PROPOSED RESIDENTIAL DEVELOPMENT

68, 68a and 72 Railway Parade and 2 - 2a, 4 - 10 Oxford Street in Burwood

Traffic and Parking Impact Report

Prepared for: Pacific Planning

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1. INTRODUCTION

Motion Traffic Engineers was commissioned by Pacific Planning to undertake a traffic and parking impact assessment of proposed residential development at 68 – 72 Railway Parade and 2 – 2A, 4 – 10 Oxford Street in Burwood. The site is located on the eastern corner of Railway Parade with Oxford Street.

The site has frontage to Railway Parade and Oxford Street. The proposed vehicle access and egress to the car park is from Oxford Street. Currently the addresses of 4-10 Oxford Street are residential homes. The site of 68-72 Railway Parade and 2-2A Oxford Street is now a vacant site with no permanent structures present.

The proposed development will consist of 219 apartments. Car parking will be provided at the basement level.

This traffic report focuses on the proposed development and changes in car usage and car park utilisation and additional trips from the proposed development.

In the course of preparing this assessment, the subject site and its environs have been inspected, plans of the development examined, and all relevant traffic and parking data collected and analysed.

2. BACKGROUND AND EXISTING CONDITIONS OF THE PROPOSED LOCATION

2.1 Location and Land Use

The proposed residential development is located on the corner of Railway Parade with Oxford street and at the perimeter of Burwood Town Centre.

The nearby landuses on Railway Parade are retail and commercial business as well as residential homes and a public school. The Burwood Train Station and bus services is nearby. The site is located within a school zone speed limit during the school days drop off and pick up period.

Figures 1 and 2 show the location of the development site from the aerial and street map perspective respectively.

Figures 3 shows the existing site.

Figure 1: Location of the Subject Site on Aerial

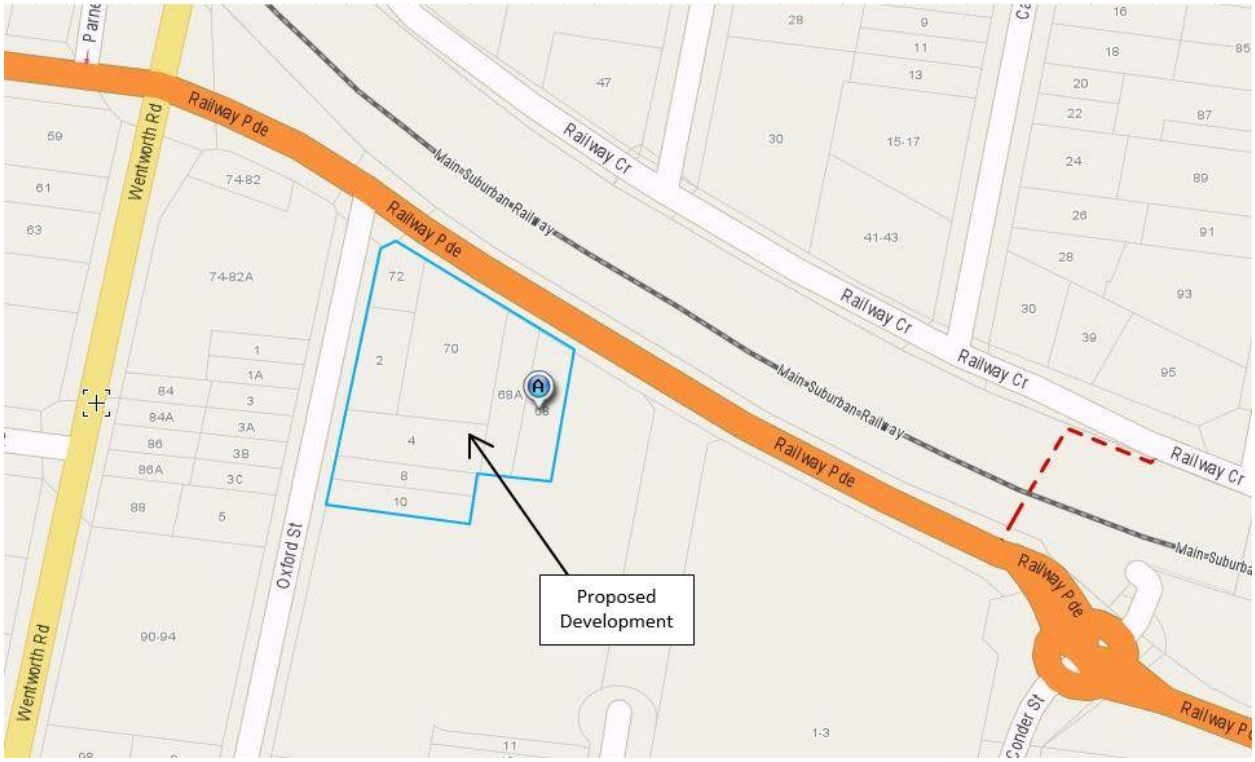

Figure 2: Street Map of the Location of the Development Site

Figure 3a: Site of 68 - 72 Railway Parade

Figure 3b: Site of 2-2A Oxford Street

Figure 3c: Property of 4 Oxford Street

Figure 3d: Property of 6 Oxford Street

Figure 3e: Property of 8 Oxford Street

Figure 3f: Property of 10 Oxford Street

2.2 Road Network

This section describes the roads near the proposed development. Railway Parade is a collector road near the development with on street parking restricted. Railway Parade has two lanes westbound and one lane eastbound adjacent to the site. The default speed limit is 50km/hr except when the school zone speed limit applies near the nearby Burwood Public School.. Figure 4 shows a photograph of Railway Parade near the development.

The property has frontage to Oxford Street. Oxford Street is a local road with one lane each way with on street parking permitted on both sides of the road. The default speed limit is 50km/hr except when the school zone speed limit applies near the nearby Burwood Public School. Figure 5 shows a photograph of Oxford Street.

Figure 4: Railway Parade looking east from adjacent the Development Site

Figure 5: Oxford Street looking north from adjacent the site

2.3 Public Parking Opportunities

Time restricted on-street parking is permitted on both sides of Oxford Street during the following times:

- 8am-6pm Monday to Friday
- 8am-1pm on Saturdays

Site observations show that there are a small number of vacant car spaces as shown in Figure 5.

On street parking is not permitted on Railway Parade.

