

**PLANNING PROPOSAL TO PERMIT
MIXED USE DEVELOPMENT
EBLEY STREET, BONDI JUNCTION
*Traffic Impact Assessment***

April 2017
(Rev F)

Reference 15159

TRANSPORT AND TRAFFIC PLANNING ASSOCIATES
Transportation, Traffic and Design Consultants
Suite 502, Level 5
282 Victoria Avenue
CHATSWOOD 2067
Telephone (02) 9411 5660
Facsimile (02) 9904 6622
Email: info@ttpa.com.au

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	PLANNING PROPOSAL.....	2
2.1	Site, Context, Current Zoning and Use.....	2
2.2	Envisaged Development	3
3.	ROAD NETWORK AND TRAFFIC CONDITIONS	4
3.1	Road Network.....	4
3.2	Traffic Controls	4
3.3	Traffic Conditions	5
3.4	Transport Services	7
3.5	Future Circumstances	7
4.	TRAFFIC	8
5.	ACCESS, INTERNAL CIRCULATION AND SERVICING	10
6.	PARKING	11
7.	CONCLUSION	12

APPENDIX A	CONCEPT PLAN
APPENDIX B	TRAFFIC SURVEY RESULTS

LIST OF ILLUSTRATIONS

FIGURE 1	LOCATION
FIGURE 2	SITE
FIGURE 3	ROAD NETWORK
FIGURE 4	TRAFFIC CONTROLS

1. INTRODUCTION

This report has been prepared to accompany a Planning Proposal to Waverley Council for a rezoning to permit mixed use development on sites with front to Ebley Street at Bondi Junction (Figure 1).

The sites are located in the south-eastern sector of the Bondi Junction Centre and are currently zoned B3 Commercial, however Bondi Junction is well served by rail and bus services and provides an ideal location for residential apartment living as part of the urban consolidation process.

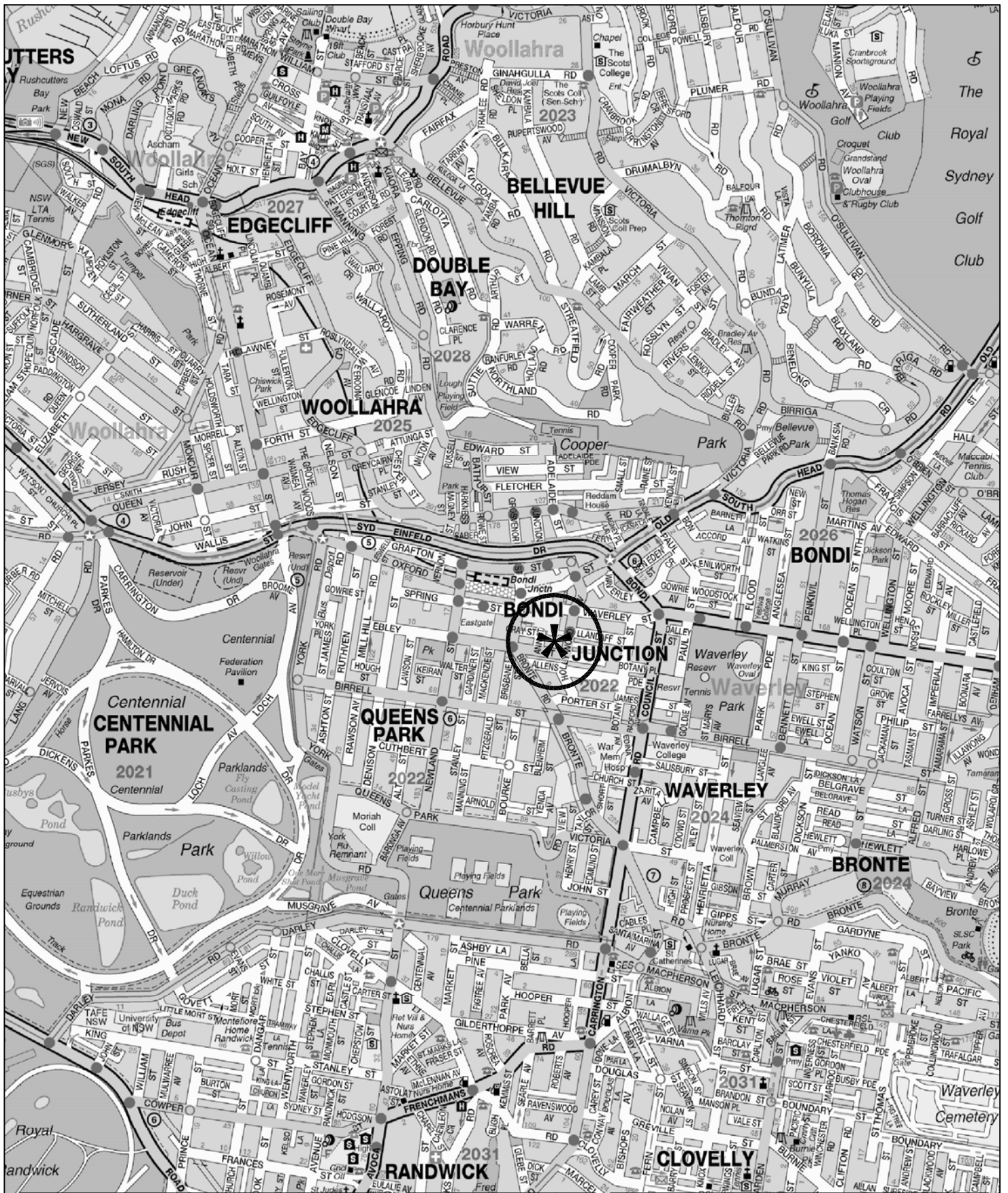
The adjoining sites to the west are zoned B4 Mixed Use and the proposal is consistent with this existing zoning.

