

**PROPOSED
REZONING FOR RESIDENTIAL
APARTMENT DEVELOPMENT
2 FACTORY STREET, GRANVILLE**

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

May 2012

Reference 08234

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: ttpa@ttpa.com.au

TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	PROPOSED DEVELOPMENT SCHEME.....	2
2.1	Site, Context and Existing Use	2
2.2	Proposed Rezoning.....	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	6
4.	ACCESS	7
5.	TRAFFIC	9
6.	PARKING, INTERNAL CIRCULATION AND SERVICING.....	11
7.	CONCLUSION	13
APPENDIX A	INTERSECTION PLAN	
APPENDIX B	TRAFFIC SURVEYS	
APPENDIX C	TRANSPORT SERVICES	

LIST OF ILLUSTRATIONS

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

1. INTRODUCTION

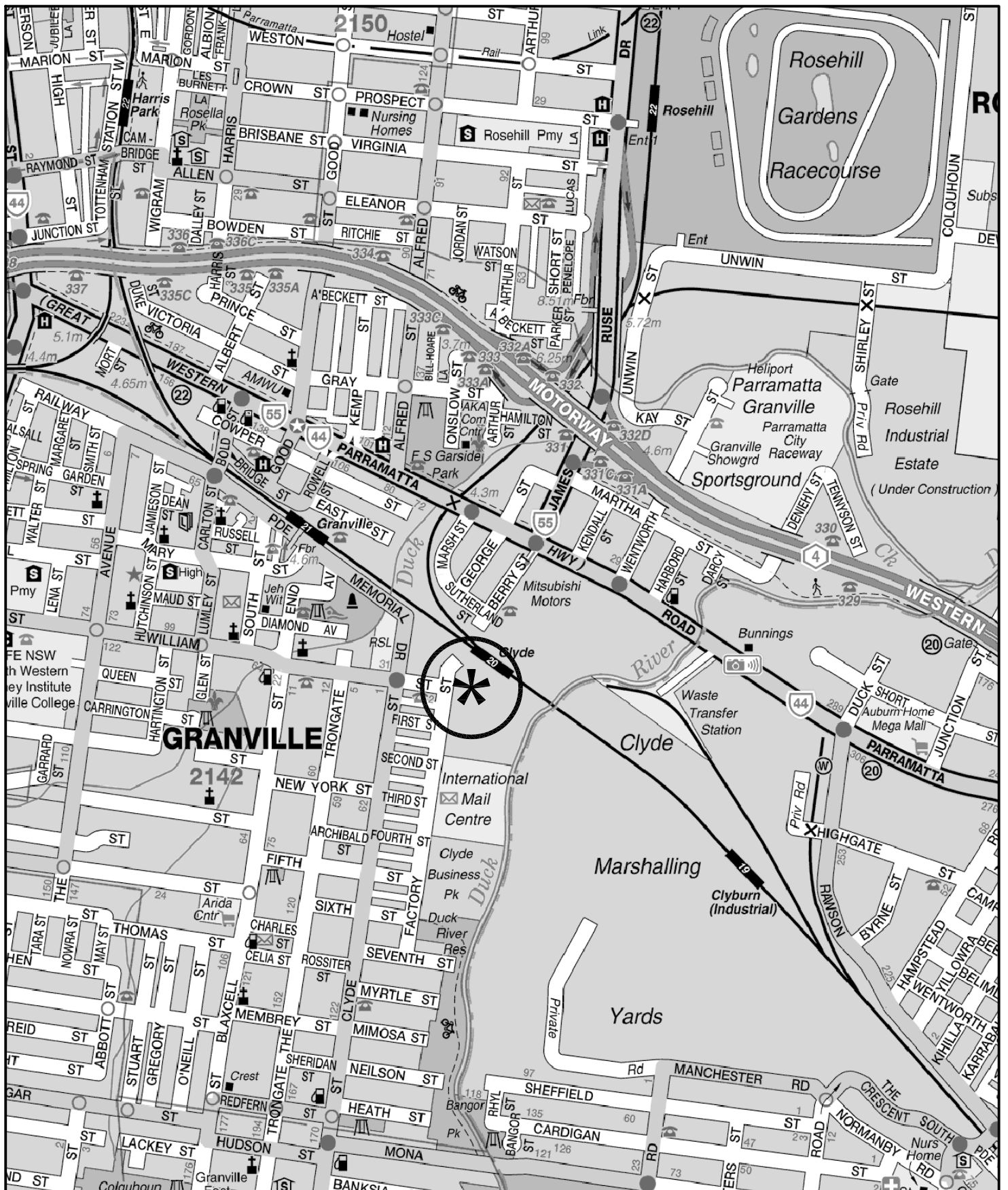
This report has been prepared to accompany a Development Application to Parramatta City Council for the proposed rezoning of an existing industrial site in Factory Street, Granville (Figure 1) to provide for residential apartment development.

The focus for increasing residential housing in the Sydney Metropolitan Area under the urban consolidation strategy has been placed on lands adjacent to railway stations and transport hubs. The subject site is located adjacent to Clyde Railway Station and also has ready access to the arterial road system (Parramatta Road, M4 and James Ruse Drive).

The existing industrial buildings on the site are outmoded and the circumstances present an ideal opportunity for a rezoning to permit residential apartment development with a significant portion of the site dedicated to Council.

The purpose of this report is to:

- * describe the site, the existing use and the potential development subject to the proposed rezoning
- * describe the road network serving the site and the prevailing traffic conditions
- * assess the potential traffic implications
- * assess the suitability of the envisaged parking, vehicle access, internal circulation and servicing arrangements.



LEGEND



LOCATION

FIG 1

2. PROPOSED DEVELOPMENT SCHEME

2.1 SITE, CONTEXT AND EXISTING USE

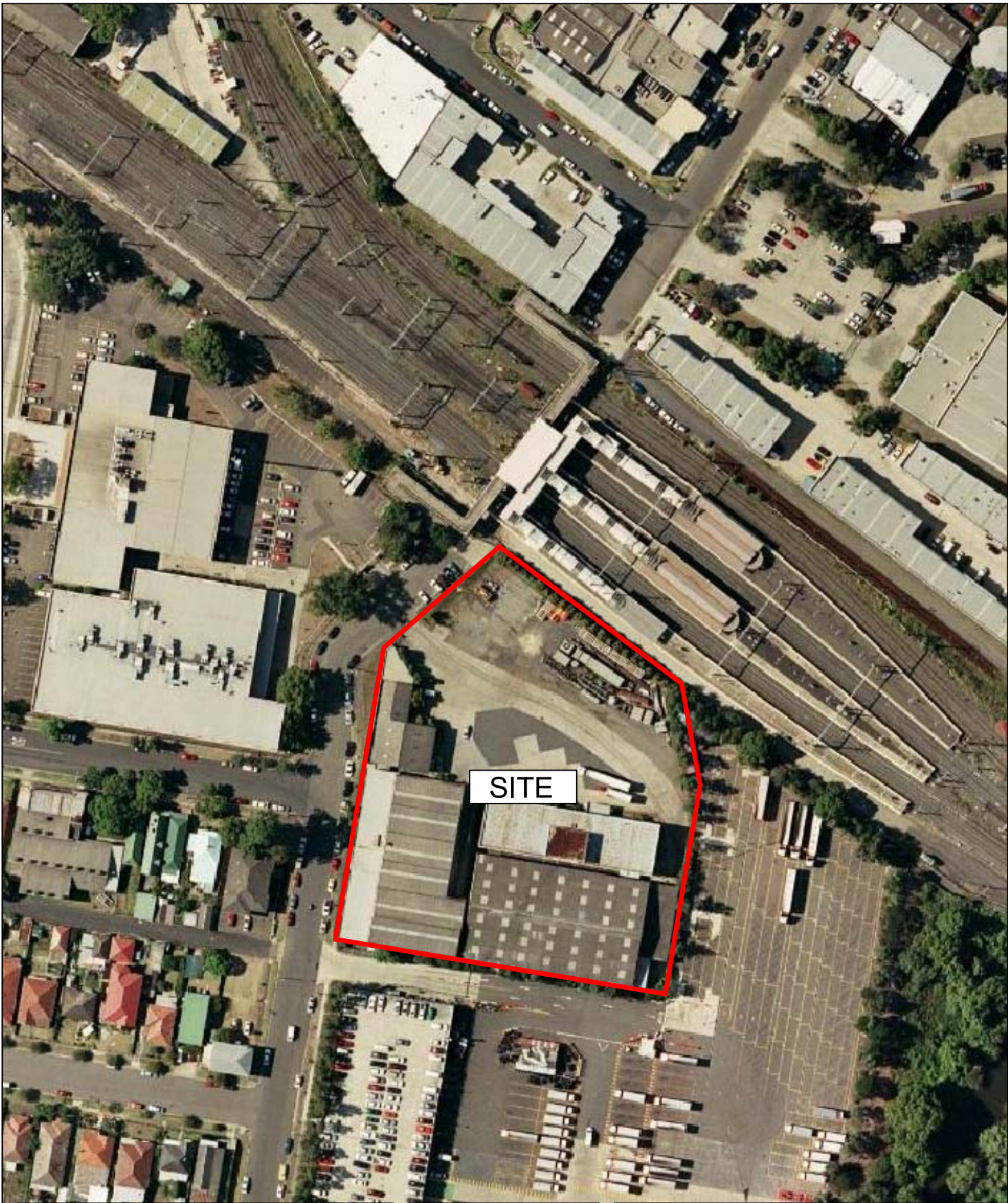
The site (Figure 2) is Lot 22 of DP 569501 occupying an irregular shaped area of some 10,700m² with a frontage of some 128 metres to the northern end of Factory Street. The site is located immediately to the south of Clyde Railway Station on the Main Western Line, and major nearby uses include:

