

# **Technical paper 4**

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Traffic and transport

# Nundah Bank Third Track Traffic Impact Assessment

February 2010

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**Upper Hunter Valley Alliance**

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## Executive summary

The traffic implications of the construction of the proposed third track and ancillary infrastructure at Nundah Bank are expected to fall into the following areas of investigation:

- increased traffic associated with the delivery of construction equipment and material in 2011/2012
- increased train and freight services in 2012 and 2018
- road safety implications.

The access to the main compound and satellite compound would be via a proposed haulage route that utilises the New England Highway's intersections with Rixs Creek Lane and Bridgman Road.

The construction of the Nundah Bank third track and ancillary infrastructure would result in 140 to 220 light vehicles per day (i.e. 70 to 110 light vehicles per hour arriving at the compounds before the working shift, and 70 to 110 light vehicles per hour leaving after the working shift), as well as 80 to 120 trucks per day (i.e. six trucks per hour arriving and six trucks per hour departing from the site). These traffic volumes were assigned to the New England Highway, Rixs Creek Lane and Bridgman Road for intersection performance and mid-block capacity analyses.

The construction of the third track and ancillary infrastructure is expected to occur between the third quarter of 2011 and the fourth quarter of 2012, partially during the time period when Singleton Council will undertake construction works for upgrading the New England Highway/Bridgman Road intersection. The intersection analysis was undertaken based on the Council's Stage 1 works which is scheduled to be completed by the end of 2011. At the moment Council has no funding or plans to complete further stages. Further staging will be determined by the amount of development occurring in Singleton Heights/Hunter View area located to the north of the subject intersection. In order to measure the impacts from these proposals, the surrounding road network was observed and the key intersections identified for analysis. Traffic counts and turning movement surveys were conducted in August 2010. Regional traffic growth was estimated based on the traffic data collected from a nearby Roads and Traffic Authority (RTA) traffic counting station. An annual growth rate of 0.7% was adopted for this project and applied to all forecast scenarios.

Once current traffic flows were calculated for the proposed haulage route, the intersections of interest were analysed using SIDRA traffic modelling software to measure their current performance. This performance was the benchmark against which the future changes were compared. Besides the current benchmark year, year 2012 was selected for studying the traffic impacts during the construction period.

The following scenarios for traffic impact forecasting were then identified:

1. 2010, base case benchmark
2. 2012, do-nothing case
3. 2012, construction case – typical working day
4. 2012, construction case – track possessions.

Intersection performance was scaled using levels of service, which range between 'A' which is the best performance, to 'F' which is the worst. Degree of saturation was also assessed to determine the ratio of demand to capacity. The intersection performance results are reported in the following table.

Intersection	2010		2012					
	Base case benchmark		Do-nothing case		Construction case – typical working day		Construction case – track possessions	
	AM peak hour	PM peak hour	AM peak hour	PM peak hour	AM peak hour	PM peak hour	AM peak hour	PM peak hour
New England Highway/Rixs Creek Lane intersection (existing layout)	B 0.54	B 0.32	B 0.55	B 0.32	<b>F</b> 0.56	B 0.32	<b>F</b> 0.56	B 0.32
New England Highway/Bridgman Road intersection (Council's Stage 1 upgrade layout)	<b>E</b> 1.26	D 1.00	C 1.00	C 0.88	C 1.00	C 0.88	C 1.00	C 0.93

The analysis indicated:

- reduction in the New England Highway/Rixs Creek Lane intersection’s performance between the 2012 do-nothing case and the 2012 construction cases, affecting only one project related right-turning heavy vehicle assigned on Rixs Creek Lane. It should be acknowledged that in the do-nothing case there would be no right turning traffic on the Rixs Creek Lane approach, therefore this heavy vehicle is unlikely to interrupt any background traffic.
- no performance changes at the New England Highway/Bridgman Road intersection between the 2012 do-nothing case and the 2012 construction cases, as a result of the construction traffic.

The mid-block road capacity analysis indicated that the key roads’ sections would continue to operate at LoS D based on the anticipated construction traffic volumes, indicating the construction truck trips would not impose adverse impacts to the traffic efficiency on these rural highway sections.

Impact of traffic at the Middle Falbrook Road’s level crossing is expected to be minor despite the increased number and length of trains by 2012 and 2018. This is because even though the duration and frequency of closures of the level crossing would be significantly higher in the future years considered the traffic volumes using Middle Falbrook Road will still be low so few vehicles will be affected. By 2018, there would be 131 train services per day between 7:00 am and 10:00 pm. As a result, an average of 44 vehicles per day would experience delays when the trains pass the level crossing during the same time period. For each train movement, only one vehicle, on average, is expected to queue on each approach at the level crossing. The delay as a result of this vehicle queue is expected to be approximately 340 seconds for a freight train or approximately 20 seconds for a passenger train.

Access to properties along the proposed haulage route would be maintained as far as practicable during the construction phase of the project. Where necessary, specific arrangements regarding property access would be further investigated in a Traffic Management Plan and discussed with affected property owners prior to any changes.

It is unlikely that there would be any significant traffic impact at the key intersections associated with the increased traffic due to construction equipment and material delivery. Any impact would be further reduced as the construction trips disperse into the broader, regional road network distant from the construction site.

Maintenance works would be required in the rail corridor following the construction of the third track and ancillary infrastructure. The amount of operational activities is expected to be less than the construction activities that have been considered in this traffic impact assessment. Based on the findings of this traffic impact assessment, it is anticipated the traffic generated by the operational activities would be less significant than that generated by the construction activities. Therefore, maintenance activities are unlikely to impose adverse traffic impacts to the local and regional road network.

Road dilapidation inspections would be undertaken prior to and following construction with any change in conditions beyond normal wear and tear. Any damage resulting from construction would be repaired unless alternative arrangements are made with the relevant road authority.

A number of road safety issues were identified in relation to deficiencies in signs and linemarking, pavement, guardrail and drainage. Other issues included unprotected roadside hazards identified within the clear zone. A number of mitigation measures have been recommended to improve road safety outcomes for the haulage operation. These safety improvements would also benefit other road users. It is recommended UHVA to undertake consultation with RTA and Singleton Council to rectify identified road safety deficiencies and ensure adequate levels of safety are maintained during construction.

## Conclusion

- The proposed construction will generate additional traffic for equipment and material delivery, but this additional traffic is not expected to have significant impact on the surrounding road network.
- The New England Highway/Bridgman Road intersection would continue to operate above its practical capacity, with or without the additional traffic resulting from the Nundah Bank project.
- The haulage operation and design of the road safety improvements (refer to Section 7) should be undertaken in compliance with accepted traffic engineering practices (i.e. RTA and Austroads guidelines).



# 1. Introduction

## 1.1 Background

The Upper Hunter Valley Alliance (UHVA) commissioned Parsons Brinckerhoff (PB) to prepare a traffic impact assessment (TIA) for the proposed third transport track and ancillary infrastructure at Nundah Bank. The report considers both construction impacts and impacts following commissioning of the third track, specifically at the Middle Falbrook Road level crossing.

## 1.2 Location

Figure 1.1 shows a locality map of the proposed third track which is approximately 4.26 km long, located on the up side (east side) adjacent to Australian Rail Track Corporation's (ARTC) Main North Line, at Nundah Bank, NSW. This location is approximately 6 km north of Singleton.

Two construction compounds are proposed:

- the main compound, near the point where Middle Falbrook Road crosses the railway, which would service the east (up) side of the track for earthworks and track installation
- the satellite compound, east of Rixs Creek Lane adjacent the railway line, which would service the west (down) side of the track for the construction of track.

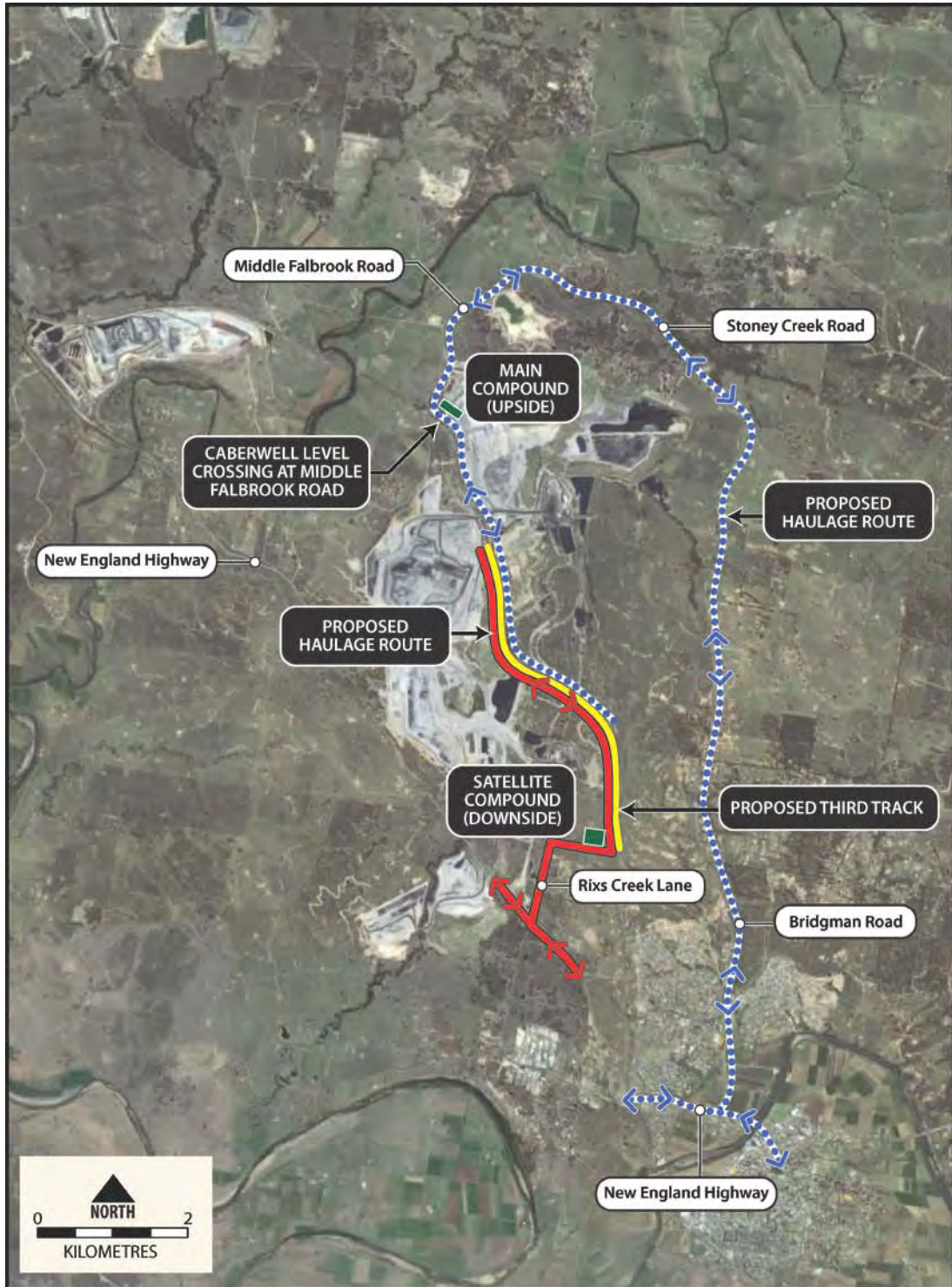
## 1.3 Scope of work

An assessment was undertaken to investigate the potential traffic impacts of the construction of the proposed third track and ancillary infrastructure, and following commissioning on the level crossing at Middle Falbrook Road. The report was developed in accordance with the Roads and Traffic Authority (RTA) *Guide to Traffic Generating Developments* and in response to the Director-General Requirements (DGRs) for the Environmental Assessment issued on 27 July 2010.

