LEGEND

- ARCHONTONPHOENIX cunninghamiana
- BRACHYCHITON acerifolius
- BUCKINGHAMIANA celsissima
- CUPANIOPSIS anacardioides
- DELONIX regia
- GREVILLEA baileyana
- LIVISTONA australis
- SYZYGIUM jambos
- WATERHOUSIA floribunda
- TURF
- UNDERSTOREY PLANTING
- PEDESTRIAN ACCESS

Twin Towns clubs & resorts

PROJECT: TWIN TOWNS – CLUB BANORA
DRAWING TITLE: LANDSCAPE MASTER PLAN
CLIENT: TWIN TOWNS SERVICES CLUB
SCALE: 1:2500 @ A3
PROJECT No.: TWI01
DATE: 18.02.11
SHEET: 1/4 REV. A

QLD Reg 3430 NSW Reg 7065 Nominated Architect – Bayden Foster Goddard ABN 71 105 586 040

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Aged Persons Accommodation
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Retail
THE BUCHAN GROUP
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Club Banora & Master Planning
B G R
T. +61 7 5592 6188 www.bgdarchitects.com

LEGEND

- ARCHONTONPHOENIX cunninghamiana
- BRACHYCHITON acerifolius
- BUCKINGHAMIANA celsissima
- CUPANIOPSIS anacardioides
- DELONIX regia
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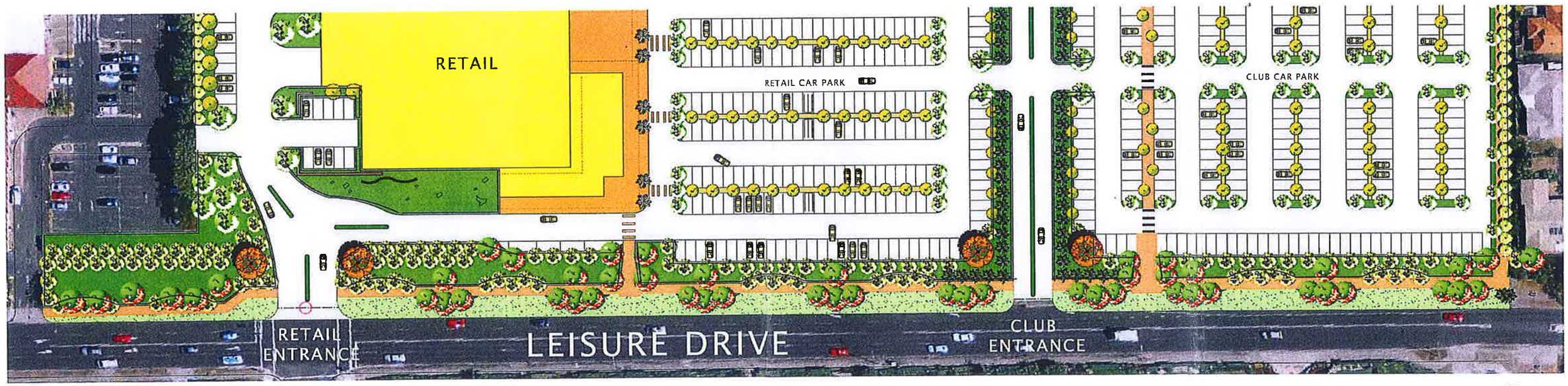
- PEDESTRIAN ACCESS



NORTH

Twin Towns clubs & resorts

PROJECT: TWIN TOWNS – CLUB BANORA PROJECT No.: TWI01

DRAWING TITLE: LANDSCAPE MASTERPLAN - LEISURE DRIVE DETAIL DATE: 18.02.11

CLIENT: TWIN TOWNS SERVICES CLUB SCALE: 1:1000 @ A3 SHEET: 2/4 REV. A

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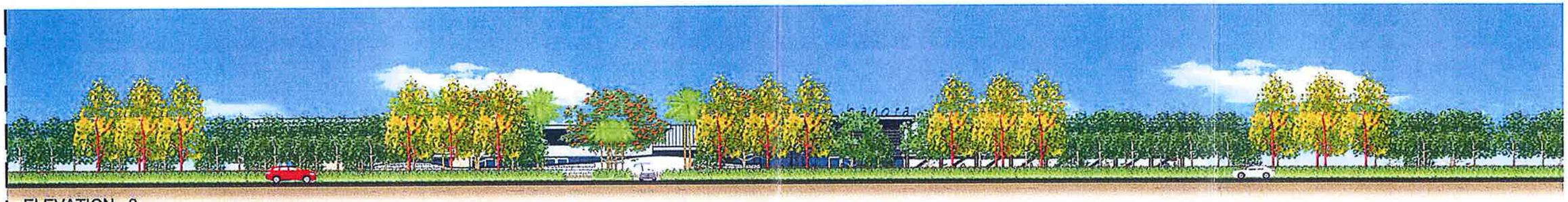
ELEVATION - 1

ADJOINS ELEVATION - 2



ADJOINS ELEVATION - 1

ELEVATION - 2

PROJECT: TWIN TOWNS - CLUB BANORA

DRAWING TITLE: LEISURE DRIVE STREETSCAPE ELEVATION

CLIENT: TWIN TOWNS SERVICES CLUB SCALE: NTS

PROJECT No.: TWI01

DATE: 18.02.11

SHEET: 3 / 4 REV. A

QLD Reg 3430 NSW Reg 7065 Nominated Architect Bayden Foster Goddard ABN 71 105 566 040

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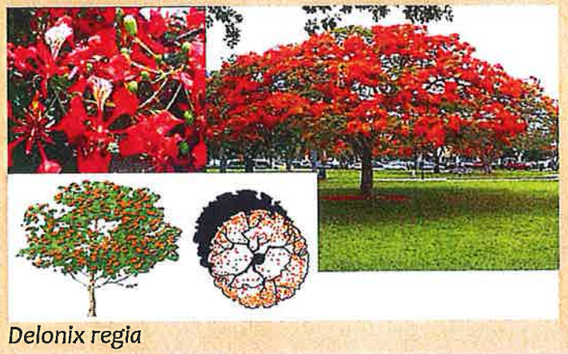
trees

Brachychiton acerifolius

Buckinghamiana celsissima

Cupaniopsis anacardioides

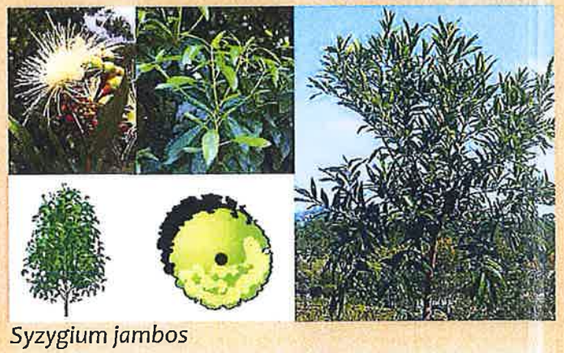


Delonix regia

trees

Grevillea baileyana

Waterhousia floribunda



Syzygium jambos

palms

Archontonphoenix cunninghamiana

Livistona australis

shrubs

Metrosideros collina var. villosa 'Tahiti'

groundcovers

Hymenocallis littoralis

PROJECT: TWIN TOWNS - CLUB BANORA

DRAWING TITLE: SOFTSCAPE REFERANCES

CLIENT: TWIN TOWNS SERVICES CLUB SCALE: NTS

PROJECT No.: TWI01

DATE: 18.02.11

SHEET: 4 / 4 REV. A

QLD Reg 3430 NSW Reg 7065 Nominated Architect - Bayden Foster Goddard ABN 71 105 566 040

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ANNEXURE F **Capital Investment Value – GMP Management, 20 December 2010**

gmp management

• Project Managers • Development Consultants
• Cost Managers • Quantity Surveyors

20th December 2010

Darryl Anderson Consulting
Suite 7, 8 Corporation Circuit
TWEED HEADS SOUTH NSW 2486

06 JAN 2011

Attention: Mr Darryl Anderson

Dear Darryl

RE: CLUB BANORA REDEVELOPMENT
CAPITAL INVESTMENT VALUE

We have reviewed the documentation and plans for the proposed redevelopment of the Club Banora site, and detail below our estimate of the Capital Investment Value.

1.	**CONSTRUCTION COSTS**		**$98,717,000**
	- Carpark & Civil Works	$6,127,000	
	- Retail Centre	$15,225,000	
	- Aged Care	$43,736,000	
	- New Club	$19,419,000	
	- Function Facility	$1,710,000	
	- Contingency	$5,000,000	
	- Escalation	$7,500,000	
2.	**ON COSTS**		**$8,518,000**
	- Design Fees	$7,700,000	
	- Legal Fees	$300,000	
	- P.L.S.L.	$518,000	
	TOTAL (Excluding GST)		**$107,235,000**

The above costs include temporary works, diversions, construction costs inclusive of labour, personnel and long service levies.

Yours sincerely
GMP MANAGEMENT

IAN W PERT
Director

G:\532 Club Banora\GMP\Ltr Capital Investment Value_20-12-10.docx

ANNEXURE G **Market Potential and Economic Impact Assessment – Pitney Bowes, September 2010**

Club Banora, New South Wales

Market potential and Economic Impact Assessment

September 2010

Pitney Bowes
Business Insight

Pitney Bowes Business Insight
SYDNEY
Level 1, 123 Walker Street
North Sydney NSW 2060
(02) 9437 6255

MELBOURNE
Level 20, 40 City Road (HWT)
Southbank VIC 3006
(03) 9694 3300

Prepared for: Twin Towns Services Club Ltd

Pitney Bowes Business Insight staff responsible for this report:

Tony Dimasi, Managing Director, Strategy & Analytics

Jessica Commins, Client Services Manager

Channa de Silva, Consultant

Table of contents

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Introduction

This report presents an independent assessment of market potential and associated economic impacts for proposed retail facilities at Club Banora, located within the suburb of Banora Point in Northern New South Wales.

The report has been prepared in accordance with instructions received from Twin Towns Services Club Ltd and is structured and prepared as follows:

- **Section 1** provides an overview of the regional and local context of the proposed Club Banora development. Relevant planning guidelines outlined in the New South Wales Government's Draft Centres Policy (April 2009) are also discussed.
- **Section 2** reviews the trade area likely to be served by the proposed development, including current and projected population and spending levels. The socio-demographic profile of the trade area population is also reviewed.
- **Section 3** discusses the competitive retail environment under which the proposed centre would operate.
- **Section 4** assesses the potential for retail facilities at the Club Banora site, including a supermarket as well as retail specialty floorspace. Estimates of sales potential for each component of the centre are also provided.
- **Section 5** considers the likely economic impacts of the proposed development, including the likely trading impacts on other retailers within the relevant area.

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Section 1: Background

This section of the report reviews the regional and local context of the future Club Banora development and also provides an overview of the proposed facility. The planning guidelines for future retail and commercial development in New South Wales, as outlined in the State Government's Draft Centre Policy, have also been discussed.

1.1 Regional and local context

The proposed site for the Club Banora retail facility is located within the suburb of Banora Point, in the Northern Rivers region of New South Wales. As illustrated on Map 1.1, Banora Point is approximately 100 km to the south-east of Brisbane and 660 km to the north-east of Sydney.

Banora Point, which is located within the Local Government Area (LGA) of Tweed, is predominantly a residential suburb, which has become popular with older retirees.

The proposed retail facilities at Banora Point would be located adjacent to Club Banora, which is currently a large facility containing a range of sporting and recreational uses including an 18 hole golf course, lawn bowling greens, tennis courts and an Olympic size swimming pool.

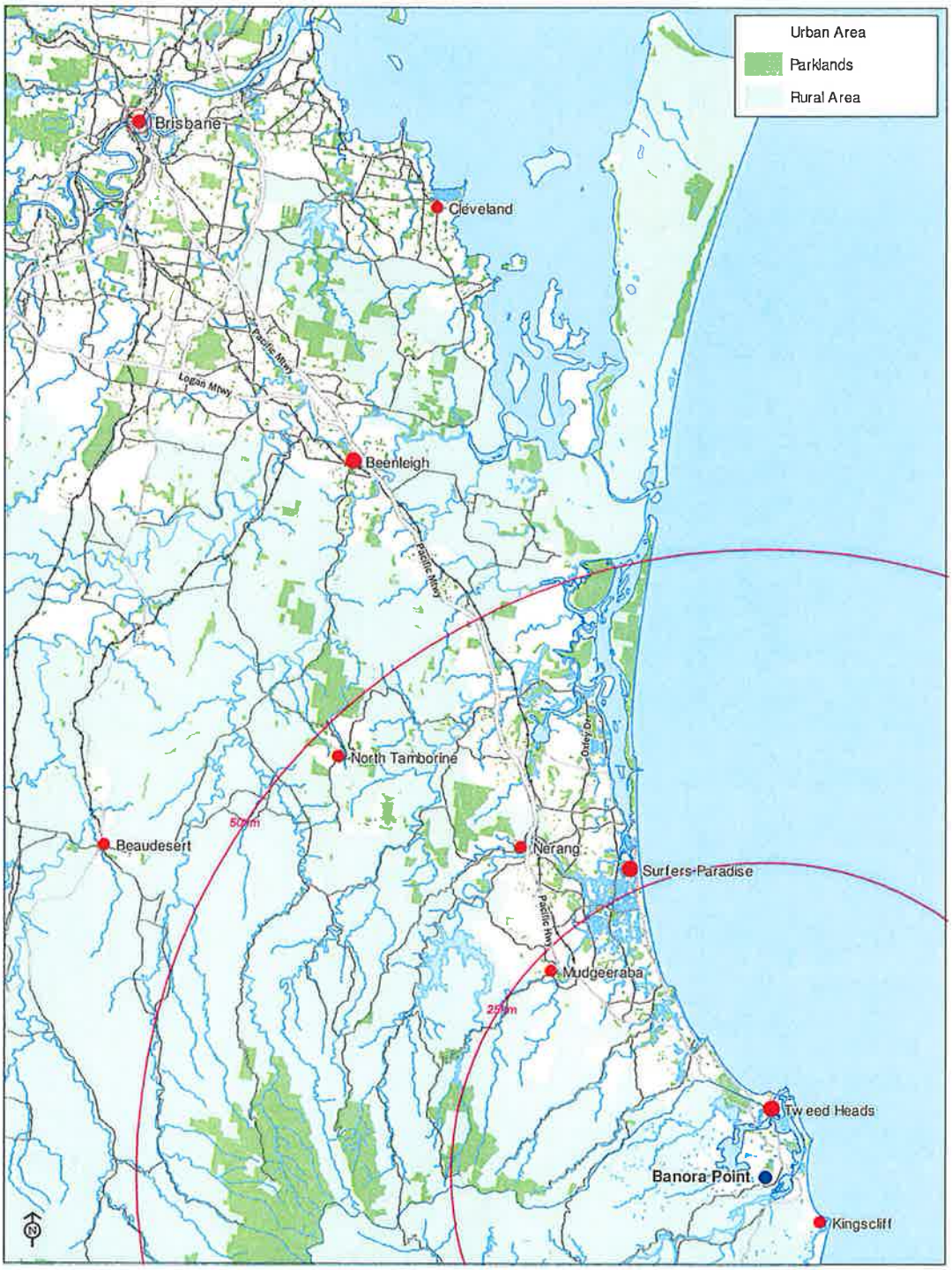
As illustrated on Map 1.2, the Club Banora site is located on Leisure Drive, adjacent to the Banora Shopping Centre which is anchored by a Bi-Lo supermarket.

Leisure Drive is the main east-west connector route through the surrounding area, and therefore provides the Club Banora site with excellent accessibility from the prospective trade area to be served by the proposed new centre. The site also enjoys excellent visibility and exposure to passing traffic along Leisure Drive.

The Pacific Highway, located to the east of Club Banora, is now undergoing an upgrade (at Banora Point) which will result in a new 2.5 km segment of highway stretching from Barneys Point Bridge in the south to the Tweed Heads Bypass in the north (refer Figures 1.1 and 1.2). Once completed, it will provide a six-lane dual carriageway link between the existing Chinderah and Tweed Heads bypasses.

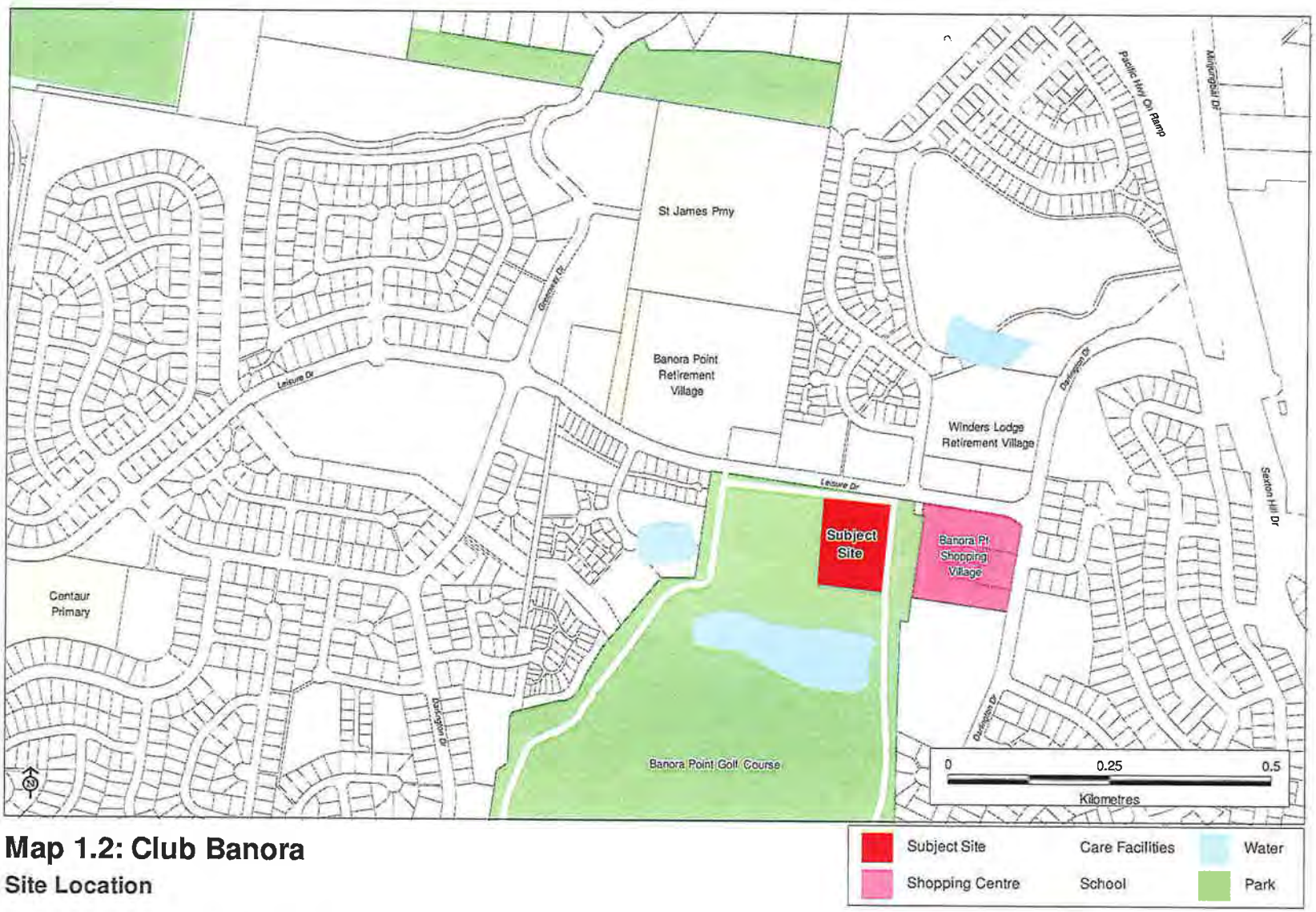
As illustrated on Figures 1.1 and 1.2, the upgrade will bypass the existing section of the Pacific Highway that runs via Banora Point and has poor alignment and a high accident rate. The existing section of the highway will be retained as a local access road.

This upgrade to the Pacific Highway has implications for the proposed Club Banora retail facility, which are discussed further in the following sections of this report.