- * the Australia Post and Clyde Business Park adjoining to the south on Factory Street
- * the Clyde Marshalling Yards and railway maintenance facilities to the south of Duck River
- * the residential development extending to the west and south

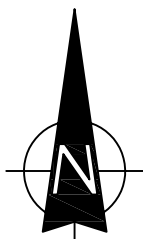
The industrial area itself is surrounded by extensive residential precincts while Granville Railway Station and small retail centre are situated about 500 metres to the west.

Details of the existing industrial/warehouse development on the site is provided on the plan overleaf and comprises:

<u>Building A</u>	3,442m ²
<u>Building B</u>	420.7m ²
<u>Building C</u>	2,079m ²

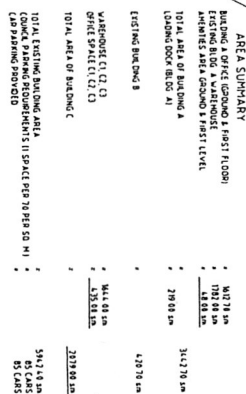


LEGEND



SITE

FIG 2



DATE	MO/NO/2000	DATE
 PLANDERS GROUP 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 8		

A total of 85 parking spaces are provided on the site together with a large hardstand 'yard space' along the northern boundary. Vehicle access is provided by driveway on the northern part of the Factory Street frontage.

2.2 PROPOSED REZONING

It is proposed to rezone the site for residential apartment development. The existing buildings would be demolished and the site partly excavated to provide for basement carparking and a level building platform.

It is proposed to dedicate some 1,535m² of the northern part of the site to Council (potentially for commuter carparking). The envisaged development subject to the rezoning would comprise 4 tower buildings with:

26 x 1 bed apartments

146 x 2 bed apartments

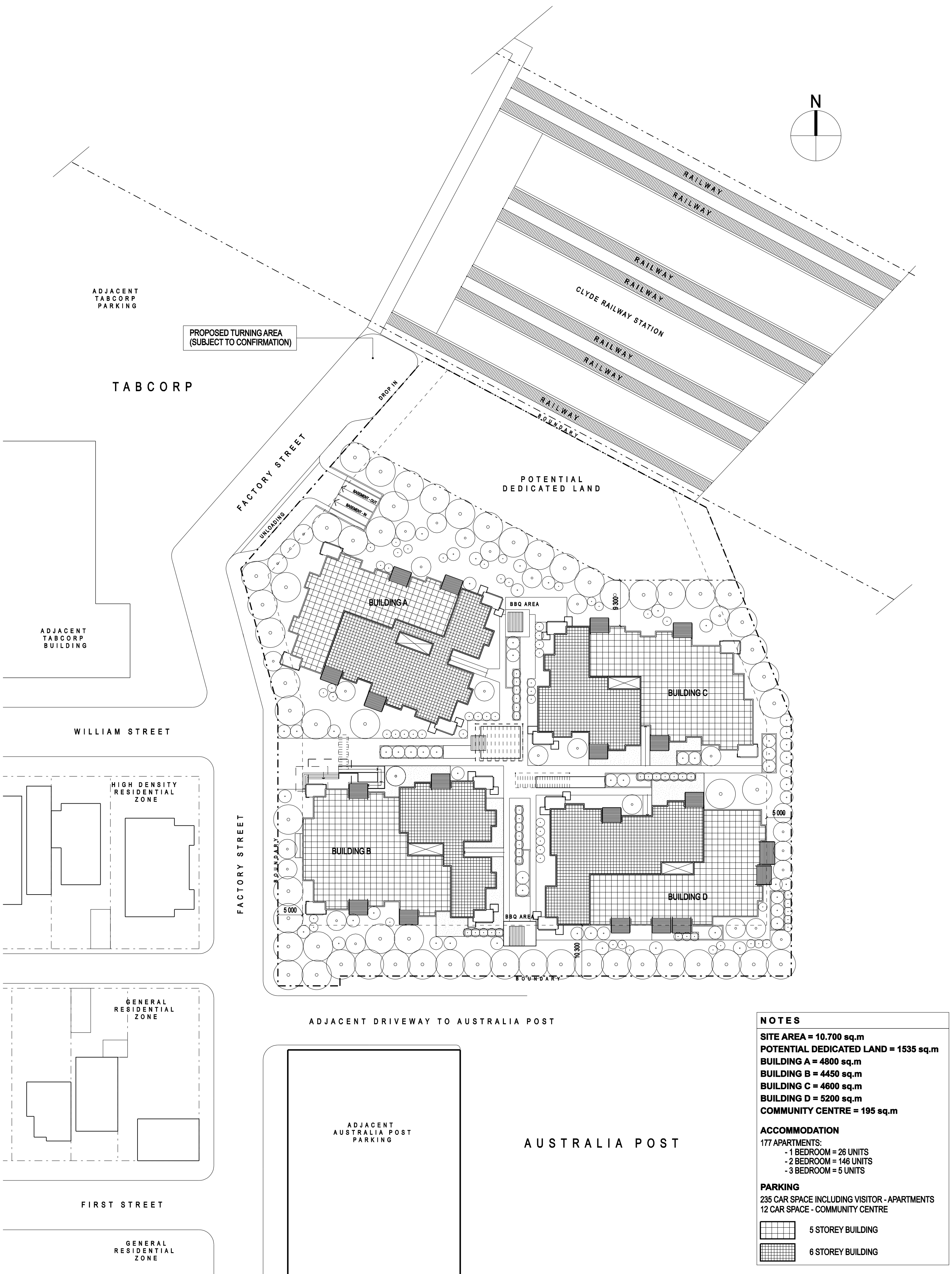
5 x 3 bed apartments

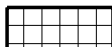
Total 177 apartments

195m² Community use element

A total of 247 parking spaces would be provided in the basement with vehicle access located on the northern part of Factory Street similar to the existing driveway.

Details of the envisaged development outcome are provided on the plans prepared by Urbania Design which are reproduced in part overleaf.



