RESOURCE CO PTY LTD

TRAFFIC IMPACT ASSESSMENT
FOR E.I.S
FOR PROPOSED
RESOURCE RECOVERY FACILITY
AT
NOS. 35 – 37 FRANK STREET,
WETHERILL PARK NSW

Prepared by:

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Job No.: 1162/15
Report No.: 02/16 **FEBRUARY, 2016**

CONTENTS

1.0 INTRODUCTION

1.1 Background

This traffic impact assessment for the proposed Resource Recovery Facility to be operated by Resource Co Pty Ltd on Lot 1, DP 589097 Nos. 35-37 Frank Street, Wetherill Park has been prepared for the E.I.S. being prepared by Nexus Environmental Planning Pty Ltd. The site is shown in **Figure 1**, Site Location.

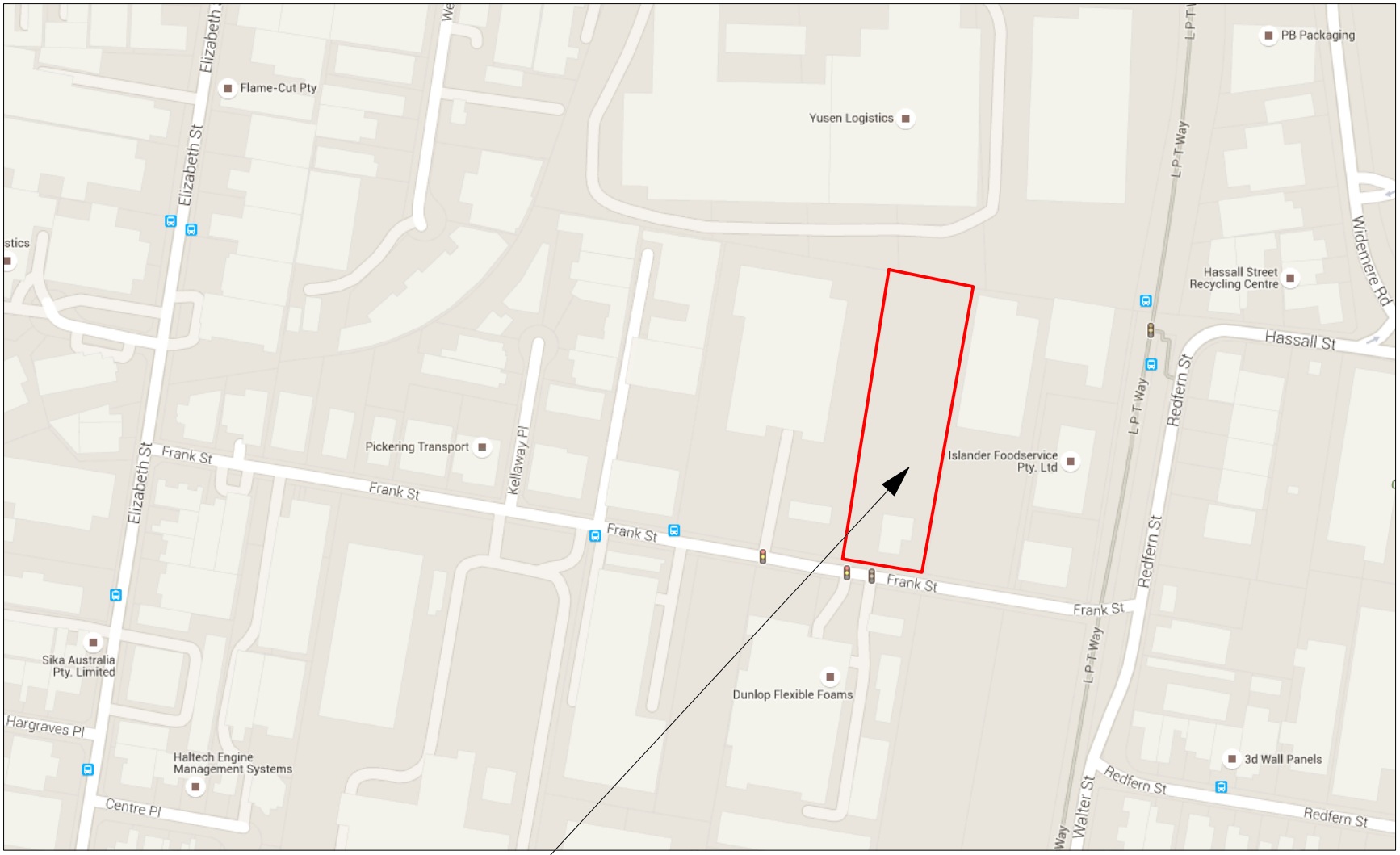
1.2 Scope of Report

This report addresses the transport issues involved in the proposed facility and the traffic impacts on the regional road network in the vicinity of the site.

In a letter to Mr Ben Sawley Resource Co Pty Ltd dated 1/10/15, the NSW Planning and Environment listed the Secretary's Environmental Assessment Requirements (**SEARS**) and advised that the **E.I.S**. must address the following specific matters:

- **Traffic and Transport** – including:
  - details of all traffic types and volumes likely to be generated during construction and operation, including a description of haul routes;
  - an assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model;
  - detailed plans of the proposed layout of the internal road network and parking on site in accordance with the relevant Australian standards; and
  - detailed plans of any proposed road upgrades, infrastructure works or new roads required for the development.