Map 1.1: Banora Point

Regional Context



Map 1.2: Club Banora

Site Location

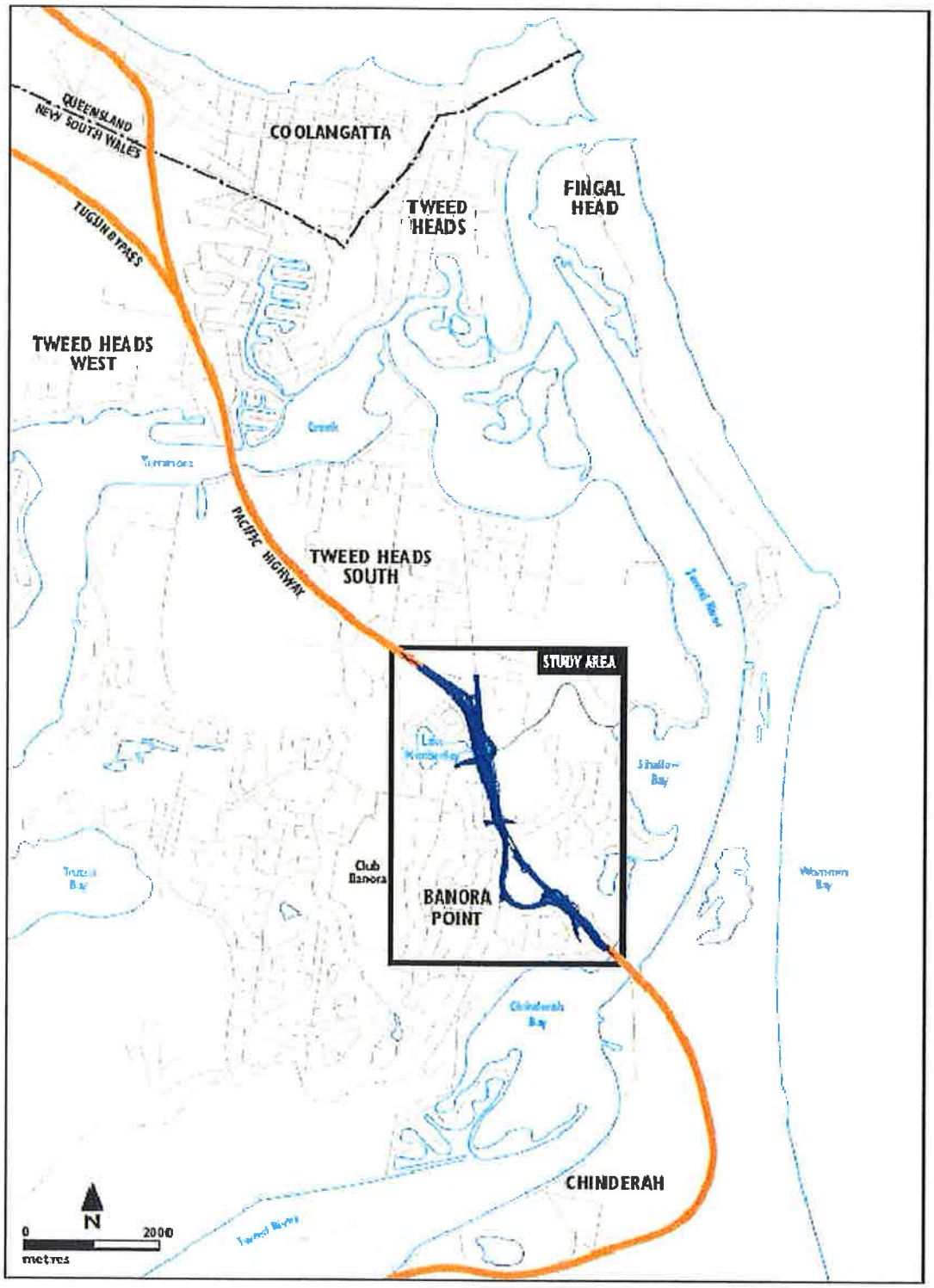


Figure 1-1 Location of the proposed upgrade and study area

Figure 1.1

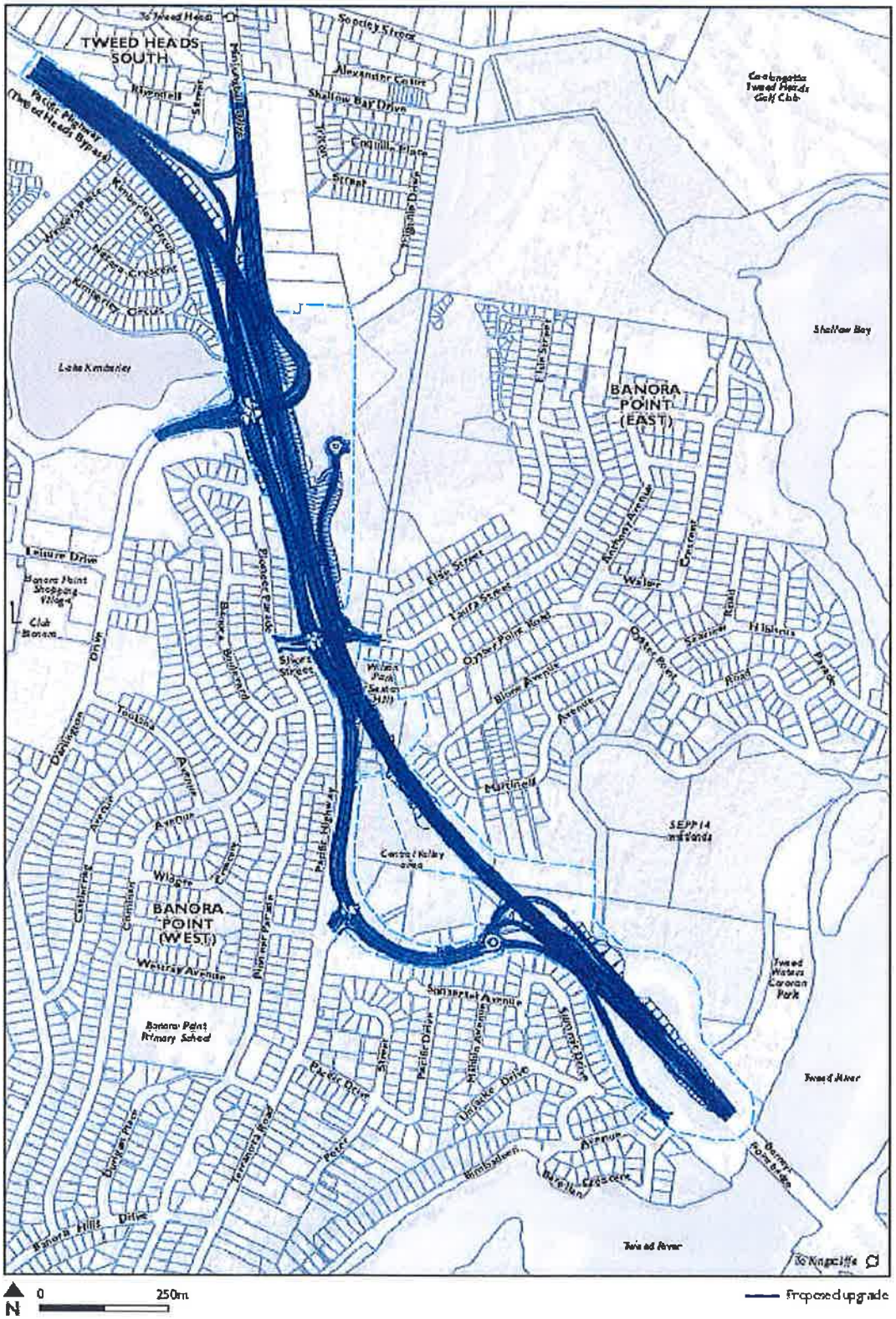


Figure 1-2 The proposed upgrade

Figure 1.2

1.2 Draft Centres Policy

The *Draft Centres Policy* released by the New South Wales Government's Department of Planning in April 2009, sets planning guidelines for retail and commercial development in New South Wales. Once adopted, this will be the overriding policy document with regard to retail and commercial development in the state.

This document identifies six key planning principles to guide future retail and commercial development:

- Principle 1 – Retail and commercial activity should be located in centres, to ensure the most efficient use of transport and other infrastructure, proximity to labour markets, and to improve the amenity and liveability of those centres.
- Principle 2 – The planning system should be flexible enough to enable all centres to grow, and new centres to form.
- Principle 3 – The market is best placed to determine the need for retail and commercial development. The role of the planning system is to regulate the location and scale of development to accommodate market demand.
- Principle 4 – The planning system should ensure that the supply of available floorspace always accommodates market demand, to help facilitate new entrants into the market and promote competition.
- Principle 5 – The planning system should support a wide range of retail and commercial premises in all centres and should contribute to ensuring a competitive retail and commercial market.
- Principle 6 – Retail and commercial development should be well designed to ensure it contributes to the amenity, accessibility, urban context and sustainability of centres.

Each of the key principles detailed above is of direct relevance to the proposed Club Banora development. As detailed in the previous sub-section, Principle 1 would be fulfilled by the proposed centre, which would be located in a highly accessible location immediately opposite Banora Shopping Village, the established retail centre in the locality.

Principles 2-5 provide guidelines to the planning system that should be employed with respect to retail and commercial facilities. These principles stress that planning regulations should be flexible enough to allow market forces to dictate the supply and demand of retail floorspace. The detailed analysis carried out in the following sections of this report suggests that there is sufficient market scope and demand for a facility of the scale and composition proposed at the Club Banora development.

1.3 Proposed development

Figure 1.3 details the proposed composition of the Club Banora retail facility. As illustrated, the proposed retail facility would be located on the north-east corner of the Club Banora site and will be directly accessible off Leisure Drive. A substantial provision of grade carparking will be provided to the immediate west of the facility.

Table 1.1 summarises the composition of the proposed Club Banora development, as suggested by Twin Town Services Club Ltd, and compares it with typical single supermarket anchored centres in Australia. The single supermarket benchmark data relate to 65 single supermarket anchored centres throughout metropolitan and non-metropolitan areas of Australia, for which data is collected regularly by Pitney Bowes Business Insight.

Key points to note in relation to the composition of the proposed Club Banora development are as follows:

- The anchor tenant of the proposed development will be a full-line supermarket of 3,800 sq.m, which would account for almost 72% of the total retail floorspace at the centre.
- As currently advised by Twin Towns Services Club Ltd, the proposed centre would not contain any mini-major tenants (retail tenants of at least 400 sq.m).

- The total suggested provision of retail specialty floorspace is 1,484 sq.m, which is substantially smaller than the average for single supermarket anchored centres (of 1,968 sq.m).

- The completed centre will contain a total of 5,284 sq.m of retail floorspace, which is almost 1,000 sq.m less than the benchmark for this type of centre.

Table 1.1

Club Banora - Proposed centre composition

Category	Club Banora GLA (sq.m)	Club Banora GLA (% of retail)	Single smkt centres GLA (sq.m)	Single smkt centres GLA (% of retail)	Difference GLA (sq.m)
Major tenant					
Supermarket	3,800	71.9%	3,453	56.4%	347
Total majors	**3,800**	**71.9%**	**3,453**	**56.4%**	**347**
Mini-majors*	0	0.0%	700	11.4%	-700
Total retail spec.	1,484	28.1%	1,968	32.2%	-484
Total Retail	**5,284**	**100.0%**	**6,120**	**100.0%**	**-836**

**Retail tenants of at least 400 sq.m.*

Source: Twin Towns Services Club Ltd; Pitney Bowes Business Insight

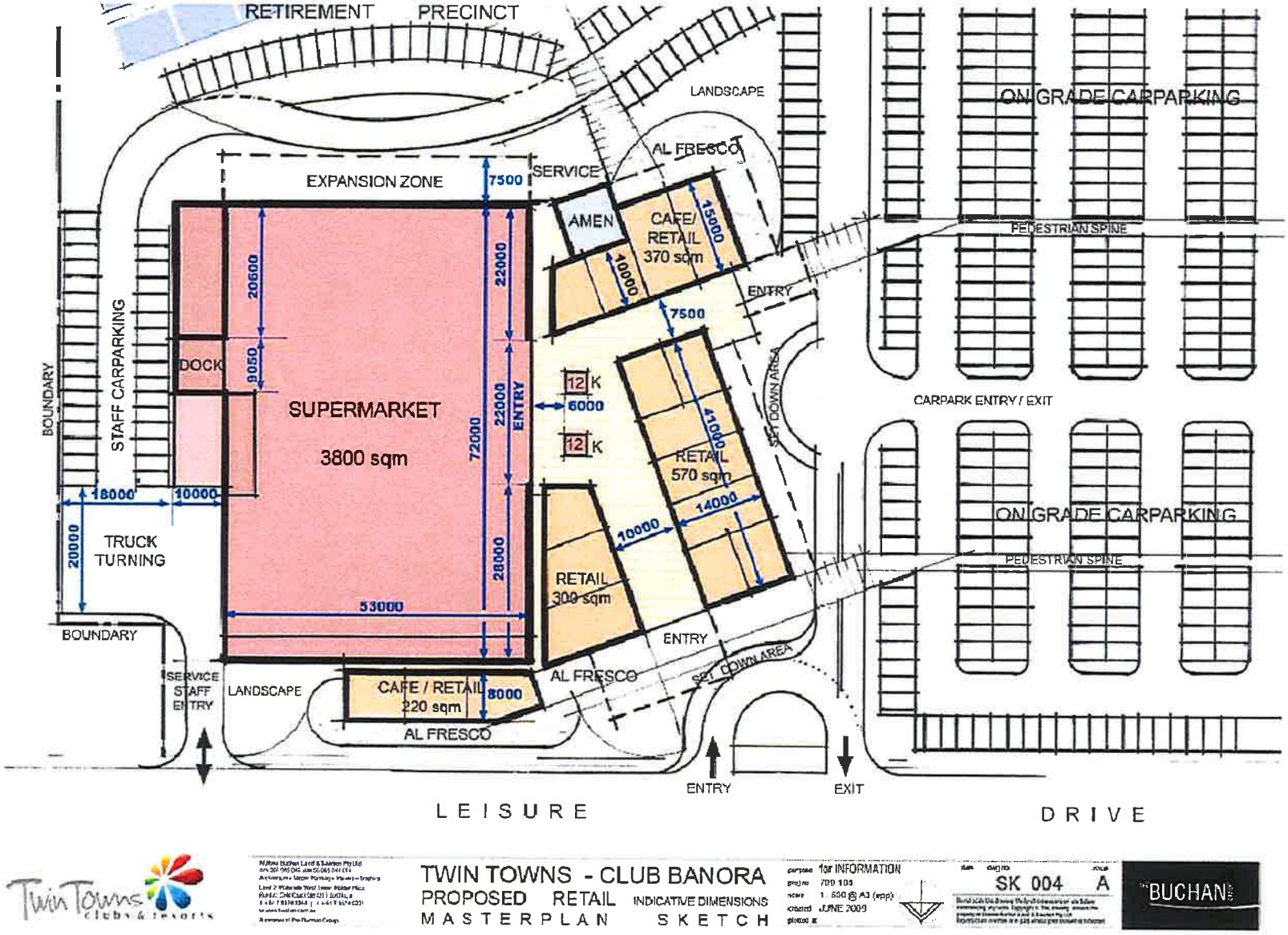


Figure 1.3

Club Banora, New South Wales

Market potential and Economic Impact Assessment

Section 2: Trade area analysis

This section of the report details the trade area likely to be served by the proposed Club Banora retail development, and includes an analysis of the current and forecast population levels, as well as the socio-demographic profile and retail spending capacity of trade area residents.

2.1 Trade area definition

The extent of the trade area or catchment that is served by any shopping centre is shaped by the interplay of a number of critical factors. These factors include:

- The relative attraction of the centre, in comparison with alternative competitive retail facilities. The factors that determine the strength and attraction of any particular centre are primarily its scale and composition (in particular the major trader or traders that anchor the centre); its layout and ambience; and carparking, including access and ease of use.

- The proximity and attractiveness of competitive retail centres. The locations, compositions quality and scale of competitive retail facilities all serve to define the extent of the trade area which a shopping centre is able effectively to serve.

- The available road network and public transport infrastructure, which determine the ease (or difficulty) with which customers are able to access a shopping centre.

- Significant physical barriers which are difficult to negotiate, and can act as delineating boundaries to the trade area served by an individual shopping centre.

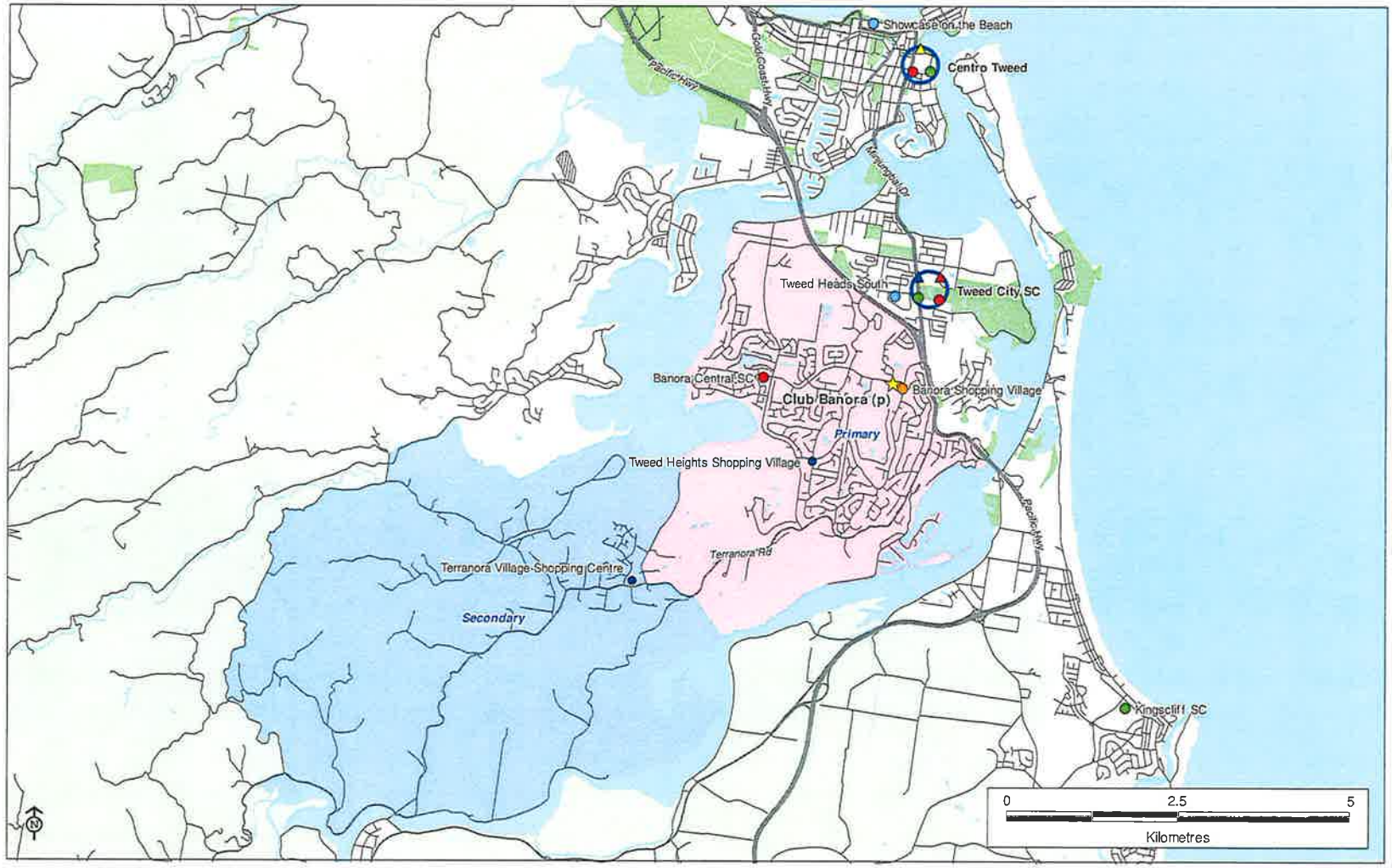
In this context, the key determinants of the trade area served by the proposed Club Banora development include:

- The ongoing upgrade to the Pacific Highway located to the east of Club Banora, which on the one hand acts as a physical barrier in limiting customer visitation from the areas to the east of the highway, but also serves equally as a barrier to residents living west of the highway, to the benefit of retail facilities at Banora.
- The under provision of supermarket facilities in the locality, especially to the south-west of Banora Point, as is discussed further in Section 3 of this report.
- The locations of extensive retail facilities in the region to the north and east, especially at Centro Tweed and Tweed City Shopping Centre (also discussed in Section 3).
- The Tweed River system, which limits access from the region to the south of Banora Point.

Taking the above into account, the trade area which is likely to be served by the Club Banora development is illustrated on the attached Map 2.1 and includes a primary sector and a secondary sector, described as follows:

- The **primary sector** is limited to the east by the Pacific Highway, to the south-east by the Tweed River and to the west by Mahers Lane. This sector includes the suburb of Banora Point and parts of Tweed Heads South and Terranora.
- The **secondary sector** is bounded by Hogans Road to the west and includes the towns of Bilambil, Duroby, North Tumbulgum and part of Terranora.

The combination of the primary and secondary sectors is referred to as the main trade area throughout the remainder of this report.



Map 2.1: Club Banora

Trade Area & Competition

** Halo object indicates proposed store*

2.2 Trade area population

Table 2.1 details the current and projected population levels within the Club Banora main trade area, by sector. The current main trade area population is estimated at 22,570, including 19,590 residents in the key primary sector.

Over the period from 2001-2006 (the most recent inter-censal period), population growth throughout the main trade area averaged some 582 persons, at a very strong rate of 3.1% per annum.

Map 2.2 illustrates the new dwelling approval activity throughout the region for the period 2006-2009. As highlighted, some new dwelling approval activity has been taking place within the main trade area.

According to the *Far North Coast Regional Strategy 2006-2031* released by the New South Wales Government in December 2006, up to 51,000 new dwellings are to be added to the Far North Coast region over the period 2006-2031. Of this total, 37.5% is to be provided within the Tweed LGA.

The *Far North Coast Region Residential Submarket Analysis* (prepared by MacroPlan in August 2008), indicates that some 56% of these dwellings within the Tweed LGA are anticipated to be provided as part of infill development, concentrated in Tweed Heads and Kings Forest (which is located approximately 12 km south of Banora Point).

Residential growth within the defined main trade area will be predominantly driven by the significant development planned in Terranora, located immediately south-west of Banora Point (within the primary sector). A large plot of land known as 'Area E' is the most significant residential release area to be planned at Terranora (refer Map 2.2) and has the capacity to accommodate well over 4,000 residents once completed over the next 10-15 years.

Discussions with Tweed Shire Council have indicated that the 130 hectare Area E has been rezoned for urban uses, however, residential development in the area has been delayed due to infrastructure planning constraints. These constraints are expected to be rectified within the next year, with residential growth considered likely to commence soon thereafter.

Taking the above into consideration, the Club Banora main trade area population is projected to increase to 27,290 by 2021, including 23,990 residents in the key primary sector. Over the forecast period, population growth within the main trade area is projected at around 1.6%-1.9% per annum, which is well above the non-metropolitan New South Wales averages anticipated over the same period.

Table 2.1

Club Banora trade area population, 2001-2021*

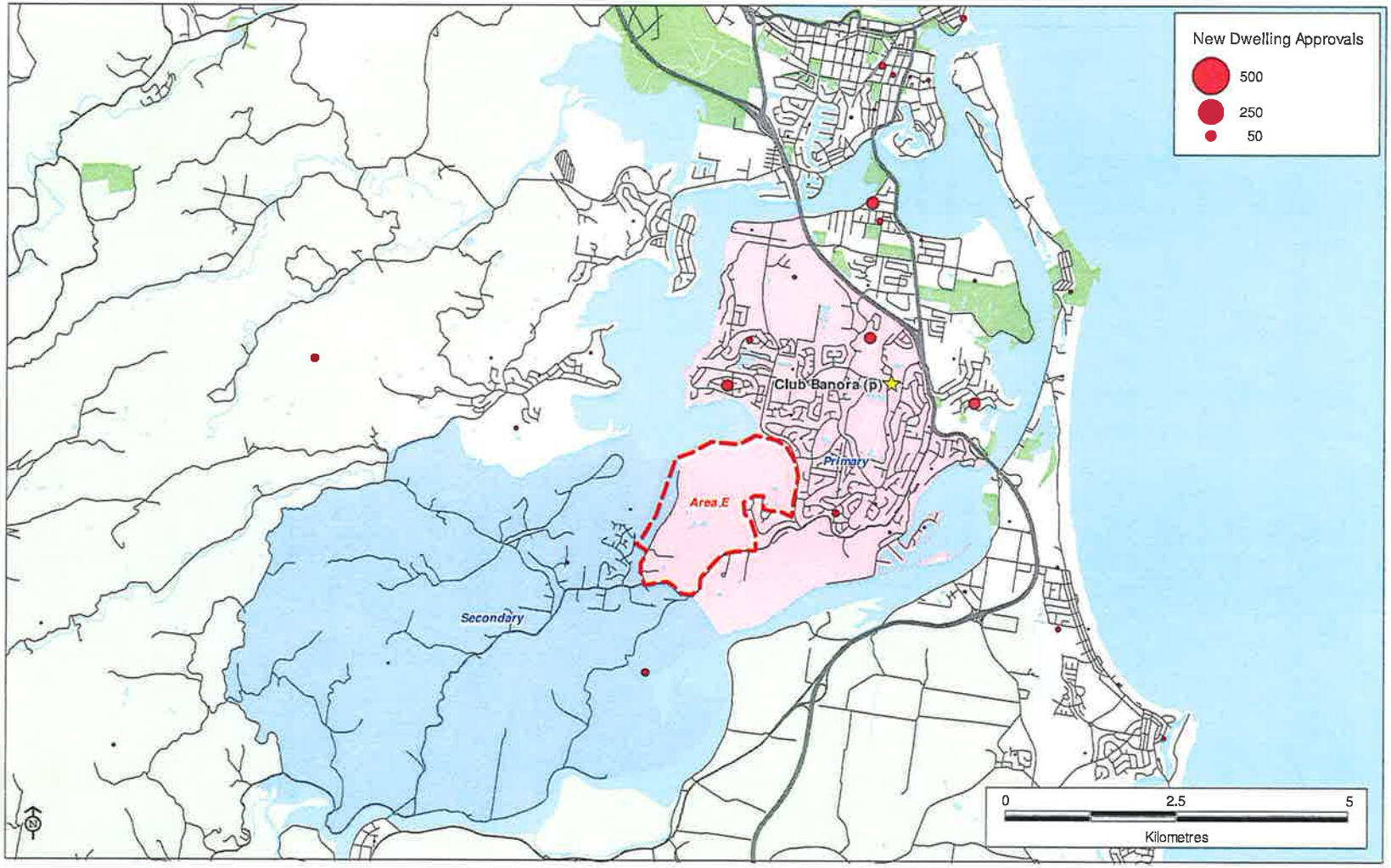
	Estimated population			Forecast population		
Trade area	2001	2006	2010	2013	2016	2021
Primary sector	15,320	17,990	19,590	20,790	21,990	23,990
Secondary sector	2,580	2,820	2,980	3,100	3,175	3,300
Main trade area	**17,900**	**20,810**	**22,570**	**23,890**	**25,165**	**27,290**

	Average annual growth (no.)				
Trade area	2001-06	2006-10	2010-13	2013-16	2016-21
Primary sector	534	400	400	400	400
Secondary sector	48	40	40	25	25
Main trade area	**582**	**440**	**440**	**425**	**425**

	Average annual growth (%)				
Trade area	2001-06	2006-10	2010-13	2013-16	2016-21
Primary sector	3.3%	2.2%	2.0%	1.9%	1.8%
Secondary sector	1.8%	1.4%	1.3%	0.8%	0.8%
Main trade area	**3.1%**	**2.1%**	**1.9%**	**1.7%**	**1.6%**
NSW average		1.1%	1.1%	1.1%	1.0%

**As at June*

Source: ABS; Pitney Bowes Business Insight



Map 2.2: Club Banora

New Dwelling Approvals, 2006-2009

2.3 Socio-demographic profile

Table 2.2 and Chart 2.1 illustrate the socio-demographic profile of the main trade area population, compared with the respective non-metropolitan New South Wales averages. This information is sourced from the 2006 Census of Population and Housing.