NOTES	
SITE AREA = 10,700 sq.m	
POTENTIAL DEDICATED LAND = 1535 sq.m	
BUILDING A = 4800 sq.m	
BUILDING B = 4450 sq.m	
BUILDING C = 4600 sq.m	
BUILDING D = 5200 sq.m	
COMMUNITY CENTRE = 195 sq.m	
ACCOMMODATION	
177 APARTMENTS:	
- 1 BEDROOM = 26 UNITS	
- 2 BEDROOM = 146 UNITS	
- 3 BEDROOM = 5 UNITS	
PARKING	
235 CAR SPACE INCLUDING VISITOR - APARTMENTS	
12 CAR SPACE - COMMUNITY CENTRE	
	5 STOREY BUILDING
	6 STOREY BUILDING

 urbania design pty limited abn 99 131 103 958 suite 1201, level 12, 109 pitt street sydney nsw 2000 australia Tel : 61 . 2 . 9223 7797 Fax: 61 . 2 . 9222 2801	MDM Pty. Ltd.		SCALE 1 : 500 @ A2	
	2 FACTORY STREET GRANVILLE NSW 2142		DATE 21.03.12 DRAWN MM	
	PROPOSED SITE PLAN, ROOF PLAN & LANDSCAPE PLAN (SUBJECT TO SURVEY)		CHECKED ISSUE B	
			PROJECT No. DRG. No. 11 / 171 / P R4 01	
			© urbania design pty limited 2012	

3. ROAD NETWORK AND TRAFFIC CONDITIONS

3.1 ROAD NETWORK

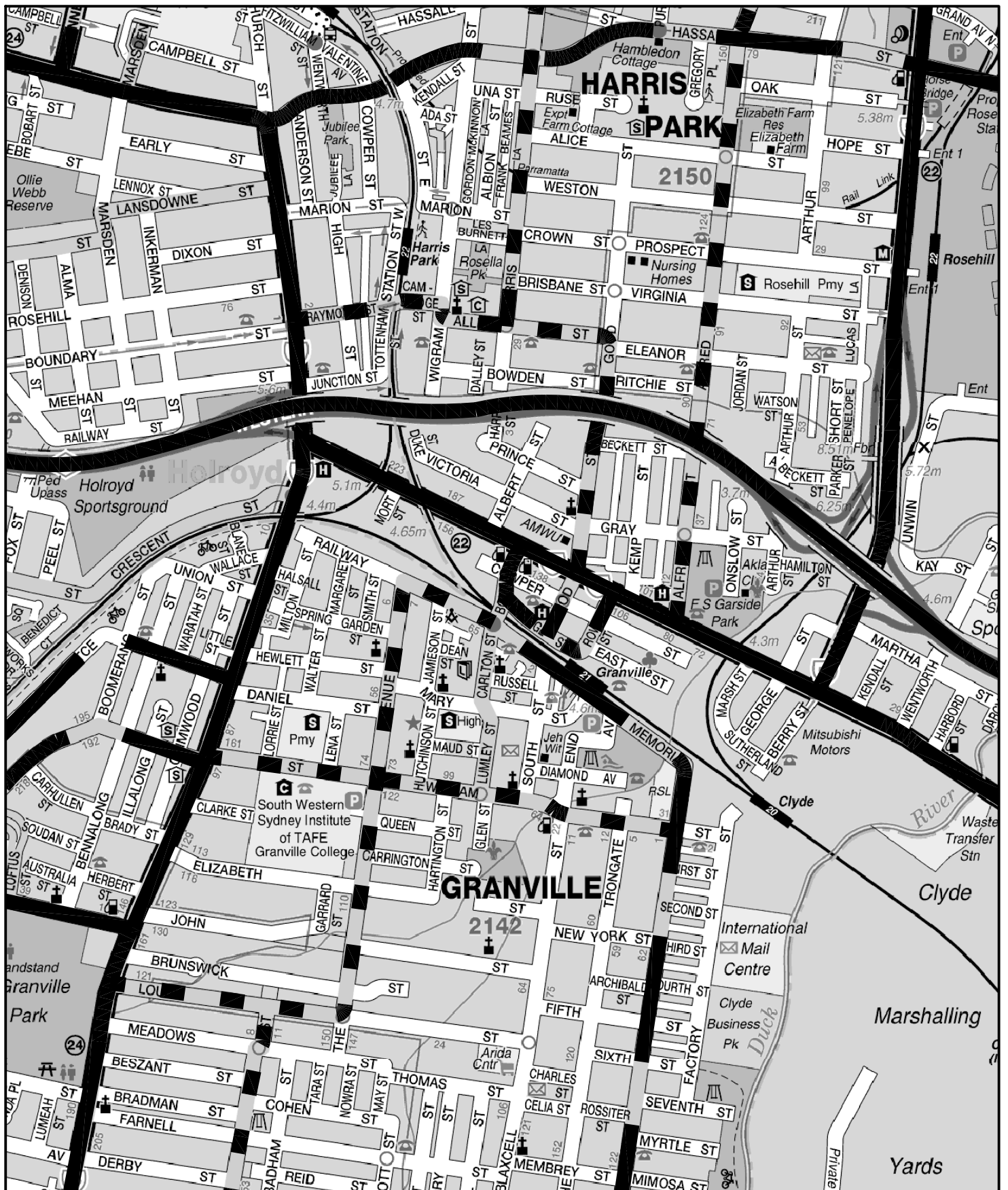
The road network serving the site (Figure 3) comprises:

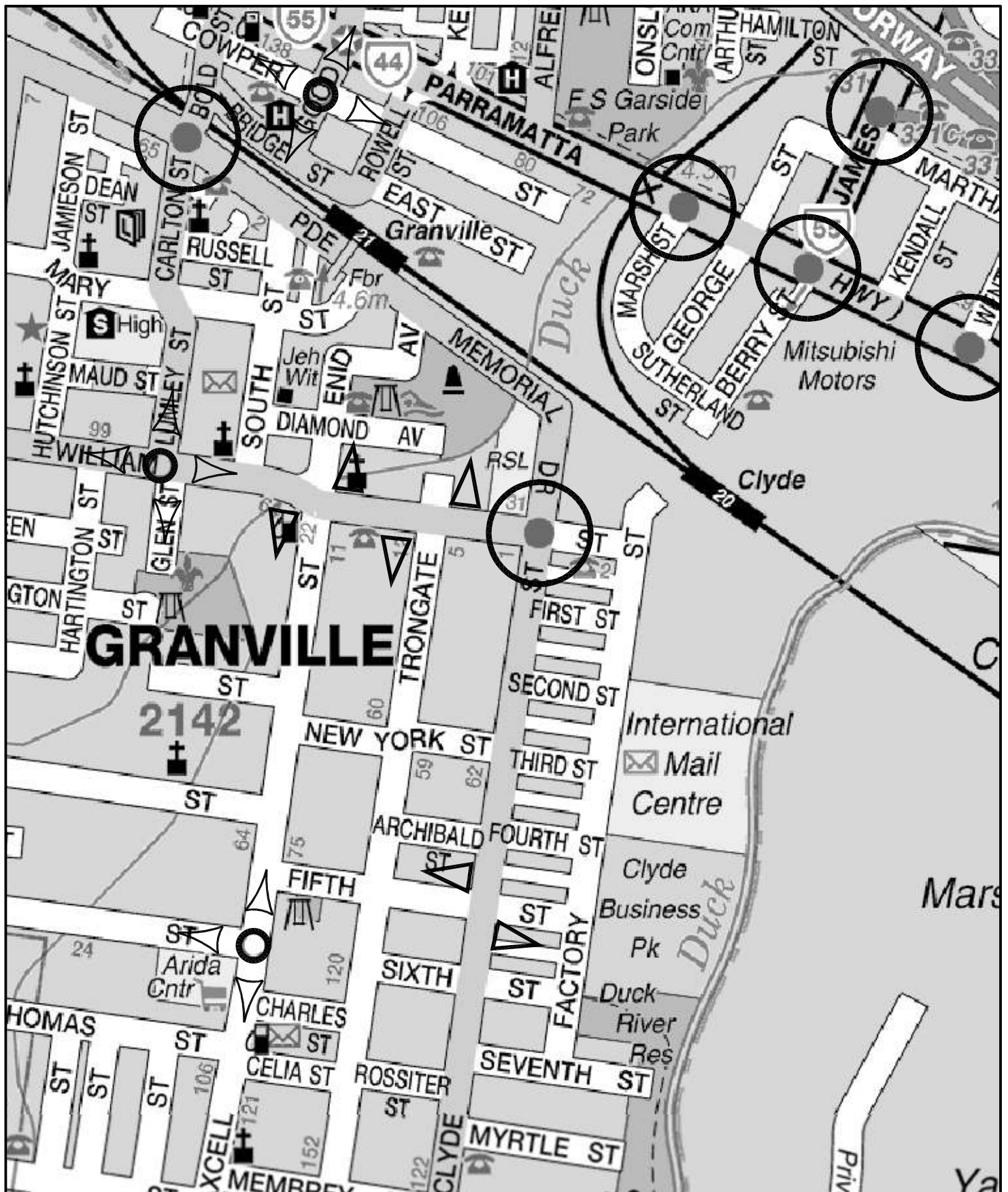
- * *M4 Motorway* – a major arterial route, linking between the City and Penrith
- * *Parramatta Road* – a State Highway and major arterial route linking between the City and Parramatta
- * *James Ruse Drive* – a State Road and arterial route linking between Parramatta Road and Windsor Road
- * *Woodville Road* – a State Road and arterial route linking between Parramatta Road and the Hume Highway
- * *Bold Street/Railway Parade/Memorial Avenue/Clyde Street* – a Regional Road and major collector route
- * *William Street/The Avenue/Louis Street/Good Street* – a minor collector road system.