- **Parking:**
  - The *Fairfield Citywide DCP Chapter 12 – Car Parking, Vehicle and Access Management – Amend. 10* states that the parking spaces required for a Resource Recovery Facility are "*to be determined by a car parking survey of a comparable facility*".



35-37 FRANK ST, WETHERILL PARK 2164, NSW

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FIGURE 1
SITE LOCATION

2.0 EXISTING TRAFFIC CONDITIONS

2.1 Existing Traffic Volumes

a) Annual Average Daily Traffic Volumes (AADT)

Historical traffic volumes at RMS Counting Stations in The Horsley Drive (MR609), Gipps Road (MR646), Ferrers Road (RR7153) and Cowpasture Road (MR648) were published by the RMS until 2005. Later counts have been provided by request. Available *volumes* are listed in **Table 2.1a**. The Counting Station locations are shown in **Figure 3A.**

Table 2.1a – AADT Volumes

ROAD	STATION LOCATION	1993	1996	1999	2002	2005	2008	2009	2012	2015	ANNUAL GROWTH COMPOUND
The Horsley Drive	66240 Fairfield Railway	37927	40889	40373	41273	40354	40934	40722	40021	41881	93 to 2015 +0.45%
	66089 West of Cumb. Hwy	16005	19487	22336	18240	19645					
	66245 West of Maugham Cr.	14600	21267	20815	21564	19972		21295			93 to 2009 +2.4%
	65140 West of Ferrers Rd	17627	18833	19376	19278	17547		28713			
	65095 East of Wallgrove Rd	17656		19244	18913	17084		28774			
Gipps Road	68225 South of Long St		17574	22784	22395	21067		18820	19488	17926	96 to 2012 +0.7%
Cowpasture Road	65152 South of The Horsley Dr.		18119								
Ferrers Road	66237 Supply Canal	8571	11333	16184	17250	17449		11278			
	70074 South of Gt West Hwy	9134	12554	18113	18399	18703					
Cowpasture	65151 South of Prairievale Rd	17354	22794	25771	28879	32609		28365			

A **7** day Classification and Volume Survey by **CFE** (Centre For Excellence) in November 2015 on Frank Street showed an **ADT of 3432** and an **AWT** of **4452**.

A **7** day Classification and Volume Count was conducted by CFE in The Horsley Drive between Elizabeth Street and Canley Vale Road in February 2016. The **ADT** was **23151** and the **AWT** was **26235**. The count locations are shown on **Figure 2A**.

The historical data from 1996 to the *latest current count* shows that the *annual average growth rate per annum* is generally *less than **0.5%*** on all regional roads in the vicinity of the subject site. Between 2005 and 2009 there has been a reduction of some **6200 vpd** in Ferrers Road and increase of some **11200 vpd** in The Horsley Drive west of Ferrers Road.

