

**PROPOSED RESIDENTIAL
APARTMENT DEVELOPMENT
132 – 138 KILLEATON STREET, ST IVES**

***Assessment of Traffic and
Parking Implications***

August 2010

Reference 10121

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1. INTRODUCTION

This report has been prepared to accompany a Part 3A Major Project Application for the staged development of a new residential apartment complex at 132 – 138 Killeaton Street in St Ives (Figure 1).

The development site (former Passionist Monastery) lies just to the east of the St Ives Retail Centre within a largely residential area which is subject to redevelopment for new residential apartment buildings. The proposed development scheme comprises 298 apartments and the Director General's Requirements contain the following key issues to be addressed in the Environmental Assessment relevant to transport and traffic:

*** Relevant EPI's Policies and Guidelines to be Addressed**

Planning provisions applying to the site, including permissibility and the provisions of all plans and policies.

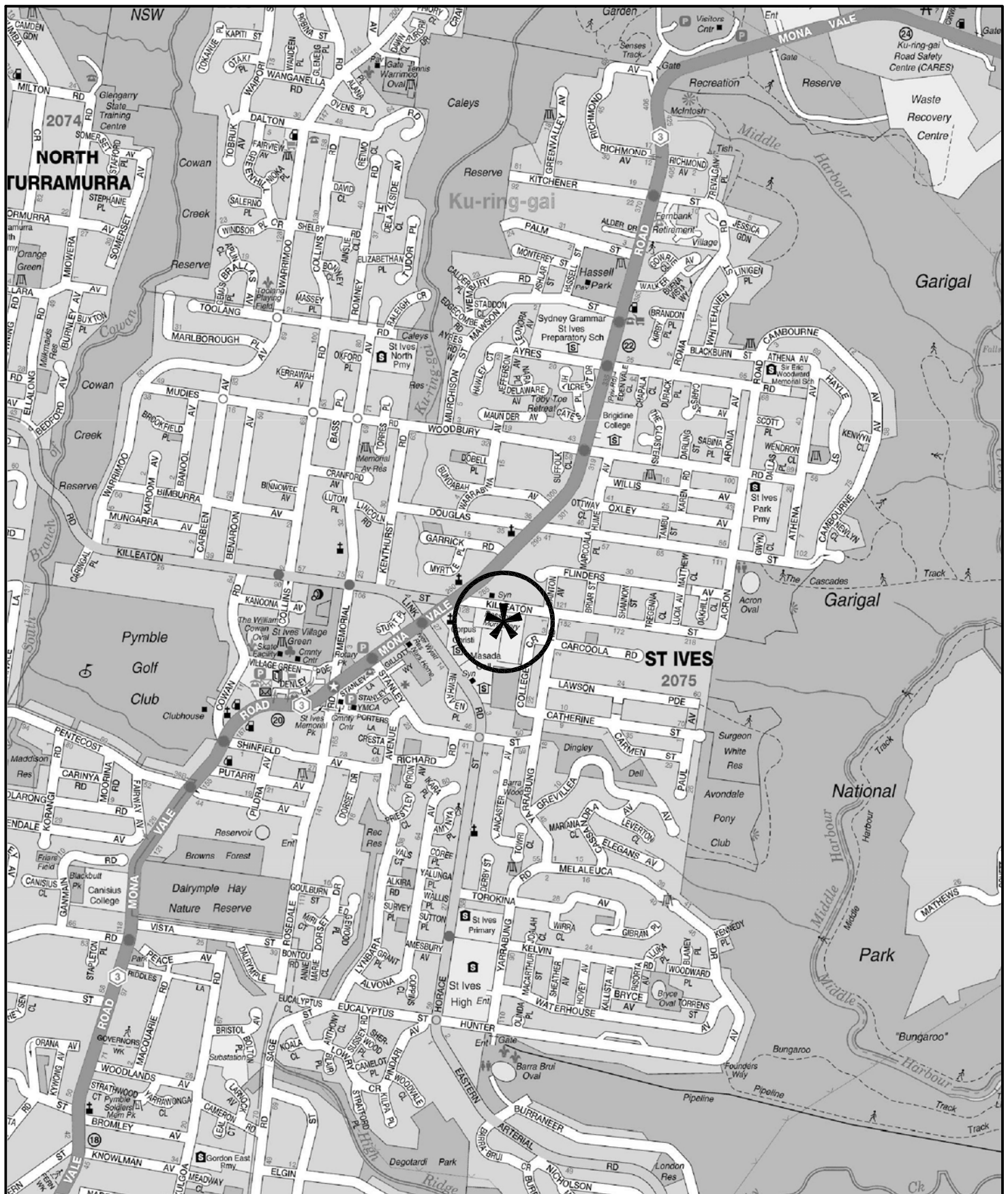
*** Transport and Accessibility (Construction and Operational)**

- *provide a Traffic and Accessibility Impact study prepared in accordance with the RTA's Guide to Traffic Generating Developments and Australian Standards, considering traffic generation including trip generation, any required road/intersection upgrades (refer to RTA letter dated 6 May 2010 for key intersections to be modelled), access, loading(s), carparking arrangements, measures to promote public transport usage and pedestrian and bicycle linkages*
- *provide an assessment of the implications of the proposed development for non-car travel modes (including public transport, walking and cycling)*
- *identify measures to mitigate potential impacts for pedestrians and cyclists during the construction stage of the project*
- *demonstrate the provision of sufficient on-site carparking for the proposal having regard to local planning controls and the RTA guidelines (NOTE: the*

Department supports reduced carparking rates in areas well served by public transport).

The purpose of this report is to:

- * describe the site and the proposed development scheme
- * describe the road network serving the site and the prevailing traffic conditions
- * assess the adequacy of the proposed parking provision
- * assess the potential traffic implications
- * assess the suitability of the proposed vehicle access, internal circulation and servicing arrangements
- * review the relevant EPI's, Policies and Guidelines and respond to the issues raised in the RTA's letter of 6th May 2010 (Appendix A).



LEGEND



LOCATION

FIG 1

2. PROPOSED DEVELOPMENT SCHEME

2.1 SITE, CONTEXT AND FORMER USE

The subject development site is located just to the south of Mona Vale Road and close to the St Ives retail and commercial centre. The site, which the former Passionist Monastery occupied, is an area of 22,970m² with a frontage of some 145.5 metres to the southern side of Killeaton Street.

The existing Monastery building remains on the site while other landuses in the vicinity of the property comprise:

- * the large Masada College site which adjoins to the west
- * the residential dwellings which adjoin to the east
- * the surrounding residential areas which include elements of new high density residential apartments.

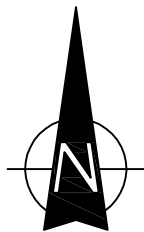
2.2 PROPOSED DEVELOPMENT

It is proposed to clear and partially excavate the site retaining the Monastery building and the mature perimeter trees. The proposed staged development comprises 5 buildings elements with basement carparking. The development with a total of 298 apartments will comprise:

Buildings	Stage 1 D, E	Stage 2 A, B, C	Total
Studio apartment	1	2	3
One-bedroom apartment	7	20	27
Two-bedroom apartment	117	118	235
Three-bedroom apartment	20	13	33



LEGEND

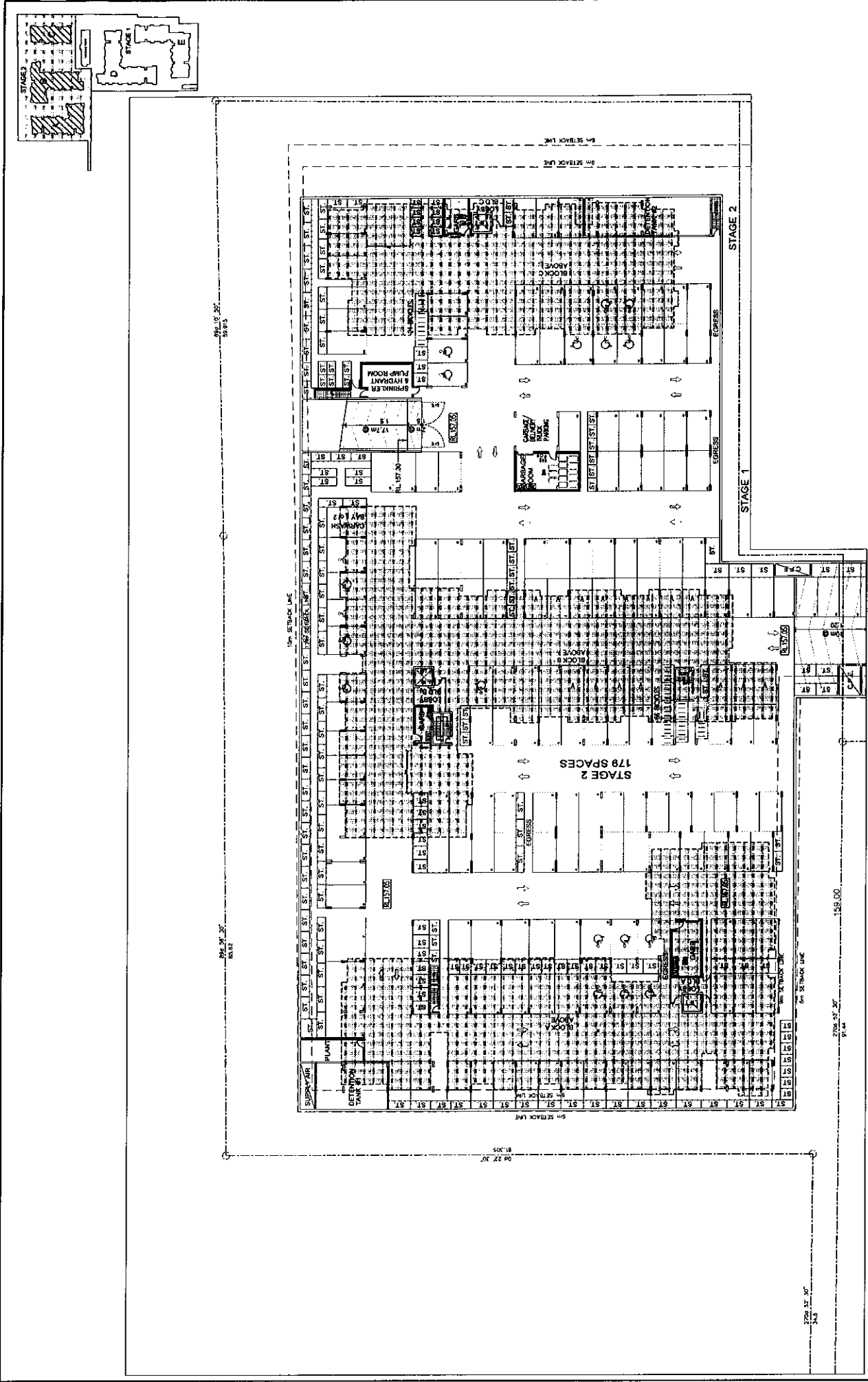


SITE

FIG 2

A total of 367 parking spaces will be provided within basement levels with vehicle access provided within the eastern part of the Killeaton Street frontage.

Full details of the proposed development scheme are provided on the architectural plans prepared by Meriton Apartments, which accompany the Development Application and are reproduced in part overleaf.



CARPARK STAGE-2
SCALE 1:500

PROJECT TITLE		PROPOSED RESIDENTIAL DEVELOPMENT		CARPARK STAGE-2		DA-16		A	
PROJECT NO.		12-108 ALLIANCE STREET		STAGE 2, LOT 20		12-108 ALLIANCE STREET		12-108 ALLIANCE STREET	
DRAWN BY		M. J. JONES		M. J. JONES		M. J. JONES		M. J. JONES	
CHECKED BY		M. J. JONES		M. J. JONES		M. J. JONES		M. J. JONES	
DATE		12/10/2018		12/10/2018		12/10/2018		12/10/2018	
SCALE		1:500		1:500		1:500		1:500	
PROJECT NO.		12-108 ALLIANCE STREET		STAGE 2, LOT 20		12-108 ALLIANCE STREET		12-108 ALLIANCE STREET	
DRAWN BY		M. J. JONES		M. J. JONES		M. J. JONES		M. J. JONES	
CHECKED BY		M. J. JONES		M. J. JONES		M. J. JONES		M. J. JONES	
DATE		12/10/2018		12/10/2018		12/10/2018		12/10/2018	
SCALE		1:500		1:500		1:500		1:500	
PROJECT NO.		12-108 ALLIANCE STREET		STAGE 2, LOT 20		12-108 ALLIANCE STREET		12-108 ALLIANCE STREET	
DRAWN BY		M. J. JONES		M. J. JONES		M. J. JONES		M. J. JONES	
CHECKED BY		M. J. JONES		M. J. JONES		M. J. JONES		M. J. JONES	
DATE		12/10/2018		12/10/2018		12/10/2018		12/10/2018	
SCALE		1:500		1:500		1:500		1:500	

3. ROAD NETWORK AND TRAFFIC CONDITIONS

3.1 ROAD NETWORK

The road network serving the site (Figure 3) comprises:

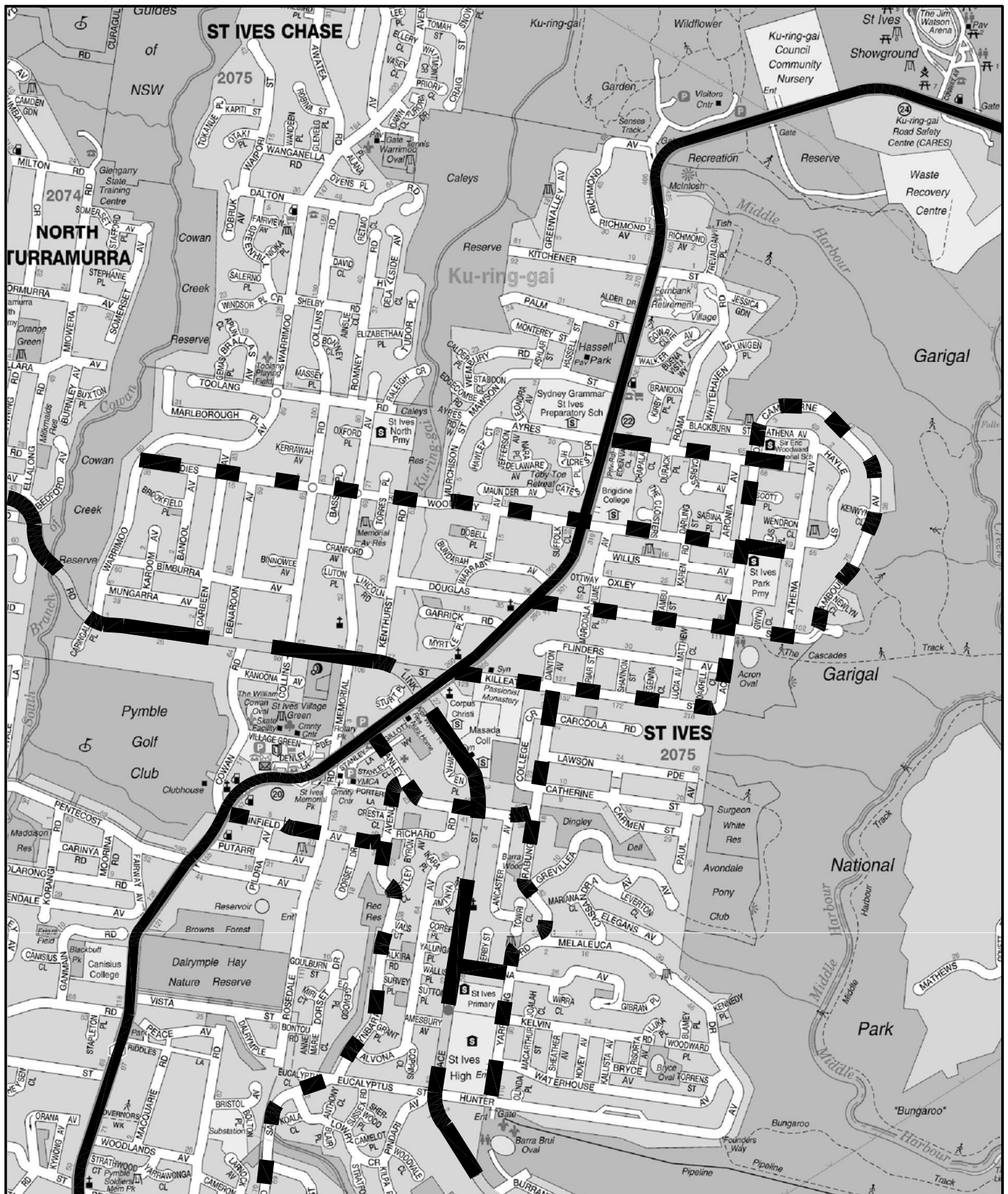
- * *Mona Vale Road* – a State Road and arterial route providing a major link between Pacific Highway and the Northern Beaches Peninsula
- * *Killeaton Road-Link Road-Horace Street* – a State Road and part of a north/south sub-arterial route between Willoughby and Hornsby.
- * *Rosedale Road-Memorial Avenue* – a local collector road connecting across Mona Vale Road.

Rosedale Road, in the vicinity of the site, is straight and relatively level with a 12 metre wide roadway.

3.2 TRAFFIC CONTROLS

The traffic controls on the road network serving the site (Figure 4) comprise:

- * the traffic control signals at the intersections of:
 - Mona Vale Road and Link Road
 - Mona Vale Road and Stanley Street
 - Mona Vale Road and Rosedale Road
- * the roundabout at the Link Road/Stanley Street intersection
- * the 60 kmph speed restriction on Mona Vale Road
- * the 50 kmph restriction on the local roads (including Rosedale Road)



LEGEND

- ARTERIAL
- SUB-ARTERIAL
- COLLECTOR

ROAD NETWORK

FIG 3

- * the right-turn movement prohibitions at the Mona Vale Road and Killeaton Street intersection and the marked footcrossing across Killeaton Street
- * the NO STOPPING restrictions along Mona Vale Road and Link Road.

Details of relevant intersection arrangements are provided in Appendix B.

3.3 TRAFFIC CONDITIONS

An indication of the prevailing traffic conditions in the area is provided by data published by the RTA and surveys undertaken for this study. The RTA data is expressed in terms of Annual Average Daily Traffic (AADT) and the latest recorded volumes in the vicinity of the site are:

	AADT
Mona Vale Road east of Woodlands Avenue	48,819
Killeaton Road west of Warrimoo Avenue	27,374
Rosedale Road (based on intersection data)	2,000

Surveys have been undertaken during the morning and afternoon peak traffic periods of intersections in the vicinity of the site. The results of those surveys are summarised in the following:

		AM	PM
Mona Vale Road	Northbound	1313	1427
	Right-turn	100	81
	Left-turn	20	23
	Southbound	1645	1488
	Right-turn	83	107
	Left-turn	276	49
Link Road	Eastbound	892	316
	Right-turn	32	71
	Left-turn	-	-
	Westbound	532	632
	Right-turn	168	231
	Left-turn	56	49

		AM	PM
Mona Vale Road	Northbound	1408	1492
	Right-turn	131	172
	Southbound	1684	1535
	Left-turn	49	73
Stanley Street	Right-turn	25	39
	Left-turn	40	81
Link Road	Northbound	348	912
	Right-turn	31	68
	Left-turn	89	175
	Southbound	996	405
	Right-turn	33	13
	Left-turn	45	81
Stanley Street	Eastbound	25	81
	Right-turn	243	143
	Left-turn	29	25
	Westbound	49	53
	Right-turn	56	30
	Left-turn	169	37
Killeaton Street	Eastbound	-	20
	Right-turn	28	37
	Westbound	20	13
	Left-turn	112	38
Yarrabung Road	Right-turn	81	27
	Left-turn	118	156

Rosedale Road provides access to the residential area to the south-east of Mona Vale Road together with Pentecost Avenue and Shinfield Avenue, which provide flexible access to/from the arterial road network.

3.4 TRANSPORT SERVICES

Public transport in the vicinity of the site is provided by the bus routes operated by Forest Coach Line and Shorelink (Appendix D), which connect to Pymble and Gordon Railway Stations respectively including:

		Peak Frequency
Route 194	City – St Ives	30 minutes
Route 196	Mona Vale – Gordon	30 minutes
Route 197	Mona Vale – Macquarie	15 minutes
Route 594	City – Hornsby	30 minutes

4. PARKING

Council's carparking criteria relevant to the proposed development is specified in DCP (Town Centres) 2010 as follows:

	Minimum	Maximum
Studio	0	0.5 spaces
One-bedroom	0.7 spaces	1.0 space
Two-bedroom	1.0 space	1.25 spaces
Three-bedroom	1.0 space	2.0 spaces
Visitors	1 space per 4 apartments	

Application of this criteria to the development scheme indicates the following provision:

	Minimum	Maximum
3 x studio apartments	0 spaces	2 spaces
27 x one-bedroom apartment	19 spaces	27 spaces
235 x two-bedroom apartments	235 spaces	294 spaces
33 x three-bedroom apartments	33 spaces	66 spaces
Visitors	120 spaces	120 spaces
Total	407 spaces	509 spaces

The DCP criteria for visitor parking provision is a very robust criteria which has not been established on any survey/assessment basis. What is more, this criteria would not appear to be consistent with contemporary government strategies to constrain reliance on private motor vehicle travel, particularly where there are public transport services available.

The RTA in establishing their parking criteria for 'high density residential apartment' development undertook extensive survey and assessment of numerous existing developments including sites which are distance from railway station s(eg Sans

Souci). The RTA Development Guideline criteria for residential visitor parking in sub-regional centres is outlined on Page 5-5 of the document as follows:

“The recommended number of off-street visitor parking spaces is one space for every 5 to 7 apartments. Councils may wish to reduce this requirement for buildings located in close proximity to public transport or where short term apartment leasing is expected”.

It is also apparent that with larger apartment developments there is a significant ‘pool’ of visitor parking spaces which are seldom used and that this presents a circumstance of:

- * unnecessary construction cost
- * misuse by residents (ie circumventing the objective of restrained resident parking provision).

The site has a very significant road frontage of some 146 metres which could accommodate some 22 visitor’s cars on the infrequent occasions when there maybe a ‘super peak’ of visitation (eg Christmas).

It is proposed to provide a total of 367 parking spaces including 31 visitor parking spaces, which will be located in the vicinity of the lift lobby.

The DCP also specifies a requirement for bicycle parking of:

- * 1 space per 5 units for residents within the residential parking area
- * 1 space per 10 units for visitors in the form of a bicycle rail in the visitor parking area.

It is proposed to provide 60 bicycle spaces for residents and 30 bicycle spaces for visitors in compliance with the DCP requirements.

5. TRAFFIC

The Roads and Traffic Authority development guidelines¹ specify a peak hour traffic generation rate for medium density residential development (ie less than 5 stories) in the range of 0.4 – 0.5 vtpd for two-bedroom apartments and 0.50 – 0.65 vtpd for three-bedroom apartments.

During the morning and afternoon peak periods and the proposed development will potentially involve a projected generation as follows:

265 x studio, one and two-bedroom	106 – 132 vtpd (say 120)
33 x three-bedroom	17 – 22 vtpd (say 20)
Total	123 – 154 vtpd (say 140)

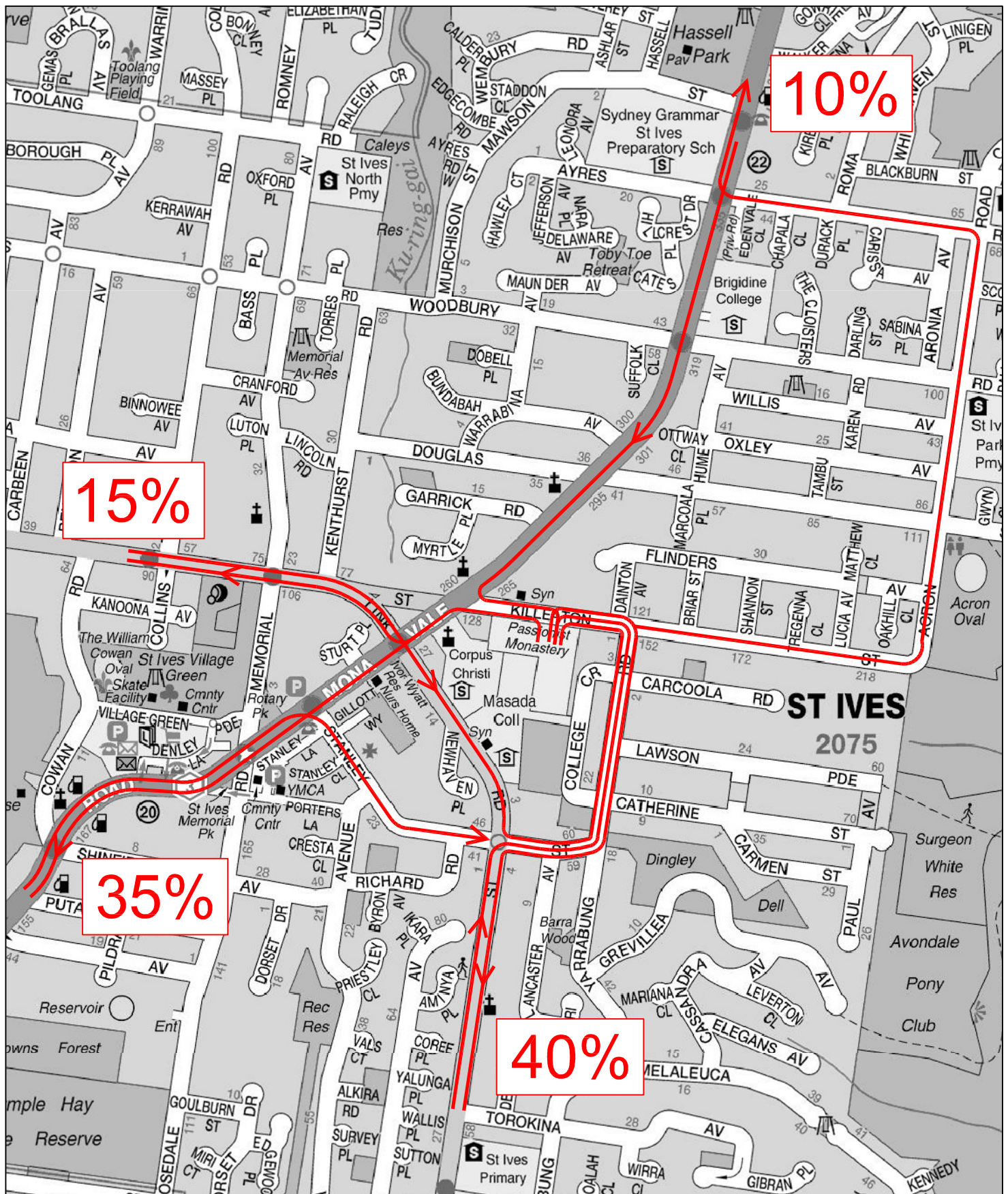
The projected distribution of the generated traffic movements (Figure 5) are as follows:

* Horace Street (south)	40%
* Mona Vale Road (south-west)	35%
* Link Road (west)	15%
* Mona Vale Road (north)	10%

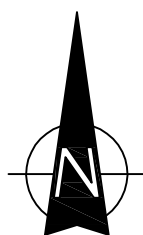
The resultant additional traffic movements would be as follows:

	AM		PM	
	IN	OUT	IN	OUT
Horace Street (south)	6	50	50	6
Mona Vale Road (south-west)	4	45	45	4
Link Road	2	19	19	2
Mona Vale Road (north)	1	13	13	1

¹ Guide to Traffic Generating Development
Section 3 Landuse Traffic Generation
Roads and Traffic Authority



LEGEND



TRAFFIC
DISTRIBUTION

FIG 5

The detail individual movement distributions have been added to the established existing intersection volumes and SIDRA assessments undertaken for 3 relevant intersections (the RTA letter specifies Mona Vale road and Killeaton Street, however due to the right-turn restrictions at this intersection there will only be left-turn IN/OUT movements and the egress movement will be facilitated by gaps introduced by the traffic signals at intersection to the north).