Factory Street is a local access road which is relatively straight and level with a 13.0 metre wide carriageway in the vicinity of the site where it terminates as a dead end at the railway corridor.

3.2 TRAFFIC CONTROLS

The existing traffic controls which have been applied to the roads in the vicinity of the site (Figure 4) include:





LEGEND

- TRAFFIC SIGNAL CONTROL
- ROUNDAABOUT
- RESTRICTED TURNING MOVEMENT



TRAFFIC CONTROLS

FIG 4

- * the traffic signals at the Memorial Drive/Clyde Street/William Street intersection. Details of this intersection arrangement is shown on the design plan reproduced in Appendix A
- * the traffic signals at the Railway Parade and Bold Street intersection
- * the 60 kmph speed limit along Memorial Drive and Clyde Street and 50 kmph limits along Factory Street, William Street and other local streets
- * the LIGHT TRAFFIC limits on all local streets connecting Factory Street with Clyde Street, south of William Street.

3.3 TRAFFIC CONDITIONS

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

Location	AADT
Parramatta Road at Bold Street	55,736
Woodville Road at William Street	48,322

Traffic surveys have been undertaken at the William Street/Memorial Drive/Clyde Street intersection during the morning and afternoon peak periods. The results of those surveys are summarised in the following:

		AM	PM
William Street	Westbound	15	46
	Right-turn	20	79
	Left-turn	9	8

¹ Traffic Volumes for Sydney Region
Roads and Traffic Authority

		AM	PM
<i>William Street</i>	Eastbound	41	19
	Right-turn	123	170
	Left-turn	13	9
<i>Memorial Drive</i>	Southbound	318	390
	Right-turn	7	43
	Left-turn	74	15
<i>Clyde Street</i>	Northbound	371	427
	Right-turn	6	16
	Left-turn	74	216

The operational performance of the William Street/Memorial Drive/Clyde Street intersection under the recorded peak traffic demands has been modelled using the SIDRA program. The results of that analysis, indicating a relatively satisfactory operational performance, are provided in the following while the criteria for interpreting the model output are provided overleaf.

	AM	PM
Level of Service	A	B
Average vehicle delay	10.2	15.1

3.4 TRANSPORT SERVICES

Public transport services relative to the site are indicated in Appendix C as follows:

- * the rail services at Clyde Railway Station located immediately to the north of the development site
- * the Route 910 bus service operated by Veolia Transport along Blaxcell Street providing connection between the Parramatta and Bankstown Centres
- * the Route 909 bus service operated by Veolia Transport along Parramatta Road providing connection between the Parramatta and Bankstown Centres via Auburn.

Criteria for Interpreting Results of SIDRA Analysis

1. Level of Service (LOS)

LOS	Traffic Signals and Roundabouts	Give Way and Stop Signs
'A'	Good	Good
'B'	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
'C'	Satisfactory	Satisfactory but accident study required
'D'	Operating near capacity	Near capacity and Accident Study required
'E'	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode
'F'	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode

2. Average Vehicle Delay (AVD)

The AVD provides a measure of the operational performance of an intersection as indicated on the table below which relates AVD to LOS. The AVD's listed in the table should be taken as a guide only as longer delays could be tolerated in some locations (ie inner city conditions) and on some roads (ie minor side street intersecting with a major arterial route).

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabouts	Give Way and Stop Signs
A	Less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode

3. Degree of Saturation (DS)

The DS is another measure of the operational performance of individual intersections.

For intersections controlled by **traffic signals**² both queue length and delay increase rapidly as DS approaches 1, and it is usual to attempt to keep DS to less than 0.9. Values of DS in the order of 0.7 generally represent satisfactory intersection operation. When DS exceeds 0.9 queues can be anticipated.

For intersections controlled by a **roundabout or GIVE WAY or STOP signs**, satisfactory intersection operation is indicated by a DS of 0.8 or less.

¹ the values of DS for intersections under traffic signal control are only valid for cycle length of 120 secs

4. ACCESS

It is proposed to provide access for the basement carpark on the dead end section of Factory Street in a very similar position to the existing access driveway. The new access will be a suitable distance away from the William Street intersection on a section of Factory Street which is relatively straight and level.

The proposed access driveway will comply with the design requirements of AS2890.1 and will have suitable and appropriate sight distances available.

5. TRAFFIC

In relation to the existing uses on the site, the RMS Development Guideline traffic generation rate for Warehouse use is 0.5 vtpm per 100m² GFA and 1.0 vtpm per 100m² for Factory (office areas are incorporated into the total areas). On this basis the traffic generation of the existing uses on the site would be:

Building A (warehouse) 3,442m² - 17.2 vtpm

Building B (factory) 420.7m² - 4.2 vtpm

Buildings C1, C2 and C3 (warehouse) 2,079m² - 10.4 vtpm

The total existing traffic generation of these buildings on this basis would be a total of 32 vtpm including some 4 to 5 truck movements.

The RMS Guideline traffic generation rate for High Density Residential Apartments is 0.29 vtpm and while there is no stipulated use for the community element floorspace this could potentially be a childcare centre (highest order of potential use). The projected traffic generation of the envisaged development on this basis:

177 apartments @ 0.29	-	51.4 vtpm
Childcare Centre 30 children	-	12.0 vtpm
Total		64 vtpm

These trips would be distributed as follows:

	AM		PM	
	IN	OUT	IN	OUT
Apartments	11	41	41	11
Childcare Centre	7	5	5	7
Total	18	46	46	18

If the existing truck movements are equated to pcu's (passenger car units) then the comparison between existing and future peak traffic flows would be:

Existing	40 vtp
Future	64 vtp

While this is a moderate increase it is not a large volume per se' and assessment of the operation of the William street/Clyde street/Memorial Drive access intersection using SIDRA reveals that the existing satisfactory performance will be maintained with the projected additional traffic movements as follows:

	AM	PM
Level of Service	A	A
Average Vehicle Delay	12.8	17.3

6. PARKING, INTERNAL CIRCULATION AND SERVICING

PARKING

Councils Code in respect of the envisaged development specifies the following carparking criteria:

1 and 2 Bed Apartments	1 space
3 Bed Apartment	1.2 spaces
Visitors	0.25 spaces per apartment
Childcare Centre	1 space per 4 children

Thus the envisaged development would require:

26 x 1 Bed Apartments	26 spaces
146 x 2 Bed Apartments	146 spaces
5 x 3 Bed Apartments	6 spaces
Visitors	45 spaces
Community/Child Care Centre	12 spaces
Total	235 spaces

It would be proposed to provide a total of 247 parking spaces in the development including an appropriate quantum of disabled/accessible spaces as well as bicycle parking in accordance with Councils Code.

INTERNAL CIRCULATION

The design of the internal circulation arrangements would accord with AS2890 and Council DCP requirements.

SERVICING

Refuse will be removed from the street by Councils collection service. The proposed recessed bay on the Factory Street frontage will provide for the occasional large service vehicles (eg furniture movements) while service personnel will be able to use the available visitor spaces in the Basement carpark.

7. CONCLUSION

The proposed rezoning of the existing industrial site at 2 Factory Street, Granville represents an appropriate outcome for residential apartment development adjacent to a Railway Station and with ready access to the arterial road network.