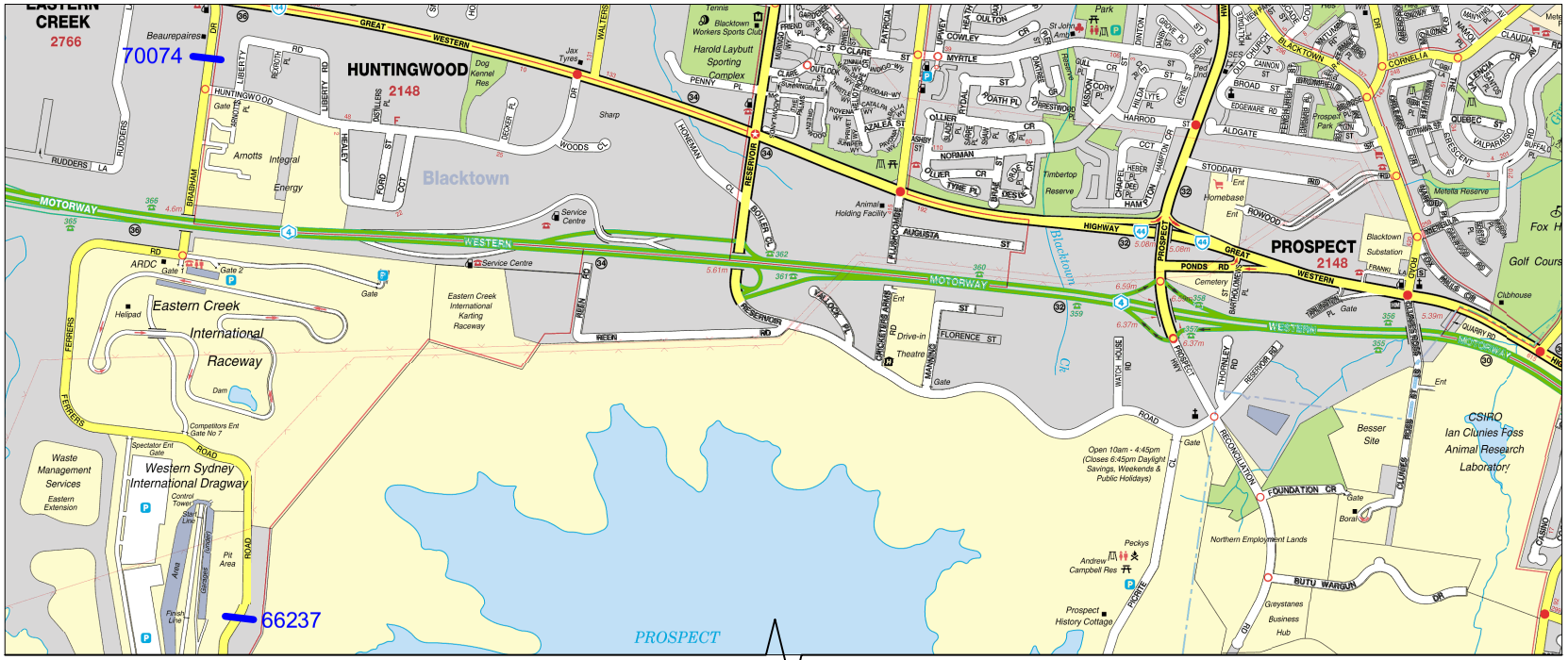
LEGEND

70074 TRAFFIC COUNT STATION NUMBER

TRAFFIC COUNT STATION LOCATION

N

TRUNCATED MAP B



TRUNCATED MAP A

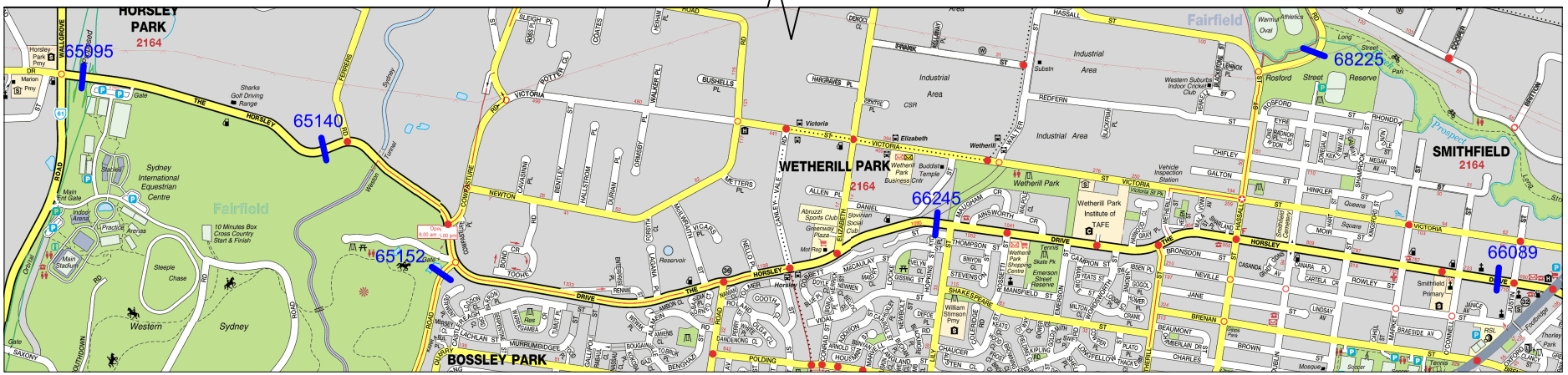


FIGURE 3A

EXISTING AADT COUNT STATIONS

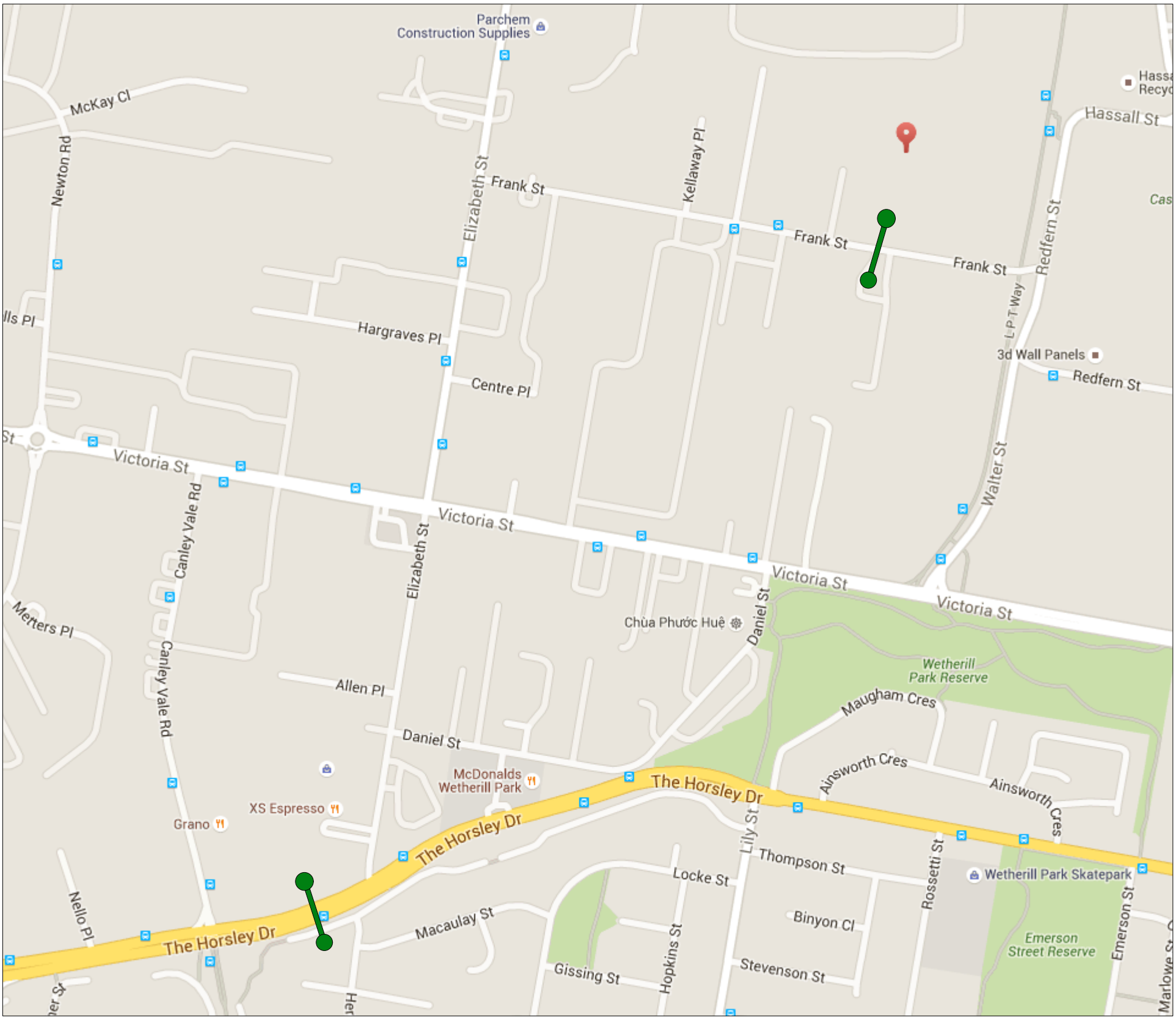


FIGURE 2A

LOCATION OF VEHICLE
CLASSIFICATION COUNTS

2.1 (Continued)

b) Comparison between AAWT and AADT

AAWT data has been obtained in *2012 from the **RMS** website at Station 68225* in Gipps Road and *Station 66240* in The Horsley Drive and from the **CFE** survey in Frank Street.

STATION	**68225**	**AAWT 23800**	**Ratio 1.227**
		AADT 19400	
	66240	**AAWT 45800**	**Ratio 1.134**
		AADT 40400	
	Frank Street	**ADT 3432**	**Ratio 1.297**
		AWT 4452	

The **RMS** Counting Stations are located in **Figure 3A**.

c) Peak Hour Traffic Volumes:

Traffic Volume and Pedestrian Counts were made from **7:00-9:00am** and **4:00-6:00pm** on *Tuesday 24th November* and *Wednesday 25th November 2015* at **6 intersections** on the road network surrounding the subject site at 35-37 Frank Street, Wetherill Park, as shown in **Figure 2**. The peak hours were generally **7:30-8:30am** and **4:00-5:00pm**. A further count was carried out at Daniel Street/Elizabeth Street and a *partial count* at Elizabeth Street and The Horsley Drive from **4:00pm** to **6:00pm** on the **2/2/16.** The counts are shown in **Figure 3C** for the **am** and **pm** peak hours. The *peak hour* Pedestrian Movements at the *signalised* pedestrian crossings ranged from **0** to **4**.

2.2 Road Inventory and Traffic Controls:

- Frank Street is a **2 lane** industrial road. The movements at the Elizabeth Street intersection are controlled by Give Way signs. The movements at Redfern Street are controlled by *Stop signs*.
- Elizabeth Street is a **4 lane** industrial road with *traffic signal control* at the Victoria Street and The Horsley Drive intersections. Victoria Street is a **4 lane** industrial road with additional *right turning lanes* at the Elizabeth Street and Walter Street *signalised intersections*.
- The Horsley Drive is a **4 lane** industrial road with *additional right turn bays* at the *signalised intersections*.
- Redfern Street is a **2 lane** industrial road and movements at the Walter Street tee intersection are controlled by *Give Way* signs.
- The signposted speed limits are **50km** in Frank Street, **60km** Redfern Street, Elizabeth Street and Gipps Road and **70km** in The Horsley Drive.