2.4 Intersection Description

As part of the traffic impact assessment, the performance of two nearby intersections were surveyed and assessed:

- The priority intersection of Railway Parade and Oxford Street.
- The signalised intersection of Wentworth Road with Railway Parade and Morwick Street.

External traffic travelling to and from the site will most likely need to travel through the above intersection.

The priority intersection of Railway Parade with Oxford Street is a three leg intersection with drivers from Oxford Street needing to give way to traffic on Railway Parade. Figure 6 presents the layout of this intersection using SIDRA 7 (an industry standard intersection assessment program) for the PM peak hour (with the right turn permitted).

The signalised intersection of Wentworth Road with Railway Parade and Morwick Street is a four leg intersection with all turn movements permitted. A left slip lane governed by give way control is present on Railway Parade and Wentworth Road north. A right turn ban exists from Morwick Street into Wentworth Road south. Figure 7 presents the layout of this intersection.

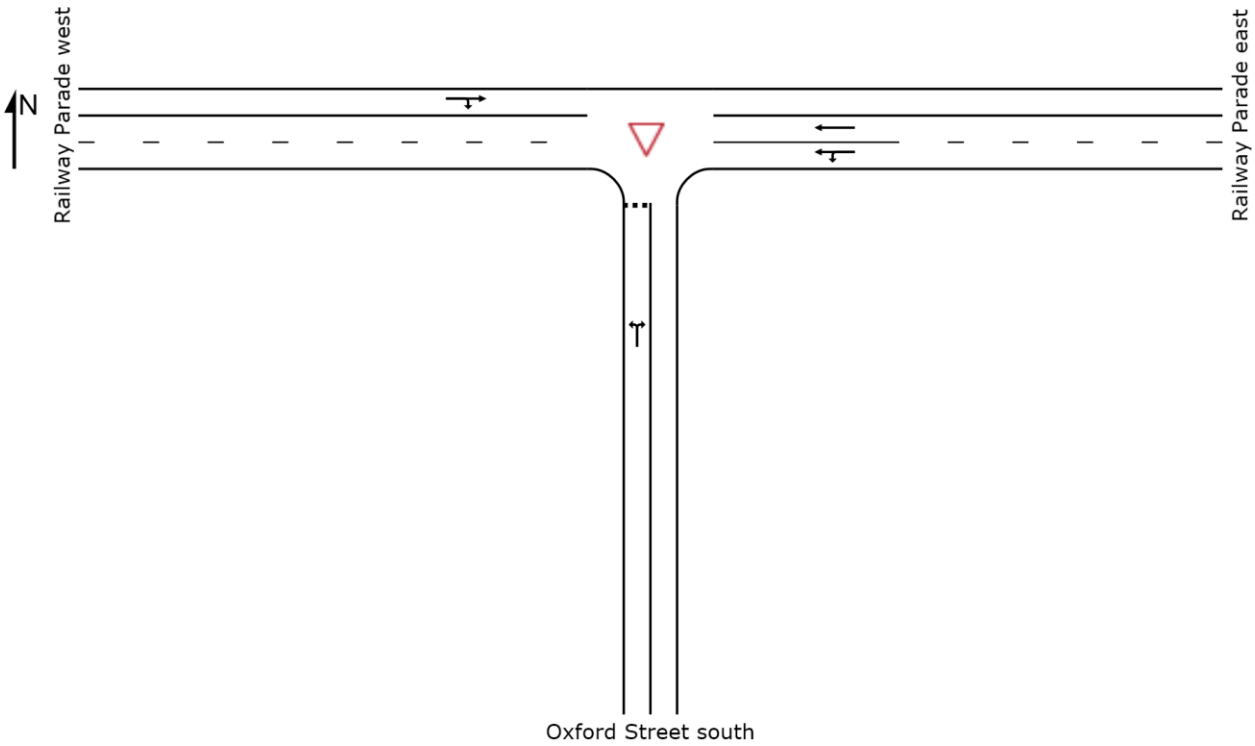

Figure 6: Priority Intersection of Railway Parade with Oxford Street

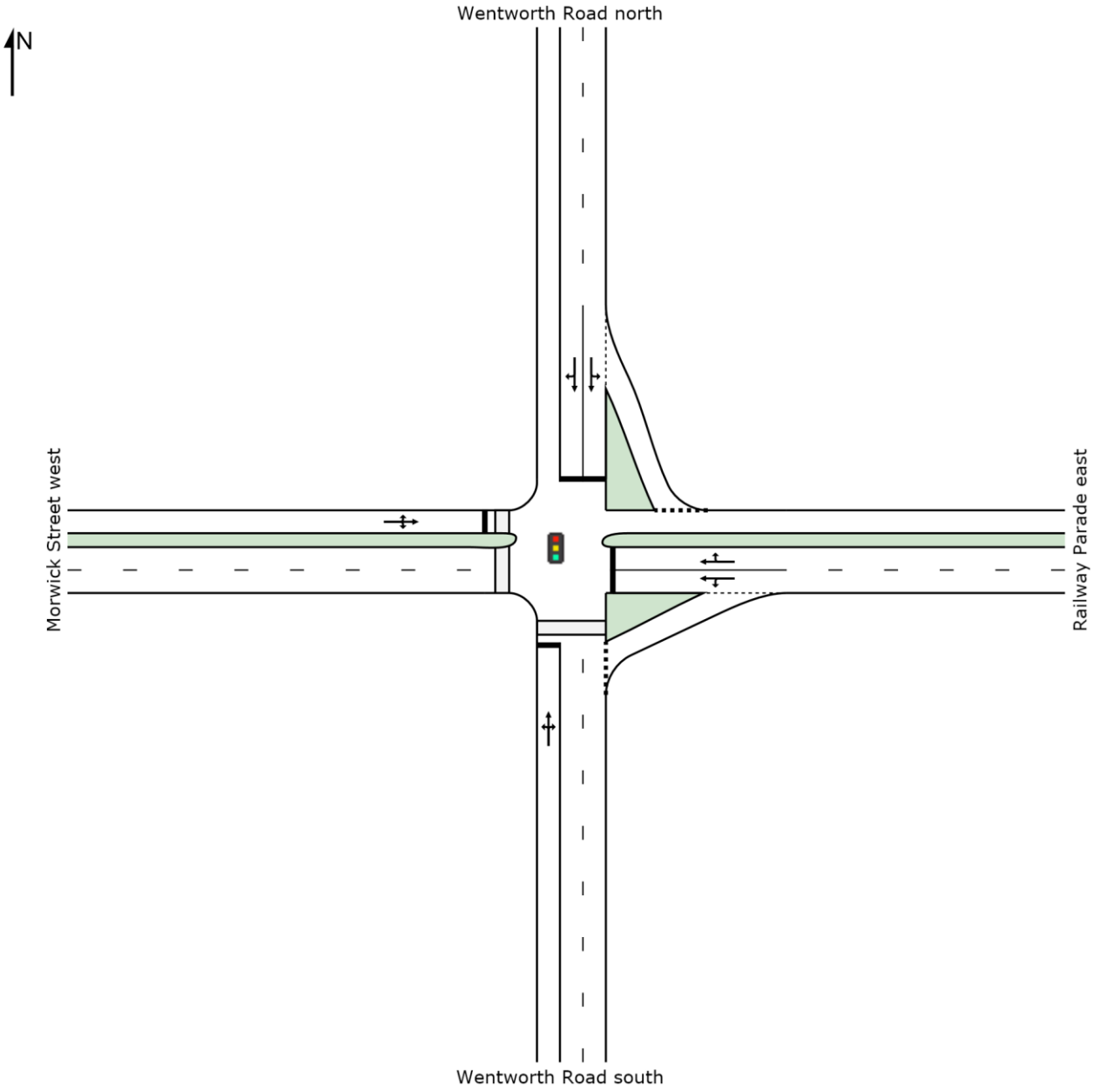

Figure 7: Signalised Intersection of Wentworth Road with Railway Parade with Morwick Street

2.5 Existing Traffic Volumes

As part of the traffic assessment, traffic counts have been undertaken at the intersections for the weekday AM and PM peak periods. The peak hour was 7:45am to 8:45am and 5pm to 6pm.

The survey hours are to capture the traffic movements when the retail and other businesses are most active in the Burwood Town Centre as well as the proposed residential development.

The following Figures present the traffic volumes in vehicles for the weekday peak hours.

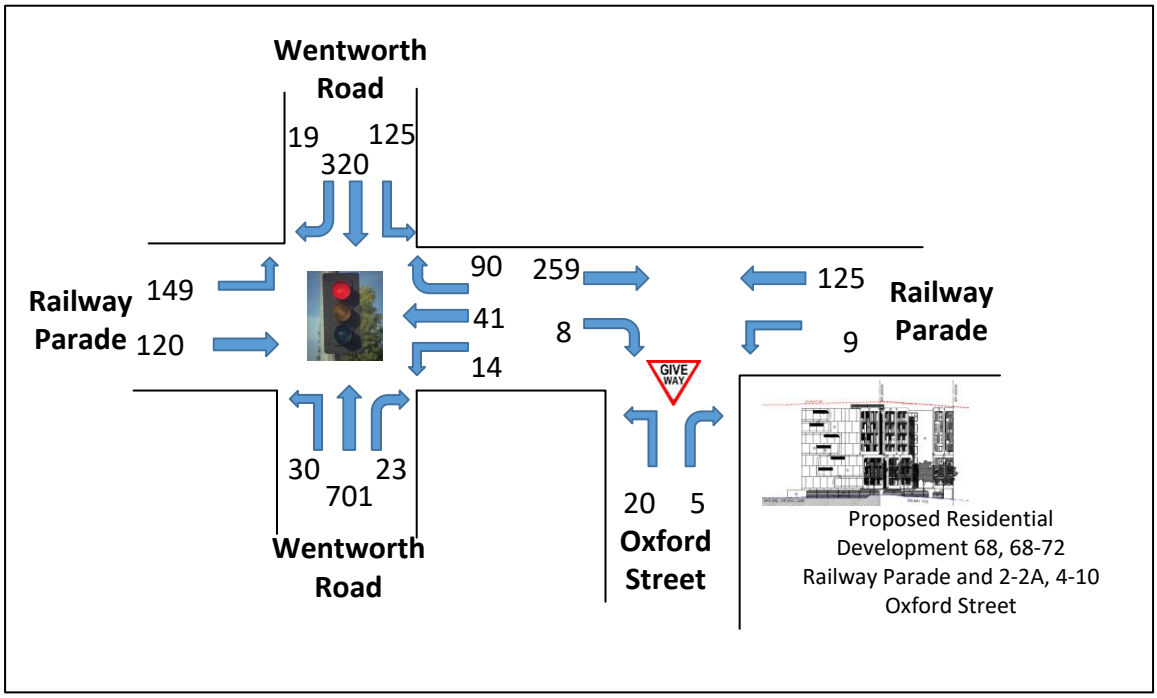

Figure 8: Existing Weekday Traffic Volumes AM Peak Hour

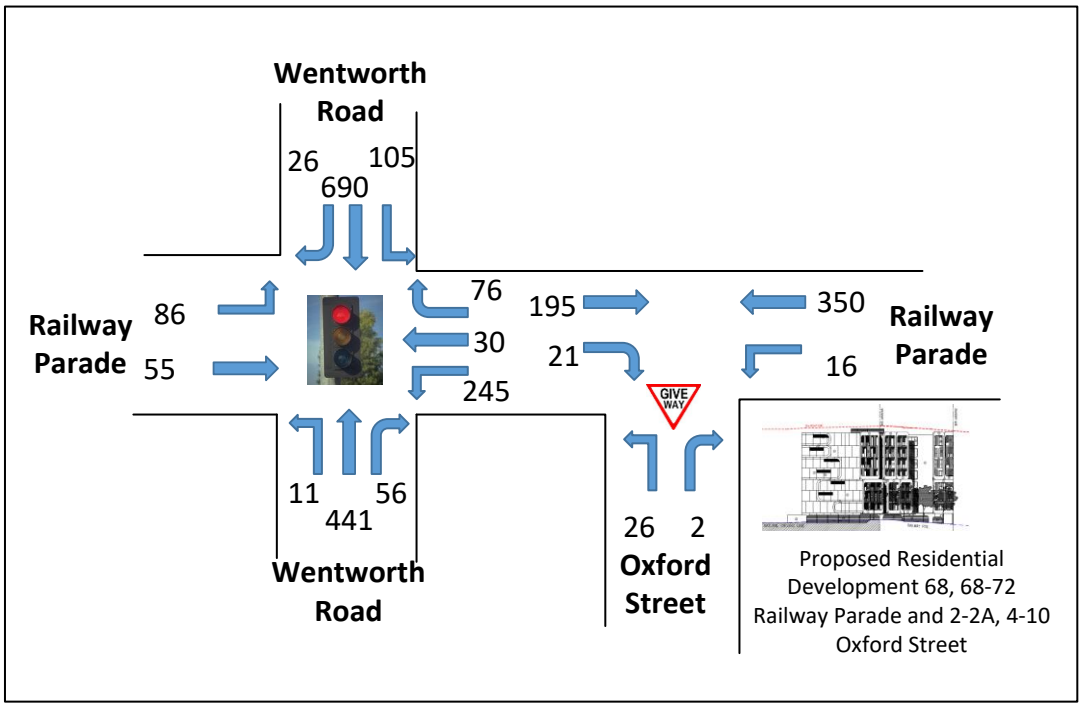

Figure 9: Existing Weekday Traffic Volumes PM Peak Hour

2.6 Intersection Assessment

As part of the traffic impact assessment, the performance of two nearby intersections were surveyed and assessed:

- The priority intersection of Railway Parade and Oxford Street.
- The signalised intersection of Wentworth Road with Railway Parade and Morwick Street.

The existing intersection operating performance was assessed using the SIDRA software package (version 7) to determine the Degree of Saturation (DS), Average Delay (AVD in seconds) and Level of Service (LoS) at each intersection. The SIDRA program provides Level of Service Criteria Tables for various intersection types. The key indicator of intersection performance is Level of Service, where results are placed on a continuum from 'A' to 'F', as shown in Table 3.

LoS	Traffic Signal / Roundabout	Give Way / Stop Sign / T-Junction control
A	Good operation	Good operation
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 & accident study required
E	At capacity, at signals incidents will cause excessive delays.	At capacity, requires other control mode
F	Unsatisfactory and requires additional capacity, Roundabouts require other control mode	At capacity, requires other control mode

Table 3: Intersection Level of Service

The Average Vehicle Delay (AVD) provides a measure of the operational performance of an intersection as indicated below, which relates AVD to LOS. The AVD's should be taken as a guide only as longer delays could be tolerated in some locations (i.e. inner city conditions) and on some roads (i.e. minor side street intersecting with a major arterial route). For traffic signals, the average delay over all movements should be taken. For roundabouts and priority control intersections (sign control) the critical movement for level of service assessment should be that movement with the highest average delay.

LoS	Average Delay per Vehicles (seconds/vehicle)
A	Less than 14
B	15 to 28
C	29 to 42
D	43 to 56
E	57 to 70
F	>70

Table 4: Intersection Average Delay (AVD)

The degree of saturation (DS) is another measure of the operational performance of individual intersections. For intersections controlled by traffic signals both queue length and delay increase rapidly as DS approaches 1. It is usual to attempt to keep DS to less than 0.9. Degrees of Saturation in the order of 0.7 generally represent satisfactory intersection operation. When DS exceed 0.9 queues can be anticipated.

The results of the intersection analysis are as follows:

Priority intersection of Railway Parade with Oxford Street

- All turn movements have a LoS A for both peak hours
- There is spare capacity at this intersection.

Signalised intersection of Wentworth Road with Railway Parade with Morwick Street

- The overall intersection has a LoS B for both peak hours
- There is spare capacity at this intersection.

The full Sidra results are presented in Appendix A.

2.7 Public Transport

The nearest bus stop is 100 metres from the development on Railway Parade. This bus stop is serviced by the 408, 415, 450, 458, 466, 525, 526 and M90 bus routes. These provide transport to a range of suburbs including Campsie, Liverpool, Hurstville and Ryde. Burwood train station is 500 metres from the development. Trains regularly leave this station to major town centres including Epping, Lidcombe and The Sydney CBD.

The site has excellent access to public transport.

2.8 Conclusions on the Existing Conditions

The proposed development is in an area where there are vacant car spaces on Oxford Street.

The nearby intersection performs well with sufficient spare capacity to accommodate additional traffic.

The local area is well serviced by bus services and the Burwood Train Station.

Figure 10 shows a map of the local public transport services.