The DGRs specified the following assessment and considerations to be included:

- construction traffic impacts, including haulage, road network changes and potential disruption to the local and regional road network
- operational assessment of the level crossing at Middle Falbrook Road due to the increased passenger train services and freight rails following completion of the third track
- a strategy for managing rail and road traffic impacts, with a particular focus placed on those activities identified to have the greatest potential for adverse traffic flow, access or safety implications, and a broader, more generic approach developed for day-to-day traffic management.

Consultation with Transport NSW has confirmed that the draft Hunter Regional Transport Strategy is not currently available to the public for exhibition and public consultation as per NSW State Plan requirements. Therefore, PB was not able to make an assessment of the consistency of the project or potential impacts on the Hunter Regional Transport Strategy at the time of preparing this assessment.



Reference: [www.maps.google.com.au](http://www.maps.google.com.au)

**Figure 1.1** Locality map

## 2. Existing conditions

This section describes the traffic and transport infrastructure located within the vicinity of the proposal, as well as the traffic performance and road safety assessment of the existing road network.

### 2.1 Existing roads condition

#### 2.1.1 New England Highway

The observed section of the New England Highway is a two-lane undivided road connecting Singleton and Muswellbrook. The lane width is 3.5 m, with a sealed shoulder width in range from 1 m to 2 m. The posted speed limit is 80 km/h between White Avenue and the road section further north, while 60 km/h between White Avenue and the Singleton.

#### 2.1.2 Rixs Creek Lane

Rixs Creek Lane is a 6 m to 8 m wide sealed road with no line-marking provided. The posted speed limit is 60 km/h.

The road provides a connection between the New England Highway and Rixs Creek Colliery, and a few rural properties. A gate is located on Rixs Creek Lane approximately 920 m to the north of the New England Highway, which restricts the access to Rixs Creek Colliery. Adjacent to the gate, there is an unsealed road on the east side of Rixs Creek Lane, which would be used as a haulage route linking to the proposed satellite site.

Observations indicate the following deficiencies affecting road safety (site photos are shown in Appendix A):

- delineation provided along Rixs Creek Lane is insufficient (refer to Photo 1)
- soil and gravel have been tracked onto the intersection of Rixs Creek Lane and the unsealed road. Loose material on the road surface may adversely affect the controllability of a vehicle, and increase driver error and the likelihood of a crash (refer to Photo 2).

#### 2.1.3 New England Highway/Rixs Creek Lane intersection

Rixs Creek Lane intersects the New England Highway forming a T-junction, with a 400 m long continuous southbound auxiliary left-turn lane from Rixs Creek Lane onto the New England Highway (south). A left turn slip lane and a right turn short lane provided on the Highway. The intersection is located in 80 km/h speed limit zone on the New England Highway.

Observations indicate the following deficiencies affecting road safety (site photos are shown in Appendix A):

- Give Way sign is missing on Rixs Creek Lane approach to the intersection (refer to Photo 3)

- the lack of centreline marking on Rixs Creek Lane at the intersection means turning vehicles have no guidance and they may encroach to the opposite lane (refer to Photo 3)
- there is no Sight Board at the intersection (refer to Photo 4), thus drivers on Rixs Creek Lane may not be aware of the termination of Rixs Creek Lane, because of the limited sight distance towards the intersection because of the uphill approach. Failure to give way to traffic on the New England Highway may result in crossing/turning crashes
- gravel has been tracked onto Rixs Creek Lane. Loose material on the road surface may adversely affect the controllability of a vehicle, and increase driver error and the likelihood of a crash (refer to Photo 4).

#### 2.1.4 Bridgman Road

Bridgman Road is a two-lane undivided road connecting Singleton with the mine site and the towns located further north. A central median is provided on Bridgman Road on approach to the Blaxland Avenue and Acacia Circuit intersections.

The posted speed limit is 60 km/h between New England Highway and Gardner Circuit (northern end). The posted speed limit is 80 km/h between Gardner Circuit (northern end) and Retreat Road, and 100 km/h between Retreat Road and Stoney Creek Road.

Observations indicate the following deficiencies affecting road safety (site photos are shown in Appendix A):

- there is no deflection zone available in the back of the guardrail adjacent to a deep gully just to the north of Gardner Circuit (southern end) (refer to Photo 5). The lack of sufficient deflection zone would result in snagging errant vehicles' left wheels and cannot be safely redirected to the roadway. The standard deflection distance is 1.2 m based on the Road and Traffic Authority 1992, *Road Design Guide*
- there are no reflectors to provide sufficient delineation along the guardrails located just to the north of Gardner Circuit (southern end) (refer to Photo 5)
- the following roadside hazards have been identified:
  - ▶ the driveway culverts to the north of Gardner Circuit (southern end) are not traversable and not protected, and pose a significant risk for an errant vehicle (refer to Photo 6)
  - ▶ a few large trees to the north of Gardner Circuit (northern end) are located within the clear zone too close to the moving traffic
- the Pedestrian Crossing warning sign (W6-1) to the north of Gardner Circuit (southern end) is faded with low retro-reflectivity and is not clearly visible during the night
- the centreline is faded along Bridgman Road to the north of the New England Highway (refer to Photo 7)
- no line-marking is provided along Bridgman Road to the south of Stoney Creek Road (refer to Photo 8).

### 2.1.5 New England Highway/Bridgman Road intersection

This intersection is signal-controlled, located to the west of the Hunter River. Turning lanes are provided on all approaches.

Observations indicate the following deficiencies affecting road safety (site photos are shown in Appendix A):

- The gutter is blocked with soil, reducing its efficiency to drain water from Bridgman Road (refer to Photo 9). Water would stand on the road surface instead of being drained, and may result in aquaplaning, affecting road safety.

### 2.1.6 Intersections along Bridgman Road

The T-junctions located along Bridgman Road are priority controlled (from north to south):

- Sandy Creek Road
- Integral Coal Mine access road
- Telstra Tower access road
- Retreat Road
- Gardner Circuit (northern end)
- Cox Lane
- Gardner Circuit (southern end)
- Wattle Pond Road
- Acacia Circuit
- Blaxland Avenue.

Observations indicate the following deficiencies affecting road safety (site photos are shown in Appendix A):

- both the hold line and Give Way sign are missing at the following intersections along Bridgman Road:
  - ▶ Gardner Circuit (northern end)
  - ▶ Gardner Circuit (southern end)
  - ▶ Retreat Road
- a non-standard Sight Board has been installed at the Retreat Road intersection (refer to Photo 10)
- gravel has been tracked onto Retreat Road (refer to Photo 11). Loose material on the road surface may adversely affect the controllability of a vehicle, and increase driver error and the likelihood of a crash
- stop line is faded at the coal mine access road (refer to Photo 12)

- incorrect orientation of the Sight Board at the Bridgman Road/coal mine access road intersection (refer to Photo 13).

### **2.1.7 Stoney Creek Road**

Stoney Creek Road is a 6 m to 8 m wide sealed road with no line-marking provided and with no speed limit signs on display. As a rural road, the default speed limit would be 100 km/h.

Observations indicate the following deficiencies affecting road safety (site photos are shown in Appendix A):

- no line-marking is provided along Stoney Creek Road (refer to Photo 14)
- there are no chevron alignment markers (CAMs) installed along the curves for which 55 km/h and 75 km/h advisory speed limits signs are provided (refer to Photo 14). The lack of CAMs results in inadequate curve delineation, especially during the night
- no wildlife warning signs provided on the road. During a daylight site inspection a number of kangaroos were spotted crossing the road (refer to Photo 15).

### **2.1.8 Bridgman Road/Stoney Creek Road intersection**

Stoney Creek Road intersects Bridgman Road forming a T-junction with an auxiliary right-turn (AUR) configuration with a left-turn slip lane provided on Bridgman Road. The intersection is located in a 100 km/h speed limit zone. There is good visibility from the intersection in all directions.

Observations indicate the following deficiencies affecting road safety (site photos are shown in Appendix A):

- the hold line is faded at Stoney Creek Road (refer to Photo 16)
- the orientation of the Sight Board is upside down (refer to Photo 16).

### **2.1.9 Middle Falbrook Road/Stoney Creek Road intersection**

Stoney Creek Road intersects with Middle Falbrook Road forming a T-junction.

Observations indicate the following deficiencies affecting road safety (site photos are shown in Appendix A):

- no priority control is provided at the intersection (refer to Photo 17)
- the Sight Board and its sign posts are damaged (refer to Photo 18)
- non-standard installation of the chevron alignment markers (CAMs) along a curve adjacent the Middle Falbrook Road/Stoney Creek Road intersection (refer to Photo 19). A minimum of three CAMs are required in each direction along a curve in accordance with *AS 1742.2-2009 Manual of uniform traffic control devices - Traffic control devices for general use*.

### **2.1.10 Middle Falbrook Road**

Middle Falbrook Road is a sealed rural road with no speed limit signs on display. As a rural road, the default speed limit would be 100 km/h.

The road is generally 4 m to 7 m wide. The road is particularly narrow on the section just to the north of a timber bridge. The timber bridge is 4.6 m wide, located to the north of the level crossing which only allows one vehicle on the bridge at a time.

Middle Falbrook Road is currently a no through road at its southern end due to the presence of a private coal mine.

Observations indicate the following deficiencies affecting road safety (site photos are shown in Appendix A):

- no line-marking is provided along Middle Falbrook Road, except for in the vicinity of its intersection with Stoney Creek Road (refer to Photo 20)
- there is some pavement failure on Middle Falbrook Road which may cause driving and/or safety problems (refer to Photo 21). The pavement is significantly damaged and there are pot holes on the road between a mine entrance and the timber bridge
- road delineation is insufficient on a curve leading to a crest just outside the mine entrance (refer to Photo 22). The road also narrows after the crest.