In general, there is some variation in characteristics between the two trade area sectors, with the primary sector population comprising largely older Australian born residents earning below average incomes, reflecting the popularity of Banora Point with retirees. In comparison, the significantly smaller (by population) secondary sector contains a younger population, with a large representation of amilies who earn above average income levels.

Key points to note regarding the characteristics of the current main trade area population include:

- The average age of the main trade area population at 43.2 years, is significantly older than the non-metropolitan New South Wales average of 39.1 years. This trend is especially evident in the primary sector However, the secondary sector contains a much younger population.
- The primary sector residents earn income levels that are significantly below the non-metropolitan New South Wales benchmarks on both a per capita and per household basis. The income profile of the secondary sector residents is quite different, containing a much more affluent population.
- Home ownership levels within the main trade area are higher than the non-metropolitan New South Wales average.
- The main trade area population is largely Australian born, with only 16.2% of residents born overseas.

- A review of the household structure within the primary sector indicates a significantly below average proportion of households consisting of traditional families (i.e. couples with dependent children), again reflecting the retiree population within this sector. In contrast, the nature of the population in the secondary sector is much more family oriented, with 58.7% of households occupied by traditional families.

Table 2.2

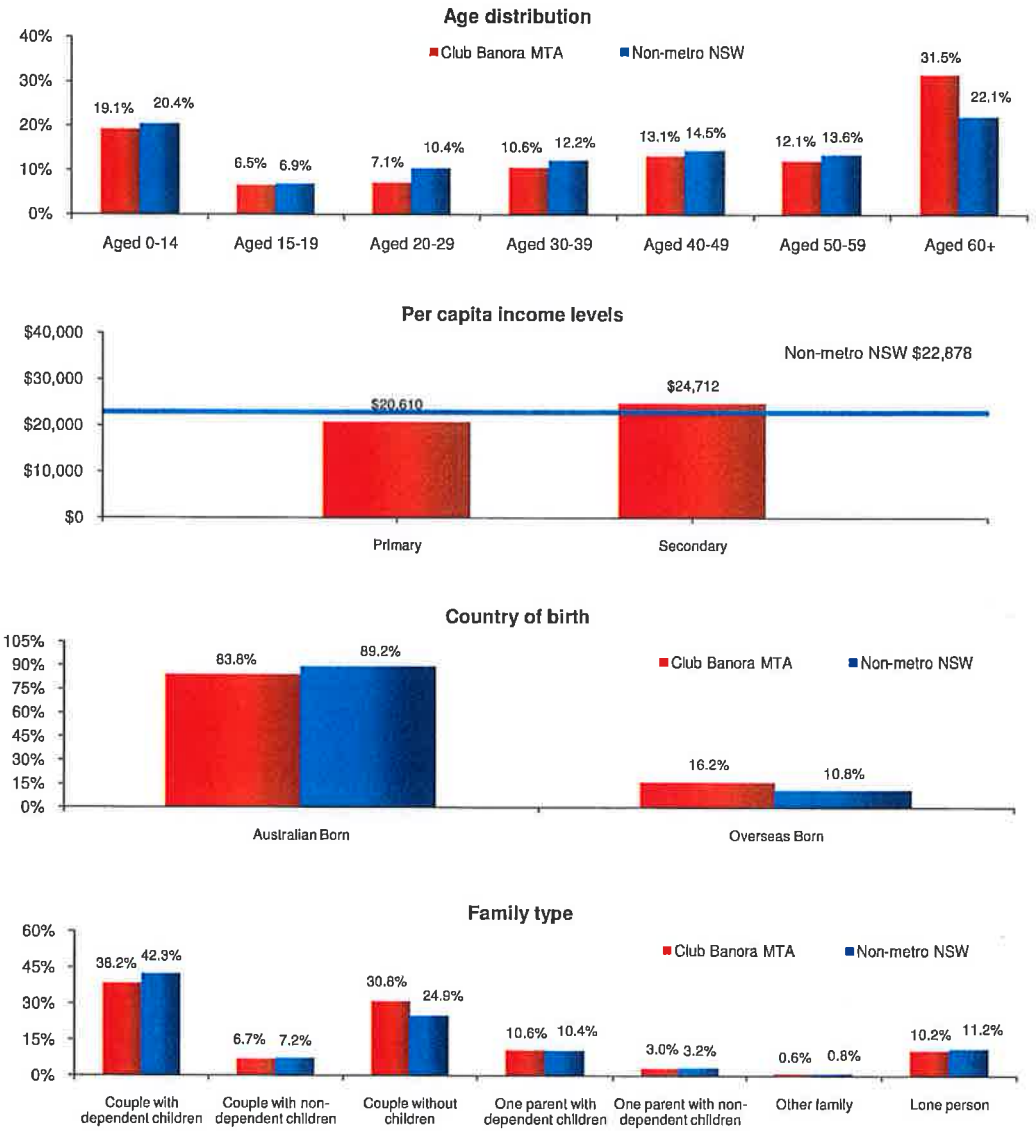
Club Banora main trade area - socio-demographic profile, 2006

Census item	Primary sector	Secondary sector	Main TA	Non-metro NSW avg.
Per capita income	$20,610	$24,712	$21,166	$22,878
Variation from benchmark	*-9.9%*	*8.0%*	*-7.5%*	
Avg. household income	$49,084	$76,606	$52,045	$56,695
Variation from benchmark	*-13.4%*	*35.1%*	*-8.2%*	
Avg. household size	2.4	3.1	2.5	2.5
Age distribution (% of pop'n)				
Aged 0-14	18.2%	24.8%	19.1%	20.4%
Aged 15-19	6.1%	8.9%	6.5%	6.9%
Aged 20-29	7.0%	7.8%	7.1%	10.4%
Aged 30-39	10.5%	11.1%	10.6%	12.2%
Aged 40-49	12.5%	17.3%	13.1%	14.5%
Aged 50-59	11.7%	14.5%	12.1%	13.6%
Aged 60+	34.0%	15.6%	31.5%	22.1%
Average age	44.4	35.7	43.2	39.1
Housing status (% of h'holds)				
Owner/purchaser	78.5%	89.1%	79.9%	71.4%
Renter	20.5%	10.9%	19.2%	27.6%
Other	1.1%	0.0%	0.9%	1.0%
Birthplace (% of pop'n)				
Australian born	83.0%	88.9%	83.8%	89.2%
Overseas born	17.0%	11.1%	16.2%	10.8%
• Asia	1.5%	0.7%	1.4%	1.3%
• Europe	10.9%	6.7%	10.4%	7.1%
• Other	4.5%	3.7%	4.4%	2.5%
Family type (% households)				
Couple with dep't children	35.7%	58.7%	38.2%	42.3%
Couple with non-dep't children	6.5%	8.2%	6.7%	7.2%
Couple without children	32.3%	18.5%	30.8%	24.9%
One parent with dep't children	11.0%	7.7%	10.6%	10.4%
One parent with non-dep't child.	3.0%	2.6%	3.0%	3.2%
Other family	0.6%	0.2%	0.6%	0.8%
Lone person	10.9%	4.1%	10.2%	11.2%

Source: ABS Census of Population & Housing, 2006; Pitney Bowes Business Insight

Chart 2.1

Club Banora main trade area - socio-demographic profile, 2006



Source: ABS Census of Population & Housing, 2006; Pitney Bowes Business Insight

2.4 Retail expenditure capacity

Chart 2.2 highlights the per capita retail expenditure of the main trade area population, compared with non-metropolitan New South Wales averages. As shown, the per capita retail spending behaviour of the main trade area residents is broadly in line with benchmark levels.

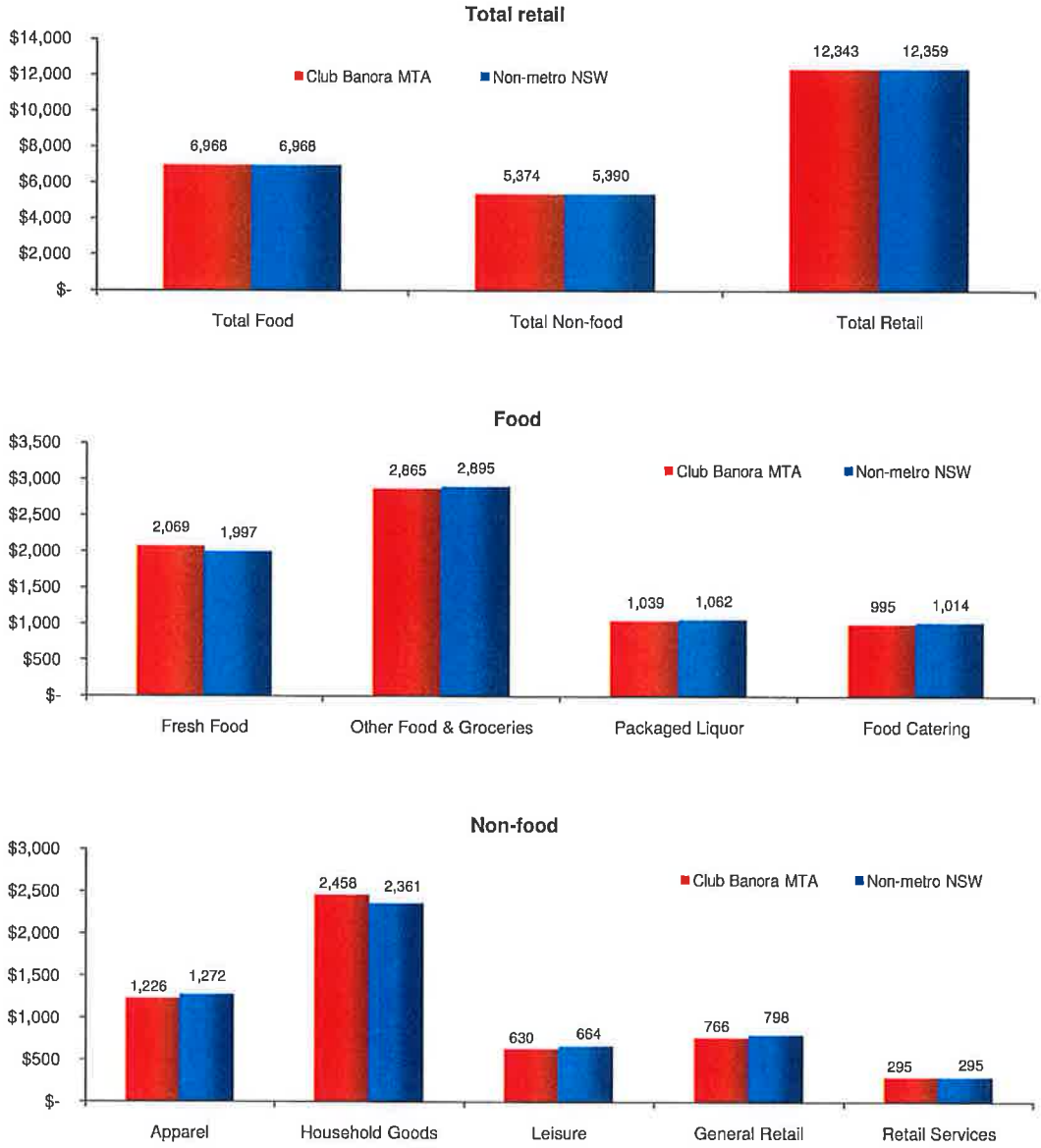
Table 2.3 details the estimated of retail expenditure capacity for the Club Banora main trade area population in 2010, and projected increases in retail spending to 2021. The current retail expenditure of the main trade area population is estimated at $276 million and is projected to increase by 2.8% per annum in real terms over the forecast period to reach $373 million in 2021. All spending forecasts presented throughout this report are expressed in constant 2009/10 dollars (i.e. excluding inflation) and include GST.

Table 2.4 provides a more detailed summary of the retail expenditure for the Club Banora main trade area population. As shown, take-home food and liquor spending accounts for the highest proportion of total retail expenditure in 2010, at some 48.4%.

In addition to the resident population within the defined main trade area, it is also important to consider the expenditure generated by the tourists attracted to the Tweed region. According to Tourism Research Australia, total expenditure generated by tourists within the Tweed LGA was estimated at just under $250 million in 2007. It is reasonable to assume that a small proportion of this spending will be directed to the facilities at Club Banora, which is and will be a tourist destination in the Banora Point locality.

Chart 2.2

Club Banora trade area - retail spending per person, 2009/10*



Source: MarketInfo; Pitney Bowes Business Insight

Table 2.3

Club Banora main trade area - retail expenditure, 2010-2021

Year ending June	Primary sector	Secondary Sector	Main TA
2010	238	39	278
2011	246	40	287
2012	255	41	296
2013	263	42	305
2014	271	43	314
2015	279	44	323
2016	287	45	332
2017	295	46	341
2018	303	46	350
2019	311	47	359
2020	320	48	368
2021	329	49	378
Average annual growth ($M)			
2010-2016	8	1	9
2016-2021	8	1	9
2010-2021	8	1	9
Average annual growth (%)			
2010-2016	3.1%	2.2%	3.0%
2016-2021	2.8%	1.8%	2.7%
2010-2021	3.0%	2.0%	2.8%

**Constant 2009/10 dollars & including GST*
Source: MarketInfo; Pitney Bowes Business Insight

Table 2.4

Club Banora main trade area - retail expenditure by product group ($M), 2010-2021*

Y/E June	Food & liquor	Food catering	Apparel	Household goods	Leisure	General retail	Retail services
2010	133	22	27	55	14	17	7
2011	137	23	28	57	15	18	7
2012	141	24	29	59	15	18	7
2013	145	24	30	61	15	19	7
2014	148	25	31	63	16	19	7
2015	152	26	32	65	16	20	8
2016	156	26	33	67	17	20	8
2017	160	27	34	69	17	21	8
2018	163	28	35	71	18	21	8
2019	167	28	36	74	18	22	8
2020	171	29	37	76	19	23	9
2021	175	30	38	78	20	23	9
Average annual growth ($M)							
2010-2016	4	1	1	2	0	1	0
2016-2021	4	1	1	2	1	1	0
2010-2021	4	1	1	2	0	1	0
Average annual growth (%)							
2010-2016	2.6%	2.9%	3.1%	3.4%	3.1%	2.9%	2.9%
2016-2021	2.4%	2.6%	2.9%	3.2%	2.9%	2.6%	2.7%
2010-2021	2.5%	2.8%	3.0%	3.3%	3.0%	2.8%	2.8%

**Constant 2009/10 dollars & including GST*

Source: MarketInfo; Pitney Bowes Business Insight

Section 3: Competitive context

This section of the report reviews the competitive environment within which the proposed Club Banora retail facility would operate. Competitive retail facilities are illustrated on the previous Map 2.1 and are summarised in Table 3.1 below.

For the purposes of this analysis, supermarkets are defined as being greater than 500 sq.m in size and do not include small corner stores, grocery and convenience stores and milk bars. Smaller sized stores of less than 500 sq.m are commonly referred to as foodstores, and sell a limited range of food and groceries, as well as typically providing takeaway food and newsagent items.

Table 3.1
Club Banora schedule of competing retail facilities

Centre	Retail GLA (sq.m)	**Major traders**	Dist. by road from Club Banora (km)
Sub-regional Centres			
Tweed Heads South	*46,700*		*2.0*
• Tweed City SC	36,700	Big W (7,033), Kmart (7,381), Woolworths (4,527), Coles (3,708)	
• Remainder	10,000	Aldi (1,350)	
Centro Tweed	18,600	Target (5,592), Woolworths (4,527), Coles (3,708)	6.0
Supermarket Centres			
Banora Shopping Village	3,200	Bi-Lo (1,993)	-
Banora Central SC	3,400	Coles (2,800)	2.0
Other Retail Facilities			
Tweed Heights Shopping Village	700	IGA (200)	2.4
Terranora Village SC	900	Spar (350)	6.8

Source: Property Council of Australia; Pitney Bowes Business Insight

3.1 Sub-regional centres

There are currently two sub-regional facilities situated in close proximity to the proposed Club Banora site, which are described as follows:

- The major component of the retail facilities provided at Tweed Heads South is Tweed City Shopping Centre, situated around 2 km north of the Club Banora site. The centre, which is provided over a single level, is anchored by Big W and Kmart discount department stores as well as Woolworths and Coles supermarkets, and also contains a substantial provision of well over 150 specialty shops. This facility is the major non-food retail destination for the residents of the Tweed Coast.

  Remaining retail facilities at Tweed Heads South include an Aldi supermarket, provided in close proximity to Tweed City Shopping Centre. A substantial provision of retail specialty traders are also provided along Minjungbal Drive within this precinct.

- Centro Tweed Mall is the second sub-regional centre situated in the area, and is located approximately 6 km to the north of the Club Banora site. This centre incorporates around 18,600 sq.m of retail floorspace and is anchored by a Target discount department store as well as Woolworths and Coles supermarkets.

3.2 Supermarket centres

Supermarket facilities within the main trade area are limited to two centres located within the primary trade area sector. These facilities are described below:

- As mentioned previously, Banora Shopping Village is located immediately opposite the proposed Club Banora site and is anchored by a Bi-Lo supermarket of almost 2,000 sq.m. This facility, which is serviced by a sizable at-grade carparking provision, also contains a provision of around 14 retail specialty tenants, including convenience-based uses such as a pharmacy, newsagent and take away stores.

- Banora Central is anchored by a 2,800 sq.m Coles supermarket and contains a smaller provision retail specialty floorspace in comparison to Banora Shopping Village. This facility, located 2 km to the west of the Club Banora site, contains a liquor store, coffee shop, pharmacy and newsagent.

There are other supermarket based facilities located beyond the defined main trade area, but these are of little competitive relevance to the Club Banora retail centre, as they serve different catchments.

3.3 Other retail facilities

In addition to the sub-regional and supermarket facilities discussed in the preceding sub-sections, the main trade area also contains two smaller convenience centres at Tweed Heights Shopping Village and Terranora Village Shopping Centre.

Tweed Heights Shopping Village is located in Banora Point at the corner of Amaroo and Ash Drives, some 2.4 km south-west of the Club Banora site. This facility is anchored by a small IGA foodstore of around 200 sq.m and plays a purely convenience-based role to the immediate local population. The foodstore is complemented by a small provision of around 8-9 specialty traders including a baker, butcher and liquor outlet.

Terranora Village Shopping Centre serves a similar convenience-based role to the local residents of Terranora and is located 6.8 km south-west of Club Banora. This centre currently has a high level of vacancies, with more than half the tenancies at the centre being vacant. A Spar foodstore of around 350 sq.m is the anchor tenant at the centre, which also contains several specialty traders including a pharmacy, butcher and newsagent.

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Section 4: Potential retail facilities

On the basis of the analysis presented in the preceding sections of this report, this section assesses the appropriate, supportable provision of retail floorspace at the proposed Club Banora retail centre and then estimates the sales potential for that floorspace.

4.1 General considerations

The sales performance of any particular retail facility is determined by a combination of the following critical factors:

i. The scale and quality of the centre, with particular regard to:
   - the major trader or traders which anchor the centre;
   - the strength of the tenancy mix relative to the needs of the catchment which it seeks to serve;
   - the physical layout and ease of use; and
   - its amenity and ambience of the centre.

ii. Accessibility to the centre and available carparking once there.

iii. The size of the available catchment which the centre serves, which sets the maximum limit of the likely sales potential that the centre can achieve; and

iv. The locations and strengths of competitive retail facilities, and the degree to which those alternative facilities are able to effectively serve the needs of the population within the relevant area.

Key points to note in relation to the above factors are as follows:

- As mentioned in Section 1.1, the Pacific Highway upgrade currently being carried out at Banora Point would limit access to the proposed retail facilities from areas to the east of the highway. However, this is also likely to provide some insulation to supermarket facilities within the main trade area (which are located to the west of the Highway), as it will also limit residents travelling beyond the main trade area to complete their supermarket shopping needs (especially at Tweed Heads South).

- The Club Banora retail centre would be anchored by a 3,800 sq.m full-line supermarket, most likely Woolworths, as both Wesfarmers supermarket brands (Coles and Bi-Lo) are already represented in the main trade area. This store would be the largest supermarket to be located within the main trade area and also the only store to represent the Woolworths brand, which is currently the strongest trading supermarket brand in the country.

- The proposed centre would be located within an established retail precinct in the region, adjacent to Banora Shopping Village. In combination with the Bi-Lo supermarket at Banora Shopping Village, the Club Banora facility would provide the main trade area residents with a double supermarket offer, which would then clearly be the major supermarket shopping destination within the main trade area.

- The current main trade area population, of over 22,700 persons, provides a sizable potential customer base for the proposed single supermarket centre at Club Banora, especially considering that there is solid population growth planned for the area in the future.

- There is a limited number of national brand specialty retailers throughout the main trade area currently, with the most national brands provided beyond the trade area at Tweed Heads South. In our opinion, the proposed Club Banora centre should contain a mix of convenience oriented national brands currently not represented in the main trade area, which would help differentiate its offer from other retail facilities in the area.

Our assessment of the potential for retail floorspace at the proposed Club Banora development takes into consideration each of these factors. For the purpose of this analysis, any facility built at the site is assumed to be of the latest shopping centre standards.

4.2 Supermarket potential

Typically in Australia, a full-line supermarket of at least 3,000 sq.m is provided for every 8,000–9,000 persons. The Club Banora primary trade area sector alone currently includes over 19,500 persons, and is expected to grow solidly to exceed 24,000 persons by 2013. Such a catchment could support two full-line supermarkets within the main trade area in 2013, even allowing for a proportion of residents to be attracted to facilities located at higher order retail centres located beyond the trade area.

Both the existing supermarkets within the main trade area are relatively small in size. The Coles store is 2,800 sq.m, while the Bi-Lo store is slightly less than 2,000 sq.m. Typical Coles or Woolworths full-line supermarkets are generally around 3,200 sq.m in size, with many being 3,800 sq.m or greater.

The demand for additional supermarket floorspace is further highlighted by the currently limited provision of supermarket floorspace relative to population in the main trade area, which is estimated at some 213 sq.m per 1,000 persons. This is significantly lower than both the New South Wales and Australian averages of around 275 sq.m and 314 sq.m per 1,000 residents, respectively.

Table 4.1 details our estimates of the sales potential for a 3,800 sq.m Woolworths supermarket at the proposed Club Banora Centre. All sales figures in this report are expressed in constant 2009/10 dollars (excluding inflation) and include GST.

As shown, potential sales for the supermarket are projected at around $33.5 million or some $8,827 per sq.m in 2012/13, and are expected to grow at a rate of 2.5% per annum (in real terms) to reach $40.8 million by 2021.

Including inflation assumed at 2.5% per annum, the 2013 estimated supermarket sales potential is around $36.1 million, growing at a rate of 5.0% per annum to reach $53.5 million by 2021.

Table 4.1
Club Banora supermarket sales potential, 2013-2021*

Year Ending June	Sales ($M) Constant	Sales ($M) Inc. Inflation
2013	33.5	36.1
2014	34.4	38.0
2015	35.3	39.9
2016	36.2	41.9
2017	37.1	44.1
2018	38.0	46.2
2019	38.9	48.5
2020	39.8	51.0
2021	40.8	53.5
Avg. ann. growth, 2013-2021	2.5%	5.0%

**Including GST*
Source: Pitney Bowes Business Insight

4.3 Retail specialty potential

The performance of the retail specialty tenants at any centre is largely driven by the performance of the major anchor tenants. These larger tenants act as key customer attractors, with retail specialty shops benefiting from the customer flows.

The most appropriate specialty tenant mix at the proposed Club Banora retail facility, assuming it is anchored by a supermarket as proposed, would generally be skewed toward convenience retailing. The most suitable retail specialty mix, as recommended by Pitney Bowes Business Insight, is outlined below.

- Food & Liquor: Tenants that could be included in this category are a butcher, baker, delicatessen, seafood store, patisserie and/or fresh produce store (totalling some 350-400 sq.m). These tenants would form a solid food retailing precinct at the centre in conjunction with the supermarket. A liquor store is generally a key trader in this category but has not been included in this instance, in line with instructions from Twin Towns Services Club Ltd.

