

Illawarra International Health Precinct

Transport Management & Accessibility Plan



Prepared for La Vie Developments Pty Ltd

april 09

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DOCUMENT CONTROL

Document Control FR108121 Illawarra International Health Precinct Traffic Management & Accessibility Plan (TMAP)					
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Table of Contents

1.0	INTRODUCTION	7
1.1	BACKGROUND	7
1.2	STUDY PROCESS	7
1.3	STUDY AREA	8
1.3.1	Site Description	8
1.4	KEY ACCESS AND TRAFFIC ISSUES	9
1.5	SCOPE OF REPORT	9
2.0	STRATEGIC CONTEXT	10
2.1	STATE AND REGIONAL STRATEGIC POLICIES	10
2.1.1	The NSW State Plan 2006	10
2.1.2	The State Infrastructure Strategy 2008	11
2.1.3	Action for Air	11
2.1.4	Action for Bikes – Bike Plan 2010 NSW	11
2.1.5	Integrating Land Use and Transport 2001	12
2.1.6	Planning Guidelines for Walking & Cycling (2004)	12
2.1.7	Accessible Transport Action Plan (2007)	12
2.1.8	Review of Bus Services in New South Wales – Final Report (Unsworth) 2003	13
2.1.9	Illawarra Regional Strategy 2006 – 2031	13
2.2	LOCAL PLANNING CONTEXT	15
2.2.1	Wollongong LEP 1990	15
2.2.2	West Dapto Development Control Plan 2007	16
2.2.3	Wollongong LGA Employment Lands Strategy 2006	16
2.2.4	Draft Wollongong Local Environment Plan (West Dapto LEP) 2009	17
2.2.5	Wollongong Economic Development Road Map Report 2003	17
2.2.6	Wollongong Economic Development Road Map Report 2003	17
2.2.7	Moving Together (2004)	17
2.3	LOCAL TRANSPORT CONTEXT	18
2.3.1	Illawarra Urban Transport Opportunities Study (1997)	18
2.3.2	Illawarra's Action for Transport (1999)	18
2.3.3	Moving Together (2004)	19
2.3.4	West Dapto Urban Development Transport Management and Access Plan Stage 1 Report – Baseline Study (2004)	20
2.3.5	West Dapto Release Area Draft Infrastructure Implementation Plan (2006)	20
2.3.6	West Dapto TMAP Extension Study (2008)	20
2.3.7	West Dapto Release Area Review: Planning and Infrastructure, Planning Report (2008)	21
3.0	EXISTING TRANSPORT SITUATION	23
3.1	SITE LOCATION	23
3.2	ROAD NETWORK	24
3.2.1	Classification Criteria	24

	3.2.2	Road Network Description	31
	3.2.3	Existing Traffic Volumes	42
	3.2.4	Mid-Block Carriageway Capacity	46
3.3		PUBLIC TRANSPORT SYSTEM	48
	3.3.1	Rail Infrastructure and Services	48
	3.3.2	Proposed Huntley Railway Station	51
	3.3.3	Bus Services	53
	3.3.4	Existing Bus Infrastructure	57
	3.3.5	Interchange Facilities	59
	3.3.6	Taxi Facilities	59
	3.3.7	Community Transport	59
3.4		PEDESTRIAN & BICYCLE FACILITIES	59
	3.4.1	Provision for Pedestrian Movement	59
	3.4.2	Existing Pedestrian Infrastructure	59
	3.4.3	Existing Cycle Facilities	64
	3.4.4	Proposed Infrastructure	68
3.5		PARKING	68
4.0		JOURNEY TO WORK	69
5.0		DEVELOPMENT PROFILE	71
	5.1	HOURS OF OPERATION	73
	5.2	TRAFFIC GENERATION	73
	5.3	TRAFFIC DISTRIBUTION AND ASSIGNMENT	89
	5.3.1	2008 Traffic Distribution with Development Traffic	89
	5.3.2	2016 Traffic Distribution with Development Traffic	89
	5.3.3	2026 Traffic Distribution with Development Traffic	89
	5.4	PUBLIC TRANSPORT TRIP GENERATION	97
	5.5	PARKING REQUIREMENTS	99
	5.5.1	Car Parking	100
	5.5.2	Service & Delivery Vehicle Parking	100
	5.5.3	Bicycle Parking	101
	5.5.4	Parking Management Strategy	102
	5.6	ROAD WIDTH REQUIREMENTS	102
	5.6.1	Access Intersections	102
	5.6.2	Internal Roads	103
	5.6.3	Loading Docks	104
6.0		MODELLING	106
	6.1	OBJECTIVE OF THE MODELLING	106
	6.2	BACKGROUND TO TRAFFIC MODELLING COMPLETED WITHIN THE STUDY AREA	106
	6.2.1	TRACKS Model	106
	6.2.2	Issues with TRACKS Model	106
	6.3	MODELLING METHODOLOGY	107
	6.3.1	Overview	107
	6.3.2	2008 & 2016 Base Models	107
	6.3.3	2026 Base Model	110
	6.3.4	Development Models	110
	6.4	NETWORK MODELLING	112
	6.5	INTERSECTION LAYOUTS	112
	6.5.1	Princes Highway/Fowlers Road	113
	6.5.2	Princes Highway/Cleveland Road	115
	6.5.3	Princes Highway/Emerson Road	117

6.5.4	Princes Highway/Avondale Road	118
6.5.5	Princes Highway/Amaral Avenue	120
6.5.6	Princes Highway/Mt Brown Road	121
6.5.7	Princes Highway/Huntley Road	123
6.5.8	Huntley Road/Penrose Drive	125
6.5.9	Huntley Road/Avondale Road	127
6.5.10	Avondale Road/Turnbull Crescent	129
6.5.11	Avondale Road/Amaral Avenue/Marshall Street	131
6.5.12	Fowlers Road Ext/Avondale Road	133
6.6	SIDRA INTERSECTION ANALYSIS	134
6.6.1	Intersection Performance	134
6.6.2	2008 Base	136
6.6.3	2016 Base	137
6.6.4	2026 Base	138
6.6.5	2008 Base plus Development	139
6.6.6	2016 Base plus Development	140
6.6.7	2026 Base plus Development	141
6.7	MITIGATION MEASURES	142
7.0	IMPACT ASSESSMENT	146
7.1	INTRODUCTION	146
7.2	PUBLIC TRANSPORT IMPACTS	146
7.2.1	Scenario 1 'Business as Usual'	147
7.2.2	Scenario 2 '25% Public Transport Mode Share'	148
7.2.3	Site-specific Public Transport Infrastructure	151
7.2.4	Conclusions	151
7.3	INTERNAL ACTIVE TRANSPORT IMPACTS	152
7.3.1	Analysis	152
7.3.2	Conclusions	155
7.4	EXTERNAL ACTIVE TRANSPORT IMPACTS	155
7.4.1	Analysis	155
7.4.2	Conclusions	160
7.5	TRAVEL DEMAND MANAGEMENT	161
7.5.1	Introduction	161
7.5.2	Range of Options	161
7.5.3	Conclusions	163
8.0	RECOMMENDED PACKAGE OF MEASURES	164
8.1	ROAD NETWORK IMPROVEMENTS	164
8.2	PUBLIC TRANSPORT IMPROVEMENTS	164
8.2.1	Bus Network	164
8.2.2	Rail Network	165
8.2.3	Information	165
8.3	ACTIVE TRANSPORT IMPROVEMENTS	166
8.3.1	Internal Infrastructure	166
8.3.2	External Infrastructure	166
8.4	TRAVEL DEMAND MANAGEMENT	167