The envisaged development (subject to the proposed rezoning) would comprise:

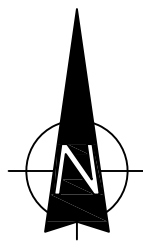
	Site 1	Site 2	Site 3
	96-104 Ebley St	106-108 Ebley St	110-122 Ebley St
Commercial Ground	420m ²	262m ²	941m ²
Commercial Upper	3,473m ²	2,036m ²	5,411m ²
Total:	3,893m²	2,298m²	6,352m²
Residential	9 apartments	6 apartments	24 apartments

The purpose of this report is to:

- * describe the site and the envisaged development outcome
- * describe the road network serving the site and the prevailing traffic conditions
- * assess the potential traffic implications
- * assess the suitability of the envisaged vehicle access arrangements
- * assess the envisaged parking provision



LEGEND



LOCATION

FIG 1

2. PLANNING PROPOSAL

2.1 SITE, CONTEXT, CURRENT ZONING AND USE

The sites (Figure 2) which are the subject of the Planning Proposal are:

Site 1

A consolidation of Lot 1 in DP733362 and Lot 1 in DP568524 occupying a total area of some 1,009m² with frontages to Hollywood Avenue and Ebley Street.

Site 2

A consolidation of SP32529 and SP22095 occupying a total area of 590m² with frontage to Ebley Street.

Site 3

Lot 6 in DP749904 which occupies an area of 1,639m² with frontages to Ebley Street and Ann Street.

There are very wide footways along the Ebley Street and Hollywood Avenue frontages of the sites. The large Westfield shopping complex extends to the north with commercial / retail uses along Ebley Street and Hollywood Avenue while there are terrace style dwellings extending to the east and flats buildings extending to the south.

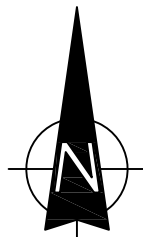
The existing buildings on the sites comprise:

	Site 1 (No. 96-104)	Site 2 (No. 106-108)	Site 3 (No. 110-122)
Residential Units	-	16	-
Commercial	-	717m ²	1,959m ²
Education	1,540m ²	-	1,641m ²
Retail	-	300m ²	-
Sex Industry	582m ²	-	-
Parking		33 spaces	52 spaces

Vehicle accesses for the sites are located on the Ebley Street frontages.