- Food Catering: In total, a provision of 300 sq.m has been included in this category, which could accommodate 2-3 cafés/restaurants and a few takeaway stores. Ideally, some of these tenants could be provided externally to the centre, to appeal to both the resident, worker and tourist populations in the area, and especially the retiree population within the primary trade area sector.

- Apparel: A small provision of around 200 sq.m (catering to an older demographic) is considered to be supportable in this category, and would appeal to the significant retiree population within the primary sector. It is our view that the 200 sq.m recommended in this category represents the upper limit to what is supportable at the centre, given the substantial provisions of apparel traders currently offered at Tweed City Shopping Centre and Centro Tweed.

- Household Goods: Similarly to apparel, the retiree population in the locality is likely to support around 100 sq.m of floorspace in this category, which could include a homewares store or gift shop. The centre is unlikely to support any additional tenants in this category, as significant provisions of household goods floorspace are provided in the Tweed Heads South area.

- General/Leisure: The most important tenants in these categories are a strong newsagent and pharmacy/chemist. Other tenants that could be included are a bookshop, film processing/photography store, a tobacconist and/or a florist. A total of around 500 sq.m of General/Leisure traders should be supportable.

- Retail Services: 3-4 tenants (totalling 200 sq.m) which would enhance the convenience function of the centre would be most appropriate. Usages could include a hairdresser, optometrist, key cutting/shoe repairs kiosk and/or framing shop.

In addition to the retail specialty floorspace discussed above, the proposed centre could also include a small provision of non-retail specialty floorspace which would add to the convenience function of the centre. A travel agent, bank outlet and/or a real estate agent would be compatible additions to the mix.

Table 4.2 summarises the proposed retail composition of the Club Banora retail centre, compared to existing single supermarket centres throughout Australia. The benchmark includes some 65 single supermarket based centres throughout metropolitan and non-metropolitan areas of Australia.

Key points to note from the comparison include:

- The 3,800 sq.m supermarket that would anchor the Club Banora facility is 347 sq.m larger than the typical supermarket at similar centres.
- No mini-major tenants have been included as per instructions received from Twin Towns Services Club Ltd, which is also consistent with the restricted floorspace available at the site. A range of competitive mini-major tenants are already located at Tweed Heads South.
- The total retail specialty floorspace suggested for the centre is less than the single supermarket centre benchmark, but somewhat larger than suggested by the indicative floor plans provided to this office by Twin Towns Services Club Ltd. This reflects our view that the proposed retail facilities at Club Banora will play a predominantly convenience oriented role for trade area residents, but also that a small, targeted comparison good offer (apparel and household goods) is warranted to serve the needs of the retiree population. However, if site constraints dictate a lower specialty floorspace provision than indicated in Table 4.2, then the apparel and household goods floorspace indicated in the table should be the first to be deleted.

Table 4.2

Club Banora - Proposed retail composition

Category	Club Banora GLA (sq.m)	Club Banora GLA (% of retail)	Single smkt centres GLA (sq.m)	Single smkt centres GLA (% of retail)	Difference GLA (sq.m)
Major tenants					
Supermarket	3,800	69.7%	3,453	56.4%	347
Total majors	**3,800**	**69.7%**	**3,453**	**56.4%**	**347**
Mini-majors	0	0.0%	700	11.4%	-700
Retail specialities					
Food & liquor	350	6.4%	419	6.8%	-69
Food catering	300	5.5%	325	5.3%	-25
Apparel	200	3.7%	376	6.1%	-176
Household	100	1.8%	113	1.8%	-13
Leisure	200	3.7%	195	3.2%	5
General	300	5.5%	338	5.5%	-38
Retail services	200	3.7%	201	3.3%	-1
Total retail spec.	**1,650**	**30.3%**	**1,968**	**32.2%**	**-318**
Total Retail	**5,450**	**100.0%**	**6,120**	**100.0%**	**-670**
Non-retail	150				
Total Centre	**5,600**				

Source: Twin Towns Services Club Ltd; Pitney Bowes Business Insight

4.4 Total centre potential

Table 4.3 details the total centre potential for the proposed Club Banora retail centre, compared to existing single supermarket centres throughout Australia. These projected sales are presented in 2009/10 constant dollars and include GST.

Total retail sales for the centre are estimated at $43.8 million in 2012/13, of which $33.5 million or 76.5% would be attributed to the Woolworths supermarket. As outlined in the previous Table 4.1, supermarket sales are expected to increase solidly to reach $40.8 million (in constant dollar terms) by 2021, which is also likely to drive the sales potential of the entire centre.

The retail specialty floorspace at the centre is estimated to achieve sales of around $10.3 million or $6,242 per sq.m. This level of trading would initially be a little below the average achieved at similar centres in part due to the exclusion of a liquor outlet, but is expected to grow steadily as the centre becomes fully established.

New retail facilities do not achieve their ultimate trading potential in their first year of operation, with sales levels consolidating and growing over a period of time after establishment. Sales at the Club Banora retail centre are expected to increase over time, in line with the projected main trade area population growth.

Table 4.4 details the projected main trade area market shares for the proposed Club Banora retail centre. The projected main trade area market share in 2013 is 13.5%, including a 19.9% share of food retail expenditure and a 5.3% share of non-food retail expenditure.

Table 4.3

Club Banora - Forecast centre sales by retail category, 2012/13*

Category	Club Banora GLA (sq.m)	Club Banora Forecast sales ($'000)	Club Banora Forecast sales ($/sq.m)	Single smkt centres GLA (sq.m)	Single smkt centres Average sales ($'000)	Single smkt centres Average sales ($/sq.m)
Major tenants						
Supermarket	3,800	33,543	8,827	3,453	39,905	11,558
Total majors	3,800	33,543	8,827	3,453	39,905	11,558
Mini-majors	0	0	0	700	2,433	3,477
Retail specialities						
Food & liquor	350	2,800	8,000	419	4,070	9,711
Food catering	300	1,650	5,500	325	2,145	6,591
Apparel	200	1,000	5,000	376	2,002	5,321
Household	100	475	4,750	113	596	5,273
Leisure	200	1,050	5,250	195	1,134	5,806
General	300	2,325	7,750	338	2,924	8,643
Retail services	200	1,000	5,000	201	1,093	5,452
Total retail spec.	1,650	10,300	6,242	1,968	13,964	7,096
Total Retail	**5,450**	**43,843**	**8,045**	**6,120**	**56,302**	**9,199**
Non-retail	150					
Total Centre	**5,600**					

**Constant 2009/10 dollars & including GST*
Source: Pitney Bowes Business Insight

Table 4.4

Club Banora - Forecast market shares, 2012/13*

Trade area	Retail spend ($M) Food	Retail spend ($M) Non-food	Retail spend ($M) Total	Centre sales ($M) Food	Centre sales ($M) Non-food	Centre sales ($M) Total	Market share Food	Market share Non-food	Market share Total
Primary sector	145.9	112.8	258.7	29.5	6.1	35.6	20.2%	5.4%	13.8%
Secondary sector	22.9	19.4	42.3	4.1	0.8	4.9	17.7%	4.3%	11.6%
Main TA	**168.8**	**132.2**	**301.1**	**33.6**	**7.0**	**40.6**	**19.9%**	**5.3%**	**13.5%**
Sales from beyond TA				2.7	0.6	3.3			
Total centre sales				**36.3**	**7.5**	**43.8**			

**Constant 2009/10 dollars & including GST*
Source: Twin Towns Services Club Ltd; Marketinfo; Pitney Bowes Business Insight

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Section 5: Assessment of likely impacts

This section of the report considers the likely trading and other impacts that can be anticipated following the development of a retail facility at the Club Banora site.

5.1 Nature of likely impacts

The Club Banora retail development is likely to result in a range of economic impacts. From a trading point of view, some impacts are likely to be experienced by competitive retailers in the region, and this will be considered later in this report.

On the other side of the equation, it is clear that the proposed centre would result in a range of economic benefits, particularly for nearby residents and workers. These key positive impacts include the following.

- Choice and convenience for trade area residents and workers: The provision of retail facilities at Club Banora would benefit local residents, tourists and workers by meeting their convenience shopping needs (eg. for a weekly grocery shop, the purchase of medication and/or reading materials, or a place to socialise away from home/work), without requiring travel to facilities provided at other retail facilities in the area. The Woolworths supermarket anchoring the centre would be the only store to represent the brand within the main trade area, providing local residents with greater choice, and encouraging price competition.

- Reduced costs, travel times and escape expenditure: Currently within the main trade area, there are only two supermarket facilities, both relatively small. The proposed full-line supermarket at Club Banora would provide a comprehensive supermarket shopping option which is conveniently located for the growing local population. The proposed Club Banora development will reduce the need for residents to travel beyond the main trade area, resulting in time and fuel cost savings for the local residents and retaining retail expenditure and jobs in the immediate local area.

- Additional Employment: Once fully operational, the proposed Club Banora retail facilities would be likely to employ around 289 people. Allowing for an estimated 5% of the total increase to be as a result of reduced employment at existing retail facilities in the region, the net additional jobs for the area provided at the Club Banora retail development are estimated at 275 (refer Table 5.1).

  In terms of wages and salaries, the additional 275 permanent retail employees within the proposed retail development would earn an average annual wage of around $28,000 (as sourced from the latest ABS average weekly earnings statistics). This represents an additional $7.7 million in salaries and wages for the local region, directly as a result of the development.

In addition to the jobs created once the proposed retail facility is operational, the construction phase of the project would also generate employment opportunities for the region (refer Table 5.2). The estimated cost of construction of the proposed Club Banora Centre is $16 million. By utilising the appropriate ABS Input/Output multipliers (last produced in 1996/97) and a deflated cost of construction of $9.8 million (i.e in 1996/97 dollars), it is estimated that the construction period would create around 68 jobs. A further 109 jobs could be expected to be generated on the basis of supplier induced multiplier effects from this period. These numbers represent full-time equivalent jobs, which may include both full-time and part-time positions. The additional ongoing retail jobs in the centre proper as previously outlined (275), will result in a further 261 jobs in the broader community based on ABS Input/Output Multipliers.

Table 5.1

Club Banora - Estimated Future Additional Employment Levels

Type of Use	Estimated Employment Per '000 sq.m	Club Banora GLA (sq.m)	Club Banora Employment (persons)
Supermarket	50	3,800	190
Specialty Shops	60	1,650	99
Total Centre[1]		**5,450**	**289**
Net Increase[2]			**275**

1. Excludes non-retail components.
2. Net increase includes an allowance for reduced employment levels at impacted centres, estimated at 5% of the total increase
Source : Pitney Bowes Business Insight

Table 5.2

Club Banora - Estimated Future Additional Employment Levels*

Original Stimulus	Estimated Capital Costs ($M)[1]	Direct Employment	Supplier Employment *Multiplier Effects*	Total	
Construction of Project	16	68	109	178	Job Years[2]
Centre Employment[3]		275	261	535	
Total		**343**	**370**	**713**	

** Employment totals include both full-time and part-time work*
1. Adjusted by inflation and productivity to 1996/97 Dollars
2. Indicates the estimated number of jobs over the life of the construction project plus ongoing multiplier effects, for the equivalent of one year
3. Indicates the estimated number of net additional ongoing jobs as a result of the proposed development
Source : Australian National Accounts: Input-Output Tables 1996-97; Pitney Bowes Business Insight

As highlighted, a number of significant economic benefits can be expected to flow directly from the development of the proposed Club Banora retail centre. Against these positive impacts, the question of likely trading impacts on other retailers within the surrounding region also needs to be considered.

5.2 Considerations of broad trading impacts

The following sub-section of this report presents an indicative projection of the anticipated impacts of the proposed Club Banora development on competing retail facilities in the region. Such projections must be considered as indicative, on the basis that it is very difficult to predict with certainty the precise impact on any one retailer or any one centre that will result from any change to the retail structure serving a particular area or region.

The impacted centre has a number of possible actions which it may be able to take, for example, which may mitigate or eliminate the extent of the impact. Expansions and improvements may be undertaken at other centres and locations throughout the region, and all of these factors can change the nature of the impact.

Table 5.3 below presents an assessment of the likely order of trading impact for the existing retail floorspace within the defined trade area. The table highlights the following for both 2009/10 and 2012/13, as well as the projected changes over that period:

- The available retail expenditure generated by the trade area population.
- The estimated sales volumes for the existing and proposed additional retail facilities within the trade area.
- The consequent estimated escape expenditure from the trade area, directed to retail facilities located beyond the trade area boundary.

Clearly evident from this analysis is the fact that the existing retail facilities within the trade area, which are very limited in scale and nature, currently account for a relatively small proportion of the available retail expenditure that is generated by trade area residents – approximately one-quarter. Further, even though the proposed additional facilities to be provided at the Club Banora site would clearly increase the volume of available retail expenditure that is retained within the trade area, more than 60% of the total available retail expenditure would still be likely to escape to retail facilities located outside the trade area. This will be the

case because the total provision of retail facilities within the trade area, even after the addition of the proposed development at the Club Banora site, would still be quite limited given the available main trade area population.

Table 5.3
Club Banora - Trading Impact Assessment, 2010-2013*

	2009/10 $M	2012/13 $M	Change $M	Change %
Part 1A : Estimated Retail Spending Market (With Club Banora)				
Main TA Residents Spending	275.8	301.1	25.3	9.2%
Net Escape Resident Spending	208.2	187.9	-20.4	-9.8%
Est. Retail Sales to Main TA Retailers	67.6	113.2	45.6	67.5%
Part 1B : Calculation of Main TA Retail Sales (With Club Banora)				
Club Banora	0.0	43.8	43.8	n.a.
Other Trade Area Retailers	67.6	69.4	1.8	2.6%
Est. Retail Sales to Main TA Retailers	67.6	113.2	45.6	67.5%
Part 2A : Estimated Retail Spending Market (Without Club Banora)				
Main TA Residents Spending	275.8	301.1	25.3	9.2%
Net Escape Resident Spending	208.2	224.3	16.1	7.7%
Est. Retail Sales to Main TA Retailers	67.6	76.8	9.2	13.6%
Part 2B : Calculation of Main TA Retail Sales (Without Club Banora)				
Club Banora	0.0	0.0	0.0	0.0%
Other Trade Area Retailers	67.6	76.8	9.2	13.6%
Est. Retail Sales to Main TA Retailers	67.6	76.8	9.2	13.6%
Part 3 : Est. Sales Impact of Development on Other Trade Area Retailers (2013)				
• Projected Sales Post Club Banora Compared with Current Sales (2010)				2.6%
• Projected Sales Post Club Banora Compared with Projected Sales Pre Exp. (2013)				-9.7%

**Constant 2009/10 dollars & including GST*
Source : Pitney Bowes Business Insight

Table 5.3 commences with an estimation of the likely sales volumes which will be achieved by retail traders within the Club Banora main trade area (Part 1A), following the addition of the proposed development. The total level of retail sales in the trade area is projected to increase by some $45.6 million between 2010 and 2013, from $67.6 million to $113.2 million. The components of this growth include:

- Forecast growth in the main trade area retail spending market of $25.3 million

- A decrease in the level of resident net escape spending of $20.4 million, which would currently be directed to facilities beyond the trade area, as a result of the new facilities.

Part 1B of the table then presents projected sales for the Club Banora shopping centre in 2013, which are estimated at $43.8 million. Total retail sales for other trade area retailers are projected to increase by $1.8 million (or 2.6%) in 2013, even with the Club Banora development commencing trade.

On the same basis, part 2 of the table then illustrates the expected outcomes, assuming the Club Banora development does not proceed. In this instance, the total volume of retail sales in the main trade area is projected to increase by some $9.2 million between 2010 and 2013, from $67.6 million to $76.8 million.

Part 3 of the table then summarises the potential impact of the Club Banora development on existing retailers within main trade area, by comparing their post-development projected sales with:

- 2010 estimated sales, and

- Sales projections for these retailers assuming the Club Banora development does not proceed.

These comparisons illustrate the following:

- Projected sales levels for existing retailers throughout the trade area in 2013, assuming that the Club Banora development goes ahead, would be on average 2.6% higher than the current estimated 2009/10 sales.

- As compared with the sales volume which all other retailers in the main trade area are projected to achieve in 2013 if the Club Banora development does NOT proceed, the post-development sales volume would be on average 9.7% lower.

The results of these calculations demonstrate our view that the Club Banora development would in all likelihood have some trading impacts on other retailers currently provided throughout the main trade area. These impacts are an estimated average for all retail facilities within the main trade area, with some retail centres likely to be impacted more than others based on their offers, their competitive situations in relation to the proposed Club Banora development and their tenant mix.

Most importantly however, the analysis shows that at present the existing retail facilities are retaining only a very small proportion of the total available main trade area retail expenditure, due to their limited nature and extent. In other words, there is ample available retail expenditure for the existing facilities to continue to trade successfully, and for appropriate new facilities to be added within the trade area. Given these circumstances, and notwithstanding our assessment above which shows some expected trading impacts on existing facilities, it is quite possible in these circumstances that there may be virtually no trading impacts experienced by existing facilities within the trade area.

Once trading commences, the proposed Club Banora centre will also result in a redirection of retail spending from facilities beyond the main trade area, especially those provided at Tweed Heads South, and to a lesser extent, Centro Tweed. Retail facilities at these two locations are currently estimated to be achieving sales of around $425 million.

Most of this impact on the retail facilities at these two locations would be on the full-line supermarket offers provided at these centres. In percentage terms though the likely order of impact on the various supermarket facilities provided at Tweed Heads South and Centro Tweed would be minor, generally well below 5%.

Generally, the levels of impact projected above (on retail facilities both within and beyond the main trade area) will not threaten the ongoing viability of existing retail centres or precincts in the area, or the future potential for expansion of retail facilities in the region. All facilities in the region would continue to trade viably after the opening of the proposed Club Banora retail centre.


Pitney Bowes
Business Insight

ANNEXURE H Transport Assessment – TTM Consulting, February 2011

ttm GROUP

TRAFFIC • PARKING • ACOUSTICS

Report

Club Banora, Leisure Drive, Banora Point NSW
Club Re-development, Retail and Aged Care
Concept Planning to Department of Planning

TRANSPORT ASSESSMENT

Prepared for:
GMP Management Pty Ltd

February 2011

Reference: 34318

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Reference No: 34318
28 February 2011

1. Introduction

This report presents the findings of a transport assessment carried out by TTM Group for the proposed redevelopment of Club Banora, located at Leisure Drive, Banora Point.

The scope and purpose of this report addresses all relevant traffic and transport requirements including access, parking and servicing. This report has been prepared to accompany the application to the Department of Planning.

1.1 Site Locality

The development site is illustrated in Figure 1 and described as follows:

- Leisure Drive, Banora Point
- Administered by Tweed Shire Council

Figure 1: Site Location

1.2 Relevant Authorities

Leisure Drive and all other roads relevant to the site are administered by Tweed Shire Council. The development site is also located within the jurisdiction of Tweed Shire Council.

1.3 Current Use of Development Site

The site currently houses Club Banora's activities including golf course, club building, bowling greens, swimming pools and tennis courts.

2. Proposed Development

2.1 Development Floor Areas

The development will comprise the following:

- Addition of a retail subdivision of 5010 sqm
- Addition of Assisted Living Facility, including a mixture of 1-, 2-bedroom units, totalling 154 units (254 bedrooms)
- Addition of "Halfway House"
- Addition of Pool Kiosk and Golf Pro Shop
- Relocation of 6 Tennis Courts and 2 Bowling Greens
- Redevelopment of the current Club Banora building to 3380 sqm comprising of:
    - Bar Area of 90 sqm
    - Lounge Area of 2002 sqm
    - Gaming Area of 1048 sqm
    - Auditorium of 240 sqm
- Retention of the existing Pool of 1000 sqm of water
- Retention of the existing Wading Pool of 1000 sqm of water
- Retention of 18 Hole Golf Course and Facilities
- Modification to existing parking and service arrangements.

2.2 Development Program

Construction of the development is planned to begin in 2011, with and expected completion in late 2013.

2.3 Development Plans

As part of preparing this assessment, TTM has had extensive involvement with the development planning stages, such that we have provided ongoing advice and design recommendations to the project team in relation to various transport, access, parking and servicing requirements of the proposed scheme.

Development plans are provided in Figure 2 and Figure 3 and summarised as follows:

- Two main vehicular accesses to be retained from Leisure Drive
- Total on-site parking supply of 921 spaces
- Total Assisted Living Facility parking supply of 77 spaces
- Loading provision for coach, service vehicles and refuse collection

Figure 2: Site development plans - Overall

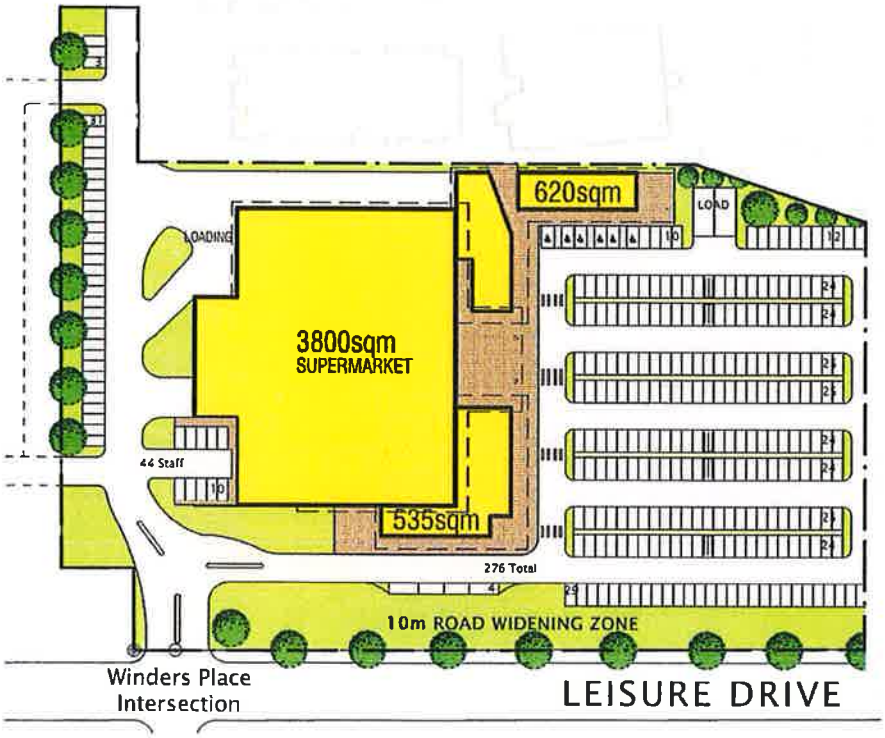


Figure 3: **Site development plans – Retail Subdivision**

Figure 4: **Site development plans – Assisted Living Facility**

3. Existing Traffic Conditions

3.1 Road Planning

Tweed Shire is responsible for road and traffic management on Leisure Drive, Greenway Drive, Darlington Drive, all other roads relevant to this development are Council-controlled.

- Tweed Shire Council has identified a requirement to link Fraser Drive and Kirkwood Road and to provide connection to the Tweed Heads Bypass (Pacific Highway). TTM understands that the current estimate for completion of this project is 2015.
- The Tweed Roads Contribution Plan includes a total figure of $3.59M for the widening of Leisure Drive from Winders Place to Eucalyptus Drive to four lanes. It is likely that Council will delay any further upgrade to Leisure Drive until completion of the Kirkwood Road project. This project will not overly affect access to the site as the road section from Winders Place west to the club access is current 4 lanes.

3.2 Road Network

Leisure Drive is an urban distributor providing connection between Frasier Drive and Darlington Drive. The nature of the road environment in the site vicinity is summarised briefly below:

- Two-way, four-lane and two-lane in sections
- Pavement width varies between approximately 10 m and 13 m
- Sign-posted speed limit of 60 km/h along the development frontage.
- Pavement fully linemarked; road formalised with kerb and guttering
- Pavement in good condition

Figure 5: Leisure Drive – Facing East

3.3 Existing Traffic Volumes

Existing traffic volumes were obtained by TTM Group by conducting intersection turning movement counts for the AM and PM peak hours on Tuesday 15th and Wednesday 16th of February 2011 and data taken from a Thursday 24th of June 2010 survey TTM performed previously. A 7 day traffic count along Leisure Drive was also taken from the 17th of February to the 24th.