List of Tables

Table 3.1	Functional Classification of Roads - Parameters	27
Table 3.2	Suitability for Provision of Right Turn Movements	28
Table 3.3	Environmental Capacity Performance Standards on Residential Streets	30
Table 3.4	Annual Average Daily Traffic (AADT) Volumes (vehicles per day)	42
Table 3.5	Level of Service Uninterrupted Flow Conditions Along Urban Roads (One Way Hourly Volumes)	46
Table 3.6	Existing Mid-block Traffic Volumes & Carriageway Level of Service	47
Table 3.7	Frequency of Rail Services serving Dapto Railway Station	48
Table 3.8	Summary of Bus Services in Dapto Area	53
Table 3.9	Existing Bus Stop Facilities	57
Table 4.1	Dapto/Penrose Journey to Work Analysis Trips	69
Table 4.2	Dapto/Penrose Journey to Work Analysis Percentages	69
Table 5.1	Development Yields by Stage	72
Table 5.2	Development Staging by Year	72
Table 5.3	IIHP Operation Hours	73
Table 5.4	Land Use Yields	76
Table 5.5	Land Use Staffing Numbers	77
Table 5.6	Land Use Visitor and Resident Numbers	78
Table 5.7	Land Use AM and PM Peak Trip Generation Rates	79
Table 5.8	Traffic Generation Prior to Directional Splits	80
Table 5.9	Final Traffic Generation – Scenario 1 - Business as Usual	81
Table 5.10	Scenario 1 - Business as Usual - Public Transport Trip Generation	97
Table 5.11	Scenario 2 - 25% Mode Share Public Transport Trip Generation	98
Table 5.12	Scenario 2 Modified - 5.3% Mode Share Public Transport Trip Generation	98
Table 5.13	Car Parking Requirements by Land Use Type	100
Table 5.14	Bicycle Parking Requirements	101
Table 5.15	Loading Dock Service Bay Dimensions	104
Table 6.1	AM Peak Comparison	108
Table 6.2	PM Peak Comparison	109
Table 6.3	Site Zones by Precinct Stages	111
Table 6.4	Precinct Staging by Year	111
Table 6.5	2008 Demographic Data	111
Table 6.6	2016 Demographic Data	111
Table 6.7	2026 Demographic Data	111
Table 6.8	Traffic Generation by Zone	112
Table 6.9	Intersection Level of Service	134
Table 6.10	Intersection Average Delay (AVD)	134
Table 6.11	2008 Base - Intersection Operation	136
Table 6.12	2016 Base - Intersection Operation	137
Table 6.13	2026 Base - Intersection Operation	138
Table 6.14	2008 Base plus Development - Intersection Operation	139
Table 6.15	2016 Base plus Development - Intersection Operation	140
Table 6.16	2026 Base plus Development - Intersection Operation	141
Table 7.1	Some Key Requirements for Special Needs Groups	152

List of Figures

Figure 1.1	Site Location	8
Figure 2.1	Wollongong Strategic Bus Corridors	14
Figure 2.2	West Dapto Planning Review – Revised Level Crossing Removal Staging Plan	22
Figure 3.1	Site Boundary	23
Figure 3.2	Dapto Area Road Network – Funding Classifications	25
Figure 3.3	Dapto Area Road Network – Road Hierarchy	29
Figure 3.4	Intersection Controls	40
Figure 3.5	Average Annual Daily Traffic Volumes (AADT)	43
Figure 3.6	2008 AM Peak Background Turning Traffic Volumes	44
Figure 3.7	2008 PM Peak Background Turning Traffic Volumes	45
Figure 3.8	Public Transport Travel Time – Rail	50
Figure 3.9	Site of proposed Huntley Railway Station	52
Figure 3.10	Bus Network	55
Figure 3.11	Public Transport Travel Time – Bus	56
Figure 3.12	Existing Bus Infrastructure	58
Figure 3.13	Pedestrian Infrastructure	61
Figure 3.14	IIHP Walking Catchment	63
Figure 3.15	Existing and Proposed Bicycle Infrastructure	65
Figure 3.16	IIHP Cycling Catchment	67
Figure 5.1	2008 AM Base plus IIHP Development Traffic Turning Movement Volumes	83
Figure 5.2	2008 PM Base plus IIHP Development Traffic Turning Movement Volumes	84
Figure 5.3	2016 AM Base plus IIHP Development Traffic Turning Movement Volumes	85
Figure 5.4	2016 PM Base plus IIHP Development Traffic Turning Movement Volumes	86
Figure 5.5	2026 AM Base plus IIHP Development Traffic Turning Movement Volumes	87
Figure 5.6	2026 PM Base plus IIHP Development Traffic Turning Movement Volumes	88
Figure 5.7	2008 AM Base plus IIHP Development Traffic Distribution and Assignment	91
Figure 5.8	2008 PM Base plus IIHP Development Traffic Distribution and Assignment	92
Figure 5.9	2016 AM Base plus IIHP Development Traffic Distribution and Assignment	93
Figure 5.10	2016 PM Base plus IIHP Development Traffic Distribution and Assignment	94
Figure 5.11	2026 AM Base plus IIHP Development Traffic Distribution and Assignment	95
Figure 5.12	2026 PM Base plus IIHP Development Traffic Distribution and Assignment	96
Figure 5.13	Driveway Types and Locations	105
Figure 6.1	Princes Highway/Fowlers Road 2008 Intersection Layout	113
Figure 6.2	Princes Highway/Fowlers Road 2016 and 2026 Intersection Layout	114
Figure 6.3	Princes Highway/Cleveland Road 2008 Intersection Layout	115
Figure 6.4	Princes Highway/Cleveland Road 2016 and 2026 Intersection Layout	116
Figure 6.5	Princes Highway/Emerson Road Intersection Layout	117
Figure 6.6	Princes Highway/Avondale Road 2008 Intersection Layout	118
Figure 6.7	Princes Highway/Avondale Road 2016 and 2026 Intersection Layout	119
Figure 6.8	Princes Highway/Amaral Avenue Intersection Layout	120
Figure 6.9	Princes Highway/Mt Brown Road 2008 Intersection Layout	121
Figure 6.10	Princes Highway/Mt Brown Road 2016 and 2026 Intersection Layout	122
Figure 6.11	Princes Highway/Huntley Road 2008 Intersection Layout	123
Figure 6.12	Princes Highway/Huntley Road 2016 and 2026 Intersection Layout	124
Figure 6.13	Huntley Road/Penrose Drive 2008 Intersection Layout	125
Figure 6.14	Huntley Road/Penrose Drive 2016 and 2026 Intersection Layout	126
Figure 6.15	Huntley Road/Avondale Road 2008 Intersection Layout	127
Figure 6.16	Huntley Road/Avondale Road 2016 and 2026 Intersection Layout	128
Figure 6.17	Avondale Road/Turnbull Crescent 2008 Intersection Layout	129
Figure 6.18	Avondale Road/Turnbull Crescent 2016 and 2026 Intersection Layout	130
Figure 6.19	Avondale Road/Amaral Avenue/Marshall Street 2008 Intersection Layout	131