The results of the SIDRA assessment are provided in Appendix C and summarised in the following indicating a satisfactory operational performance outcome:

	AM			PM		
	LOS	DS	AVD	LOS	DS	AVD
Mona Vale/Link	C	0.928	41.9	C	0.851	35.0
Mona Vale/Stanley	B	0.775	18.6	B	0.884	24.5
Link/Stanley	A	0.515	8.8	A	0.467	8.1

The traffic signal controls at the intersections of Mona Vale Road with Link Road and Stanley Street provides flexible and direct access to the arterial road network, serving the northern beaches, Hornsby via Killeaton Street and the City/North Sydney via Mona Vale Road and the Pacific Highway. The alternative route to the east of the site is also available in order to access Chatswood and the Warringah area.

It is apparent that the existing road network surrounding the development site is operating within capacity and in the context of the arterial road network, it is evident that the low level of traffic associated with the proposed development will not cause any detrimental impact.

6. ACCESS, INTERNAL CIRCULATION AND SERVICING

Access

The proposed vehicle access arrangement for the development will involve a 6.0 metre wide driveway located centrally within the Rosedale Road frontage and will be located where suitable sight distances are available. The driveway will narrow to a single lane into the site although passing opportunities will be provided across the property boundary and in the basement ramp (as provided for in AS 2890.1.).

Internal Circulation

The ramps and access aisles provided in the basement car parks will comply with the requirements of AS2890.1. Adequate provision will be available for cars to manoeuvre into and out of the parking bays, which also comply with Council's the criteria specified in the LEP.

Servicing

Provision is made for Council's small refuse collection vehicle to access both of the basements as illustrated on the swept path diagram provided in Appendix E. The height clearance requirements for this vehicle (2.6 metres) will also be satisfied. Small service vehicles (tradesmen, couriers etc) will be able to utilise a dedicated service vehicle parking space provided in both basements.

7. RELEVANT EPI'S, POLICIES/GUIDELINES AND RTA ISSUES

This section of the report addresses relevant environmental planning instruments, policies and guidelines and Authority issues in accordance with the DGR's. Further assessment is provided in Appendix F responding to the Department of Planning letter of 4th August 2010.

We understand that the Minister for Planning is not bound by the provision of an environmental planning instrument, other than a State Environmental Planning Policy in determining an application for a major project (Section 75R(3)). In the giving of approval for a Concept Plan the Minister may take into account (but is not required to) the provisions of any environmental planning instrument that would apply but for the application of Section 75R.

*** Metropolitan Transport Plan 2010 (February 2010)**

Planning Objectives	Strategies	Compliance
- Effectively link Sydney's landuse planning with its transport network	- Provide 70% of new housing in established areas	✓
- Create a working, connected sustainable City	- Diversity with a variety of renewed neighbourhoods	✓
- Improve quality of life boost the economy and help face future challenges	- Ample transport connections	✓
- Integrate with the Metropolitan Strategy providing an effective framework for housing and employment growth and development in Metropolitan Sydney	- Contain congestion	✓
	- Concentrate development and supporting transport services in centres	✓
	- Make better use of existing infrastructure	

*** Integrating Landuse and Transport Policy Package (August 2001)**

Planning Objectives	Strategies	Compliance
- Reducing the growth of VKT	- Link public transport with landuse	✓
- Improving air quality and reducing green house emissions	- Connect streets	✓
- Building more compact cities	- Improve pedestrian access	✓
- Promoting economic development and creating jobs	- Improve cycle access	✓
- Focus on the movement of people and good rather than vehicles	- Manage parking supply	✓
- Focus on maximising accessibility	- Improve road management	✓
	- Good urban design	✓

*** Planning Guidelines for Walking and Cycling (December 2004)**

Planning Objectives	Strategies	Compliance
- The Walking and Cycling City - Accessible centres - Walking and cycling catchments - Regional walking and cycling networks - Mixed use neighbourhoods - Local walking and cycling networks - Security and safety - Parks and open space - Building and site design	- Improve walkability and cycleability across the City	✓
	- Emphasise urban redevelopment and renewal over urban expansion	✓
	- Create accessible centres by increasing density and landuse mix	✓
	- Ensure walking and cycling and use of public transport is more direct and convenient than use of cars	✓
	- Create quality public spaces	✓
	- Integrate local walking and cycling networks into neighbourhood scale designs	✓
	- Encourage active uses at street level	✓
	- Minimise the number of driveways crossing footpaths	✓
	- Design intersections to be visibly and physically tight to slow traffic and reduce pedestrian crossing distances	✓

Roads and Traffic Authority (letter of 6.5.10)

• Compliance with Government Strategies

The Concept Plan is compliant with government strategies as detailed in the foregoing. In particular by co-locating urban development with existing transport services and encouraging walking, cycling and use of public transport.

- Traffic Impact and Need for Road Improvements

The projected traffic generation of development has been assessed in relation to the existing circumstances at the access intersections. It is apparent from this assessment that there is no need for accommodating road upgrade works on the external access road system.

- Design Compliance of Accesses and Parking to Relevant Australian Standards

The design of access and parking elements will be compliant with the relevant standards.

- Quantum of Carparking

The proposed carparking provision will be compliant with the requirement of sustainable development which minimises reliance on private motor vehicle travel and generally compliant with appropriate codes.

- Details of Service Vehicle Movements

It is apparent that service vehicle movements will be quite minor and largely limited to refuse removal and occasional deliveries (furniture etc). Any requirement for Travel Plans or the like would be subject to Consent Conditions.

- Traffic Management Plan for Construction

This would be the subject of a Consent Condition.

- Ku-Ring-Gai DCP 2010 (Town Centres)

The proposed carpark and access design will be compliant with the DCP criteria as will the parking provision for residents. However, the quantum of parking for visitors will be less than that specified in the DCP for the reasons stated in Section 4.

8. CONCLUSION

The traffic and parking assessment undertaken for the proposed residential apartment development at 132 – 138 Killeaton Street, St Ives has concluded that:

- * the traffic generation of the proposed development will not present any adverse traffic implications, particularly due to the diverse approach and departure routes
- * the proposed parking provision will be adequate of the proposed development and will ensure that generally no overflow parking will occur within the surrounding road network
- * the proposed access, internal circulation and parking arrangements will be appropriate and designed in accordance with AS2890.1.

Appendix A

RTA LETTER

Your Reference:	MP 10_0057
Our Reference:	RDC 10M684 SYD10/00311
Contact:	Dianne Rees
Telephone	8849 2237



The Director
Metropolitan Projects
Department of Planning
GPO Box 39
SYDNEY NSW 2001

Attention: Kim Shaw

**PROPOSED RESIDENTIAL DEVELOPMENT AT 132-138 KILLEATON STREET, ST IVES
CONCEPT PLAN AND STATE SIGNIFICANT SITE LISTING – DIRECTOR GENERAL'S
REQUIREMENTS, MP 10_0057**

Dear Sir/Madam

I refer to your letter dated 22 April 2010 (Ref: MP 10_0057; File: 10/08342-1) requesting the Roads and Traffic Authority (RTA) to provide details of key issues and assessment requirements regarding the abovementioned development for inclusion in the Director General's Environmental Assessment (EA) requirements.

The RTA would like the following issues to be included in the transport and traffic impact assessment of the proposed development:

1. It is important that the development of the residential development takes into consideration, and contributes to the achievement of, transport objectives contained in this and other high-level NSW Government strategies.

These strategies include the NSW State Plan and Draft North Subregional Strategy. These policies share the aims of increasing the use of walking, cycling and public transport; appropriately co-locating new urban development with existing and improved transport services; and improving the efficiency of the road network.

By addressing both the supply of transport services and measures to manage demand for car use, the EA report should demonstrate how users of the residential development will be able to make travel choices that support the achievement of relevant State Plan targets.

2. Daily and peak traffic movements likely to be generated by the proposed development including the impact on nearby intersections and the need/associated funding for upgrading or road improvement works (if required).

The key intersections to be examined / modelled include but not be limited to:

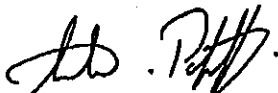
- Killeaton Street and Mona Vale Road
- Mona Vale Road and Link Road.
- Mona Vale Road and Stanley Street.

Roads and Traffic Authority

- Any other local intersections that may be affected by the proposed development.
3. Details of the proposed accesses and the parking provisions associated with the proposed development including compliance with the requirements of the relevant Australian Standards (ie: turn paths, sight distance requirements, aisle widths, etc).
 4. Proposed number of car parking spaces and compliance with the appropriate parking codes.
 5. Details of service vehicle movements (including vehicle type and likely arrival and departure times).
 6. The RTA requires the EA report to assess the implications of the proposed development for non-car travel modes (including public transport use, walking and cycling); the potential for implementing a location-specific sustainable travel plan (eg 'Travelsmart' or other travel behaviour change initiative); and the provision of facilities to increase the non-car mode share for travel to and from the site. This will entail an assessment of the accessibility of the development site by public transport.
 7. The RTA will require in due course the provision of a traffic management plan for all demolition/construction activities, detailing vehicle routes, number of trucks, hours of operation, access arrangements and traffic control measures.

Further enquiries on this matter can be directed to Dianne Rees on phone 8849 2237 or facsimile (02) 8849 2918.

Yours sincerely



Andrew Popoff
A/Senior Land Use Planner
Transport Planning, Sydney Region

6 May 2010

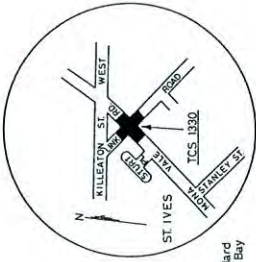
Appendix B

INTERSECTION DETAILS

0162.238.V.V.

1830.

Date in Service 23.10.78



LOCALITY SKETCH
NOT TO SCALE

SIGNAL GROUP/PHASE CHART

Signal Group	A	B	C	D	D1	D2	E	F1	F2	G	G1	G2	Overlap Duration of
V1	X	X	X	X									Running
V2	X	X	X	X									Running
V3	X	X	X	X									Running
V4	X	X	X	X									Running
V5	X	X	X	X									Running
V6	X	X	X	X									Running
V7	X	X	X	X									Running
V8	X	X	X	X									Running
V9	X	X	X	X									Running
V10	X	X	X	X									Running
V11	X	X	X	X									Running
V12	X	X	X	X									Running
P1	X	X	X	X									Running
P2	X	X	X	X									Running
P3	X	X	X	X									Running
P4	X	X	X	X									Running

POST CHART

POST TYPE	REMARKS
1	EXISTING
2	EXISTING
3	EXISTING
4	EXISTING
5	EXISTING
6	EXISTING
7	EXISTING
8	EXISTING
9	EXISTING
10	EXISTING
11	EXISTING
12	EXISTING

NOTES:

- This site is a SCATS (Tined).
- Special STOP signs (R1-41) are placed on posts 4.5, 10 & 11.
- For details of the Automatic Network Travel Time System (ANTS) installed on this site refer to plan No. V4242-13. The ANTS antenna is mounted on post 1.

DETECTOR SPECIFICATION

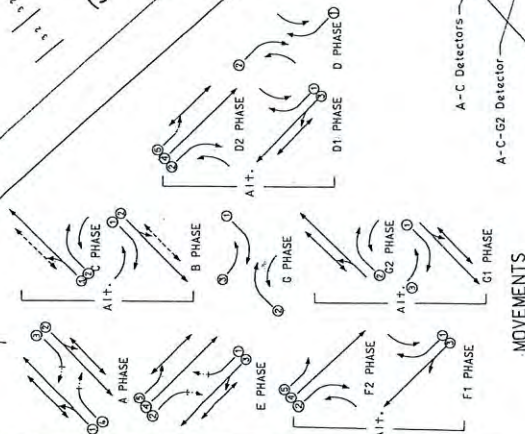
Detector	FN	G1(FR)	E1(ES)	G1(E3)	D2(E5)	F2(E5)
D2-E-F2-1 Detector	SC/PS	V12	E	G	D2	F2
D2-E-F2-2 Detector	DS	B, D2, E, F2	REDI NEXT	REDI NEXT	REDI NEXT	REDI NEXT

D2-E-F2-1 Detector

D2-E-F2-2 Detector

D2-E-F2-2 Detector

Controller



Additional arrows at standard spacings to end of Turning Bay

Additional arrows at standard spacings to end of Turning Bay
Phasing 1st - Standard Double Diamond Overlap.
(Refer V.D. 018-6)
Standard For Single Diamond Overlap With Filter.
(Refer V.D. 018-14)

DESIGN LAYOUT

APPROVED
DATE: 17.12.78
SUPERVISING ENGINEER
DATE: 17.12.78

DEPT OF MAIN ROADS, NSW
MUNICIPALITY OF KURING-GAI
M.R. 162 MONA VALE ROAD
& S.R. 2043 LINK ROAD
ST IVES

DEPT OF MAIN ROADS, NSW
MUNICIPALITY OF KURING-GAI
M.R. 162 MONA VALE ROAD
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ST IVES