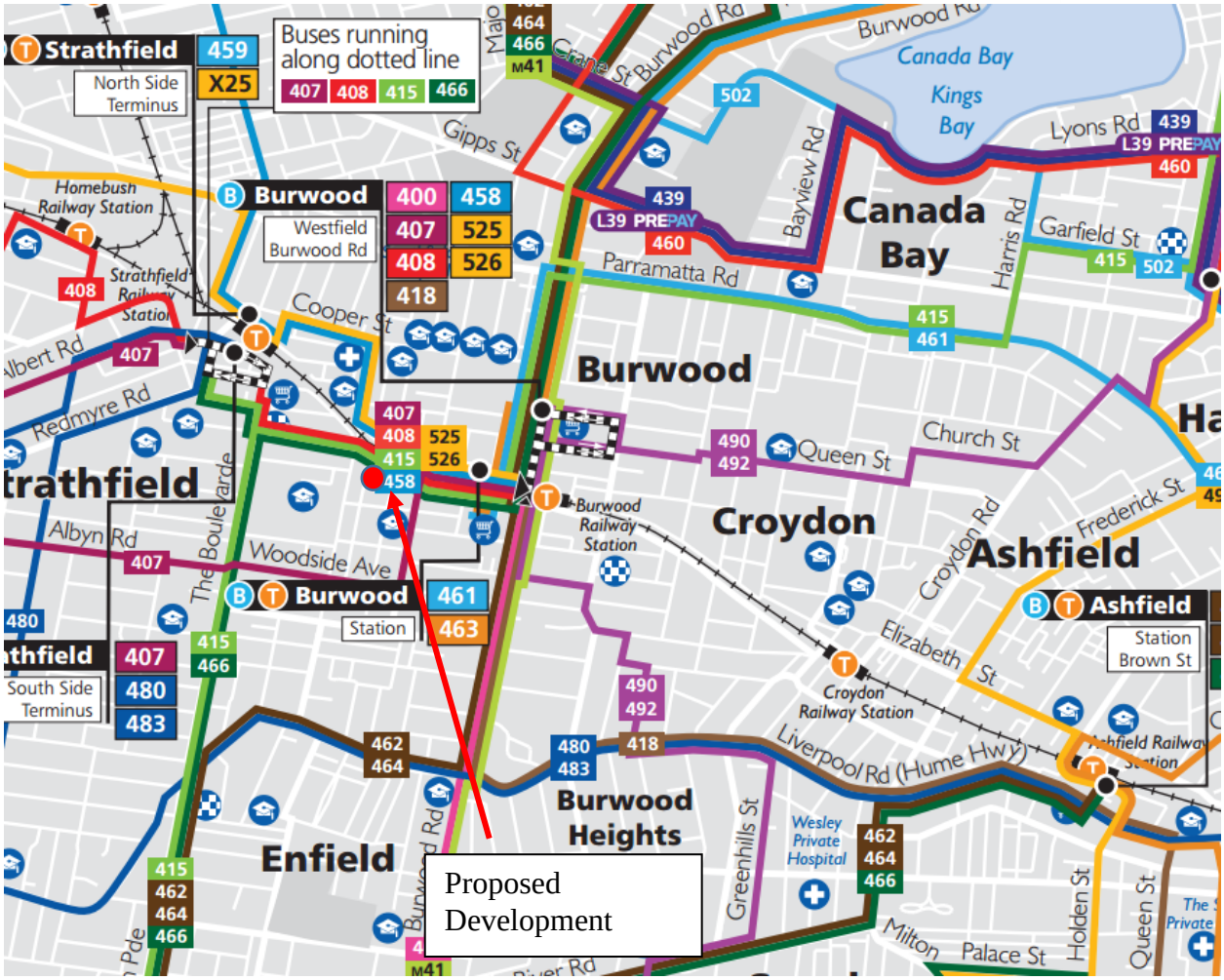

Figure 10: Local transport map

3. PROPOSED RESIDENTIAL DEVELOPMENT

The details of the proposed development are as follows:

- 34 one- bedroom apartments
- 165 two-bedroom apartments
- 20 three-bedroom apartments

On site parking will be provided at the basement level.

The site has frontage to Railway Parade and Oxford Street. The proposed vehicle access and egress to the car park area is from Oxford Street.

A full scaled plan of the proposed residential development is provided as part of the Planning Application.

4. CAR PARKING CONSIDERATIONS

4.1 Burwood Council Planning Scheme

The car parking requirements for the proposed development are presented in Council's Development Control Plan with the car parking rates as follows as it applies to this development:

Burwood DCP rates

- 1 per 1 bedroom apartment
- 1 car space per 2-bedroom apartment
- 1.5 car spaces per 3-bedroom apartment
- 0.2 visitor parking per apartment

Table 5a summarises the car parking requirements of the proposed development with Burwood DCP rates

The proposed development will need to provide 273 parking spaces according to Burwood DCP parking rates.

Apartments	Number	Car Parking Rate Per Unit	Car Spaces Required	Car Spaces Available Per Typical Basement Level	Number
1 Bedroom	34	1	34	62	273 for compliance
2 Bedroom	165	1	165		
3 Bedroom	20	1.5	30		
Visitor Parking	219	0.2	44		
Total			**273**		

Table 5a: Summary of Car Parking Requirements under Burwood DCP rates

As the site is within 800m (650m walking distance) from Burwood Railway Station, State Environmental Planning Policy 65 (SEPP65) parking guidelines can be applied. SEPP65 parking requirements (using the RMS Guide to Traffic Generating Developments) for this proposal are:

- 0.4 per 1 bedroom apartment
- 0.7 car spaces per 2 bedroom apartment
- 1.2 car spaces per 3 bedroom apartment
- 0.14 visitor parking per apartment

Table 5b summarises the car parking requirements of the proposed development using SEPP 65.

The proposed development will need to provide 185 parking spaces according to SEPP65 parking rates.

Apartments	Number	Car Parking Rate Per Unit	Car Spaces Required	Car Spaces Available Per Typical Basement	Number
1 Bedroom	34	0.4	14	62	185 for compliance
2 Bedroom	165	0.7	116		
3 Bedroom	20	1.2	24		
Visitor Parking	219	0.14	31		
Total			**185**		

Table 5b: Summary of Car Parking Requirements under RMS (ADG rates)

4.2 Adequacy of Car Parking Provision

The Burwood DCP requires 273 car parking spaces for this proposal while SEPP65 requires 185 car spaces.

The site is well located to the Burwood Train Station and the bus routes that service the train station. Many people visiting to the development will find that the convenience of public transport is preferable to driving a car.

5. VEHICLE TRAFFIC IMPACT CONSIDERATIONS

5.1 Traffic Generation for the Proposed Development

The RTA Guide to Traffic Generating Developments provides average weekday AM and PM peak hour trip generation rates for high density residential apartments located in CBD areas as follows:

- 0.24 trips per apartment for AM and PM peak hours

The existing observed trips for the residences and commercial businesses are as follows:

- one outbound trips and six inbound trips in the AM peak hour
- four outbound trips and three inbound trip in the PM peak hour

Table 6 summarises the trip generation for the proposed development.

Table 7 summarises the net trip generation and distribution of the existing and proposed developments.

Overall the proposed development is a modest trip generator.

	Type	Apartments	Trip Rate per Apartment	Trips
AM and PM Peak Hours	One Bedroom	219	0.24	**53**
	Two Bedroom			
	Three Bedroom			

Table 6: Summary of Trip Generation for the Proposed Development for Weekday Peak Hours

Existing	Origin	Destination	Total
AM Peak Hour	6	1	7
PM Peak Hour	4	3	7

Proposed	Origin	Destination	Total
AM Peak Hour	42	11	53
PM Peak Hour	11	42	53

Net	Origin	Destination	Total
AM Peak Hour	36	10	46
PM Peak Hour	7	39	46

Table 7: Weekday Net Trip Distribution for the Proposed and Existing Developments

5.2 Traffic Volumes

The additional development trips are assigned onto the local traffic network. The following figures present the existing with the trips generated by the proposal (in red for origin and blue for destination trips) for the respective peak hours.

The additional development trips represent a small proportion of the existing traffic volumes.