Figure 6.20	Avondale Road/Amaral Avenue/Marshall Street 2016 and 2026 Intersection Layout	132
Figure 6.21	Fowlers Road Ext/Avondale Road Intersection Layout	133
Figure 6.22	Fowlers Road/Princes Highway Intersection Layout - UPGRADED	143
Figure 6.23	Huntley Road/Princes Highway Intersection Layout - SIGNALISED	144
Figure 6.24	Huntley Road/Avondale Road/Future New Road Intersection Layout - SIGNALISED	145
Figure 7.1	Examples of Appropriate Internal Road Layouts	154
Figure 7.2	Future active transport desire lines	156
Figure 7.3	Future IIHP Walking Catchment	158
Figure 7.4	Future IIHP Cycling Catchment	159

List of Photographs

Photograph 3.1	Southern Freeway looking north from Fowlers Road	31
Photograph 3.2	Princes Highway looking south to Fowlers Road	32
Photograph 3.3	Fowlers Road looking west at Southern Freeway overbridge	33
Photograph 3.4	Avondale Road looking south west along the frontage of the site	34
Photograph 3.5	Huntley Road looking east along the frontage of the site	35
Photograph 3.6	Cleveland Road looking north at Mullet Creek	36
Photograph 3.7	Goolagong Street looking south near Penrose Drive	37
Photograph 3.8	Intersection of Huntley Road and Avondale Road looking west	38
Photograph 3.9	Railway Level Crossing in Avondale Road	39
Photograph 3.10	Current site access	41
Photograph 7.1	Example of Shared Zones	154
Photograph 7.2	Example of Shared Zones	154

Appendices

Appendix A	Site Plan and Staging Plan
Appendix B	TRACKS Road Network Plots
Appendix C	SIDRA Outputs

1.0 INTRODUCTION

Cardno Eppell Olsen has been engaged by La Vie Developments Pty Ltd to prepare a Traffic Management & Accessibility Plan (TMAP) for the Illawarra International Health Precinct (IIHP) in Huntley NSW.

This report sets out the results of the TMAP process. It considers the transport issues relating to this facility and the wider strategic context provided by land use and employment trends and major road network planning. The likely transport impacts of the development are considered and a package of service and infrastructure measures developed.

The TMAP has been prepared in accordance with the NSW Ministry of Transport and the NSW Roads & Traffic Authority's (RTA) Draft Interim Guidelines on preparing a TMAP.

1.1 BACKGROUND

La Vie Developments Pty Ltd proposes to develop a world class private hospital and major health care campus in the Illawarra. The proposed development will provide the following:

- A 352 bed private tertiary referral hospital;
- generate up to 3,500 direct employment positions;
- generate up to 1,500 additional ancillary/indirect Jobs;
- a capital investment value in excess of \$250 million;
- an estimated \$400 million per annum turnover with a \$20 million per annum local investment catalyst, and
- reduced patient/family travel expenditure of \$3 million per annum and \$270 million annual salary expenditure.

1.2 STUDY PROCESS

The study process used for this assessment has reflected the technical requirements of the project and considers best practice in integrated land use and transport planning in NSW. The focus is on translating strategic principles and objectives into realistic, practical and deliverable outcomes.

The methodology is focused on four key stages as follows:

- **Stage 1 – Inception**
 - Project familiarisation –background research, site inspections;
 - Data collection;
 - Literature review; and
 - Consultation.
- **Stage 2 – Existing Transport Context & Initial Assessment**
 - Development of the transport model;
 - Review Existing Transport and land use context; and
 - Transport Assessment of Proposal.
- **Stage 3 – Package of Measures & Funding Apportionment**
 - Package of Measures to develop infrastructure options to address the direct transport impacts of the IIHP facility;
- **Stage 4 - The Draft Traffic Impact Assessment Report**
 - Reporting.

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Stage 1 and 2 concentrated on collating existing information and reviewing documentation in order to build up a picture of the existing transport situation, including available infrastructure, public transport services and parking supply. Consultation with other team members and the client was an important phase of this stage of the project.

The next stage allowed the study team to assess any departures from the population and development assumptions. A detailed assessment of the initiatives that will be required to accommodate IIHP was then prepared. These measures include a range of responses to the issues, including infrastructure projects, transport service improvements, policy developments and developer led initiatives. Where appropriate, the transport implications of these measures have been tested using the transport model developed by Cardno.

The final stage of the project documented the entire study process including recommendations.