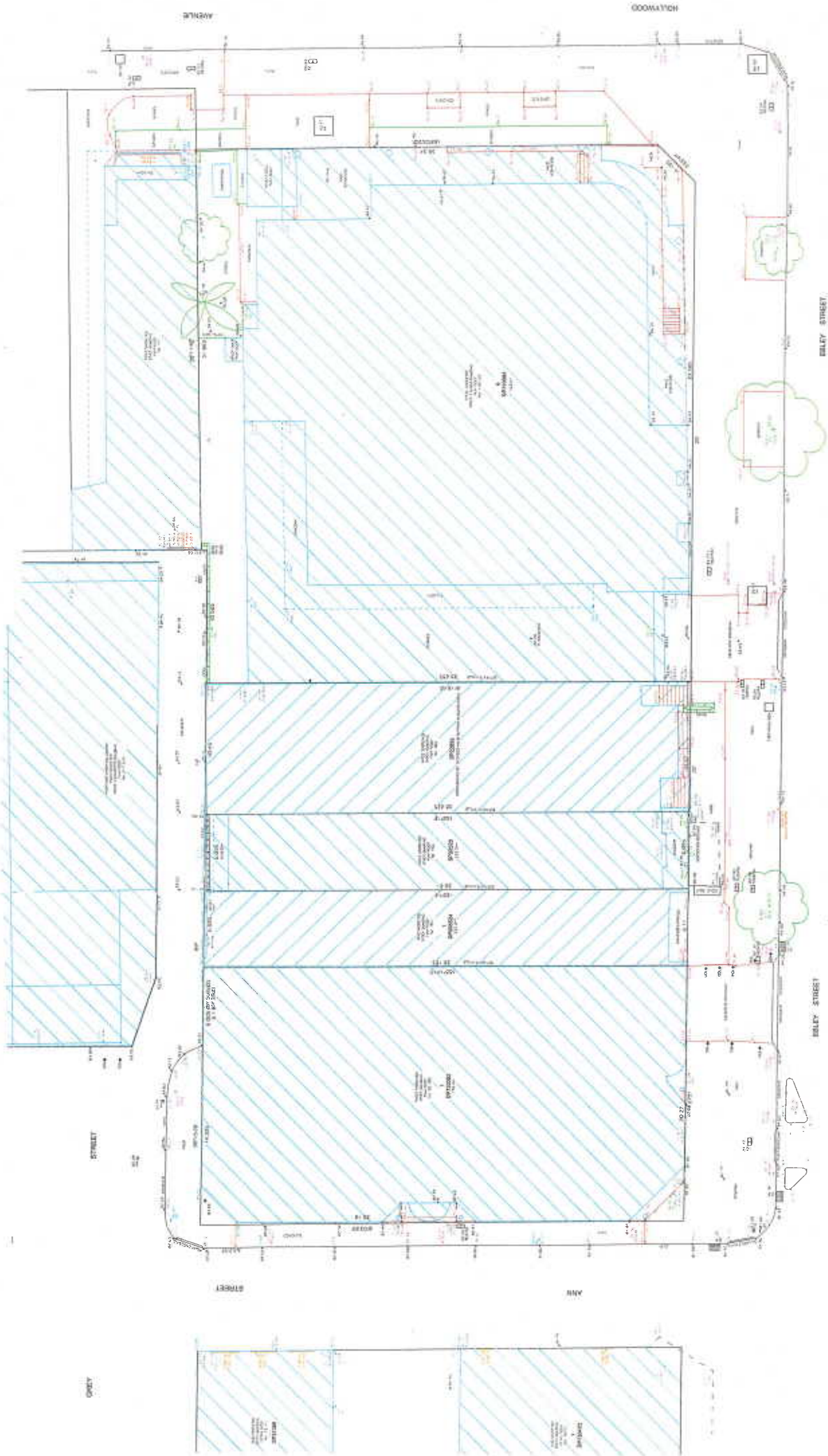


LEGEND



SITE

FIG 2



HOLLYWOOD

AVENUE

BILLY STREET

BILLY STREET

STREET

STREET

AND

ONLY

2.2 ENVISAGED DEVELOPMENT

The existing buildings would be demolished and the sites excavated to construct new 9 level buildings over basement carparking.

The envisaged development outcome is compared with a development outcome under the existing LEP provisions in the following:

Planning Proposal	Site 1	Site 2	Site 3	Total
Commercial Ground	420m ²	262m ²	941m ²	1,623m ²
Commercial Upper	3,473m ²	2,036m ²	5,411m ²	10,920m ²
Total:	3,893m²	2,298m²	6,352m²	12,543m²
Residential	9 apartments	6 apartments	24 apartments	39 apartments
LEP				
Retail			1,500m ²	2,810m ²
Commercial	6,560m ²		8,400m ²	13,650m ²

Basement carparking would be provided with vehicle accesses either on the Ebley Street or Ann Street frontages.

The Planning Proposal could allow for land dedication of up to 4.5 metres along Ann Street. This will allow for road widening and has the potential to improve access to surrounding developments and increase the capacity of the surrounding road network.

Details of the envisaged development are provided in the plans prepared by X.Pace Design Group which accompany the Planning Proposal and are reproduced in part in Appendix A.

3. ROAD NETWORK AND TRAFFIC CONDITIONS

3.1 ROAD NETWORK

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

- * the State Road and arterial routes of Bondi Road, Old South Head Road and Syd Einfeld Drive
- * the Centre access roads of Bronte Road and Oxford Street
- * the Centre circulation routes of Ebley Street, Newland Street, Grafton Street and Adelaide Street/Hollywood Avenue