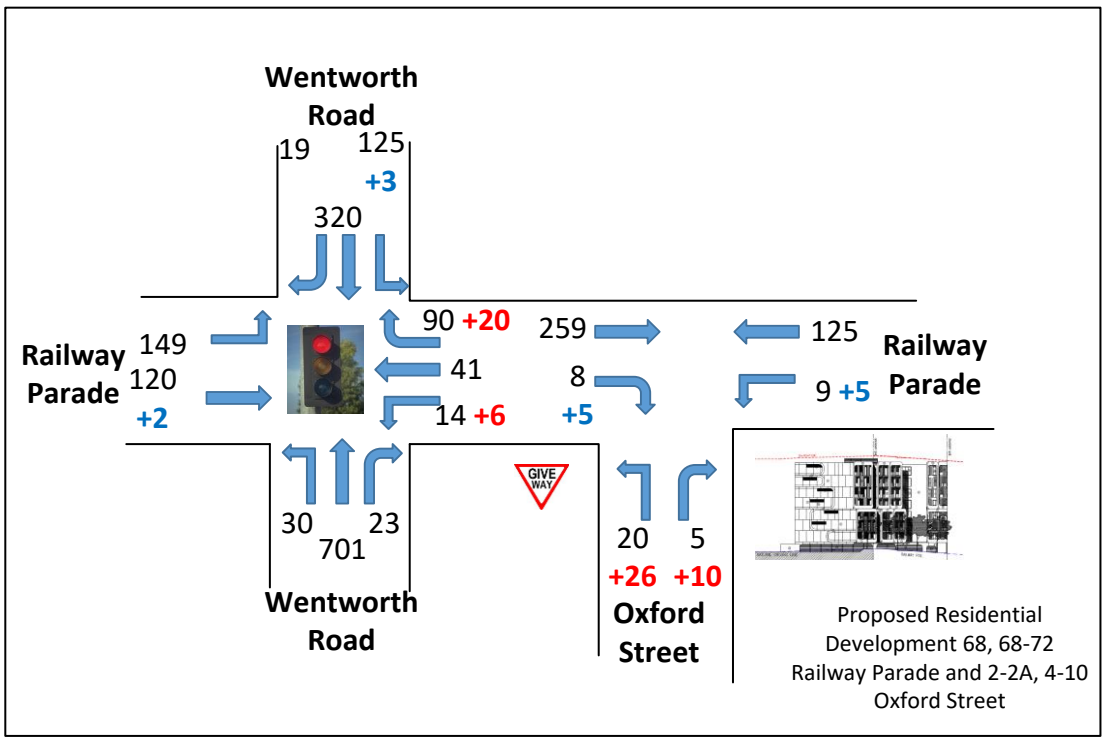

Figure 12: Weekday AM Peak Hour Traffic Volumes with Residential Apartment Traffic

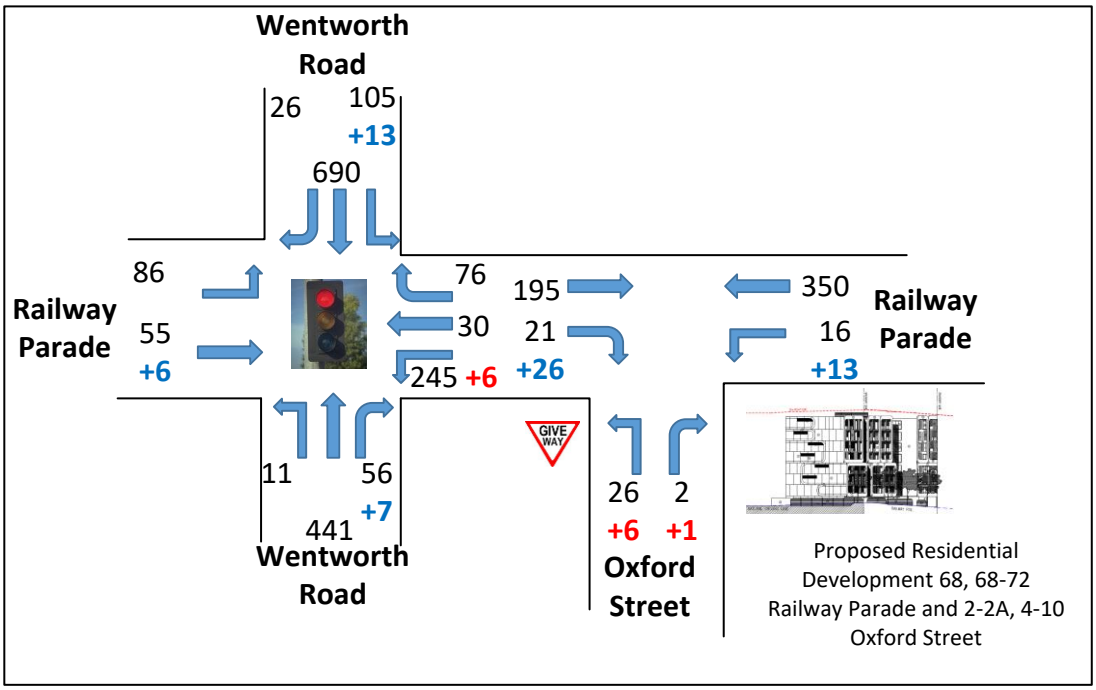

Figure 13: Weekday PM Peak Hour Traffic Volumes with Residential Apartment Traffic

5.3 Intersection Assessment

An intersection assessment has been undertaken for the two surveyed intersections.

The results of the intersection analysis are as follows:

Priority intersection of Railway Parade with Oxford Street

- All turn movements have a LoS A for both peak hours
- There is spare capacity at this intersection.

Signalised intersection of Wentworth Road with Railway Parade with Morwick Street

- The overall intersection has a LoS B for both peak hours
- There is spare capacity at this intersection.

The full Sidra results with the development traffic are presented in Appendix B. The existing conditions are presented in Appendix A.

6. CONCLUSIONS

Based on the considerations presented in this report, it is considered that:

Car Parking Spaces

- The proposed design will need to comply with Burwood Council's DCP or State Environmental Planning Policy 65 for car spaces

Traffic

- The proposed development is a moderate trip generator for the weekday AM and PM peak hours.
- The additional trips from the proposed development can be accommodated at the nearby intersection without noticeably affecting intersection performance, delays or queues.
- There are no traffic engineering reasons why a planning permit for the proposed residential development at 68, 68a and 72 Railway Parade and 2 - 2a, 4 - 10 Oxford Street, in Burwood, should be refused.