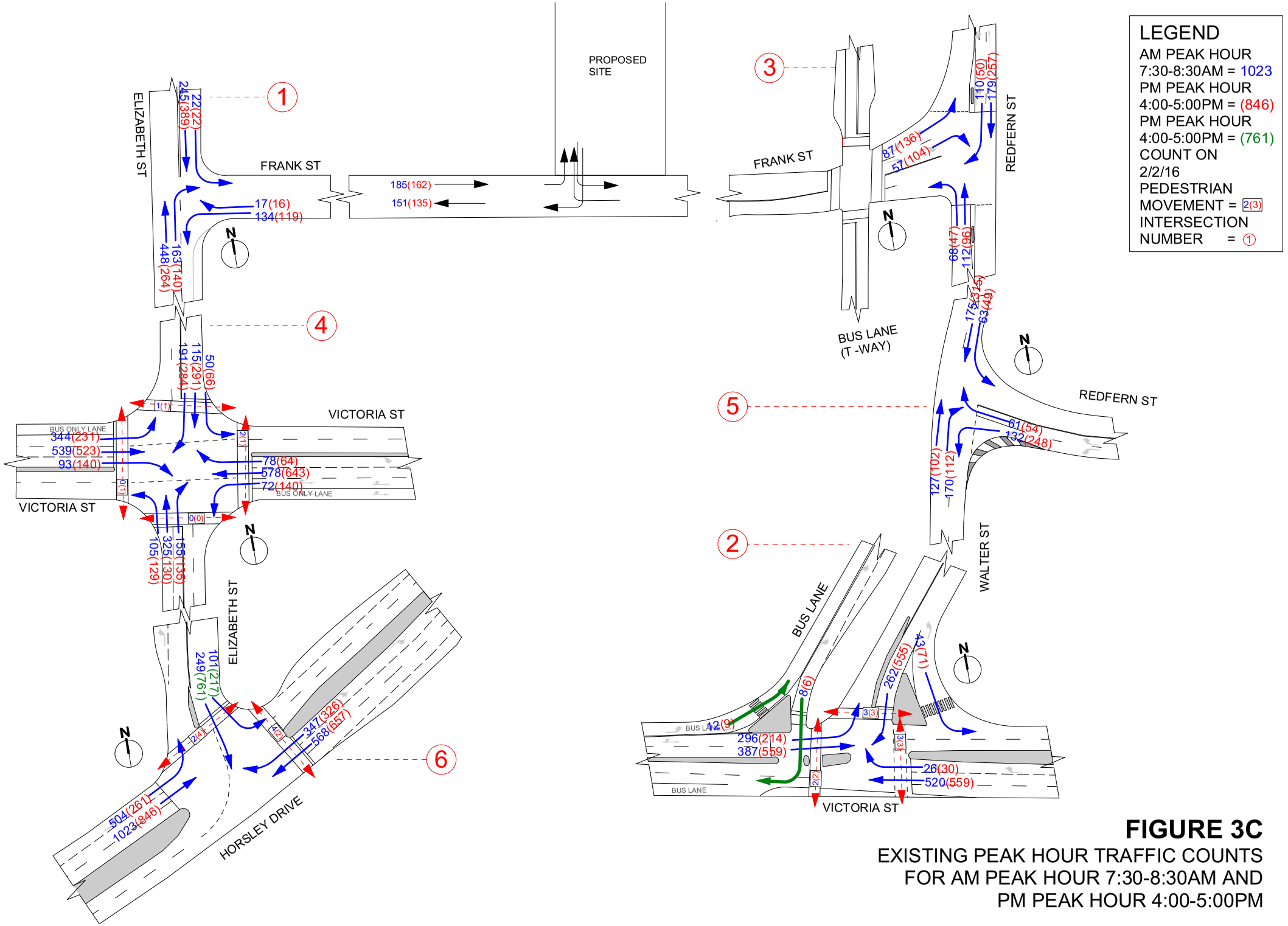
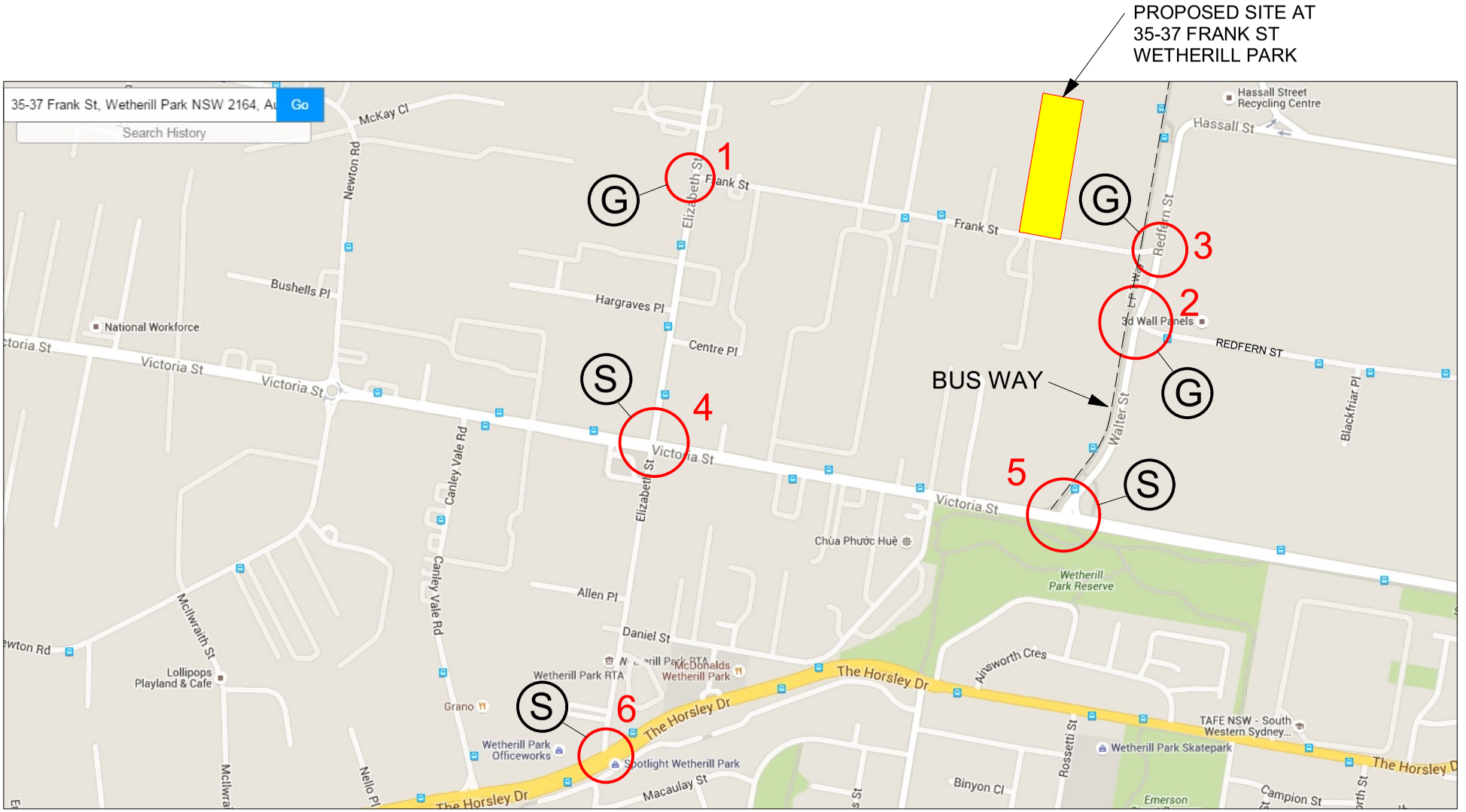