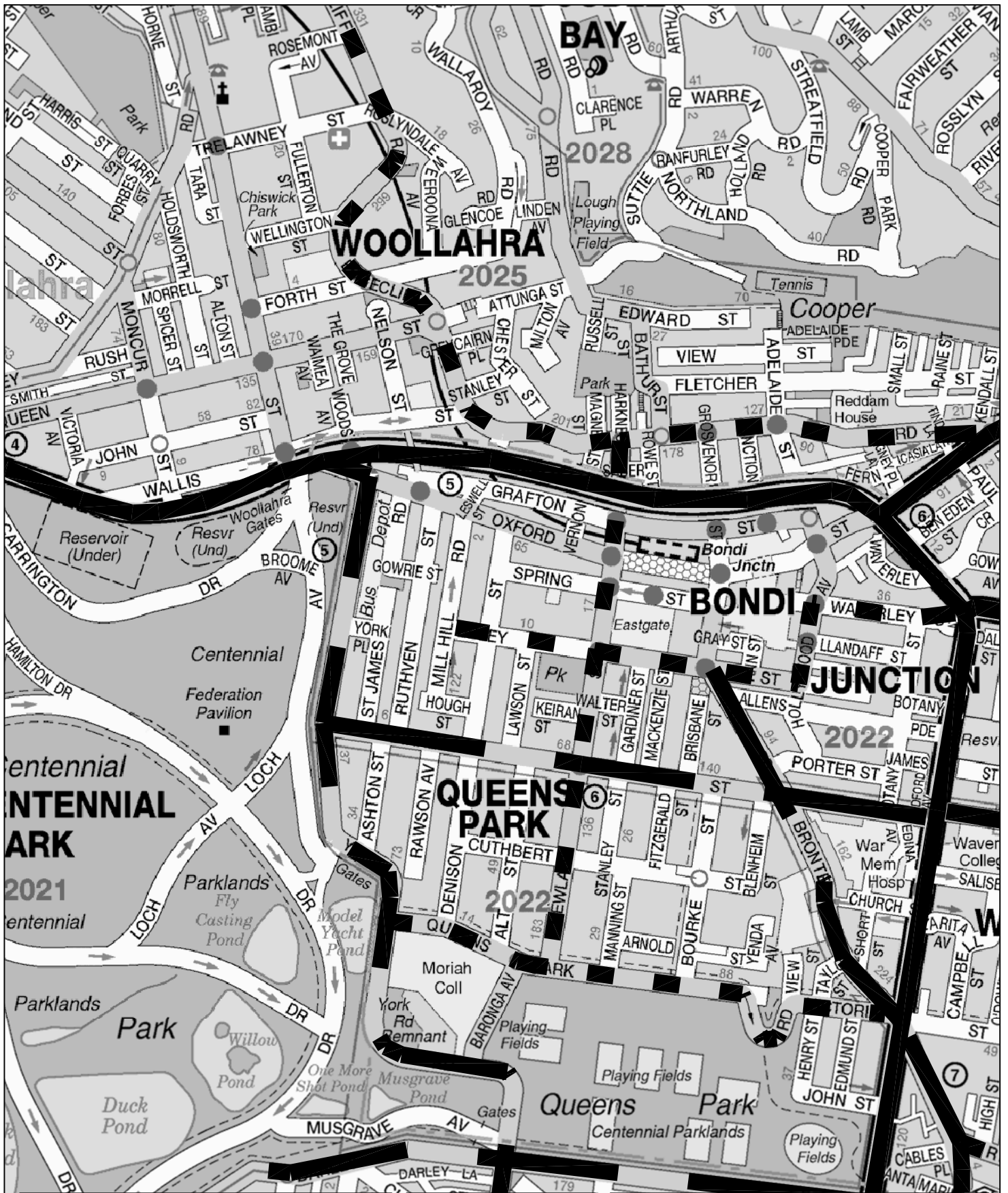
Gray Street and Ann Street are minor service lanes connecting between Bronte Road and Ebley Street. Oxford Street is closed (Oxford Mall) between Bronte Road and Newland Street and sections of Bronte Road and Oxford Street have access restrictions (Buses Only). Hollywood Avenue is closed on the southern side of Ebley Street and Ebley Street terminates to the east of Hollywood Avenue.

Ebley Street is 12.8 wide, having a straight alignment with a slight down grade towards the west.




3.2 TRAFFIC CONTROLS

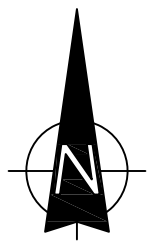
The traffic controls which exist on the road system in the vicinity of the site (Figure 4) comprise:

- * the traffic signals at the Bronte Road/Ebley Street intersection
- * the traffic signals at the Oxford Street/Bondi Road/Old South Head Road/Syd Einfeld Drive intersection
- * the marked foot-crossing across Ebley Street located midway between Bronte Road and Hollywood Avenue (i.e. at the site frontage)