### **2.1.11 Middle Falbrook Road's level crossing at ARTC main line**

Middle Falbrook Road crosses the ARTC Main North Line at a level crossing. The level crossing is passively controlled by stop signs.

Observations indicate the following deficiency affecting road safety (site photos are shown in Appendix A):

- The Railway Crossing sign is damaged (refer to Photo 23).

### **2.1.12 Access track on the eastern (up) side of the ARTC main line**

An existing access track enables vehicle access (as well as maintenance works and inspections) on the eastern (up) side of the existing line between the Camberwell level crossing and the New England Highway.

The section between Middle Falbrook Road and the Telstra Tower access road would be upgraded and used as part of the proposed haulage route.

## 2.2 Traffic data

The following traffic data resources were used to determine the existing traffic profile:

- **Average Annual Daily Traffic (AADT) data** - RTA count station 05.943
- **traffic count data** - a traffic count undertaken at the New England Highway/Rixs Creek Lane intersection, as well as the New England Highway/Bridgman Road intersection from 6:00 am to 7:00 pm on Tuesday 3 August 2010 (see Appendix B).

### 2.2.1 Average Annual Daily Traffic

The AADT has been obtained from RTA count station (05.943) located on New England Highway at the Hunter River Bridge, approximately 520 m east of Bridgman Road. Table 2.1 shows the historical AADT recorded in 2001 and 2007.

**Table 2.1 Historical AADT data from RTA count station (05.943)**

Station no.	Location	2001	2004	2007
05.943	New England Highway at the Hunter River Bridge (520 m east of Bridgman Road)	24,043	–	25,073

Source: Traffic Volume Data for Hunter and Northern Region, RTA 2004 (most recent publication), and consultation with RTA for the 2007 provisional AADT data.

The AADT demonstrated an upward trend between 2001 and 2007 with an annual growth rate of 0.7%.

### 2.2.2 Traffic flow

#### 2.2.2.1 Mid-block traffic flow during the day

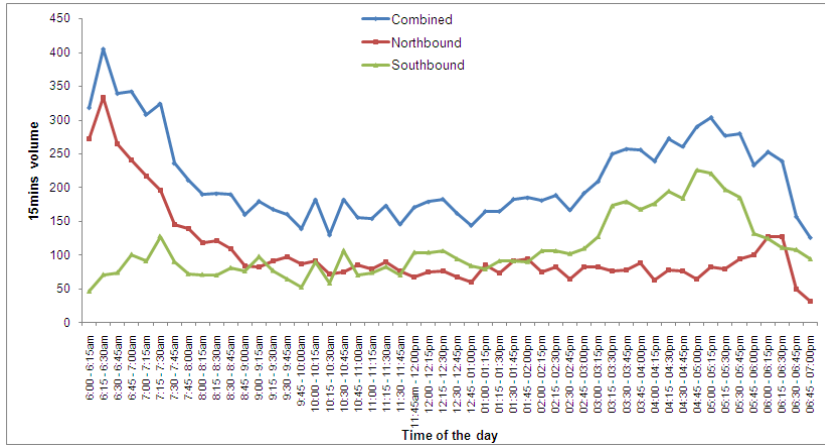
Traffic counts were conducted on Tuesday 3 August 2010 at the New England Highway's intersections with Rixs Creek Lane and Bridgman Road, from 6:00 am to 7:00 pm.

The intersection count data has also been converted to a mid-block traffic volume on the following key road sections in order to establish traffic profiles in 15 minute intervals:

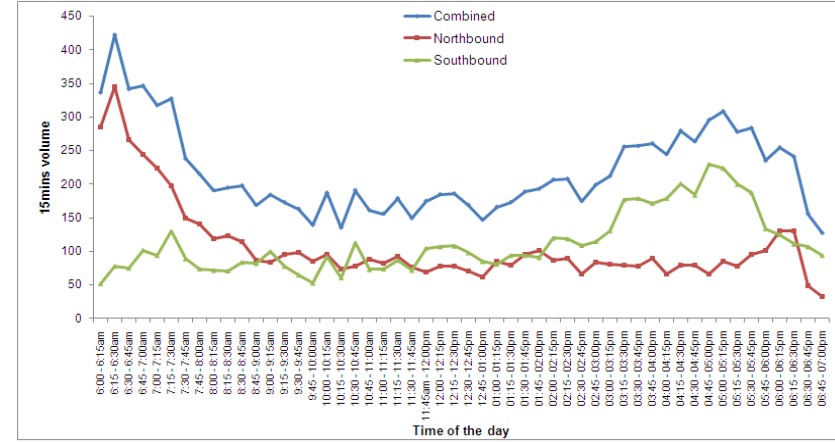
- New England Highway, north of Rixs Creek Lane
- New England Highway, south of Rixs Creek Lane
- New England Highway, west of Bridgman Road
- New England Highway, east of Bridgman Road
- Rixs Creek Lane, east of New England Highway
- Bridgman Road, north of New England Highway.

These key road sections are proposed to be part of the proposed haulage route which are described in Section 3.5.

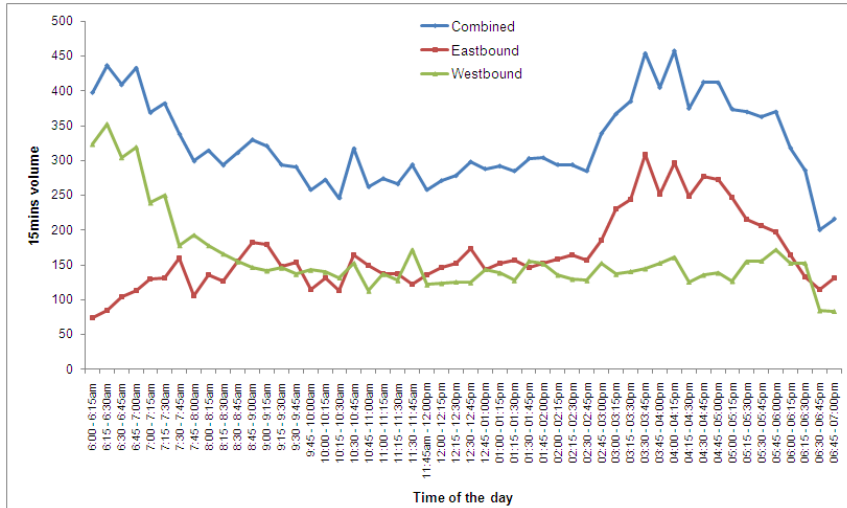
Figure 2.1 shows the traffic profile on the key road sections.



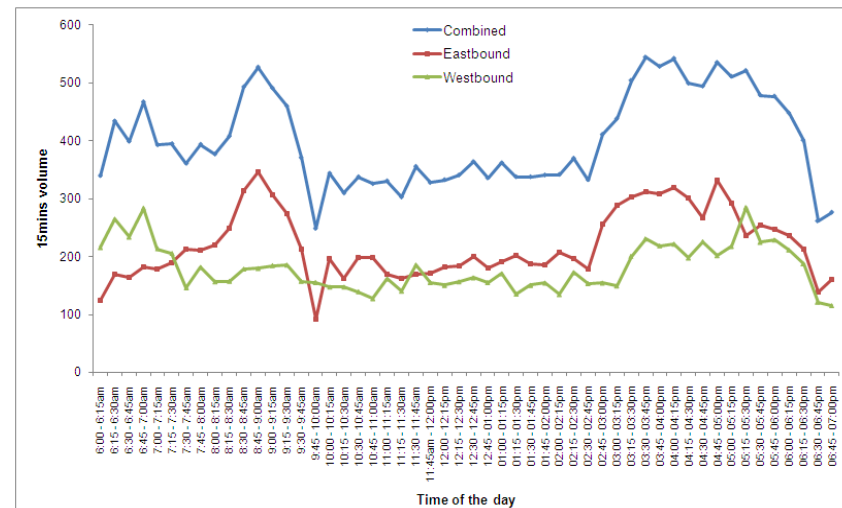
New England Highway, north of Rixs Creek Lane



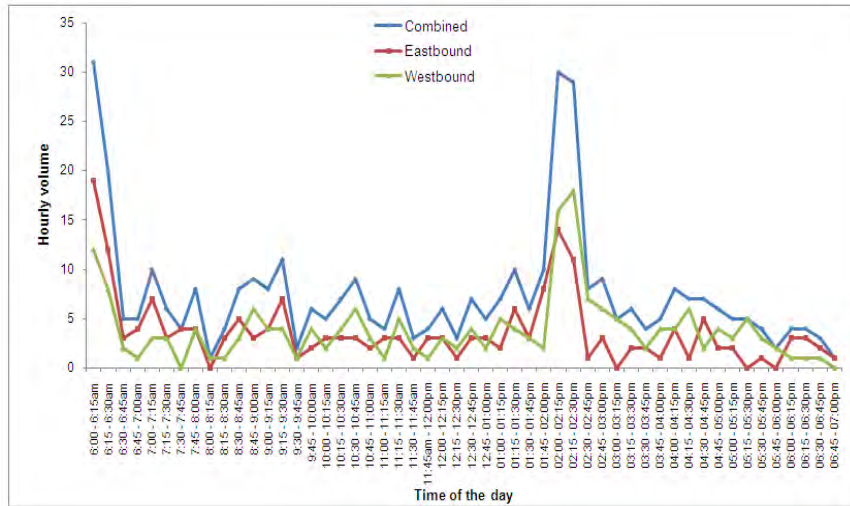
New England Highway, south of Rixs Creek Lane



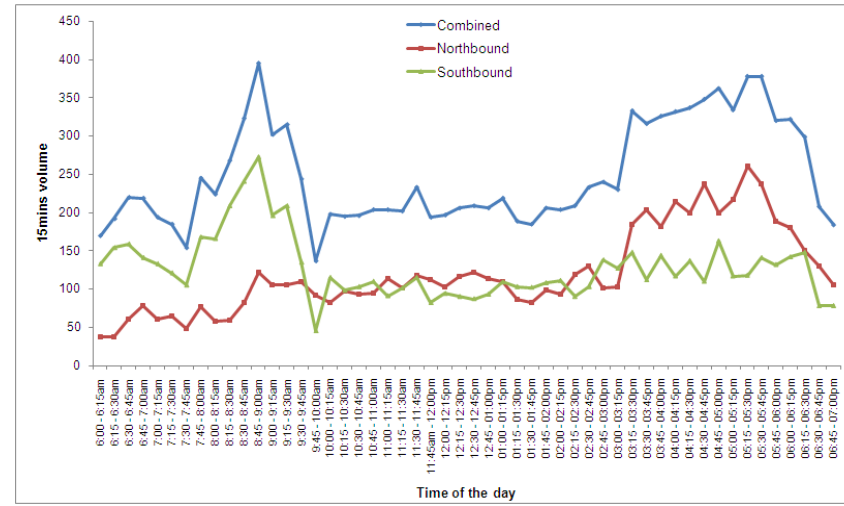
New England Highway, west of Bridgman Road