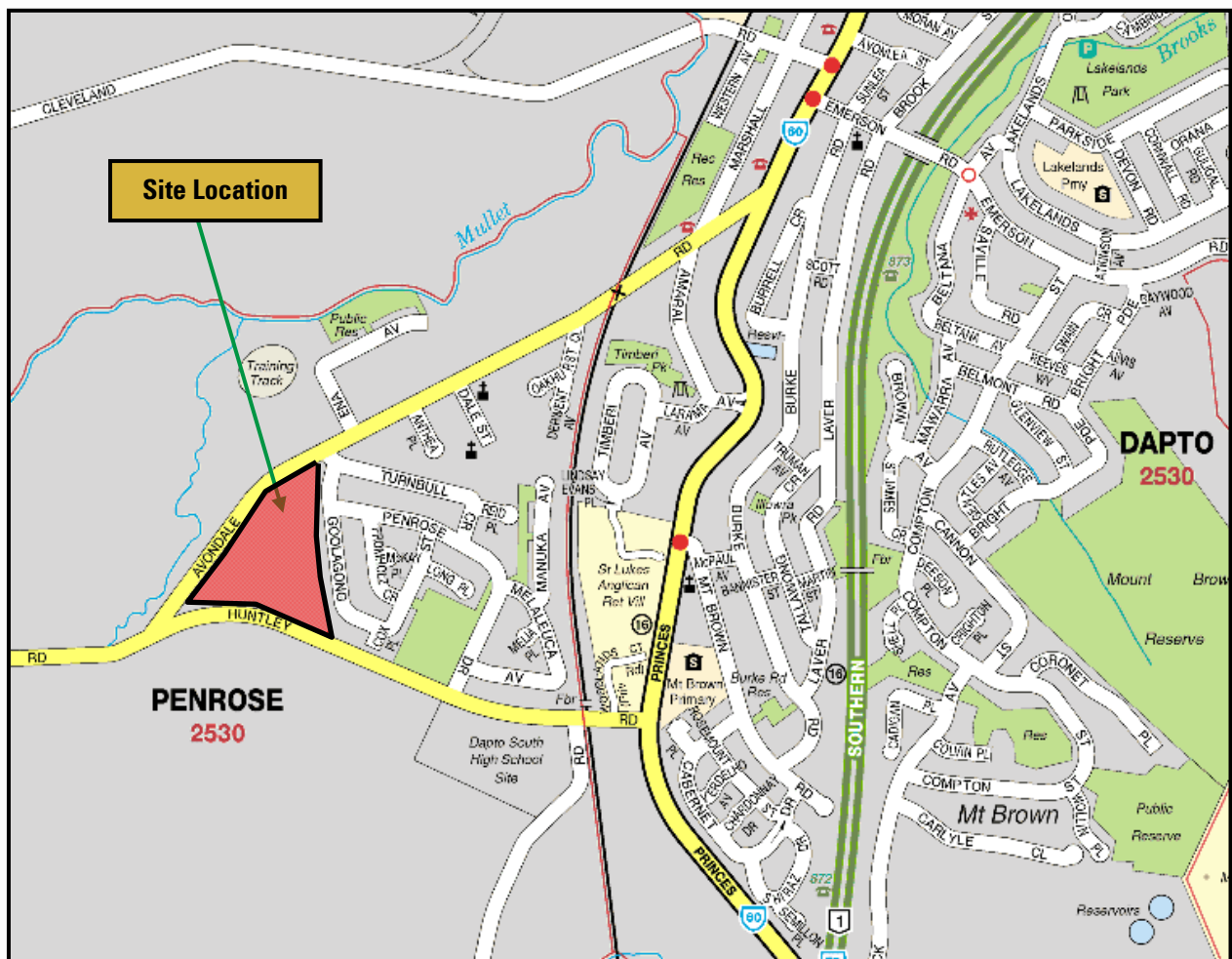
1.3 STUDY AREA

1.3.1 Site Description

The subject site is known as Lot 22 DP607750 and Lot 4 DP258024 located on the corner of Avondale and Huntley Roads, Huntley. The triangular parcel of land has an area of 10.5 ha and is bordered by Avondale Road to the north and west, Goolagong Street to the east and Huntley Road to the south.

The site location is shown in **Figure 1.1**. The site plan & staging plan are provided in **Appendix A**.

Figure 1.1 Site Location



Source: UBD – Universal Publishers Pty Ltd

1.4 KEY ACCESS AND TRAFFIC ISSUES

The IIHP will have four major access points under the full development scenario with two access points on Avondale Road and two on Huntley Road. Several minor access points will also be provided on both Avondale Road and Huntley Road. All vehicular access points and intersection layouts are further discussed in **Section 5.7** of this report.

Journey to work trips using private vehicles are expected to arrive/depart via two main locations:

- from the north utilising the F6 Freeway and existing at the Fowlers Road exit, travelling south on Princes Highway and then west along Avondale Road or Huntley Road; and
- from the south travelling north on the Princes Highway and then west along Huntley Road.

The IIHP Traffic Impact Assessment has been prepared recognising the following:

- relevant planning policies, strategies and controls affecting the Dapto such as
 - state level and regional strategies;
 - statutory plans;
 - local government planning instruments;
- key transport and related issues, constraints, opportunities and requirements for the site;
- the existing land uses and current planning controls for the Dapto area; and
- existing and proposed infrastructure in the Dapto area and their relationship to the site.

1.5 SCOPE OF REPORT

The report is divided into eight sections:

- 1 Introduction;
- 2 Strategic Context;
- 3 Existing Transport Situation;
- 4 Journey to Work;
- 5 Development Profile;
- 6 Modelling;
- 7 Impact Assessment; and
- 8 Recommended Package of Measures.

2.0 STRATEGIC CONTEXT

2.1 STATE AND REGIONAL STRATEGIC POLICIES

The following New South Wales government policies, plans and strategies contain the strategic context relevant to the local planning and development of the IIHP.

The following documents have been reviewed:

- NSW State Plan 2006;
- NSW State Infrastructure Strategy 2008;
- Action for Air (2006 update);
- Action for Bikes (1999);
- Integrating Land Use and Transport (2001);
- Planning Guidelines for Walking and Cycling (2004);
- Accessible Transport Action Plan (2007); and
- Illawarra Regional Strategy 2006-2031.

Each of the documents have been summarised, in order to determine their:

- aims/objectives;
- key targets and strategies; and
- relevance to the IIHP development and the local area.

2.1.1 The NSW State Plan 2006

The *NSW State Plan* sets out the goals and priorities for government action, with targets for improvements, to guide decision-making and resource allocation. It is structured around 14 long-term goals and 34 priorities for action. It identifies measurable targets that allow progress to be assessed. In addition, it sets out how government agencies will work to deliver on the targets. The State Plan service delivery priorities for government agencies are underpinned by investment in infrastructure and maintenance of existing assets. The *State Infrastructure Strategy* enables these infrastructure and maintenance programs to be implemented.

The following are key transport targets which are of importance to this project:

- upgrading and adding new capacity to the public transport network through significant investments identified in the *State Infrastructure Strategy*;
- Implement the *Accessible Transport Action Plan*;
- Clean air target - meet national air quality goals as identified in the *National Environment Protection Measure for Ambient Air Quality*;
- Greenhouse gas target - Achieve 60 per cent cut in greenhouse emissions by 2050 and a return to year 2000 greenhouse gas emission levels by 2025;
- Improve the efficiency of the road network during peak times;
- Further reduce emissions from motor vehicles by half by 2020;
- Implementing the *State Infrastructure Strategy*;
- Actions to curb growth in transport emissions while maximising transport choice; and
- Providing more 'park and ride' facilities at railway stations to make it easier to do part of a journey by public transport.

2.1.2 The State Infrastructure Strategy 2008

The *State Infrastructure Strategy* is a rolling 10-year plan for infrastructure projects to support service delivery. First published in 2006, it is updated every two years. The Strategy maps the infrastructure projects by six broad regions – Sydney, Central Coast, Hunter, North Coast, Illawarra - South East and Inland NSW.

The 2008/09 State Government mini budget, released in November 2008, included significant changes to the state's capital works program, reducing forecast expenditure over the life of the strategy.

Transport highlights of the *State Infrastructure Strategy* affecting the study area include:

- Dapto Railway Station easy access upgrade.

2.1.3 Action for Air

Action for Air is the NSW Government's 25 year air quality management plan for the Greater Metropolitan Region of New South Wales, including the Illawarra region. It contains a range of measures aimed at reducing emissions from transport.

The *Action for Air: 2006 Update* retains the objectives of *Action for Air* and includes an updated review of the air quality and issues in the greater metropolitan region. The key objective is to make transport greener, by reducing the use of unsustainable transport and reducing the emission levels of existing transport systems. Actions to implement the goals of the plan are also included. Actions relevant to the IIHP development include:

- Provide public transport to new suburbs;
- Implement an extensive bus priority scheme;
- Better integrate ticketing;
- Develop a long-term transport strategy for the Illawarra region; and
- Facilitate walking as a mode of transport.

2.1.4 Action for Bikes – Bike Plan 2010 NSW

This Bike Plan aims to ensure cycling is a viable travel alternative. *Action for Bikes* is a four point plan outlining a range of actions that may be taken to achieve these goals. The plan presents a costed 10 year plan for a series of arterial bicycle networks across NSW, and includes a commitment to provide cycling facilities when new roads are built and to create off-road cycleways wherever possible.