FIGURE 3C

EXISTING PEAK HOUR TRAFFIC COUNTS
FOR AM PEAK HOUR 7:30-8:30AM AND
PM PEAK HOUR 4:00-5:00PM



LEGEND

- LOCATION OF INTERSECTION COUNT
- GIVE WAY
- SIGNALS
- 2 INTERSECTION NUMBER

N

FIGURE 2
LOCATION OF INTERSECTION COUNTS

2.3 Intersection Capacity Analysis (SIDRA 6.1)

The Classification Counts in Frank Street show that the percentages of heavy vehicles (Austroad Classes 3 to 12) were as shown in **Table 2.3A** in the **7:30-8:30am** *peak* hour and in the **4:00-5:00pm** *peak* hour. These percentages were used in the **SIDRA** analysis of intersections **1** to **3**, as located in **Figure 2.**

In The Horsley Drive Upgrade – **M7** Motorway to **Cowpasture Road** corridor study for the **RMS**, the *percentage* of *heavy vehicles* is stated to range from **18** to **22%** in *Section 2.1.1* of the *Preferred Option Corridor Report by Hills Environmental,* August 2015: The report does not state whether the *daily volumes* are *weekday or 7 day*. An additional Classification Count was carried out in The Horsley Drive, midblock between Canley Vale Road and Elizabeth Street to check the *heavy vehicle volumes* in the *eastbound* and *westbound* directions for this report. In the analysis of intersections **2, 4, 5** and **6** the percentage of heavy vehicles is based upon the *percentage of heavy vehicles **Class 3** to **12*** by *direction* from The Horsley Drive Count, as shown in **Table 2.3A**.

All **6** intersections located in **Figure 2** have been analysed using **SIDRA Version 6.1**. The network performance is determined by the Level of Service (**LoS**) Average Delay (**AVD**), Degree of Saturation (**DoS**) and maximum delay on the *critical movement* at the intersections during *peak* hours. The Level of Service criteria for intersections are explained in **Table 4.2** taken from the RTA *Guide to Traffic Engineering Developments.*

Table 4.2 (*RTA Guide to Traffic Generating Developments)*
Level of Service criteria for intersections

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	<14	Good operation	Good operation
B	15 TO 28	Good with acceptable delays spare capacity	Acceptable delays & spare capacity
C	29 TO 48	Satisfactory	Satisfactory, but accident study required
D	43 TO 56	Operating near capacity	Near capacity & accident study required
E	57 TO 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode

The results of the **SIDRA** analysis are set out in **Table 2.3**

2.3 (Continued)

Table 2.3A Percentage of Heavy Vehicles Class 3 to 12 in Frank Street and The Horsely Drive.

Peak Hours	Frank Street		The Horsley Drive	
	Eastbound	Westbound	Eastbound	Westbound
7:30AM – 8:30AM	38.6%	30.62%	13.82%	12.36%
4:00PM – 5:00PM	21.41%	38.54%	14.11%	7.32%

Assumptions of Peak Hour Heavy Vehicle Movements by Direction for SIDRA Analysis:

▪ **Elizabeth Street, Walter Ave & Hassall Street**		
Southbound	AM	12.36%
	PM	7.32%
Northbound	AM	13.82%
	PM	14.11%
▪ **Victoria Street**		
Eastbound	AM	13.82%
	PM	14.11%
Westbound	AM	12.36%
	PM	7.32%
▪ **Frank Street and Redfern Street**		
Eastbound	AM	38.6%
	PM	21.41%
Westbound	AM	30.62%
	PM	38.54%

2.3 (Continued)

Table 2.3 – Intersection Performance

No	Location	Sign/ Control	Peak Hour	Level Of Service (LoS)	Degree of Saturation (DoS)	Average Delay (Av)	Critical Movement
1	Frank St/Elizabeth St	G	AM	A	0.457	4.7	RHT from Frank St (57.4 secs)
1	Frank St/Elizabeth St	G	PM	A	0.344	4.4	RHT from Frank St (43.2 secs)
2	Redfern St/Walter St	G	AM	A	0.273	5.6	RHT from Redfern St East (19.1 secs)
2	Redfern St/Walter St	G	PM	A	0.383	5.9	RHT from Redfern St East (21.6 secs)
3	Frank St/Redfern St	ST	AM	A	0.247	10.5	RHT from Redfern St North (14.6 secs)
3	Frank St/Redfern St	ST	PM	A	0.341	10.1	Through movement from Redfern St South (16.4 secs)
4	Victoria St/Elizabeth St	S	AM	C	0.814	35.0	RHT from Victoria St West (50.1 secs)
4	Victoria St/Elizabeth St	S	PM	C	0.899	39.7	RHT from Victoria St West (46.4 secs)
5	Victoria St/Walter St	S	AM	B	0.768	23.5	RHT from T-Way road (51.0 secs)
5	Victoria St/Walter St	S	PM	D	0.874	47.0	RHT from T-Way road (83.5 secs)
6	Elizabeth St/The Horsley Dr	S	AM	B	0.790	21.3	RHT from Elizabeth St (42.7 secs)
6	Elizabeth St/The Horsley Dr	S	PM	C	0.872	29.5	RHT from The Horsley Drive East (43.5 secs)

NOTE

S = SIGNALS
ST = STOP
G = GIVEWAY
R = ROUNDABOUT

All intersections are providing a satisfactory Level of Service.