New England Highway, east of Bridgman Road



Rixs Creek Lane, east of New England Highway



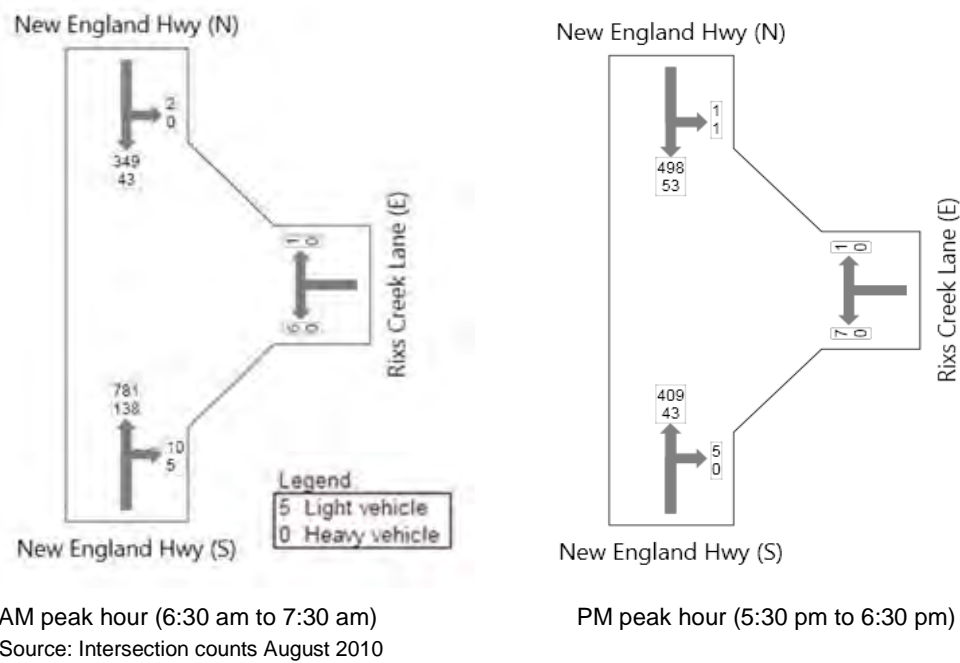
Bridgman Road, north of New England Highway

Figure 2.1 Hourly traffic profile on key road sections

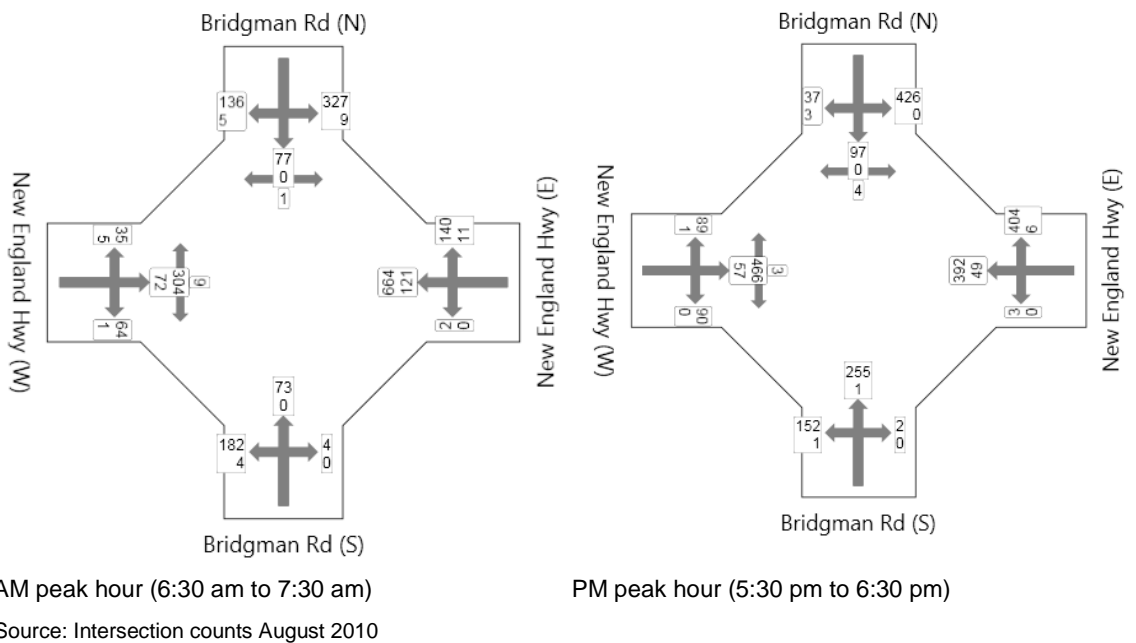
**2.2.2.2 Traffic volumes at the intersections during the peak hours**

Department of Planning specified the peak hours that should be adopted in this study are between 6:30 am and 7:30 am, and between 5:30 pm and 6:30 pm. These are the peak trip generation hours of the proposed Nundah Bank third track project.

Figures 2.2 and 2.3 show the AM and PM peak hours' traffic volumes selected for intersection performance analysis.



**Figure 2.2 Morning and afternoon peak hour traffic volumes at the New England Highway/Rixs Creek Lane intersection**



**Figure 2.3 Morning and afternoon peak hour traffic volumes at the New England Highway/Bridgman Road intersection**

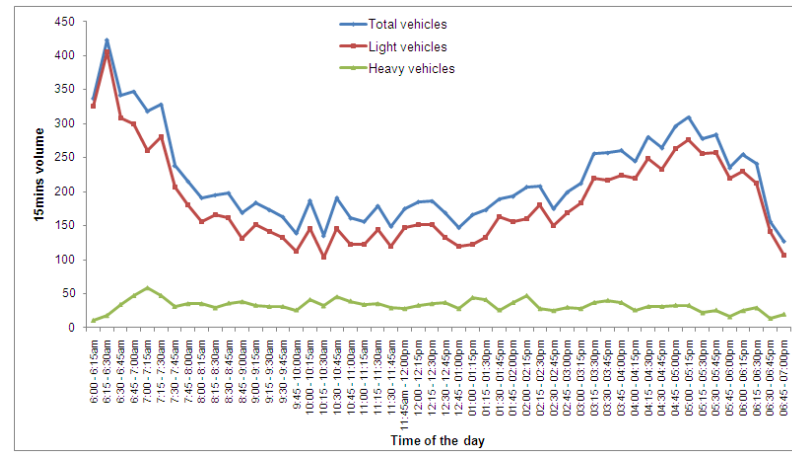
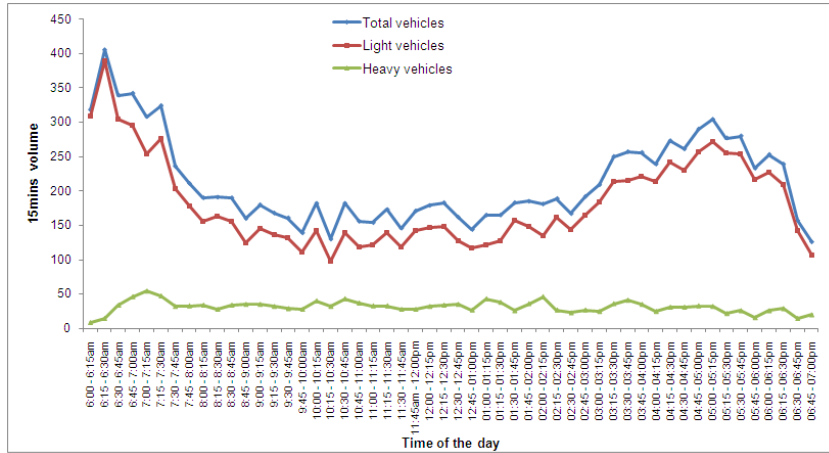
**2.2.2.3 Heavy vehicle volume**

The heavy vehicle volume was obtained from the intersection count data collected between 6:00 am and 7:00 pm. Table 2.2 shows the heavy vehicle percentage on key road sections. The highest heavy vehicle volume on the New England Highway was recorded to the east of Rixs Creek Lane between 3:00 pm and 4:00 pm.

**Table 2.2 Heavy vehicle percentage on key road sections**

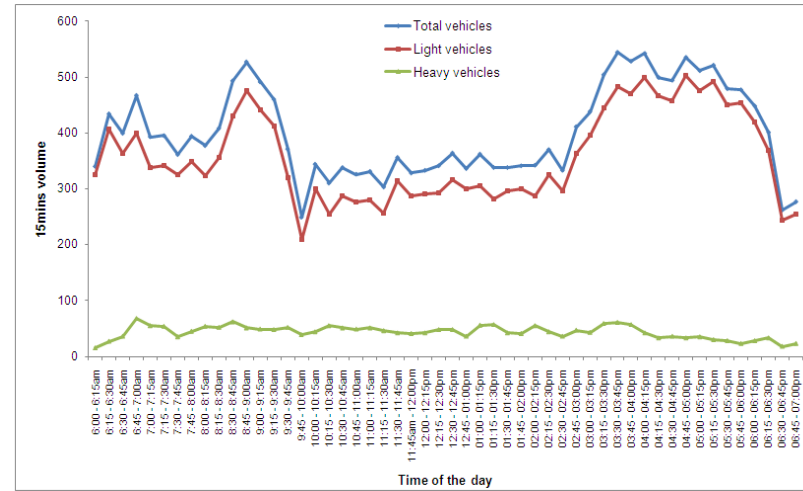
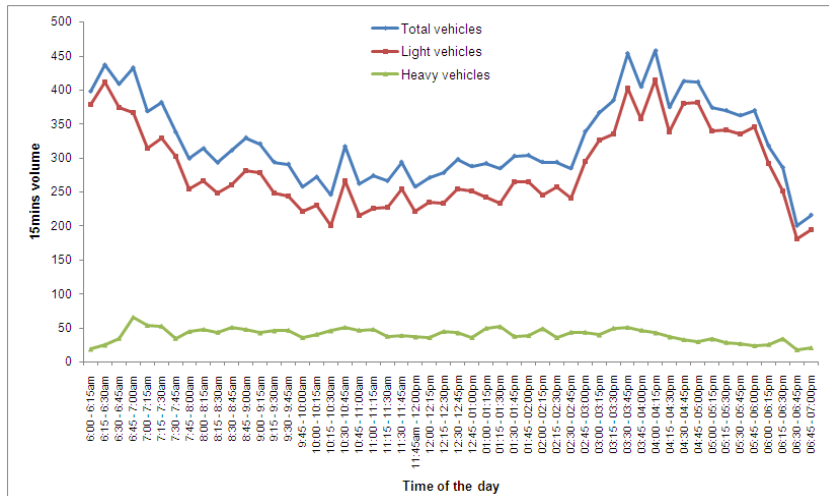
Road section	Minimum % of heavy vehicle	Maximum % of heavy vehicle	% of heavy vehicle (AM peak)	% of heavy vehicle (PM peak)
New England Highway, north of Rixs Creek Lane	7% (6:00 am – 7:00 am)	23% (10:00 am – 11:00 am)	7% (6:00 am – 7:00 am)	10% (4:45 am – 5:45 am)
New England Highway, south of Rixs Creek Lane	8% (6:00 am – 7:00 am)	23% (10:00 am – 11:00 am)	8% (6:00 am – 7:00 am)	10% (4:45 am – 5:45 am)
New England Highway, west of Bridgman Road	8% (5:00 pm – 6:00 pm)	17% (10:00 am – 11:00 am)	15% (8:30 am – 9:30 am)	11% (3:15 am – 4:15 am)
New England Highway, east of Bridgman Road	6% (5:00 pm – 6:00 pm)	15% (10:00 am – 11:00 am)	11% (8:30 am – 9:30 am)	10% (3:15 am – 4:15 am)
Rixs Creek Lane, east of New England Highway	6% (5:00 pm – 6:00 pm)	35% (3:00 pm – 4:00 pm)	10% (6:00 am – 7:00 am)	5% (4:45 am – 5:45 am)
Bridgman Road, north of New England Highway	1% (5:00 pm – 6:00 pm and 6:00 pm – 7:00 pm)	5% (7:00 am – 8:00 am and 2:00 pm – 3:00 pm)	3% (8:30 am – 9:30 am)	4% (3:15 am – 4:15 am)