The infrastructure plan is not detailed for areas outside of the Sydney metropolitan area. The only major cycling routes to be listed in the Illawarra region are:

- Sutherland to Bulli Tops;
- Bulli Tops to Wollongong;
- North Wollongong to Fairy Meadow;
- Warrawong to Kiama Heights; and
- Kiama to Nowra.

None of the listed routes will serve the development site directly, being located over ten kilometres away. However they may facilitate the use of cycling as part of a multi-modal journey to or from the site.

The four point action plan includes the actions of improving the bike network, making it safer to cycle, improving personal and environmental health and raising community awareness.

2.1.5 Integrating Land Use and Transport 2001

The *Integrated Land Use and Transport* (ILUT) package (DUAP 2001) provides a framework for State government agencies, councils and developers to integrate land use and transport planning at the regional and local levels.

This package identified the following opportunities for facilitating the achievement of objectives related to improving access to housing, jobs and services, increasing the choice of available transport, reducing travel demand (especially by car) and supporting efficient and viable operation of public transport services, specifically:

- concentrating large trip generators/attractors near each other (in centres) and creating a network of these centres linked by good public transport services;
- using parking as a travel demand management tool; and
- a minimum of 15 dwellings per hectare for new residential areas.

The site is presently located on the edge of the urban area, however it is located on the site of the future Huntley neighbourhood centre and within the West Dapto Urban Release Area. The principles of the package will be used to guide the transport assessment of the development.

2.1.6 Planning Guidelines for Walking & Cycling (2004)

The guidelines have been designed to provide a walking and cycling focus to the NSW Government's Integrating Land Use & Transport Planning Policy Package. They are also designed to provide a planning complement to the RTA's facilities-focused policies and actions.

At the broadest level, these guidelines illustrate how metropolitan strategies, Masterplans and Local Environmental Plans (LEPs) can help create an urban form that is conducive to walking and cycling. At a more detailed level, the guidelines show how Development Control Plans (DCPs), developer contributions plans and development assessment processes can reinforce these broader plans through funding mechanisms, provision of facilities and design outcomes that are supportive of walking and cycling.

These guidelines will form the basis of the walking and cycling recommendations in this report.

2.1.7 Accessible Transport Action Plan (2007)

This Action Plan outlines the legal responsibilities of the transport agencies, with respect to accessibility, the guiding principles of integrated accessible transport services, progress to date in improving accessibility and future strategies to improve accessibility.

One key aspect is a timetable for compliance with the anti-discrimination and disability legislation by transport infrastructure, including information (to be compliant by the end of 2007) buses, coaches and rail services. All buses and coaches are to be compliant with the legislation by 2022, with percentages of stock to be compliant in the preceding years, while all rail stock must be compliant by 2032 (with 90% required to be compliant by 2022).

The Action Plan also outlines an assessment of aspects of the transport system and how compliant they are currently. Results vary, with more work needing to be done.

Finally, the plan sets out a series of barriers, with subsequent strategies, responsibilities, budgets and targets aimed at improving key areas of accessibility shortfalls, including related to information provision, adequacy of infrastructure, communication with groups, road and pedestrian access and crossings and the planning of developments to include all users.

The guiding principles of this plan will be used to ensure that transport improvements recommended in this report meet accessibility requirements.

2.1.8 Review of Bus Services in New South Wales – Final Report (Unsworth) 2003

On 17 November 2003, the Interim Report of the review was released. The Interim Report contained recommendations covering metropolitan issues (network and service planning, contracting and funding), rural and regional NSW and state-wide issues (fares, ticketing and concessions, school student travel and governance arrangements).

The recommendations from the final report of relevance to this study include a network of viable strategic corridors, regional service planning forums, planning for the provision of bus services being factored into the planning of greenfield sites, high level integrated transport planning at the regional and sub-regional level, the development of viable public transport solutions such as supporting employment and population growth in regional centres and encouraging development along strategic corridors. The corridors for Wollongong are displayed in **Figure 2.1**.

2.1.9 Illawarra Regional Strategy 2006 – 2031

The stated aim of the regional strategy is to ensure that adequate land is available and appropriately located to sustainably accommodate the housing and employment needs of the residents to 2031. The strategy incorporates requirements set out in the State Infrastructure Strategy and is the pre-eminent strategic policy document for the region.

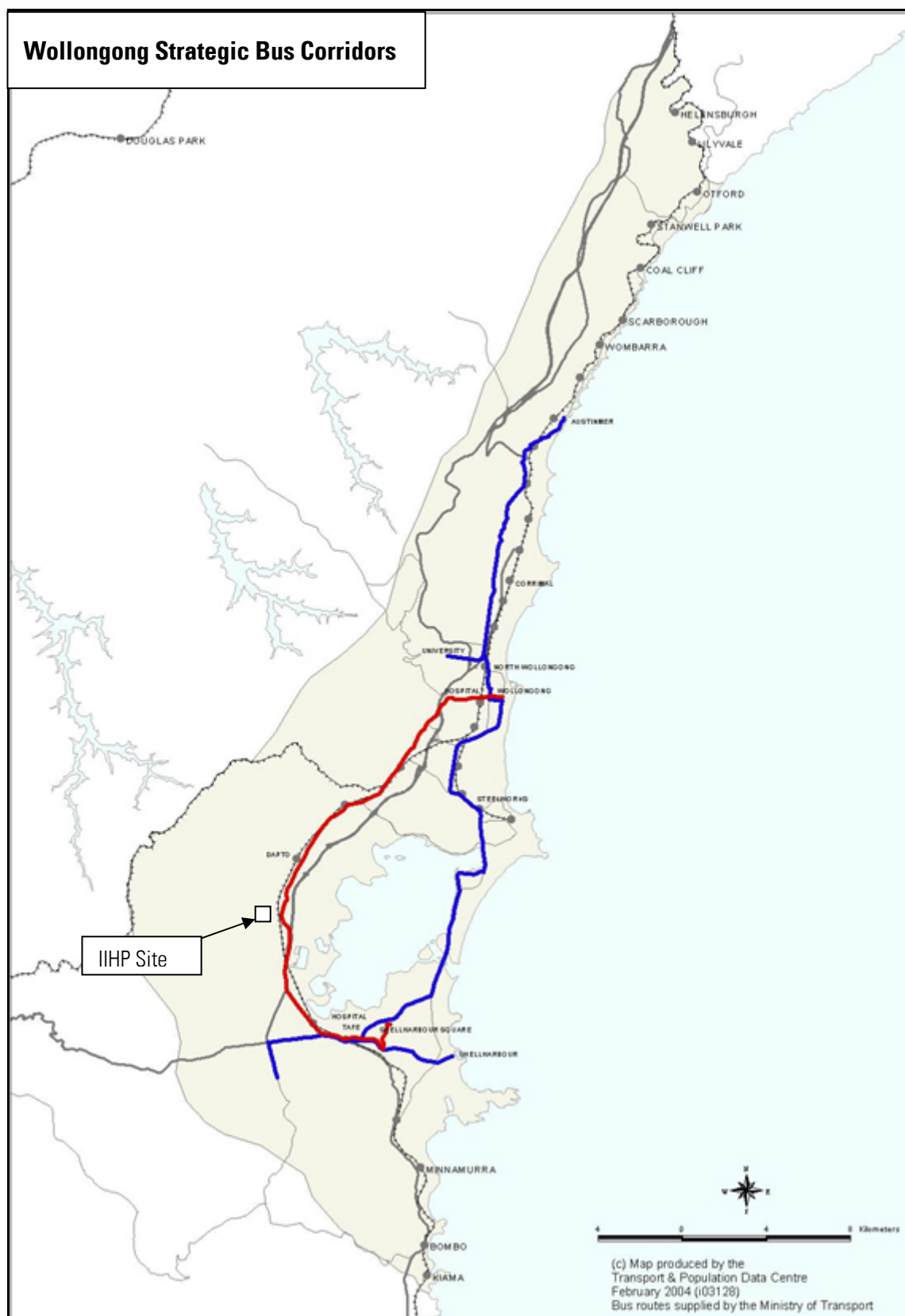
Challenges are discussed, including in the areas of employment, economy, environment, population and housing. A vision to meet the challenges is presented, promoting a prosperous, diverse and sustainable region.

