> <p>The Proposal has the potential for a short-term increase in noise during construction.</p> <p>The Proposal would result in a moderate reduction in the aesthetic and recreational value of the locality through the loss of private recreation area and a small amount of remnant roadside vegetation. However, the environmental benefits resulting from less cars on Old Windsor Road and improved access to the area are considered to outweigh these losses.</p>	<p>Short term negative</p> <p>Moderate negative</p>
<p>e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present generations?</p> <p>There is speculation that the study area is situated within the 'Seventh Hill' of Seven Hills. Even if this is the case, any impact of the Proposal on the</p>	<p>Minor negative</p>

Clause 228(2) Factors	Impact
heritage significance of the area would be minimal, given the highly modified nature of the area. The Proposal would have no further impact on the heritage alignment of Old Windsor Road.	
<p>f) Any impact on habitat of any protected fauna (within the meaning of the <i>National Parks and Wildlife Act 1974</i>)?</p> <p>All native fauna are protected under the <i>National Parks and Wildlife Act 1974</i>. The Proposal would result in the loss of a section remnant bushland, which may be foraging and/or nesting habitat for native avifauna. However, given the availability of similar habitat within close proximity to the study area, this impact would be minor.</p>	Minor
<p>g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air?</p> <p>The Proposal would not result in the endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air.</p>	Nil
<p>h) Any long-term effects on the environment?</p> <p>The Proposal would have a positive long term effect on the environment. The streamlining of the rapid bus service would encourage the general public to patronage this service, rather than use private vehicles, and lead to a reduction in the amount of car exhaust fumes released into the environment. This would result in improved air quality of the local area.</p> <p>The Proposal would result in the removal of not more than 0.4ha of highly disturbed roadside vegetation, and any degradation to the quality of the environment caused by this removal would be minor.</p>	<p>Long term positive</p> <p>Minor negative</p>
<p>i) Any degradation of the quality of the environment?</p> <p>The Proposal has the potential for a short-term increase in noise during construction.</p> <p>The Proposal would result in the removal of not more than 0.4ha of highly disturbed roadside vegetation, and any degradation to the quality of the environment caused by this removal would be minor.</p>	<p>Short term negative</p> <p>Minor negative</p>
<p>j) Any risk to the safety of the environment?</p> <p>The risk to the safety of the environment posed by the Proposal is no different to that of the approved T-way design. There is the potential for fuel spillages, sedimentation and erosion in the short term during the construction of the Proposal. Given the presence of a main road alongside the proposed Transitway, there is no increase in the risk for local residents of motor-vehicle related accidents expected.</p>	Short term negative
<p>k) Any reduction in the range of beneficial uses of the environment?</p> <p>The Proposal would result in the loss of approximately 1995m² of NSW Soccer Federation land, currently used for recreational purposes. This would cause a moderate reduction in the range of beneficial uses of the environment.</p>	Moderate negative

Clause 228(2) Factors	Impact
<p>l) Any pollution of the environment?</p> <p>There is the potential for fuel spillages, sedimentation and erosion in the short term during the construction of the Proposal. Safeguard measures outlined in the EIS would minimise these risks.</p> <p>In the long-term, the Proposal is expected to contribute to a reduction in the level of pollution entering the environment from motor vehicle exhausts: a more streamlined public transport service encouraging people to take the bus rather than drive private vehicles.</p>	<p>Short term negative</p> <p>Long term positive</p>
<p>m) Any environmental problems associated with the disposal of waste?</p> <p>All wastes generated, if not re-used, would be disposed of at an approved waste disposal site in accordance with DEC and Blacktown Council policies and guidelines for waste disposal. There are no environmental problems associated with the disposal of waste generated from the Proposal.</p>	<p>Nil</p>
<p>n) Any increased demands on resources, natural or otherwise which are, or are likely to become, in short supply?</p> <p>The Proposal is not likely to place increased demand on any resources, natural or otherwise, which are or are likely to become in short supply.</p>	<p>Nil</p>
<p>o) Any cumulative environmental effect with other existing or likely future activities?</p> <p>The Proposal would have a short term negative cumulative environmental effect with the concurrent construction of the broader T-Way project and the Western Sydney Orbital.</p> <p>The Proposal, viewed in conjunction with other major transport infrastructure projects currently underway or planned for the western Sydney region (such as the Western Sydney Orbital), would have a positive impact on the environment. Improved accessibility to western Sydney, and an improved public transport service within the region, would lead to improved air quality and less cars on main roads in western Sydney.</p>	<p>Short term negative</p> <p>Long term positive</p>

10.2 EPBC Act 1999 Factors (Commonwealth Legislation)

The EPBC Act requires that the following matters of National Environmental Significance (NES) be considered.

Table 10.2: Compliance with Commonwealth EPBC Act requirements.

EPBC Act Factors	Impact
a) Any environmental impact on World Heritage property? There are no World Heritage properties within 5km of the study area, or likely to be impacted upon by the Proposal.	Nil
b) Any environmental impact on National Heritage places? There are no National Heritage places within 5km of the study area.	Nil
c) Any environmental impact on wetlands of international importance? Although the study area is within the same catchment as Towra Point Nature Reserve (a RAMSAR site), it is at a sufficient distance from the reserve to not have any impact upon the reserve.	Nil
d) Any environmental impact on Commonwealth listed threatened species or ecological communities? The Proposal would have no impact on Commonwealth listed threatened species or ecological communities.	Nil
e) Any environmental impact on Commonwealth listed migratory species? The Proposal would have no impact on any Commonwealth listed migratory species.	Nil
f) Does any part of the Proposal involve nuclear action? The Proposal does not involve nuclear action.	Nil
g) Any environmental impact on a Commonwealth Marine area? The Proposal is located inland and thus would not have the potential to impact upon any Commonwealth Marine area.	Nil
In addition: Any impact on Commonwealth Land? The Proposal would not be located on or near Commonwealth Land.	Nil

II Certification

This Review of Environmental Factors provides a true and fair review of the Proposal in relation to its potential effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the Proposal.

Susan Westcott
Environmental Officer
Date:

I have examined this Review of Environmental Factors and the certification by Susan Westcott and accept the Review of Environmental Factors on behalf of the RTA.

Matty Mathivanar
Project Manager
Date:

12 References

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APPENDIX A
SITE VISIT PHOTOS



Photo 1. View east from Meurants Lane.



Photo 2. Residential development, southern side of eastern end of Meurants Lane.



Photo 3. View west down Meurants Lane.

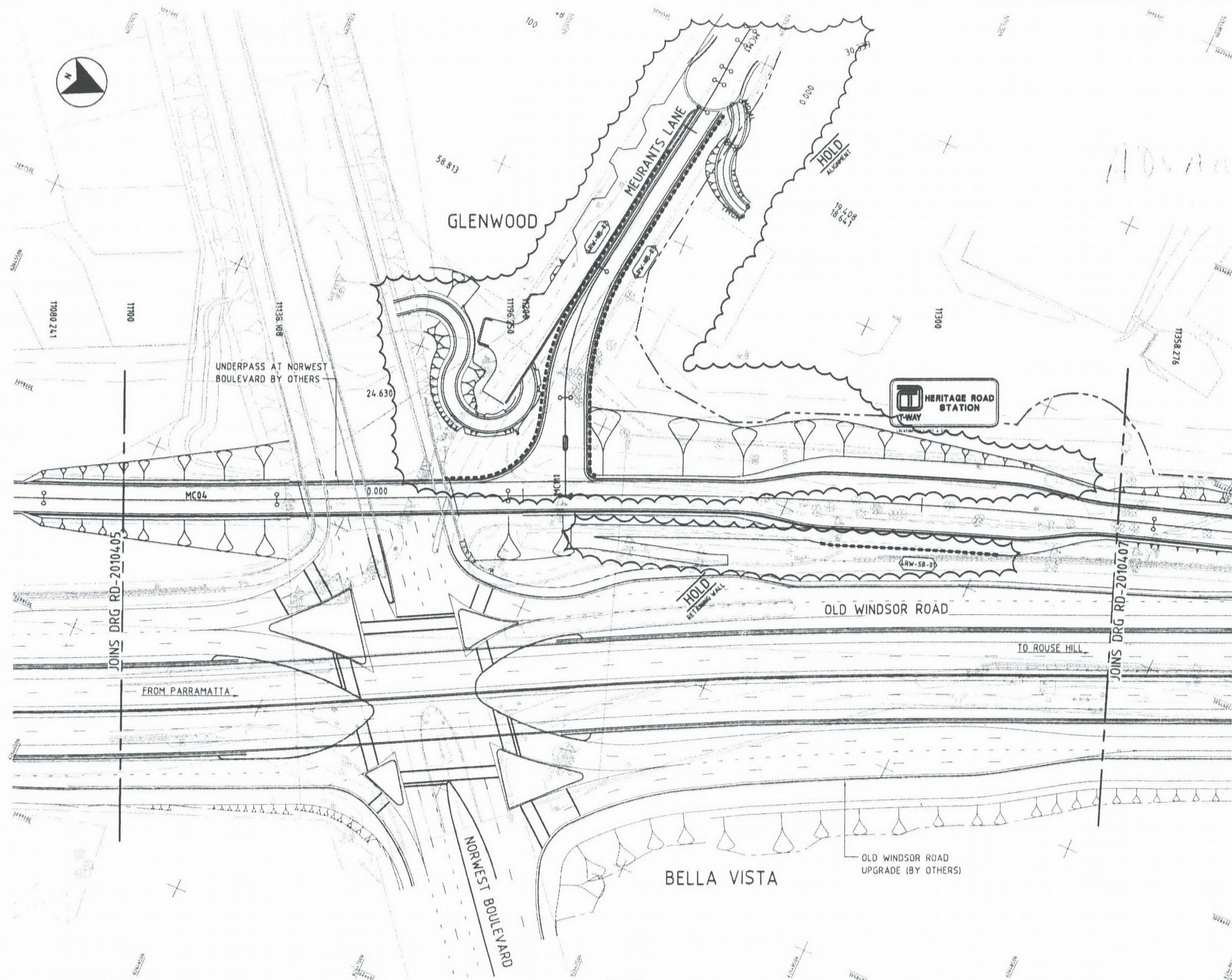


Photo 4. Area to be cleared, possibly part of the 'Seventh Hill'.

APPENDIX B

PROPOSAL DETAILS

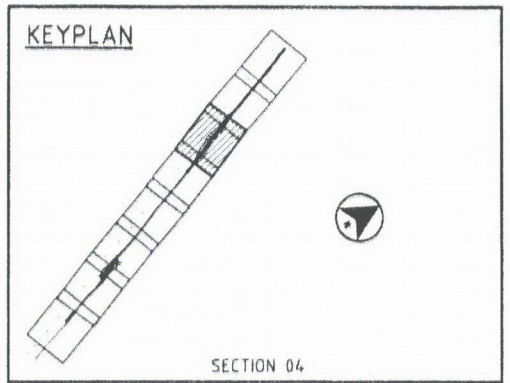
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LEGEND

- CONTROL LINE
- LEIGHTONS INTERPRETED BOUNDARY
- RETAINING WALL AND REFERENCE TAG
(INDICATIVE LOCATION ONLY - (REFER RETAINING WALL DRAWINGS)

- NOTES**
- FOR GENERAL CIVIL NOTES REFER DRAWING GE-003001.
 - FOR GENERAL ROADWORKS NOTES REFER DRAWING RD-010001.
 - FOR GENERAL DRAWING INDEX OF RELATED DRAWINGS REFER GE-001002.
 - FOR KERB, GUTTER, RAMP AND BARRIER TYPES & LOCATIONS REFER ROAD FURNITURE DRAWINGS ('RF' SERIES).
 - NOISE WALLS NOT SHOWN, REFER NOISE WALL DRAWINGS ('NW' SERIES).
 - LINEMARKING AND PAVEMENT SYMBOLS NOT SHOWN, REFER LINEMARKING AND SIGNAGE DRAWINGS ('LS' SERIES).
 - FOR EXTENTS OF PAVEMENT WORKS REFER TO THE PAVEMENT PLANS ('PV' SERIES).

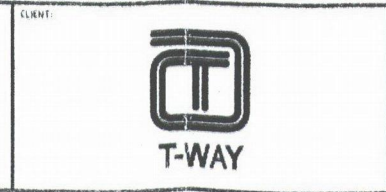
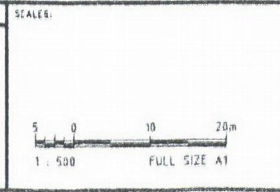


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No.	BY	DATE	DESCRIPTION
			WVR

DESIGNERS SITE NOTE			
REF. No(s):			
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DESIGN MODEL FILE USED FOR DOCUMENTATION OF THIS DRAWING
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DESIGNER:

MAUNSELL | AECOM

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NOT FOR CONSTRUCTION

NORTH-WEST TRANSITWAY

ALIGNMENT PLAN
OLD WINDSOR ROAD
MC04 - STN 11100m TO 11350m

STATUS: DETAILED DESIGN

DRAWING NO: N777-RD-2010406

REV: 01

APPENDIX C
CORRESPONDENCE

RECEIVED

10 DEC 2004

**DARUG CUSTODIAN ABORIGINAL
CORPORATION**

PO BOX 36 KELLYVILLE 2155

PH: 45775181 FAX: 45775098 MOB: 0415770163

ABN: 819 35 722 930

8TH December 2004.~~Roads and Traffic Authority~~

PO Box 558

Blacktown 2148

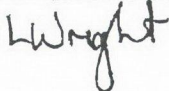
Attention: Stephen Sherwin

SUBJECT: T-WAY Old Windsor / Meurants Lane.

Dear Stephen

At our meeting on the 6th of December at Old Windsor Road and Meurants Lane we discussed two proposals for the T-Way I walked over the area proposed and the soil profiles did not look to me to be intact I found that there has been disturbance to the natural soil profiles in the past therefore The Darug Custodian Aboriginal Corporation have no objections to either proposal at this area.

Leanne Wright.



NORTH-WEST T-WAY: PROPOSED MODIFICATIONS AT MEURANTS LANE, GLENWOOD

As part of the construction of the North-West T-way, the Roads and Traffic Authority (RTA) is proposing a modification to the project at Meurants Lane, Glenwood.

The proposed modification aims to provide improved connection and integration of local bus services with North-West T-way services through the provision of a Bus Only link road.

This Bus Only link road will run from Meurants Lane to connect with the T-way corridor along Old Windsor Road. The eastern end of Meurants Lane will remain closed to general traffic.

As part of the proposed modification, a bus turnaround facility will also be provided on the T-way corridor just north of Heritage T-way Station near the Soccer Federation which will provide residents of Glenwood and other patrons with the ability to change bus services at Heritage T-way station.

Without the link road, buses would have to travel via Greenhill Drive, Norwest Boulevard extension and Old Windsor Road before being able to access the T-way near Norbrik, taking additional time and making a longer journey for passengers using these services.

To ensure that access to properties is maintained, a new service road on the southern side of Meurants Lane will be provided, as illustrated in the attached plan.

The RTA is currently preparing a Review of Environmental Factors (REF) as part of the modified proposal outlined above.

It is extremely important that interested and affected residents are involved in this process. As part of the REF consultation process, you are invited to comment on the proposal and to advise of any comments, potential improvements or concerns you may have with the proposed modification

Comments received will be considered in the preparation and finalisation of the REF.

If you require any additional information or would like to discuss this matter further please call the RTA's Project Manager, Matty Mathivanar on 8805 1977.

Written comments should be sent to Roads and Traffic Authority, Lot 8 Pikes Lane, Eastern Creek NSW 2766 or emailed to Matty_Mathivanar@rta.nsw.gov.au. Comments should be received by close of business Friday 20 May 2005.

For general information about the design and construction of the North-West T-way you can call the T-way Info Line on 1800 335 742 or visit the website at www.t-way.nsw.gov.au.

APPENDIX D
DATABASE SEARCH
RESULTS



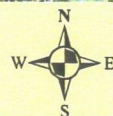
Threatened Fauna and FLora in the Vicinity
of Proposed T-ways modifications at Meurants Lane, Old Windsor Road



0 500 1,000 2,000 3,000 Meters



Cumberland Plain Vegetation Map surrounding
of Proposed T-ways modifications at Meurants Lane, Old Windsor Road



0 100 200 Meters

Map produced by RTA Environmental Technology
Date: 2012/2004
Orthoreview aerial photography under license to RTA by Lands Department NSW
Cumberland Plain Western Sydney, NSW National Parks & Wildlife Service, 19/2002
Map data copyright 2004 Telstra Corporation Limited (Sensis Pty Ltd) and Universal Press Limited



Australian Government

Department of the Environment and Heritage

Protected Matters Search Tool

You are here: [DEH Home](#) > [EPBC Act](#) > [Search](#)

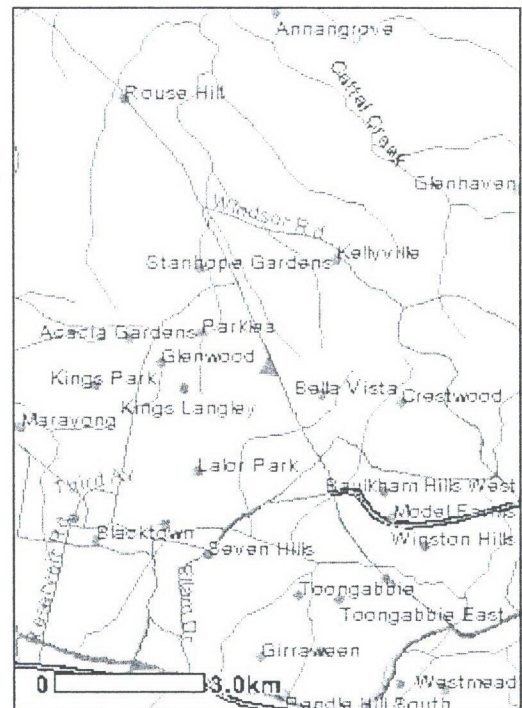
8 December 2004 12:43

EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected. Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

You may wish to print this report for reference before moving to other pages or websites.

The Australian Natural Resources Atlas at <http://www.environment.gov.au/atlas> may provide further environmental information relevant to your selected area. Information about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.deh.gov.au/epbc/assessmentsapprovals/index.html>



Search Type: Area

Buffer: 5 km

Coordinates: -33.734695,150.944145, -33.734965,150.943649, -33.736722,150.944415, -33.740280,150.942658, -33.740461,150.942568, -33.74113,150.946938



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see <http://www.deh.gov.au/epbc/assessmentsapprovals/guidelines/index.html>.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Significance: (Ramsar Sites)	1
Commonwealth Marine Areas:	None
Threatened Ecological Communities:	2
Threatened Species:	24
Migratory Species:	8

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place and the heritage values of a place on the Register of the National Estate. Information on the new heritage laws can be found at <http://www.deh.gov.au/heritage/index.html>.

Please note that the current dataset on Commonwealth land is not complete. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species,

whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at <http://www.deh.gov.au/epbc/permits/index.html>.

Commonwealth Lands:	3
Commonwealth Heritage Places:	None
Places on the RNE:	5
Listed Marine Species:	12
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	None
Other Commonwealth Reserves:	None
Regional Forest Agreements:	None

Details

Matters of National Environmental Significance

Wetlands of International Significance [[Dataset Information](#)]
(Ramsar Sites)

<u>TOWRA POINT NATURE RESERVE</u>	Within same catchment as Ramsar site
-----------------------------------	--------------------------------------

Threatened Ecological Communities [[Dataset Information](#)]

Status	Type of Presence
--------	------------------

<u>Cumberland Plain Woodlands</u>	Endangered	Community likely to occur within area
-----------------------------------	------------	---------------------------------------

<u>Shale/Sandstone Transition Forest</u>	Endangered	Community likely to occur within area
--	------------	---------------------------------------

Threatened Species [[Dataset Information](#)]

Status	Type of Presence
--------	------------------

Birds

<u>Lathamus discolor</u> Swift Parrot	Endangered	Species or species habitat may occur within area
--	------------	--

<u>Rostratula australis</u> Australian Painted Snipe	Vulnerable	Species or species habitat may occur within area
---	------------	--

<u>Xanthomyza phrygia</u> Regent Honeyeater	Endangered	Species or species habitat likely to occur within area
--	------------	--

Fishes

<u>Macquaria australasica</u> * Macquarie Perch	Endangered	Species or species habitat may occur within area
--	------------	--

<i>Prototroctes maraena</i> *	Vulnerable	Species or species habitat likely to occur within area
Australian Grayling		
Frogs		
<i>Heleioporus australiacus</i> *	Vulnerable	Species or species habitat likely to occur within area
Giant Burrowing Frog		
<i>Litoria aurea</i> *	Vulnerable	Species or species habitat likely to occur within area
Green and Golden Bell Frog		
<i>Mixophyes balbus</i> *	Vulnerable	Species or species habitat likely to occur within area
Stuttering Frog, Southern Barred Frog (in Victoria)		
<i>Mixophyes iteratus</i> *	Endangered	Species or species habitat likely to occur within area
Southern Barred Frog, Giant Barred Frog		
Mammals		
<i>Chalinolobus dwyeri</i>	Vulnerable	Species or species habitat may occur within area
Large-eared Pied Bat, Large Pied Bat		
<i>Dasyurus maculatus maculatus</i> (SE mainland population)	Endangered	Species or species habitat likely to occur within area
Spot-tailed Quoll, Spotted-tail Quoll, Tiger Quoll (southeastern mainland population)		
<i>Petrogale penicillata</i>	Vulnerable	Species or species habitat may occur within area
Brush-tailed Rock-wallaby		
<i>Potorous tridactylus tridactylus</i>	Vulnerable	Species or species habitat may occur within area
Long-nosed Potoroo (SE mainland)		
<i>Pteropus poliocephalus</i>	Vulnerable	Species or species habitat likely to occur within area
Grey-headed Flying-fox		
Reptiles		
<i>Hoplocephalus bungaroides</i> *	Vulnerable	Species or species habitat likely to occur within area
Broad-headed Snake		
Plants		
<i>Acacia bynoeana</i> *	Vulnerable	Species or species habitat likely to occur within area
Bynoe's Wattle, Tiny Wattle		
<i>Acacia pubescens</i> *	Vulnerable	Species or species habitat likely to occur within area
Downy Wattle, Hairy Stemmed Wattle		
<i>Cryptostylis hunteriana</i>	Vulnerable	Species or species habitat may occur within area
Leafless Tongue-orchid		
<i>Darwinia biflora</i>	Vulnerable	Species or species habitat likely to occur within area
<i>Melaleuca deanei</i>	Vulnerable	Species or species habitat may occur within area
Deane's Melaleuca		
<i>Persoonia hirsuta</i> *	Endangered	Species or species habitat likely to occur within area
<i>Pimelea curviflora</i> var. <i>curviflora</i>	Vulnerable	Species or species habitat likely to occur within area
<i>Pimelea spicata</i>	Endangered	Species or species habitat may occur within area
<i>Tetratheca glandulosa</i>	Vulnerable	Species or species habitat likely to occur within area

Migratory Species [[Dataset Information](#)]

Status

Type of Presence

Migratory Terrestrial Species**Birds**

Haliaeetus leucogaster
White-bellied Sea-Eagle

Migratory

Species or species habitat likely to occur within area

Hirundapus caudacutus
White-throated Needletail

Migratory

Species or species habitat may occur within area

Monarcha melanopsis
Black-faced Monarch

Migratory

Breeding may occur within area

Myiagra cyanoleuca
Satin Flycatcher

Migratory

Breeding likely to occur within area

Rhipidura rufifrons
Rufous Fantail

Migratory

Breeding may occur within area

Xanthomyza phrygia
Regent Honeyeater

Migratory

Species or species habitat likely to occur within area

Migratory Wetland Species**Birds**

Gallinago hardwickii
Latham's Snipe, Japanese Snipe

Migratory

Species or species habitat may occur within area

Rostratula benghalensis s. lat.
Painted Snipe

Migratory

Species or species habitat may occur within area

Other Matters Protected by the EPBC ActListed Marine Species [[Dataset Information](#)]

Status

Type of Presence

Birds

Apus pacificus
Fork-tailed Swift

Listed -
overfly
marine
area

Species or species habitat may occur within area

Ardea alba
Great Egret, White Egret

Listed -
overfly
marine
area

Species or species habitat may occur within area

Ardea ibis
Cattle Egret

Listed -
overfly
marine
area

Species or species habitat may occur within area

Gallinago hardwickii
Latham's Snipe, Japanese Snipe

Listed -
overfly
marine
area

Species or species habitat may occur within area

Haliaeetus leucogaster
White-bellied Sea-Eagle

Listed

Species or species habitat likely to occur within area

Hirundapus caudacutus
White-throated Needletail

Listed -
overfly
marine
area

Species or species habitat may occur within area

Lathamus discolor
Swift Parrot

Listed -
overfly

Species or species habitat may occur within area

	marine area	
<i>Merops ornatus</i> Rainbow Bee-eater	Listed - overfly marine area	Species or species habitat may occur within area
<i>Monarcha melanopsis</i> Black-faced Monarch	Listed - overfly marine area	Breeding may occur within area
<i>Myiagra cyanoleuca</i> Satin Flycatcher	Listed - overfly marine area	Breeding likely to occur within area
<i>Rhipidura rufifrons</i> Rufous Fantail	Listed - overfly marine area	Breeding may occur within area
<i>Rostratula benghalensis s. lat.</i> Painted Snipe	Listed - overfly marine area	Species or species habitat may occur within area

Commonwealth Lands [[Dataset Information](#)]

Communications, Information Technology and
the Arts - Australian Postal Corporation

Communications, Information Technology and
the Arts - Telstra Corporation Limited

Defence - Defence Housing Authority

Places on the RNE [[Dataset Information](#)]

Note that not all Indigenous sites may be listed.