APPENDIX A

SIDRA Intersection Results for Existing Traffic Conditions

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total 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: Oxford Street south											
1	L2	20	0.0	0.019	4.7	LOS A	0.1	0.5	0.13	0.51	25.6
3	R2	5	0.0	0.019	7.0	LOS A	0.1	0.5	0.13	0.51	46.1
Approach		25	0.0	0.019	5.2	LOS A	0.1	0.5	0.13	0.51	29.8
East: Railway Parade east											
4	L2	9	0.0	0.034	4.6	LOS A	0.0	0.0	0.00	0.07	49.1
5	T1	125	0.0	0.034	0.0	LOS A	0.0	0.0	0.00	0.03	49.6
Approach		134	0.0	0.034	0.3	NA	0.0	0.0	0.00	0.04	49.6
West: Railway Parade west											
11	T1	259	0.0	0.139	0.0	LOS A	0.1	0.5	0.02	0.02	49.8
12	R2	8	0.0	0.139	3.3	LOS A	0.1	0.5	0.02	0.02	48.5
Approach		267	0.0	0.139	0.1	NA	0.1	0.5	0.02	0.02	49.8
All Vehicles		426	0.0	0.139	0.5	NA	0.1	0.5	0.02	0.05	47.6

Table A1: Weekday Intersection Performance of Railway Parade with Oxford Street AM Peak Hour

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total 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: Wentworth Road south											
1	L2	30	0.0	0.797	17.6	LOS B	16.7	116.7	0.88	0.89	41.9
2	T1	701	0.0	0.797	13.0	LOS A	16.7	116.7	0.88	0.89	42.3
3	R2	23	0.0	0.797	17.6	LOS B	16.7	116.7	0.88	0.89	36.2
Approach		754	0.0	0.797	13.3	LOS A	16.7	116.7	0.88	0.89	42.1
East: Railway Parade east											
4	L2	14	0.0	0.117	18.4	LOS B	1.1	7.7	0.80	0.65	35.8
5	T1	41	0.0	0.117	15.1	LOS B	1.1	7.7	0.80	0.65	35.7
6	R2	90	0.0	0.470	28.3	LOS B	2.3	15.9	0.98	0.76	28.7
Approach		145	0.0	0.470	23.6	LOS B	2.3	15.9	0.91	0.72	31.0
North: Wentworth Road north											
7	L2	125	0.0	0.701	19.4	LOS B	5.0	34.8	0.98	0.87	21.1
8	T1	320	0.0	0.701	19.8	LOS B	5.2	36.5	0.99	0.89	38.9
9	R2	19	0.0	0.701	27.7	LOS B	5.2	36.5	0.99	0.90	37.2
Approach		464	0.0	0.701	20.0	LOS B	5.2	36.5	0.98	0.89	34.0
West: Morwick Street west											
10	L2	149	0.0	0.644	25.2	LOS B	6.4	45.0	0.96	0.85	37.7
11	T1	120	0.0	0.644	20.7	LOS B	6.4	45.0	0.96	0.85	31.5
Approach		269	0.0	0.644	23.2	LOS B	6.4	45.0	0.96	0.85	35.6
All Vehicles		1632	0.0	0.797	17.8	LOS B	16.7	116.7	0.93	0.87	37.8

Table A2: Weekday Intersection Performance of Wentworth Road with Railway Parade and Morwick Street AM Peak Hour

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total 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: Oxford Street south											
1	L2	26	0.0	0.022	5.0	LOS A	0.1	0.6	0.26	0.52	25.4
3	R2	2	0.0	0.022	8.4	LOS A	0.1	0.6	0.26	0.52	45.8
Approach		28	0.0	0.022	5.3	LOS A	0.1	0.6	0.26	0.52	26.9
East: Railway Parade east											
4	L2	16	0.0	0.094	4.6	LOS A	0.0	0.0	0.00	0.05	49.2
5	T1	350	0.0	0.094	0.0	LOS A	0.0	0.0	0.00	0.02	49.7
Approach		366	0.0	0.094	0.2	NA	0.0	0.0	0.00	0.02	49.7
West: Railway Parade west											
11	T1	195	0.0	0.121	0.3	LOS A	0.2	1.6	0.11	0.05	49.1
12	R2	21	0.0	0.121	4.5	LOS A	0.2	1.6	0.11	0.05	47.8
Approach		216	0.0	0.121	0.7	NA	0.2	1.6	0.11	0.05	49.0
All Vehicles		610	0.0	0.121	0.6	NA	0.2	1.6	0.05	0.06	47.5

Table A3: Weekday Intersection Performance of Railway Parade with Oxford Street PM Peak Hour

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total 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: Wentworth Road south											
1	L2	11	0.0	0.924	41.0	LOS C	18.2	127.4	1.00	1.34	33.0
2	T1	441	0.0	0.924	36.4	LOS C	18.2	127.4	1.00	1.34	33.2
3	R2	56	0.0	0.924	41.0	LOS C	18.2	127.4	1.00	1.34	25.3
Approach		508	0.0	0.924	37.0	LOS C	18.2	127.4	1.00	1.34	32.5
East: Railway Parade east											
4	L2	245	0.0	0.229	6.8	LOS A	2.3	16.1	0.51	0.66	42.9
5	T1	30	0.0	0.213	13.1	LOS A	1.9	13.4	0.75	0.69	36.0
6	R2	76	0.0	0.213	16.3	LOS B	1.9	13.4	0.75	0.69	35.3
Approach		351	0.0	0.229	9.4	LOS A	2.3	16.1	0.58	0.67	40.4
North: Wentworth Road north											
7	L2	105	0.0	0.776	28.7	LOS C	10.5	73.6	0.97	1.03	19.4
8	T1	690	0.0	0.776	22.9	LOS B	10.5	73.6	0.97	1.00	37.8
9	R2	26	0.0	0.776	26.4	LOS B	10.1	70.4	0.98	0.97	37.8
Approach		821	0.0	0.776	23.8	LOS B	10.5	73.6	0.97	1.00	35.3
West: Morwick Street west											
10	L2	86	0.0	0.207	16.7	LOS B	2.4	17.0	0.73	0.68	41.2
11	T1	55	0.0	0.207	12.2	LOS A	2.4	17.0	0.73	0.68	36.3
Approach		141	0.0	0.207	15.0	LOS B	2.4	17.0	0.73	0.68	39.8
All Vehicles		1821	0.0	0.924	24.0	LOS B	18.2	127.4	0.89	1.01	35.2

Table A4: Weekday Intersection Performance of Wentworth Road with Railway Parade and Morwick Street PM Peak Hour