Figure 2.4 shows the vehicle composition of the key road sections between 6:00 am and 7:00 pm.



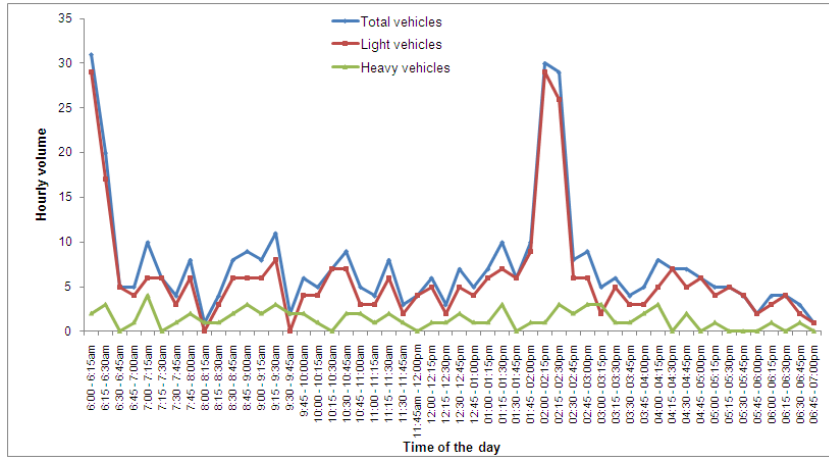
**New England Highway, north of Rixs Creek Lane**

**New England Highway, south of Rixs Creek Lane**

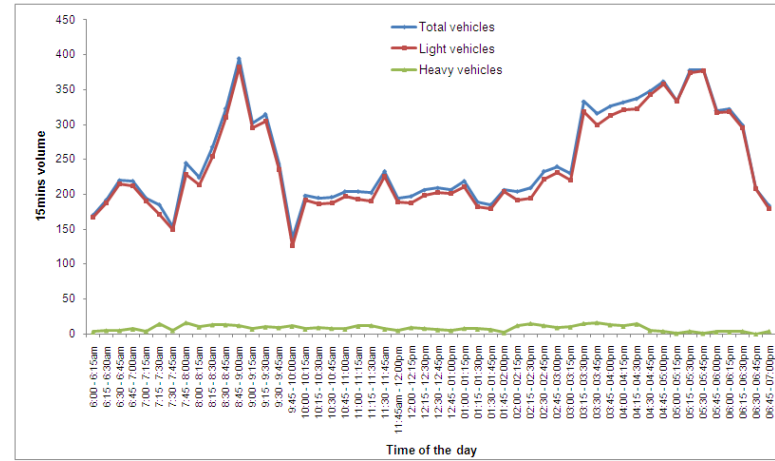


**New England Highway, west of Bridgman Road**

**New England Highway, east of Bridgman Road**



Rixs Creek Lane, east of New England Highway



Bridgman Road, north of New England Highway

Figure 2.4 Vehicle compositions on key road sections

## 2.3 Queue length

Table 2.3 summarises the 95<sup>th</sup> percentile back of queue calculated from the survey data collected at the New England Highway/Bridgman Road intersection on Tuesday 3 August 2010.

**Table 2.3 Observed 95<sup>th</sup> percentile back of queue**

Peak period	Approach	Lane	95 <sup>th</sup> percentile back of queue (number of vehicles)	
AM (6:30am–7:30 am)	South - Bridgman Road	Kerb	5	
		Median	4	
	East - New England Highway	Kerb	2	
		Centre	12	
		Median	6	
	North - Bridgman Road	Kerb	1	
		Median	12	
	West - New England Highway	Kerb	Centre	6
			Median	8
			Median	4
		South - Bridgman Road	Kerb	4
			Median	5
East - New England Highway		Kerb	Centre	3
	Median		11	
	Median		23	
	North - Bridgman Road	Kerb	0	
		Median	6	
	West - New England Highway	Kerb	Centre	11
Median			14	
Median			6	

## 2.4 Operation of traffic signals

### 2.4.1 Operation of controllers

The New England Highway/Bridgman Road intersection is under SCATS regional computer control and operates in flexilink mode except for between 3:00 pm and 6:00 pm from Monday to Friday when it operates in the master-isolated mode. This is shown in the SCATS Intersection Diagnostic Monitor (IDM) data provided by the RTA and included in Appendix C.

Appendix C shows the IDM data recorded between 10:30 am and 12:00 am on Tuesday 3 August 2010 and between 6:00 am and 12:00 pm on Wednesday 4 August 2010. It should be noted that the IDM data was not collected on the same day because the field equipment was not operational in windy weather conditions during the morning period, thus it was resurveyed on the following day.

### 2.4.2 Signal phasing

Figure 2.5 shows the three-phase single diamond overlap arrangement (phases A, D and E) in operation by the signal controller during the surveyed morning and afternoon peak hours.

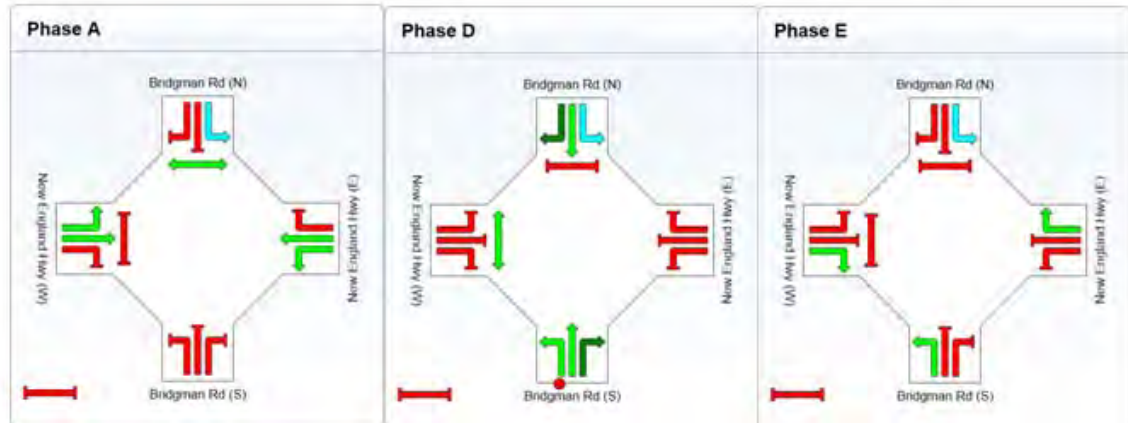


Figure 2.5 Existing signal phasing

### 2.4.3 Cycle time

Based on the IDM data, the cycle times were 112 seconds between 6:30 am and 8:30 am and 132 seconds between 5:30 pm and 6:30 pm on the survey day.

## 2.5 Public transport services

There are a number of public bus and school bus services operating on the surrounding road network. The following bus services are currently available:

- bus route 182 – Singleton Heights - Maitland (via North Rothbury - Branxton - Rutherford)
- bus route 181/182 – Woodberry to Singleton Heights (via Metford – Greenhills – Maitland – Rutherford – Branxton – North Rothbury), Greenhills to Singleton Heights (via Maitland – Lochinvar - Greta – Branxton - North Rothbury – Singleton)
- bus route 401 – Singleton Town Circuit
- bus route 402 – Singleton – Darlington (via Singleton Heights Shops and Hunterview)
- bus route 403 – Singleton – Singleton Heights (via Hunterview Estate)
- bus route GX242 – Sydney to Brisbane via New England Highway – Greyhound Australia
- bus route GX424 – Brisbane to Sydney via New England Highway – Greyhound Australia
- school bus service – New England Highway, Stoney Creek Road and Bridgman Road – Hunter Valley Buses Company.

Bus movements have been captured in the intersection counts and included in the intersection analyses.

## 2.6 Pedestrian and cyclist facilities

A pedestrian footpath is provided along the western side of Bridgman Road, between the New England Highway and to the north of Acacia Circuit.

Bicycle warning signs are provided on Bridgman Road. No bicycle facilities are provided on the rural roads within the study area.

## 2.7 Crash history

From October 2004 to September 2009, a total of 63 crashes have occurred on the road network in the vicinity of the Nundah Bank project site. Crash reports from the RTA are presented in Appendix D.

The following sections analyse the commonalities between the crashes that have occurred along various road sections. No crashes have been reported on Middle Falbrook Road and Rixs Creek Lane during the analysed time period.

### 2.7.1 New England Highway

A total of 43 crashes have been reported on New England Highway between 100 m to the north of Rixs Creek Lane and 100 m to the east of Bridgman Road. These crashes involved one fatal crash, 20 injury crashes and 22 non-injury crashes.

Analysis of the location of recorded crashes indicates that:

- 14 out of 43 crashes (33%) occurred at the New England Highway/Bridgman Road intersection
- 4 out of 43 crashes (9%) occurred at its T-junction with White Avenue
- 25 out of 43 crashes (58%) occurred at isolated locations along the New England Highway
- In total, 43 out of 63 crashes (68%) that have been recorded within the study area occurred on New England Highway.