DEPT OF MAIN ROADS, NSW
MUNICIPALITY OF KURING-GAI
M.R. 162 MONA VALE ROAD
& S.R. 2043 LINK ROAD
ST IVES



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Appendix C

SIDRA RESULTS

MOVEMENT SUMMARY

Site: Mona Vale and Link PD AM
Peak

Mona Vale Road and Link Road
Post Development AM Peak

Signals - Fixed Time Cycle Time = 140 seconds

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	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Link Road South											
1	L	21	2.0	0.705	34.4	LOS C	35.4	252.3	0.81	0.94	32.4
2	T	1382	2.0	0.699	26.4	LOS B	35.7	254.2	0.81	0.74	33.2
3	R	105	2.0	0.729	45.9	LOS D	6.3	44.8	1.00	0.86	26.6
Approach		1508	2.0	0.729	27.9	LOS B	35.7	254.2	0.83	0.75	32.6
East: Mona Vale Road East											
4	L	59	2.0	0.554	62.9	LOS E	14.3	102.0	0.95	0.84	22.6
5	T	560	2.0	0.553	55.1	LOS D	14.3	102.0	0.96	0.79	22.9
6	R	177	2.0	0.928	71.9	LOS F	13.2	93.9	1.00	1.01	20.2
Approach		796	2.0	0.928	59.4	LOS E	14.3	102.0	0.97	0.84	22.2
North: Link Road North											
7	L	291	2.0	0.250	19.9	LOS B	10.1	71.8	0.46	0.76	38.8
8	T	1779	2.0	0.886	37.9	LOS C	58.0	413.1	0.97	0.94	28.1
9	R	107	2.0	0.584	32.4	LOS C	4.7	33.4	0.88	0.79	31.8
Approach		2177	2.0	0.886	35.2	LOS C	58.0	413.1	0.90	0.91	29.3
West: Mona Vale Road West											
10	L	1	2.0	0.756	68.3	LOS E	20.2	144.2	0.99	0.90	21.7
11	T	941	2.0	0.875	64.8	LOS E	24.0	170.5	1.00	0.94	20.8
12	R	34	2.0	0.140	47.9	LOS D	2.4	16.8	0.82	0.72	26.0
Approach		976	2.0	0.875	64.2	LOS E	24.0	170.5	0.99	0.93	21.0
All Vehicles		5457	2.0	0.928	41.9	LOS C	58.0	413.1	0.90	0.86	26.9

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).
Level of Service (Worst Movement): LOS F. LOS Method for individual vehicle movements: Delay (RTA NSW).
Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	11	44.8	LOS E	0.0	0.0	0.80	0.80
P3	Across E approach	11	15.6	LOS B	0.0	0.0	0.47	0.47
P5	Across N approach	11	44.8	LOS E	0.0	0.0	0.80	0.80
P7	Across W approach	11	15.6	LOS B	0.0	0.0	0.47	0.47
All Pedestrians		44	30.2				0.64	0.64

Level of Service (Aver. Int. Delay): LOS D. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS E. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: Mona Vale and Link PD PM
Peak

Mona Vale Road and Link Road
Post Development PM Peak

Signals - Fixed Time Cycle Time = 110 seconds

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	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Link Road South											
1	L	24	2.0	0.823	36.3	LOS C	36.6	260.8	0.92	0.95	31.7
2	T	1502	2.0	0.823	28.3	LOS B	36.8	262.0	0.93	0.87	32.1
3	R	85	2.0	0.446	31.8	LOS C	3.4	24.2	0.93	0.78	32.1
Approach		1612	2.0	0.823	28.6	LOS C	36.8	262.0	0.93	0.87	32.1
East: Mona Vale Road East											
4	L	52	2.0	0.679	54.2	LOS D	13.9	98.9	0.98	0.85	25.0
5	T	665	2.0	0.679	46.4	LOS D	13.9	98.9	0.99	0.84	25.2
6	R	243	2.0	0.851	58.9	LOS E	13.8	98.6	1.00	1.06	23.0
Approach		960	2.0	0.851	50.0	LOS D	13.9	98.9	0.99	0.90	24.6
North: Link Road North											
7	L	52	2.0	0.047	17.8	LOS B	1.7	12.0	0.43	0.72	40.3
8	T	1571	2.0	0.847	31.1	LOS C	39.8	283.3	0.95	0.91	30.8
9	R	115	2.0	0.602	32.3	LOS C	4.6	33.1	0.96	0.81	31.8
Approach		1737	2.0	0.847	30.8	LOS C	39.8	283.3	0.93	0.90	31.1
West: Mona Vale Road West											
10	L	5	2.0	0.317	50.1	LOS D	6.8	48.5	0.90	0.82	26.4
11	T	353	2.0	0.352	42.7	LOS D	7.5	53.6	0.91	0.73	26.5
12	R	75	2.0	0.354	42.5	LOS D	4.4	31.3	0.95	0.76	27.7
Approach		433	2.0	0.354	42.7	LOS D	7.5	53.6	0.92	0.74	26.7
All Vehicles		4741	2.0	0.851	35.0	LOS C	39.8	283.3	0.94	0.87	29.4

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).
Level of Service (Worst Movement): LOS E. LOS Method for individual vehicle movements: Delay (RTA NSW).
Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	11	36.0	LOS D	0.0	0.0	0.81	0.81
P3	Across E approach	11	14.3	LOS B	0.0	0.0	0.51	0.51
P5	Across N approach	11	36.0	LOS D	0.0	0.0	0.81	0.81
P7	Across W approach	11	14.3	LOS B	0.0	0.0	0.51	0.51
All Pedestrians		44	25.1				0.66	0.66

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS D. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: Mona Vale and Stanley PD
AM Peak

Mona Vale Road and Stanley Street
Post Development AM Peak
Signals - Fixed Time Cycle Time = 80 seconds

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	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Stanley Street											
1	L	42	0.0	0.052	22.0	LOS B	1.4	10.1	0.60	0.72	37.4
3	R	26	0.0	0.049	30.2	LOS C	1.1	8.0	0.75	0.71	32.8
Approach		68	0.0	0.052	25.1	LOS B	1.4	10.1	0.66	0.72	35.4
East: RoadName											
4	L	52	0.0	0.774	31.5	LOS C	22.9	160.3	0.92	0.94	33.9
5	T	1820	0.0	0.775	23.7	LOS B	23.0	161.0	0.93	0.87	34.4
Approach		1872	0.0	0.775	24.0	LOS B	23.0	161.0	0.93	0.87	34.3
West: RoadName											
11	T	1482	0.0	0.450	11.0	LOS A	12.8	89.7	0.63	0.56	44.0
12	R	142	0.0	0.565	25.0	LOS B	4.1	28.5	0.94	0.80	35.5
Approach		1624	0.0	0.565	12.2	LOS A	12.8	89.7	0.66	0.58	43.1
All Vehicles		3564	0.0	0.775	18.6	LOS B	23.0	161.0	0.80	0.73	37.9

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).
Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (RTA NSW).
Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	13.2	LOS B	0.1	0.1	0.58	0.58
P7	Across W approach	53	19.6	LOS B	0.1	0.1	0.70	0.70
All Pedestrians		106	16.4				0.64	0.64

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).
Level of Service (Worst Movement): LOS B. LOS Method for individual pedestrian movements: Delay (HCM).

Processed: Tuesday, 6 July 2010 5:15:38 PM
SIDRA INTERSECTION 4.0.18.1102
Project: F:\WORK\10\10121 - 132-138 KILLEATON ST, ST IVES\SIDRA\All intersections.sip
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MOVEMENT SUMMARY

Site: Mona Vale and Stanley PD
PM Peak

Mona Vale Road and Stanley Street
Post Development PM Peak
Signals - Fixed Time Cycle Time = 70 seconds

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	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: Stanley Street											
1	L	85	0.0	0.092	18.0	LOS B	2.3	15.9	0.55	0.74	40.1
3	R	41	0.0	0.067	25.5	LOS B	1.5	10.4	0.72	0.72	35.3
Approach		126	0.0	0.092	20.4	LOS B	2.3	15.9	0.60	0.73	38.4
East: RoadName											
4	L	77	0.0	0.884	42.3	LOS C	23.6	165.3	1.00	1.08	29.1
5	T	1620	0.0	0.881	34.3	LOS C	23.6	165.3	1.00	1.08	29.3
Approach		1697	0.0	0.881	34.7	LOS C	23.6	165.3	1.00	1.08	29.3
West: RoadName											
11	T	1571	0.0	0.537	12.9	LOS A	13.8	96.4	0.73	0.65	42.1
12	R	228	0.0	0.838	31.1	LOS C	7.3	51.3	1.00	0.93	32.3
Approach		1799	0.0	0.838	15.2	LOS B	13.8	96.4	0.77	0.68	40.5
All Vehicles		3622	0.0	0.884	24.5	LOS B	23.6	165.3	0.87	0.87	34.3

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Back of Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	15.1	LOS B	0.1	0.1	0.66	0.66
P7	Across W approach	53	15.1	LOS B	0.1	0.1	0.66	0.66
All Pedestrians		106	15.1				0.66	0.66

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual pedestrian movements: Delay (HCM).

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SIDRA INTERSECTION 4.0.18.1102

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MOVEMENT SUMMARY

Site: Link and Stanley PD AM
Peak

Link Road and Stanley Street
Post Development AM Peak
Roundabout

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	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: RoadName											
1	L	94	0.0	0.201	7.6	LOS A	1.3	9.1	0.31	0.62	48.7
2	T	366	0.0	0.201	6.6	LOS A	1.3	9.1	0.32	0.52	49.3
3	R	39	0.0	0.201	11.6	LOS A	1.3	9.0	0.32	0.79	46.1
Approach		499	0.0	0.201	7.2	LOS A	1.3	9.1	0.32	0.56	48.9
East: RoadName											
4	L	125	0.0	0.196	11.1	LOS A	1.2	8.4	0.74	0.90	45.9
5	T	52	0.0	0.196	10.9	LOS A	1.2	8.4	0.74	0.86	45.5
6	R	59	0.0	0.196	16.0	LOS B	1.1	7.8	0.74	0.95	42.6
Approach		236	0.0	0.196	12.3	LOS B	1.2	8.4	0.74	0.90	44.9
North: RoadName											
7	L	49	0.0	0.515	8.8	LOS A	4.0	28.3	0.57	0.74	47.9
8	T	1048	0.0	0.513	7.8	LOS A	4.0	28.3	0.58	0.67	47.8
9	R	35	0.0	0.511	12.8	LOS A	4.0	28.1	0.58	0.85	45.6
Approach		1133	0.0	0.513	8.0	LOS A	4.0	28.3	0.58	0.68	47.7
West: RoadName											
10	L	31	0.0	0.099	10.0	LOS A	0.5	3.3	0.50	0.75	47.2
11	T	31	0.0	0.099	9.0	LOS A	1.3	9.4	0.50	0.68	47.9
12	R	256	0.0	0.241	12.6	LOS A	1.3	9.4	0.48	0.77	44.6
Approach		317	0.0	0.241	12.0	LOS A	1.3	9.4	0.49	0.76	45.1
All Vehicles		2184	0.0	0.515	8.8	LOS A	4.0	28.3	0.52	0.69	47.3

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout Capacity Model: SIDRA Standard.

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SIDRA INTERSECTION 4.0.18.1102

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MOVEMENT SUMMARY

Site: Link and Stanley PD PM
Peak

Link Road and Stanley Street
Post Development PM Peak
Roundabout

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	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South: RoadName											
1	L	184	0.0	0.466	7.6	LOS A	3.9	27.3	0.33	0.61	48.7
2	T	960	0.0	0.467	6.6	LOS A	3.9	27.3	0.33	0.51	49.2
3	R	124	0.0	0.467	11.6	LOS A	3.9	27.1	0.34	0.76	46.0
Approach		1268	0.0	0.467	7.2	LOS A	3.9	27.3	0.33	0.55	48.8
East: RoadName											
4	L	45	0.0	0.071	8.8	LOS A	0.4	2.6	0.50	0.70	47.8
5	T	56	0.0	0.071	7.9	LOS A	0.4	2.6	0.50	0.63	47.8
6	R	32	0.0	0.071	12.9	LOS A	0.4	2.6	0.50	0.81	45.1
Approach		133	0.0	0.071	9.4	LOS A	0.4	2.6	0.50	0.70	47.1
North: RoadName											
7	L	105	0.0	0.263	8.6	LOS A	1.6	11.1	0.49	0.72	48.0
8	T	426	0.0	0.263	7.6	LOS A	1.6	11.1	0.49	0.65	48.2
9	R	14	0.0	0.263	12.6	LOS A	1.6	11.0	0.50	0.87	45.7
Approach		545	0.0	0.263	7.9	LOS A	1.6	11.1	0.49	0.67	48.1
West: RoadName											
10	L	26	0.0	0.196	10.1	LOS A	1.1	7.6	0.64	0.87	47.5
11	T	133	0.0	0.197	9.1	LOS A	1.2	8.1	0.64	0.78	47.3
12	R	151	0.0	0.218	14.7	LOS B	1.2	8.1	0.65	0.90	43.2
Approach		309	0.0	0.218	11.9	LOS B	1.2	8.1	0.65	0.85	45.2
All Vehicles		2256	0.0	0.467	8.1	LOS A	3.9	27.3	0.42	0.63	48.0

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all vehicle movements. LOS Method: Delay (RTA NSW).

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (RTA NSW).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout Capacity Model: SIDRA Standard.

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INTERSECTION

Appendix D

BUS SERVICES



Effective from 12 October 2009



Your Region 12 operator
TRANSDEV
Shorelink Buses

Bus Route Numbers

194 St Ives Chase to City via St Ives and Killara. Services operate Monday to Friday (Operated by Forest Coach Lines).

594 Hornsby/North Turramurra to City via St Ives and Killara. Services operate Monday to Friday.

Additional Services

131500.com.au
Transport Info
Information for people on the move

There are additional services operating in this area. Please call 131 500 or visit transport info on www.131500.com.au for details.

This Service is Operated by

TRANSDEV
Shorelink Buses

PO Box 138 Mt Kuring-gai NSW 2080
Telephone 9457 8888
www.shorelink.com.au

Shorelink Transport 2009 | Version 1.1 | 12 October 2009

Welcome Aboard

This timetable details the various bus services operated by TransdevTSL - Shorelink Buses in the areas listed on the cover.

Our reliable bus services will enable you to go shopping, to work, to school or to social events, quickly and comfortably. At the bus stop please ensure you "half" the bus driver of the bus you wish to catch and where possible tender the correct fare.

Please move to the back of the bus and make the seats in the front rows of the bus available for elderly or less able passengers. Copies of timetables and other information about services we operate are available from Transport Info and on board all our buses.