Historic

[Bella Vista Complex NSW](#)

[Chelsea Farm NSW](#)

[Grantham Poultry Research Station \(former\) NSW](#)

[Old Windsor Road Section NSW](#)

[St Michaels Catholic Church \(former\) NSW](#)

Caveat

The information presented in this report has been provided by a range of data sources as
[acknowledged](#) at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in
determining obligations under the *Environment Protection and Biodiversity Conservation Act 1999*.
It holds mapped locations of World Heritage and Register of National Estate properties, Wetlands of
International Importance, Commonwealth and State/Territory reserves, listed threatened, migratory
and marine species and listed threatened ecological communities. Mapping of Commonwealth land
is not complete at this stage. Maps have been collated from a range of sources at various
resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under "type of presence". For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

Only selected species covered by the migratory and marine provisions of the Act have been mapped.

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers.

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites;
- seals which have only been mapped for breeding sites near the Australian continent.

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Acknowledgments

This database has been compiled from a range of data sources. Environment Australia acknowledges the following custodians who have contributed valuable data and advice:

- New South Wales National Parks and Wildlife Service
- Department of Sustainability and Environment, Victoria
- Department of Primary Industries, Water and Environment, Tasmania
- Department of Environment and Heritage, South Australia Planning SA
- Parks and Wildlife Commission of the Northern Territory
- Environmental Protection Agency, Queensland
- Birds Australia
- Australian Bird and Bat Banding Scheme
- Australian National Wildlife Collection

- [Natural history museums of Australia](#)
- [Queensland Herbarium](#)
- [National Herbarium of NSW](#)
- [Royal Botanic Gardens and National Herbarium of Victoria](#)
- [Tasmanian Herbarium](#)
- [State Herbarium of South Australia](#)
- [Northern Territory Herbarium](#)
- [Western Australian Herbarium](#)
- [Australian National Herbarium, Atherton and Canberra](#)
- [University of New England](#)
- Other groups and individuals

ANUCLIM Version 1.8, Centre for Resource and Environmental Studies, Australian National University was used extensively for the production of draft maps of species distribution. Environment Australia is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Last updated:

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What is the weather usually like?

- Climate Averages for Australian Sites -

Averages for SEVEN HILLS (COLLINS ST)

Make sure you understand what the Climate Averages are all about before you make use of the following information. A comma separated text file of these averages is also available for download which can be graphed in software such as a spreadsheet

067026	SEVEN HILLS (COLLINS ST)					Commenced: 1950			Last record		
Latitude:-33.7704 S		Longitude: 150.9318 E				Elevation: 50.0 m			State: N		
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	
Mean Daily Max Temp (deg C)											
28.3	27.7	27.0	24.1	20.0	17.5	17.4	18.6	21.5	23.8	26.3	
Mean no. Days, Max >= 40.0 deg C											
0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Mean no. Days, Max >= 35.0 deg C											
3.6	2.2	1.1	0.0	0.0	0.0	0.0	0.0	0.1	0.5	1.7	
Mean no. Days, Max >= 30.0 deg C											
10.3	8.8	6.3	1.5	0.0	0.0	0.0	0.0	0.8	4.0	6.0	
Highest Max Temp (deg C)											
41.4	41.1	40.0	33.6	28.3	24.0	25.8	27.8	35.0	36.6	39.0	
Mean Daily Min Temp (deg C)											
16.5	17.0	15.7	12.3	8.3	6.3	4.5	5.9	7.9	11.0	12.9	
Mean no. Days, Min <= 2.0 deg C											
0.0	0.0	0.0	0.0	0.7	3.6	6.3	2.8	0.6	0.0	0.0	
Mean no. Days, Min <= 0.0 deg C											
0.0	0.0	0.0	0.0	0.0	0.5	1.3	0.3	0.0	0.0	0.0	
Lowest Min Temp (deg C)											
8.9	8.3	5.3	4.4	0.8	-1.1	-3.9	-0.8	0.3	3.3	6.1	
Mean 9am Air Temp (deg C)											
22.5	22.2	20.7	17.7	13.4	10.6	9.7	12.1	15.3	18.4	20.2	
Mean 9am Wet-bulb Temp (deg C)											
18.7	19.1	17.7	15.3	11.4	9.2	7.9	9.2	11.8	14.7	16.2	
Mean 9am Dew Point Temp (deg C)											
16.1	17.1	16.0	13.6	9.3	7.5	5.8	6.4	8.7	12.0	13.8	
Mean 9am Relative Humidity (%)											
69	75	76	77	77	82	78	70	65	68	68	
Mean 9am Wind Speed (km/hr)											
5.3	5.3	5.6	4.2	4.4	5.5	5.5	5.6	5.9	6.0	6.2	
Mean 3pm Air Temp (deg C)											
24.9	...	...	...	...	...	...	18.8	16.8	22.8	22.1	
Mean 3pm Wet-bulb Temp (deg C)											
20.4	...	...	...	...	...	...	...	...	16.0	17.3	
Mean 3pm Dew Point Temp (deg C)											
18.5	18.0	...	...	...	7.0	...	...	...	10.0	12.0	

Mean 3pm Relative Humidity (%)

64	60	57	46	54
----	----	-----	-----	-----	----	-----	-----	-----	----	----

Mean Rainfall (mm)

106.4	110.9	107.5	74.8	74.9	76.9	44.8	58.3	44.5	71.1	81.8
-------	-------	-------	------	------	------	------	------	------	------	------

Median (Decile 5) Rainfall (mm)

86.2	91.1	95.6	54.4	44.5	47.6	32.2	31.1	35.3	51.9	73.5
------	------	------	------	------	------	------	------	------	------	------

Decile 9 Rainfall (mm)

210.6	264.0	232.4	166.1	168.3	161.6	112.3	167.7	82.2	169.6	169.2	1
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Decile 1 Rainfall (mm)

19.5	20.5	19.0	13.0	8.5	6.9	3.5	7.3	3.9	8.7	11.8
------	------	------	------	-----	-----	-----	-----	-----	-----	------

Mean no. of Raindays

10.5	11.5	11.7	8.8	9.3	9.5	7.1	7.8	8.0	9.9	9.9
------	------	------	-----	-----	-----	-----	-----	-----	-----	-----

Highest Monthly Rainfall (mm)

440.1	474.2	331.9	455.6	395.4	489.2	173.7	394.2	223.4	181.2	364.6	2
-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	---

Lowest Monthly Rainfall (mm)

9.0	3.8	4.1	2.2	2.3	1.4	0.0	0.0	0.9	0.0	3.6
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Highest Recorded Daily Rain (mm)

161.0	150.0	121.6	120.6	169.4	133.4	93.6	250.0	141.7	63.8	102.9
-------	-------	-------	-------	-------	-------	------	-------	-------	------	-------

Mean no. of Clear Days

3.3	5.0	1.5	6.5	6.0	3.5	9.0	7.0	7.0	7.0	5.0
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Mean no. of Cloudy Days

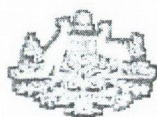
8.0	9.0	6.0	3.5	4.0	3.5	1.5	4.0	5.5	6.5	9.0
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Last modified 16 August 2004

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Emission report

You are here: [NPI Home](#) > [Database Search](#)

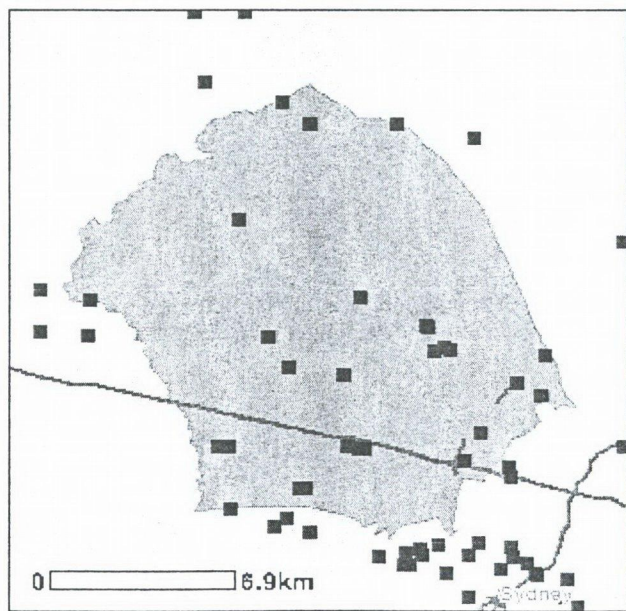
NPI location report - All sources: Blacktown (C), NSW

15 May 2005 17:15



The National Pollutant Inventory (NPI) has pollutant emissions from various industrial facility sources, and diffuse sources. Diffuse sources are from small facilities, transport and households.

This report includes data for industrial facilities and diffuse sources (if available for this region) for the 2003 - 2004 NPI reporting year for the region selected.



Map of Blacktown (C), NSW

NPI facilities are shown as ■

Detail

- [Summary](#)
- [Top sources by substance](#)

Other reports for this region are below.

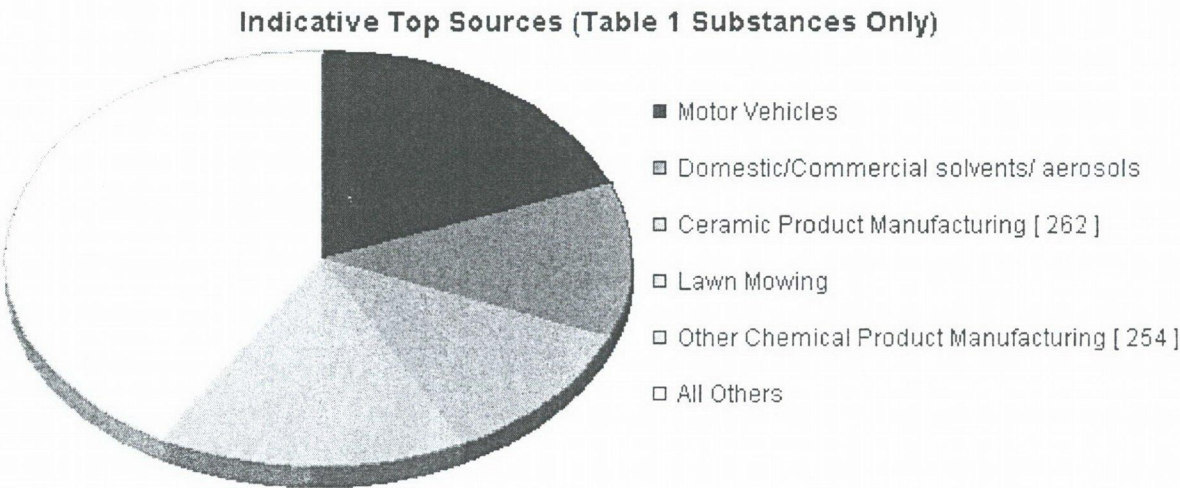
- Location report for industry facility sources only
- Location report for diffuse sources only (if available)
- Emissions from individual facilities

How we live impacts pollutant emissions. There are actions we can all take to decrease pollution.

- What you can do to decrease pollution
- Using and interpreting NPI data
- Disclaimer has further information about the use of NPI data.

Summary

- 56 substances from 50 sources were found.
- 26 facilities reported to the NPI.
- Diffuse data was collected for 35 sources.
- Indicative top sources are shown in the pie chart. Note that only substances listed on Table 1 were used in the calculation. These substances were required to be reported during the first three reporting years.
- Table 1 substances that industrial reporters had to consider for the first three reporting years




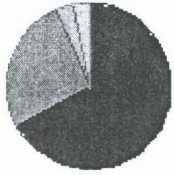
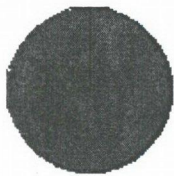
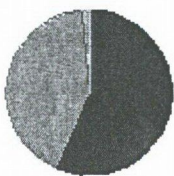
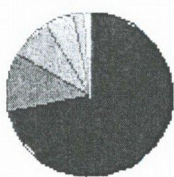
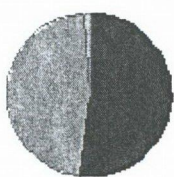
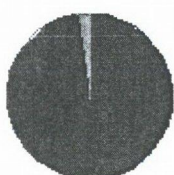
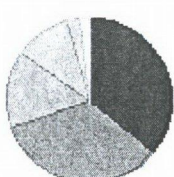
The top sources pie chart above gives a broad snapshot of NPI emissions in this region. The chart is derived by converting each emission into proportional units and then summing the proportional units. This calculation does not account for any variation in toxicity or ground level concentration of these substances.

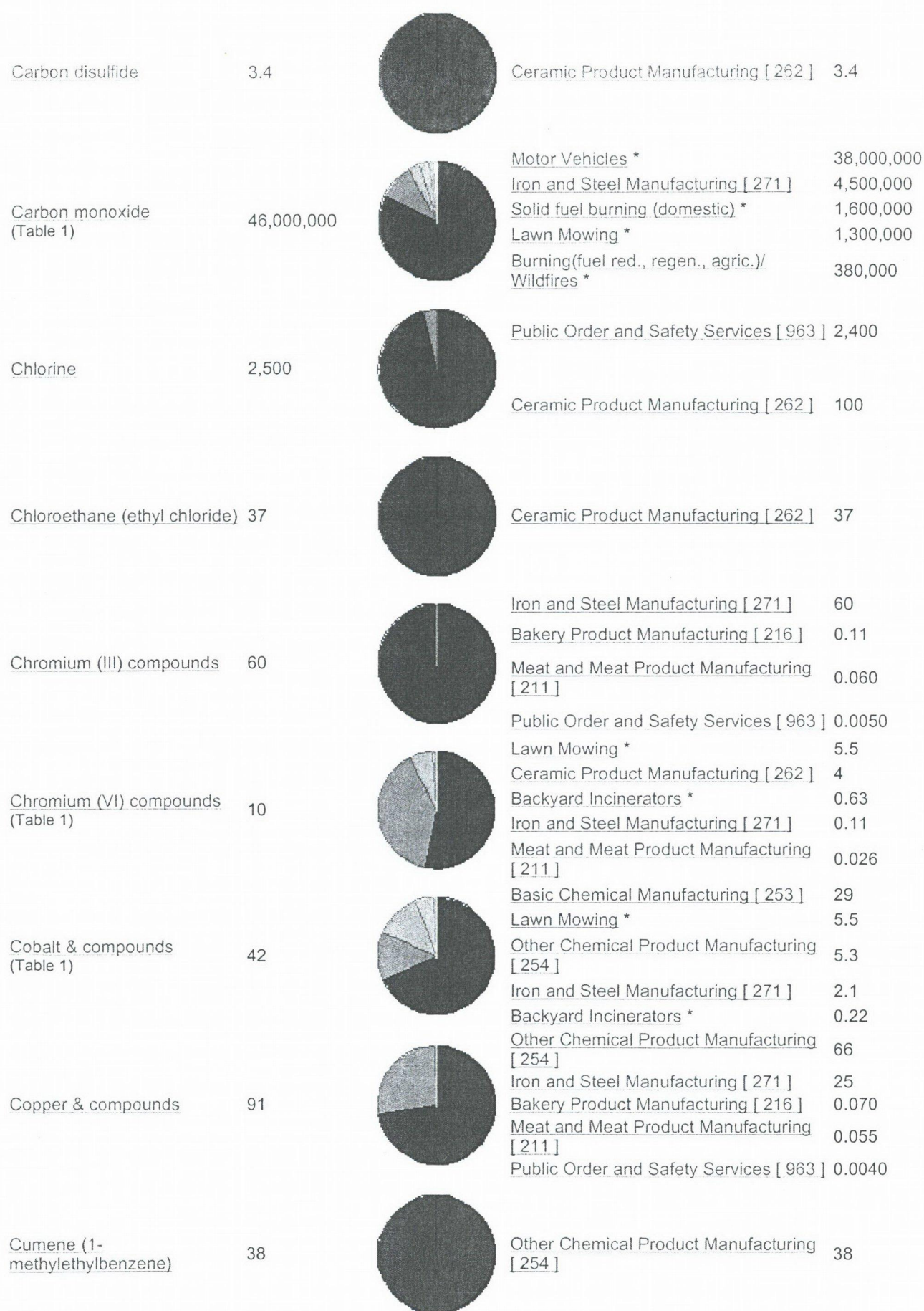
For more information, refer to individual substances in the table below.



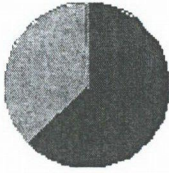


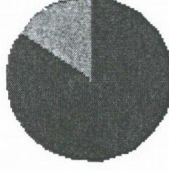
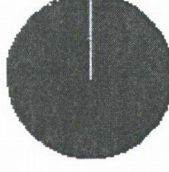
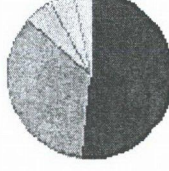
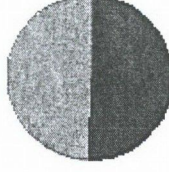
Top sources by substance - Blacktown (C), NSW

The table shows emissions of all NPI substances in this region, and the top sources for each substance. All emission amounts have been rounded to two significant figures. Note that totals may differ from the sum of the individual amounts because of this rounding. Source names for industrial reporting facilities are shown as ANZSIC Groups; source names for diffuse data are marked with *. Click on the source name for more information about that source for this region.