2.4 Vehicle Access to Site

The existing vehicular crossings in Frank Street are to be retained. These crossings were constructed for the previous use of the site by Sims Metal and are shown on the Survey plan prepared by William L. Backhouse Pty Ltd. All trucks are proposed to *enter and exit* using the western vehicular crossing. This crossing will have to be widened to **13.5** metres as noted on **Sheet 1A** of **Drawing No. 1162-15**.

CONCRETE RETAINING WALL AS SHOWN ON MMD CONCEPT PLAN NO 5

EXISTING RETAINING WALL

EXISTING RETAINING WALL

minimum carriageway width 6 metres

6000

BOUNDARY LINE 188° 50' 41" 267.49 m

SWALES

NOTE: FIRE TRUCK EGRESS PATH IN ACCORDANCE WITH NSW FIRE BRIGADES GUIDLINES FOR EMERGENCY VEHICLE ACCESS POLICY No 4

EASEMENT FOR POWERLINE

EASEMENT FOR POWERLINE

SIGN "GIVEWAY TO TURNING TRUCKS AHEAD".

EXISTING DRIVEWAY SHOWN DOTTED

BOUNDARY LINE 99° 29' 21" 77.66 m

PROPOSED RETAINING WALL AT EASEMENT LINE

RAW FEED

PEF STORE

MANUFACTURING FACILITY

STAFF CARPARK

LANDSCAPING

speed hump

SERVICE

WORKSHOP

VISITORS CARPARK

LANDSCAPING

FRANK STREET

keep driver's line of sight clear no cars to exit here

LOCKED SPARES STORAGE

FUEL TANKS

WATER TANKS

LANDSCAPING

CAR-TRAILER PARKING 6

speed hump

LINE OF ROOF AWNING OVER (SHOWN DASHED)

speed hump

WATER TANKS

minimum carriageway width 6 metres

speed hump

WEIGHBRIDGE

speed hump

PROPOSED RETAINING WALL AT BOUNDARY LINE
CRASH BARRIER

BOUNDARY LINE 8° 47' 10" 268.46 m

40000

55000

clearances to kerb required 600mm if trucks are required to exit here

central median island

S ARTICULATED 19M

Tractor Width	: 2500	Lock to Lock Time	: 6.0
Trailer Width	: 2500	Steering Angle	: 27.7
Tractor Track	: 2500	Articulating Angle	: 70.0
Trailer Track	: 2500		

S ARTICULATED 19M

Tractor Width	: 2500	Lock to Lock Time	: 6.0
Trailer Width	: 2500	Steering Angle	: 27.7
Tractor Track	: 2500	Articulating Angle	: 70.0
Trailer Track	: 2500		

Aerial Scania F19

Width	: 2500		
Track	: 2400		
Lock to Lock Time	: 8.0		
Steering Angle	: 38.4		

NORTH

DRAFT

No.	DATE	APPD	
A	3.1.16	EMMC	CAR PARKING LAYOUT AMENDED

SURVEY BY:

DATUM: A.H.D.

LYLE MARSHALL & ASSOCIATES PTY. LTD.
CONSULTING ENGINEERS, TRANSPORTATION, ENVIRONMENTAL PLANNERS & ARCHITECTS
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871 PACIFIC HIGHWAY
CHATSWOOD N.S.W 2067
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CLIENT: RESOURCE CO

PROPOSED TURNING SWEPT PATH DIAGRAMS FOR FIRE TRUCK, B DOUBLE AND SEMI-TRAILER ACCESS AND TRAFFIC MANAGEMENT NOTES

SCALE	PASSED	DATE FIRST ISSUED
1:400(A1) 1:800(A3)		DEC 2015

DESIGN	LMA	SHEET No.	DRAWING No.
DRAWN	EMMC	1A OF 3	1162-15
CHECKED	GLM		

NOTE: FIRE TRUCK EGRESS PATH IN ACCORDANCE WITH NSW FIRE BRIGADES GUIDLINES FOR EMERGENCY VEHICLE ACCESS POLICY No 4

EASEMENT FOR POWERLINE

EASEMENT FOR POWERLINE

SIGN "GIVEWAY TO TURNING TRUCKS AHEAD".

EXISTING DRIVEWAY SHOWN DOTTED

0 5000 10000 15000 20000mm

SWALES

Aerial Scania FTR LMA

Aerial Scania FTR LMA

PEF STORE

29 28 27 26 25 24 23 22 21 20

30 LANDSCAPING

31 42

32 41

33 40

34 39

35 38

36 37

LANDSCAPING

STAFF CARPARK

R7300

8156

SERVICE

UP

WORKSHOP

speed hump

speed hump

speed hump

9 8 7 6 5 4 3 2 1

19 18 17 16 15 14 13 12 11 10

VISITOR/STAFF CARPARK

LANDSCAPING

LANDSCAPING

FRANK STREET

BOUNDARY

existing vc

LINE OF ROOF AWNING OVER (SHOWN DASHED)

keep driver's line of sight clear no cars to exit here

LOCKED SPARES STORAGE

FUEL TANKS

WATER TANKS

5 ARTICULATED 19M AUSTROADS 2006 (AU)

B-DOUBLE 25M AUSTROADS 2006 (AU)

5 ARTICULATED 19M AUSTROADS 2006 (AU)

WEIGHBRIDGE

B-DOUBLE 25M AUSTROADS 2006 (AU)

4045

38200

500

R500

7250

5250

4000

clearances to kerb required 600mm if trucks are required to exit here

central median island

268.46 m

55000

DRAFT

No.	DATE	APPD	

SURVEY BY:

DATUM: A.H.D.