How to use this Timetable

- Using the route map provided, find the two timing points you are located between.
- Locate these two timing points on the timetables.
- Your bus is scheduled to arrive between the times shown for these points. For example, if your bus stop is situated between timing points A and B on the map, then the bus is scheduled to arrive between the time listed for B and the time listed for A.

Fares and Concession Travel

Passes must be produced for concession discounts or free travel each time a ticket is purchased. Unreadable passes are invalid. Passengers 16 years and over are required to pay full fare unless travelling to and from school, or upon presenting a valid school pass or other valid ID.

Lost Property

Please take all items with you before you leave the bus. If you find an item left on the bus, please notify the driver.

For lost property enquiries please call the relevant bus operator. Please keep your bus ticket to help identify the bus involved.

Late Running Buses

TransdevTSL - Shorelink Buses reserves the right to amend this timetable without prior notice. We endeavour to ensure services depart at the specified times, however timetables may change and buses may be delayed or cancelled due to circumstances beyond our control.

Accessible Vehicles

Wheelchair-accessible buses operate on selected timetabled services. While we will endeavour to operate an accessible bus at the time(s) nominated, due to circumstances beyond our control, this service may be replaced by an ordinary bus.

A Pleasant Environment for All

In the interests of our passengers, please refrain from smoking, eating, drinking or playing loud music on our buses.



Bus Route Map

194/594



Express to City
Routes 194 and 594 operates express to Wynyard via Harbour Bridge. Buses do not stop to pick up or set down passengers when operating express.

Legend

- Bus Route
- Express Route
- Railway Line
- Railway Station
- Bus Route Number
- Educational Institution
- Hospital
- Shopping Centre

Monday to Friday																
Route Number	194	594	594	194	594	594	194	594	594	194	594	594	194	594	594	194
A Kuring-gai Creative Arts High	am	...	...	am	...	...	am	...	...	am	...	...	am	...	...	am
B Hornsby Station (Interchange)	...	H6.00	H6.25	...	H6.56	H7.00	...	H7.20	...	...	...	...	...	...	...	...
C Grosvenor St & Junction Rd	...	6.06	6.31	...	7.06	7.26	...	7.26	...	...	...	...	...	...	...	...
D Eastern Rd & Kintore St	...	6.09	6.34	...	7.10	7.30	...	7.30	...	...	...	...	...	...	...	...
E Burns & Bobbin Head Rds	...	6.14	6.39	...	7.01	7.16	...	7.36	...	...	...	...	...	...	...	...
F St Ives Shops (Memorial Ave)	6.15	...	6.45	...	7.16	7.20	...	7.36	...	...	...	...	...	...	...	...
G St Ives Shops (Mona Vale Rd)	6.18	6.43	...	...	7.21	7.41	...	7.41	...	...	...	...	...	...	...	...
H St Ives Chase Shops (Warrimoo Ave)	6.22	...	6.50	...	7.25	7.32	...	7.32	...	...	...	...	...	...	...	...
I Woodbury Rd & Mona Vale Rd	6.25	...	6.57	...	7.32	7.32	...	7.32	...	...	...	...	...	...	...	...
J Mona Vale & Link Rds	6.27	...	6.59	...	7.06	7.34	...	7.34	...	...	...	...	...	...	...	...
K Masada College (Link Rd)	6.21	6.46	...	...	7.24	7.44	...	7.44	...	...	...	...	...	...	...	...
L St Ives High	6.29	6.24	6.49	7.02	7.10	7.28	7.37	7.48	7.41	7.57	8.17	9.13	10.13	3.56	4.34	5.34
M Killara (Koola Ave)	6.33	6.30	6.55	7.06	7.19	7.36	7.41	7.56	7.53	8.01	8.21	9.17	10.17	4.05	4.37	5.38
N East Lindfield (Woodlands Rd)	6.35	6.33	6.58	7.09	7.22	7.39	7.44	7.59	7.56	8.04	8.24	9.20	10.20	4.08	4.40	5.46
O East Roseville (Addison Ave)	6.38	6.37	7.02	7.13	7.26	7.48	7.48	8.03	8.00	8.08	8.28	9.23	10.23	4.12	4.43	5.49
P Wynyard (York St)	6.55	7.01	7.26	7.35	7.49	8.11	8.15	8.31	8.24	8.35	8.55	9.45	10.45	4.36	5.05	6.21
Q Town Hall (QVB York St Stand D)	7.00	7.10	7.35	7.45	8.20	8.20	8.40	8.40	8.30	8.40	9.00	9.50	10.50	4.45	5.10	6.30

Monday to Friday																
Route Number	594	594	594	194	594	594	194	594	594	194	594	594	194	594	594	194
P Town Hall (QVB York St Stand D)	7.25	7.50	8.30	8.50	9.20	9.30	...	...	...	...	...	...	...	...	...	...
Q Wynyard (Clarence & Margaret St)	7.30	7.57	8.37	8.57	9.27	9.37	...	...	...	...	...	...	...	...	...	...
R East Roseville (Addison Ave)	7.53	8.20	9.00	9.20	2.43	5.16	5.36	5.06	5.15	5.26	5.45	5.51	6.06	6.25	6.47	7.07
S East Lindfield (Woodlands Rd)	7.56	8.23	9.03	9.23	2.46	5.19	5.39	5.09	5.19	5.34	5.54	6.09	6.24	6.49	7.10	7.30
T Killara (Koola Ave)	8.02	8.29	9.09	9.29	2.52	5.25	5.45	5.15	5.25	5.40	6.00	6.15	6.30	6.55	7.19	7.39
U St Ives (Horace Street)	8.07	8.34	9.14	9.34	2.56	5.29	5.51	5.49	5.51	6.04	6.19	6.36	6.57	7.24	7.44	7.64
V Masada College (Link Road)	8.10	8.37	9.17	9.37	...	...	...	...	...	...	...	...	...	...	...	...
W Mona Vale & Link Rds	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
X Woodbury Rd & Mona Vale Rd	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Y St Ives Chase Shops (Warrimoo Ave)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Z St Ives Shops (Memorial Ave)	8.15	8.42	9.22	9.42	3.08	5.45	5.65	6.05	6.35	6.45	6.55	7.15	7.35	7.55	8.15	8.35
AA Burns & Bobbin Head Rds	8.20	8.47	9.27	9.47	...	...	...	...	...	...	...	...	...	...	...	...
AB Eastern Rd & Kintore St	8.24	8.51	9.31	9.51	...	...	...	...	...	...	...	...	...	...	...	...
AC Grosvenor St & Junction Rd	8.27	8.54	9.34	9.54	...	...	...	...	...	...	...	...	...	...	...	...
AD Hornsby Station (Interchange)	8.35	9.02	9.42	10.02	...	...	...	...	...	...	...	...	...	...	...	...
AE Kuring-gai Creative Arts High	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Explanation

- B - Services operate via Bobbin Head Rd and Curragul Rd prior to arrival at Kuring-gai Creative Arts High School.
- H - Service begins at 596 Route from Hornsby Heights.
- A - Accessible buses operate this service (For operational requirements Transdev/TSLS reserves the right to substitute conventional buses).

Connections to North Sydney

Passengers may transfer at East Roseville to Route 207 or 209 services to Northbridge, Cammeray, North Sydney and Milsons Point. These services are operated by Sydney Buses.

i No service on Saturday, Sunday, Public Holidays, Easter Saturday or Christmas Day.

i See other side for route map →

i There are no 194/594 services on weekends or Public Holidays. Alternative services are available to and from Lindfield, Killara, Gordon, Pymble and Turramurra Stations.

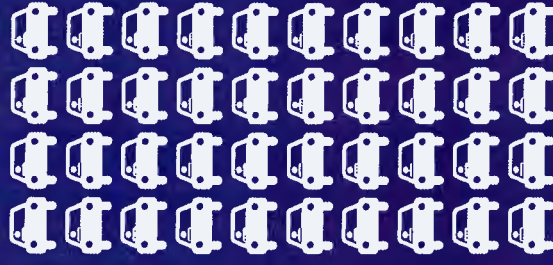
Reduce greenhouse gas emissions by a bus, train or ferry

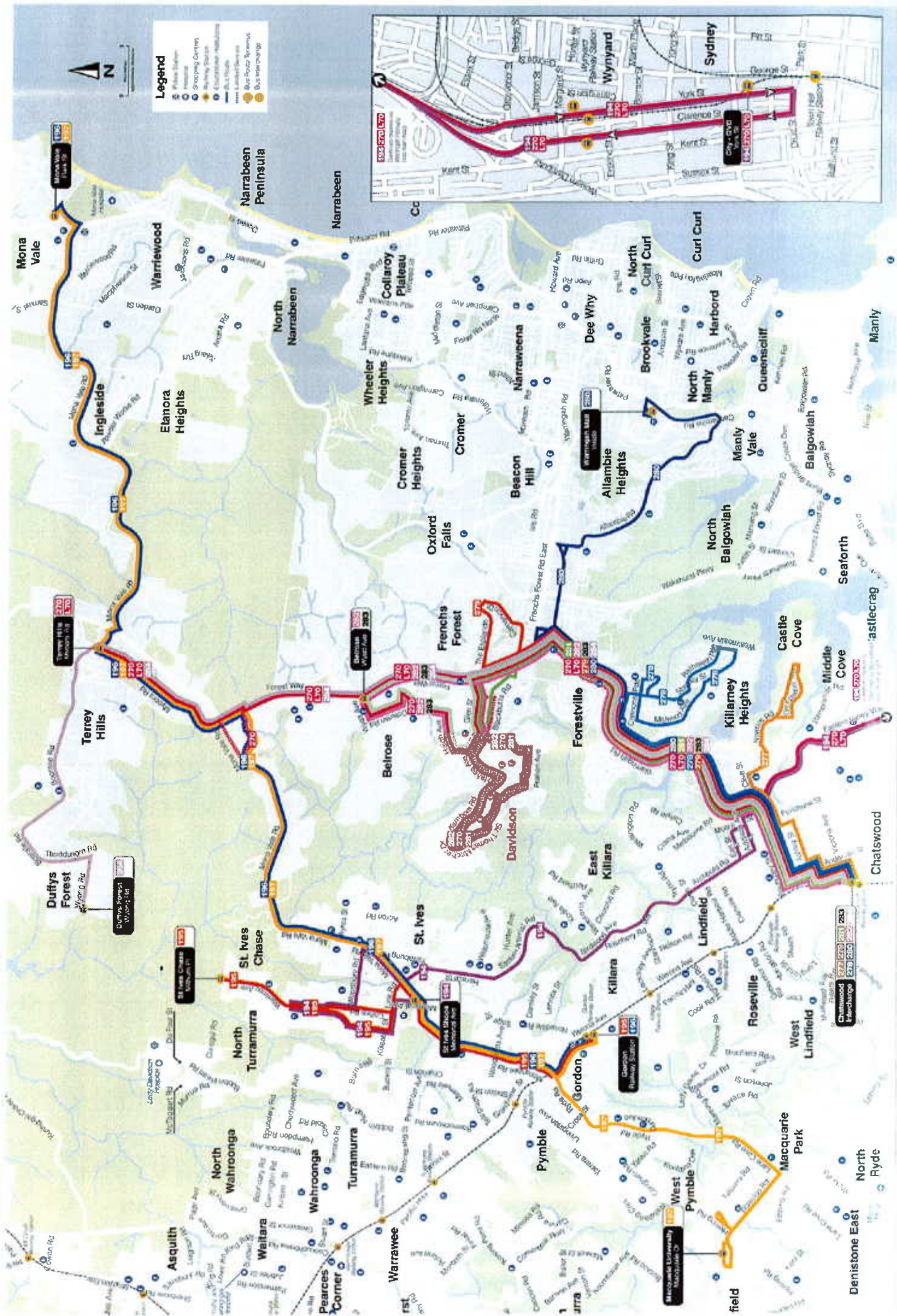
Fewer cars on the road will lead to less traffic, noise and congestion on Sydney's roads.

TRANSDEV
Shorelink Buses



40 less cars





Legend

- Bus Route
- Railway Line
- Railway Station
- 196 Bus Route Number
- Educational Institution
- Shopping Centre

Base Map: UBD DG08/01



Route 195, 196 & 197 Services

The Routes 195, 196 & 197 service the corridor of Mona Vale Road and provide a link with the North Shore Railway at Gordon Station.

The Route 195 operates between St Ives Chase and Gordon Station via St Ives Village Shops. It joins Mona Vale Road at Link Rd and forms a common route with the Route 196.

The Route 196 operates between Mona Vale and Gordon Station via Austlink Business Park and St Ives Village Shops. Services at Mona Vale stop at a common point with State Transit services to facilitate transfers with other services along Pittwater Road.

The Route 197 operates between Mona Vale and Macquarie University via Austlink Business Park, St Ives Village Shops and Gordon Station. Services at Mona Vale stop at a common point with State Transit services to facilitate transfers with other services along Pittwater Road.

The Route 194 City Express information is available on a separate timetable.