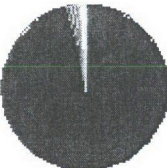
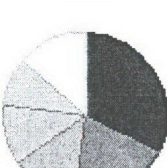
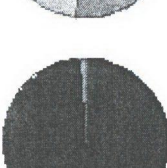
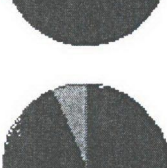
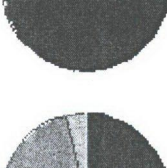
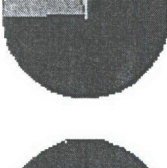
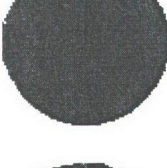

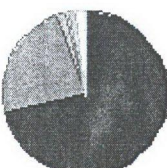


Substance (sort by total emission)	Total Emissions (kg/year)	Emission Sources Distribution (pie chart)	Name (Diffuse Data Source * or ANZSIC Group)	Sub-total (kg/year)
Acetic acid (ethanoic acid)	250		Basic Chemical Manufacturing [253]	250

Acetone (Table 1)	19,000		Motor Vehicles *	8,900
			Motor Vehicle Refinishing *	4,700
			Burning(fuel red., regen., agric.)/ Wildfires *	2,900
			Other Chemical Product Manufacturing [254]	1,200
			Basic Chemical Manufacturing [253]	850
			Meat and Meat Product Manufacturing [211]	19,000
			Water Supply, Sewerage and Drainage Services [370]	7,500
Ammonia (total)	29,000		Motor Vehicle and Part Manufacturing [281]	990
			Public Order and Safety Services [963]	860
Antimony & compounds	2.1		Ceramic Product Manufacturing [262]	2.1
Arsenic & compounds (Table 1)	5.9		Iron and Steel Manufacturing [271]	3.4
			Ceramic Product Manufacturing [262]	2.5
			Backyard Incinerators *	0.072
			Bakery Product Manufacturing [216]	0.020
			Meat and Meat Product Manufacturing [211]	0.013
Benzene (Table 1)	190,000		Motor Vehicles *	130,000
			Lawn Mowing *	21,000
			Solid fuel burning (domestic) *	15,000
			Service stations *	10,000
			Burning(fuel red., regen., agric.)/ Wildfires *	3,800
Beryllium & compounds	0.064		Ceramic Product Manufacturing [262]	0.033
			Iron and Steel Manufacturing [271]	0.030
			Meat and Meat Product Manufacturing [211]	0.00070
1,3-Butadiene (vinyl ethylene) (Table 1)	2,700		Lawn Mowing *	2,700
			Backyard Incinerators *	64
Cadmium & compounds (Table 1)	3.5		Ceramic Product Manufacturing [262]	1.3
			Backyard Incinerators *	1.3
			Ceramic Product Manufacturing [262]	1.2
			Solid fuel burning (domestic) *	0.53
			Iron and Steel Manufacturing [271]	0.37
			Bakery Product Manufacturing [216]	0.090

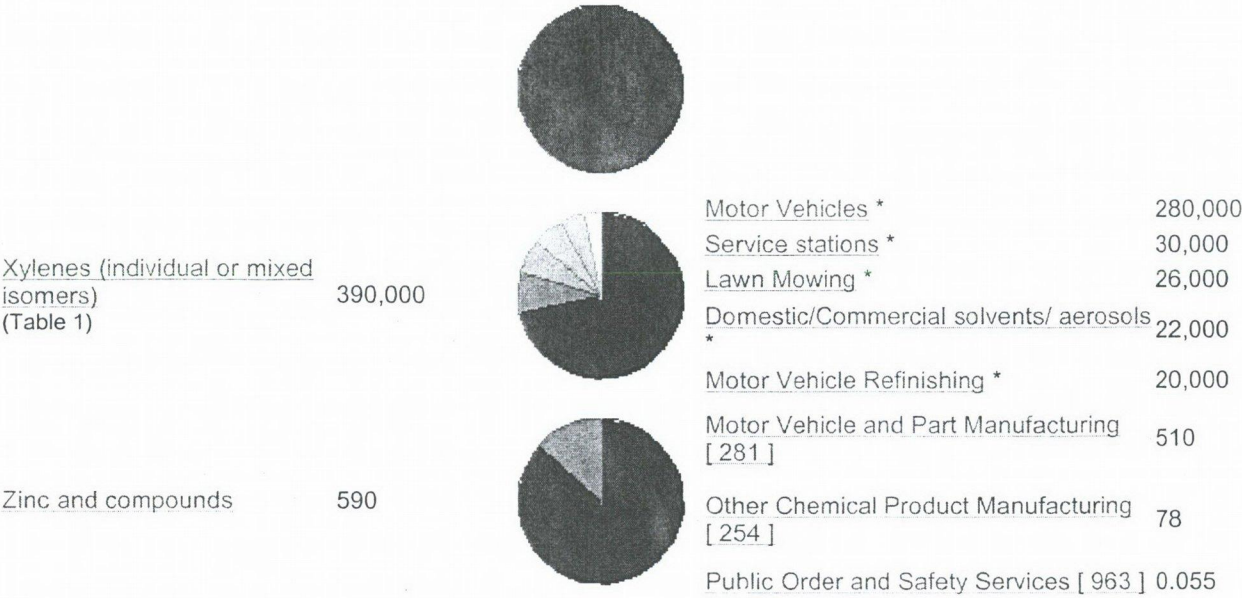


Cyanide (inorganic) compounds (Table 1)	1,300		Motor Vehicle and Part Manufacturing [281]	1,300
Dibutyl phthalate	49		Other Chemical Product Manufacturing [254]	49
Ethanol	5,300		Beverage and Malt Manufacturing [218]	3,300
			Other Chemical Product Manufacturing [254]	1,900
			Basic Chemical Manufacturing [253]	15
Ethyl acetate	460		Other Chemical Product Manufacturing [254]	460
Ethylbenzene	3.5		Ceramic Product Manufacturing [262]	3.5
Ethylene glycol (1,2-ethanediol) (Table 1)	5,200		Domestic/Commercial solvents/ aerosols *	4,400
			Architectural Surface Coatings *	810
			Other Chemical Product Manufacturing [254]	4
Fluoride compounds (Table 1)	5,600		Ceramic Product Manufacturing [262]	5,600
			Iron and Steel Manufacturing [271]	18
			Other Chemical Product Manufacturing [254]	11
			Electricity Supply [361]	5.7
			Public Order and Safety Services [963]	0.031
Formaldehyde (methyl aldehyde)	210		Ceramic Product Manufacturing [262]	110
			Basic Chemical Manufacturing [253]	74
			Other Chemical Product Manufacturing [254]	12
			Motor Vehicle and Part Manufacturing [281]	10
			Bakery Product Manufacturing [216]	6.3
n-Hexane	300		Bakery Product Manufacturing [216]	150
			Other Chemical Product Manufacturing [254]	150
			Ceramic Product Manufacturing [262]	13,000
			Basic Chemical Manufacturing [253]	310

Hydrochloric acid	14,000		Electricity Supply [361]	82
			Other Chemical Product Manufacturing [254]	0.30
Hydrogen sulfide	1,300		Motor Vehicle and Part Manufacturing [281]	1,300
			Water Supply, Sewerage and Drainage Services [370]	10
Lead & compounds (Table 1)	320		Other Chemical Product Manufacturing [254]	140
			Iron and Steel Manufacturing [271]	120
			Lawn Mowing *	50
			Ceramic Product Manufacturing [262]	12
			Backyard Incinerators *	1
Manganese & compounds	1,300		Iron and Steel Manufacturing [271]	800
			Motor Vehicle and Part Manufacturing [281]	500
			Ceramic Product Manufacturing [262]	23
			Other Chemical Product Manufacturing [254]	1.1
Mercury & compounds (Table 1)	0.97		Ceramic Product Manufacturing [262]	0.59
			Backyard Incinerators *	0.26
			Iron and Steel Manufacturing [271]	0.070
			Bakery Product Manufacturing [216]	0.020
			Meat and Meat Product Manufacturing [211]	0.016
Methanol (Table 1)	77,000		Domestic/Commercial solvents/ aerosols *	76,000
			Basic Chemical Manufacturing [253]	490
			Other Chemical Product Manufacturing [254]	20
Methyl ethyl ketone (Table 1)	39,000		Motor Vehicle Refinishing *	16,000
			Other Chemical Product Manufacturing [254]	8,500
			Motor Vehicle and Part Manufacturing [281]	7,300
			Domestic/Commercial solvents/ aerosols *	5,500
Methyl isobutyl ketone (Table 1)	4,100		Solid fuel burning (domestic) *	1,200
			Motor Vehicle Refinishing *	2,100
			Other Chemical Product Manufacturing [254]	1,200
			Domestic/Commercial solvents/ aerosols *	830
Nickel & compounds	22		Iron and Steel Manufacturing [271]	11
			Ceramic Product Manufacturing [262]	5.7
			Lawn Mowing *	5.5
			Backyard Incinerators *	0.36
			Bakery Product Manufacturing [216]	0.18

Nitric acid	83		Basic Chemical Manufacturing [253]	83
Oxides of Nitrogen (Table 1)	5,800,000		Motor Vehicles *	5,600,000
			Construction Material Mining [141]	45,000
			Electricity Supply [361]	41,000
			Iron and Steel Manufacturing [271]	39,000
			Ceramic Product Manufacturing [262]	33,000
Particulate Matter 10.0 um (Table 1)	820,000		Motor Vehicles *	260,000
			Solid fuel burning (domestic) *	160,000
			Ceramic Product Manufacturing [262]	110,000
			Iron and Steel Manufacturing [271]	96,000
			Burning(fuel red., regen., agric.)/ Wildfires *	77,000
Phenol	490		Motor Vehicle and Part Manufacturing [281]	490
			Ceramic Product Manufacturing [262]	6.8
Phosphoric acid	260		Basic Chemical Manufacturing [253]	240
			Other Chemical Product Manufacturing [254]	16
Polycyclic aromatic hydrocarbons (Table 1)	5,100		Solid fuel burning (domestic) *	3,800
			Lawn Mowing *	1,100
			Burning(fuel red., regen., agric.)/ Wildfires *	200
			Petroleum and Coal Product Manufacturing n.e.c. [252]	1.4
			Iron and Steel Manufacturing [271]	0.22
Selenium & compounds	18		Ceramic Product Manufacturing [262]	18
Styrene (ethenylbenzene)	240		Other Chemical Product Manufacturing [254]	240
			Ceramic Product Manufacturing [262]	1.6
Sulfur dioxide (Table 1)	270,000		Motor Vehicles *	190,000
			Ceramic Product Manufacturing [262]	62,000
			Solid fuel burning (domestic) *	3,800
			Motor Vehicle and Part Manufacturing [281]	3,400
			Construction Material Mining [141]	3,000
			Basic Chemical Manufacturing [253]	620

Sulfuric acid (Table 1)	620		Bakery Product Manufacturing [216]	0.62
1,1,1,2-Tetrachloroethane	0.22		Ceramic Product Manufacturing [262]	0.22
Tetrachloroethylene (Table 1)	20,000		Dry Cleaning *	20,000
Toluene (methylbenzene) (Table 1)	450,000		Motor Vehicles * 280,000 Domestic/Commercial solvents/ aerosols * 47,000 Lawn Mowing * 35,000 Service stations * 30,000 Motor Vehicle Refinishing * 26,000	
Toluene-2,4-diisocyanate (Table 1)	2		Other Chemical Product Manufacturing [254]	2
Total Nitrogen (Table 1)	140,000		Water Supply, Sewerage and Drainage Services [370] 63,000 Unsewered peri-urban-Hawkesbury-Nepean River * 27,000 Urban-Hawkesbury-Nepean River * 20,000 Unfertilised grazing-Hawkesbury-Nepean River * 6,800 Fertilised grazing-Hawkesbury-Nepean River * 4,700 Unsewered peri-urban-Hawkesbury-Nepean River * 4,100 Urban-Hawkesbury-Nepean River * 3,900 Unfertilised grazing-Hawkesbury-Nepean River * 1,000	
Total Phosphorus (Table 1)	14,000		Industrial and commercial-Hawkesbury-Nepean River * 930 Water Supply, Sewerage and Drainage Services [370] 730 Motor Vehicles * 4,400,000 Domestic/Commercial solvents/ aerosols * 860,000	
Total Volatile Organic Compounds	7,300,000		Solid fuel burning (domestic) * 620,000 Lawn Mowing * 370,000 Service stations * 360,000	
Trichloroethylene (Table 1)	53		Domestic/Commercial solvents/ aerosols *	53



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Noxious weed declarations in NSW

Hawkesbury River County Council

The following weeds are declared noxious in the Hawkesbury River County Council control area **(including Baulkham Hills, Blacktown, Hawkesbury and Penrith council areas)**. The 'details' link on each listing provides further information on the legal requirements of the weed's listing and any variation in status within the local control area. [A complete list of all weeds in all control areas](#) is also available as a PDF document.

Common name	Scientific name	Category	
African boxthorn	<i>Lycium ferocissimum</i>	W2	details
Alligator weed	<i>Alternanthera philoxeroides</i>	W1	details
Bathurst			
Noogoora	<i>Xanthium spp.</i>	W3	details
Californian			
Cockle burrs			
Black knapweed	<i>Centaurea nigra</i>	W1	details
Blackberry	<i>Rubus fruticosus (agg. spp.)</i>	W3	details
Broomrape	<i>Orobancha spp.</i>	W1	details
Cabomba	<i>Cabomba spp.</i>	W4g	details
Columbus grass	<i>Sorghum x alnum</i>	W2	details
Crofton weed	<i>Ageratina adenophora</i>	W2	details
Dodder	<i>Cuscuta campestris</i>	W2	details
Giant Parramatta grass	<i>Sporobolus fertilis syn. Sporobolus indicus var. major</i>	W2	details
Green cestrum	<i>Cestrum parqui</i>	W2	details
Harrisia cactus	<i>Harrisia spp.</i>	W4f	details
Hawkweed	<i>Hieracium spp.</i>	W1	details
Horsetail	<i>Equisetum spp.</i>	W1	details
Johnson grass	<i>Sorghum halepense</i>	W2	details
Karoo thorn	<i>Acacia karroo</i>	W1	details
Kochia	<i>Kochia scoparia</i>	W1	details
Lagarosiphon	<i>Lagarosiphon major</i>	W1	details
Ludwigia	<i>Ludwigia peruviana</i>	W2	details
Mexican feather grass	<i>Nassella tenuissima syn Stipa tenuissima</i>	W1	details
Miconia	<i>Miconia spp.</i>	W1	details
Mother-of-millions	<i>Bryophyllum delagoense</i>	W2	details
Pampas grass	<i>Cortaderia spp.</i>	W2	details
Parthenium weed	<i>Parthenium hysterophorus</i>	W1	details

Paterson's curse, Vipers	<i>Echium spp.</i>	W3	details
Italian bugloss			
Pellitory	<i>Parietaria judaica</i>	W3	details
Prickly pears	<i>Opuntia spp.</i>	W4f	details
Privet - broadleaf	<i>Ligustrum lucidum</i>	W4b	details
Privet - narrowleaf	<i>Ligustrum sinense</i>	W4b	details
Rhus tree	<i>Toxicodendron succedaneum</i>	W2	details
Salvinia	<i>Salvinia molesta</i>	W2	details
Senegal tea plant	<i>Gymnocoronis spilanthoides</i>	W1	details
Siam weed	<i>Chromolaena odorata</i>	W1	details
Spiny burrgrass	<i>Cenchrus incertus</i>	W2	details
Spiny burrgrass	<i>Cenchrus longispinus</i>	W2	details
Spotted knapweed	<i>Centaurea maculosa</i>	W1	details
St John's wort	<i>Hypericum perforatum</i>	W2	details
Water hyacinth	<i>Eichhornia crassipes</i>	W2	details
Water lettuce	<i>Pistia stratiotes</i>	W1	details
Willows	<i>Salix spp.</i>	W4g	details

[Return to start page](#)

The information contained in this web page is based on knowledge and understanding at the time of writing. However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of NSW Department of Primary Industries or the user's independent adviser.

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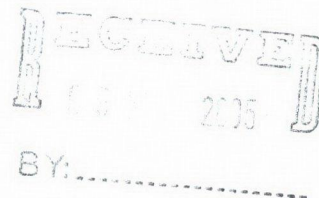


Department of
**Environment
and Conservation (NSW)**



Your reference : Meurants Lane, Glenwood
Our reference : AHIMS #12841

RTA - Environment Technology/Parramatta
Po Box 3035
Parramatta NSW 2150



Friday, 06 May 2005

Attention: Susan Westcott

Dear Sir or Madam:

Re: AHIMS Search for the following area at Glenwood;Z:56;E:309250-309750;N:6264500-6265000;

I am writing in response to your recent inquiry in respect to Aboriginal objects and Aboriginal places registered with the NSW Department of Environment and Conservation (DEC) at the above location.

A search of the DEC Aboriginal Heritage Information Management System (AHIMS) has shown that 2 Aboriginal objects and Aboriginal places are recorded in or near the above location. Please refer to the attached report for details.

The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not to be made available to the public.

The following qualifications apply to an AHIMS search:

- AHIMS only includes information on Aboriginal objects and Aboriginal places that have been provided to DEC;
- Large areas of New South Wales have not been the subject of systematic survey or recording of Aboriginal history. These areas may contain Aboriginal objects and other heritage values which are not recorded on AHIMS;
- Recordings are provided from a variety of sources and may be variable in their accuracy. When an AHIMS search identifies Aboriginal objects in or near the area it is recommended that the exact location of the Aboriginal object be determined by re-location on the ground; and
- The criteria used to search AHIMS are derived from the information provided by the client and DEC assumes that this information is accurate.

All Aboriginal places and Aboriginal objects are protected under the *National Parks and Wildlife Act 1974* (NPW Act) and it is an offence to destroy, damage or deface them without the prior consent of the DEC Director-General. An Aboriginal object is considered to be known if:

- It is registered on AHIMS;
- It is known to the Aboriginal community; or

- It is located during an investigation of the area conducted for a development application.

If you considering undertaking a development activity in the area subject to the AHIMS search, DEC would recommend that an Aboriginal Heritage Assessment be undertaken. You should consult with the relevant consent authority to determine the necessary assessment to accompany your development application.

Yours Sincerely

A handwritten signature in dark ink, appearing to read 'S Freeburn', with a long horizontal stroke extending to the right.

Freeburn, Sharlene
Administrator
Information Systems Section
Cultural Heritage Division
Phone: (02) 9585 6471
Fax: (02) 9585 6094



Heritage Office Website - Listing Heritage Items - Search the State Heritage Inventory



Listing Heritage Items

State Heritage Inventory Search Results

Statutory Listed Items

Information and items listed in the State Heritage Inventory come from a number of sources. This means that there may be several entries for the same heritage item in the database. For clarity, the search results have been divided into two sections.

- Section 1. contains items listed by the **Heritage Council** under the NSW Heritage Act. This includes listing on the State Heritage Register, an Interim Heritage Order or protected under section 130 of the NSW Heritage Act. This information is provided by the NSW Heritage Office.
- Section 2. contains items listed by **Local Councils & Shires and State Government Agencies**. This section may also contain additional information on some of the items listed in the first section.

Section 1. Items listed under the NSW Heritage Act.

The search results can be re-sorted by clicking on the **(sort)** option at the top of each column.

Item Name (sort)	Address (sort)	Suburb (sort)	LGA (sort)	State Heritage Register
Exeter Farm	Meurants Lane	Parklea	Blacktown	Yes

There was 1 record in this section matching your search criteria.

Section 2. Items listed by Local Government and State agencies.

Item Name (sort)	Address (sort)	Suburb (sort)	LGA (sort)	Information Source (sort)
Exeter Farm Cottage	148 Meurants Lane	Glenwood	Blacktown	LGOV
House	244 Meurants Lane	Glenwood	Blacktown	LGOV

There were 2 records in this section matching your search criteria.

There was a total of 3 records matching your search criteria.

Key:
LGA = Local Government Area
GAZ= NSW Government Gazette (statutory listings prior to 1997), HGA = Heritage Grant Application, HS = Heritage Study, LGOV = Local Government, SGOV = State Government Agency.

Note: The Heritage Office seeks to keep the State Heritage Inventory (SHI) up to date, however the latest listings in Local and Regional Environmental Plans (LEPs and REPs) may not yet be included. Always check with the relevant Local Council or Shire for the most recent listings.



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APPENDIX E
SPECIALIST STUDIES

North West Transitway Meurants Lane Options Assessment

ROAD TRAFFIC NOISE ASSESSMENT

- Final
- 20 April 2005



North West Transitway Meurants Lane Options Assessment

ROAD TRAFFIC NOISE ASSESSMENT

- Final
- 20 April 2005

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Road Traffic Noise Options Investigation

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1. Introduction

1.1 Background

The Roads and Traffic Authority (RTA) in partnership with the Ministry of Transport (MoT) will be constructing two integrated rapid bus transit links (T-ways). The North-West T-way Network would consist of two rapid bus transit links:

- Parramatta to Rouse Hill Link; and
- Blacktown to Castle Hill Link.

The T-ways would operate along purpose-built exclusive corridors, or priority conditions on existing roads. The Parramatta to Rouse Hill Link would be approximately 17km long and include 19 stations. Figure 1-1 shows an aerial of the intersection at Meurants Lane and Old Windsor Road where the transitway will be constructed.

1.2 The Proposal

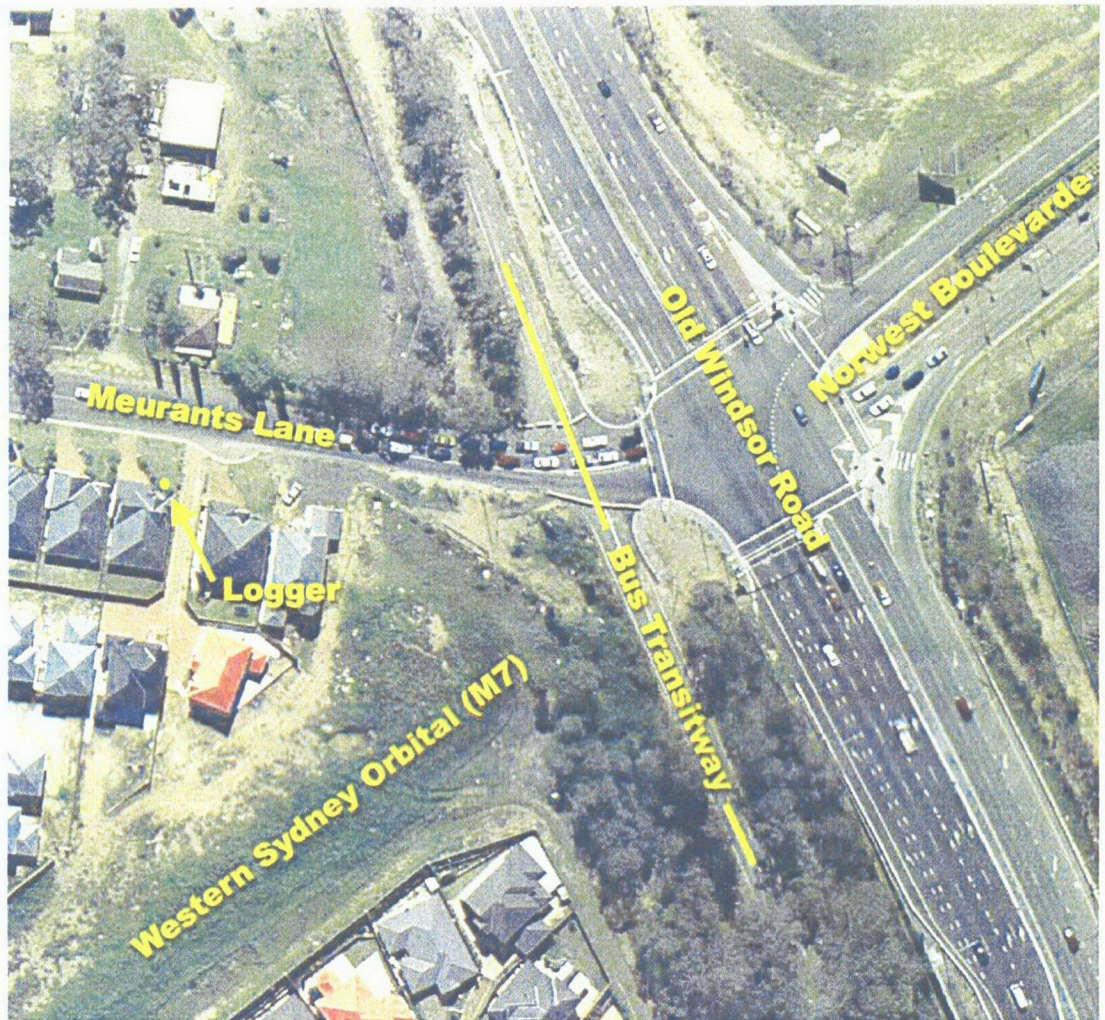
The Parramatta to Rouse Hill Bus Transitway was approved by the minister in February 2004. As a result of the design process some minor changes to the alignment presented in the EIS are required. In the vicinity of Meurants Lane there are two options being assessed for design purposes. The Meurants Lane access is a new access proposed to bring local services from Glenwood to the T-way along Meurants Lane, otherwise they would need to use Greenhill Drive then Old Windsor Road to gain access. The two alternatives are known as Option 3 and Option 5 and both options provide bus-only access from the proposed Meurants Lane cul-de-sac while maintaining vehicular and pedestrian access to the dwellings at the end of Meurants Lane.. A brief description of each option is as follows.