The following intersections were surveyed:

- Leisure Drive/Greenway Drive/Darlington Drive 4 Leg Roundabout
- Leisure Drive/Darlington Drive 3 Leg roundabout (2010 data)
- Leisure Drive/Winder Place 3 way signalised intersection

Peak hour traffic volume data is provided in Figure 6 to Figure 12 for these intersections. Full survey data is provided in Appendix A.

Figure 6: Survey Locations

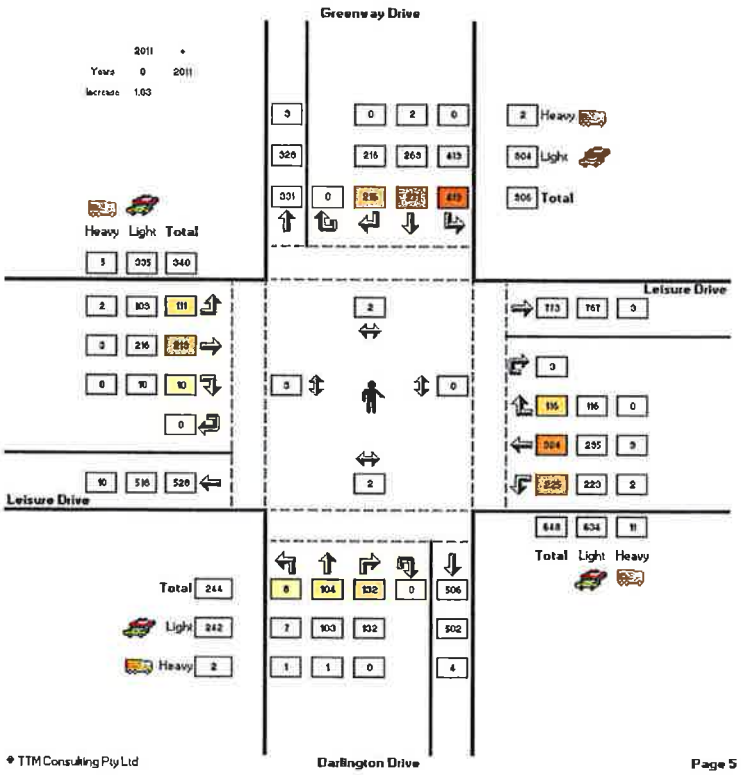


Figure 7: AM Peak – Leisure Drive/Greenway Drive/Darlington Drive (7:00am to 8:00am 16/02/2011)

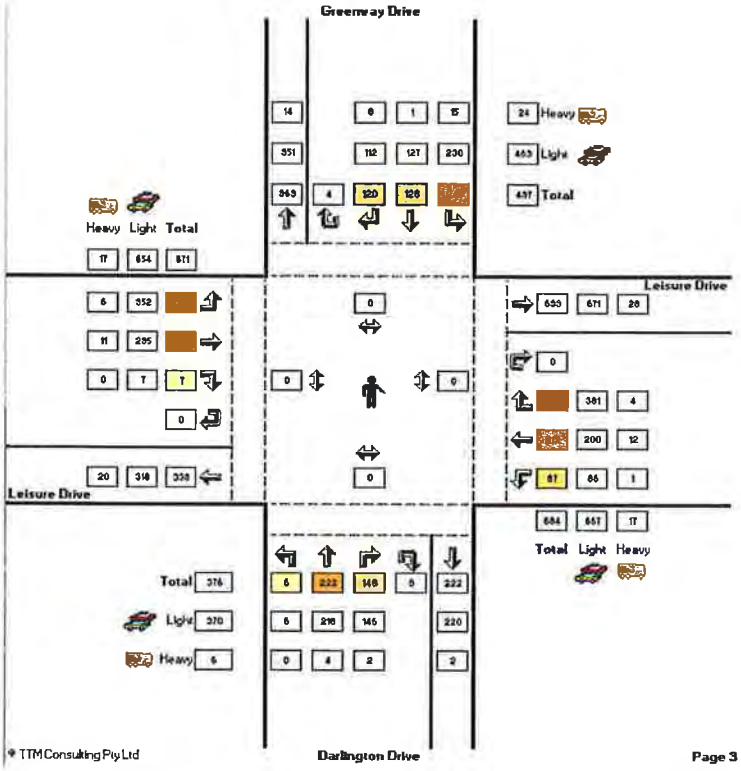


Figure 8: PM Peak – Leisure Drive/Greenway Drive/Darlington Drive (4:30pm to 5:30pm 15/02/2011)

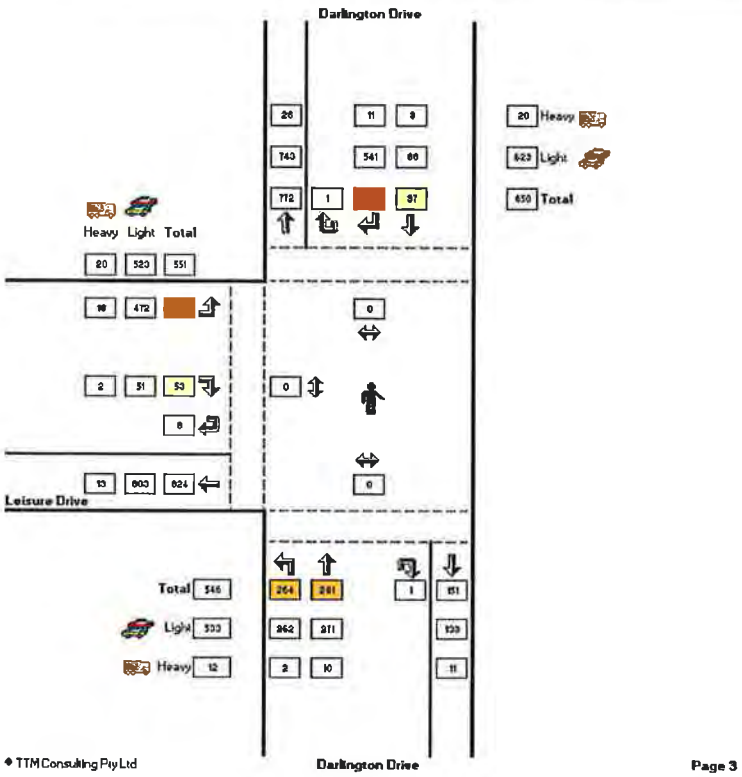


Figure 9: AM Peak – Leisure Drive/Darlington Drive (8:00am to 9:00am 24/06/2010)

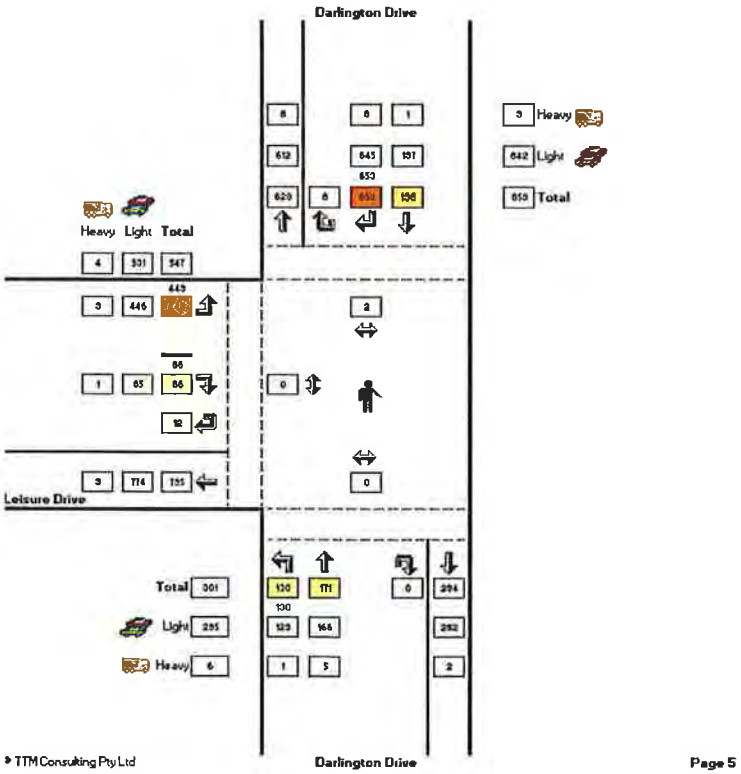


Figure 10: AM Peak – Leisure Drive/Darlington Drive (4:00pm to 5:00pm 24/06/2010)

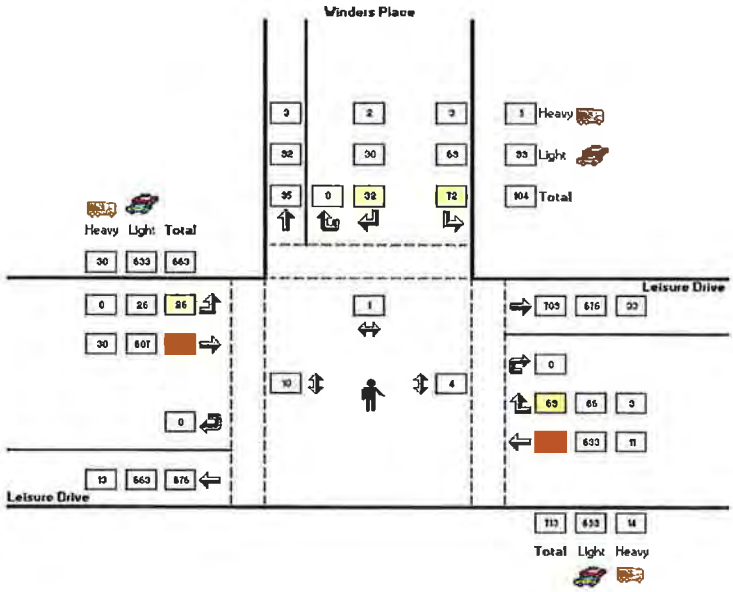


Figure 11: AM Peak – Leisure Drive/Winders Place (8:00am to 9:00am 15/02/2011)

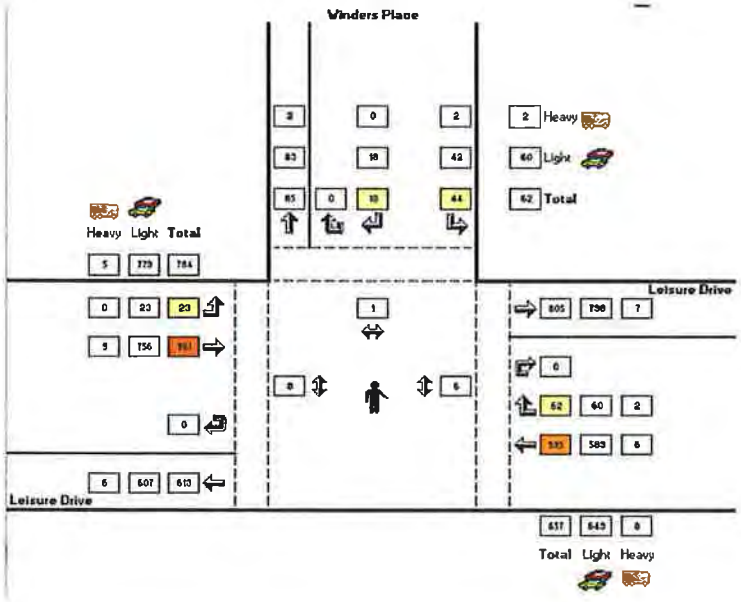


Figure 12: AM Peak – Leisure Drive/Winders Place (8:00am to 9:00am 15/02/2011)

3.4 Growth Rate

A growth rate have been applied to survey data to project forecast traffic volumes for 'year of opening' (2013) and 10-year design horizon (2023) scenarios. A growth rate of 2.7% annual compound growth was deduced based on historical survey data supplied by Tweed Shire Council along Leisure Drive and applied along all roads.

4. Development Parking Supply

4.1 Parking Supply Requirements

Tweed Shire Council's *A2, Site Parking and Access Code* provides parking rates for different land uses. Land use rates and their corresponding demand are seen in Section Table 1: Council Parking Requirements4.2 below.

4.2 Development Parking Provision

Application of Council's rates to the proposed development results in parking supply requirements as presented in Table 1.

Table 1: Council Parking Requirements

Use	Council Parking Rate	Units	Parking Requirement
Shop	Customer: 4.4 spaces per 100 sqm GFA	5010 sqm	220.4
	Staff: 1 space per 100 sqm GFA	5010 sqm	50.1
Golf Course	Customer: 4 spaces per hole	18 holes	72
	Staff: 0.5 spaces per staff	6 staff	3
Tennis Court	2 spaces per court	6 courts	12
Bowling Green	15 spaces per green	2 greens	30
Swimming Pool	1 space per 50 sqm water surface	2000 sqm water surface	40
Club	Customer:		
	- 1 space per 4 sqm bar area	90 sqm	23
	- 1 space per 7 sqm lounge/dining area	2002 sqm	286
	- 1 space per 15 sqm auditorium/gaming	1288 sqm	86
	Staff: 0.3 spaces per staff	48 staff	15
	Reserved: 1 space per reserved member	3 reserved*	3
		TOTAL	**840.5**

*Reserved spaces are for General manger, Secretary and CFO

Proposed parking for the development numbers 921 spaces, exceeding Council's requirements.

Parking for the Assisted Living Facility has been considered separately to the rest of the development as its use is largely self-contained, i.e. only users of the facility will park in the facility's spaces.

Under Council's requirements, Housing for Older/Disabled parking requirements are refered to *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* (SEPP).

The SEPP document contains general definitions for Senior's Housing;

- A Residential Care Facility,
- A Hostel
- A Group of Self-Contained Dwellings; or
- A combination of these.

The parking requirement of each of these definitions varies and as such it is important to identify which definition the proposed facility best fits. As the facility does not fit perfectly into any of the general definitions, and a combination definition is allowed, the required parking rate will fall between the rates prescribed.

The facility can be considered a combination of a Residential Care Facility and A Group of Self-Contained Dwellings, and as such the required parking will fall between the requirements of these two definitions.

Definition	SEPP Rate	Beds / Staff	Parking Requirement
Residential Care Facility	1 space per 10 beds in the facility	285 beds	28.5
	1 space per 2 staff on duty at any one time	12 staff	6
		TOTAL	**34.5**
Group of Self-Contained Dwellings	1 space per 2 beds in the facility	285 beds	142.5
		TOTAL	**142.5**

The proposed Assisted Living Facility includes 77 parking spaces. The proposed parking falls between the requirements of these definitions and hence is appropriate due to the facility's 'combination' definition.

4.3 Conclusion

The development parking supply satisfies Tweed Shire Council's requirements as demonstrated by this assessment.

5. Development Parking Design

5.1 User Class Requirements

Parking on-site is divided into three categories due to the differing use. The parking adjacent the retail subdivision is high-turnover by nature. In accordance with Australian Standards AS2890.1, the appropriate User Class is 3A. Minimum dimension requirements follow:

- Width: 2.6 m
- Length: 5.4 m
- Aisle: 6.6 m

All retail customer parking complies with AS2890.1 User Class 3A requirements.

Parking for staff and residents will be low-turnover (generally all-day parking) by nature; therefore, User Class 1A is appropriate. Staff and resident parking should be provided as follows:

- Width: 2.4 m
- Length: 5.4 m
- Aisle: 5.8 m

All on-site staff and resident car parking complies with User Class 1A requirements.

Parking for club and the sports facility will have a medium-turnover by nature; therefore, User Class 2 is appropriate. Minimum dimension requirements should be provided as follows:

- Width: 2.5 m
- Length: 5.4 m
- Aisle: 5.8 m

All on-site staff and resident car parking complies with User Class 1A requirements.

Parking for people with a disability should be provided in accordance with AS2890.6 (2009); all disabled parking bays on-site comply with this standard. Disabled parking has been provided at a rate of 1 disabled space for every 50 car spaces as required for Class 6 Buildings in the Building Code of Australia.

5.2 Ramp Grade Requirements

In accordance with AS2890.1, ramps for use by light vehicles must not exceed a gradient of:

- 1 in 6 (16.7%) if longer than 20 m, and
- 1 in 5 (20%) if up to 20 m long.

Grade transitions 2 m in length should be installed in accordance with AS2890.1 to prevent excessive grade changes.

All ramps on-site comply with Australian Standards.

5.3 Car Park Layout

The parking layout has been designed with good circulation and vehicle manoeuvrability, with access to parking areas readily identifiable from the main circulation roadway.

The layout allows for the efficient circulation of vehicles with dead-end aisle restricted to staff parking.

5.4 Conclusion

Site parking layout complies with relevant local and Australian Standards requirements and services the requirements of the various proposed uses.

6. Development Servicing

6.1 Design Service Vehicle Requirements

Council requires differing service vehicle requirements based on land use. The requires of the different parts of the development are as follows:

- Access by an articulated vehicle (AV) to the shopping centre and provision for waste collection.
- Access and parking for an ambulance at the Assisted Living Facility.
- Access by an HRV for the club requires HRV access for coaches and service vehicle access.

6.2 Service Vehicle Movements

Retail and supermarket tenancies are typically serviced on a daily basis, and waste collection occurs 1-3 times weekly. Surfside Coaches currently arrive at the Club Banora site up to 12 times a day.

6.3 Proposed Servicing Arrangements

A dedicated loading dock is provided at the rear of the supermarket tenancy. Service vehicles will enter the site to the eastern site access on Leisure Drive to gain access to the loading dock.

Swept path analysis has been carried out to assess the manoeuvrability of service vehicles on-site. Results are presented in Figure 13 and Figure 14.

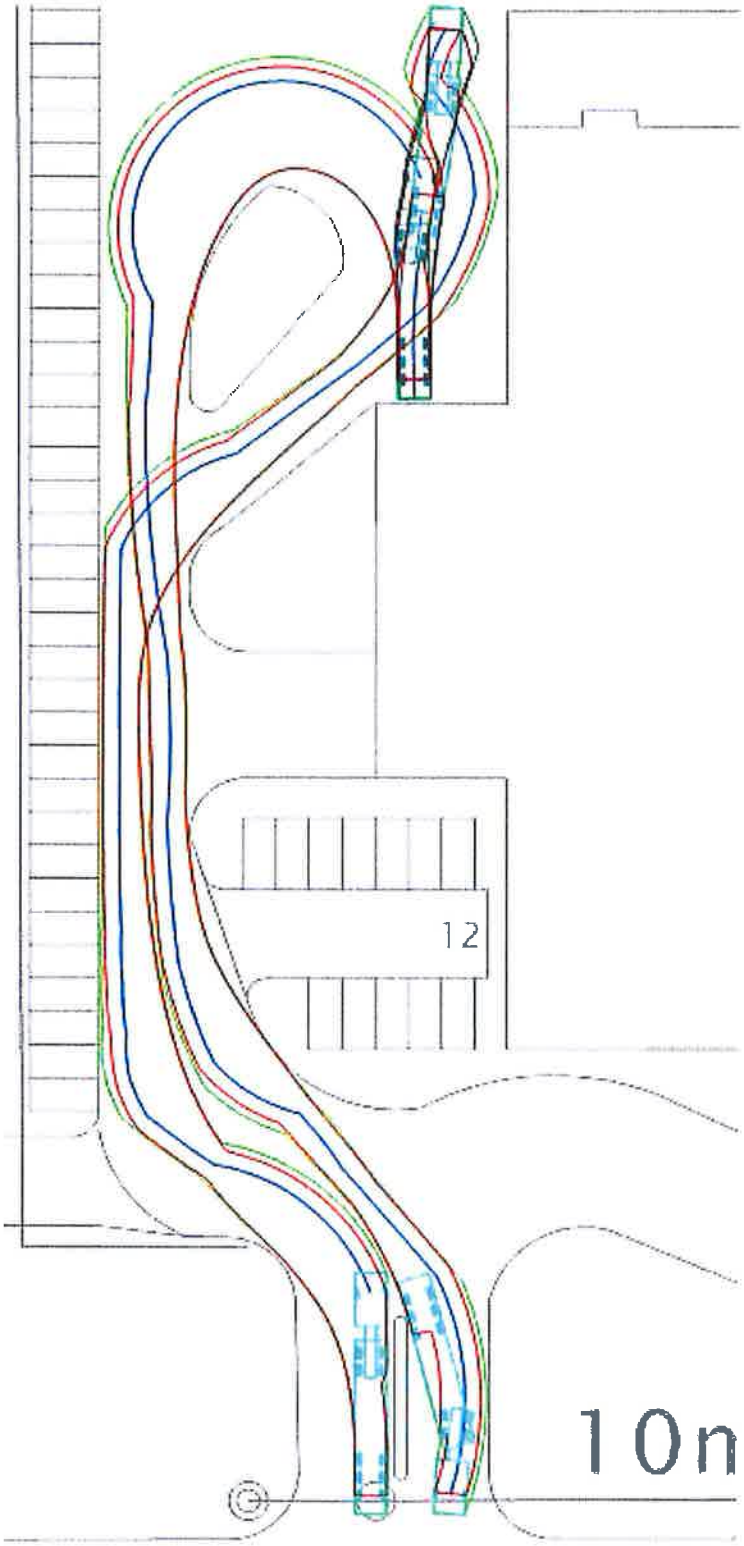


Figure 13: AV access through site

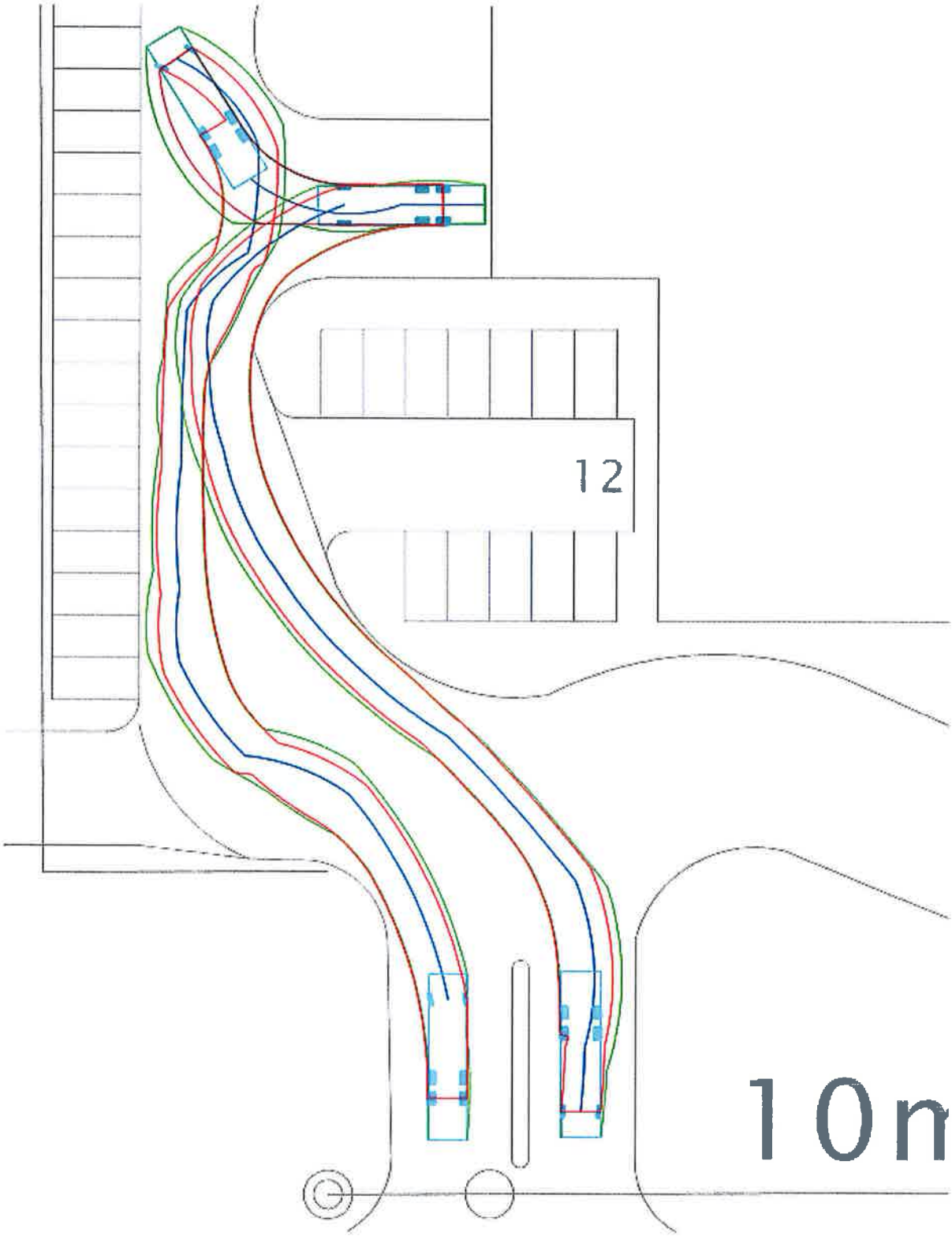


Figure 14: HRV access through site

All service vehicles enter and leave the site in a forward direction, in compliance with AS2890.2. Areas providing access to service vehicles must maintain a minimum aisle width of 4.5 m (one-way) and 6.5 m (two-way); minimum aisle dimension requirements are met in this case. Vertical clearance required for an AV is 4.5 m; sufficient vertical clearance is provided on all areas of the site requiring AV access. Council's Planning Scheme requires grade changes of less than 1 in 20 (5%) where service vehicle movements are required (unless transitions are provided). Gradients on-site comply with Planning Scheme requirements.