This assessment has concluded that the envisaged development subject to the proposed rezoning would:

- * not result in any unsatisfactory traffic implications
- * accommodate adequate on-site parking provision
- * have suitable and appropriate vehicle access and internal circulation arrangements

APPENDIX A

INTERSECTION PLAN



APPENDIX B

TRAFFIC SURVEYS



R.O.A.R. DATA

Reliable, Original & Authentic Results

Ph.88196847, Fax 88196849, Mob.0418-239019

Client : T.T.P.A

Job No/Name : 2443 GRANVILLE Clyde St

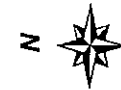
Day : Tuesday

All Vehicles	NORTH				WEST				SOUTH				EAST				
	Memorial Dr				William St				Clyde St				William St				
	L	I	R	TOT	L	I	R	TOT	L	I	R	TOT	L	I	R	TOT	
Time Per	14	84	3	282	3	11	36	20	96	0	3	4	8	3	10	23	345
0730 - 0745	25	81	1	279	2	13	34	18	96	2	1	3	3	3	8	22	358
0745 - 0800	19	73	1	255	5	8	32	17	88	3	3	3	3	1	11	20	348
0800 - 0815	16	80	2	255	3	9	21	19	91	1	2	5	6	1	17	14	387
0815 - 0830	21	76	0	257	0	10	16	18	107	0	1	4	4	1	12	21	331
0830 - 0845	15	51	2	204	1	8	17	17	74	0	2	7	10	2	8	21	351
0845 - 0900	17	46	2	215	1	6	26	32	71	2	4	2	6	3	17	13	314
0900 - 0915	11	74	3	219	3	7	19	21	70	2	1	6	2	2	12	14	294
0915 - 0930	138	565	14	1966	18	72	201	162	693	10	17	34	42	16	95	148	2728
Period End																	

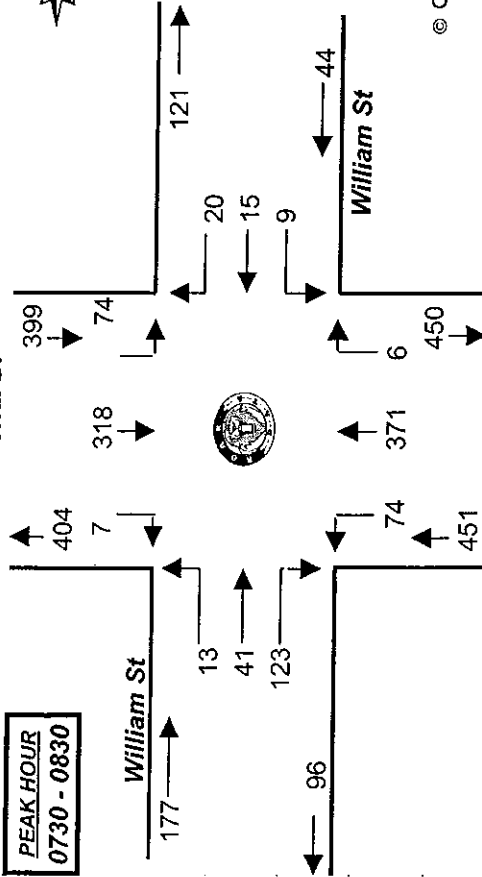
All Vehicles	NORTH				WEST				SOUTH				EAST														
	Memorial Dr				William St				Clyde St				William St														
	L	I	R	TOT	L	I	R	TOT	L	I	R	TOT	L	I	R	TOT											
Time Per	1630 - 1645	5	94	6	37	53	107	2	3	10	23	345	1645 - 1700	2	99	8	3	39	55	112	4	3	8	22	358		
1645 - 1700	2	99	8	3	39	55	112	4	3	8	22	358	1700 - 1715	6	96	10	1	5	36	56	100	6	1	11	20	348	
1700 - 1715	6	96	10	1	5	36	56	100	6	1	11	20	348	1715 - 1730	2	101	19	3	8	58	52	108	4	1	17	14	387
1715 - 1730	2	101	19	3	8	58	52	108	4	1	17	14	387	1730 - 1745	7	107	4	4	1	40	51	78	5	1	12	21	331
1730 - 1745	7	107	4	4	1	40	51	78	5	1	12	21	331	1745 - 1800	6	106	1	11	5	48	50	86	7	2	8	21	351
1745 - 1800	6	106	1	11	5	48	50	86	7	2	8	21	351	1800 - 1815	1	96	9	4	4	42	37	86	2	3	17	13	314
1800 - 1815	1	96	9	4	4	42	37	86	2	3	17	13	314	1815 - 1830	2	94	4	5	3	36	42	78	2	2	12	14	294
1815 - 1830	2	94	4	5	3	36	42	78	2	2	12	14	294	Period End	31	793	61	33	32	336	396	755	32	16	95	148	2728
Period End	31	793	61	33	32	336	396	755	32	16	95	148	2728														

Peak Time	NORTH				WEST				SOUTH				EAST			
	Memorial Dr				William St				Clyde St				William St			
	L	I	R	TOT	L	I	R	TOT	L	I	R	TOT	L	I	R	TOT
0730 - 0830	74	318	7	13	41	123	74	371	6	9	15	20	1071			
0745 - 0845	81	310	4	10	40	103	72	382	6	7	15	16	1046			
0800 - 0900	71	280	5	9	35	86	71	360	4	8	19	23	971			
0815 - 0915	69	253	6	5	33	80	86	343	3	9	18	26	931			
0830 - 0930	64	247	7	5	31	78	88	322	4	8	19	22	895			
PEAK HOUR	74	318	7	13	41	123	74	371	6	9	15	20	1071			

Peak Time	NORTH				WEST				SOUTH				EAST			
	Memorial Dr				William St				Clyde St				William St			
	L	I	R	TOT	L	I	R	TOT	L	I	R	TOT	L	I	R	TOT
1630 - 1730	15	390	43	9	19	170	216	427	16	8	46	79	1438			
1645 - 1745	17	403	41	11	17	173	214	398	19	6	48	77	1424			
1700 - 1800	21	410	34	19	19	182	209	372	22	5	48	76	1417			
1715 - 1815	16	410	33	22	18	188	190	358	18	7	54	69	1383			
1730 - 1830	16	403	18	24	13	166	180	328	16	8	49	69	1290			
PEAK HOUR	15	390	43	9	19	170	216	427	16	8	46	79	1438			