Regional transport is a key area of focus for the strategy. The following actions emerge from the strategy:

- protection of the existing transport corridors, including through local environment plans;
- consideration of transport access implications and travel demand management and inclusion of these measures in planning policies;
- continued monitoring of the road network;
- timely implementation of major transport infrastructure projects;
- identification of strategic transport corridors;
- monitoring of the functioning and future of the rail lines; and
- protection of Illawarra Airport.

Little detail is given regarding specific transport infrastructure projects, and none are listed in close proximity to the site.

Figure 2.1 Wollongong Strategic Bus Corridors



Source: Transport & Population Data Centre

2.2 LOCAL PLANNING CONTEXT

The following local government plans were summarised, to gain an insight into the local planning context which would shape the master planning process.

The following documents are reviewed:

- Employment Lands Guidelines for the Illawarra 2008;
- Wollongong LEP 1990;
- Draft Wollongong Local Environment Plan (West Dapto LEP) 2009;
- Wollongong Local Government Area Employment Land Strategy 2006;
- Wollongong Economic Development Road Map Report 2003;
- West Dapto DCP 2007;
- West Dapto Masterplan;
- West Dapto Proposed Staging Plan; and
- West Dapto Draft Infrastructure Implementation Plan.

2.2.1 Wollongong LEP 1990

The Wollongong LEP is the principal planning document that guides land use management and development in the Wollongong LGA (excluding the Wollongong City Centre). Towards achieving managing the development, the following aims have been outlined by Council:

- To encourage appropriate development, conservation and management processes of natural and man-made resources to further enhance the social and economic well-being of the community and to improve the environment;
- To conserve the environment and prevent further degradation by protecting environmentally sensitive areas and minimising adverse effects of development;
- To enhance the quality of life and amenity of local residents;
- To promote business and economic development in order to support future growth and employment;
- To conserve and encourage heritage; and
- To enable alterations required to the zoning of land, owned or controlled by the Council.

The actions and initiatives employed to ensure the implementation of these aims include:

- To regulate development to coincide with the particular zones;
- To implement development and performance criteria to direct specific types of development and development in specific zones;
- To allow appropriate rezoning of particular areas, to further enable development;
- To combine all relevant planning documents and policies to enhance efficiency; and
- To decrease the number of zones and definitions, while also reducing the level of permission required for minor development.

The LEP also outlines the provisions for exempt and complying development, the objectives and land use tables for each proposed zone and permitted and prohibited development activities.

The development site is presently zoned non-urban, with the Penrose residential area to the east of the site presently zoned low density residential.

2.2.2 West Dapto Development Control Plan 2007

The West Dapto Development Control Plan aims to regulate and control the development of land, through the implementation of specific requirements and standards. Through the satisfaction of these minimum standards, the DCP works towards achieving improved neighbourhood amenity, diversity and availability of housing types and environmental accountability.

In defining the urban structure of West Dapto, the DCP recommends enhancements to the public transport and cycling/walking networks. To allow for better accessibility to these network systems, more services and connections have been proposed, including upgrades to Huntley Road, Avondale Road, Cleveland Road, and a new access link aligned north-south, located to the west of the railway.

Additionally, there is a possibility of a new railway station located 3km south of the Dapto Station, at Huntley Road, Penrose. This has been included as part of the Master Planning process.

Towards a more sustainable community, Council has highlighted the need for an efficient transport system to reduce private vehicle usage and the main roads network has been developed to support this system. A primary bus loop has been designed for express services, providing links for key centres, while a secondary links all other centres to this. This has aimed at providing public transport access to residents, within a 5-minute walk (or 400m).

Further to this, the urban structure has been planned to provide for walkable communities, supported by several town and village centres, local bus stops, local shops and amenities, community facilities and schools, denser housing types and mixed use job opportunities. The aim is to design walkable communities, while reducing vehicle kilometres travelled (VKT) and promoting more cycling and pedestrian activity. The IIHP site is located in the proposed Huntley neighbourhood centre.

To encourage more cycling activity, several off-road and on-road routes, linking to major centres and attractions have been identified. These will also include east-west routes along the riparian corridors. Council is aiming for a well-connected network of routes that will promote a healthy lifestyle for residents.

2.2.3 Wollongong LGA Employment Lands Strategy 2006

The Employment Lands Strategy is a product of the planning department's recognition of the need to direct the identification, release, rezoning and development of employment lands in order to accommodate future growth. The lack of land for employment purposes can be a major constraint for future job availability. The regulation of development of employment lands is to ensure the economic state of the region by allocating sufficient land resources to be consistent with future increases in population and advancements in the region's infrastructure network. This strategy is hence used as a tool to plan for an anticipated escalation in demand for employment through earmarking land for specific use.

The demand assessment has been based on demand for employment lands and future key industries and the requirements. Based on the economic development strategy, the future opportunities are focussed on the following:

- The metals and engineering sector;
- Mining;
- The development of the port;
- Services growth including health;
- Knowledge based industry;
- Business services and community services; and
- Continued growth in tourism.

No specific recommendations were made for the siting of health services.

2.2.4 Draft Wollongong Local Environment Plan (West Dapto LEP) 2009

The Draft Wollongong Local Environment Plan outlines the process, including the standards and requirements that new developments are required to undertake. The plan sets out several objectives that it aims for. These include the following:

- To provide a framework for land use management;
- To increase employment and job opportunities through increasing economic and business development;
- To provide a range of housing choices which comply with land availability and capacity;
- To enhance the quality of life and social well-being of residents, workers and visitors;
- To protect and improve the condition of all ecological elements of the region;
- To conserve and develop heritage aspects;
- To regulate development to comply with the limitations of land and infrastructure resource capacities; and
- To ensure the protection of significant landscapes such as the Illawarra Escarpment, Lake Illawarra, the drinking water catchment and the coastline.

In order to work towards this set of aims, the LEP outlines the provisions for exempt and complying development, the objectives and land use tables for each proposed zone and permitted and prohibited uses, which vary for each zone. The zoning of the IHHP site changes from non-urban to B1 neighbourhood centre, R2 low density residential, R3 medium density residential, and SP2 infrastructure in the 2009 LEP.