Analysis of the type of crashes indicates:

- rear end crash was the most common crash type (19 out of 43 crashes), of which 15 occurred in the vicinity of the New England Highway/Bridgman Road intersection
- the second most common crash type was crossing/right turning, involving vehicles turning right and colliding with vehicles travelling along the road in adjacent approach
- one fatal crash involved a truck reversing and hitting a pedestrian on the New England Highway.

Analysis of the contributing crash factors indicates:

- 8 out of 43 crashes (19%) involved speeding or fatigue as a contributing factor.

### **2.7.2 Bridgman Road**

A total of 19 crashes occurred on Bridgman Road between New England Highway and Stoney Creek Road. These crashes involved 5 injury crashes and 14 non-injury crashes.

Analysis of the location of recorded crashes indicates that:

- 5 out of 19 crashes (26%) occurred at the Bridgman Road/Blaxland Avenue intersection
- 4 out of 19 (21%) occurred at the Bridgman Road/Acacia Circuit intersection
- 10 out of 19 (53%) occurred at isolated locations along Bridgman Road
- in total, 19 out of 63 of crashes (30%) that have been reported within the study area occurred on Bridgman Road.

Analysis of the type of crashes indicates:

- The most common crash type along Bridgman Road was right turning/crossing crashes; 3 out of 19 crashes (16%) were of this type and occurred at the Bridgman Road/Blaxland Avenue intersection.

Analysis of the contributing crash factors indicates:

- 2 out of 19 crashes (11%) involved speeding as a contributing factor.

### **2.7.3 Stoney Creek Road**

Only one crash occurred on Stoney Creek Road between Bridgman Road and Middle Falbrook Road, resulting in one injury. The vehicle involved in the crash ran off the road on a straight road section. Fatigue was reported as a contributing factor in this crash.

## **2.8 Traffic efficiency**

The Road and Traffic Authority 2002, *Guide to Traffic Generating Developments* sets out the two-way hourly road capacities for two-lane roads for different level of service, with a design speed of 100 km/h, as shown in Table 2.4. The Level of Service (LoS) descriptions are shown in Appendix E.

**Table 2.4 Level of Service (LoS) and threshold peak hour flow on two-lane rural roads in 80 km/h zone**

Terrain	Level of Service	Threshold peak hour flow (veh/hr)			
		0% heavy vehicles	5% heavy vehicles	10% heavy vehicles	15% heavy vehicles
Rolling	B	450	378	324	279
	C	828	684	585	513
	D	1233	1026	873	630
	E	2178	1800	1548	1359

Source: RTA Guide Traffic Generating Development. The guide indicated that the lane capacities in an 80 km/h zone are considered approximately 85-95% of the lane capacities in a 100 km/h zone as referenced in Table 4.5. The above table considered 90% of the lanes capacity referenced in Table 4.5 in the guide. Note: Level of Service (LoS) A applies to peak hour flows less than the LoS B threshold flows.

Table 2.5 shows the existing LoS based the surveyed traffic volumes at the key roads' sections. The roads are currently operating at LoS D.

**Table 2.5 Existing peak hour flow on two-lane rural roads (veh/hr)**

Road section	Period	Volume (veh/hr)	Heavy vehicle %	Level of Service (LoS)
New England Highway, north of Rixs Creek Lane	AM peak (6:30 am– 7:30 am)	1,313	14%	D
	PM peak (5:30 am–6:30 am)	1,005	10%	D
New England Highway, south of Rixs Creek Lane	AM peak (6:30 am–7:30 am)	1,335	14%	D
	PM peak (5:30 am–6:30 am)	1,015	9%	D

## 2.9 Intersections analysis

The performance of the road network is largely governed by the ability of its key intersections to accommodate the traffic demand. The performance of the key intersections in the study area was assessed using the SIDRA traffic modelling software.

### 2.9.1 Model calibration

The SIDRA model was calibrated using the following parameters:

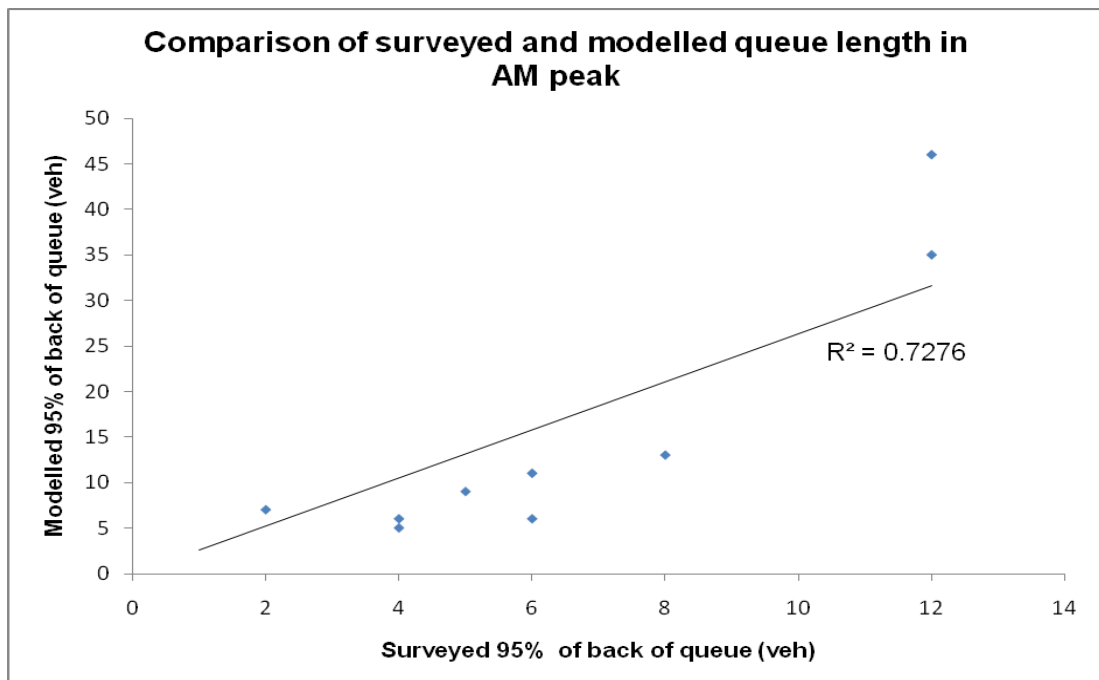
- lane saturation flow based on the maximum flows (MFs) provided by the RTA (see Appendix C)
- lane saturation speed
- lane utilisation ratio
- all red time.

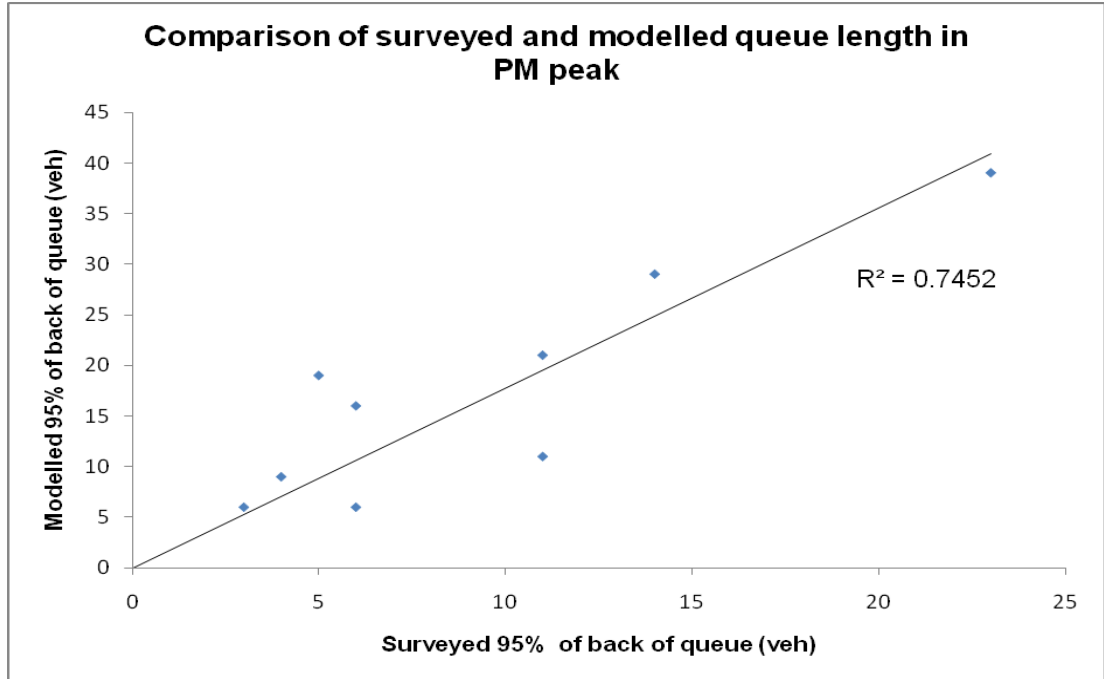
Table 2.6 shows the calibration results.

**Table 2.6 Comparison of modelled 95<sup>th</sup> percentile back of queue and survey results**

Peak period	Approach	Lane	Modelled results (number of vehicles)	Survey results (number of vehicles)	
AM (6:30 am– 7:30 am)	South - Bridgman Road	Kerb	5	9	
		Median	4	6	
	East - New England Highway	Kerb	2	7	
		Centre	12	46	
		Median	6	11	
	North - Bridgman Road	Kerb	1	-	
		Median	12	35	
	West - New England Highway	Kerb	6	6	
		Centre	8	13	
		Median	4	5	
	PM (5:30 pm– 6:30 pm)	South - Bridgman Road	Kerb	4	9
			Median	5	19
East - New England Highway		Kerb	3	6	
		Centre	11	21	
		Median	23	39	
North - Bridgman Road		Kerb	0	-	
		Median	6	16	
West - New England Highway		Kerb	11	11	
		Centre	14	29	
		Median	6	6	

The comparison between the modelled results and survey results are plotted in Figure 2.6.





**Figure 2.6 Comparison of surveyed and modelled queue length**

The  $R^2$  value shows a reasonable correlation between the modelled and surveyed 95<sup>th</sup> percentile back of queue, indicating the existing intersection has been reflected adequately in the calibrated model.

### 2.9.2 Intersections performance

Typically acceptable intersection performance is defined as follows:

- LoS D or better (the worst case scenario of vehicle delay was less than or equal to 56 seconds)
- degree of saturation (DoS) less than or equal to 0.8 at priority controlled intersection, and 0.95 at a signal controlled intersection
- 95<sup>th</sup> percentile back of queue does not interfere with other traffic movements.

The definition of each performance measure is shown in Appendix E.