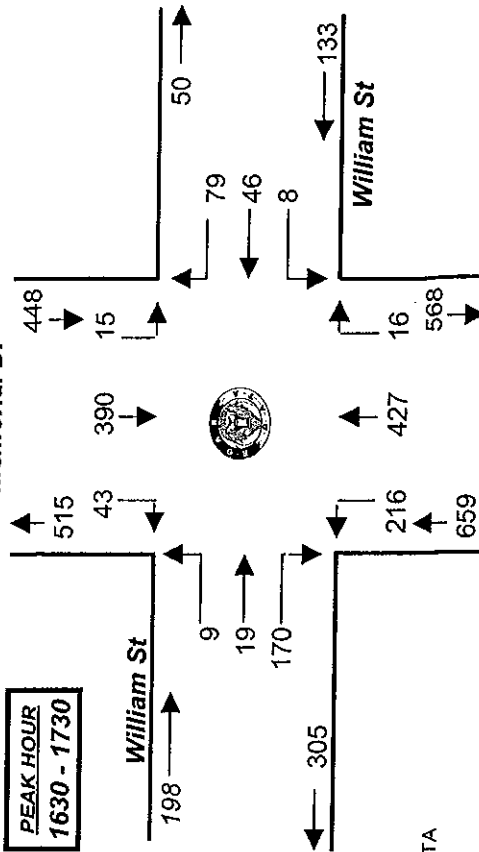


Memorial Dr



PEAK HOUR
1630 - 1730

Memorial Dr



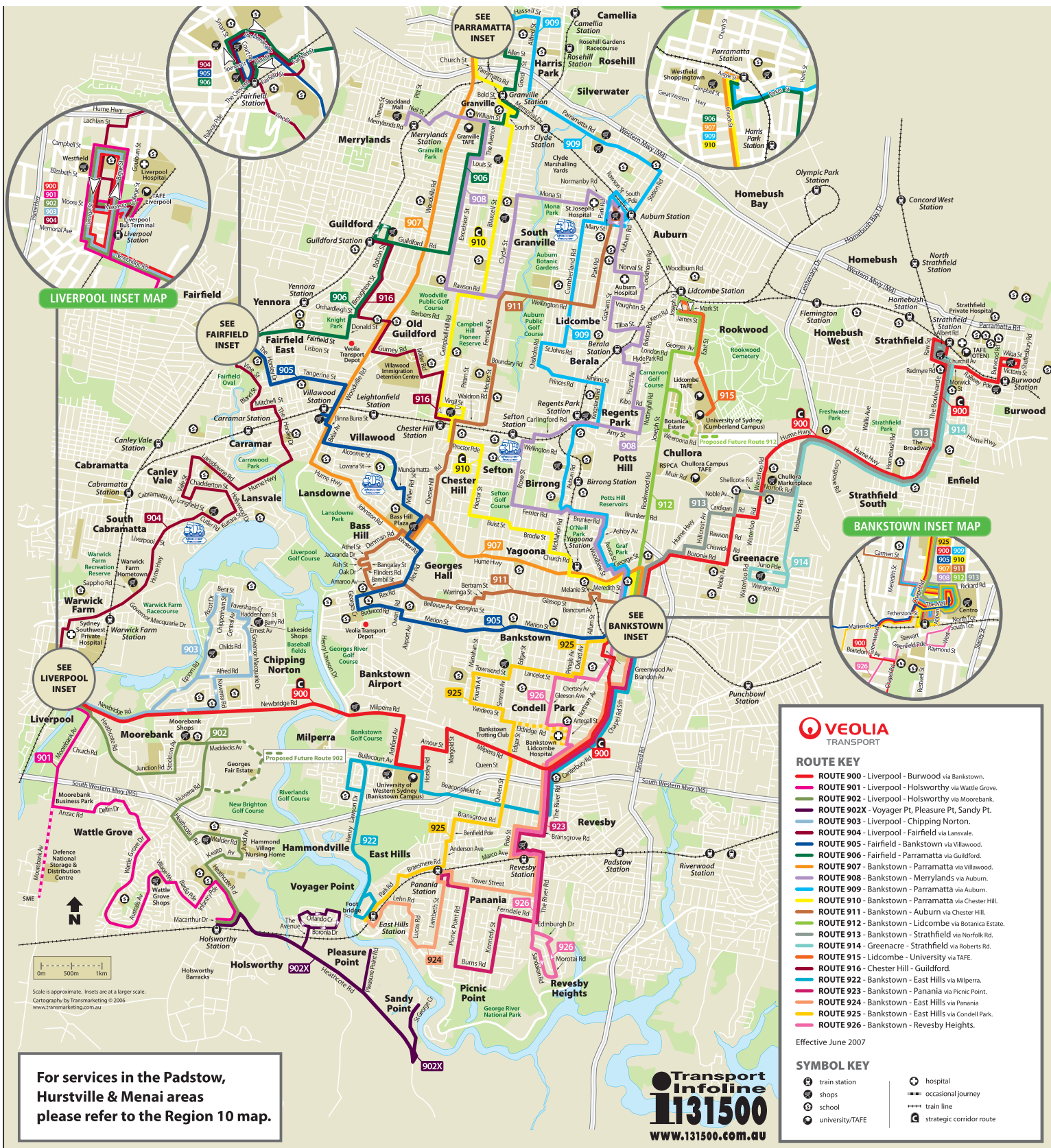
© Copyright ROAR DATA

Clyde St

Clyde St

APPENDIX C

TRANSPORT SERVICES



Look for bus
number

906

Parramatta to Fairfield

Buses Serving

Parramatta
Granville
South Granville
Guildford
Fairfield East
Fairfield



See back cover for
detailed route descriptions

Effective from 2 April 2007



Your Region 13 bus operator



How to use this timetable

1. Using the route map provided, find the two timing points you are located between
2. Locate these two timing points on the timetables
3. 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 **A** and the time listed for **B**.

Fares

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.
Lost property enquiries for this service can be made by calling on 8700 0555. Please keep your bus ticket to help identify the bus involved.

Additional Information

Veolia Transport reserves the right to amend this timetable without prior notice. If you have not used our services for a long period of time you can check if this timetable is still current by referring to our web site or phoning us on 8700 0555. Veolia Transport endeavours to ensure services depart at the specified times. Timetables may change and buses may be delayed or cancelled due to circumstances beyond Veolia Transport's control. Wheelchair-accessible buses operate on selected timetabled services. While Veolia Transport will endeavour to operate an accessible bus at the time(s) nominated, due to circumstances beyond Veolia Transport's 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.



Welcome Aboard

This timetable details the 906 bus route operated by Veolia Transport 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 "hail" 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 the Transport InfoLine and on board all our buses.

Changes to timetables

Sometimes timetables and bus routes change. You can check for updates by visiting the Veolia Transport website at www.veoliatransportnsw.com.au or by calling the Transport InfoLine on 131 500.

Bus Route Numbers

906

Fairfield to Parramatta
via Guildford Station and
Excelsior Street
Services operate
Monday to Saturday.

Further Information

The Transport InfoLine provides
up-to-the-minute transport
information about bus, train
and ferry services operating
right across Sydney.
**Transport
InfoLine
131500**
www.131500.com.au

This service is operated by



PO Box 209 Georges Hall NSW 2198
127 Link Rd
Banksstown Airport NSW 2200
Ph: 02 8700 0555
www.veoliatransportnsw.com.au

Monday to Friday									
map ref	Route Number	906 am	906 am	906 am	906 am	906 am	906 am	906 pm	906 pm
A Fairfield Station	Orchardleigh St & Broughton St	5:37	...	6:22	6:52	7:22	7:52	8:22	8:52
		5:45	...	6:30	7:00	7:30	8:00	8:30	9:00
C Guildford Station	Guildford Rd & Excelsior St	5:50	...	6:35	7:05	7:35	8:05	8:35	9:05
D Granville TAFE (The Avenue)		5:56	6:26	6:41	7:11	7:41	8:11	8:41	9:11
F Granville Station	Good St & Allen St	6:03	6:33	6:48	7:18	7:48	8:18	8:48	9:18
G Parramatta Interchange		6:08	6:38	6:53	7:23	7:53	8:23	8:53	9:23
		6:10	...	6:56	7:26	7:58	8:28	8:56	9:26
		6:18	6:51x	7:05	7:35	8:07	8:37	9:05	9:35

Saturday			
map ref	Route Number	906 am	906 pm
A Fairfield Station	Orchardleigh St & Broughton St	...	...
		6:44	...
C Guildford Station	Guildford Rd & Excelsior St	6:48	7:48
D Granville TAFE (The Avenue)		6:54	7:54
F Granville Station	Good St & Allen St	7:00	8:00
G Parramatta Interchange		7:04	8:04
		7:07	8:07
		7:15	8:15

Explanations

- ... - Journey does not operate past this timing point.
- G** - On school days bus diverts from Guildford Road via Rowley Road and Rawson Road to Excelsior Street.
- x** - Time shown is connecting Route 910 bus. Ask your driver for a transfer ticket and change buses at Granville Station.
-  - This service is usually operated by a wheelchair accessible bus.