Service vehicle bays are provided with minimum dimensions in accordance with AS2890.2 standards, being:

- HRV: 3.5 m wide x 12.5 m long
- AV: 3.5 m wide x 19.0 m long

6.4 Conclusion

Site servicing provision satisfies Council and Australian Standard requirements.

7. Site Access

7.1 Sight Distance Requirements

Australian Standards AS2890.1 provides guidelines for sight distance requirements for a speed environment of 60 km/h, as follows:

- Absolute minimum Safe Stopping Distance (SSD): 65m
- Desirable Safe Stopping Distance (SSD): 83 m

Sight distance from the main site access and secondary access satisfy sight distance requirements. Sight distance to both the east and west along Leisure Drive is in excess of 100m, which exceeds Australian Standard requirements.

Site observations have therefore identified that sight distance is adequate at all crossover locations.

7.2 Proposed Vehicular Access Arrangements

Two crossovers exist to the development on Leisure Drive. One of these crossover locations will be retained, with the other moved to form a 4 way signalised intersection with the existing Leisure Drive / Winders Place intersection. The proposed additional crossover is to be kerbed with pavement widths sufficient to comply with guidelines contained with the AustRoads Guides to Road Design.

7.3 Conclusion

Site access designs and locations are to comply with the relevant Council and authority guidelines.

8. Development Traffic Analysis

8.1 Trip Generation Rates

To demine the site's impact on the surrounding road network, the trips generated by visiting patrons must be estimated. With the site's is current facilities, an increase in trip generation will only occur from additional land use to the current site and a decrease will occur from uses that are removed.

The site has two additional uses added to the site, the Assisted Living Facility and the Retail Subdivision. The site also removes 2 uses, 1 Bowling Green, and a 9 Hole Minigolf Course.

Table 2 below shows the net increase in traffic generation of the site.

Table 2: Changes in PM Peak Hour Trip Generation

Land Use	Rate	Unit	Generated Trips	Source
Shopping Centre	12.3 Trips per 100 sqm	5010 sqm	616.23	RTA
Retirement Centre	0.15 Trips per dwelling	154 Dwellings	23.1	RTA
Bowling Green	15 Trips per green	1 Green	-15	RTA (assumed)
Mini Golf Course	0.33 Trips per hole	9 Holes	-2.97	ITE 8th Ed.
		TOTAL	621.36	

The PM peak has been considered for the purposes of carrying out this traffic impact assessment, as it coincides with both the road peak and the peak operating times of the development.

The site will generate approximately 622 additional trips during the PM peak hour due to the proposed development.

Due to the layout of the site, it is assumed that all Shopping Centre generated traffic will enter and exit through the signalised Leisure Drive/Winders Place intersection, whilst the Retirement Centre and other existing traffic will access the site via the existing central site access.

8.2 Traffic Distributions

Traffic distributions have been assumed to 50% in / 50% out due to the mixed use of the site.

8.3 Impacts Analysis

Potential impacts from the development have been assessed for each intersection using SIDRA Intersection 5.0. It is reiterated that the PM peak has been used as the basis for assessment, based on peak road network operation and development operation.

The following sections contain detailed tables describing the SIDRA model output, split in two cases, the future with only base traffic, and the future with base traffic plus additional traffic generated by the site. The impact is assessed at the predicted year of opening, and again 10 years after opening, giving a 10 year design horizon.

The performance of an intersection can be measured in multiple ways, TMR in their document, *Guidelines to the Assessment of Road Impacts of Developments* (GARID), specifies maximum degrees of saturations that intersections should be operating below. If an intersection exceeds one of these thresholds during this period, under GARID ameliorative works should be performed in order obtain acceptable performance.

The impact analysis helps to determine what causes the requirement for ameliorative works, and hence who should burden the costs of such works.

8.3.1 Leisure Drive / Winders Place / Proposed Site Access

The Leisure Drive / Winders Place intersection is currently a signalised 3 way intersection to the east of the development site. The redevelopment of the site will shift the eastern existing access into this intersection to form a 4 way signalised intersection.

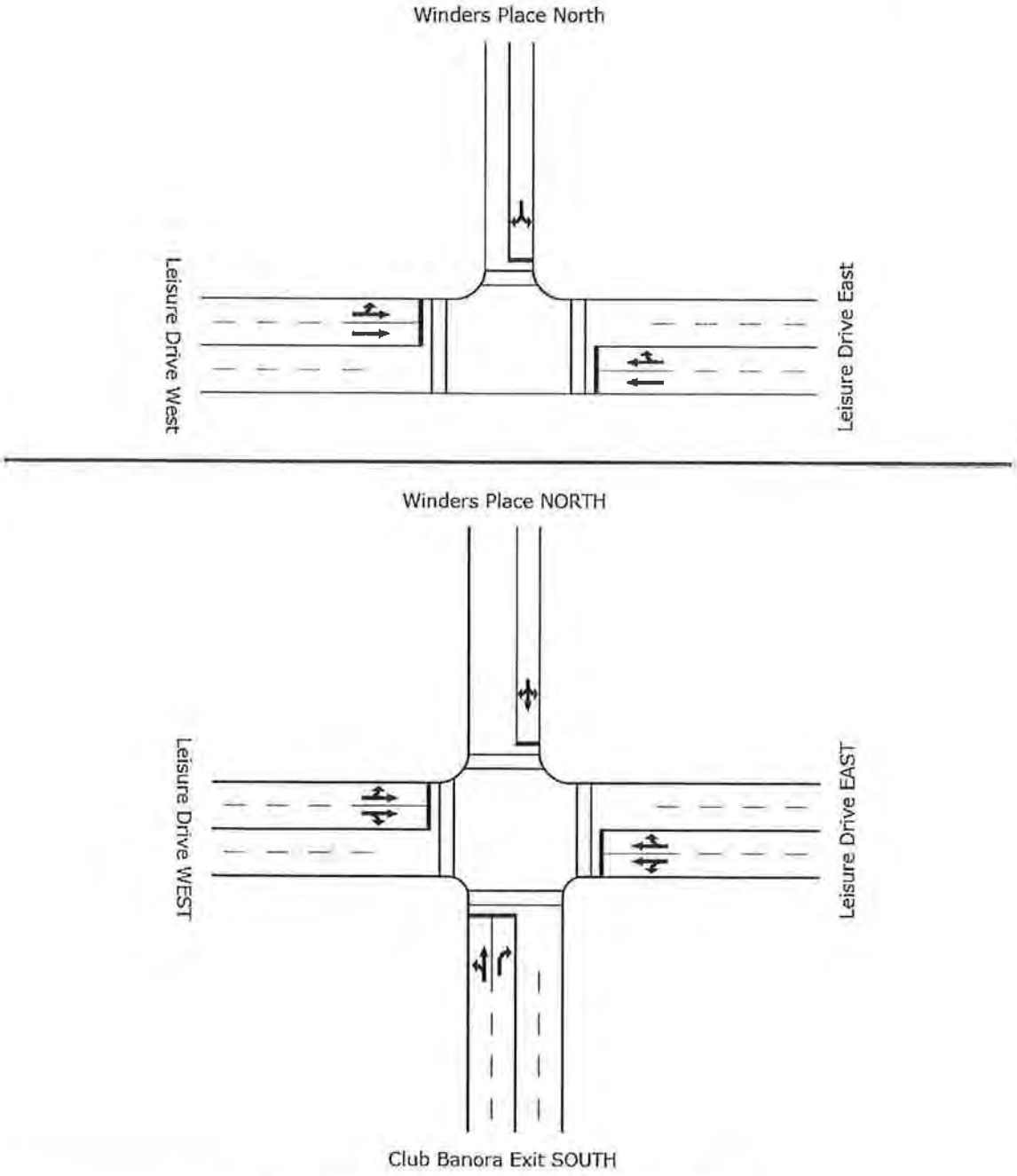


Figure 15: Existing and Proposed Intersection Layout – Leisure Drive / Winders Place / Site Access

Table 3: SIDRA Output – Leisure Drive / Winders Place – 2011 (Existing)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Leisure Drive East											
5	T	595	1.0	0.375	5.9	LOS A	6.1	57.4	0.46	0.40	49.5
6	R	62	3.2	0.375	35.4	LOS D	4.8	34.5	0.93	0.79	31.2
Approach		657	1.2	0.375	8.7	LOS A	6.1	57.4	0.50	0.44	46.9
North: Winders Place North											
7	L	44	3.2	0.358	40.4	LOS D	2.9	20.6	0.98	0.75	28.4
9	R	18	0.0	0.358	40.4	LOS D	2.9	20.6	0.98	0.75	28.4
Approach		62	2.3	0.358	40.4	LOS D	2.9	20.6	0.98	0.75	28.4
West: Leisure Drive West											
10	L	23	0.0	0.399	19.5	LOS B	9.6	67.5	0.67	0.92	41.1
11	T	761	0.7	0.400	11.3	LOS B	9.6	67.7	0.67	0.58	43.5
Approach		784	0.6	0.400	11.5	LOS B	9.6	67.7	0.67	0.59	43.5
All Vehicles		1503	1.0	0.400	11.5	LOS B	9.6	67.7	0.61	0.53	43.9

Table 4: SIDRA Output – Leisure Drive / Winders Place – 2013 No Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Leisure Drive East											
5	T	627	1.0	0.395	6.0	LOS A	6.6	60.9	0.47	0.41	49.3
6	R	65	3.2	0.394	35.5	LOS D	5.1	36.2	0.93	0.80	31.2
Approach		692	1.2	0.395	8.7	LOS A	6.6	60.9	0.51	0.44	46.8
North: Winders Place North											
7	L	46	3.2	0.376	40.5	LOS D	3.1	21.8	0.98	0.75	28.4
9	R	19	0.0	0.376	40.5	LOS D	3.1	21.8	0.98	0.75	28.3
Approach		65	2.3	0.376	40.5	LOS D	3.1	21.8	0.98	0.75	28.4
West: Leisure Drive West											
10	L	24	0.0	0.424	19.6	LOS B	10.1	71.3	0.68	0.92	41.0
11	T	803	0.7	0.422	11.4	LOS B	10.2	71.5	0.68	0.59	43.4
Approach		827	0.6	0.422	11.7	LOS B	10.2	71.5	0.68	0.60	43.3
All Vehicles		1584	1.0	0.422	11.6	LOS B	10.2	71.5	0.62	0.54	43.8

Table 5: SIDRA Output – Leisure Drive / Winders Place – 2013 With Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Club Banora Exit SOUTH											
1	L	126	1.0	0.392	54.4	LOS D	9.1	64.3	0.92	0.80	24.1
2	T	17	1.0	0.392	46.1	LOS D	9.1	64.3	0.92	0.75	24.4
3	R	165	1.0	0.689	62.5	LOS E	11.3	79.6	1.00	0.85	22.0
Approach		308	1.0	0.689	56.2	LOS E	11.3	79.6	0.96	0.82	23.0
East: Leisure Drive EAST											
4	L	135	1.0	0.704	48.4	LOS D	22.3	157.1	0.95	0.87	26.6
5	T	628	1.0	0.704	40.2	LOS D	22.4	158.4	0.95	0.83	27.0
6	R	65	3.2	0.703	46.5	LOS D	22.4	158.4	0.95	0.86	26.8
Approach		828	1.2	0.704	42.2	LOS D	22.4	158.4	0.95	0.84	26.9
North: Winders Place NORTH											
7	L	46	3.2	0.277	53.7	LOS D	5.4	38.5	0.90	0.76	24.4
8	T	13	1.0	0.278	45.4	LOS D	5.4	38.5	0.90	0.71	24.7
9	R	19	0.0	0.277	53.7	LOS D	5.4	38.5	0.90	0.76	24.3
Approach		78	2.1	0.277	52.3	LOS D	5.4	38.5	0.90	0.77	24.4
West: Leisure Drive WEST											
10	L	24	0.0	0.698	43.5	LOS D	25.4	178.9	0.92	0.90	28.7
11	T	803	0.7	0.699	35.3	LOS D	25.4	178.9	0.92	0.81	26.8
12	R	161	1.0	0.699	43.6	LOS D	25.1	176.8	0.92	0.88	26.2
Approach		988	0.7	0.699	36.9	LOS D	25.4	178.9	0.92	0.82	26.7
All Vehicles		2202	1.0	0.704	42.4	LOS D	25.4	178.9	0.94	0.83	26.9

Table 6: SIDRA Output – Leisure Drive / Winders Place – 2023 No Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Leisure Drive East											
5	T	822	1.0	0.518	6.5	LOS A	12.0	84.9	0.52	0.46	48.5
6	R	86	3.2	0.518	36.2	LOS D	6.5	46.6	0.96	0.81	30.8
Approach		908	1.2	0.518	9.3	LOS A	12.0	84.9	0.56	0.50	46.1
North: Winders Place North											
7	L	61	3.2	0.497	41.0	LOS D	4.0	28.5	0.99	0.76	28.2
9	R	25	0.0	0.497	41.0	LOS D	4.0	28.5	0.99	0.76	28.2
Approach		86	2.3	0.497	41.0	LOS D	4.0	28.5	0.99	0.76	28.2
West: Leisure Drive West											
10	L	32	0.0	0.551	20.7	LOS C	13.6	95.4	0.75	0.92	40.4
11	T	1051	0.7	0.553	12.5	LOS B	13.6	95.7	0.75	0.66	42.3
Approach		1083	0.6	0.553	12.7	LOS B	13.6	95.7	0.75	0.67	42.2
All Vehicles		2077	1.0	0.553	12.4	LOS B	13.6	95.7	0.68	0.60	42.9

Table 7: SIDRA Output – Leisure Drive / Winders Place – 2023 With Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Club Banora Exit SOUTH											
1	L	126	1.0	0.430	56.5	LOS E	9.3	65.6	0.94	0.80	23.6
2	T	17	1.0	0.430	48.3	LOS D	9.3	65.6	0.94	0.76	23.8
3	R	165	1.0	0.827	71.3	LOS E	12.2	86.0	1.00	0.93	20.2
Approach		308	1.0	0.827	64.0	LOS E	12.2	86.0	0.97	0.87	21.7
East: Leisure Drive EAST											
4	L	135	1.0	0.662	57.8	LOS E	32.2	227.2	1.00	0.96	23.9
5	T	822	1.0	0.661	49.6	LOS D	32.2	228.3	1.00	0.96	24.1
6	R	86	3.2	0.661	56.0	LOS E	32.2	228.3	1.00	0.96	24.0
Approach		1043	1.2	0.661	51.3	LOS D	32.2	228.3	1.00	0.96	24.1
North: Winders Place NORTH											
7	L	61	3.2	0.404	56.9	LOS E	6.9	49.2	0.93	0.79	23.5
8	T	13	1.0	0.404	48.7	LOS D	6.9	49.2	0.93	0.75	23.7
9	R	25	0.0	0.403	57.0	LOS E	6.9	49.2	0.93	0.80	23.5
Approach		99	2.1	0.404	55.9	LOS E	6.9	49.2	0.93	0.79	23.5
West: Leisure Drive WEST											
10	L	32	0.0	0.656	52.3	LOS D	37.2	262.0	1.00	0.96	25.8
11	T	1051	0.7	0.659	44.1	LOS D	37.2	262.0	0.99	0.97	25.8
12	R	161	1.0	0.659	52.4	LOS D	36.9	259.9	0.99	0.97	25.4
Approach		1244	0.7	0.659	45.4	LOS D	37.2	262.0	0.99	0.97	25.7
All Vehicles		2694	1.0	0.661	50.2	LOS D	37.2	262.0	0.99	0.95	24.5

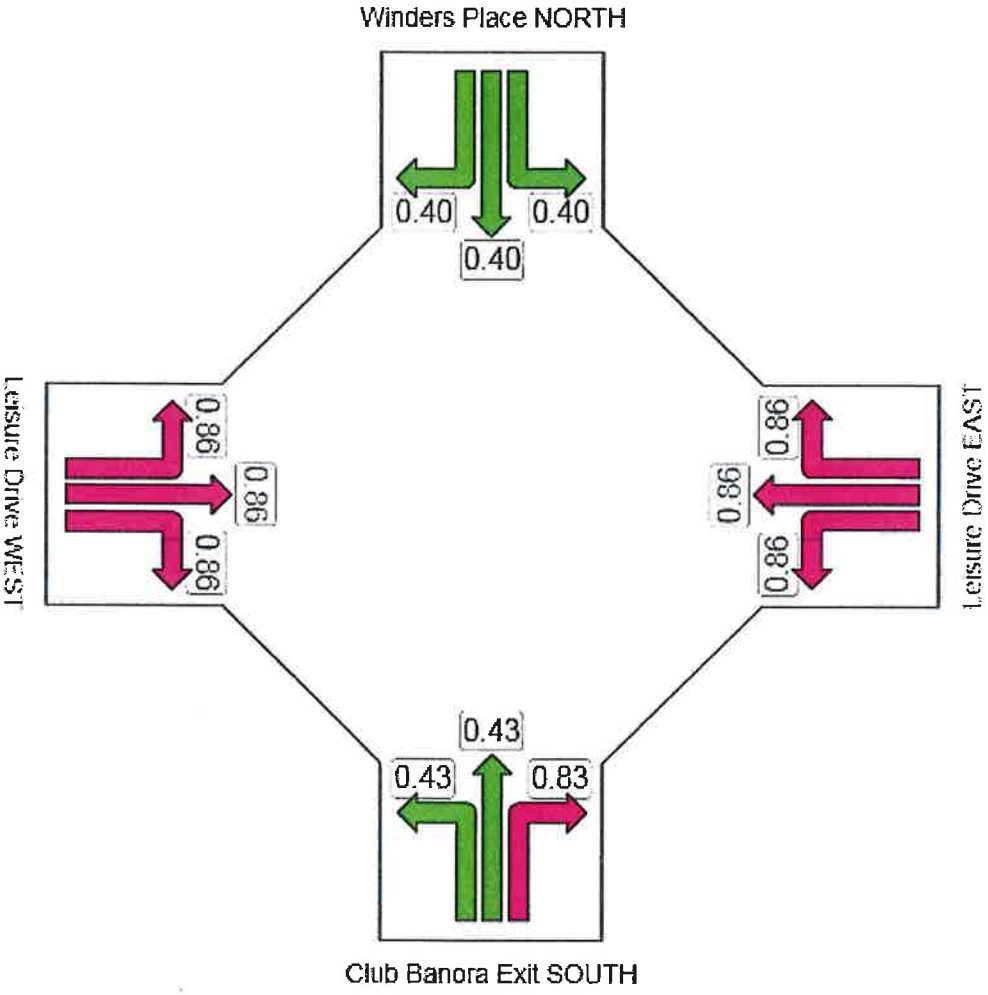


Figure 16: SIDRA Output – Leisure Drive / Winders Place – 2023 Development (DoS)

Analysis of the cases reveals that the Degree of Saturation (DoS) for all movements on the project case intersection both in 2013 and 2023 remain below the 0.9 acceptable threshold for signalised intersections as per TMR's *Guidelines to the Assessment of Road Impacts of Developments* (GARID).

As the intersection meets the GARID guidelines, no further ameliorative works would be required in the 10 year design horizon.

8.3.2 Leisure Drive / Darlington Drive

The Leisure Drive / Darlington Drive intersection is currently 3 legged roundabout to the east of the development site, east of the Leisure Drive / Winders Place intersection.

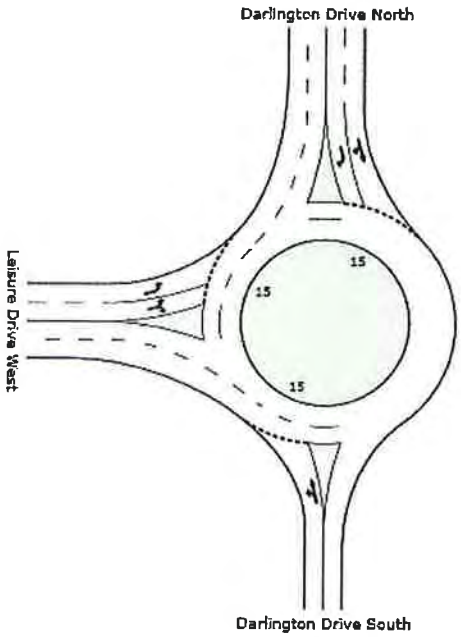


Figure 17: Existing Intersection Layout – Leisure Drive / Darlington Drive

Table 8: SIDRA Output – Leisure Drive / Darlington Drive – 2010 (Existing)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Darlington Drive South											
1	L	130	0.8	0.376	9.6	LOS A	2.2	15.5	0.61	0.84	47.6
2	T	171	2.9	0.375	9.1	LOS A	2.2	15.5	0.61	0.76	47.5
Approach		301	2.0	0.375	9.4	LOS A	2.2	15.5	0.61	0.81	47.5
North: Darlington Drive North											
8	T	198	0.5	0.311	6.3	LOS A	2.1	14.9	0.24	0.47	49.7
9	R	653	1.2	0.311	11.4	LOS B	2.1	14.9	0.24	0.69	45.7
Approach		851	1.1	0.311	10.2	LOS B	2.1	14.9	0.24	0.64	46.5
West: Leisure Drive West											
10	L	449	0.7	0.220	7.7	LOS A	1.4	10.1	0.35	0.59	48.4
12	R	66	1.2	0.220	11.6	LOS B	1.4	10.1	0.35	0.71	45.4
Approach		535	0.7	0.220	8.4	LOS B	1.4	10.1	0.35	0.61	47.9
All Vehicles		1687	1.1	0.375	9.5	LOS A	2.2	15.5	0.34	0.66	47.1

Table 9: SIDRA Output – Leisure Drive / Darlington Drive – 2013 No Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Darlington Drive South											
1	L	141	0.6	0.418	10.3	LOS B	2.6	18.6	0.64	0.86	47.0
2	T	185	2.9	0.419	9.6	LOS A	2.6	18.6	0.64	0.84	47.3
Approach		326	2.0	0.419	9.9	LOS B	2.6	18.6	0.64	0.86	47.2
North: Darlington Drive North											
8	T	215	0.5	0.339	6.3	LOS A	2.4	16.8	0.26	0.46	49.6
9	R	708	1.2	0.339	11.5	LOS B	2.4	16.8	0.26	0.69	45.6
Approach		923	1.1	0.339	10.3	LOS B	2.4	16.8	0.26	0.64	46.4
West: Leisure Drive West											
10	L	487	0.7	0.242	7.8	LOS A	1.6	11.4	0.37	0.60	48.3
12	R	93	1.2	0.242	11.9	LOS B	1.6	11.4	0.37	0.71	45.3
Approach		580	0.7	0.242	8.5	LOS B	1.6	11.4	0.37	0.62	47.7
All Vehicles		1829	1.1	0.419	9.6	LOS A	2.6	18.6	0.36	0.67	47.0