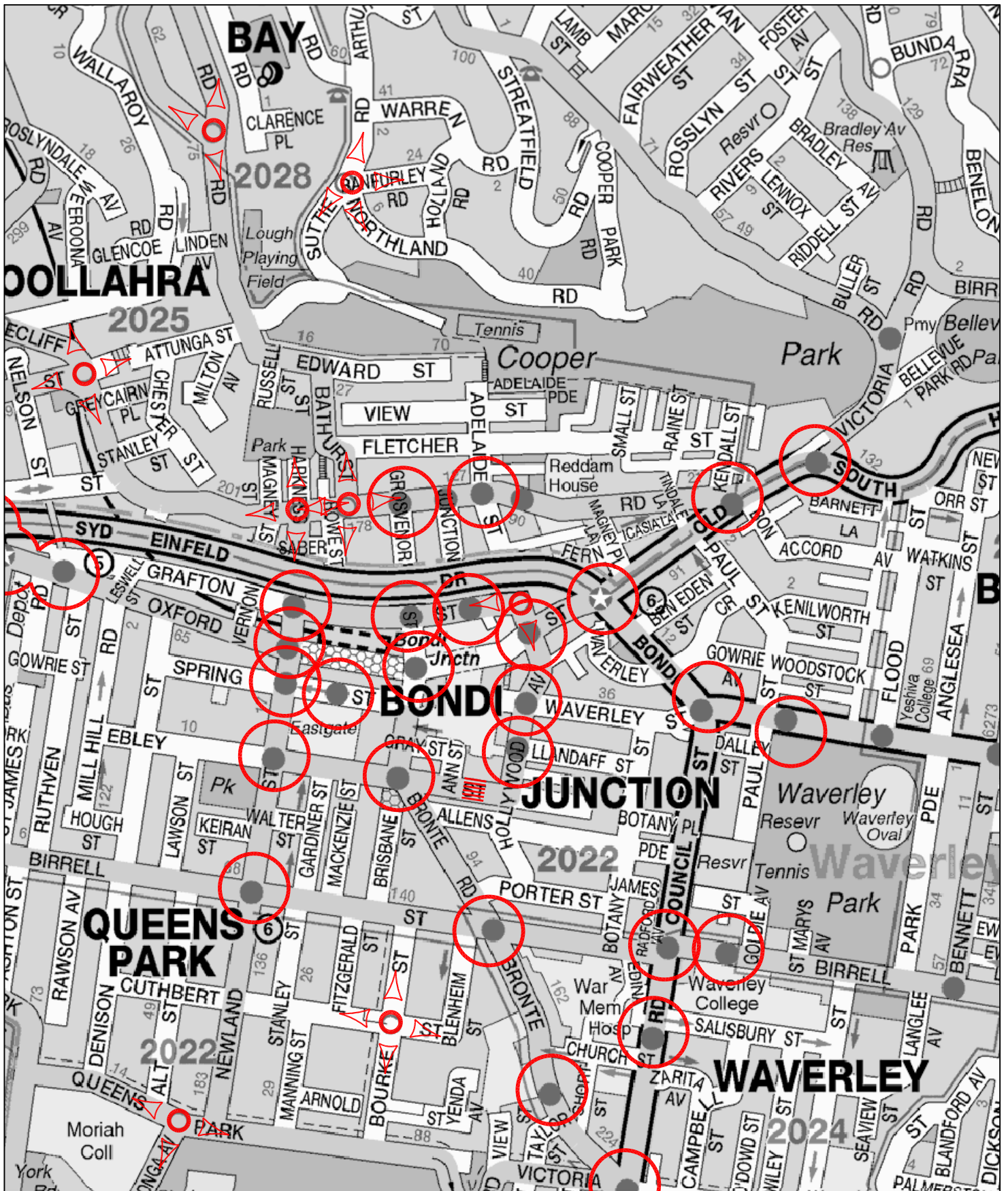
LEGEND

-  ARTERIAL
-  SUB-ARTERIAL
-  COLLECTOR






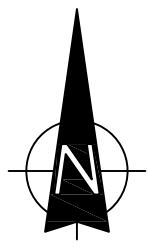
ROAD NETWORK

FIG 3



LEGEND

-  TRAFFIC SIGNAL CONTROL
-  ROUNDABOUT
-  RESTRICTED TURNING MOVEMENT



TRAFFIC CONTROLS

FIG 4

- * the traffic signals at the Oxford Street/Hollywood Avenue/Grafton Street intersection
- * the traffic signals at the Hollywood Avenue and Waverley Street intersection
- * the NO STOPPING, CLEARWAY and BUS LANE restrictions in Oxford Street
- * the ONE-WAY westerly restriction on Gray Street with left turn only at Bronte Road
- * the STOP sign control on Ebley Street at the Hollywood Avenue intersection

3.3 TRAFFIC CONDITIONS

An indication of the prevailing traffic conditions in the vicinity of the site is provided by data published by RMS¹ and surveys undertaken as part of this study. The data published by RMS is expressed in terms of Annual Average Daily Traffic (AADT) and the most recent information reveals the following:

	AADT
Sydney Enfield Drive	41,898
Bondi Road	29,247
Old South Head Road	49,453

Traffic surveys have been undertaken at the Oxford Street/Hollywood Avenue/Adelaide Street and Bronte Road/Ebley Street intersections during the morning and afternoon peak periods. The results of those surveys are provided in Appendix B and summarised overleaf and indicate the following peak flows at the site frontage:

	AM	PM
Ebley Street		
East Bound	504	689
West Bound	302	519

¹ *Traffic Volume Data for Sydney Region
Roads and Maritime Services*

		AM	PM
Bronte Road	NB	198	198
	RT	227	165
	LT	167	197
	SB	71	195
	RT	72	86
	LT	34	139
Ebley Street	EB	243	385
	RT	133	286
	LT	30	67
	WB	219	341
	RT	-	-
	LT	83	178
Oxford Street	EB	40	42
Oxford Street	WB	66	70
	RT	174	248
	LT	280	327
Hollywood Avenue	NB	280	233
	RT	136	229
Adelaide Street	SB	178	205
	LT	154	210

The operational performance of these intersections is quite satisfactory however the Traffic flows in the area are largely controlled by the operation of the traffic signals at the major intersection of Oxford Street, Bondi Road and Syd Enfeld Drive.