2.2.5 Wollongong Economic Development Road Map Report 2003

These guidelines are designed to assist planning of employment land. This is intended to assist in strategic planning mechanisms, as well as to monitor land locations and to assist with investment opportunities.

Principles are developed for the differing industrial and employment land uses, however no specific principles are developed for health facilities.

2.2.6 Wollongong Economic Development Road Map Report 2003

This masterplan sets out the proposed land uses and form of the West Dapto area. Identified within it are the key centres, residential areas, green and open space and precincts. The site is located within the Huntley Village medium density residential and neighbourhood centre. The site is surrounded predominately residential lands, with the proposed Huntley Station and associated medium density residential and commercial centre located a short distance to the east.

2.2.7 Moving Together (2004)

The West Dapto Proposed Staging Plan details the staged development of areas within the West Dapto release area. The site is located within Stage 4 – Avondale, which will yield approximately 5,000 dwellings according to the estimates prior to the Growth Centres Commission review in 2008.

2.3 LOCAL TRANSPORT CONTEXT

With the development of the West Dapto Urban Release Area scheduled to begin in the near future, a large number of planning investigations and reports relating to the Dapto area have been prepared in recent years.

2.3.1 Illawarra Urban Transport Opportunities Study (1997)

In 1997, the *Illawarra Urban Transport Opportunities Study* (DJA Maunsell for DUAP) identified that a 30% modal split to public transport during the commuter peak periods would be required to improve air quality and reduce the environmental impact of urban development. The study identified Dapto as one of three sub-regional transport interchanges, along with Wollongong CBD and Oak Flats, which would be integral to the achievement of that target.

2.3.2 Illawarra's Action for Transport (1999)

In 1999, the Illawarra Transport Taskforce prepared the *Illawarra's Action for Transport* document. The strategy contained a number of goals, including:

- Generate a significant shift to public transport and higher occupancy vehicles for journey within the region;
- Reduce total vehicle kilometres travelled for journeys to school; and
- Reduce use of private vehicles for shopping trips within the region.

The strategy identified that modal split to public transport was approximately 4.1% in 1999.

2.3.3 Moving Together (2004)

In 2003, the Illawarra Transport Taskforce began reviewing the 1999 *Action for Transport* document with the result being the release of *Moving Together* in 2004. This document forms the current broad transport strategy covering the Illawarra region.

Moving Together contains a number of actions relevant to the Dapto area, including:

- Apply a 'trunk and feeder' network structure for public transport services, e.g. local bus to main bus route or local to railway station;
- Review public transport services to major trip generators (e.g. University, Hospitals, WIN Stadium, commercial centres) and recommend improvements;
- Review existing neighbourhoods to improve public transport accessibility and the ability to move in and around suburbs;
- Improve the accessibility, attractiveness, safety and frequency of bus and train services;
- Promote off-peak travel using public transport;
- Promote the benefits of public transport and non-motorised transport (i.e. walking, bicycles etc.);
- Work with employers to encourage journey to work by public transport, e.g. transport access information;
- Provide and promote better integration of public transport services through integrated timetables;
- Provide and promote better integration of public transport services through integrated ticketing options;
- Promote and facilitate car pooling, car sharing and 'park and ride' options;
- Provide integrated public transport at commercial centres;
- Apply Transit Oriented Development (TOD) principles in land use planning to support and encourage public transport. A neighbourhood based on TOD principles would include a high density mixed use centre, narrow streets with wide footpaths, active street frontages, quality public open spaces, shared parking, safe pedestrian and cycle routes and an interconnected road network;
- Review planning controls to reallocate parking infrastructure costs to the provision of public transport infrastructure;
- Develop a set of effective parking supply management strategies to manage limited parking resources. These would specify pricing, duration and availability in the CBDs and other busy areas. As an incentive for more desirable modes provide more parking for buses, taxis, disabled, delivery and high occupancy vehicles;
- Develop a set of effective parking supply management strategies to manage travel demand. These would specify pricing, duration and availability on campuses. Provide incentives for more desirable modes, i.e. for buses, taxis, disabled, delivery and high occupancy vehicles;
- Ensure Council Planning policies encourage alternatives to private transport when assessing Development Applications, e.g. showers at destinations, bicycle storage in new developments, bus stops in subdivisions etc.; and
- Provide physical and timing priority for preferred road based modes, i.e. pedestrians, buses, taxis and bicycles; e.g. bus lanes, transit lanes and 'B' traffic light phase.

The actions relating to integrating fare structures and timetables will be particularly pertinent to IIHP development as it is located outside of the walking catchment of the nearest railway station.

2.3.4 West Dapto Urban Development Transport Management and Access Plan Stage 1 Report – Baseline Study (2004)

In 2004, Kellogg Brown and Root prepared the *West Dapto Urban Development TMAP Stage 1 Report* for Wollongong City Council. The report aimed to identify barriers to public transport use and the impact of poor accessibility.

The report identified that the aim of placing bus routes within 400m of an area's population has led to circuitous and unattractive bus routes and suggests that service provision standards also need to consider the directness of routes, frequency and journey times.

The report identified that long journey times and low service frequency are major barriers to public transport use. It was recognised that modern styles of fringe development forces buses further away from direct routes in order to serve the catchment adequately.

The report also identified that bus/rail interchanges will be an integral part of the public transport network and consequently a fully integrated multi-modal fare structure would be required in order to encourage people to transfer between modes.

2.3.5 West Dapto Release Area Draft Infrastructure Implementation Plan (2006)

The *Draft Infrastructure Implementation Plan* was prepared by Wollongong City Council in 2006 to set out the infrastructure which would be provided as part of the development of the West Dapto Release Area.

Relevant infrastructure and its estimated cost includes:

- Fowlers Road Extension (\$32.43 million);
- F6/Fowlers Road south-facing ramps (\$1.70 million plus a matching contribution from State Government);
- Dapto Bus/Rail interchange upgrade (\$7.50 million plus a matching contribution from State Government);
- Huntley Road to Bong Bong Road link (\$9.07 million);
- Cleveland Road upgrading (\$4.38 million);
- F6/Princes Highway north-facing ramps, Tallawarra interchange (\$0.85 million – 25% share, with the remaining funded by the State Government and other sources);
- Huntley Road upgrade (\$3.16 million);
- Avondale Road upgrade (\$4.60 million); and
- F6/Emerson road on/off ramps (\$2.07 million).

The most significant pieces of infrastructure from this list, with regard to the IIHP development, are the upgrades to Huntley and Avondale Roads, and the link from Huntley Road to Cleveland and Bong Bong Roads.

2.3.6 West Dapto TMAP Extension Study (2008)

The TMAP Extension Study was prepared by Connell Wagner in 2008 to develop a preferred main roads strategy for the West Dapto area, focusing on links to the Southern Freeway and crossings of the South Coast Railway Line. A combination of TRACKS modelling and multi-criteria assessment was used to determine a preferred package of measures.

The study recommended a schedule of infrastructure improvements be implemented to serve the West Dapto Urban Release Area, in order to achieve the goals of increased road network permeability and grade-separation of existing level crossings.

The study also recognised the present low levels of public transport usage in the Dapto area, and identified that, if these levels were not markedly improved by 2026, the road network would come under considerable pressure. The study recommended that a greater emphasis be placed on the improvement of public transport services, especially in new release areas where the early provision of good public transport services can greatly influence modal choice. This recommendation is particularly relevant for the IIHP development, given its location on the cusp of the urban release area and its large trip generation.