Monday to Friday

map ref	Route Number	195 am	196 am	196 am	197 am	195 am	196 am	196 am	197 am	195 am	197 am	195 am	197 am	195 am	197 am	195 am	197 am	195 am	197 am
M	Macquarie University																		
L	Macquarie Centre				6.55														
K	Macquarie Park Station				7.00														
J	Gordon West Public School				7.03														
A	Gordon Station	6.12	6.30	7.00	7.10	7.10	7.15	7.30	7.45	7.50	7.55	8.10	8.20	8.35	8.50	9.05	9.25	9.55	
B	St Ives Village Shops	6.20	6.38	7.08	7.18	7.23	7.23	7.38	7.53	7.58	8.03	8.18	8.28	8.33	8.48	9.03	9.23	9.53	10.08
C	St Ives Chase (Milburn Place)	6.32			7.30								8.40						10.18
D	Brigantine College		6.41	7.10			7.25	7.41	7.55				8.05	8.20					
E	St Ives Showground		6.45	7.14			7.29	7.45	7.59				8.09	8.24					
F	Austlink (Garigal Rd)		6.47	7.16			7.31	7.47	8.01				8.11	8.26					
G	Terrey Hills (Myoora/Booralie)		6.53	7.22				7.53	8.05				8.30						
H	Ingleside (Bahai Temple)		6.58					7.58	8.09										
I	Mona Vale (Park Street)		7.06					8.06	8.18										

Monday to Friday (cont...)

map ref	Route Number	197 am	195 am	197 am	195 am	197 am	195 am	197 am	195 am	197 am	195 am	197 am	195 am	197 am	195 am	197 am	195 am	197 am	195 am
M	Macquarie University																		
L	Macquarie Centre	9.55		10.25		10.55		11.25		11.55		12.25		12.55		1.25		1.55	
K	Macquarie Park Station	10.00		10.30		11.00		11.30		12.00		12.30		1.00		1.30		2.00	
J	Gordon West Public School	10.03		10.33		11.03		11.33		12.03		12.33		1.03		1.33		2.03	
A	Gordon Station	10.08		10.38		11.08		11.38		12.08		12.38		1.08		1.38		2.08	
B	St Ives Village Shops	10.15	10.30	10.45	11.00	11.15	11.30	11.45	12.00	12.15	12.30	12.45	1.00	1.15	1.30	1.45	2.00	2.15	2.30
C	St Ives Chase (Milburn Place)	10.23	10.38	10.53	11.08	11.23	11.38	11.53	12.08	12.23	12.38	12.53	1.08	1.23	1.38	1.53	2.08	2.23	2.38
D	Brigantine College		10.48		11.18		11.48		12.18		12.48		1.18		1.48		2.18		2.48
E	St Ives Showground	10.25		10.55		11.25		11.55		12.25		12.55		1.25		1.55		2.25	
F	Austlink (Garigal Rd)	10.29		10.59		11.29		11.59		12.29		12.59		1.29		1.59		2.29	
G	Terrey Hills (Myoora/Booralie)	10.31		11.01		11.31		12.01		12.31		1.01		1.31		2.01		2.31	
H	Ingleside (Bahai Temple)	10.37				11.37				12.37				1.37				2.37	
I	Mona Vale (Park Street)	10.43				11.43				12.43				1.43				2.43	
		10.50				11.50				12.50				1.50				2.50	

Monday to Friday (cont...)

map ref	Route Number	195	197	195	197	195	197	195	197	195	197	195	197	195	197	195	197	195	197
		pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm
M	Macquarie University																		
L	Macquarie Centre	2.55	3.25	3.30	3.35	3.55	4.25	4.55	5.10	5.15	5.25	5.40	5.45	5.50	5.55	5.60	5.65	5.70	5.75
K	Macquarie Park Station	3.00	3.30	3.33	3.38	4.00	4.30	4.50	5.00	5.10	5.20	5.30	5.40	5.45	5.50	5.55	5.60	5.65	5.70
J	Gordon West Public School	3.03	3.33	3.38	3.43	4.03	4.33	4.53	5.03	5.13	5.23	5.33	5.43	5.48	5.53	5.58	5.63	5.68	5.73
A	Gordon Station	3.05	3.35	3.40	3.45	4.05	4.35	4.55	5.05	5.15	5.25	5.35	5.45	5.50	5.55	5.60	5.65	5.70	5.75
B	St Ives Village Shops	3.13	3.43	3.48	3.53	4.13	4.43	4.63	5.13	5.23	5.33	5.43	5.53	5.58	5.63	5.68	5.73	5.78	5.83
C	St Ives Chase (Milburn Place)	3.23	3.53	3.58	3.63	4.23	4.53	4.73	5.23	5.33	5.43	5.53	5.63	5.68	5.73	5.78	5.83	5.88	5.93
D	Brigantine College	3.28	3.58	3.63	3.68	4.28	4.58	4.78	5.28	5.38	5.48	5.58	5.68	5.73	5.78	5.83	5.88	5.93	5.98
E	St Ives Showground	3.32	4.01	4.06	4.11	4.71	5.01	5.21	5.71	5.81	5.91	6.01	6.11	6.16	6.21	6.26	6.31	6.36	6.41
F	Austlink (Garigal Rd)	3.34	4.03	4.08	4.13	4.73	5.03	5.23	5.73	5.83	5.93	6.03	6.13	6.18	6.23	6.28	6.33	6.38	6.43
G	Terrey Hills (Myoora/Booralie)	3.40																	
H	Ingleside (Bahai Temple)	3.46																	
I	Mona Vale (Park Street)	3.55																	

Monday to Friday (cont...)

map ref	Route Number	197	195	197	195	197	195/6	195/6	195/6	195/6	195/6	195/6	195/6	195/6	195/6	195/6	195/6	195/6	195/6
		pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm
M	Macquarie University	5.55	6.10	6.25	6.40	7.00	7.20	7.50	8.20	8.50	9.20	9.50	10.20	10.48	10.76	11.04	11.32	11.60	11.88
L	Macquarie Centre	6.00	6.15	6.30	6.45	7.05	7.25	7.55	8.25	8.55	9.25	9.55	10.25	10.53	10.81	11.09	11.37	11.65	11.93
K	Macquarie Park Station	6.03	6.18	6.33	6.48	7.08	7.28	7.58	8.28	8.58	9.28	9.58	10.28	10.56	10.84	11.12	11.40	11.68	11.96
J	Gordon West Public School	6.08	6.23	6.38	6.53	7.13	7.33	7.63	7.93	8.23	8.53	8.83	9.13	9.41	9.69	9.97	10.25	10.53	10.81
A	Gordon Station	6.15	6.30	6.45	6.60	7.20	7.40	7.70	8.00	8.30	8.60	8.90	9.20	9.48	9.76	10.04	10.32	10.60	10.88
B	St Ives Village Shops	6.25	6.40	6.55	7.10	7.30	7.50	7.80	8.10	8.40	8.70	9.00	9.28	9.56	9.84	10.12	10.40	10.68	10.96
C	St Ives Chase (Milburn Place)	6.40	6.55	7.10	7.25	7.45	7.65	7.95	8.25	8.55	8.85	9.15	9.43	9.71	10.00	10.28	10.56	10.84	11.12
D	Brigantine College	6.27	6.42	6.57	7.12	7.32	7.62	7.92	8.22	8.52	8.82	9.12	9.40	9.68	9.96	10.24	10.52	10.80	11.08
E	St Ives Showground	6.31	6.46	6.61	6.76	6.96	7.26	7.56	7.86	8.16	8.46	8.76	9.04	9.32	9.60	9.88	10.16	10.44	10.72
F	Austlink (Garigal Rd)	6.33	6.48	6.63	6.78	6.98	7.28	7.58	7.88	8.18	8.48	8.78	9.06	9.34	9.62	9.90	10.18	10.46	10.74
G	Terrey Hills (Myoora/Booralie)	6.39																	
H	Ingleside (Bahai Temple)	6.45																	
I	Mona Vale (Park Street)	6.52																	



Saturday																		
map iret																		
Route Number																		
	196	196	195	196	195	196	197	195	196	195	196	195	196	195	196	195	196	196
	am	am	am	am	am	am	am	am	am	am	am	pm	pm	pm	pm	pm	pm	pm
M	Macquarie University																	
L	Macquarie Centre																	
K	Macquarie Park Station																	
J	Gordon West Public School																	
A	Gordon Station																	
B	St Ives Village Shops																	
C	St Ives Chase (Milburn Place)																	
D	Brigantine College																	
E	St Ives Showground																	
F	Austlink (Gargal Rd)																	
G	Terrey Hills (Myoora/Booralie)																	
H	Ingleside (Bahai Temple)																	
I	Mona Vale (Park Street)																	

Accessible Vehicles

Wheelchair-accessible buses operate on selected timetabled services. While Forest Coach Lines will endeavour to operate an accessible bus at the time(s) nominated, due to circumstances beyond Forest Coach Lines control, this service may be replaced by an ordinary bus.

Saturday (cont...)										
map ref	Route Number		195	196	195	196	195	197	196	195
			pm	pm	pm	pm	pm	pm	pm	pm
M	Macquarie University									
L	Macquarie Centre		3.10	3.47	4.10	4.47	5.10	4.55	5.47	6.25
K	Macquarie Park Station		3.18	3.55	4.18	4.55	5.18	5.00	5.55	6.33
J	Gordon West Public School		3.26	3.58	4.26	4.58	5.26	5.03	5.58	6.41
A	Gordon Station							5.08		
B	St Ives Village Shops									
C	St Ives Chase (Milburn Place)									
D	Brigantine College									
E	St Ives Showground									
F	Austlink (Garrigal Rd)									
G	Terrey Hills (Myoora/Booralie)									
H	Ingleside (Bahai Temple)									
I	Mona Vale (Park Street)									

[illegible]

Sunday (cont...)										
map	Route Number	195	196	195	196	195	197	196	195	195/6
ref		pm	pm	pm	pm	pm	pm	pm	pm	pm
M	Macquarie University									
L	Macquarie Centre	3.47	3.47	4.10	4.47	5.15	5.47	6.25	7.00	
K	Macquarie Park Station	3.18	3.55	4.18	4.55	5.23	5.55	6.33	7.08	
J	Gordon West Public School	3.26	3.58	4.26	4.58	5.26	5.58	6.41	7.16	
A	Gordon Station									
B	St Ives Village Shops									
C	St Ives Chase (Milburn Place)									
D	Brigantine College									
E	St Ives Showground									
F	Austlink (Garigal Rd)									
G	Terrey Hills (Myoora/Booralie)									
H	Ingleside (Bahai Temple)									
I	Mona Vale (Park Street)									

Explanations

- A** – Journey diverts via Link Rd, Killeaton St, Carbeen Ave and Warrimoo Ave to St Ives Chase before proceeding to Gordon.
- C** – Journey continues beyond Dalton Road to Milburn Place only if required, then travels to Austlink before returning to Gordon Station.
- D** – Change buses for travel to Duffys Forest.
- S** – Journey operates on School Days only.
- X** – Change buses for travel to Gordon.
-  – Wheelchair accessible service.

 The Sunday timetable operates on all Public Holidays.



St Ives Chase/ Mona Vale to Gordon Station/ Macquarie University

via Austlink Business Park and St Ives Village Shops



Effective March 2010

Monday to Friday

[illegible]

Monday to Friday (cont...)

[illegible]



Routes
195/ 196/ 197

St Ives Chase/ Mona Vale to Gordon Station/ Macquarie University

via Austlink Business Park and St Ives Village Shops



Effective March 2010

Monday to Friday (cont...)

map ref	Route Number	197	195	197	195	197	195	197	195	197	195	197	195	197	195	197	195	197	195	197
	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm
I	Mona Vale (Park Street)	1.12	1.27	1.42	1.57	2.12	2.27	2.42	2.57	3.12	3.27	3.42	3.57	4.12	4.27	4.42	4.57	5.12	5.27	5.42
H	Ingleside (Bahai Temple)	1.20	1.35	1.50	2.05	2.20	2.35	2.50	3.05	3.20	3.35	3.50	4.05	4.20	4.35	4.50	5.05	5.20	5.35	5.50
G	Terrey Hills (Myoora/Booralie)	1.25	1.40	1.55	2.10	2.25	2.40	2.55	3.10	3.25	3.40	3.55	4.10	4.25	4.40	4.55	5.10	5.25	5.40	5.55
F	Austlink (Garigal Rd)	1.30	1.45	1.60	1.75	1.90	2.05	2.20	2.35	2.50	2.65	2.80	2.95	3.10	3.25	3.40	3.55	4.10	4.25	4.40
E	St Ives Showground	1.34	1.49	1.64	1.79	1.94	2.09	2.24	2.39	2.54	2.69	2.84	2.99	3.14	3.29	3.44	3.59	4.14	4.29	4.44
D	Brigantine College	1.40	1.55	1.70	1.85	2.00	2.15	2.30	2.45	2.60	2.75	2.90	3.05	3.20	3.35	3.50	3.65	3.80	3.95	4.10
C	St Ives Chase (Milburn Place)	1.12	1.27	1.42	1.57	1.72	1.87	2.02	2.17	2.32	2.47	2.62	2.77	2.92	3.07	3.22	3.37	3.52	3.67	3.82
B	St Ives Village Shops	1.20	1.35	1.50	1.65	1.80	1.95	2.10	2.25	2.40	2.55	2.70	2.85	3.00	3.15	3.30	3.45	3.60	3.75	3.90
A	Gordon Station	1.25	1.40	1.55	1.70	1.85	2.00	2.15	2.30	2.45	2.60	2.75	2.90	3.05	3.20	3.35	3.50	3.65	3.80	3.95
J	Gordon West Public School	1.30	1.45	1.60	1.75	1.90	2.05	2.20	2.35	2.50	2.65	2.80	2.95	3.10	3.25	3.40	3.55	3.70	3.85	4.00
K	Macquarie Park Station	1.34	1.49	1.64	1.79	1.94	2.09	2.24	2.39	2.54	2.69	2.84	2.99	3.14	3.29	3.44	3.59	3.74	3.89	4.04
L	Macquarie Centre	1.40	1.55	1.70	1.85	2.00	2.15	2.30	2.45	2.60	2.75	2.90	3.05	3.20	3.35	3.50	3.65	3.80	3.95	4.10
M	Macquarie University	1.40	1.55	1.70	1.85	2.00	2.15	2.30	2.45	2.60	2.75	2.90	3.05	3.20	3.35	3.50	3.65	3.80	3.95	4.10

Monday to Friday (cont...)