3.4 TRANSPORT SERVICES

Public transport services operating in close proximity to the development site include:

- * the high frequency arterial bus services which operate along Bondi Road, Old South Head Road and Oxford Street

- * Bondi Junction Railway Station located just to the west on the Eastern Line Suburbs with adjacent bus interchange

3.5 FUTURE CIRCUMSTANCES

Council proposes to a number of cycle way and streetscape initiatives in the area and one associated traffic management outcome will be the prohibition of the right turn movement from Bronte Road to Ebley Street.

4. TRAFFIC

The RMS guidelines (TDT-2013-4b) specify a generation rate for 'high density' residential apartments in reasonable proximity to a railway station of 0.19 vtpd and 0.15 vtpd per dwelling in the morning and afternoon peaks respectively. The current RMS rate for commercial floorspace is 1.6 vtpd per 100m² in the morning peak and 1.2 vtpd per 100m² in the afternoon peak however this is on the basis of an unconstrained parking provision of 1 space per 40m² where as the DCP allowance is only 0.66 space per 100m².

Similarly the RMS generation rate for retail use is based on large shopping centres with a parking provision of 5-6 spaces per 100m² where as the DCP allowance for retail is only 2.0 spaces per 100m².

The traffic generation rate for commercial and retail uses at Bondi Junction therefore only reflect the number of parking spaces provided as follows:

Commercial	0.6 vtpd per space (AM & PM)*
Retail	2.0 vtpd per space PM (25% AM)

* 60% arrive/depart in 1 hour

A comparison of the potential traffic generation for the Planning Proposal development outcome and the LEP development outcome is provided in the following:

Planning Proposal	AM	PM
39 apts (@ 0.19 & 0.15)	8 vtpd	6 vtpd
10,920m ² Commercial (72 cars)	43 vtpd	43 vtpd
1,623m ² Retail (32 cars)	16 vtpd	64 vtpd
Total:	67 vtpd	113 vtpd
LEP		
13,650m ² Commercial (90 cars)	72 vtpd	72 vtpd
2,810m ² Retail (45 cars)	23 vtpd	90 vtpd
Total:	95 vtpd	162 vtpd

Thus it is apparent that the traffic generation of the envisaged development under the Planning Proposal will be less than that under the LEP provisions.

The projected traffic generation of the envisaged development will be discounted by the vehicle movements generated by the existing site development of some 51 vtp/h (i.e. 85 parking with 60% arrival in 1 hour).

The projected distribution of the total generated movements is as follows:

Syd Einfeld Drive/Oxford Street east (via Waverley Crescent)	50%
Bondi Road/Council Street (Via Waverley Crescent)	15%
Hollywood Avenue/Grafton Street	20%
Hollywood Avenue/Ebley Street	15%

The resultant traffic movements will only be of a minor magnitude and will not present any adverse traffic capacity, safety or environmental related consequences particularly as they will be dispersed on multiple approach and departure routes (due to the nature of the traffic management measures on the road system) and discounted in relation to the existing traffic generation. The additional volumes will be of such a minor nature that they will not impact on the operational performance of the intersections in the vicinity of the site and are consistent with the traffic management, which underlies redevelopment of the area.

Besides the projected traffic generation would be somewhat less than that generated by the permitted development under the existing planning provisions.

5. ACCESS, INTERNAL CIRCULATION AND SERVICING

The envisaged vehicle access, internal circulation and servicing arrangements for the developments can and would comply with the requirements of AS2890.1, 2 and 6. Vehicle access would be located on either the Ebley Street or Ann Street frontages.

6. PARKING

The envisaged development resultant to the proposed rezoning will provide on-site parking which is compliant with the provisions of Council's DCP for the proposed uses. Similarly, there will also be appropriate provision for bicycle and motorcycle parking in the development outcomes.

7. CONCLUSION

There is an increasing demand for residential apartment living as part of the ongoing urban consolidation in Metropolitan Centres where there are good public transport services available as well as retail, entertainment and employment facilities. The traffic, transport and parking assessment provided in this report concludes that the envisaged development resultant to the proposed rezoning will:

- * not present any unsatisfactory traffic capacity, safety or environmental related implications
- * incorporate a suitable and appropriate parking provision
- * incorporate suitable vehicle access, internal circulation and servicing arrangements
- * present a 'sustainable' outcome with colocation in regard to rail and bus services, retail, entertainment and commercial facilities resulting an optimum outcome in relation to reliance on private car travel

APPENDIX A

CONCEPT PLAN

PLANNING PROPOSAL

The drawings assume the sites are to be developed by individual owners. However, due to inability to effectively make carparking possible at 106 & 108 Ebley Streets, the scheme assumes these sites are consolidated.