Table 2.7 summarises intersections performance, while Table 2.8 shows the movement summary results. The analysis was based on the 2010 traffic volume (refer to Table 2.2 and Table 2.3). Those performance measure values that exceed the acceptable threshold are highlighted in red.

**Table 2.7 Intersection summary results for 2010 (existing case)**

Intersection	Scenario	Peak hour	DoS	Delays (Sec)	LoS	Queue (m)
New England Highway/Rixs Creek Lane	Existing	AM	0.54	23	B	2
		PM	0.32	19	B	1
New England Highway/Bridgman Road	Existing	AM	<b>1.26</b>	63	E	368
		PM	<b>1.00</b>	50	D	<b>279</b>

**Table 2.8 Movement summary results for 2010 (existing case) – New England Highway/Rixs Creek Lane**

Peak hour	Approach	Movement	DoS	Delays (sec)	LoS	Queue (m)
AM (6:30 am– 7:30 am)	South	Through	0.54	0	A	0
		Right	0.06	22	A	2
	East	Left	0.00	8	A	0
		Right	0.00	23	B	0
	North	Left	0.00	10	A	0
		Through	0.23	0	A	0
PM (5:30 pm– 6:30 pm)	South	Through	0.26	0	A	0
		Right	0.02	19	B	1
	East	Left	0.00	8	A	0
		Right	0.00	16	B	0
	North	Left	0.00	12	A	0
		Through	0.32	0	A	0

**Table 2.9 Movement summary results for 2010 (existing case) – New England Highway/Bridgman Road**

Peak hour	Approach	Movement	DoS	Delays (sec)	LoS	Queue (m)
AM (8:30 am- 9:30 am)	South	Left	1.00	32	C	61
		Through	0.31	42	C	45
		Right	0.31	49	D	45
	East	Left	0.45	27	B	57
		Through	0.94	50	D	368
		Right	0.79	64	E	82
	North	Left	0.19	6	A	0
		Through	1.26	308	F	248
		Right	1.26	316	F	248
	West	Left	0.26	28	B	47
		Through	0.53	21	B	104
		Right	0.37	56	D	35
PM (3:15 pm- 4:15 pm)	South	Left	0.85	36	C	61
		Through	0.73	54	D	126
		Right	0.73	61	E	126
	East	Left	0.33	38	C	44
		Through	0.68	37	C	166
		Right	1.00	110	F	279
	North	Left	0.24	6	A	0
		Through	0.90	79	F	90
		Right	0.90	87	F	90
	West	Left	0.46	42	C	80
		Through	0.93	46	D	223
		Right	0.28	46	D	44

Analysis of the results indicated that:

- New England Highway/Rixs Creek Lane intersection is operating satisfactorily, with LoS of B during both the morning and afternoon peak hours. The intersection has sufficient capacity and acceptable delays under the existing conditions
- New England Highway/Bridgman Road intersection is operating at an acceptable LoS E during the AM peak hour and an acceptable LoS D during the PM peak hour
- during the AM peak hour, the highest delay (316 seconds) is experienced by the southbound right turn traffic from Bridgman Road onto the New England Highway
- during the PM peak hour, the highest delay (110 seconds) is experienced by the westbound right turn traffic from New England Highway onto Bridgman Road
- the following queues exceed the length of the short lanes and overspill to the adjacent lane at the New England Highway/Bridgman Road intersection:
  - ▶ 61 m long queue in the northbound left turn movement on Bridgman Road during the AM and PM peak hours, whilst the available turn bay length is only 30 m

- ▶ 279 m long queue in the westbound right turn movement on New England Highway during the PM peak, whilst the available turn bay length is only 170 m
- ▶ 223 m long queue in the eastbound through movement on New England Highway during the PM peak, whilst the available short lane length is only 135 m
- the New England Highway/Bridgman Road intersection will require changes to improve the capacity to accommodate future growth in traffic volumes.

### **3. Construction traffic demands and road network performance**

The performance of the road network has been assessed at the mid-block section of New England Highway and at the key intersections based on 2012 forecast traffic volumes, calculated as the sum of existing background traffic and traffic generated by the construction activity distributed onto the road network, during a typical working day as well as track possessions.

This section shows the results of investigations into potential impacts during the construction and operation of the project.

#### **3.1 Construction schedule, working hours and material delivery hours**

Construction haulage operations associated with the construction of the third track project is proposed to take place over 18 months, between the third quarter in 2011 and the fourth quarter in 2012. The proposed working hours are:

- between 7:00 am and 6:00 pm, Monday to Friday
- between 8:00 am and 1:00 pm, Saturday.

No works are proposed to be carried out on Sunday or public holidays with the exception of works undertaken during track possessions.

Delivery of construction material will occur between 7:00 am and 6:00 pm on weekdays.

Exemption to the above working hours would be required during:

- rail possessions
- works required by utility services providers
- delivery of oversize equipment and materials, may be dictated by RTA or NSW Police requirements.

#### **3.2 Track possessions**

ARTC has scheduled a total of five track possessions between November 2011 and November 2012 during the construction phase. Each possession will last 24 hours for three to four days.

### 3.3 Construction workforce and construction activities

Construction of the third track involves the following workforce and activities:

- A workforce between 30 and 120 people is expected at two compounds on a typical working day, whilst 120 people are expected during track possessions. It is expected that all construction staff will arrive at the site using light vehicles. ARTC assumed up to 70 light vehicles would arrive at the two compounds on typical working day, whilst 110 light vehicles are expected during track possession.
- Delivery of construction plant and equipment, and quarry products, including structural fill and capping to the two compounds. These will be used to construct the proposed third track and ancillary infrastructure. Structural fill, capping and ballast would be sourced from local quarries in Hebden and Muswellbrook and from other quarries within the Hunter Valley. The construction plant and equipment will be transported by trucks and semi-trailers, and quarry products will be transported by truck with 'dog trailer' into the site.

### 3.4 Peak site generation hours

Department of Planning advised the following peak site generation hours that should be adopted in this assessment:

- 6:30 am to 7:30 am (half an hour before and after the start of the working shift)
- 5:30 pm to 6:30 pm (half an hour before and after the end of the working shift).

### 3.5 Traffic generation and distribution

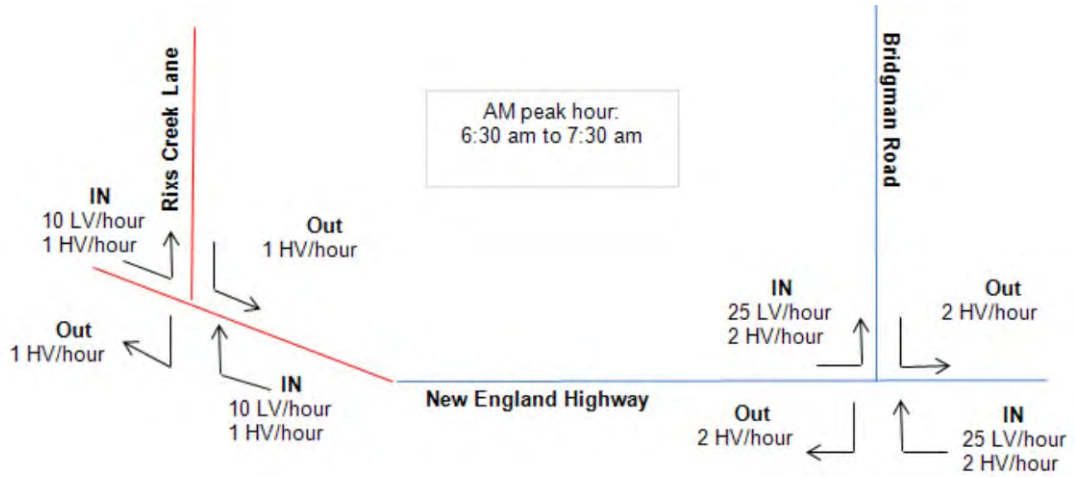
Traffic generation for the construction of the Nundah Bank third track is assumed to comprise:

- Traffic generated by staff travelling to and from the site. During a typical working day, up to 70 vehicles in a 30-minute period prior to 7:00 am when the employees arrive at work. These consist of 50 vehicles entering the main compound via Bridgman Road, and 20 vehicles entering the satellite compound via Rixs Creek Lane. At the end of the shift, the employees would leave the compounds within about 30 minutes after 6:00 pm. During track possessions, up to 110 vehicles would be expected arriving and leaving the compounds, before and after the working hours. These consist of 80 vehicles entering the main compound via Bridgman Road, and 30 vehicles entering the satellite compound via Rixs Creek Lane.
- The employee trips are 50/50 split from the north and south via the New England Highway.

- The majority of construction vehicles will enter the construction site via Bridgman Road. This is because the bulk earthworks and track installation would occur on the up (east) side of the existing railway tracks. These construction vehicles include trucks and semi-trailers delivering construction plant and equipment, and trucks with 'dog trailers' delivering quarry products. During a typical working day, the material to be imported requires a maximum of 40 heavy vehicle movements into the sites per day. During track possessions, the material to be imported requires a maximum of 45 heavy vehicle movements into the sites per day. Assuming truck trips are distributed evenly throughout the working hours (7:00 am and 6:00 pm), there would be four trucks per hour arriving and four trucks per hour departing from the site. During the peak site's traffic generation hours (6:30 am–7:30 am and 5:30 pm–6:30 pm), although no trucks are expected to occur between 6:30 am and 7:00 am (before the working shift starts), it was conservatively assumed there would be four trucks arriving and four trucks departing the site. Similarly, although no trucks are expected to occur between 6:00 pm and 6:30 pm (after the end of the working shift), it was conservatively assumed there would be four trucks arriving and four trucks departing the site.
- A small volume of construction traffic would enter the site via Rixs Creek Lane for the down (west) side access track construction. These construction vehicles include trucks and semi-trailers delivering construction plant and equipment, and trucks with 'dog trailers' delivering quarry products. During a typical working day, the material to be imported requires a maximum of 10 heavy vehicle movements into the site per day. During track possessions, the material to be imported requires a maximum of 20 heavy vehicle movements into the site per day. Assuming truck trips are distributed evenly throughout the working hours (7:00 am and 6:00 pm), there would be two trucks per hour arriving and two trucks per hour departing from the site. During the peak site's traffic generation hours (6:30 am–7:30 am and 5:30 pm–6:30 pm), although no trucks are expected to occur between 6:30 am and 7:00 am (before the working shift starts), it was conservatively assumed there would be two trucks arriving and two trucks departing the site. Similarly, although no trucks are expected to occur between 6:00 pm and 6:30 pm (after the end of the working shift), it was conservatively assumed there would be two trucks arriving and two trucks departing the site.
- The heavy vehicles are 50/50 split from the north and south via the New England Highway. For the trucks coming from the north on the New England Highway, the heavy vehicles consist of 90% trucks with 'dog trailers' and 10% semi-trailers and delivery trucks. For the trucks coming from the south on the New England Highway, they would comprise 20% trucks with 'dog trailers' and 80% semi-trailers and delivery trucks.