Table 10: SIDRA Output – Leisure Drive / Darlington Drive – 2013 With Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Darlington Drive South											
1	L	164	0.6	0.480	11.3	LOS B	3.2	23.0	0.70	0.92	46.0
2	T	185	2.9	0.479	10.6	LOS B	3.2	23.0	0.70	0.89	46.3
Approach		349	1.9	0.480	11.0	LOS B	3.2	23.0	0.70	0.91	46.2
North: Darlington Drive North											
8	T	215	0.5	0.393	6.5	LOS A	2.9	20.7	0.32	0.49	49.1
9	R	825	1.2	0.393	11.7	LOS B	2.9	20.7	0.33	0.69	45.4
Approach		1040	1.1	0.393	10.6	LOS B	2.9	20.7	0.32	0.65	46.1
West: Leisure Drive West											
10	L	630	0.7	0.310	7.9	LOS A	2.3	15.9	0.40	0.61	48.1
12	R	121	1.2	0.310	11.9	LOS B	2.2	15.7	0.40	0.71	45.2
Approach		751	0.7	0.311	8.5	LOS B	2.3	15.9	0.40	0.62	47.6
All Vehicles		2140	1.1	0.480	9.9	LOS A	3.2	23.0	0.41	0.66	46.6

Table 11: SIDRA Output – Leisure Drive / Darlington Drive – 2023 No Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Darlington Drive South											
1	L	185	0.6	0.625	13.6	LOS B	5.1	36.5	0.79	1.01	44.0
2	T	243	2.9	0.626	12.9	LOS B	5.1	36.5	0.79	0.99	44.1
Approach		428	2.0	0.625	13.2	LOS B	5.1	36.5	0.79	1.00	44.1
North: Darlington Drive North											
8	T	281	0.5	0.455	6.6	LOS A	3.7	26.4	0.35	0.50	48.9
9	R	927	1.2	0.456	11.7	LOS B	3.7	26.4	0.36	0.69	45.3
Approach		1208	1.1	0.455	10.5	LOS B	3.7	26.4	0.36	0.64	46.1
West: Leisure Drive West											
10	L	637	0.7	0.334	8.2	LOS A	2.5	17.7	0.47	0.64	47.7
12	R	122	1.2	0.334	12.2	LOS B	2.5	17.5	0.48	0.73	45.0
Approach		759	0.7	0.334	8.8	LOS B	2.5	17.7	0.47	0.66	47.3
All Vehicles		2395	1.1	0.625	10.5	LOS B	5.1	36.5	0.47	0.71	46.1

Table 12: SIDRA Output – Leisure Drive / Darlington Drive – 2023 With Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Darlington Drive South											
1	L	208	0.8	0.712	15.9	LOS B	6.5	46.4	0.65	1.08	42.0
2	T	243	2.9	0.713	15.2	LOS B	6.5	46.4	0.65	1.07	42.2
Approach		451	1.9	0.713	15.5	LOS B	6.5	46.4	0.65	1.08	42.1
North: Darlington Drive North											
8	T	281	0.5	0.514	6.8	LOS A	4.5	32.0	0.42	0.53	46.4
9	R	1044	1.2	0.514	11.9	LOS B	4.5	32.0	0.43	0.69	45.0
Approach		1325	1.1	0.514	10.8	LOS B	4.5	32.0	0.43	0.66	45.7
West: Leisure Drive West											
10	L	780	0.7	0.408	8.3	LOS A	3.3	23.5	0.51	0.65	47.5
12	R	150	1.2	0.408	12.3	LOS B	3.3	23.1	0.52	0.74	44.9
Approach		930	0.7	0.408	8.9	LOS B	3.3	23.5	0.51	0.66	47.1
All Vehicles		2706	1.1	0.713	11.0	LOS B	6.5	46.4	0.53	0.73	45.5

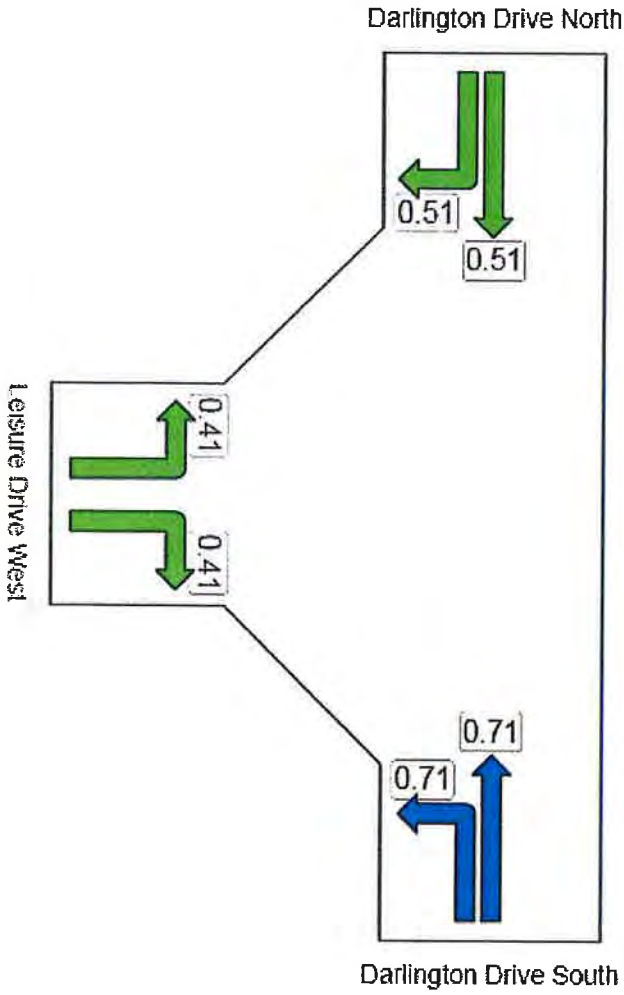


Figure 18: SIDRA Output – Leisure Drive / Darlington Drive – 2023 With Development (DoS)

Analysis of the cases reveals that the Degree of Saturation (DoS) for all movements on the project case intersection both in 2013 and 2023 remain below the 0.9 acceptable threshold for signalised intersections as per TMR's *Guidelines to the Assessment of Road Impacts of Developments* (GARID).

The intersection meets the GARID guidelines, no ameliorative works would be required in the 10 year design horizon.

8.3.3 Leisure Drive / Darlington Drive / Greenway Drive

The Leisure Drive / Darlington Drive / Greenway Drive intersection is currently 4 legged roundabout to the west of the development site.

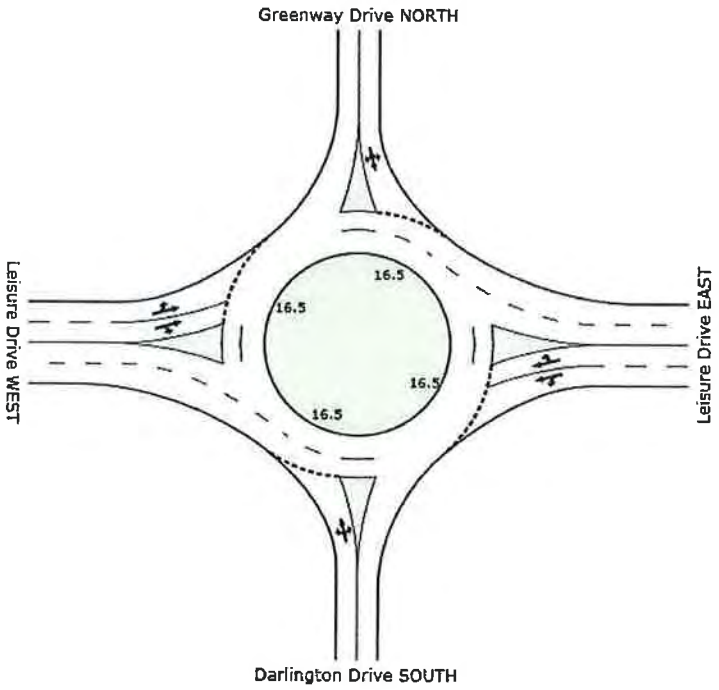


Figure 19: Existing Intersection Layout – Leisure Drive / Darlington Drive / Greenway Drive

Table 13: SIDRA Output – Leisure Drive / Darlington Drive / Greenway Drive – 2011 (Existing)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Darlington Drive SOUTH											
1	L	8	12.5	0.320	10.0	LOS A	2.0	14.1	0.64	0.82	47.1
2	T	104	1.0	0.320	8.9	LOS A	2.0	14.1	0.64	0.76	47.0
3	R	132	0.0	0.320	14.2	LOS B	2.0	14.1	0.64	0.90	44.1
Approach		244	0.6	0.320	11.6	LOS B	2.0	14.1	0.64	0.84	45.4
East: Leisure Drive EAST											
4	L	225	0.9	0.367	9.3	LOS A	3.1	21.7	0.71	0.76	47.0
5	T	304	3.0	0.367	8.4	LOS A	3.1	21.7	0.71	0.72	46.7
6	R	116	0.0	0.367	13.7	LOS B	3.0	21.1	0.71	0.86	44.8
Approach		645	1.7	0.367	9.7	LOS B	3.1	21.7	0.71	0.76	46.4
North: Greenway Drive NORTH											
7	L	419	0.0	0.915	19.1	LOS B	21.3	149.5	1.00	1.21	39.3
8	T	271	0.7	0.916	18.4	LOS B	21.3	149.5	1.00	1.21	39.3
9	R	216	0.0	0.915	23.7	LOS C	21.3	149.5	1.00	1.21	37.6
Approach		906	0.2	0.915	20.0	LOS C	21.3	149.5	1.00	1.21	38.9
West: Leisure Drive WEST											
10	L	111	0.0	0.159	8.2	LOS A	1.0	6.9	0.46	0.65	46.2
11	T	219	0.0	0.160	7.2	LOS A	1.0	6.9	0.46	0.60	46.6
12	R	10	0.0	0.159	12.5	LOS B	1.0	6.6	0.46	0.83	45.8
Approach		340	0.0	0.160	7.7	LOS B	1.0	6.9	0.46	0.62	46.4
All Vehicles		**2135**	**0.7**	**0.915**	**14.0**	**LOS B**	**21.3**	**149.5**	**0.78**	**0.94**	**43.0**

Table 14: SIDRA Output – Leisure Drive / Darlington Drive / Greenway Drive - 2013 No Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Darlington Drive SOUTH											
1	L	8	12.5	0.348	10.2	LOS B	2.2	15.6	0.67	0.84	47.0
2	T	110	1.0	0.347	9.1	LOS A	2.2	15.6	0.67	0.78	46.8
3	R	139	0.0	0.347	14.4	LOS B	2.2	15.6	0.67	0.92	43.9
Approach		257	0.6	0.347	12.0	LOS B	2.2	15.6	0.67	0.86	45.2
East: Leisure Drive EAST											
4	L	238	0.9	0.400	9.5	LOS A	3.4	24.3	0.74	0.80	46.8
5	T	321	3.0	0.400	8.6	LOS A	3.4	24.3	0.74	0.74	46.5
6	R	122	0.0	0.400	14.0	LOS B	3.3	23.5	0.74	0.88	44.6
Approach		681	1.7	0.400	9.9	LOS B	3.4	24.3	0.74	0.78	46.3
North: Greenway Drive NORTH											
7	L	442	0.0	0.978	36.1	LOS D	38.1	267.4	1.00	1.73	30.1
8	T	286	0.7	0.979	35.4	LOS D	38.1	267.4	1.00	1.73	30.1
9	R	228	0.0	0.979	40.7	LOS D	38.1	267.4	1.00	1.73	29.4
Approach		956	0.2	0.979	37.0	LOS D	38.1	267.4	1.00	1.73	29.9
West: Leisure Drive WEST											
10	L	117	0.0	0.171	8.3	LOS A	1.1	7.6	0.47	0.66	48.1
11	T	231	0.0	0.171	7.3	LOS A	1.1	7.6	0.48	0.61	48.5
12	R	11	0.0	0.172	12.6	LOS B	1.1	7.5	0.48	0.84	45.8
Approach		359	0.0	0.171	7.6	LOS B	1.1	7.6	0.48	0.63	48.3
All Vehicles		2253	0.7	0.979	21.3	LOS C	38.1	267.4	0.80	1.17	37.7

Table 15: SIDRA Output – Leisure Drive / Darlington Drive / Greenway Drive – 2013 With Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Darlington Drive SOUTH											
1	L	8	12.5	0.400	10.9	LOS B	2.8	19.5	0.71	0.88	46.3
2	T	110	1.0	0.401	9.8	LOS A	2.8	19.5	0.71	0.85	46.4
3	R	168	0.0	0.402	15.1	LOS B	2.8	19.5	0.71	0.96	43.4
Approach		286	0.7	0.402	13.0	LOS B	2.8	19.5	0.71	0.92	44.5
East: Leisure Drive EAST											
4	L	283	0.9	0.446	9.3	LOS A	3.9	27.5	0.72	0.76	46.9
5	T	382	3.0	0.446	8.4	LOS A	3.9	27.5	0.72	0.72	46.6
6	R	146	0.0	0.445	13.7	LOS B	3.8	26.6	0.72	0.86	44.8
Approach		811	1.7	0.446	9.6	LOS B	3.9	27.5	0.72	0.77	46.4
North: Greenway Drive NORTH											
7	L	533	0.0	1.134	263.2	LOS F	176.7	1238.8	1.00	6.81	7.3
8	T	286	0.7	1.135	262.5	LOS F	176.7	1238.8	1.00	6.81	7.3
9	R	228	0.0	1.134	267.6	LOS F	176.7	1238.8	1.00	6.81	7.5
Approach		1047	0.2	1.135	264.0	LOS F	176.7	1238.8	1.00	6.81	7.3
West: Leisure Drive WEST											
10	L	117	0.0	0.202	8.6	LOS A	1.3	9.4	0.52	0.69	47.9
11	T	278	0.0	0.202	7.6	LOS A	1.3	9.4	0.53	0.64	48.2
12	R	11	0.0	0.204	13.0	LOS B	1.3	9.2	0.53	0.85	45.5
Approach		406	0.0	0.202	8.1	LOS B	1.3	9.4	0.52	0.66	48.0
All Vehicles		2550	0.7	1.135	114.2	LOS F	176.7	1238.8	0.80	3.25	14.6

Table 16: SIDRA Output – Leisure Drive / Darlington Drive / Greenway Drive – 2023 No Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Darlington Drive SOUTH											
1	L	11	12.5	0.500	12.3	LOS B	4.0	27.9	0.78	0.95	45.0
2	T	144	1.0	0.502	11.3	LOS B	4.0	27.9	0.78	0.93	45.2
3	R	182	0.0	0.501	16.5	LOS B	4.0	27.9	0.78	1.01	42.3
Approach		337	0.8	0.502	14.1	LOS B	4.0	27.9	0.78	0.97	43.5
East: Leisure Drive EAST											
4	L	310	0.9	0.506	10.0	LOS B	4.9	34.5	0.77	0.83	46.7
5	T	420	3.0	0.506	9.2	LOS A	4.9	34.5	0.77	0.81	46.3
6	R	160	0.0	0.506	14.5	LOS B	4.8	33.9	0.77	0.91	44.1
Approach		890	1.7	0.506	10.4	LOS B	4.9	34.5	0.77	0.83	46.0
North: Greenway Drive NORTH											
7	L	579	0.0	1.392	723.7	LOS F	456.0	3212.3	1.00	14.31	2.9
8	T	374	0.7	1.396	722.9	LOS F	456.0	3212.3	1.00	14.31	2.9
9	R	298	0.0	1.393	728.2	LOS F	456.0	3212.3	1.00	14.31	3.0
Approach		1251	0.2	1.393	724.5	LOS F	456.0	3212.3	1.00	14.31	2.9
West: Leisure Drive WEST											
10	L	153	0.0	0.248	9.0	LOS A	1.7	12.2	0.59	0.73	47.6
11	T	303	0.0	0.248	8.1	LOS A	1.7	12.2	0.59	0.68	47.8
12	R	14	0.0	0.250	13.4	LOS B	1.7	11.9	0.59	0.87	45.2
Approach		470	0.0	0.248	8.5	LOS B	1.7	12.2	0.59	0.70	47.6
All Vehicles		2948	0.7	1.393	313.6	LOS F	456.0	3212.3	0.64	6.55	6.3

Table 17: SIDRA Output – Leisure Drive / Darlington Drive / Greenway Drive - 2023 With Development

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Darlington Drive SOUTH											
1	L	11	12.5	0.550	13.3	LOS B	4.6	32.7	0.81	0.99	44.0
2	T	144	1.0	0.554	12.3	LOS B	4.6	32.7	0.81	0.97	44.2
3	R	201	0.0	0.555	17.6	LOS B	4.6	32.7	0.81	1.04	41.5
Approach		356	0.8	0.554	15.3	LOS B	4.6	32.7	0.81	1.01	42.6
East: Leisure Drive EAST											
4	L	356	0.9	0.548	9.9	LOS A	5.5	39.2	0.76	0.82	46.7
5	T	481	3.0	0.548	9.1	LOS A	5.5	39.2	0.76	0.80	46.4
6	R	184	0.0	0.548	14.4	LOS B	5.4	38.7	0.76	0.90	44.2
Approach		1021	1.7	0.548	10.3	LOS B	5.5	39.2	0.76	0.82	46.1
North: Greenway Drive NORTH											
7	L	669	0.0	1.570	1040.9	LOS F	623.8	4374.0	1.00	18.04	2.0
8	T	374	0.7	1.571	1040.2	LOS F	623.8	4374.0	1.00	18.04	2.0
9	R	298	0.0	1.568	1045.4	LOS F	623.8	4374.0	1.00	18.04	2.1
Approach		1341	0.2	1.570	1041.7	LOS F	623.8	4374.0	1.00	18.04	2.0
West: Leisure Drive WEST											
10	L	153	0.0	0.284	9.3	LOS A	2.1	14.5	0.63	0.75	47.4
11	T	350	0.0	0.284	8.4	LOS A	2.1	14.5	0.63	0.72	47.5
12	R	14	0.0	0.286	13.8	LOS B	2.0	14.1	0.63	0.88	45.0
Approach		517	0.0	0.284	8.8	LOS B	2.1	14.5	0.63	0.73	47.4
All Vehicles		3235	0.7	1.570	438.2	LOS F	623.8	4374.0	0.65	7.97	4.6

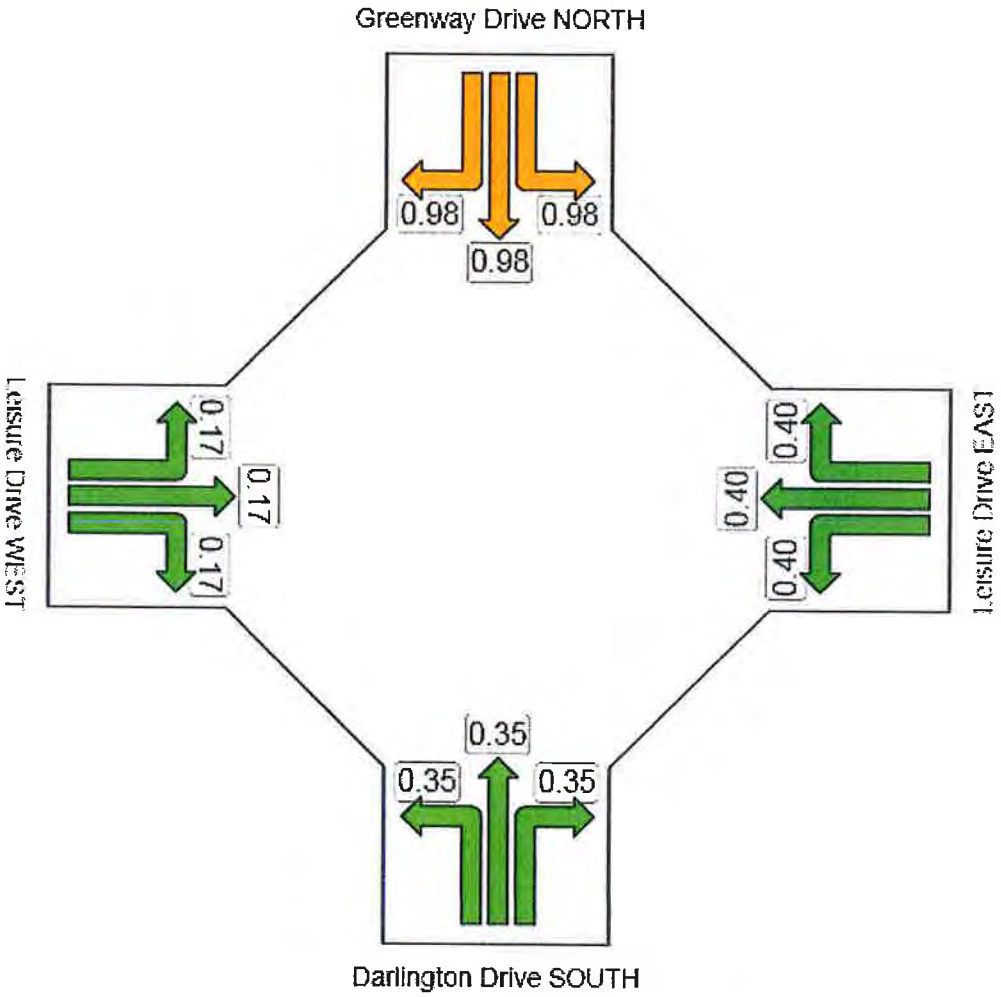


Figure 20: Leisure Drive / Darlington Drive / Greenway Drive - 2013 No Development (DoS)

Analysis of the cases and the 2011 survey reveals that the Degree of Saturation (DoS) for the northern leg, Greenway Drive is currently operating above the TMR's *Guidelines to the Assessment of Road Impacts of Developments* (GARID) DoS threshold of 0.85. By 2013, it almost fully saturated regardless of the development, i.e. the proposed development is not the cause of the leg exceeding the guideline's threshold in this case.

As the intersection exceeds the GARID guidelines, ameliorative works would be required within the 10 year design horizon. The requirement for these works however is not caused by the development but by background traffic growth and hence the burden of these works should not be placed on the development.

8.3.4 Leisure Drive / Existing Site Access

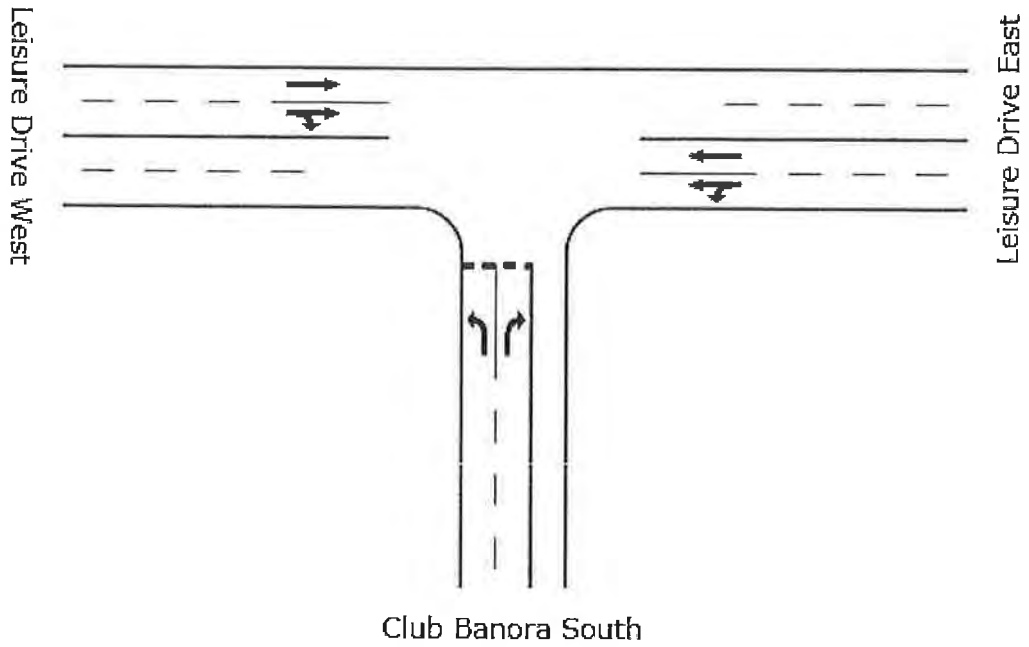


Figure 21: Existing Intersection Layout - Leisure Drive / Site Access

Table 18: SIDRA Output – Leisure Drive / Site Access – 2023 (Assumed)

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	95% Back of Queue Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
South: Club Banora South											
1	L	179	1.0	0.374	16.2	LOS C	2.1	14.8	0.71	0.97	41.5
3	R	89	1.0	0.795	82.5	LOS F	4.3	30.3	0.98	1.21	18.3
Approach		268	1.0	0.795	36.2	LOS F	4.3	30.3	0.80	1.05	29.2
East: Leisure Drive East											
4	L	134	1.0	0.211	8.2	LOS A	0.0	0.0	0.00	0.90	49.0
5	T	697	1.0	0.211	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		831	1.0	0.211	1.3	LOS A	0.0	0.0	0.00	0.14	57.9
West: Leisure Drive West											
11	T	825	1.0	0.326	1.7	LOS A	3.6	25.5	0.18	0.00	55.9
12	R	134	1.0	0.326	16.0	LOS C	3.6	25.5	0.84	1.04	43.3
Approach		959	1.0	0.326	3.7	LOS C	3.6	25.5	0.27	0.15	53.7
All Vehicles		2058	1.0	0.795	7.2	NA	4.3	30.3	0.23	0.26	49.7

No formal survey work was performed over the site access; however, it is assumed that the traffic along this access will remain approximately the same as current use. An assumed 2023 Development Case which includes Background traffic growth along leisure drive follows.