TOTAL GFA/FSR AREAS FOR INDIVIDUAL SITES

	96-104 Ebley St	106-108 Ebley St	110-122 Ebley St
	SITE 1 GFA	SITE 2 GFA	SITE 3 GFA
TOTAL AREA EACH SITE	1,009.00 Sq/m	631.00 sqm	1,639.00 S/qm
LEVEL GROUND - Commercial	420.00 Sq/m	282.00 Sq/m	941.00 Sq/m
LEVEL 1 - Commercial	686.00 Sq/m	403.00 Sq/m	1288.00 Sq/m
LEVEL 2 - Commercial	686.00 Sq/m	403.00 Sq/m	1288.00 Sq/m
LEVEL 3 - Commercial - Residential	686.00 Sq/m	403.00 Sq/m	934.00 Sq/m 289.00 Sq/m
LEVEL 4 - Commercial - Residential	686.00 Sq/m	403.00 Sq/m	934.00 Sq/m 289.00 Sq/m
LEVEL 5 - Commercial - Residential	686.00 Sq/m	403.00 Sq/m	934.00 Sq/m 289.00 Sq/m
LEVEL 6 - Residential	356.10 Sq/m	265.00 Sq/m	816.00 Sq/m
LEVEL 7 - Residential	356.10 Sq/m	265.00 Sq/m	816.00 Sq/m
LEVEL 8 - Residential	356.10 Sq/m	265.00 Sq/m	816.00 Sq/m
CIRCULATION AREAS - Residential - Commercial	50.00 Sq/m 43.00 Sq/m	62.00 Sq/m 21.00 Sq/m	84.00 Sq/m 33 Sq/m
Total Commercial Floor area	3,893.00 Sq/m	2,298.00Sq/m	6352.00 Sq/m
Total Residential Floor area	1,118.30 Sq/m	857.00Sq/m	3315.00 Sq/m
TOTAL FLOOR AREA	5,011.30 Sq/m	3,155.00Sq/m	9667.00 Sq/m
Residential FSR	1.1:1	1.35:1	2.0:1
Commercial FSR	3.85:1	3.65:1	3.87:1
TOTAL FSR	4.97:1	5:1	5.9:1
ALLOWABLE FSR	5:1	5:1	6:1
HEIGHT ALLOWABLE	32 Metres	32 Metres	32 Metres

TYPE	USE	LEVEL
Q	Commercial - Retail or others	GF
R	Commercial - Offices or others	1-5
S	Horizontal Circulation	GF
CS	Circulation [Commercial]	GF
	Circulation/Ancillary Space	All

RESIDENTIAL LEVELS

STUDIO	LEVEL
1 BEDROOM	LEVEL
2 BEDROOM	LEVEL
3 BEDROOM	LEVEL

UNIT BREAKDOWN - PER SITE

SITE 1 - TOTAL UNITS 9 UNITS

Studio	- 0 units - %
1 Bedroom	- 3 units - 33%
2 Bedroom	- 6 units - 66%
3 Bedroom	- 0 units - %

SITE 2 - TOTAL UNITS 6 UNITS

Studio	- 0 units - %
1 Bedroom	- 6 units - 100%
2 Bedroom	- 0 units - %
3 Bedroom	- 0 units - %

SITE 3 - TOTAL UNITS 24 UNITS

Studio	- 0 units - %
1 Bedroom	- 3 units - 12.5%
2 Bedroom	- 18 units - 75%
3 Bedroom	- 3 units - 12.5%