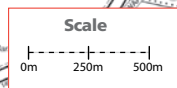
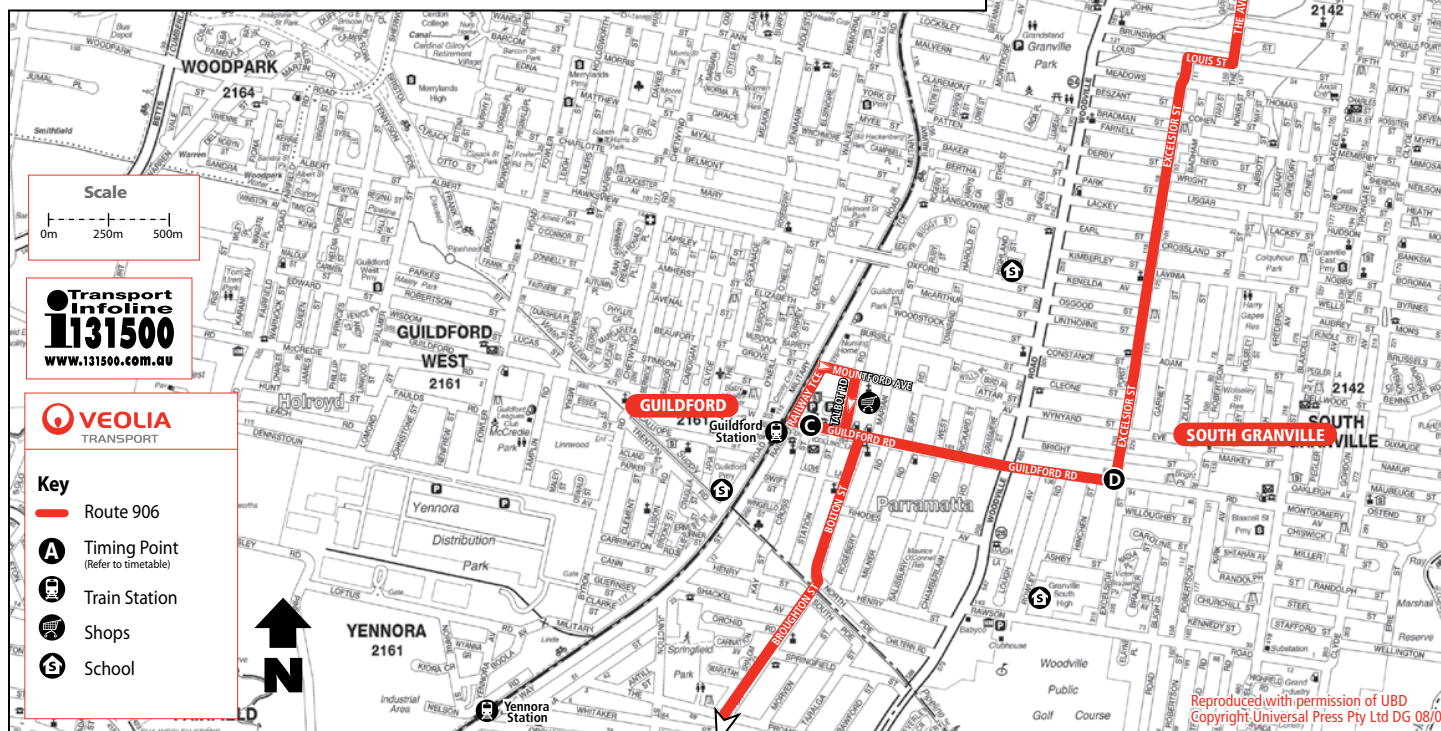
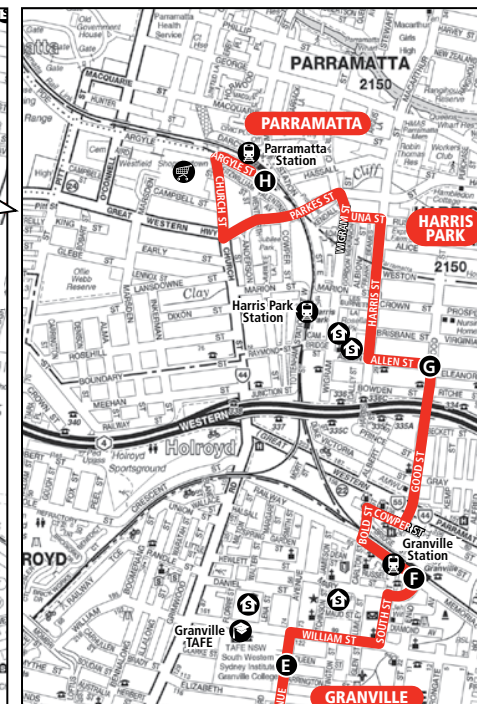
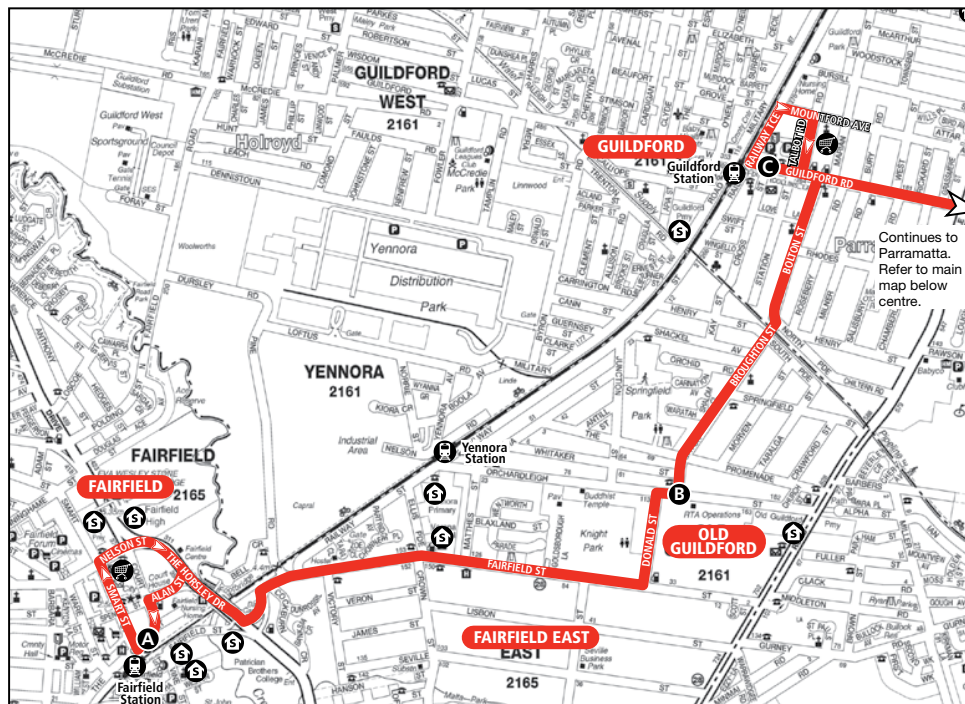
A Timing Points

For your assistance, the symbols located in the timetables refer to corresponding locations on the route map.

* Sundays & Public Holidays

Route 906 does not operate on Sundays and Public Holidays. The nearest services are Route 907 along Woodville Road and Route 910 along Blaxcell Street. Please see separate timetables for further details.

Route 906 does not operate on Sundays and Public Holidays. The nearest services are Route 907 along Woodville Road and Route 910 along Blaxcell Street. Please see separate timetables for further details.



Transport Infoline
131500
 www.131500.com.au

VEOLIA
 TRANSPORT

- Key**
- Route 906
 - A Timing Point (Refer to timetable)
 - Train Station
 - Shops
 - School

Fare Sections - Route 906

- Parramatta Interchange
- Harris St & Allen St
- Granville Station
- Excelsior St & Louis St
- Guildford Rd & Excelsior St
- Guildford Station
- The Promenade & Broughton St
- Fairfield St & Victory St
- Fairfield Station

Reproduced with permission of UBD
 Copyright Universal Press Pty Ltd DG 08/01



Route
S1

Lansvale to Cabramatta



Monday to Friday

map ref	Route Number	S1 am	S1 am	S1 am	S1 pm	S1 pm
A	Lansvale - Huntingdale Av & Hume Hwy	8.55	9.55	10.55	12.55	1.55
B	Lansvale - Cutler Rd & Kurrara St	8.58	9.58	10.58	12.58	1.58
C	Lansvale - Day St & Willis St	9.02	10.02	11.02	1.02	2.02
D	Lansvale - Lansdowne Rd & Hume Hwy	9.07	10.07	11.07	1.07	2.07
E	Cabramatta - Longfield St & Vale St	9.11	10.11	11.11	1.11	2.11
F	Cabramatta Station - Railway Pde	9.19	10.19	11.19	1.19	
G	Cabramatta Station - Broomfield St	9.27	10.27		1.27	2.14



Route
S1

Cabramatta to Lansvale



Monday to Friday

map ref	Route Number	S1 am	S1 am	S1 pm	S1 pm	S1 pm
F	Cabramatta Station - Railway Pde	9.20	10.20	12.20	1.20	
G	Cabramatta Station - Broomfield St	9.30	10.30	12.30	1.30	3.30
E	Cabramatta - Longfield St & Vale St	9.38	10.38	12.38	1.38	3.38
D	Lansvale - Lansdowne Rd & Hume Hwy	9.42	10.42	12.42	1.42	3.42
C	Lansvale - Day St & Willis St	9.47	10.47	12.47	1.47	3.47
B	Lansvale - Cutler Rd & Kurrara St	9.51	10.51	12.51	1.51	3.51
A	Lansvale - Huntingdale Av & Hume Hwy	9.55	10.55	12.55	1.55	3.55



Route
S2

Auburn to Granville



Monday to Friday

map ref	Route Number	S2 am	S2 am	S2 am	S2 pm	S2 pm
H	Auburn Station - South Pde		9.42	10.42	12.42	1.42
I	Auburn Botanic Gardens - Chisholm Rd		9.52	10.52	12.52	1.52
J	South Granville - Clyde St & Wellington Rd	8.57	9.57	10.57	12.57	1.57
K	South Granville - Clyde St & Mona St	9.03	10.03	11.03	1.03	2.03
L	Granville Station - south side	9.10	10.10	11.10	1.10	2.10
	Connecting bus arrives Parramatta	9.35x	10.28x	11.25x	1.25x	2.25x



Route
S2

Granville to Auburn



Monday to Friday

map ref	Route Number	S2 am	S2 am	S2 am	S2 pm	S2 pm
	Connecting bus departs Parramatta	9.00x	10.00x	11.00x	1.00x	2.00x
L	Granville Station - south side	9.15	10.15	11.15	1.15	2.15
K	South Granville - Clyde St & Mona St	9.22	10.22	11.22	1.22	2.22
J	South Granville - Clyde St & Wellington Rd	9.27	10.27	11.27	1.27	2.27
I	Auburn Botanic Gardens - Chisholm Rd	9.32	10.32	11.32	1.32	
H	Auburn Station - South Pde	9.40	10.40	11.40	1.40	

Fare Sections - S1

- Cabramatta station (west)
- Cabramatta station (east)
- Vale St & Chancery St
- Hollywood Dr & Kurrara St
- Willis St loop
- Hume Hwy & Huntingdale Ave

Fare Sections - S2

- Auburn Station
- Chisholm Rd & Mary St
- Wellington Rd & Chisholm Rd
- Clyde St & Chiswick Rd
- Clyde St & Sixth St
- Granville Station

Explanations

.... - Journey does not operate past this timing point.