- Option 3 proposes a loop road for buses from the proposed cul-de-sac on Meurants Lane. The proposed turning head is designed in a manner to provide direct vehicular and pedestrian access to the dwellings
- Option 5 proposes the connecting bus-only link continuing along the current alignment. A separate service road is provided from the proposed cul-de sac to maintain access to the dwellings. The proposed turning head location is further to the west than the previous option.

The view looking to the south east (from Meurants Lane to Old Windsor Road) is shown in Figures 1-2 and 1-3. These graphics show the modelled versions of each option in a three dimensional view to illustrate the difference between each option.

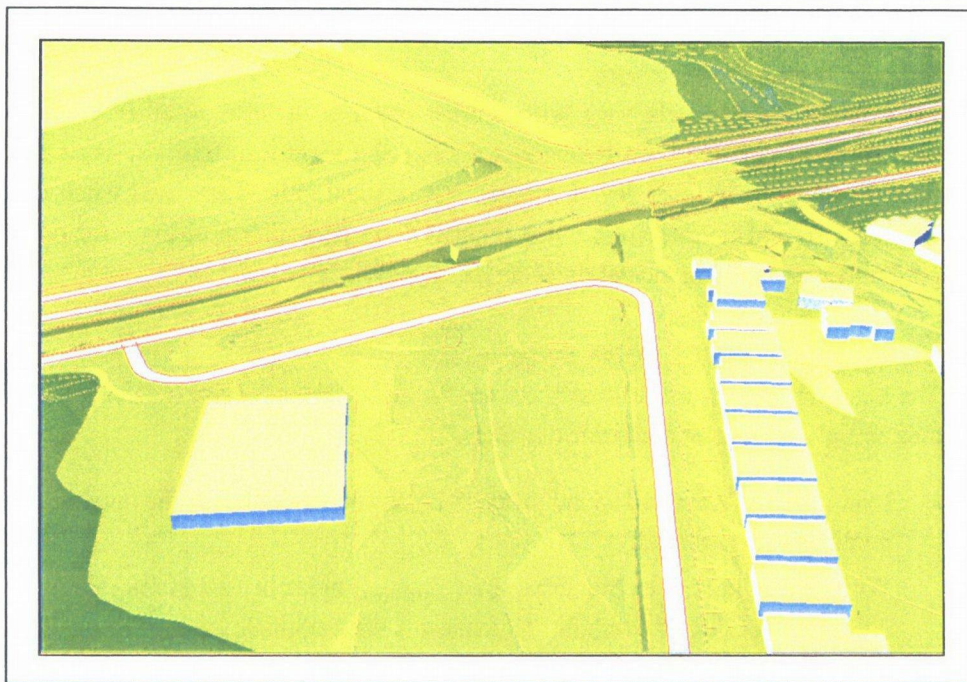


■ Figure 1-1 Location Map – Meurants Lane and Old Windsor Road

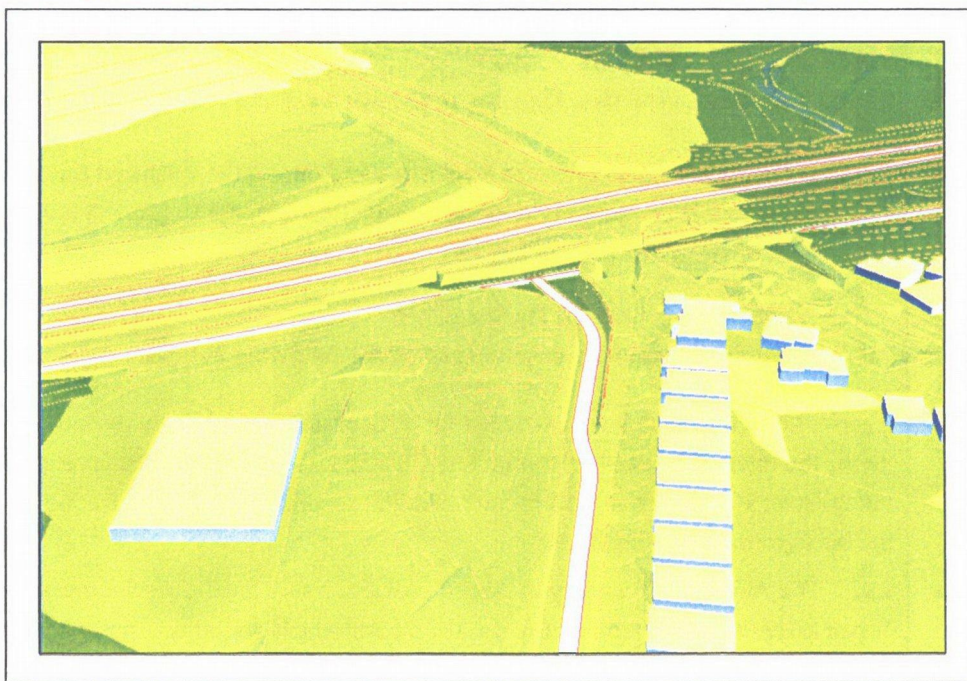




■ Figure 1-2 Bus Transitway Connection Option 3 (View along Meurants Lane)



■ Figure 1-3 Bus Transitway Connection Option 5 (View along Meurants Lane)





2. Road Traffic Noise & Noise Level Objectives

2.1 Noise Descriptors

Road traffic noise levels vary with diurnal changes in local weather conditions and with the changes in human activities throughout the day and night-time periods. As a result of these time-related variations in noise levels a range of statistical indices are used when describing the noise environment and investigating noise impacts from particular projects. An overview of common road traffic and environmental noise indices is provided below.

2.2 Road Traffic Noise Descriptors

The L_{A10} and the L_{Aeq} noise descriptors are the most common noise indices referred to when measuring or assessing road traffic noise:

- L_{A10} – The A-Weighted sound pressure level, corresponding to the level exceeded 10% of a nominated time period.
With respect to road traffic noise, the $L_{A10(18\text{hour})}$ index is used in the calculation of Road traffic noise by the CORTN Method. This index is the arithmetic average of the eighteen $L_{A10(1\text{ hour})}$ noise levels occurring between 6.00 am and midnight;
- L_{Aeq} – The A-Weighted energy averaged sound pressure level over the measurement period.
The $L_{Aeq(15\text{ hour})}$ and $L_{Aeq(9\text{ hour})}$ level is used in NSW to assess the impact of daytime and night-time traffic noise respectively. The $L_{Aeq(1\text{ hour})}$ is the noise level associated with predicted highest one hour traffic flow between 10 pm and 7 am.
- L_{AMAX} – maximum sound pressure level measured during the specified time interval. The L_{AMAX} noise level is commonly used, in conjunction with the L_{Aeq} noise level, in the assessment of sleep disturbance impacts.

2.3 Environmental Noise Descriptors

Environmental noise is generally described using the following indices:

- L_{A90} – This is the noise level exceeded for 90% of the measurement period. For environmental noise, the interval is usually 15 minutes; thus the L_{A90} represents the level corresponding to the quietest 90 seconds in a 15 minute (i.e. 900 second) period. It is frequently referred to as the background noise level; and
- L_{Aeq} – The A-Weighted energy averaged sound pressure level over the measurement period. When assessing environmental noise, the measurement period is usually 15 minutes ($L_{Aeq(15\text{ minutes})}$). Unlike the L_{A10} index, the L_{Aeq} is sensitive to infrequent high level events, such as heavy vehicle movements.



2.4 Noise Goals

The changes made to the traffic mix and road alignment as the result of the Bus Transitway are not entirely clear, as the existing traffic scenario along Meurants Lane will change due to the introduction of the WSO M7. The ECRTN requires that the road category be described in order to determine the appropriate noise criteria. The most likely effect of the Transitway proposal at Meurants Lane will be a redevelopment of an existing arterial road. This is defined in the ECRTN as:

“**Redevelop existing freeway/arterial** refers to an existing freeway, arterial or sub-arterial corridor where it is proposed to increase traffic-carrying capacity, change the traffic mix or change the road alignment through design or engineering changes. Redevelopment does not cover minor road works designed to improve safety, such as straightening curves, installing traffic control devices or making minor road alignments.”

The criteria for this type of road activity are listed in **Table 2.1**.

■ Table 2.1 Road Traffic Noise ECRTN Base Criteria

Road category	Daytime Levels	Night-time levels
Redevelopment of an existing freeway or arterial road.	L _{Aeq} (15hour) 60 dB(A)	L _{Aeq} (9hour) 55 dB(A)



3. Existing Noise Environment

3.1 Baseline Noise Monitoring

From **Figure 1-1** above it can be seen that the nearest receivers are located adjacent to the proposed works along Meurants Lane. In order to obtain information on the existing road traffic noise levels that are present within the study area, a baseline noise survey was undertaken at a representative receiver location along Meurants Lane. The location was selected based on proximity to Old Windsor Road and availability of the occupier of the property. The location of noise logger is shown on **Figure 1-1** and described below:

- Location 1 – 268 Meurants Lane;
The logger was located approximately 115 m west of Old Windsor Road North Bound Traffic stream, and approximately 12 m south of Meurants Lane edge of pavement. The logger was located 1m from the facade of the building in accordance with traffic noise monitoring practice.

The noise monitoring was undertaken using Acoustic Research Laboratories, type EL 316 noise monitor. The monitor was set to store a range of statistical descriptors in consecutive 15 minute intervals throughout the daytime, evening and night-time for a nominal period of 14 days.

The calibration level of the noise loggers was checked at the commencement and prior to the completion of the noise surveys and the variation in calibration was less than 0.5 dB(A).

3.2 Results

The $L_{A10,18\text{ hour}}$ and $L_{Aeq,15\text{ hour}}$ and $L_{Aeq,9\text{ hour}}$ road traffic noise indices and the L_{Amax} descriptors were calculated on a daily basis for this monitoring location. The daily noise measurement profile is shown graphically in Appendix A and summarised in **Table 3-1**. The levels are facade measurements incorporating any increases in noise levels due to building facade effects.

■ Table 3-1 Summary Ambient Noise Monitoring Results (dB(A))

Monitoring Location	L_{A10} 18hour	L_{Aeq} 15 hour	L_{Aeq} 9 hour	L_{Amax} Day	L_{Amax} Night
268 Meurants Lane	69	66	61	82	79

Note: Results rounded to nearest dB(A)

The weather conditions throughout the monitoring period were generally fine and no data were excluded from the analysis.

The recorded levels are largely influenced by traffic on Meurants Lane and to a lesser degree from Old Windsor Road. The noise measurement data are typical of locations influenced by high road



traffic volumes during the day with decreasing but consistent traffic numbers during the evening and night. The noise level graphs presented in **Appendix A** show an increase in noise levels during the morning peak period as traffic flows increase, are sustained throughout the day-time period and taper slightly during the evening and night time, as traffic volumes decrease.



4. Prediction of Road Traffic Noise Levels

4.1 Noise Assessment Methodology

In general, road traffic noise impact assessments refer to the Department of Environmental Conservation's (DEC) *Environmental Criteria for Road Traffic Noise* (ECRTN) when setting noise criteria for the project. These criteria are then applied through the implementation of the RTA's Environmental Noise Management Manual (ENMM). The ENMM requires the measurement of current traffic noise levels to assist in the creation of a noise prediction model. The measured results are used to validate the noise model to ensure that any predictions of noise impact will reflect the current environment.

The noise model is then used to predict noise impacts from several scenarios to determine the impact of the proposed road alignment. The scenarios modelled are:

- Year of opening without the project proceeding;
- Year of opening with the project proceeding; and
- Ten years after the project is completed.

The last scenario also forms the basis of any mitigation required for the project.

Old Windsor Road and adjoining roads in the vicinity of the proposed design changes to the Transitway are currently undergoing significant works as the result of other projects including the Western Sydney Orbital (M7).

At the assessment location along Meurants Lane there will be no future vehicle movements from through traffic accessing Old Windsor Road. This Section of the road corridor will only provide through access to Transitway vehicles. The predicted impacts in the vicinity of the proposed Meurants Lane modifications have therefore been assessed on an absolute basis as the result of noise increases due to each of the project options. While not in accordance with the ENMM road traffic noise assessment procedure, an indication of potential noise impacts from the project is presented along with the relative difference between each of the options. The assessment includes:

- an ambient noise survey, outlining existing road traffic noise levels and sources contributing to the existing noise environment within the study area;
- a review of the current road traffic noise level goals and planning considerations, as described in the ECRTN;
- a validated noise model for the existing conditions;



- road traffic noise modelling for the options for the year 2016, based on predicted bus movements;

This assessment covers operational noise levels and does not include consideration of construction noise impacts associated with the proposed works

4.2 SoundPLAN modelling of traffic noise impacts

Traffic noise at the receiver has been predicted for each of the route options using the Calculation of Road Traffic Noise (CoRTN) method applied through a SoundPLAN noise modelling program. The CoRTN method predicts the $L_{A10, 18 \text{ hour}}$ and the $L_{A10, 1 \text{ hour}}$ noise levels at a receiver location, the results are then modified by the relationship, $L_{A10, \text{period}} = L_{Aeq, \text{period}} + 3 \text{ dB(A)}$, to predict the $L_{Aeq, 15 \text{ hour}}$ and $L_{Aeq, 9 \text{ hour}}$ noise levels. Both the DEC and RTA support the use of the CoRTN algorithms and the correction to L_{Aeq} values. The model has assumed traffic volumes detailed below as well as vehicle speeds of 60 km with Dense Grade Asphaltic Concrete (DGAC) pavement for each option. A further correction of +2.5 dB(A) has been added to the $L_{Aeq, \text{period}}$ results to correct for facade reflections in accordance with the ENMM and ECRTN guidelines. The model output provides the unmitigated noise impacts at a height of 2m representing a single storey residence.

4.3 Traffic Flow Volumes

Meurants Lane is currently a through road (arterial) that connects Sunnyholt Road and Old Windsor Road. With the construction of the WSO M7, Meurants Lane will now become a local traffic road with no connection for general motor vehicles at Old Windsor Road. The only through traffic would be the transitway connecting buses as per Options 3 and 5 above. The proposed bus movements through Meurants Lane are as follows:

- 8 buses/ hour during peak (7.00 - 9.00 and 16.30 - 18.30)
- During off peak 1 bus every half an hour
- First bus starts at 6.30 in the morning
- Bus traffic increase to year (2016) to 10 buses/ hour during peak.

4.4 Road Traffic Noise Predictions



■ Table 4-1 2017 L_{Aeq} (15hour) and L_{Aeq} (9hour) Road Traffic Noise Level Predictions

Location	Scenario	Predicted L_{Aeq} (15 hour) dB(A)	Predicted L_{Aeq} (9 hour) dB(A)
268 Meurants Lane	Base Case – No T'way on Meurants Lane – (No through Road). Existing traffic noise from Old Windsor Road	57	53
268 Meurants Lane	Option 3 – With T'way on Meurants Lane – (No through Road). Existing traffic noise from Old Windsor Road	57	53
268 Meurants Lane	Option 5 – With T'way on Meurants Lane – (No through Road). Existing traffic noise from Old Windsor Road	57	53
284 Meurants Lane	Option 3 – With T'way on Meurants Lane – (No through Road). Existing traffic noise from Old Windsor Road	53	49
284 Meurants Lane	Option 5 – With T'way on Meurants Lane – (No through Road). Existing traffic noise from Old Windsor Road	53	49

Note: +2.5 dB(A) facade correction incorporated into results

The results in **Table 4-1** indicate that either of the options for the Bus Transitway connection to Old Windsor Road would have little effect on the local noise environment near 268 Meurants Lane, as the dominant noise source for this location is Old Windsor Road. Currently the L_{Aeq} daytime and night time levels measured near 268 Meurants lane, 66 dB(A) and 61 dB(A) respectively, are above the RTA's Definition for acute noise impacts. These levels are predicted to drop to approximately 57 dB(A) and 53 dB(A) for day and night respectively after through traffic is taken off Meurants Lane. This impact does not take into consideration the noise from the M7 freeway.

Residents further away from Old Windsor Road (284 Meurants Lane) would be less affected by general traffic noise from Old Windsor Road. From **Table 4-1** the representative receivers at 268 and 284 Meurants Lane (with Meurants Lane becoming a no through road), both Options 3 & 5, would be below the ECRTN criteria for daytime and night time traffic noise levels.

If we only consider the effects of the traffic noise impacts on local residences from the Bus Transitway, there would be a benefit of upto approximately 8 dB(A) for Option 5 over Option 3. This benefit would be for residences closer to Old Windsor Road and would reduce to zero further along Meurants Lane, where the differences in alignment between the two options is not noticeable.



5. Summary

Sinclair Knight Merz has been engaged by the Roads and Traffic Authority, Bus Transitways to prepare a Road Traffic Noise Impact Assessment for the proposed options around the Meurants Lane and Old Windsor Road Intersections. The purpose of the investigation is to identify potential noise issues for the project and identify the most appropriate option with respect to noise impacts.

The Project, involving the connection of local services from Glenwood to the Transitway using Meurants Lane, has two possible options for joining the Transitway along Old Windsor Road. The two options assessed are designated Option 3 and Option 5.

The traffic mix along Meurants Lane will be changed as the result of the Transitway and other projects within the area and as a result there will be only local traffic on Meurants Lane. The traffic noise assessment considered the impact of bus traffic from the Transitway only, for year 2016. The predicted noise impacts for year 2016 from the Transitway are estimated to be less than the ECRTN criteria for daytime and night time noise levels for a redeveloped road.

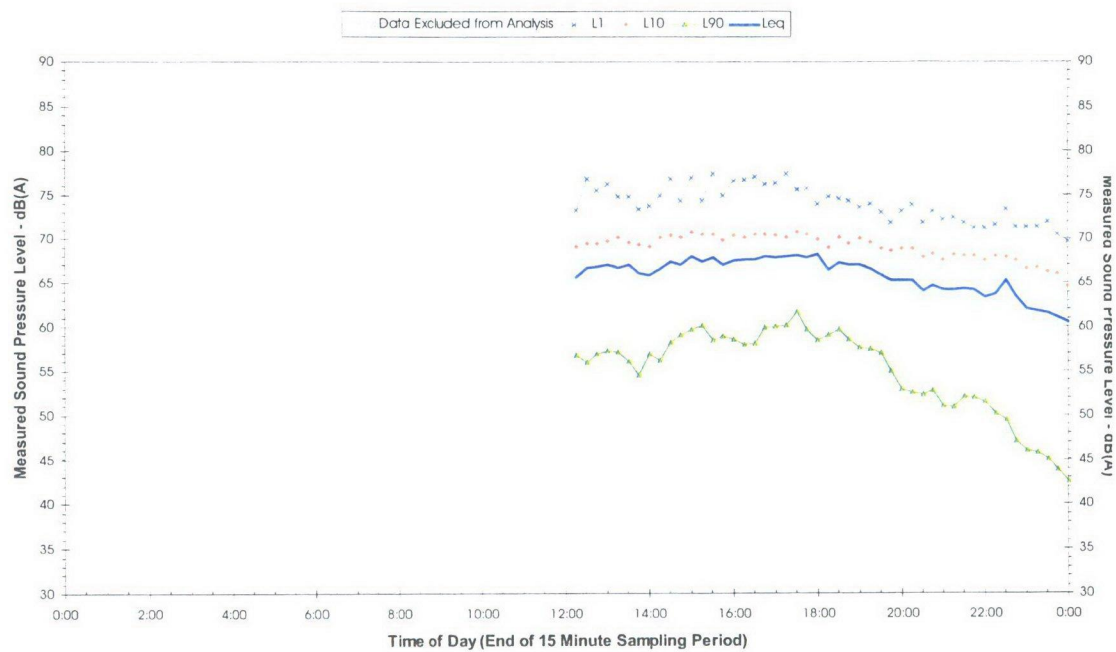
When absolute levels for the two options are compared Option 5 resulted in noise levels approximately 8 dB(A) lower for residences closer to the intersection of the Transitway and Old Windsor Road. The benefit provided by the topographic shielding from Option 5, would be reduced to zero as the road alignment gradually came out of cut (travelling from Old Windsor Road back towards the roundabout). After this point there would be no difference between the two options. The preferred option in terms of noise impacts would therefore be Option 5.