Ground Floor Plan - COMMERCIAL/RETAIL



Plan Scheme - 3rd to 5th - COMMERCIAL/RESIDENTIAL



1st-2nd Floor Plan - COMMERCIAL FLOOR AREA



Plan Scheme - 6th to 8th - RESIDENTIAL

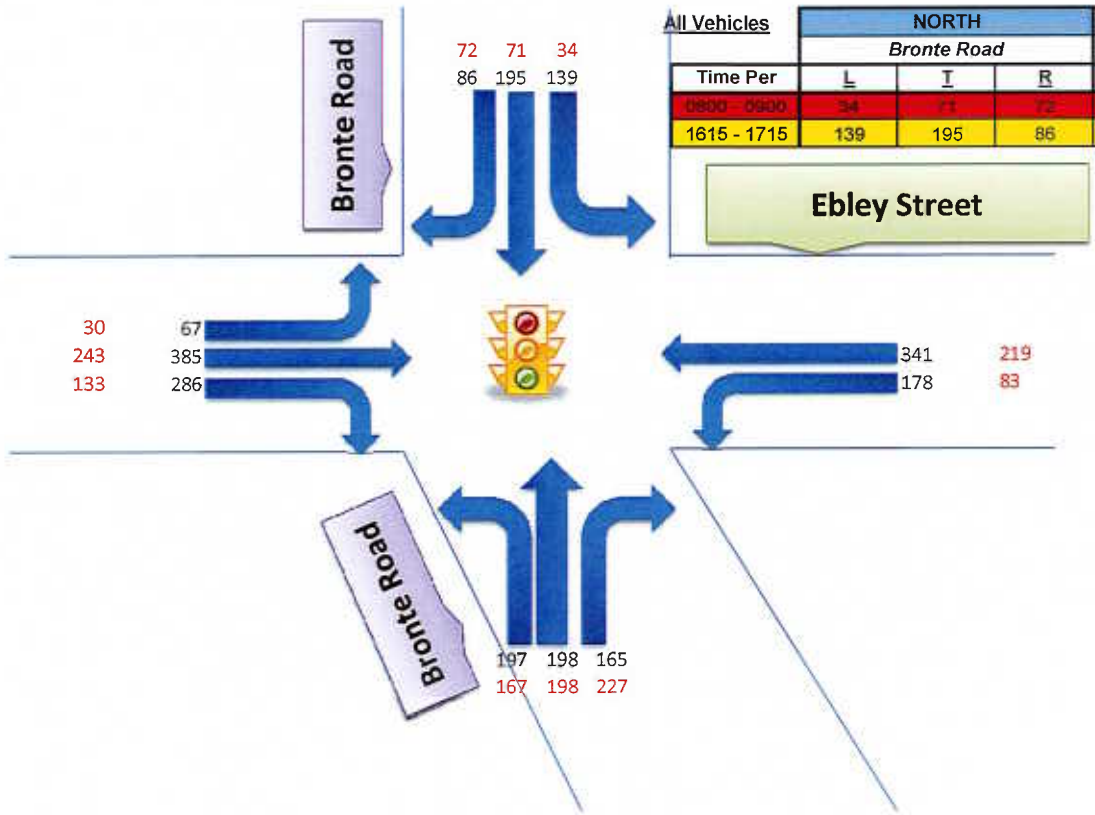
APPENDIX B

TRAFFIC SURVEY RESULTS

Location Intersection of Bronte Road and Ebley Street
 Client T.T.P.A.
 Job No/Name 14008
 Day/Date Thursday, 30th October 2014

All Vehicles	NORTH			WEST			SOUTH			EAST		TOTAL
	Bronte Road			Ebley Street			Bronte Road			Ebley Street		
Time Per	L	T	R	L	T	R	L	T	R	L	T	
0700 - 0715	4	19	6	9	36	9	32	29	39	9	22	214
0715 - 0730	6	27	12	12	43	18	33	33	42	13	29	268
0730 - 0745	9	23	7	11	49	21	29	31	39	11	29	259
0745 - 0800	11	15	13	12	53	27	35	35	54	14	35	304
0800 - 0815	9	13	19	8	57	29	31	33	53	17	49	318
0815 - 0830	7	18	25	6	60	36	49	32	51	23	57	364
0830 - 0845	11	21	17	7	63	33	45	36	56	22	55	366
0845 - 0900	7	19	11	9	63	35	42	58	67	21	58	390
1600 - 1615	42	38	17	13	81	63	51	44	49	56	78	532
1615 - 1630	44	45	15	12	99	66	57	45	58	54	83	578
1630 - 1645	38	39	19	16	89	71	53	49	46	44	81	545
1645 - 1700	30	58	27	18	96	78	48	51	30	41	78	555
1700 - 1715	27	53	25	21	101	71	39	53	31	39	99	559
1715 - 1730	18	42	12	36	108	69	24	51	27	37	75	499
1730 - 1745	22	51	17	31	103	72	28	55	30	34	55	498
1745 - 1800	21	66	18	27	111	72	33	63	29	33	51	524
Period End	306	547	260	248	1212	770	629	698	701	468	934	6773

All Vehicles	NORTH			WEST			SOUTH			EAST		TOTAL
	Bronte Road			Ebley Street			Bronte Road			Ebley Street		
Time Per	L	T	R	L	T	R	L	T	R	L	T	
0700 - 0800	30	84	38	44	181	75	129	128	174	47	115	883
0715 - 0815	35	78	51	43	202	95	128	132	188	55	142	952
0730 - 0830	36	69	64	37	219	113	144	131	197	65	170	1010
0745 - 0845	38	67	74	33	233	125	160	136	214	76	196	1080
0800 - 0900	34	71	72	30	243	133	167	159	227	83	219	1136
												0
												0
												0
1600 - 1700	154	180	78	59	365	278	209	189	183	195	320	1695
1615 - 1715	139	195	86	67	385	286	197	198	165	178	341	1718
1630 - 1730	113	192	83	91	394	289	164	204	134	161	333	1664
1645 - 1745	97	204	81	106	408	290	139	210	118	151	307	1653
1700 - 1800	88	212	72	115	423	284	124	222	117	143	280	1657
												0
												0
												0
Period End	764	1352	699	625	3053	1968	1561	1709	1717	1154	2423	13448



All Vehicles	NORTH			WEST			SOUTH			EAST		TOTAL
	Bronte Road			Ebley Street			Bronte Road			Ebley Street		
	L	T	R	L	T	R	L	T	R	L	T	
0800 - 0900	34	71	72	30	243	133	167	159	227	83	219	1136
1615 - 1715	139	195	86	67	385	286	197	198	165	178	341	1718