map ref	Route Number	197	195	197	195	197	195	197	195	197	195	197	195	197	195	197	195	197	195	197
	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm
I	Mona Vale (Park Street)	5.17	5.32	5.47	5.62	5.77	5.92	6.07	6.22	6.37	6.52	6.67	6.82	6.97	7.12	7.27	7.42	7.57	7.72	7.87
H	Ingleside (Bahai Temple)	5.20	5.35	5.50	5.65	5.80	5.95	6.10	6.25	6.40	6.55	6.70	6.85	7.00	7.15	7.30	7.45	7.60	7.75	7.90
G	Terrey Hills (Myoora/Booralie)	5.24	5.39	5.54	5.69	5.84	5.99	6.14	6.29	6.44	6.59	6.74	6.89	7.04	7.19	7.34	7.49	7.64	7.79	7.94
F	Austlink (Garigal Rd)	5.17	5.32	5.47	5.62	5.77	5.92	6.07	6.22	6.37	6.52	6.67	6.82	6.97	7.12	7.27	7.42	7.57	7.72	7.87
E	St Ives Showground	5.20	5.35	5.50	5.65	5.80	5.95	6.10	6.25	6.40	6.55	6.70	6.85	7.00	7.15	7.30	7.45	7.60	7.75	7.90
D	Brigantine College	5.24	5.39	5.54	5.69	5.84	5.99	6.14	6.29	6.44	6.59	6.74	6.89	7.04	7.19	7.34	7.49	7.64	7.79	7.94
C	St Ives Chase (Milburn Place)	5.17	5.32	5.47	5.62	5.77	5.92	6.07	6.22	6.37	6.52	6.67	6.82	6.97	7.12	7.27	7.42	7.57	7.72	7.87
B	St Ives Village Shops	5.20	5.35	5.50	5.65	5.80	5.95	6.10	6.25	6.40	6.55	6.70	6.85	7.00	7.15	7.30	7.45	7.60	7.75	7.90
A	Gordon Station	5.24	5.39	5.54	5.69	5.84	5.99	6.14	6.29	6.44	6.59	6.74	6.89	7.04	7.19	7.34	7.49	7.64	7.79	7.94
J	Gordon West Public School	5.17	5.32	5.47	5.62	5.77	5.92	6.07	6.22	6.37	6.52	6.67	6.82	6.97	7.12	7.27	7.42	7.57	7.72	7.87
K	Macquarie Park Station	5.20	5.35	5.50	5.65	5.80	5.95	6.10	6.25	6.40	6.55	6.70	6.85	7.00	7.15	7.30	7.45	7.60	7.75	7.90
L	Macquarie Centre	5.24	5.39	5.54	5.69	5.84	5.99	6.14	6.29	6.44	6.59	6.74	6.89	7.04	7.19	7.34	7.49	7.64	7.79	7.94
M	Macquarie University	5.24	5.39	5.54	5.69	5.84	5.99	6.14	6.29	6.44	6.59	6.74	6.89	7.04	7.19	7.34	7.49	7.64	7.79	7.94

Saturday		195/6	196	197	195	196	195	196	195	196	195	196	195	196	195	196	195	196
map ref	Route Number	am	am	am	am	am	am	am	am	am	am	am	am	am	pm	pm	pm	pm
I	Mona Vale (Park Street)																	
H	Ingleside (Bahai Temple)			7.55														
G	Terrey Hills (Myoora/Booralie)			8.01														
F	Austlink (Garigal Rd)			8.07														
E	St Ives Showground	A6.58	7.49	8.15														
D	Brigidine College	7.02	7.53	8.19														
C	St Ives Chase (Milburn Place)	7.12		8.26														
B	St Ives Village Shops	7.20	7.58	8.22	8.34	8.54	9.26	9.34	9.54	10.22	10.34	10.54	11.26	11.34	11.54	12.26	12.34	12.54
A	Gordon Station	7.27	8.05	8.30	8.42	9.02	9.42	10.02	10.30	10.42	10.54	11.02	11.34	11.46	11.56	12.26	12.34	12.54
J	Gordon West Public School			8.35														
K	Macquarie Park Station			8.40														
L	Macquarie Centre			8.44														
M	Macquarie University			8.50														

Saturday (cont...)		197	195	196	195	196	195	196	195	196	195	196	195	196	195	196	195	196
map ref	Route Number	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm
I	Mona Vale (Park Street)	2.55																pm
H	Ingleside (Bahai Temple)	3.01																pm
G	Terrey Hills (Myoora/Booralie)	3.07																pm
F	Austlink (Garigal Rd)	3.13																pm
E	St Ives Showground	3.15																pm
D	Brigidine College	3.19																pm
C	St Ives Chase (Milburn Place)		3.26															pm
B	St Ives Village Shops	3.22	3.34	3.54	4.34	4.54	5.26	5.34	6.12	6.09	6.06	6.03	6.01	5.55	5.41	5.34	5.26	pm
J	Gordon Station	3.30	3.42	4.02	4.42	5.02	5.42	5.54	6.20	6.09	6.06	6.03	6.01	5.55	5.41	5.34	5.26	pm
A	Gordon West Public School	3.35																pm
K	Macquarie Park Station	3.40																pm
L	Macquarie Centre	3.44																pm
M	Macquarie University	3.50																pm

Additional Services

There are additional services operating in this area. Please call or visit the Transport Info for details.



131500.com.au
Transport Info
Information for people on the move

Sunday		195/6	196	197	195	196	195	196	197	195	196	195	196	197	195	196	195	196
map ref	Route Number	am	am	am	am	am	am	am	am	am	am	am	am	pm	pm	pm	pm	pm
I	Mona Vale (Park Street)																	
H	Ingleside (Bahai Temple)			7.55					9.25	9.55								
G	Terrey Hills (Myoora/Booralie)			8.07					9.37	10.07								
F	Austlink (Garigal Rd)		7.47	8.13					9.43	10.13								
E	St Ives Showground	A6.58	7.49	8.15					9.46	10.15								
D	Brigantine College	7.02	7.53	8.19					9.51	10.19								
C	St Ives Chase (Milburn Place)	7.12		8.26					9.26									
B	St Ives Village Shops	7.20	7.58	8.22	8.34	8.54	9.34	9.54	10.22	10.34	10.54	11.34	11.54	12.26	12.34	12.54	1.26	1.34
A	Gordon Station	7.27	8.05	8.30	8.42	9.02	9.42	10.02	10.30	10.42	11.02	11.42	12.02	12.42	1.02	1.30	1.42	2.02
J	Gordon West Public School			8.35					10.35					1.35				
K	Macquarie Park Station			8.40					10.40					1.40				
L	Macquarie Centre			8.44					10.44					1.44				
M	Macquarie University			8.50					10.50					1.50				

Sunday (cont...)		197	195	196	195	196	195	196	195	196	195	196	195	196	195	196	195	196
map ref	Route Number	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm	pm
I	Mona Vale (Park Street)	2.55							4.25					5.55				
H	Ingleside (Bahai Temple)	3.01							4.31					6.01				
G	Terrey Hills (Myoora/Booralie)	3.07							4.37					6.07				
F	Austlink (Garigal Rd)	3.13							4.43					6.03				
E	St Ives Showground	3.15							4.46					6.06				
D	Brigantine College	3.19							4.51					6.09				
C	St Ives Chase (Milburn Place)		3.26		4.26				5.26					6.41				
B	St Ives Village Shops	3.22	3.34	3.54	4.34	4.54	5.34	6.12						6.49				
A	Gordon Station	3.30	3.42	4.02	4.42	5.02	5.42	6.20						6.57				
J	Gordon West Public School	3.35																
K	Macquarie Park Station	3.40																
L	Macquarie Centre	3.44																
M	Macquarie University	3.50																

Explanations

- A** – Journey diverts via Link Rd, Killeaton St, Carbeen Ave and Warrimoo Ave to St Ives Chase before proceeding to Gordon.
- C** – Journey continues beyond Dalton Road to Milburn Place only if required, then travels to Austlink before returning to Gordon Station.
- D** – Change buses for travel to Duffys Forest.
- S** – Journey operates on School Days only.
- X** – Change buses for travel to Gordon.
-  – Wheelchair accessible service.

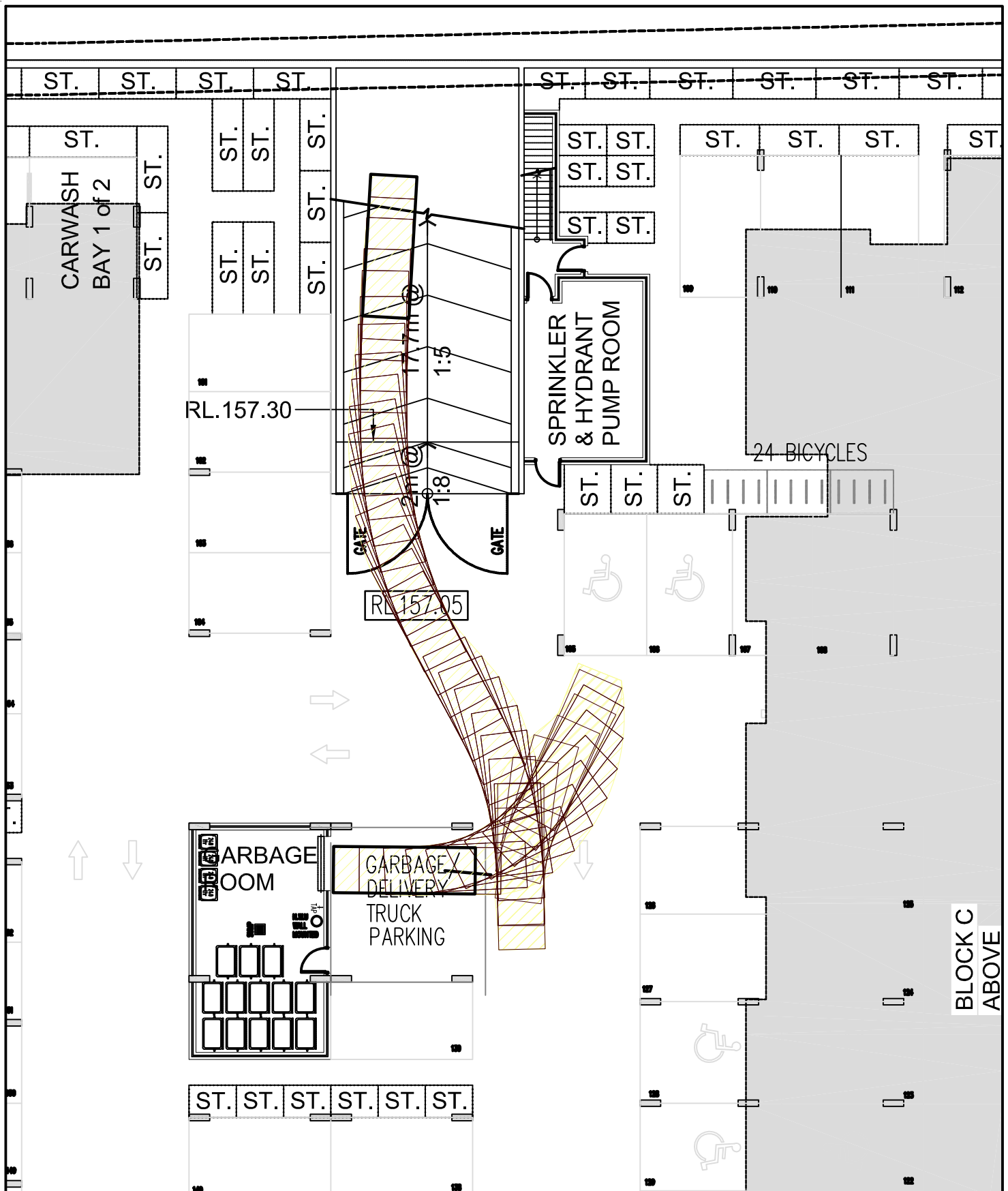
 The Sunday timetable operates on all Public Holidays.

Appendix E

TURNING PATH ASSESSMENT



SP 1



LEGEND

This drawing has been prepared using vehicle modelling computer software AutoTrack V5.00a in conjunction with AutoCAD 2000. The vehicle used is based upon vehicle data provided by Austrorads and incorporates a reasonable degree of tolerance. However, it is not possible to account for all vehicle types/characteristics and/or driver ability.



SWEPT PATH ANALYSIS OF A KU-RING-GAI REFUSE VEHICLE EXITING THE SITE

SP 2

Appendix F

DEPARTMENT OF PLANNING ISSUES

This Annexure responds to the issues raised by the Department of Planning by letter dated 4th August 2010.

Metropolitan Transport Plan 2010

This document is essentially a published statement of what the present State Government is doing or is planning to do in relation to the urban growth of the Sydney Metropolitan Area and the provision of transport services for that growth. As such the document does not present guidelines or policies about where and how urban development should occur and therefore it is not possible to 'show how the proposed specifically addresses' the Plan.

The attached extract from the Plan refers to the processes that the Department of Planning is undertaking to establish guidelines and principles. Putting that aside it is apparent that the proposal falls within the circumstances adopted in the Plan is that:

- * 70% of urban development is to be renewal
- * there are to be 26,600 additional dwellings in the northern sub-region to 2036 and 9,980 to 2010
- * Hornsby and Chatswood are to be important centres linked by a strategic bus corridor passing close to St Ives.

Integrated Landuse and Transport 2001

This is now a background document which in some ways is overtaken by more recent government strategies such as the Metropolitan Strategy 2007. An extract of the North Region document for this strategy is attached emphasising the development needs of 'Villages' such as St Ives to provide up to 5,500 dwellings.

The St Ives site is compliant with the principles identified in the ILU and T as follows:

- | | |
|--|---|
| * Located within easy walking distance of shops etc | ✓ |
| * Located within easy walking distance of transport corridor | ✓ |
| * Located where pedestrian and bicycle access is safe and direct | ✓ |
| * Reduced parking provision | ✓ |
| * Unacceptable traffic noise avoided | ✓ |

Planning Guidelines for Walking and Cycling 2004

These guidelines were essentially developed for landuse planners within Councils, consultancies and State agencies used to develop planning instruments and at the broadest level to show how metropolitan strategies, masterplans and LEP's can create an urban form that is conducive to walking and cycling.

The guidelines are not provided for application to individual development projects (particularly residential apartment developments) apart from the suggested bicycle parking provision rates. It is stated that 'effective implementation of walking and cycling provisions at development assessment level relies on support from higher level policies and plans'.