Appendix A

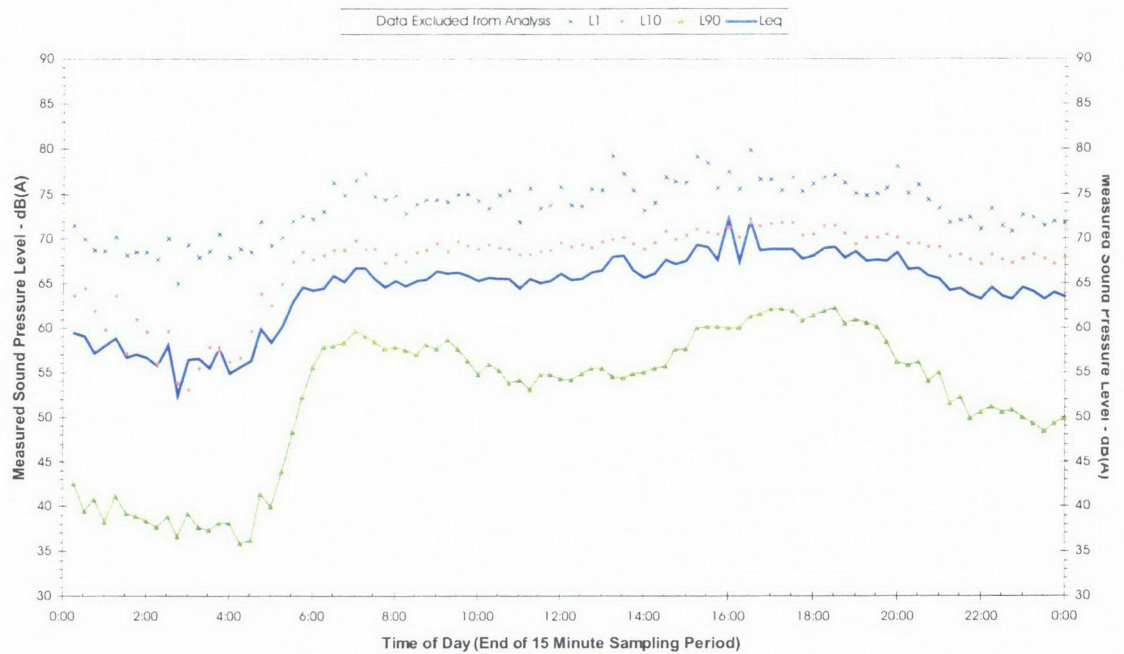


Profile of Noise Environment - 268 Muerants Lane
Thursday 17 February 2005

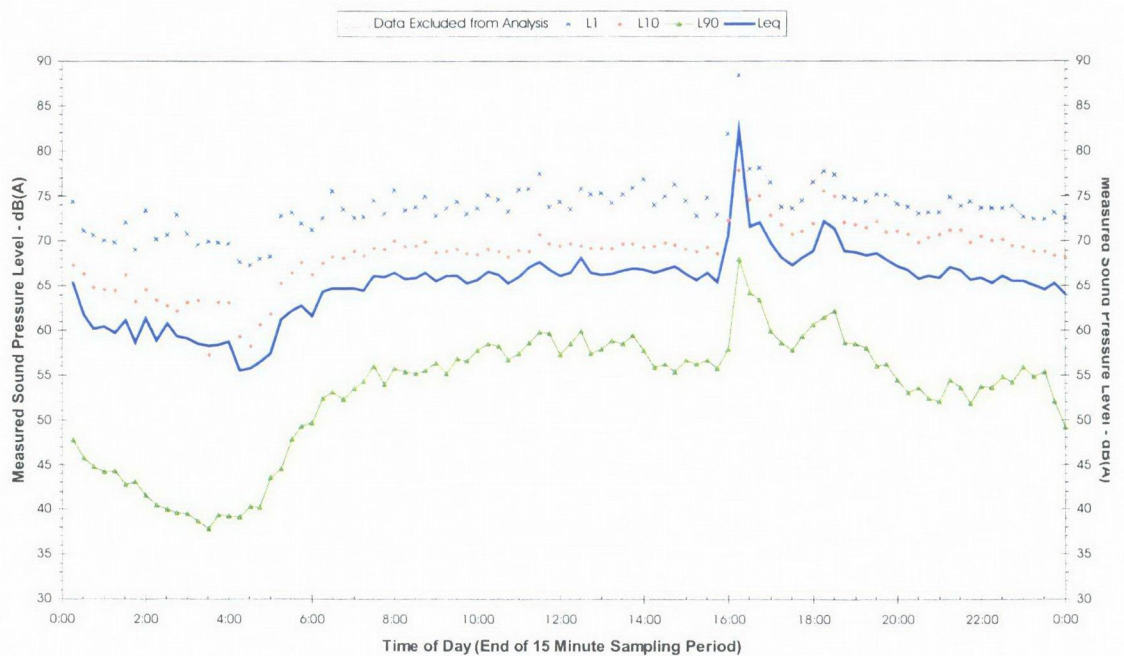




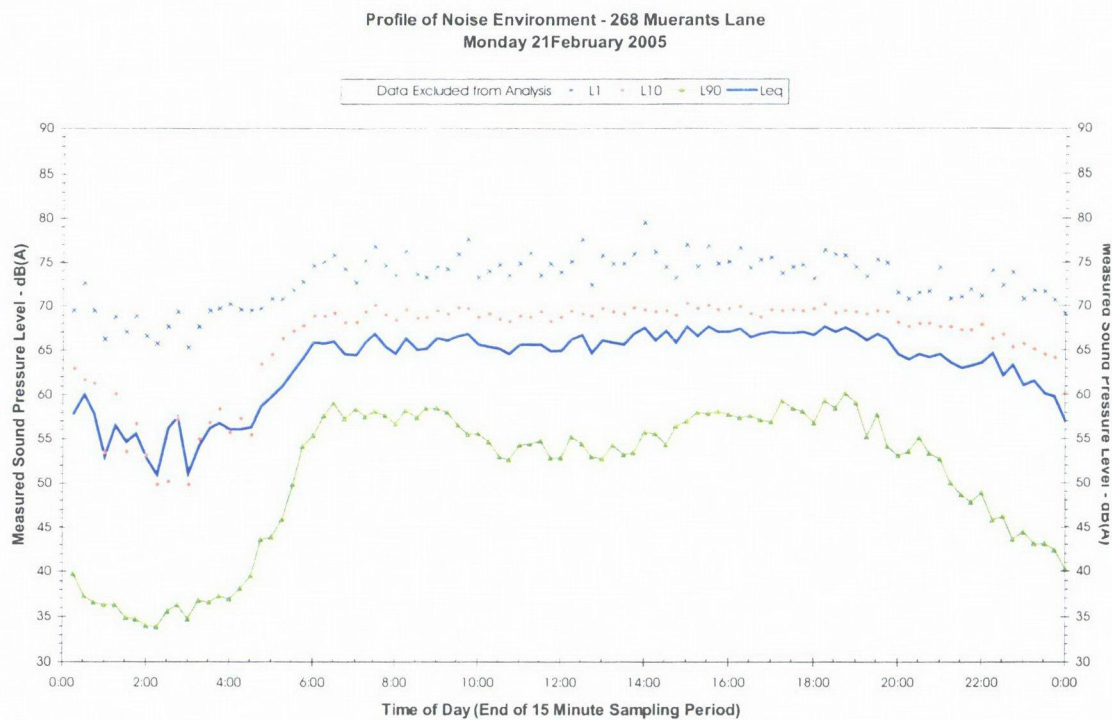
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Friday 18 February 2005



Profile of Noise Environment - 268 Muerants Lane
Saturday 19 February 2005

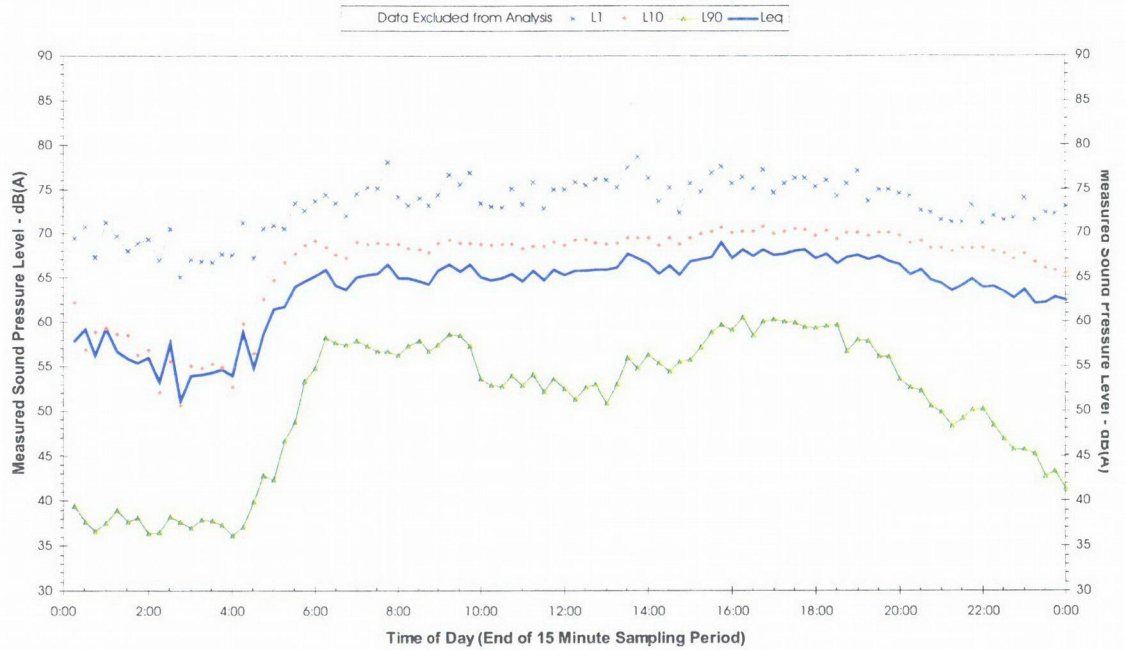




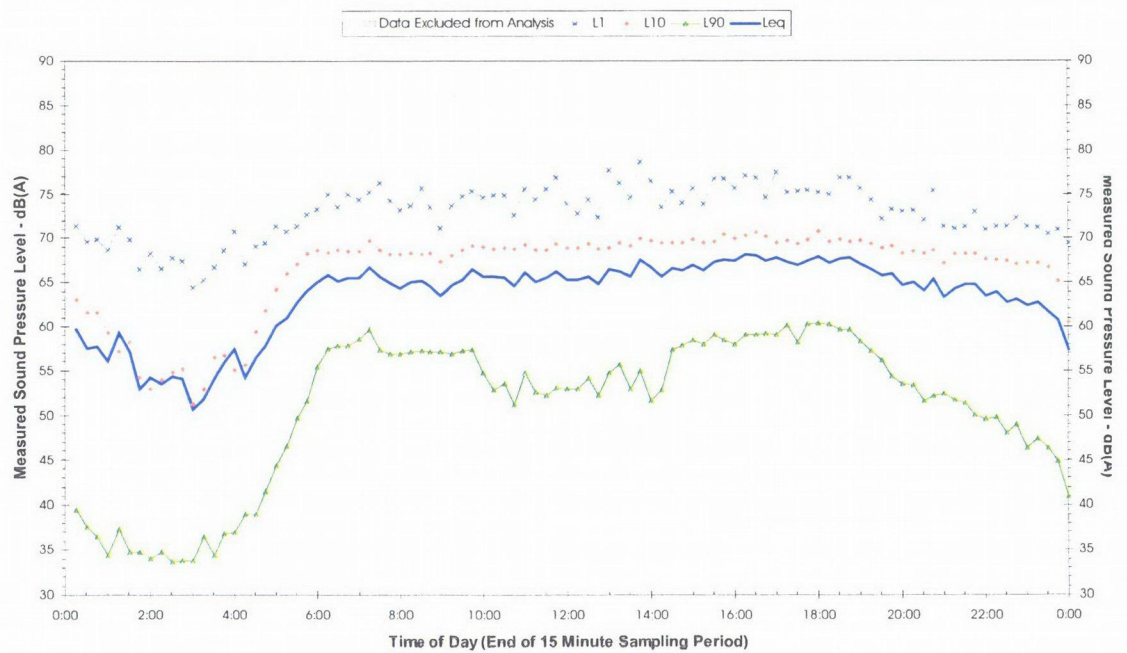




Profile of Noise Environment - 268 Muerants Lane
Tuesday 22 February 2005

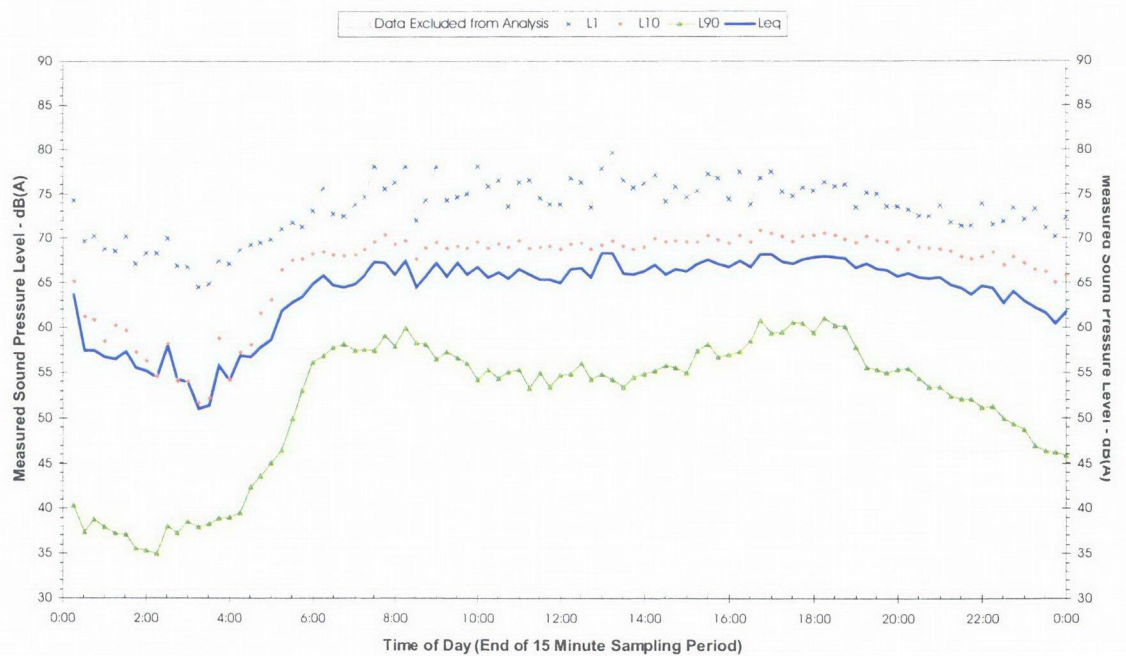


Profile of Noise Environment - 268 Muerants Lane
Wednesday 23 February 2005



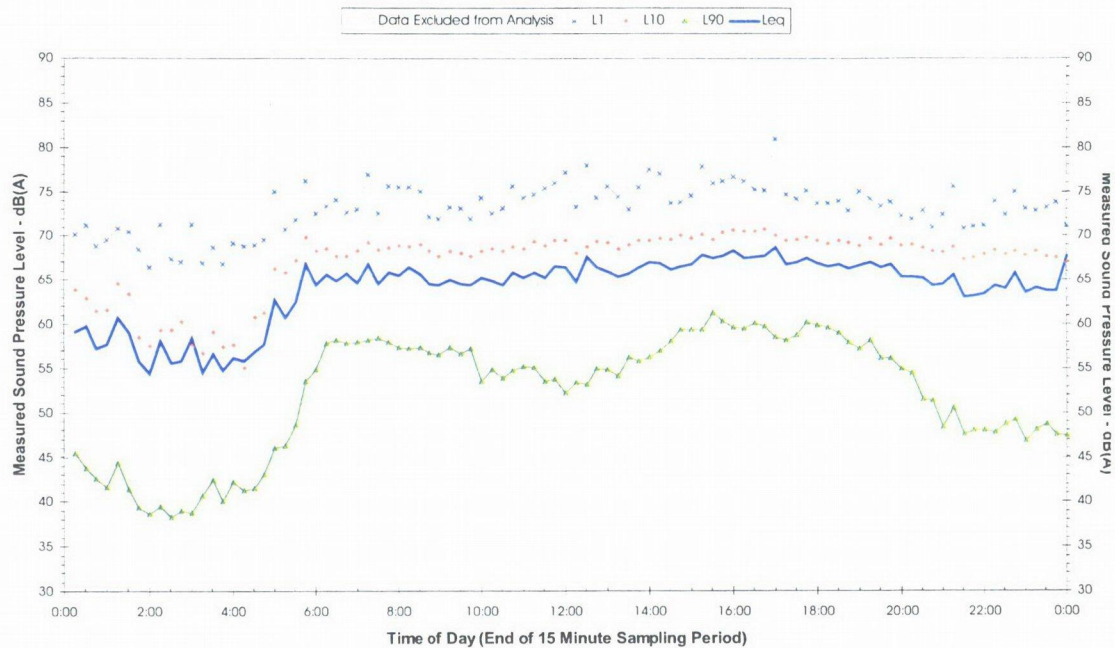


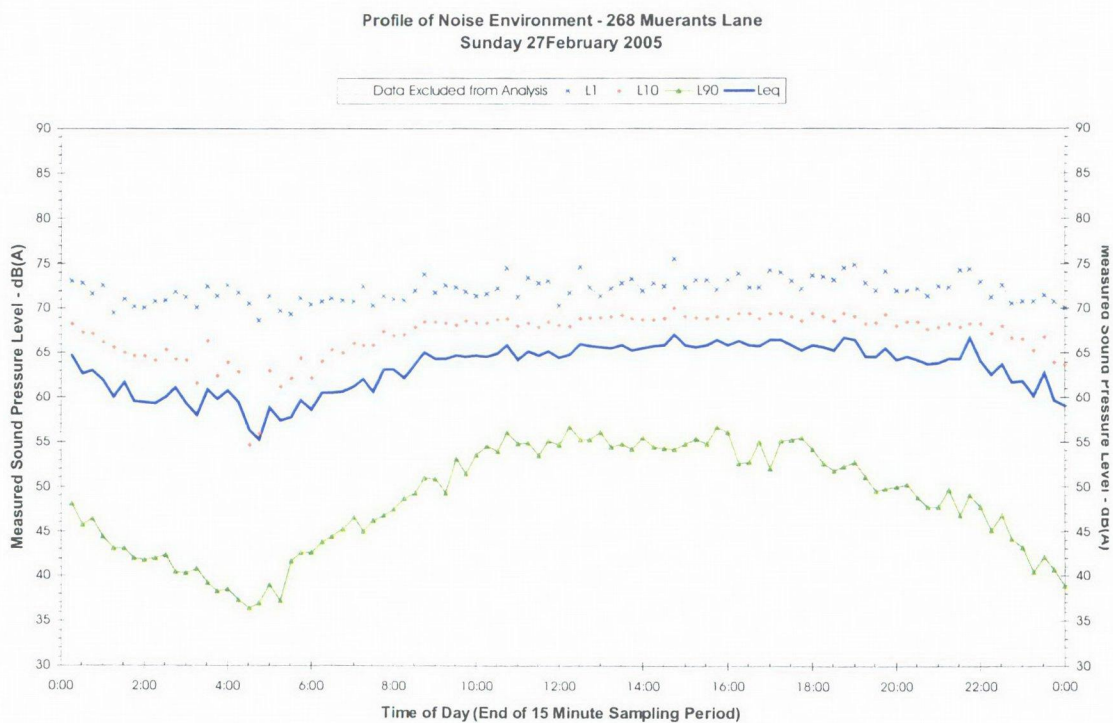
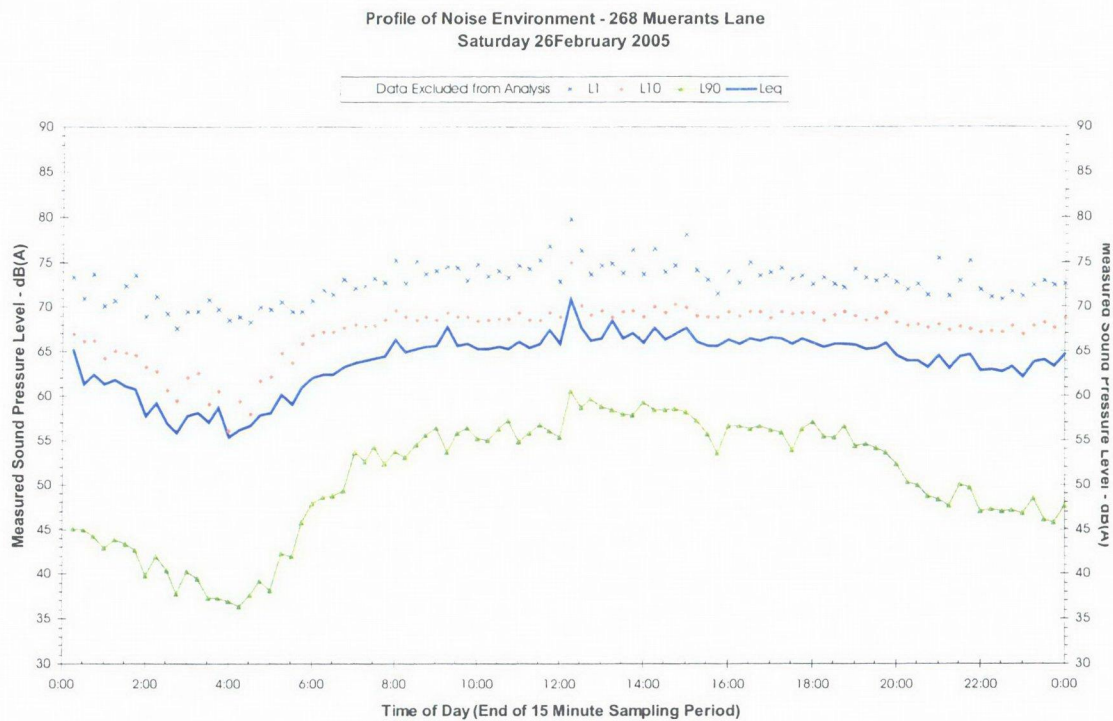
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Thursday 24 February 2005





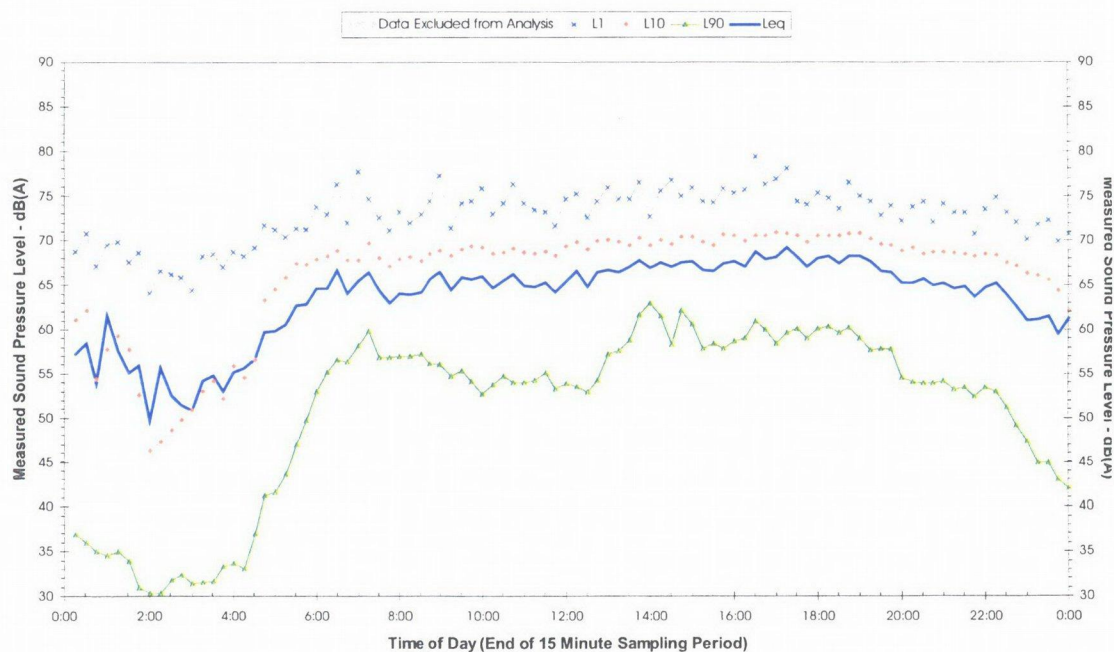
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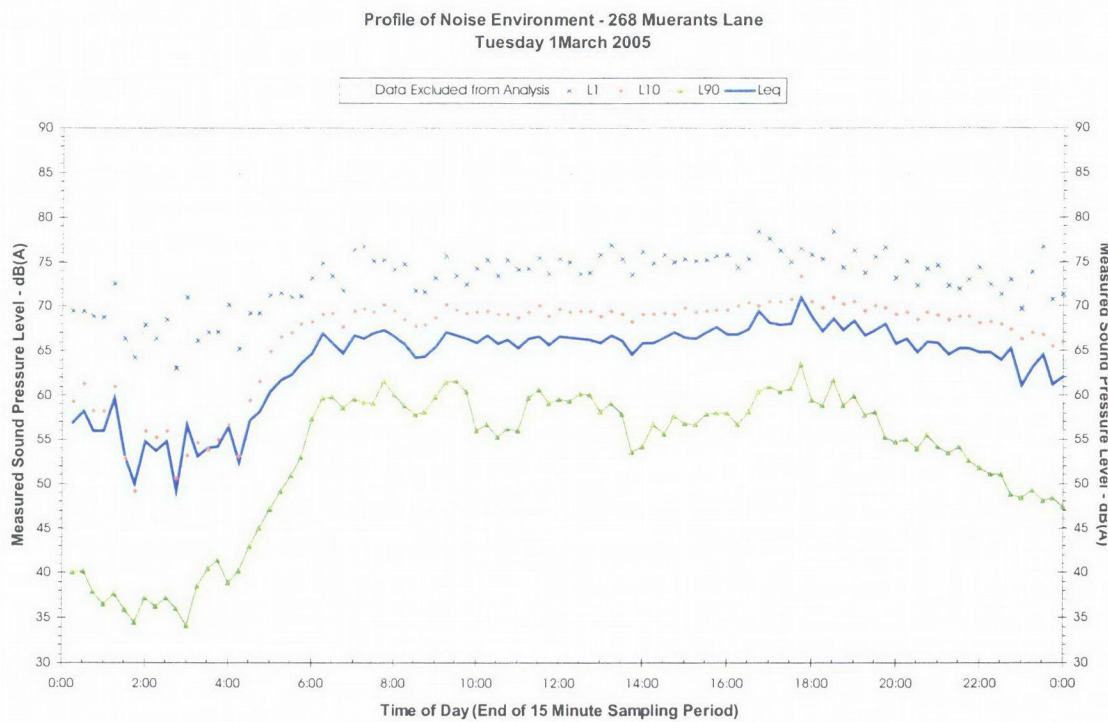