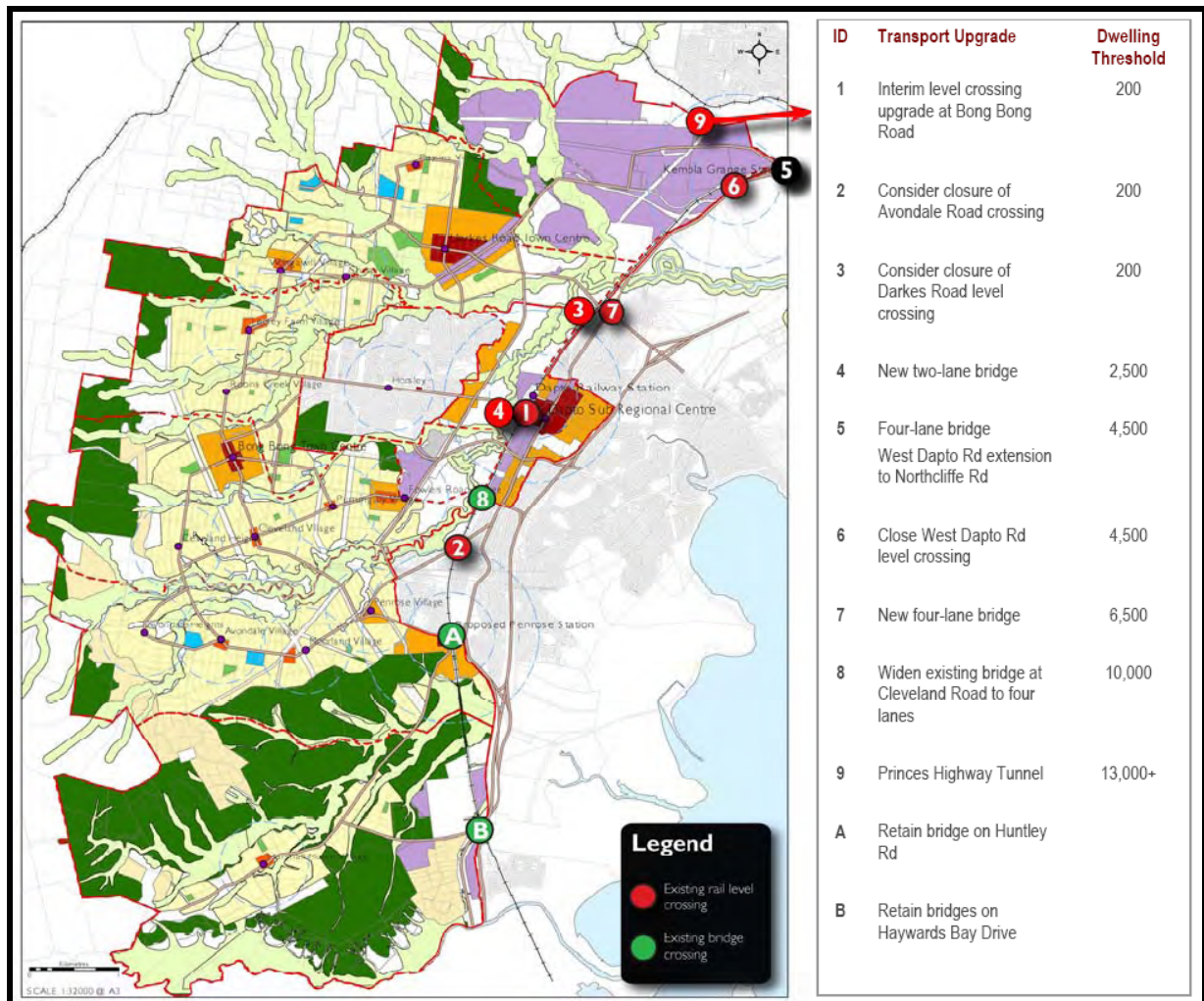
2.3.7 West Dapto Release Area Review: Planning and Infrastructure, Planning Report (2008)

The Growth Centres Commission was commissioned by Wollongong City Council in 2008 to undertake a review of West Dapto Release Area planning, following revisions to the anticipated lot yields. The review included the LES, draft LEP, draft s.94 contributions plan, and the Draft Infrastructure Implementation Plan. The previously identified target of a 3.5% modal shift to public transport was accepted by the Commission.

Notable findings of the review include:

- The estimated lot yield has been reduced from 19,000 to 16,000;
- The West Dapto Transport Link (Fowlers Road Extension) is superfluous and does not represent value for money;
- Staging and treatments for existing level crossings could be revised;
- Development in the Yallah, Marshall Mount and Calderwood areas is insufficient to warrant the development of the proposed Huntley Railway Station and that associated track amplifications are not cost effective; and
- Payment by developers of a start-up bus service subsidy needs further consideration.

Figure 2.2 illustrates the revised staging plan for the removal of level crossings between Unanderra and Yallah.

Figure 2.2 West Dapto Planning Review – Revised Level Crossing Removal Staging Plan

Source: West Dapto Planning Review, Figure 1.

3.0 EXISTING TRANSPORT SITUATION

It is important to understand the transport conditions at and surrounding the development site. This forms a good basis for assessment of the transport impacts of the development and any recommendations for change in the future. This chapter reviews the existing transport conditions across all modes of transport and considers travel behaviour, travel patterns as well as infrastructure provisions.

3.1 SITE LOCATION

The proposed IIHP is to be located at Huntley, approximately 15 kilometres south of Wollongong. The site is bounded by Avondale Road to the north and west, Goolagong Street to the east and Huntley Road to the south. The proposed vehicle access locations to the site will be via Avondale Road and Huntley Road. The site is currently a greenfield site and generates no traffic demand as is clear from **Figure 3.1** below.

Figure 3.1 Site Boundary



Source: Figure 2, Preliminary Environmental Assessment, IIHP, Huntley Road, Huntley (Cardno Forbes Rigby, July 2008)

3.2 ROAD NETWORK

3.2.1 Classification Criteria

There are two main systems for the classification of roads in New South Wales, the functional classification system and the funding classification system. A third system that defines the environmental capacity of residential streets is also a form of classification.

Funding Classification

The RTA has also adopted a “funding related” classification system that is primarily for administrative purposes. The key road classifications under the funding classification system are defined as:

- **State Roads** – roads performing an important state function and for which the RTA fully funds the maintenance cost. State roads are essentially arterial roads;
- **Regional Roads** – roads performing a significant regional function and for which the RTA and Council share the costs of maintenance. Regional roads are essentially sub-arterial roads; and
- **Local Roads** – roads performing a local or collector function and for which the Councils fully fund the maintenance cost. Additional funding is available from the RTA in certain circumstances on grounds of urban amenity and road safety.

In the Huntley area the higher hierarchy roads are as follows, while all other roads are local roads:

- State Roads:
 - Southern (F6) Freeway.
- Regional Roads:
 - Princes Highway.

The funding road classification in the Dapto area is represented in **Figure 3.2**.