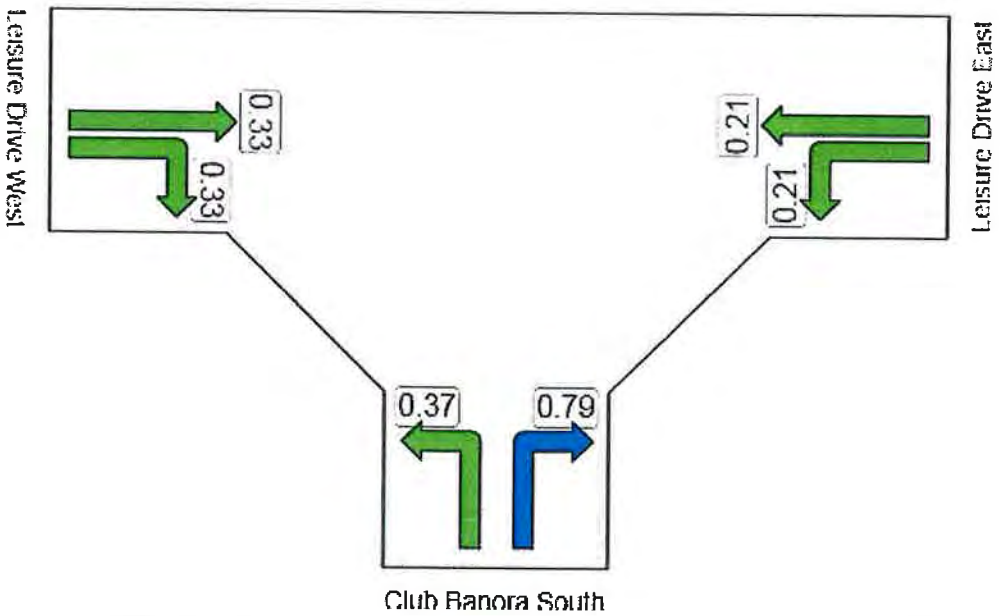


Figure 22: SIDRA Output – Leisure Drive / Site Access – 2023 (DoS)

As the intersection will remain under the TMR's *Guidelines to the Assessment of Road Impacts of Developments* (GARID) DoS threshold of 0.85 in the assumed 2023 case, ameliorative works would not be required within the 10 year design horizon.

8.4 Conclusion

The development trip generation results in relative minor impacts to the operation of surrounding intersections when compared to intersection performance given growth in background traffic volumes.

The performance of the Leisure Drive / Winders Place signalised intersection remains acceptable under TMR's GARID thresholds and will not need further works.

The Leisure Drive / Darlington Drive / Greenway Drive roundabout operates currently above the guideline's threshold and will reach full saturation during 2013 under background growth alone. The roundabout will require ameliorative works, but as this degree of saturation is not caused by the development, no burden should be placed on the developers.

9. External Transport Impacts

9.1 Public Transport

The site is well-situated with respect to public transport facilities. The site is serviced regularly throughout the day by Surf-Side Coaches on Route 602, with 12 coaches arriving a day during weekdays and 11 coaches a day on weekends. The site provides adequate provisions for the coaches to drop off and pick up passengers.

9.2 Pedestrian Facilities

Pedestrian connection to the development from surrounding areas is enabled by a number of existing facilities. The signalised intersection of Leisure Drive and Winders Place provides pedestrian phases to enable safe road crossing. Footpaths surrounding the site will remain as part of the redevelopment.

9.3 Bicycle Facilities

Bicycle riders are serviced by the road network, to access the development. Dedicated on-road bicycle facilities are not provided. Tweed Shire Council requires bicycle facilities to be provided at the rates show in Table 19: Council Bicycle Requirements

Table 19: Council Bicycle Requirements

Use	Council Parking Rate	Units	Parking Requirement
Shopping Center	2 + 1/200 per 200 sqm (after first 200 sqm)	5010 sqm	26.05
Bowling Greens	3 per Green	2 Greens	6
Tennis Corse	2 per Court	6 Courts	12
Swimming Pool	1 per 25 sqm	2000 sqm	80
Club	1 per 5 Required Vehicle Parks	413 Required Vehicle Parks	82.6
		TOTAL	**206.65**

The development proposes to include 207 bicycle spaces to be placed around the site to suit demand. This provision meets council's requirement for bicycle parking.

9.4 Road Safety

In the absence of conducting a formal road safety audit, which was not the scope or objective of this assessment, it is concluded that insufficient information is available to provide conclusive comment on road safety within the surrounding road network.

9.5 Conclusion

The development does not result in any impact to the external transport network and therefore no upgrades are considered necessary.

10. Summary and Recommendation

10.1 Summary of Key Findings

TTM Group has conducted a traffic impact assessment for the proposed development and has determined a number of key findings, as summarised below:

1. This assessment has been carried out for a redevelopment at Club Banora on Leisure Drive, Banora Point and forms part of a development application to Tweed Shire Council. The development proposal is summarised as follows:
   - Addition of a retail subdivision of 5010 sqm
   - Addition of Assisted Living Facility, including a mixture of 1-, 2-bedroom units, totalling 154 units (254 bedrooms)
   - Addition of "Halfway House"
   - Addition of Pool Kiosk and Golf Pro Shop
   - Relocation of 6 Tennis Courts and 2 Bowling Greens
   - Redevelopment of the current Club Banora building
   - Modification to existing parking and service arrangements.
2. Vehicular access to the development will be retained on Leisure Drive. Council had planned upgrades to form the Fraser Drive and Kirkwood Road link by approximately 2015. Council plans to widen Leisure Drive to 4 lanes between Winders Place and Eucalyptus Drive but the timeline is currently unknown.
3. The development exceeds Council's and meets SEPP requirements for car parking provision on the site.
4. The development car parking design complies with all relevant local and national requirements and standards.
5. Site access designs and locations are to comply with the relevant Council and authority guidelines.
6. Proposed site servicing arrangements achieve compliance with Council and Australian Standards requirements.
7. The performance of the Leisure Drive / Winders Place signalised intersection remains acceptable under TMR's GARID thresholds and will not need further works. The Leisure Drive / Darlington Drive / Greenway Drive roundabout operates above the guideline's threshold and will reach full saturation during 2013 under background growth alone. The roundabout will require ameliorative works but no burden should be placed on the developers. All other intersections effected by the development have acceptable performance under GARID.

10.2 Recommendation

Based on the findings of this assessment, TTM recommends that the proposed development be approved on transport planning grounds.

Appendix A

TRAFFIC SURVEY DATA

TTM Data

TTM Reference: 34313
Location: Leisure Drive / Winders Place
Suburb: Benora Point
Date: Tue 15/2/2011
Survey Duration: 0700-0900 & 1600-1800
Weather: Showers
Notes:

AM Peak: 0800-0900
PM Peak: 1630-1730

Time	Northern Approach: Winders Place									Eastern Approach Leisure Drive									Western Approach: Leisure Drive								
15 min	Left			Right			U-turns	TOTAL	Peds	Straight			Right			U-turns	TOTAL	Peds	Left			Straight			U-turns	TOTAL	Peds
time start	Light	Heavy	Total	Light	Heavy	Total				Light	Heavy	Total	Light	Heavy	Total				Light	Heavy	Total	Light	Heavy	Total			
7:00	10	1	11	1	0	1	0	12	3	50	3	53	4	0	4	0	57	3	3	1	4	109	4	113	0	117	0
7:15	9	0	9	1	0	1	0	10	1	85	4	89	13	1	14	0	103	1	2	0	2	102	4	106	0	108	1
7:30	5	0	5	3	1	4	0	9	1	84	1	85	7	0	7	0	92	0	3	0	3	92	7	99	0	102	1
7:45	13	2	15	14	0	14	0	29	0	141	2	143	5	0	5	0	148	4	7	2	9	130	5	135	0	144	3
8:00	15	0	15	8	1	9	0	24	0	175	5	180	9	1	10	0	190	1	5	0	5	128	12	140	0	145	3
8:15	16	0	16	5	0	5	0	21	0	216	2	218	22	0	22	0	240	0	4	0	4	134	6	140	0	144	0
8:30	21	3	24	9	0	9	0	33	1	126	2	128	19	2	21	0	149	1	8	0	8	176	6	182	0	190	3
8:45	17	0	17	8	1	9	0	26	0	116	2	118	16	0	16	0	134	2	9	0	9	169	6	175	0	184	4
TOTAL	**106**	**6**	**112**	**49**	**3**	**52**	**0**	**164**	**6**	**993**	**21**	**1014**	**95**	**4**	**99**	**0**	**1113**	**12**	**41**	**3**	**44**	**1040**	**50**	**1090**	**0**	**1134**	**15**
AM Peak	69	3	72	30	2	32	0	104	1	633	11	644	66	3	69	0	713	4	26	0	26	607	30	637	0	663	10
16:00	9	0	9	4	0	4	0	13	1	126	5	131	12	0	12	0	143	2	5	0	5	183	3	186	0	191	1
16:15	12	0	12	7	0	7	0	19	0	136	0	136	7	0	7	0	143	0	5	0	5	172	1	173	0	178	3
16:30	11	1	12	6	0	6	0	18	0	131	2	133	15	1	16	0	149	1	5	0	5	195	0	195	0	200	3
16:45	10	0	10	4	0	4	0	14	0	156	0	156	22	1	23	0	179	2	6	0	6	173	1	174	0	180	4
17:00	12	1	13	4	0	4	0	17	0	159	3	162	11	0	11	0	173	1	8	0	8	205	1	206	0	214	0
17:15	9	0	9	4	0	4	0	13	1	143	1	144	12	0	12	0	156	2	4	0	4	183	3	186	0	190	1
17:30	8	0	8	3	0	3	0	11	0	139	2	141	9	0	9	0	150	2	1	0	1	182	0	182	0	183	3
17:45	7	1	8	7	0	7	0	15	0	147	1	148	13	1	14	0	162	5	3	0	3	127	1	128	0	131	0
TOTAL	**78**	**3**	**81**	**39**	**0**	**39**	**0**	**120**	**2**	**1137**	**14**	**1151**	**101**	**3**	**104**	**0**	**1255**	**15**	**37**	**0**	**37**	**1420**	**10**	**1430**	**0**	**1467**	**15**
PM Peak	42	2	44	18	0	18	0	62	1	589	6	595	60	2	62	0	657	6	23	0	23	756	5	761	0	784	8

TTM Data

TTM Reference: 33905
Location: Leisure Dr / Darlington Dr
Suburb: Banora Point
Date: Thur 24.6.10
Survey Duration: 0700-0900 & 1600-1800
Weather: Early light showers
Notes:

AM Peak: 0800-0900
PM Peak: 1600-1700

Time	Northern Approach: Darlington Drive									Southern Approach: Darlington Drive									Western Approach: Leisure Drive								
15 min	Straight			Right			U-turns	TOTAL	Peds	Left			Straight			U-turns	TOTAL	Peds	Left			Right			U-turns	TOTAL	Peds
time start	Light	Heavy	Total	Light	Heavy	Total				Light	Heavy	Total	Light	Heavy	Total				Light	Heavy	Total	Light	Heavy	Total			
7:00	15	1	16	46	2	48	1	65	0	13	2	15	40	1	41	0	56	0	63	1	64	3	1	4	3	71	0
7:15	17	1	18	63	3	66	1	85	0	27	1	28	52	4	56	0	84	0	82	1	83	8	1	9	2	94	0
7:30	15	2	17	88	3	91	1	109	2	34	0	34	52	5	57	0	91	0	89	3	92	7	1	8	1	101	1
7:45	13	2	15	123	2	125	2	142	0	26	0	26	60	1	61	0	87	0	101	1	102	8	0	8	2	112	1
8:00	18	2	20	131	4	135	0	155	0	57	1	58	66	0	66	1	125	0	122	0	122	10	1	11	2	135	0
8:15	28	2	30	166	3	169	0	199	0	71	1	72	69	3	72	0	144	0	104	6	110	16	0	16	1	127	0
8:30	21	3	24	125	3	128	1	153	0	75	0	75	71	3	74	0	149	0	125	10	135	11	0	11	4	150	0
8:45	21	2	23	119	1	120	0	143	0	59	0	59	65	4	69	0	128	0	121	2	123	14	1	15	1	139	0
TOTAL	**148**	**15**	**163**	**861**	**21**	**882**	**6**	**1051**	**2**	**362**	**5**	**367**	**475**	**21**	**496**	**1**	**864**	**0**	**807**	**24**	**831**	**77**	**5**	**82**	**16**	**929**	**2**
AM Peak	88	9	97	541	11	552	1	650	0	262	2	264	271	10	281	1	546	0	472	18	490	51	2	53	8	551	0
16:00	42	0	42	152	4	156	3	201	0	32	0	32	44	1	45	0	77	0	123	0	123	14	0	14	5	142	0
16:15	51	0	51	179	2	181	3	235	0	41	0	41	34	2	36	0	77	0	115	0	115	25	1	26	1	142	0
16:30	61	1	62	138	2	140	0	202	0	32	1	33	34	2	36	0	69	0	110	2	112	22	0	22	2	136	0
16:45	43	0	43	176	0	176	2	221	2	24	0	24	54	0	54	0	78	0	98	1	99	24	0	24	4	127	0
17:00	55	1	56	150	2	152	1	209	0	26	0	26	39	0	39	1	66	2	114	2	116	16	0	16	5	137	2
17:15	54	1	55	138	0	138	0	193	0	30	0	30	40	1	41	0	71	2	119	0	119	21	1	22	9	150	2
17:30	55	2	57	135	3	138	3	198	0	17	0	17	59	1	60	0	77	2	127	1	128	20	0	20	7	155	0
17:45	43	1	44	139	1	140	0	184	0	13	1	14	45	0	45	0	59	0	94	2	96	23	0	23	4	123	0
TOTAL	**404**	**6**	**410**	**1207**	**14**	**1221**	**12**	**1643**	**2**	**215**	**2**	**217**	**349**	**7**	**356**	**1**	**574**	**6**	**900**	**8**	**908**	**165**	**2**	**167**	**37**	**1112**	**4**
PM Peak	197	1	198	645	8	653	8	859	2	129	1	130	166	5	171	0	301	0	446	3	449	85	1	86	12	547	0

TTM Data

TTM Reference: 34313
Location: Greenway Dr/ Leisure Dr/ Darlington Dr
Suburb: Banora Point
Date: AM Tue 15.2.11 & PM Wed 16.2.11
Survey Duration: 0700-0900 & 1600-1800
Weather: Fine
Notes:

AM Peak: 0700-0800
PM Peak: 1630-1730

Time	Northern Approach: Greenway Drive											Southern Approach: Darlington Drive										
15 min	Left			Straight			Right			U-turns	TOTAL	Peds	Left			Straight			Right			U-turns	TOTAL	Peds
time start	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total				Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
7:00	45	4	49	28	0	28	26	4	30	1	108	0	2	0	2	62	1	63	32	0	32	0	117	0
7:15	54	2	56	36	1	37	29	2	31	1	125	0	0	0	0	33	0	33	27	1	28	0	61	0
7:30	65	4	69	34	0	34	21	2	23	1	127	0	2	0	2	46	3	49	43	1	44	0	95	0
7:45	66	5	71	29	0	29	36	0	36	1	137	0	2	0	2	57	0	57	44	0	44	0	103	0
8:00	58	4	62	16	0	16	21	0	21	0	99	0	1	0	1	45	0	45	51	0	51	0	97	0
8:15	51	3	54	22	0	22	21	1	22	0	98	0	0	0	0	41	0	41	36	0	36	0	77	0
8:30	59	3	62	23	1	24	27	1	28	2	116	0	0	0	0	53	0	53	44	0	44	1	98	0
8:45	49	2	51	31	0	31	35	0	35	0	117	0	1	0	1	37	0	37	40	1	41	0	79	0
TOTAL	447	27	474	219	2	221	216	10	226	6	927	0	8	0	8	394	4	398	317	3	320	1	727	0
AM Peak	230	15	245	127	1	128	112	8	120	4	497	0	6	0	6	218	4	222	146	2	148	0	376	0
16:00	84	1	85	68	1	69	47	1	48	0	202	0	0	2	2	37	0	37	23	0	23	0	62	0
16:15	81	2	83	63	1	64	40	2	42	1	190	0	5	0	5	35	1	36	28	0	28	0	69	0
16:30	113	0	113	73	0	73	59	0	59	0	245	0	2	0	2	31	0	31	30	0	30	0	63	0
16:45	112	0	112	47	1	48	50	0	50	0	210	0	0	0	0	28	0	28	33	0	33	0	61	0
17:00	113	0	113	81	1	82	64	0	64	0	259	1	2	0	2	21	1	22	27	0	27	0	51	1
17:15	81	0	81	68	0	68	43	0	43	0	192	1	3	1	4	23	0	23	42	0	42	0	69	1
17:30	71	1	72	53	0	53	49	1	50	2	177	0	1	0	1	28	0	28	37	0	37	0	66	0
17:45	40	0	40	37	1	38	22	0	22	0	100	2	2	0	2	23	0	23	39	0	39	0	64	2
TOTAL	695	4	699	490	5	495	374	4	378	3	1575	4	15	3	18	226	2	228	259	0	259	0	505	4
PM Peak	419	0	419	269	2	271	216	0	216	0	906	2	7	1	8	103	1	104	132	0	132	0	244	2

Time	Eastern Approach: Leisure Drive											Western Approach: Leisure Drive										
15 min	Left			Straight			Right			U-turns	TOTAL	Peds	Left			Straight			Right			U-turns	TOTAL	Peds
time start	Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total				Light	Heavy	Total	Light	Heavy	Total	Light	Heavy	Total			
7:00	23	1	24	67	4	71	100	2	102	0	197	0	97	0	97	67	3	70	2	0	2	0	169	0
7:15	21	0	21	49	3	52	134	0	134	0	207	0	91	2	93	64	2	66	1	0	1	0	160	0
7:30	23	0	23	46	1	47	97	1	98	0	168	0	93	2	95	78	3	81	1	0	1	0	177	0
7:45	19	0	19	38	4	42	50	1	51	0	112	0	71	2	73	86	3	89	3	0	3	0	165	0
8:00	21	1	22	54	2	56	70	0	70	2	150	0	70	0	70	78	5	83	2	0	2	0	155	0
8:15	28	0	28	43	3	46	58	2	60	2	136	0	64	0	64	60	3	63	1	0	1	0	128	0
8:30	21	0	21	39	0	39	51	0	51	2	113	1	58	2	60	75	0	75	0	0	0	0	135	0
8:45	22	1	23	42	1	43	56	0	56	0	122	0	49	0	49	70	1	71	2	0	2	0	122	0
TOTAL	178	3	181	378	18	396	616	6	622	6	1205	1	593	8	601	578	20	598	12	0	12	0	1211	0
AM Peak	86	1	87	200	12	212	381	4	385	0	684	0	352	6	358	295	11	306	7	0	7	0	671	0
16:00	44	0	44	59	1	60	28	1	29	1	134	1	30	0	30	67	1	68	1	0	1	0	99	2
16:15	37	2	39	65	4	69	41	1	42	1	151	0	33	1	34	56	0	56	3	0	3	0	93	1
16:30	42	0	42	76	1	77	44	0	44	0	163	0	32	2	34	49	2	51	1	0	1	0	86	0
16:45	59	0	59	77	2	79	25	0	25	0	163	0	25	0	25	60	0	60	4	0	4	0	89	2
17:00	55	1	56	76	1	77	20	0	20	2	155	0	22	0	22	52	1	53	5	0	5	0	80	1
17:15	57	1	58	66	5	71	27	0	27	1	157	0	30	0	30	55	0	55	0	0	0	0	85	0
17:30	56	2	58	71	2	73	14	0	14	0	145	0	26	1	27	52	6	58	2	0	2	0	87	0
17:45	61	0	61	66	0	66	34	1	35	1	163	0	18	0	18	43	0	43	5	0	5	0	66	0
TOTAL	421	6	427	556	16	572	233	3	236	6	1241	1	216	4	220	434	10	444	21	0	21	0	685	6
PM Peak	223	2	225	295	9	304	116	0	116	3	648	0	109	2	111	216	3	219	10	0	10	0	340	3

ANNEXURE I **Level and Location Plan (3 Sheets) Drawing No. 18361D – B & P Surveys, 15 July 2010**

Revision	Chk'd

Client

TWIN TOWNS SERVICES CLUB

Important Notes:

LEVEL AND DETAIL INFORMATION WAS TAKEN FROM B&P DRAWING 12247B-A AND IS SUBJECT TO THE CONDITIONS LISTED ON THIS PLAN.

PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE RELEVANT AUTHORITIES SHOULD BE CONTACTED FOR POSSIBLE LOCATION OF FURTHER UNDERGROUND SERVICES AND DETAILED LOCATION OF ALL SERVICES.

THE TITLE BOUNDARIES AS SHOWN HEREON HAVE BEEN COMPILED AND ARE TO PLOTTING ACCURACY ONLY.

IMAGES HAVE BEEN SOURCED FROM GOOGLE EARTH 15/07/10

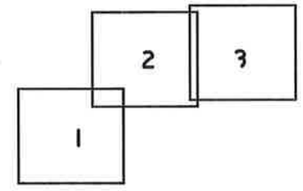
THIS NOTE IS AN INTEGRAL PART OF THIS PLAN.

IMPORTANT NOTE:

www.dialbeforeyoudig.com.au DIAL 1100 BEFORE YOU DIG

ALL UNDERGROUND SERVICES SHOULD BE LOCATED ONSITE BY RELEVANT AUTHORITIES BEFORE ANY WORK IS COMMENCED.

SHEET DIAGRAM



LEVEL & LOCATION PLAN

"CLUB BANORA"
PART LOT 2 IN DP1040576
LEISURE DRIVE – BANORA POINT

Parish of TERRANORA County of ROUS

B & P SURVEYS
CONSULTING SURVEYORS
A.B.N. 55 010117236
30 Beryl Street
Tweed Heads,NSW,2485,Australia
Telephone: (07) 5536 3611
Fax: (07) 5536 3701
Email: tweed@bpsurveys.com.au
Webpage: www.bpsurveys.com.au
Offices Also At :
Surfers Paradise Ph.(07)55390499
Murwillumbah Ph.(02)66721924
A QUALITY ASSURED COMPANY

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Scale	Level Datum	Drawn	Chk'd	F.Bk	L.Bk
1 : 1000	–	NEB		–	–
REF. No.	Date	Drawing No./Size		Sheet	of
T14208	15.07.2010	18361 D		1	3

Revision	Chk'd

Client

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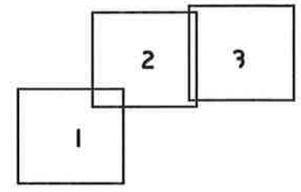

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Scale	Level Datum	Drawn	Chk'd	F.Bk	L.Bk
1 : 1000	–	NEB		–	–
REF. No.	Date	Drawing No./Size		Sheet	of
T14208	15.07.2010	18361 D		2	3

Revision	Chk'd

Client

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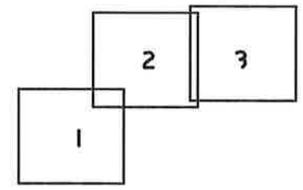

LEVEL & LOCATION PLAN

"CLUB BANORA"
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REF. No.	Date	Drawing No./Size		Sheet	of
T14208	15.07.2010	18361 D		3	3