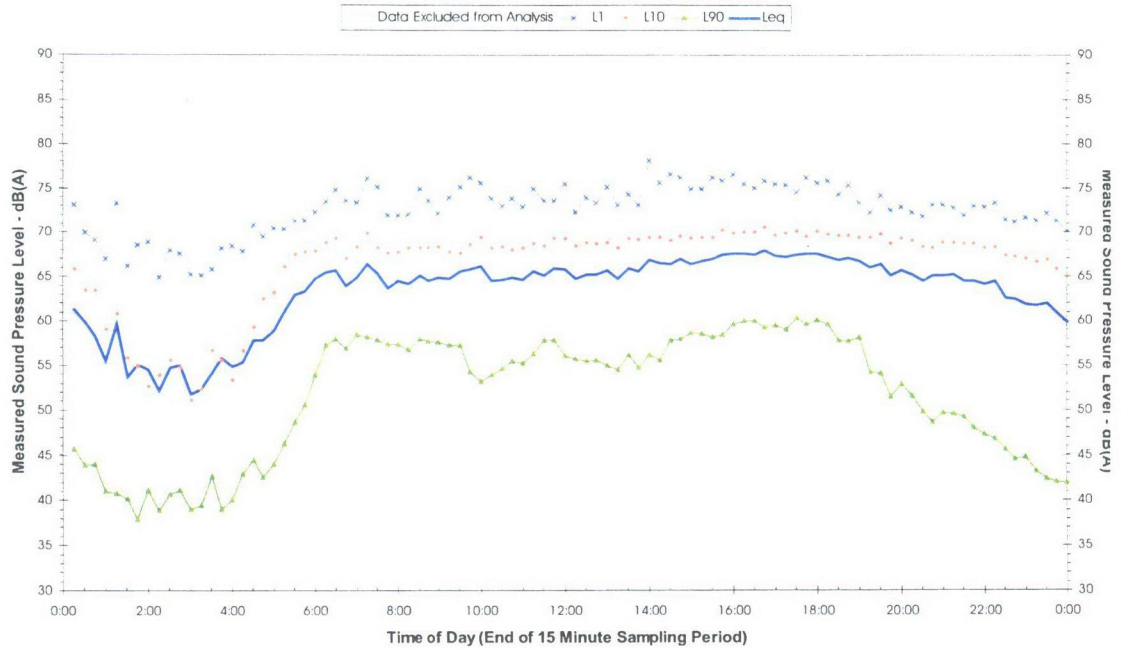
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Monday 28 February 2005



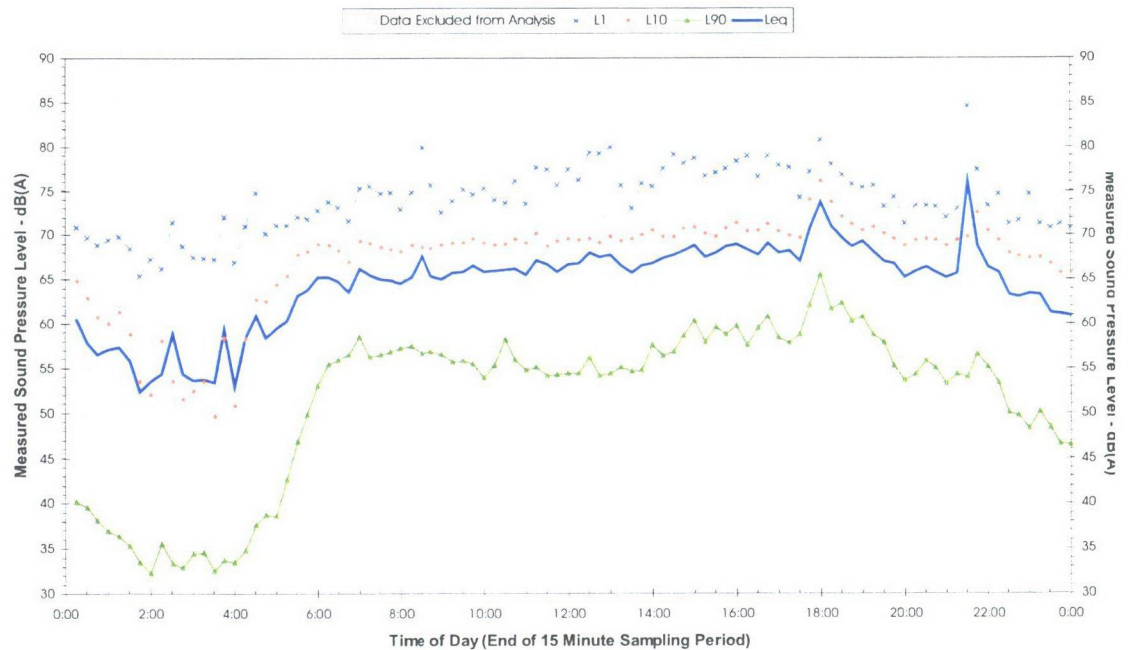




Profile of Noise Environment - 268 Muerants Lane
Wednesday 2 March 2005



Profile of Noise Environment - 268 Muerants Lane
Thursday 3 March 2005





Report on the location of the 'Seventh Hill' in the Seven Hills district



Portion of Map of Parish of St John, showing placename Seven Hills [Department of Lands]

**Dr Anne-Maree Whitaker, P O Box 63, Edgecliff NSW 2027
for the Roads and Traffic Authority
FINAL February 2005**

Executive summary

1. The NSW Roads and Traffic Authority has completed upgrading of Old Windsor Road to service new suburbs between Parramatta and Rouse Hill. It is now proposed to construct a bus Transitway using the heritage-listed sections of the 1794 road alignment.
2. Old Windsor Road was originally built to link Parramatta and the Hawkesbury settlement (Windsor). Following construction of a new section in 1812 the 'Old' part of Windsor Road became a local road and thus was not subject to major alterations until the 1980s. Its relatively undisturbed condition led to heritage listing by relevant agencies from the mid-1970s.
3. The by-passed section of Old Windsor Road crossed seven hills, giving the district its name. The name acquired additional significance due to wool-growing pioneer John Macarthur's Seven Hills Farm (1801-1821) which was in the area now known as Bella Vista. The name Seven Hills moved west from this area following the opening of Seven Hills railway station in 1863.
4. Apart from the old section of the road, there are a number of heritage sites in the district relating to the early settlement of Seven Hills. These include 'Bella Vista', the Pearce family cemetery, Joyce's Farm and Exeter Farm.
5. The significance of the name Seven Hills and specifically the Seventh Hill has been assessed, along with possible alternative locations for the Seven Hills and the Seventh Hill.
6. Local historian Jack Brook has identified the seven separate hills which travellers on the Old Windsor Road had to climb before twentieth-century cutting and filling. In the absence of another suggested location, and based on the historical evidence and the actual existence of these hills to the present day, it is considered that his analysis is correct.

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1. Introduction

1.1 Scope of Report

1.1.1 The NSW Roads and Traffic Authority is in the process of building a series of bus Transitways in western Sydney. The North-West Transitway is to be built between Parramatta and Rouse Hill and Blacktown and Castle Hill. The Parramatta-Rouse Hill link will run mostly adjacent to the existing formation of Windsor and Old Windsor Roads. In places it is proposed to use sections of the old alignment of Old Windsor Road which have been by-passed for general traffic as part of the Windsor Road upgrade.

1.1.2 One of the currently disused sections of Old Windsor Road, which is proposed to be utilised by the North-West Transitway, is a section between Abbott Road and Celebration Drive at Glenwood. This section of the old road corridor has been assessed as being of considerable heritage significance for its ability to demonstrate the 'country lane' aspect of the road that once would have been a feature of the whole road corridor.

1.1.3 The section of Old Windsor Road and surrounds has been the subject of several heritage investigations for this and other projects such as the Westlink M7 (Western Sydney Orbital) and the Windsor Road Upgrade. Subsequent to these investigations and approval for construction of these projects, the RTA was made aware of a claim by members of Blacktown and District Historical Society that the 'Seventh Hill' of the Seven Hills district is the hill in the location of the intersection of Meurants Lane and the old alignment of Old Windsor Road.

1.1.4 The RTA has commissioned this present report to provide an independent assessment of the history of the area and of the claim by Blacktown and District Historical Society for the location of the Seventh Hill and its likely historical significance. The assessment is required to:

- Review the history of Windsor Road in this location and the Glenwood/Bella Vista area, with particular focus on determining whether the hill at the intersection of Old Windsor Road and Meurants Lane is the 'Seventh Hill' of the area known as the Seven Hills, utilising primary and secondary documentary sources (including maps, plans and photographs, if available).
- Identify any images or text that may be used for a permanent display in the adjacent Transitway station if this location is identified as being the 'Seventh Hill'.

1.2 Author

1.2.1 Dr Anne-Maree Whitaker is an independent historian in private practice. She holds the following memberships and professional appointments:

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Fellow of the Royal Historical Society (UK)
Member, History Advisory Panel, NSW Heritage Council, 2004-2007
Senior Vice-President, Royal Australian Historical Society, 2003-2005, Vice-President 2002-2003, Treasurer 2001-2002, Councillor, 1995-2005
Vice-President, Australian Catholic Historical Society, 2003-2005, Councillor, 1995-2005
Management Committee member, Professional Historians Association (NSW), 2002-2003
Member, Community Advisory Committee, State Records NSW 2000-2002
Member of Professional Historians Association (NSW), Australasian Society for Historical Archaeology, Society of Australian Genealogists, and National Trust (NSW)

1.3 Repositories Consulted

1.3.1 During preparation of this report the following repositories were consulted:

Baulkham Hills Shire Library local studies collection
Blacktown City Library local studies collection
Heritage Survey Unit, Roads and Traffic Authority
Holroyd City library local studies collection
Land Titles Office, NSW Lands Department
Mitchell Library, State Library of NSW
National Trust (NSW) library
NSW Heritage Office library
Parramatta City Council heritage centre
Royal Australian Historical Society library
State Records NSW

1.3.2 Two repositories were closed indefinitely and access was not available. These were the Plan Room of the Lands Department, and The Hills District Historical Society archives.

1.4 Acknowledgements

Logan Arumugum, Project Management Services, Roads and Traffic Authority
Bruce Baskerville, Senior Heritage Officer, NSW Heritage Office
Julie Blyth, Archivist, National Trust
Jack Brook, Local Historian
Kathy Curran, Librarian, Royal Australian Historical Society
Bill Evans and Felicity Barry, Heritage Survey Unit, Roads and Traffic Authority
Hazel Magann, Local Historian
Elizabeth Robertson, Librarian, NSW Heritage Office

2. Previous Reports Consulted

Access to most of the following reports was provided by the NSW Heritage Office and the Heritage Survey Unit, Roads and Traffic Authority. Copies of others were generously provided by the authors. They are listed in chronological order.

1986 Jennifer A. Pearce, 'Bella Vista Historical Study', for NSW Department of Environment and Planning

1986 Craig Burton, 'Bella Vista: Visual Analysis and Curtilage Definition', for Department of Environment and Planning

1987 Centre for Historical Archaeology, University of Sydney, 'Bella Vista, Old Windsor Road, Kellyville: archaeological report', for Department of Environment and Planning

1992 Mitchell McCotter and Associates Pty Ltd, 'Environmental Overview: Upgrading of Old Windsor and Windsor Roads', for Roads and Traffic Authority

1993 Casey and Lowe Associates on behalf of Brayshaw McDonald Pty Ltd, 'Historical Archaeological Survey of the Rouse Hill Infrastructure Project Stage One Works', for Rouse Hill Pty Ltd (July 1993)

1993 Casey and Lowe Associates on behalf of Brayshaw McDonald Pty Ltd, 'Historical Archaeological Heritage Study and Assessment of Old Windsor Road and Windsor Road, Rouse Hill NSW', for Rouse Hill Infrastructure Project Stage One Works (September 1993)

1994 Casey and Lowe Associates on behalf of Brayshaw McDonald Pty Ltd, 'Road Boundary Stones along Old Windsor Road: Archaeological Assessment', for Roads and Traffic Authority

1994 Rust PPK Pty Ltd, 'Heritage Aspects of Old Windsor Road Development: Information Report', for Roads and Traffic Authority

1994 Hughes Trueman Ludlow, 'Old Windsor Road Heritage Study, Seven Hills Road to Meurants Lane', for Roads and Traffic Authority

1994 Casey and Lowe Associates, 'Archaeological Assessment, "Orange Grove", corner of Old Windsor Road and Seven Hills Road, Seven Hills NSW', for Don Fox Planning

1995 Connell Wagner Pty Ltd, 'Proposed Upgrading of Old Windsor Road, Seven Hills Road to Windsor Road: Review of Environmental Factors', for Roads and Traffic Authority

- 1996 Connell Wagner Pty Ltd, 'Upgrading of Old Windsor Road between Seven Hills Road and Windsor Road: Conservation Management Plan', for Roads and Traffic Authority
- 1997 Siobhán Lavelle, 'Historical Archaeological Assessment of Alignment Stones, Windsor Road', for Roads and Traffic Authority
- 2000 Heritage Design Services, Department of Public Works and Services and Otto Cserhalmi and Partners Pty Ltd, 'Bella Vista Farm Conservation Management Plan', for Baulkham Hills Shire Council
- 2000 Robynne Mills Archaeological and Heritage Services, 'Heritage Assessment of the Proposed Transitway Route Alignments: Parramatta to Mungerie Park, Wetherill Park to Castle Hill, Parramatta to Strathfield', for PPK Environment and Infrastructure
- 2001 Heritage Survey Unit, Roads and Traffic Authority, 'European Heritage Sites along Old Windsor Road, from Seven Hills Road to Windsor Road', for Roads and Traffic Authority
- 2001 Siobhán Lavelle, 'Statement of Heritage Impact: Proposed Safety Works at the intersection of Meurants Lane and Old Windsor Road', for Roads and Traffic Authority
- 2001 HLA-Envirosciences Pty Ltd, 'Old Windsor Road Upgrading: Norbrik to Celebration Drive', for Roads and Traffic Authority
- 2002 Mills Archaeological and Heritage Services Pty Ltd, 'Statement of Heritage Impact to the Old Windsor Road Alignment from the upgrade of Meurants Lane/Norwest Boulevard junction to accommodate the construction of the T-Way', for Roads and Traffic Authority
- 2003 Archaeological Management and Consulting Group Pty Ltd, 'Permit Application, S60 Heritage Act NSW 1977, Archaeological Assessment, Heritage Impact Statement, Research Design and Excavation Methodology: Bella Vista Farm Park (SHR 754)...2 Elizabeth Macarthur Drive, Bella Vista NSW', for Baulkham Hills Shire Council
- 2003 Design 5 Architects Pty Ltd, 'Exeter Farm, Meurants Lane, Parklea, Blacktown NSW 2768, Conservation Management Plan (draft)' for NSW Heritage Office

3. History of Old Windsor Road

3.1 Construction of the Hawkesbury Road

3.1.1 In January 1794 the Acting Governor, Major Francis Grose, permitted the establishment of a new agricultural settlement on the Hawkesbury River. The area had been explored by boat the previous September by Grose's second-in-command Captain William Paterson.¹ The new settlers were all emancipists, and lost no time in clearing their land. The settlement was part of a policy change from government to private farming, and over the next two years under Grose and his successor Paterson, the acreage of land sown by the government fell from the peak of over 1000 acres in 1792 to 400 acres in 1793 and 1794, to 340 acres in 1795.²

3.1.2 In 1794 Grose reported to London that a road had been made to the Hawkesbury settlement, and that an officer had walked there from Sydney in 8 hours.³ This information was confirmed in a letter from Captain Paterson of the New South Wales Corps writing to Sir Joseph Banks.⁴ As the distance was traditionally stated to be 15 miles from Sydney to Parramatta, and 20 miles from Parramatta to the Hawkesbury, this would have been a walking speed of under four-and-a half miles per hour. Most people, laden with baggage, would not have attempted the whole journey from Sydney to the Hawkesbury in one day.

3.1.3 The specifications of the Hawkesbury Road constructed in 1794 are not recorded. However, it is likely that they conformed with later specifications laid down by Governor Macquarie for the road over the Blue Mountains in 1814:

The road thus made must be at least 12 feet wide, so as to permit two carts or other wheel carriages to pass each other with ease. The timber in forest ground to be cut down and cleared away 20 feet wide, grubbing up stumps and filling up the holes, so that a four-wheel carriage or cart may pass without difficulty or danger. In brush ground it is to be cut 20 feet wide. Any small bridges that may be requisite to be made 12 feet wide.⁵

3.1.4 The Hawkesbury Road was repaired and upgraded in 1797 under Governor John Hunter, and in 1798 Mrs Elizabeth Macarthur described it as 'a very good carriage road' (see Section 3.2).

¹ John Copley, *Sydney Cove 1793-1795*, Angus and Robertson, Sydney, 1983, pp 71-72, 103-104.

² Brian Hinton Fletcher, *Landed Enterprise and Penal Society: a history of farming and grazing in New South Wales before 1821*, Sydney University Press, 1976, pp 27-29.

³ Grose to Dundas, 31 August 1794, in Copley, *Sydney Cove 1793-1795*, p 174.

⁴ Paterson to Banks, 23 August 1794, in Copley, *Sydney Cove 1793-1795*, p 171.

⁵ Macquarie to Cox, 14 July 1814, quoted in Yvonne McBurney and David Cox, *Road to Bathurst*, Educational Material Aid, Sydney, 1988, pp 19-20.

3.2 Hawkesbury Road in 1798

Elizabeth Macarthur, writing to a friend in England in September 1798, gave the following description of the road between Parramatta and the Hawkesbury:

There is a very good carriage road now made from hence [Parramatta] to Sydney, which by land is distant about fourteen miles; and another from this to the River Hawkesbury, which is about twenty miles from hence, in a direct line across the Country. Parramatta is a central position between both. I have once visited the Hawkesbury, and made the journey on horseback. The road is through an uninterrupted wood, with the exception of the village of Toongabbie, a farm of Government, and one or two others, which we distinguish by the name of greenlands, on account of the fine grass, and there being few trees compared with the other parts of the country, which is occasionally brushy and more or less covered with underwood. The greater part of the country is like an English park, and the trees give it the appearance of a wilderness or shrubbery, commonly attached to the habitations of people of fortune, filled with a variety of native plants, placed in a wild irregular manner.⁶

3.3 New Windsor Road, 1812

3.3.1 As early as 1803 efforts were made to bypass the hilly section of Windsor Road through Seven Hills. (Casey and Lowe, September 1993, p 4) Governor Lachlan Macquarie arrived in Sydney in January 1810 and in March called tenders for the construction of a road to the Hawkesbury.⁷ Although not stated in the notice, the road was to by-pass the Seven Hills area. This road included the new branch through Castle Hill and was completed in 1812.

3.4 World War II Roadworks

3.4.1 Lavelle (2001) stated that during World War II the United States Army prepared evacuation routes from Sydney in preparation for an anticipated Japanese invasion. One of the routes was Old Windsor and Windsor Roads and some cutting and filling occurred. There may be further documentation in the Australian Archives but this has not been investigated as it is not directly relevant to the current report.

3.5 1980s Changes

3.5.1 Further changes occurred to Old Windsor Road in the 1980s with the construction of new high-level bridges over Pye's Crossing (1981) and Johnston's Bridge (1982) by the Department of Main Roads. In 1983/84 Blacktown and Baulkham Hills Councils combined to surface the last unmade section of the road.

⁶ Elizabeth Macarthur to Bridget Kingdon, 1 September 1798, in Hazel King, *Elizabeth Macarthur and her World*, Sydney University Press, 1980, pp 21-22.

⁷ *Sydney Gazette*, 28 March 1810, p 1.

3.6 Heritage Listings of Old Windsor Road

3.6.1 The Australian Heritage Commission added Old Windsor Road to the Register of the National Estate on 21 March 1978.⁸ The listing covered 'the whole of Old Windsor Road reserve from its intersection with Seven Hills Road to its intersection with the new Windsor Road at Kellyville'.

3.6.2 The NSW Heritage Council has received two nominations for listing of Old Windsor Road on the State Heritage Register. These nominations are currently under consideration, pending the final outcome of the conservation management plan for the road required to be prepared by the RTA to meet the Heritage Council's resolution of 2 October 2002 concerning the proposed Transitway, which states (among other things):

'1. Prior to the commencement of works onsite, the applicant must confirm, in writing, that a comprehensive Conservation Management Plan for Old Windsor Road has been commissioned, and will be completed prior to the submission of any future applications for Old Windsor Road.'⁹

3.6.3 The NSW National Trust listed Old Windsor Road on 22 November 1976. The listing applied to 1.5 kilometres either side (ie northwest and southeast) of Meurants Lane. The road at that time was described as 'gravel road with ditches at sides, defined by earth banks, hedgerows and remaining lengths of post and rail fencing'.