The principle therefore is that the proposed development complies with LEP and DCP criteria in relation to walking and cycling. In this case the provisions are:

- * 60 bicycle spaces for residents, 30 bicycle spaces for visitors
- * conducive pedestrian access with footways and traffic signal controlled pedestrian crossing on Mona Vale Road connecting to the St Ives Centre and bus services.

Basement Carpark

New plan incorporated in report.

Promotion of Public Transport Usage and Pedestrian and Bicycle Linkages

It would be appropriate for these requirements to be contained in a Consent Condition requiring the preparation of a Transport Access Guide and any other action deemed appropriate.

The site has frontage to and connects directly with:

- * the proposed cycleways along Killeaton Street and Mona Vale Road (refer to attached Council document)
- * the footways along Killeaton Street and Mona Vale Road which connect to the traffic signals with pedestrian crossing facilities at the Link Road and Memorial Avenue intersections.

Implications for Non-Car Travel Mode

Bus Travel:

Potential population		
3 x studio	1	3
27 x one-bedroom	1.1	30
117 x two-bedroom	2.2	257
20 x three-bedroom	2.8	56
Total		346

Potential Bus Users Existing Participation

		No	Participation	Bus	No per Day
Employment	43%	149	85%	6%	7.6
Education	25%	86	75%	12%	7.8
Other	32%	111	75%	6%	5.0
Total	100%	346			20.4

Potential Bus Users with Increased Participation:

	Bus	No per Day
	10%	12.6
	15%	9.7
	10%	8.3
Total		30.6

Thus, the likely 'high' number of 'bus users per day' is approximately 30 persons and there are four bus routes which operate in close proximity to the site providing connections to the City, railway stations and other centres in the region. Those buses operate (each) with 15 to 30 minute peak directional frequencies during the morning and afternoon peak periods (ie total of 20 services in the 2 hour peak periods with some 1,200 seats). It is apparent that adequate capacity will be available on the existing bus services.

Urban Renewal

A new Sydney Metropolitan Development Authority

Managing sustainable development for Sydney

Delivering effective urban renewal relies on defining clear outcomes and allocating responsibility for these outcomes.

While a coordinated group of agencies and councils can guide delivery of small scale redevelopment, more focused control is needed to manage the substantial risks and benefits arising from transforming investment in Sydney's transport system.

We will deliver real change for land use and transport planning by establishing a Sydney Metropolitan Development Authority (SMDA) to drive development in existing areas.

The Authority will work across government, with councils and with the private sector and will focus on corridors and centres prioritised by the *Metropolitan Transport Plan* and *Metropolitan Strategy* review. The Authority will be similar to the Redfern Waterloo Authority, which has an excellent track record for delivering urban renewal quickly.

Supporting the SMDA will be a planning unit within NSWTL. All major transport planning decisions will be approved by both the Minister for Planning and Minister for Transport & Roads and must meet the objectives of the consolidated *Metropolitan Plan* and *NSW State Plan*. In addition, significant land use decisions such as the declaration of new growth centres, release areas or major urban renewal sites will be made by both ministers.

The SDMA will work closely with the Department of Planning and NSWTL to develop priorities for urban renewal and development in Sydney. It will adopt a streamlined, cross-government approach to delivering urban renewal outcomes.

The Sydney Metropolitan Development Authority will:

- be responsible for delivering against the actions of the consolidated *Metropolitan Plan*;
- define and recommend areas that will benefit from renewal;
- where appropriate, act as a development proponent on State-owned land (identified and vested in the SMDA) to expedite development and provide local economic benefits;
- apply new transport oriented development and rapid rezoning tools recently approved by government to drive urban renewal, new residential housing, employment

land and transport infrastructure. In this capacity the Authority will partner with councils as the Department of Planning does in the Growth Centres;

- consider options for funding, including value uplift and private sector investment, in urban renewal areas;
- attract private sector investment in urban renewal areas (such as the Channel Seven relocation to Redfern);
- be answerable to the Ministers for Planning and Transport & Roads and work across agencies to deliver infrastructure to support urban renewal.

Urban Renewal Implementation Tools

Measures to control the location and type of urban development through structure planning and rezoning are critical implementation tools for urban renewal.

The Department of Planning has already established an Urban Renewal Planning Branch specifically to tailor the planning, design and assessment framework for precincts in new transport corridors.

The Department is preparing an Urban Renewal State Environmental Planning Policy (SEPP) to consolidate and streamline the rezoning process for areas that are defined as urban renewal precincts. The SEPP will:

- streamline the rezoning approach for designated precincts where there is urban renewal opportunity associated with public transport;
- promote mixed use and appropriate higher intensity uses within walking distance of public transport infrastructure;
- achieve a sustainable centre structure and built form via consistency with an adopted precinct plan prepared using urban design guidelines;
- be simple, rapid and able to deliver land use certainty.

Even with these improved planning controls, extensive redevelopment in urban renewal precincts will be difficult when the land around new or improved transport hubs is in multiple ownership. Legislative reform may be required to allow the Government to amalgamate sites in defined urban renewal precincts by:

- reducing the majority of strata title holders required to enable strata redevelopment within defined urban renewal precincts;
- enabling compulsory acquisition of property covered by an adopted urban renewal precinct plan in situations where achieving an urban renewal outcome is at risk—even where the property may be on sold for private development.

NORTH TO 2031
21,000 new homes
13,500 new jobs
8 villages
2 towns
1 major centre

STRATEGIC CENTRES



SPECIALISED CENTRE

NONE IN THIS SUBREGION, CLOSEST ARE MACQUARIE PARK, ST LEONARDS, NORWEST. Areas containing major airports, ports, hospitals, universities, research and business activities. These perform a vital economic and employment role which generate metropolitan wide benefits.



MAJOR CENTRE

HORNSBY

Major shopping and business centre serving the subregion with large shopping malls, specialist retail, medical services, taller office and residential buildings, council offices, central community facilities and a minimum of 8,000 jobs.

LOCAL CENTRES



TOWN CENTRE

EPPING, GORDON

Towns have one or two supermarkets, community facilities, medical centre, schools etc. Contain between 4,500 and 9,500 dwellings.



STAND ALONE SHOPPING CENTRE

CARLINGFORD COURT

Internalised, privately owned centres located away from other commercial areas, containing many of the attributes of a town but without housing or public open space—may have potential to become a traditional centre in the long-term.

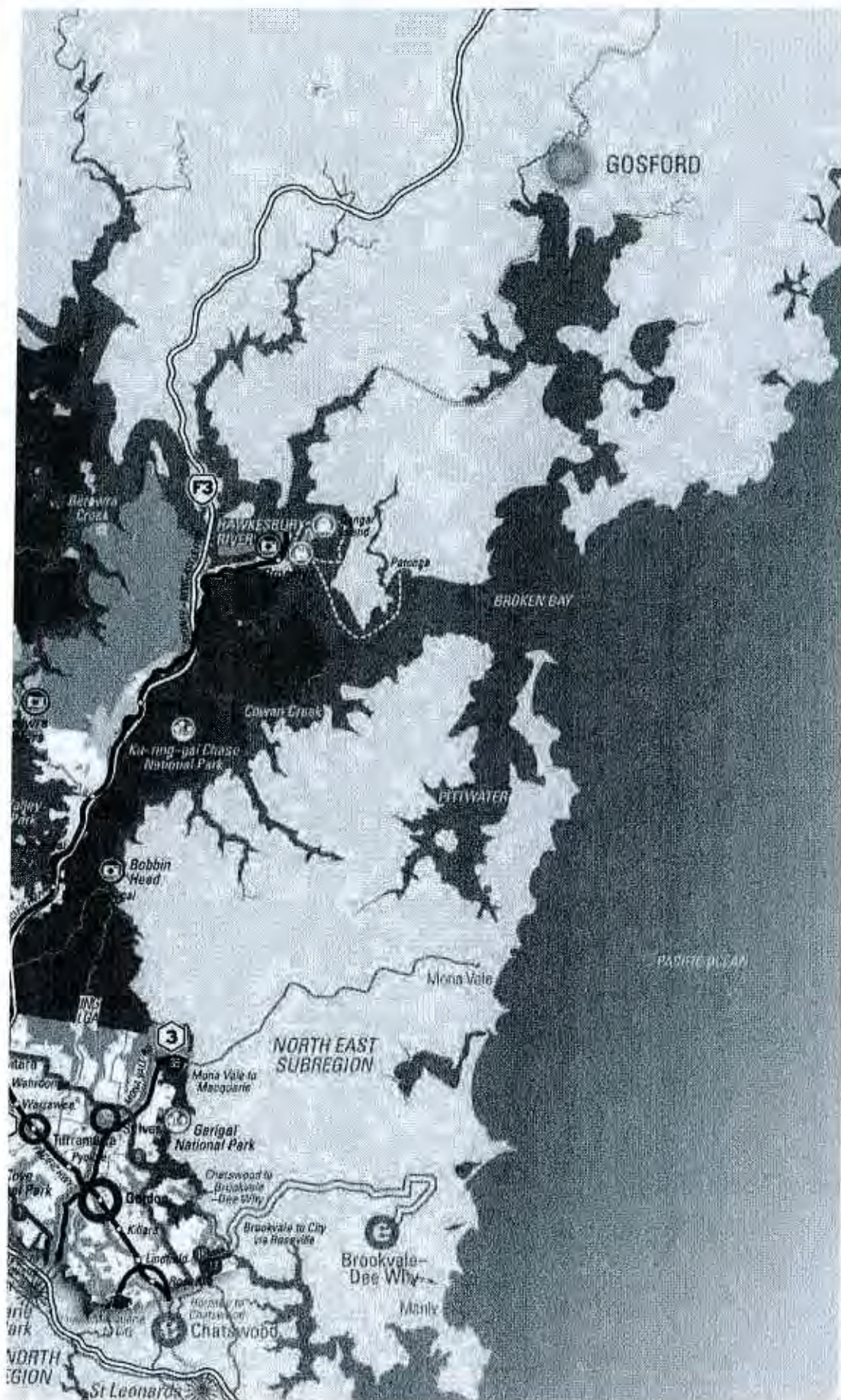


VILLAGE

ASQUITH, BEECROFT, BEROWRA HEIGHTS, CHERRYBROOK, PENNANT HILLS, ST IVES, THORNLEIGH, TURRAMURRA, WAITARA

A strip of shops and surrounding residential area within a 5–10 minute walk and usually contain a small supermarket, hairdresser, take-away food shops and have between 2,100–5,500 dwellings. Small Villages and Neighbourhood Centres are shown in Figure 11 on pages 36 and 379.

NOTE: THE FUTURE ROLE OF LOCAL CENTRES IS TO BE DETERMINED BY LOCAL GOVERNMENT OVER THE LIFE OF THE STRATEGY



KEY OUTSIDE
SUBREGION

ADJACENT
SUBREGION

SUBREGION
BOUNDARY

RAIL
LINE

NEW
RAIL

STRATEGIC
BUS ROUTES

REGIONAL
CITY

MAJOR
CENTRE

PROPOSED
MAJOR CENTRE

SPECIALISED
CENTRE

--- RAIL LINE --- NEW RAIL --- STRATEGIC BUS ROUTES --- REGIONAL CITY --- MAJOR CENTRE --- PROPOSED MAJOR CENTRE --- SPECIALISED CENTRE



KEY DIRECTIONS FOR SYDNEY'S NORTH

The vision for the North Subregion involves achieving seven key outcomes over the life of this strategy:

1 BETTER ACCESS TO A VARIETY OF HOUSING CHOICE

The North Subregion has a settlement pattern of comparatively large lot, low density housing with the range of housing choice limited in many parts. Increased housing choice should be encouraged throughout the subregion, particularly around centres and public transport nodes, to ensure that the existing and future population have access to a wide range of housing types. Care needs to be taken to ensure that development is compatible with commercial development in the centres and the character of surrounding suburbs.

2 STRENGTHEN THE MAJOR CENTRE

Hornsby centre is the key Major Centre of the North subregion and further improvements need to be made in the centre through the promotion of mixed uses and improving the general amenity. Employment and commercial uses need to be encouraged in the centre to service the expanding population.

Consolidation on both sides of the rail line will promote economic growth and employment opportunities accommodating the retail, commercial and social needs of the community.

The Hornsby Shire Local Environmental Plan 1994 (*Amendment No. 78—Hornsby Town Centre*) enacted in August 2006 promotes employment generating development in the commercial core of the centre, and takes an economic development approach to planning for the future of the centre.

3 ENHANCE THE SUBREGION'S LOCAL CENTRES

Development in the subregion has historically followed transport lines in the form of small to large town centres and villages servicing the daily needs of local residents. In order to accommodate future population growth in the region, these centres will be the focus of increased housing choice and a revitalisation of the existing retail/commercial centres. This will enable ageing-in-place, and allow easier entry into the housing market in the North Subregion, as well as promoting more sustainable travel patterns.

4 IMPROVE PUBLIC TRANSPORT ACCESS TO, FROM AND WITHIN THE SUBREGION

The subregion is well served by rail (North Shore Line, Northern Line, Newcastle and Central Coast lines).

The North West Rail Link and the Epping–Chatswood Rail Link, together with Strategic Bus Corridors and the Rail Clearways program, will improve access to and from key centres, while the integrated bus networks will help in improving internal transport circulation.

Improving the efficiency of freight movements and through traffic on key corridors is crucial to improving transport movements in the subregion.

5 MANAGING RURAL AND RESOURCE LANDS

The north west portion of the subregion is made up of rural and rural-residential allotments which produce a wide range of goods and services and tourism.

It is important to support such rural based industries in the subregion. Important rural and resource lands should not be viewed as 'land-in-waiting' for urban development, and any development should maintain the lands' rural and resource character.



Ku-ring-gai Council

Cycleway Network as at May 2010

Legend

- ON-ROAD CYCLEWAY
- SHARED FOOTWAY CYCLEWAY
- - - RIDEABLE FIRE TRAIL
- - - UNSEALED BUSH TRACK
- PROPOSED CYCLEWAY
- JUNIOR BICYCLE PATH (to 4 years)

North Wahroonga

Stives Chase

Stives

Pymble

Gordon