LYLE MARSHALL & ASSOCIATES PTY. LTD.
CONSULTING ENGINEERS, TRANSPORTATION, ENVIRONMENTAL PLANNERS & ARCHITECTS
SUITE 8
871 PACIFIC HIGHWAY
CHATSWOOD N.S.W 2067
phone: (02) 9419 8191
faxsimile: (02) 9419 8107
email: lylemarshall@ozemail.com.au

CLIENT: RESOURCE CO

PROPOSED DETAIL PATHS AND CAR APRKING LAYOUT AND NOTES- PART PLAN

SCALE	PASSED	DATE FIRST ISSUED
1:400(A3) 1:200(A1)		DEC 2015

DESIGN	LMA	SHEET No. 2 OF 3	DRAWING No. 1162-15
DRAWN	EMMC		
CHECKED	GLM		

(2.4 continued)

The existing crossing on the eastern side of the site is to be used by staff and visitor vehicles only for entry and exit.

As B-Doubles are to be used to transfer **PEF** for export, the B-Double routes are shown on **Figure 3B.** The section of Redfern Street between Hassall Street and Walter Street and The Horsley Drive east of Elizabeth Street are *not* B Double truck routes.

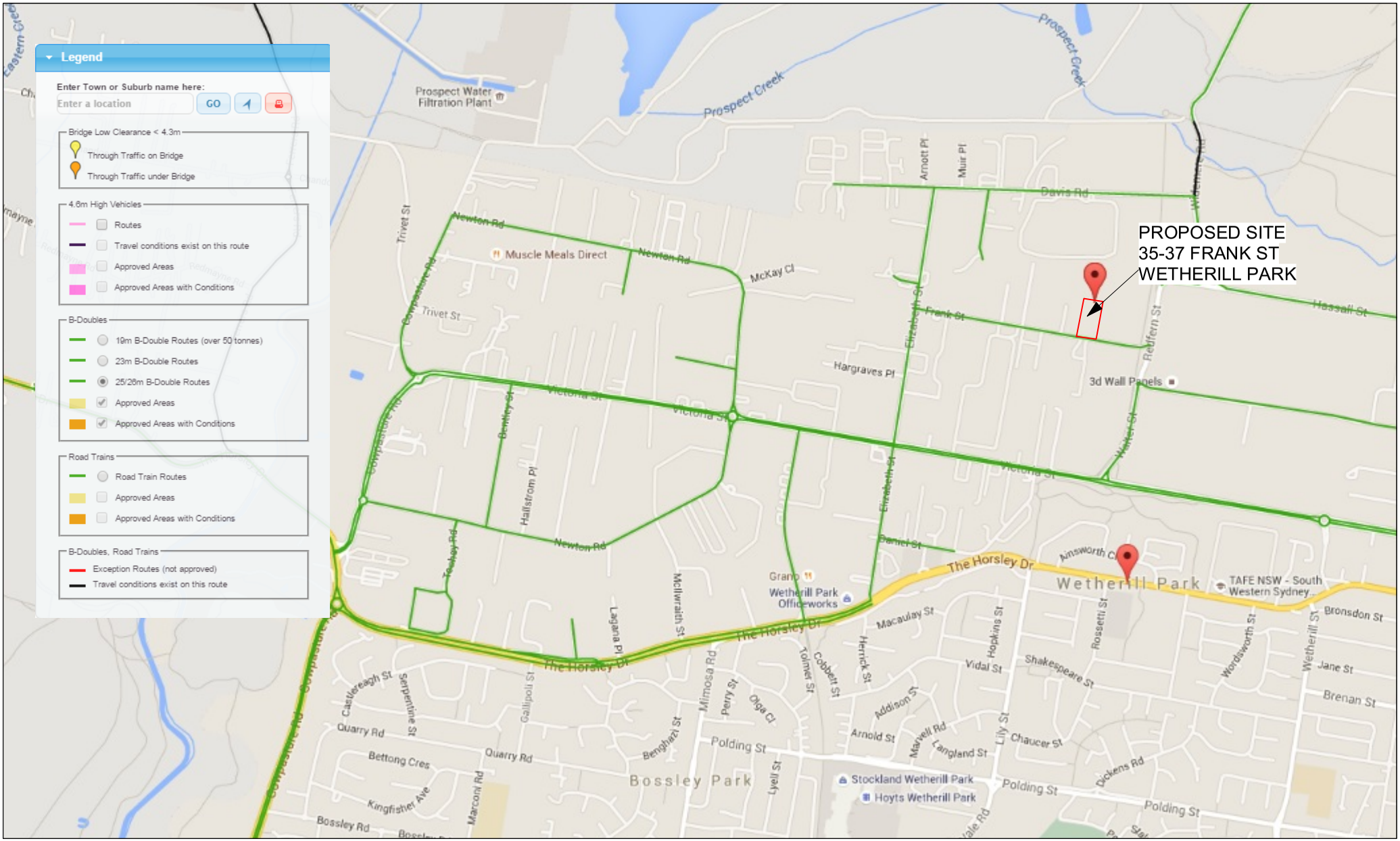

FIGURE 3B
B DOUBLE TRUCK ROUTES