3.6.4 Old Windsor Road was added to the Blacktown City Local Environmental Plan by amendment number 143, gazetted on 12 April 2002.¹⁰ The section covered is 'between Meurants Lane and the proposed Castlereagh Freeway and from Caddies Creek 300 metres southward'. The Castlereagh Freeway is now known as the Western Sydney Orbital or Westlink M7.

3.6.5 The Roads and Traffic Authority S170 Register lists the section of Old Windsor Road from Seven Hills Road north to Kellyville as item 1385.

⁸ Australian Heritage Commission, place ID 2963, place file number 1/14/004/0001.

⁹ Personal communication, Bruce Baskerville, Senior Heritage Officer, 28 February 2005.

¹⁰ *NSW Government Gazette*, no 72, 2002, p 2262.

4. Settlement in the Seven Hills/Toongabbie area

4.1 Change in Place Names

4.1.1 Several of the place names used in this report formerly applied to different areas than their modern usage.

4.1.2 In the 1790s and 1800s Toongabbie was a land district which covered a much larger area than the original settlement which was located near modern Oakes Road, Old Toongabbie. The opening of Toongabbie Station on the western railway line moved the place name to the west.

4.1.3 Seven Hills was applied to the area generally east of Old Windsor Road and north of Toongabbie Creek. The name was given to a railway siding in 1863 which caused it to move south-west from its original location.

4.1.4 Kings Langley, originally the name of Matthew Pearce's farm east of Old Windsor Road, is now applied to the subdivision west of the road.

4.2 Parish and Local Government Boundaries

4.2.1 Old Windsor Road formed the boundary between the (civil) land parishes. On its eastern side is the Parish of Castle Hill. On its western side the Parish of Gidley is north of Meurants Lane and the Parish of Prospect south of Meurants Lane.

4.2.2 Old Windsor Road also forms the boundary between the local government areas of Blacktown City, to the west, and Baulkham Hills Shire, to the east.

4.3 Early Land Grants

4.3.1 The first land grant on the Hawkesbury Road beyond the Toongabbie settlement was to Andrew Hume on 1 April 1794. Hume was a superintendent of convicts at Toongabbie, and the father of the explorer Hamilton Hume.¹¹ Hume's land grant was on the southwest side of the Hawkesbury Road, straddling Toongabbie Creek next to Pye's Crossing.

4.3.2 The second land grant was 30 acres to William Joyce on 13 December 1794.¹² Joyce's grant was on the north-east side of the Road, and bounded on its southern side by Toongabbie Creek. (See Figure 1) William Joyce Reserve in Baulkham Hills is named after him.

4.3.3 The third land grant was 160 acres to Matthew Pearce on 22 July 1795.¹³ (See Figure 1) Pearce arrived in 1794 as a free settler with his wife Martha. He named his

¹¹ *Australian Dictionary of Biography*, volume I, pp 563-564.

¹² Land Grants volume 1, no 153, Land Titles Office, Department of Lands.

¹³ Land Grants volume 1, no 169, Land Titles Office, Department of Lands.

farm Kings Langley after his father's home village in Hertfordshire.¹⁴ Pearce's descendants later came to own much of the land in the district, and apart from the name Kings Langley he is also commemorated by Matthew Pearce Primary School in Baulkham Hills. Matthew and his wife were originally buried in St John's Cemetery, Parramatta, but their graves were apparently moved to the Pearce family cemetery which stands at the junction of Old Windsor Road and Seven Hills Road. (See Section 5.2)

4.3.4 Between October and December 1799 a number of land grants were made along the Hawkesbury Road north to modern Meurants Lane. Those on the eastern side, listed from Pearce's grant northwards, were former Marine William Goodhall (270 acres on 18 October 1799),¹⁵ Private Richard Richardson of the NSW Corps (160 acres on 18 October 1799)¹⁶ and Captain Edward Abbott of the NSW Corps (700 acres on 18 December 1799).¹⁷ (See Figure 1)

4.3.5 Behind these grants, to the east, Major Joseph Foveaux of the NSW Corps received a grant of 980 acres.¹⁸ By late March 1800 he had increased this to 1770 acres by purchases.¹⁹ He called this property 'Stock Farm', and in December 1801 sold it along with 1300 sheep to John Macarthur.²⁰

4.4 First Use of Name 'Seven Hills'

4.4.1 The Government Stock Yard was located north of Meurants Lane and west of Old Windsor Road, in modern Glenwood. (See Figure 1) It was first recorded in July 1800 in a letter from Governor King, which included an 'account of live stock belonging to the Crown'. This table listed the number of cattle, sheep, horses and goats at Toongabbie, Parramatta, Annandale, Sydney and 'the Seven Hills'.²¹

4.4.2 Noting the issuing of many new land grants in the area south of Meurants Lane in 1799, and the need to distinguish this area from Toongabbie, it is assumed that the name Seven Hills was in common use by 1800.

4.5 Macarthur's Seven Hills Farm

4.5.1 During the early 1800s John Macarthur purchased Foveaux's 1770 acre Stock Farm and also acquired 170 acres from William Goodhall along with Richard

¹⁴ Michael Flynn, *Settlers and Seditious: the people of the convict ship Surprise 1794*, published by Angela Lind, Sydney, 1994, pp 120-122.

¹⁵ Land Grants volume 2, no 360, Land Titles Office, Department of Lands.

¹⁶ Land Grants volume 2, no 361, Land Titles Office, Department of Lands.

¹⁷ Land Grants volume 2, no 409, Land Titles Office, Department of Lands.

¹⁸ Land Grants volume 2, no 321, Land Titles Office, Department of Lands.

¹⁹ Land Grants volume 2, no 418 (190 acres) and volume 3, no 8 (600 acres), Land Titles Office, Department of Lands.

²⁰ Anne-Marce Whitaker, *Joseph Foveaux: power and patronage in early New South Wales*, New South Wales University Press, Sydney, 2000, pp 65-66.

²¹ King to Treasury, 7 July 1800, *Historical Records of Australia*, series 1, volume 2, p 527.

Richardson's 160 acres. Macarthur named the property Seven Hills Farm and it eventually totalled over 2000 acres. (See Figure 2) In 1804 during the Castle Hill Rebellion the rebels raided the property looking for arms and William Joyce fled to Parramatta to inform Mrs Macarthur of the attack. She wrote: "'Sir", says he, looking wildly at Mr Marsden, "come with me". "And you too, madam", looking at me. Then, half shutting the door, he told us that the Croppies had risen, that they were at my Seven Hills farm, and that numbers were approaching Parramatta.'

4.5.2 During John Macarthur's extensive absences from New South Wales the farm was run by his wife Elizabeth, and it was here that the breeding of extensive sheep flocks based on imported Merinos occurred during the period 1801-1821. In 1821 the farm was handed back to the Government in exchange for land at Camden, and the Seven Hills land was granted in four lots to new landholders. It was acquired by the Pearce family in 1842 and renamed 'Bella Vista'. (See Section 5.1)

5. Heritage Sites in the Study Area

5.1 'Bella Vista', 2 Elizabeth Macarthur Drive, Bella Vista

5.1.1 'Bella Vista' is a complex of buildings associated with the development of the property for fruit growing by the Pearce family, who owned the property from 1842 to 1950. The main house dates from the 1850s but some of the outbuildings are earlier and believed to date from 1801-1821 when this was Macarthur's Seven Hills Farm. The complex of buildings represents the agricultural enterprises of the Cumberland Plain and shows the growth and development of a nineteenth century farming establishment. The former entrance avenue of bunya pines is a significant regional landmark. The recent subdivision has been named after the property.

5.1.2 'Bella Vista' was added to the Register of the National Estate on 28 September 1982, and to the State Heritage Register on 2 April 1999. It is classified by the National Trust. 'Bella Vista' is owned by Baulkham Hills Shire Council and a Conservation Management Plan was adopted in 2000.

5.1.3 Reports reviewed on this property include Pearce (1986), Burton (1986), Centre for Historical Archaeology, University of Sydney (1987), Heritage Design Services and Otto Cserhalmi (2000), and Archaeological Management and Consulting Group (2003).

5.2 Pearce Family Cemetery, Seven Hills Road, Bella Vista

5.2.1 The cemetery is on a rise near the highest point of land on Seven Hills Road. It contains the graves of Matthew Pearce, the district's first settler, and of his descendants. There is a large vault, approximately 10 metres by 4 metres, and other headstones. It is approximately 460 m² and is enclosed by a fence.

5.2.2 The cemetery is included in the Register of the National Estate and was added to the State Heritage Register on 2 April 1999. It is classified by the National Trust.

5.3 Exeter Farm, Heritage Place, Glenwood

5.3.1 Exeter Farm is a rare intact surviving example of an early settler's farmhouse dating from the time of Governor Macquarie (1810-1821). It is built on land granted to Daniel Bryan in 1821 although at least one of the buildings is believed to date from 1810. The buildings were added to and altered, but retain many rare early colonial details including timberwork and fabric. The buildings demonstrate the growth of an individual family property, and retain many rare early colonial details such as woodwork, finishes and design. It is now owned by the NSW Heritage Office.

5.3.2 The house was added to the State Heritage Register on 2 April 1999. It is classified by the National Trust. A draft Conservation Management Plan has been prepared (Design 5, 2000).

5.4 Joyce Farmhouse, 15 Valerie Avenue, Baulkham Hills

5.4.1 Joyce Farmhouse is classified by the National Trust for its association with William Joyce, the earliest landholder in the district. It was built by William Joyce in c1806-1810 and is in private ownership.

5.4.2 The house is included in the Register of the National Estate, and the Baulkham Hills Local Environmental Plan. It has been recorded by the National Trust.

5.5 St Andrew's Anglican Church, 313 Seven Hills Road North, Seven Hills

5.5.1 This group of buildings comprises the church, rectory and hall. It has been deconsecrated and is now in private ownership.

5.5.2 The St Andrew's Church group of buildings was added to the State Heritage Register on 2 April 1999 and is included in the Blacktown Local Environmental Plan. It has been recorded by the National Trust.

5.6 Old Windsor Road

5.6.1 The heritage listings of Old Windsor Road are summarised in Section 3.6. These refer to the road itself and to related elements such as boundary stones and culverts. Specific reports on these relics include Casey and Lowe (1994), Lavelle (1997) and Heritage Survey Unit RTA (2001).

5.6.2 Many of the reports reviewed have expanded on the reasons for the heritage listings of this section of Old Windsor Road. These assessments are summarised in Section 6.

6. Review of Previous Reports

6.1 Mitchell McCotter and Associates (1992)

6.1.1 This report on 'Environmental Overview: Upgrading of Old Windsor and Windsor Roads', was prepared in 1992 by Mitchell McCotter and Associates for the Roads and Traffic Authority.

6.1.2 In relation to the Seven Hills this report notes: 'the overall character of the road varies along its length from that of the country lane character of Old Windsor Road which meanders over hills, through cuttings and in between tall eucalypts to reach the very different character of Windsor Road which is that of a very busy older style of main road with long, flat and straight stretches, views restricted only by creekline vegetation and with some older buildings fronting the road.' (p 8.6)

6.1.3 The report makes no specific comments on the heritage value of Old Windsor Road.

6.1.4 This report pre-dates the Transitway proposal.

6.2 Casey and Lowe Associates (July 1993)

6.2.1 This report on 'Historical Archaeological Survey of the Rouse Hill Infrastructure Project Stage One Works', was prepared in July 1993 by Casey and Lowe Associates for Rouse Hill Pty Ltd.

6.2.2 There is no material in this report on the Seven Hills additional to Casey and Lowe (September 1993).

6.2.3 There is no material in this report on Old Windsor Road's significance additional to Casey and Lowe (September 1993).

6.2.4 This report pre-dates the Transitway proposal.

6.3 Casey and Lowe Associates (September 1993)

6.3.1 This report on 'Historical Archaeological Heritage Study and Assessment of Old Windsor Road and Windsor Road, Rouse Hill NSW', was prepared in September 1993 by Casey and Lowe Associates for Rouse Hill Infrastructure Project Stage One Works.

6.3.2 The report notes the 1803 order to 'make a more convenient road to Hawkesbury from Parramatta, removing the mischief caused to horses and carriages by crossing the Seven Hills'. (p 4) This early use of the phrase '*the Seven Hills*' implies that the description of the number of hills was literal.

6.3.3 The report stated: 'Old Windsor Road has historical, archaeological, aesthetic and social significance for past, present, and future generations. It is a rare remnant eighteenth and early nineteenth century road associated with the development of the colony with a high degree of physical integrity.' (p 2)

6.3.4 This report pre-dates the Transitway proposal.

6.4 Casey and Lowe Associates (1994)

6.4.1 This report on 'Road Boundary Stones along Old Windsor Road: Archaeological Assessment', was prepared in 1994 by Casey and Lowe Associates for the Roads and Traffic Authority.

6.4.2 This report relates to specific relics along Old Windsor Road and does not make any comment on the origin of the name Seven Hills.

6.4.3 The report states: 'The section of Old Windsor Road between Seven Hills Road and Windsor Road has been assessed as possessing a rare degree of historic and archaeological significance. This section of the road has changed little since it was originally laid out in 1794 and its general appearance is evocative of the largely semi-rural landscape it has traversed since then. The road through the cuttings south of Meurants Lane and the tree-lined section around the branch of Caddies Creek south of the Windsor Road intersection has probably changed very little since Mackenzie ran his survey in 1885.' (p 5)

6.4.4 This report pre-dates the Transitway proposal.

6.5 Rust PPK (1994)

6.5.1 This report on 'Heritage Aspects of Old Windsor Road Development: Information Report', was prepared in 1994 by Rust PPK for the Roads and Traffic Authority.

6.5.2 In relation to the Seven Hills, the report stated: 'Old Windsor Road runs through undulating and hilly country in a nominal 60 metre road reserve. The existing road is a sealed two lane rural road, which generally is thought to follow the 1794 alignment and which tends to wander inside the road reserve. The vertical road alignment has changed over time with the addition of cuttings, and deepening of existing cuttings.' (p 4)

6.5.3 Regarding Old Windsor Road, the report stated: 'Parts of Old Windsor Road are described as significant in European heritage terms. The value relates to it being a section of the oldest continually used country road in Australia, associated with the development of the colony. It served the movement of settlements to farming areas beyond Parramatta and was constructed by convicts. Its original alignment and cuttings date between 1794 and 1812.' (p 1)

6.5.4 This report pre-dates the Transitway proposal.

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6.6 Hughes Trueman Ludlow (1994)

6.6.1 This report on 'Old Windsor Road Heritage Study, Seven Hills Road to Meurants Lane', was prepared in 1994 by Hughes Trueman Ludlow for the Roads and Traffic Authority.

6.6.2 This report makes no specific comment on the Seven Hills.

6.6.3 The report stated: 'The study area was found to have a high heritage value on the basis of the holistic view of the history of the road, the overall landscape and the individual heritage relics. It is consequently recommended that as much of the existing country lane section of Old Windsor Road and associated landscape features be retained as possible in a recognisable form through integration into the arterial road system.' (p 1) It continued: 'Sydney hinterland has undergone massive urban growth, displacing small rural enterprises....The country lane section [of Old Windsor Road] today appears from our research to be the last remaining landscape of its type that is relatively intact.' (p 12)

6.6.4 This report pre-dates the Transitway proposal.

6.7 Connell Wagner (1995)

6.7.1 This report on 'Proposed Upgrading of Old Windsor Road, Seven Hills Road to Windsor Road: Review of Environmental Factors', was prepared in 1995 by Connell Wagner for the Roads and Traffic Authority.

6.7.2 This report made no comment on the Seven Hills.

6.7.3 Regarding Old Windsor Road the report stated: The length of road from the Norbrik entry to Meurants Lane is a critical section for perceiving the history of the road. This section of road is on the original alignment which was constructed in 1794. It is also the section of road that contains the majority of the heritage components, which collectively increase the significance of this section.' (p 119)

6.7.4 This report pre-dates the Transitway proposal.

6.8 Connell Wagner (1996)

6.8.1 This report on 'Upgrading of Old Windsor Road between Seven Hills Road and Windsor Road: Conservation Management Plan', was prepared in 1996 by Connell Wagner for the Roads and Traffic Authority.

6.8.2 The report made no specific comment on the Seven Hills.

6.8.3 Regarding Old Windsor Road the report stated: 'The section of Old Windsor Road between Seven Hills Road and Windsor Road has historic, archaeological, aesthetic, education, associative and social significance. It is part of a unique remnant

of an eighteenth and early nineteenth century road and is associated with the development of the colony of New South Wales, and has a high degree of physical integrity. The road is considered to be of National significance.’ (p 2) It further stated: ‘the length of the road from the Norbrik entry to Meurants Lane is a critical section for perceiving the history of the road. This section of road is on the original alignment which was constructed in 1794. It is also the section of road that contains the majority of the heritage components, which collectively increase the significance of this section.’ (Appendix A, p 2)

6.8.4 This report pre-dates the Transitway proposal.

6.9 Siobhán Lavelle (1997)

6.9.1 This report on ‘Historical Archaeological Assessment of Alignment Stones, Windsor Road’, was prepared in 1997 by Siobhán Lavelle for the Roads and Traffic Authority.

6.9.2 This report made no specific comment on the Seven Hills.

6.9.3 The report stated: ‘Originally laid out in 1794 Windsor Road has immense historical significance and is one of the oldest surviving road-lines in New South Wales. The road provides tangible evidence of a crucial point in the development of the Colony and of the early importance of the Hawkesbury as the granary for Sydney from the 1790s onwards.’ (p 9)

6.9.4 This report pre-dates the Transitway proposal.

6.10 Robynne Mills Archaeological and Heritage Services (2000)

6.10.1 This report on ‘Heritage Assessment of the Proposed Transitway Route Alignments: Parramatta to Mungerie Park, Wetherill Park to Castle Hill, Parramatta to Strathfield’, was prepared in 2000 by Robynne Mills Archaeological and Heritage Services for PPK Environment and Infrastructure.

6.10.2 In relation to the Seven Hills this report has no specific comment.

6.10.3 The report considers that: ‘all changes to the width and elevation of Old Windsor Road, in the vicinity of Meurants Lane and Caddies Creek (ie those sections listed by heritage bodies and Blacktown and Baulkham Hills Councils) have the potential to impact heavily on the heritage significance of the alignment.’

6.10.4 In relation to the Transitway, this report states: ‘The Transitway development should avoid those areas of the Old Windsor Road alignment which have been identified by heritage bodies and the RTA’s S170 Schedules, as having high heritage significance for past, present and future citizens of NSW. The proposed Transitway alignment would require a widening of the existing roadway which would destroy the 18th and 19th century ‘country lane’ landscape character of the original roadway and reduce the heritage significance of the item.’

Dr A Whitaker, Report on the location of the ‘Seventh Hill’, FINAL February 2005

6.11 Heritage Survey Unit, RTA (2001)

6.11.1 This report on 'European Heritage Sites along Old Windsor Road, from Seven Hills Road to Windsor Road', was prepared in 2001 by the Heritage Survey Unit, Roads and Traffic Authority, for the Roads and Traffic Authority.

6.11.2 In relation to the Seven Hills this report has no specific comment.

6.11.3 This report comprises a series of inventory sheets of 29 heritage items on Old Windsor Road, with recommendations on actions related to specific items. It makes no overall comment on the heritage significance of Old Windsor Road.

6.11.4 In relation to the Transitway this report has no specific comment.

6.12 Siobhán Lavelle (2001)

6.12.1 This report on 'Statement of Heritage Impact: Proposed Safety Works at the intersection of Meurants Lane and Old Windsor Road', was prepared in 2001 by Siobhán Lavelle for the Roads and Traffic Authority.

6.12.2 In relation to the Seven Hills this report states: 'Between Seven Hills Road and Meurants Lane, the Old Windsor Road passed through hilly country. The old road formation here featured a number of cuttings ranging from 2m to up to about 5m in depth. The old road rises and falls as it ascends the hills and descend the gullies, and the undulation remains a characteristic feature of the drive along the Old Windsor Road in this area.' (p 16)

6.12.3 This report summarises the significance of Old Windsor Road as follows:

The Old Windsor Road is an item of **National** heritage significance. It has values under **all** relevant heritage assessment criteria, including historic, aesthetic, scientific and social significance as expressed by the ICOMOS Burra Charter, under the State Heritage criteria and it fulfils numerous assessment criteria as expressed by the Australian Heritage Commission.

Historically the Old Windsor Road was the first made road out of Sydney, and it linked Sydney with the early Hawkesbury settlements. It was first laid out in the 1790s and this makes it one of the earliest surviving roads in New South Wales. Few other 18th century roads survive. The road has historic associations with several notable colonial figures including Major Druitt and Governor Macquarie. The Old Windsor Road is also tangible evidence of the development of the colony at Sydney, and of the settlement of the first farmers along the Hawkesbury which was essential for the colony's food supply.

Parts of the Old Windsor Road remain in relatively unspoilt settings which are evocative of the colonial landscape environment and vegetation. The layout of

the Old Windsor Road still demonstrates the nature of nineteenth century travel, through its early style geometry and layout, including short sight-lines and tight curves, and with a formation rising and falling through an undulating landscape.

The Old Windsor Road remains in use as an essential transport corridor and has thus carried European traffic continuously since the 1790s, ie. for more than 200 years.

6.12.4 In relation to the Transitway, this report states that: 'at present part of Old Windsor Road is also proposed to be used for a bus transitway. Preliminary heritage assessment of this has been completed by R. Mills in a report dated June, 2000. These matters are not directly assessed by the present SOHI report....' (p 13) The 2000 report by R. Mills has not been available in the preparation of this report.

6.13 HLA-Envirosciences (2001)

6.13.1 This report on 'Old Windsor Road Upgrading: Norbrik to Celebration Drive', was prepared in 2001 by HLA-Envirosciences for the Roads and Traffic Authority.

6.13.2 In relation to the Seven Hills this report states: 'The road alignment is quite subtle. The Seven Hills are a series of ridges that mark the catchment boundary between the Hawkesbury River and the Parramatta River and lie in the direct route between the settlement at Parramatta and Toongabbie and the Green Hills [Windsor] settlement.' (p 10) The report was not available to Jack Brook at the time he prepared his 2001 paper but is cited in his 2004 book as confirmation of his theory regarding the name Seven Hills referring to seven specific hills (Brook 2004, p 16).

6.13.3 The report considers that 'Old Windsor Road (MR 635) is one of the most historic road lines surviving in NSW and is recognised as an item of National and State Significance.' (p 1) It summarises: 'the *whole* of Old Windsor Road (from at least Seven Hills Road to Windsor Road and to the width of the road reserve) is a heritage item.' (p 16)

6.13.4 In relation to the Transitway, the report states that: 'the impact of the transitway on the original alignment of Old Windsor Road is not considered in this report'. (p 22)

6.14 Mills Archaeological and Heritage Services (2002)

6.14.1 This report 'Statement of Heritage Impact to the Old Windsor Road Alignment from the upgrade of Meurants Lane/Norwest Boulevard junction to accommodate the construction of the T-Way', was prepared in 2002 by Mills Archaeological and Heritage Services for the Roads and Traffic Authority.