A Timing Points

For your assistance, the symbols located in the timetables refer to corresponding locations on the route map.

Weekends & Public Holidays

Shopper Hopper services do not operate on weekends & public holidays.

Look for bus
number

S1
S2
S3
S4

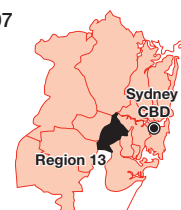


Buses Serving

Auburn
Cabramatta
Chester Hill
Granville
Lansvale
Sefton
South Granville
Villawood

See back cover for
detailed route descriptions

Effective from 12 February 2007
Reprinted April 2007



Your Region 13 bus operator



How to use this timetable

1. Using the route map provided, find the two timing points you are located between
2. Locate these two timing points on the timetables
3. 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 **A** and the time listed for **B**.

Fares

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.

Lost property enquiries for this service can be made at Bankstown Airport depot, on 8700 0555. Please keep your bus ticket to help identify the bus involved.

Additional Information

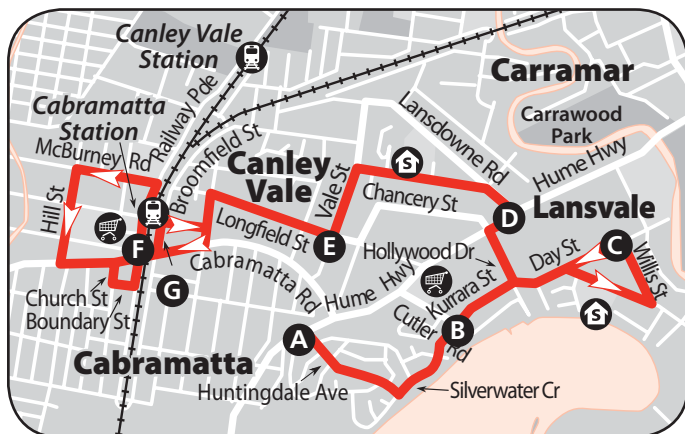
Veolia Transport reserves the right to amend this timetable without prior notice. If you have not used our services for a long period of time you can check if this timetable is still current by referring to our web site or phoning us on 8700 0555. Veolia Transport endeavours to ensure services depart at the specified times. Timetables may change and buses may be delayed or cancelled due to circumstances beyond Veolia Transport's control. Wheelchair-accessible buses operate on selected timetabled services. While Veolia Transport will endeavour to operate an accessible bus at the time(s) nominated, due to circumstances beyond Veolia Transport's control, this service may be replaced by an ordinary bus.

A Pleasant Environment For All

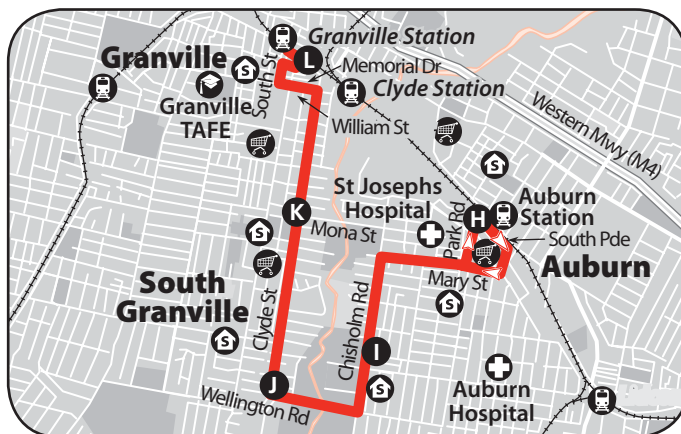
In the interests of our passengers, please refrain from smoking, eating, drinking or playing loud music on our buses.



S1 Lansvale - Cabramatta



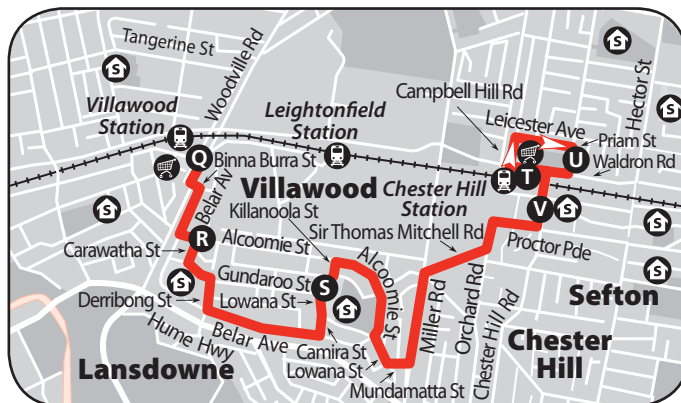
S2 Granville - Auburn



S3 Sefton - Chester Hill



S4 Villawood - Chester Hill



Route S3

Sefton to Chester Hill



A Timing Points

For your assistance, the symbols located in the timetables refer to corresponding locations on the route map.

Weekends & Public Holidays

Shopper Hopper services do not operate on weekends & public holidays.

Monday to Friday

map ref	Route Number	S3 am	S3 am	S3 pm
M	Chester Hill Station - Waldron Rd	9.56	11.36	1.36
N	Chester Hill Shops - Priam St	10.00	11.40	1.40
O	Sefton - Hector St & Batt St	10.05	11.45	1.45
P	Sefton Station - Wellington Rd	10.10	11.50	1.50
M	Chester Hill Station - Waldron Rd	10.15	11.55	1.55

Fare Sections - S3

- Chester Hill Station
- Hector St & Batt St
- Batt St & Rose St
- Sefton Station

Route S4

Villawood to Chester Hill



Bus Route Numbers

S1 - Lansvale to Cabramatta

S2 - Granville to Auburn

S3 - Sefton to Chester Hill

S4 - Villawood to Chester Hill

Monday to Friday

map ref	Route Number	S4 am	S4 am	S4 pm
Q	Villawood Shops - Villawood Place	9.40	11.20	1.20
R	Villawood - Alcoomie St & Carawatha St	9.42	11.22	1.22
S	Villawood East School - Lowana St	9.46	11.26	1.26
T	Chester Hill Station - Waldron Rd	9.56	11.36	1.36
U	Chester Hill Shops - Priam St	9.57	11.37	1.37

Route S4

Chester Hill to Villawood



Further Information

Transport Infoline
131500
www.131500.com.au

The Transport Infoline provides up-to-the-minute transport information about bus, train and ferry services operating right across Sydney.

This service is operated by



PO Box 209 Georges Hall NSW 2198
127 Link Rd
Bankstown Airport NSW 2200
Ph: 8700 0555
www.veoliatransportnsw.com.au

Monday to Friday

map ref	Route Number	S4 am	S4 pm	S4 pm
U	Chester Hill Shops - Priam St	10.35	12.15	2.15
V	Chester Hill Library - Chester Hill Rd	10.36	12.16	2.16
S	Villawood East School - Lowana St	10.44	12.24	2.24
R	Villawood - Alcoomie St & Carawatha St	10.48	12.28	2.28
Q	Villawood Shops - Villawood Place	10.51	12.31	2.31

Fare Sections - S4

- Villawood Shops
- Derribong St & Belar Av
- Lowana St & Alcoomie St
- Sir Thomas Mitchell Rd & Orchard Rd
- Chester Hill Shops - Priam St