APPENDIX B

SIDRA Intersection Results for Existing and Residential Apartment Traffic

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total 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: Oxford Street south											
1	L2	46	0.0	0.050	4.7	LOS A	0.2	1.4	0.13	0.52	25.5
3	R2	15	0.0	0.050	7.1	LOS A	0.2	1.4	0.13	0.52	46.0
Approach		61	0.0	0.050	5.3	LOS A	0.2	1.4	0.13	0.52	30.7
East: Railway Parade east											
4	L2	14	0.0	0.036	4.6	LOS A	0.0	0.0	0.00	0.11	48.9
5	T1	125	0.0	0.036	0.0	LOS A	0.0	0.0	0.00	0.05	49.5
Approach		139	0.0	0.036	0.5	NA	0.0	0.0	0.00	0.05	49.4
West: Railway Parade west											
11	T1	259	0.0	0.143	0.0	LOS A	0.1	0.8	0.03	0.03	49.7
12	R2	13	0.0	0.143	3.3	LOS A	0.1	0.8	0.03	0.03	48.4
Approach		272	0.0	0.143	0.2	NA	0.1	0.8	0.03	0.03	49.7
All Vehicles		472	0.0	0.143	0.9	NA	0.2	1.4	0.03	0.10	45.4

Table B1: Weekday Intersection Performance of Railway Parade with Oxford Street AM Peak Hour with residential apartment traffic

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total 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: Wentworth Road south											
1	L2	30	0.0	0.797	17.6	LOS B	16.7	116.7	0.88	0.89	41.9
2	T1	701	0.0	0.797	13.0	LOS A	16.7	116.7	0.88	0.89	42.3
3	R2	23	0.0	0.797	17.6	LOS B	16.7	116.7	0.88	0.89	36.2
Approach		754	0.0	0.797	13.3	LOS A	16.7	116.7	0.88	0.89	42.1
East: Railway Parade east											
4	L2	20	0.0	0.125	17.2	LOS B	1.2	8.5	0.80	0.65	36.4
5	T1	41	0.0	0.125	13.9	LOS A	1.2	8.5	0.80	0.65	36.3
6	R2	110	0.0	0.578	28.9	LOS C	2.8	19.9	1.00	0.81	28.4
Approach		171	0.0	0.578	23.9	LOS B	2.8	19.9	0.93	0.75	30.8
North: Wentworth Road north											
7	L2	128	0.0	0.703	19.5	LOS B	5.0	35.2	0.98	0.87	21.1
8	T1	320	0.0	0.703	19.9	LOS B	5.2	36.7	0.99	0.89	38.8
9	R2	19	0.0	0.703	27.8	LOS B	5.2	36.7	0.99	0.90	37.2
Approach		467	0.0	0.703	20.1	LOS B	5.2	36.7	0.98	0.89	33.9
West: Morwick Street west											
10	L2	149	0.0	0.649	25.3	LOS B	6.5	45.5	0.96	0.85	37.6
11	T1	122	0.0	0.649	20.8	LOS B	6.5	45.5	0.96	0.85	31.5
Approach		271	0.0	0.649	23.3	LOS B	6.5	45.5	0.96	0.85	35.5
All Vehicles		1663	0.0	0.797	17.9	LOS B	16.7	116.7	0.93	0.87	37.7

Table B2: Weekday Intersection Performance of Wentworth Road with Railway Parade and Morwick Street AM Peak Hour with residential apartment traffic

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total 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: Oxford Street south											
1	L2	32	0.0	0.028	5.0	LOS A	0.1	0.7	0.26	0.52	25.4
3	R2	3	0.0	0.028	8.8	LOS A	0.1	0.7	0.26	0.52	45.8
Approach		35	0.0	0.028	5.3	LOS A	0.1	0.7	0.26	0.52	27.2
East: Railway Parade east											
4	L2	29	0.0	0.098	4.6	LOS A	0.0	0.0	0.00	0.08	49.0
5	T1	350	0.0	0.098	0.0	LOS A	0.0	0.0	0.00	0.04	49.6
Approach		379	0.0	0.098	0.4	NA	0.0	0.0	0.00	0.04	49.5
West: Railway Parade west											
11	T1	195	0.0	0.149	0.7	LOS A	0.5	3.4	0.22	0.11	48.2
12	R2	47	0.0	0.149	4.6	LOS A	0.5	3.4	0.22	0.11	47.0
Approach		242	0.0	0.149	1.4	NA	0.5	3.4	0.22	0.11	48.0
All Vehicles		656	0.0	0.149	1.0	NA	0.5	3.4	0.09	0.09	46.9

Table B3: Weekday Intersection Performance of Railway Parade with Oxford Street PM Peak Hour with residential apartment traffic

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows Total 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: Wentworth Road south											
1	L2	11	0.0	0.739	21.1	LOS B	12.9	90.2	0.90	0.87	40.2
2	T1	441	0.0	0.739	16.5	LOS B	12.9	90.2	0.90	0.87	40.5
3	R2	63	0.0	0.739	21.1	LOS B	12.9	90.2	0.90	0.87	33.9
Approach		515	0.0	0.739	17.2	LOS B	12.9	90.2	0.90	0.87	39.9
East: Railway Parade east											
4	L2	251	0.0	0.252	6.4	LOS A	2.6	18.4	0.46	0.64	43.4
5	T1	30	0.0	0.252	14.5	LOS A	2.6	18.4	0.71	0.70	34.9
6	R2	76	0.0	0.252	22.5	LOS B	2.3	16.2	0.82	0.73	31.6
Approach		357	0.0	0.252	10.5	LOS A	2.6	18.4	0.56	0.66	39.5
North: Wentworth Road north											
7	L2	118	0.0	0.567	18.5	LOS B	9.1	63.7	0.83	0.75	21.5
8	T1	690	0.0	0.567	15.1	LOS B	9.6	67.2	0.83	0.74	41.1
9	R2	26	0.0	0.567	20.5	LOS B	9.6	67.2	0.84	0.74	40.3
Approach		834	0.0	0.567	15.7	LOS B	9.6	67.2	0.83	0.75	38.2
West: Morwick Street west											
10	L2	86	0.0	0.259	22.1	LOS B	3.3	23.4	0.80	0.71	38.9
11	T1	61	0.0	0.259	17.5	LOS B	3.3	23.4	0.80	0.71	33.1
Approach		147	0.0	0.259	20.2	LOS B	3.3	23.4	0.80	0.71	37.1
All Vehicles		1853	0.0	0.739	15.5	LOS B	12.9	90.2	0.80	0.76	38.8

Table B4: Weekday Intersection Performance of Wentworth Road with Railway Parade and Morwick Street PM Peak Hour with residential apartment traffic