6.14.2 In relation to the Seven Hills this report states: 'in 1818 the road in the vicinity of the Government Stockyard was referred to as Seven Hills Road and later as Old Seven Hills Road.' (p 5)

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6.14.3 The report places a high value on the surviving part of Old Windsor Road, describing it as: 'a rare remnant eighteenth and early nineteenth-century road associated with the development of the colony' with 'significance for present and future generations of NSW residents'. It continues: 'this section of Old Windsor Road has high educational, research and scientific potential as an intact section of roadway dating to the early 1800s. The road provides an opportunity for education about the history of settlement, road technology, land uses and lifestyles.' (p 19)

6.14.4 In relation to the Transitway, the report states that 'implementation of this option would destroy the historical, aesthetic, social, technical and research significance of the heritage alignment and directly impact all identified relics within the heritage alignment.' (p 29)

7. Location of the 'Seventh Hill'

7.1 Jack Brook's Research

7.1.1 To mark the 25th anniversary of the foundation of the Blacktown and District Historical Society, a function was held on 13 October 2001 which included a paper by long-time society member Jack Brook. Mr Brook's paper was entitled 'The Seven Hills' and discussed the origin of the name, advancing the theory that it was based literally on the fact that there were seven hills along the (Old) Windsor Road, in the area by-passed by the (New) Windsor Road constructed in 1812. The paper was published by the Blacktown and District Historical Society as a monograph, and includes sections of the survey of the road by Surveyor R Baylis Mackenzie in 1885.

7.1.2 Mr Brook's research was publicised by at least two local newspapers in 2001. The *Blacktown City Sun* reported on 16 October 2001 under the headline 'Seven Hills of home aren't hills of Rome' and the *Blacktown Advocate* followed on 17 October 2001 with 'Hills are alive with theories'.²²

7.1.3 In 2004 Jack Brook published his book *The Seven Hills: a village divided, a suburb united*. His 2001 paper forms chapter 3 of the book, but the annotated copies of Baylis Mackenzie's 1885 traverse are not included.

7.1.4 Also in 2004 the local press reported on Mr Brook's campaign to ensure heritage protection for the road. Articles appeared during April 2004 in the *Blacktown City Sun* ('Threat to Old Windsor Road: the end of the avenue') and the *Blacktown Advocate* ('Battle to Save Hill').²³ These articles gave rise to the issuing of the brief for the present report.

7.2 Previous Theories on the name Seven Hills

7.2.1 Early records do not contain any explicit reason for the name 'Seven Hills', although Mr Brook's explanation that it was named literally after the seven hills which had to be traversed by travellers seems most likely. The Seven Hills district was certainly regarded as a significant landmark, and is mentioned in Gregory Blaxland's journal of the crossing of the Blue Mountains. On 19 May 1813, when in the vicinity of modern Linden, he records taking bearings to Mount Banks, Grose Head, Prospect Hill, Windsor and the Seven Hills.²⁴ This would obviously have been the highest point of Seven Hills, the site of Bella Vista House, which is shown as 108 metres on trigonometrical maps.

²² Nick Soon, 'Seven Hills of Home aren't Hills of Rome', *Blacktown City Sun*, 16 October 2001, p 3; Emily Tinson, 'Hills are Alive with Theories', *Blacktown Advocate*, 17 October 2001, p 8.

²³ Nick Soon, 'Threat to Old Windsor Road: the end of the avenue', *Blacktown City Sun*, 27 April 2004, p 1; Luisa Cogno, 'Battle to Save Hill', *Blacktown Advocate*, 28 April 2004, p 3.

²⁴ George Mackaness, *Fourteen Journeys over the Blue Mountains, Part I 1813-1815*, Sydney, 1950, p 14.

7.2.2 Many sources state that the name Seven Hills was given by Matthew Pearce because he could see seven hills from his land grant.²⁵ An early publication of this family tradition was in an article by local historian James Jervis in 1929, who stated: 'from his house seven hills were visible, hence the name'.²⁶ The hills must have been near Pearce's farm, rather than just 'visible' from it. The Blue Mountains are visible from the area but it is not likely that they were related to the fixing of the name 'Seven Hills' in the specific area north of Toongabbie. Mr Brook's explanation is quite compatible with this Pearce family tradition, if it is accepted that the hills formed the approaches to Pearce's house rather than merely being 'visible' from it.

7.2.3 Convict Margaret Catchpole is sometimes cited as the source of the name, because her birthplace was Seven Hills, Nacton, Suffolk. However Catchpole did not arrive in the colony until 1801, by which time the name Seven Hills was already current. (Brook, 2001, p 2) Catchpole's vivid letters home have inspired many books and plays since the 1840s.²⁷

7.2.4 It is occasionally speculated that the name derives from the fact that Rome was built on Seven Hills. There is no evidence to substantiate this theory, which is discounted by Mr Brook.

7.2.5 An article by local historian William Freame in the *Cumberland Argus* in 1918 stated: 'the district was not named after the Seven Hills of Rome. The name arose through remarks made by Governor Macquarie to Mr M. P. Pearce re the seven hills that lay between Parramatta and Windsor'.²⁸ However Governor Macquarie did not arrive until 1810, ten years after the name Seven Hills was first recorded. Macquarie's journal of his first visit to the area in 1810 does not refer to the origin of the name Seven Hills, nor any member of the Pearce family.²⁹

7.3 The First Hill (Constitution Hill)

7.3.1 Jack Brook in his 2001 paper begins his list of the seven hills with Constitution Hill at Toongabbie. He states:

The original line of road went along part of Darcy Street, Westmead, continuing along Fulton Street, over Coopers Creek, then turned right for a short distance where the Cumberland Highway is now. Then it headed northwards, to climb steadily and join the present Old Windsor Road beyond the northern end of Ferndale Close, Wentworthville, opposite Hammers Road. The steady climb ended on top of the hill above Hammers Road where

²⁵ For example, Mark Pearce, 'Matthew Pearce (1762-1831)', *Blacktown and District Historical Society Quarterly Journal*, volume 3, no 3, September 1982, p 8.

²⁶ James Jervis, 'The Beginnings of the Settlement in the Parish of Castle Hill', *Journal of the Royal Australian Historical Society*, volume 15, pt 4, 1929, p 244.

²⁷ *Australian Dictionary of Biography*, volume 1, pp 215-216.

²⁸ William Freame, 'Our Old Place Names', *Cumberland Argus*, 10 July 1918, p 2.

²⁹ Lachlan Macquarie, *Journals of his Tours in New South Wales and Van Diemen's Land, 1810-1822*, Library of Australian History, Sydney, 1979, pp 33-34.

Constitution Road bears off to the left. This hill is the first of the seven hills encountered between the Old Windsor Road at Westmead and Meurants Lane, Seven Hills.

7.3.2 This hill was called Constitution Hill from the 1790s, and was probably named after Constitution Hill in London which was a place of popular assembly and entertainment. A report in the *Parramatta Sun* in 2003 indicated that some residents wanted the suburb name to be changed to Constitution Hill.³⁰ The report claimed that the name derived from William Charles Wentworth's role in writing the NSW constitution, but the name predates Wentworth's constitution by nearly 50 years.

7.4 The Second Hill (Toongabbie Hill)

7.4.1 Brook (2001) notes: 'the second hill took shape after crossing Johnston's Bridge, over Toongabbie Creek. The brow of the hill is clearly defined at the cross roads of Caroline Chisholm Drive and Powers Road. From this point the road descends to Pye's Crossing.' (p 3)

7.4.2 This hill is shown on early parish maps as Toongabbie Hill, extending as an east-west plateau north of Toongabbie Creek.

7.5 The Third Hill

7.5.1 Brook (2001) states: 'From Pye's Crossing the next hill rises steeply to a spur on which there sits a reservoir situated on the eastern side of the road near Myee Street. From this point the present road ascends slightly to the roundabout where the Old Windsor Road and Seven Hills Road intersect. However this section of road is built on top of a large landfill. Originally the road sloped down from the aforementioned spur....' (pp 3-4)

7.5.2 The reservoir is on Myee Crescent. The Pearce trig station was west of Old Windsor Road on this hill.

7.6 The Fourth Hill

7.6.1 Brook (2001) continues his description: 'Originally the road sloped down from the aforementioned spur before rising sharply up to the ridge on which Seven Hills Road was built. This hill or ridge would be the fourth one to challenge the weary travellers in the early days of the colony.' (p 4)

7.6.2 This hill at Seven Hills Road is also the site of the Pearce family cemetery (see Section 5.3).

³⁰ Amanda Wright, 'New Tune called for Toongabbie', *Parramatta Sun*, 26 February 2003, p 16.

7.7 The Fifth Hill

7.7.1 Brook (2001) describes the next section of road: 'Recent major roadworks have taken place on this section of the road and the hills are not as clear cut as they were. If one looks at the cutting beside the road one can clearly see the original height of the [fifth] hill. Hill number five rises from the bottom end of Troubador Park and peaks close to Norbrick brickworks. On the Baylis Mackenzie map [1885] this ridge accommodated the Darcy trig station.' (p 4)

7.7.2 By 1885 Baylis Mackenzie shows cuttings and 'viaducts' on the Old Windsor Road in the vicinity of Trig Station Darcy, which would have reduced the original impact of this hill.

7.8 The Sixth Hill

7.8.1 Brook (2001) continues: 'The top of hill number six is just above the entrance to "Kings Ridge". It is shown on the Baylis Mackenzie map on the top of a "spur". Hills number 5 and 6 almost merge into one incline but on close inspection one can see where the road has been altered at the entrance to "Kings Ridge" Estate with the formation of a roundabout.' (p 4)

7.8.2 The roundabout and entrance to Kings Ridge are in a section of the road which was closed to traffic in 2002. The area is still accessible by foot from Crestview Drive, Glenwood.

7.9 The Seventh Hill

7.9.1 Brook (2001) describes the last hill: 'The brow of the seventh hill is situated where Meurants Lane meets the Old Windsor Road in sight of "Bella Vista". Beyond this point there is only one gradual incline on the road before it joins the new Windsor Road.' (p 4)

7.9.2 The remaining section of the former Old Windsor Road clearly shows the steep valley between hills 6 and 7. Trig station Meurant was on this spur but some distance west of Old Windsor Road.

8. Significance of the Seventh Hill

8.1 Assessing Heritage Significance

8.1.1 The methodology and guidelines used to assess cultural significance have been standardised by conservation practitioners in recent years and there is now a considerable quantity of material on this subject published by heritage authorities and groups.

8.1.2 The criteria have been updated in the NSW Heritage Office publication *Assessing Heritage Significance*, published in July 2001. The revised new criteria of the 2001 version remain very similar to those listed above. They include the values of history or historic association (Criteria a and b), aesthetic (Criterion c), social or spiritual (Criterion d) and information potential (Criterion e) plus rarity (Criterion f) and representative ability to demonstrate (Criterion g).³¹ The seven criteria (a to g) allow an item to be assessed against two levels within NSW, those of State and Local significance. They are consistent with criteria used by the former Australian Heritage Commission for National Estate listing and they also encompass the four values historic, aesthetic, scientific and social used in the Burra Charter, which also functions as a national guideline document.³²

8.2 Descriptive Significance

8.2.1 The Seventh Hill is significant as the last in the line of closely-spaced hills traversed by early travellers from Parramatta to the Hawkesbury. The difficulty in travelling this stretch of road caused by the rising of the road to cross over the hills led to the number of hills becoming prominent in popular imagination. See Section 7.2.

8.2.2 The name of the district focused around the ordinal number of the final hill in this group along the road from Parramatta to Windsor. Each of the line of hills is therefore significant in the origin of the name. The hills collectively were responsible for the early by-pass of the area by the 'New' Windsor Road in 1812. See Section 3.3.

8.2.3 Early naming of the district took the form 'the Seven Hills' indicating that it was a literal description. See Section 6.3.2. Another use of the definite article form ('the Seven Hills') occurs in the *Sydney Gazette* in 1803: 'His Excellency [Governor King] during his last visit to the Out Settlement, has given directions for making a more convenient road to Hawkesbury from Parramatta, by which the mischief occasioned to Horses and Carriages from the necessity of crossing **the** Seven Hills will be totally removed'.³³ [emphasis added]

³¹ NSW Heritage Office, *Assessing Heritage Significance* (a NSW Heritage Manual Update) Sydney, 2001.

³² Australia ICOMOS, *The Australia ICOMOS Charter for the Conservation of Cultural Significance* (*The Burra Charter*), 1981, and subsequent revisions.

³³ *Sydney Gazette*, 3 July 1803.

8.2.4 Similarly in 1810 Governor Lachlan Macquarie recorded in his journal: 'On our arriving near the Districts of **the** Seven Hills and Toongabbee I quitted the carriage and mounted my horse in order to take a view of the farms in those two districts.'³⁴ [emphasis added]

8.3 Historical Significance

8.3.1 The district name Seven Hills was given more widespread prominence by John Macarthur's Seven Hills farm which operated from 1801 to 1821. The location of Macarthur's Seven Hills Farm was 'rediscovered' by the research of local historians Bill O'Halloran and Kevin Moore in 1979. They located the property by cross-checking land titles shown as bordering 'The Stock Farm', the previous name of Macarthur's Seven Hills Farm before he purchased it in 1801.³⁵ See Section 4.5.

8.3.2 The common usage of the name 'the Seven Hills' is evident from its reference as a clearly visible albeit distant landmark by Gregory Blaxland when crossing the Blue Mountains in 1813. See Section 7.2.1.

8.3.3 The name 'Seven Hills' has strong associative significance with John Macarthur, a prominent colonial figure and pioneer of the Australian wool industry. After 1821 Macarthur's farming interest moved from Seven Hills to Camden. See Section 4.5.2

8.4 Geographical Significance

The placename Seven Hills shifted west from the area where the hills are located due to the opening of the Seven Hills railway station in 1863. This may have obscured the reason for the original placename being based on seven actual hills encountered by travellers along the Old Windsor Road.

³⁴ Lachlan Macquarie, *Journals of his Tours in New South Wales and Van Diemen's Land, 1810-1822*, Library of Australian History, Sydney, 1979, pp 33-34.

³⁵ Kevin Moore, 'The Finding of the Seven Hills Farm', *Blacktown and District Historical Society Quarterly Journal*, volume 1, no 1 (January 1980), pp 9-13; reprinted in *Newsletter of the Royal Australian Historical Society*, no 188 (April 1980), pp 7-8.

9. Possible alternative locations of the Seventh Hill

9.1 General Location Confirmed by 1800 Placename

While there have been other suggestions for the origin of the name Seven Hills, none of these includes alternative locations for the seven hills collectively nor for any individual hill. Indeed as the name is linked, from its earliest use in 1800, to this part of the Old Windsor Road it is highly unlikely that an alternative location could be proposed.

9.2 Lack of Other Possible Hills

After the hill at Meurants Lane (the Seventh Hill) there is only one gradual incline before the junction with New Windsor Road. Thereafter on the journey to Windsor other hills (such as Vinegar Hill at the junction of Windsor Road and Schofields Road) present a much less steep incline.

9.3 No Historiographical Alternative Proposed

No alternative location has been suggested by any writer about the Seven Hills. A comprehensive list of works surveyed is contained in the Bibliography of this report. The less specific Pearce family tradition of a 'view' of seven hills from their property has been discussed in Section 7.2.2.

10. Text and Images on Seven Hills

10.1 Seven Hills in 1810

10.1.1 Governor Lachlan Macquarie made his first visit to Seven Hills on 8 December 1810 and wrote the following account in his journal:

On our arriving near the Districts of the Seven Hills and Toongabbee I quitted the carriage and mounted my horse in order to take a view of the farms in those two districts....The soil of those farms is in general very bad, and exhausted by the settlers constantly keeping the same fields in tillage and giving them no artificial manure. The houses or rather huts of the settlers are very bad, mean, and inconveniently constructed; themselves and their families badly clothed, and apparently very ill and poorly fed. I spoke to and admonished many of them to pay more attention in future to their own personal cleanliness and comfort and to build themselves better houses to live in.³⁶

10.2 Seven Hills in the 1920s

10.2.1 Local historian William Freame wrote a history of Seven Hills and Prospect, published in 1923, which concentrated on the religious history of these districts. However he also included some comments which refer both to the 1920s and to earlier periods of settlement.

10.2.2 Freame's description includes the passage:

Largely a land of rural homes, the people apparently are by nature no dwellers in cities, although many of them have to travel night and morning to their employment in Sydney. They possess a strong regard for a habitation where there is plenty of elbow room. They are gregarious at respectable distances, with garden and orchard plots intervening. They appreciate the personal importance which comes from the private ownership of the land they occupy. Hereditary love of land induced so many of the district pioneers to settle in what must have been a very sequestered locality in their day and generation. The desire to acquire land of one's own was the determinative principle of the new civilisation in the early days of New South Wales, and nowhere is this more demonstrated than in the rural districts immediately west of Parramatta, where one may still find families of the fourth and fifth generation residing upon the old family estates.³⁷

³⁶ Lachlan Macquarie, *Journals of his Tours in New South Wales and Van Diemen's Land, 1810-1822*, Library of Australian History, Sydney, 1979, pp 33-34.

³⁷ William Freame, *A Delectable Parish: Prospect and Seven Hills*, published by Cumberland Argus, Parramatta, 1923, quoted in Brook, 2004, p 6.

10.3 Images of Seven Hills and Old Windsor Road

10.3.1 Only one image of Old Windsor Road at Seven Hills has been located in the extensive collections of the Mitchell Library. This photograph taken in 1914 is captioned 'Seven Hills: type of orchard country' and the frame order number is GPO 1 - 16806. (See figure 5)

10.3.2 There is no picture of Old Windsor Road in the collections of the Royal Australian Historical Society.

10.3.3 The following publications have also been reviewed for images held in other repositories and private collections, but without success:

Harry Carr, Noelene Pullen and Lorna McCluskey, *Transport in the Hills District 1805-1990*, Hills District Historical Society, Castle Hill, 1990

Michael Charles, *Pictorial Memories: Old Parramatta*, Atrand Pty Ltd, Sydney, 1986

John McClymont, *Pictorial History: Baulkham Hills Shire*, Kingsclear Books, Sydney, 2003

John McClymont, *Pictorial History: Parramatta District*, Kingsclear Books, Sydney, 2001

Doris Sargeant, *The Toongabbie Story*, Toongabbie Public School, 1964

Alan Sharpe, *Pictorial History: Blacktown District*, Kingsclear Books, Sydney, 2000

11. Conclusion

11.1 Old Windsor Road

Old Windsor Road was constructed in 1794 and survived in use until 2001-2002. The portion 1.5 kilometres either side of Meurants Lane has been preserved due to its national heritage significance. See Sections 3 and 5.6.

11.2 Seven Hills

The name Seven Hills is first recorded in 1800. The early use of the form 'the Seven Hills' indicates that it was a literal description of the terrain crossed by Old Windsor Road. See Sections 4.4 and 8.2.

11.3 Macarthur's Seven Hills Farm

Pioneer wool-growers John and Elizabeth Macarthur owned a sheep farm, known as Seven Hills Farm, from 1801 to 1821. This property was in the area now known as Bella Vista. See Sections 4.5, 5.1 and 8.3.

11.4 Brook's Identification of the Seven Hills

Jack Brook in 2001 published a monograph specifically locating the seven separate hills between Hammers Road and Meurants Lane. The seventh hill is that located at the intersection of Old Windsor Road and Meurants Lane/Norwest Boulevard. See Section 7.1 and 7.9.

Bibliography

See also Section 2 for a list of previous reports consulted.

Jack Brook, 'The Seven Hills', 25th Anniversary paper, Blacktown and District Historical Society, 2001

Jack Brook, *The Seven Hills: A Village Divided, a Suburb United*, published by author, Blacktown, 2004

Rosemary Broomham, *Vital Connections: a history of NSW roads from 1788*, Roads and Traffic Authority, Sydney, 2001

John Cobley, *Sydney Cove 1793-1795*, Angus and Robertson, Sydney, 1983

Luisa Cogno, 'Battle to Save Hill', *Blacktown Advocate*, 28 April 2004, p 3

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Michael Flynn, *Settlers and Seditious: the people of the convict ship Surprise 1794*, published by Angela Lind, Sydney, 1994

William Freame, *A Delectable Parish: Prospect and Seven Hills*, published by Cumberland Argus, Parramatta, 1923

William Freame, 'Our Old Place Names', *Cumberland Argus*, 10 July 1918, p 2

James Jervis, 'The Beginnings of the Settlement in the Parish of Castle Hill', *Journal of the Royal Australian Historical Society*, volume 15, pt 4, 1929, pp 226-252

Hazel King, *Elizabeth Macarthur and her World*, Sydney University Press, 1980

Yvonne McBurney and David Cox, *Road to Bathurst*, Educational Material Aid, Sydney, 1988

Mac McCoullough, 'Grave Topic not Seen', *Hills News*, 2 July 2002, p 18

George Mackaness, *Fourteen Journeys over the Blue Mountains, Part I 1813-1815*, Sydney, 1950

Lachlan Macquarie, *Journals of his Tours in New South Wales and Van Diemen's Land, 1810-1822*, Library of Australian History, Sydney, 1979

Kevin Moore, 'The Finding of the Seven Hills Farm', *Blacktown and District Historical Society Quarterly Journal*, volume 1, no 1 (January 1980), pp 9-13;

Dr A Whitaker, Report on the location of the 'Seventh Hill', FINAL February 2005

reprinted in *Newsletter of the Royal Australian Historical Society*, no 188, April 1980, pp 7-8

'Move to Save Old Cemetery', *The Advertiser*, 10 June 1971

Mark Pearce, 'Matthew Pearce (1762-1831)', *Blacktown and District Historical Society Quarterly Journal*, volume 3, no 3, September 1982

Nick Soon, 'Seven Hills of Home aren't Hills of Rome', *Blacktown City Sun*, 16 October 2001, p 3

Nick Soon, 'Threat to Old Windsor Road: the end of the avenue', *Blacktown City Sun*, 27 April 2004, p 1

Emily Tinson, 'Hills are Alive with Theories', *Blacktown Advocate*, 17 October 2001, p 8

Anne-Maree Whitaker, *Joseph Foveaux: power and patronage in early New South Wales*, New South Wales University Press, Sydney, 2000

Amanda Wright, 'New Tune called for Toongabbie', *Parramatta Sun*, 26 February 2003, p 16

Figures

1. Original Land Grants in Seven Hills
2. John Macarthur's Seven Hills Farm
3. Location of Heritage Items in Seven Hills
4. The Seven Hills identified by Jack Brook (2001)
5. Photograph of Old Windsor Road, 1914