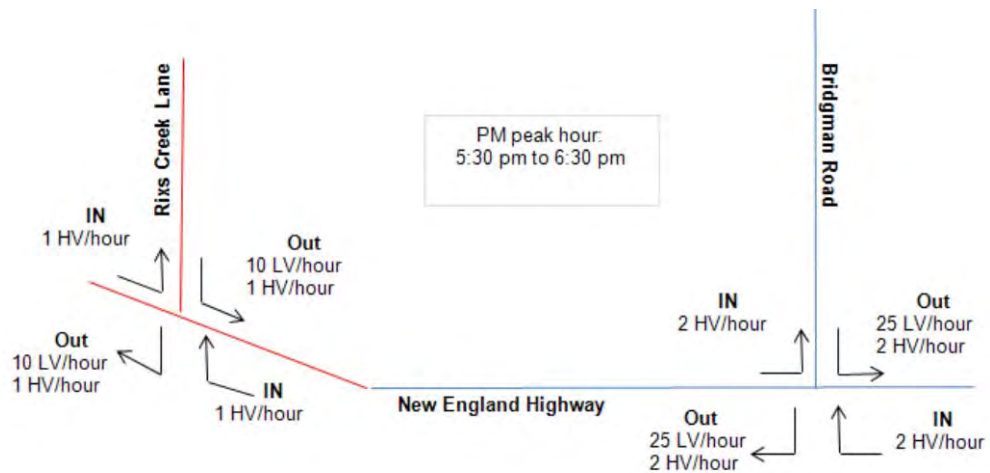
Based on the above traffic generation, the increased traffic as a result of the construction of the third track and ancillary infrastructure would be in the order to 70–110 light vehicles arriving to the compounds before the shift, and 70–110 light vehicles departing the compounds after shift hours. During the day, there would be four trucks arriving at the compounds and four trucks departing the compounds.

Figures 3.1 and 3.2 show the peak hourly number of employee and truck trips on a typical working day during the construction period.



Notes: LV notes light vehicles, and HV denotes heavy vehicle

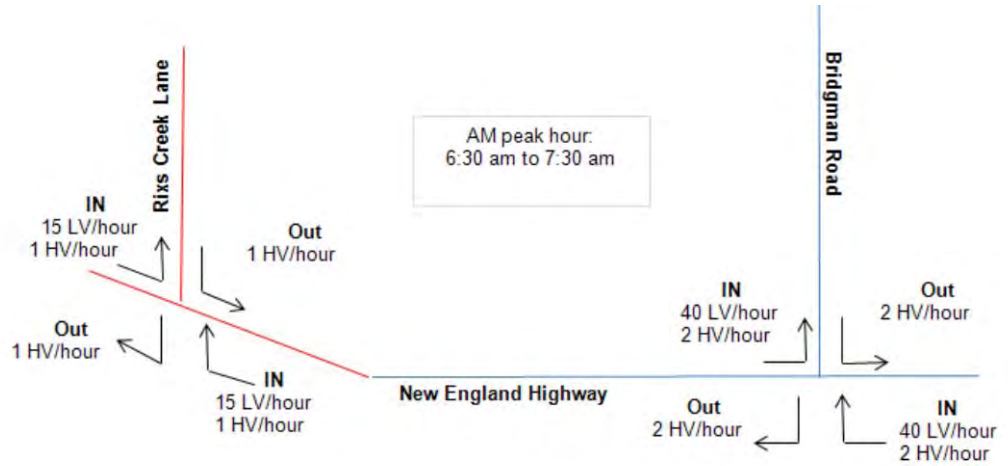
**Figure 3.1** Number of AM peak hour employee and truck trips on a typical working day during construction period (6:30 am–7:30 am)



Notes: LV notes light vehicles, and HV denotes heavy vehicle

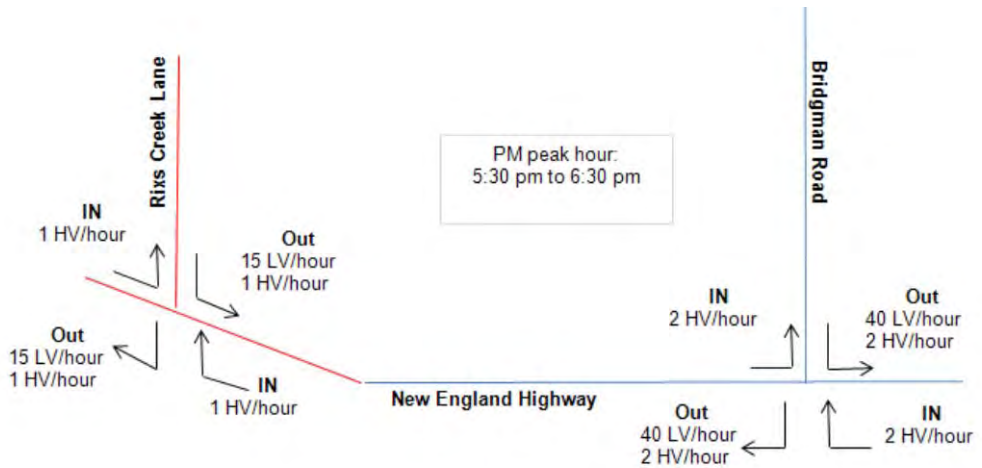
**Figure 3.2** Number of PM peak hour employee and truck trips on a typical working day during construction period (5:30 pm–6:30 pm)

Figures 3.3 and 3.4 show the peak hourly number of employee and truck trips during a track possession throughout the construction period.



Notes: LV notes light vehicles, and HV denotes heavy vehicle

**Figure 3.3** Number of AM peak hour employee and truck trips during track possessions throughout the construction period (6:30 am–7:30 am)



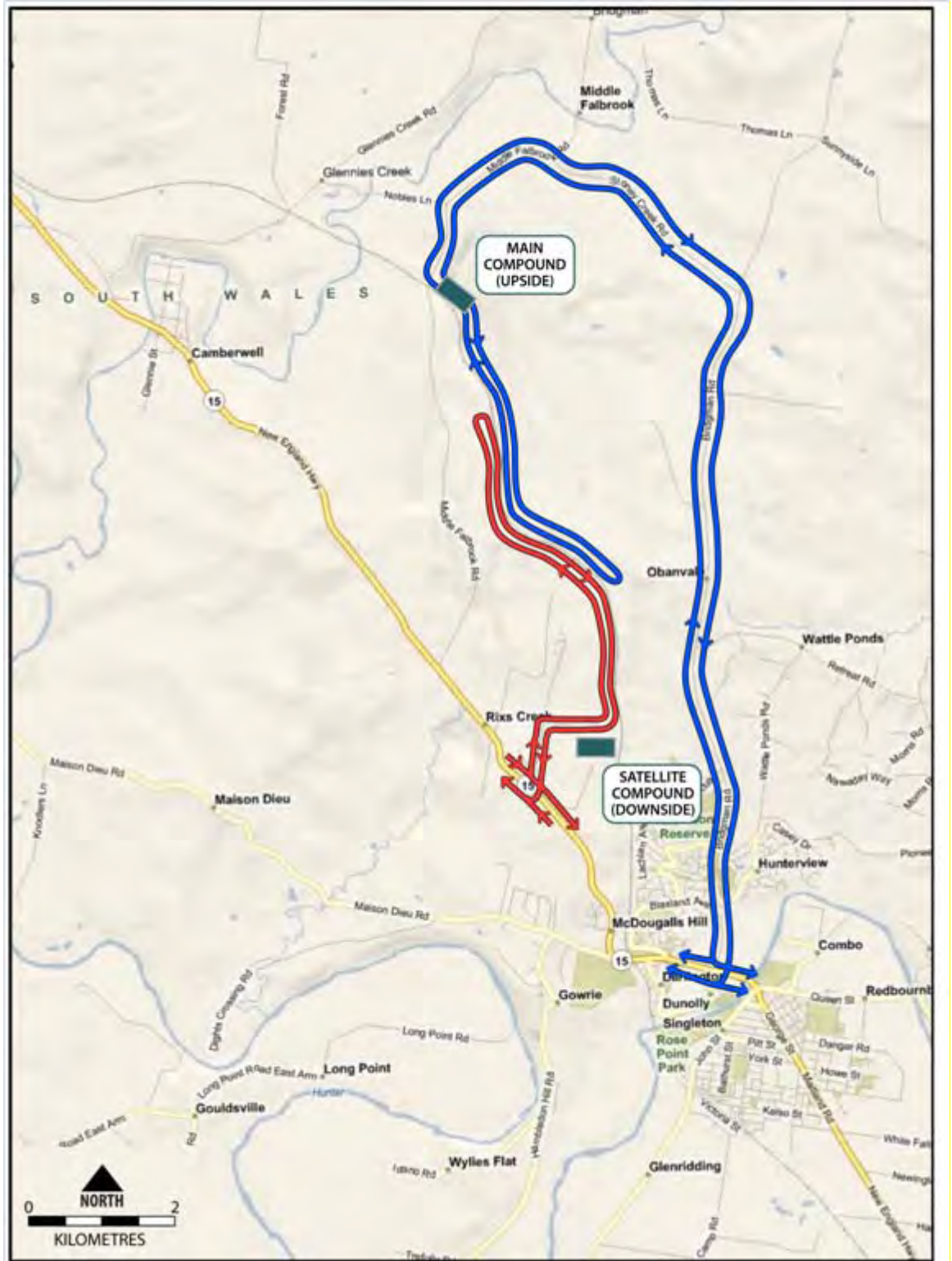
Notes: LV notes light vehicles, and HV denotes heavy vehicle

**Figure 3.4** Number of PM peak hour employee and truck trips during track possessions throughout the construction period (5:30 pm–6:30 pm)

### 3.6 Haulage route

- The proposed haulage route includes: a route that allows haulage trucks delivering construction plant/equipment and quarry products and entering the main compound (located on the east (up) side of the track) via Bridgman Road, Stoney Creek Road and Middle Falbrook Road. After being unloaded, trucks would depart from the main compound via the same route back to the New England Highway
- a route that allows haulage trucks delivering construction plant/equipment and quarry products and entering the satellite compound (located on the west (down) side of the track) via New England Highway and Rixs Creek Lane. After being unloaded, trucks would depart from the satellite compound via Rixs Creek Lane and New England Highway.

Figure 3.5 show the proposed haulage route for trucks delivering construction materials, which would arrive and depart the compounds via the New England Highway.



Note: Middle Falbrook Road is currently a no through road at its southern end due to the presence of a coal mine site.

**Figure 3.5 Proposed haulage route**

### 3.7 Peak hour traffic volumes

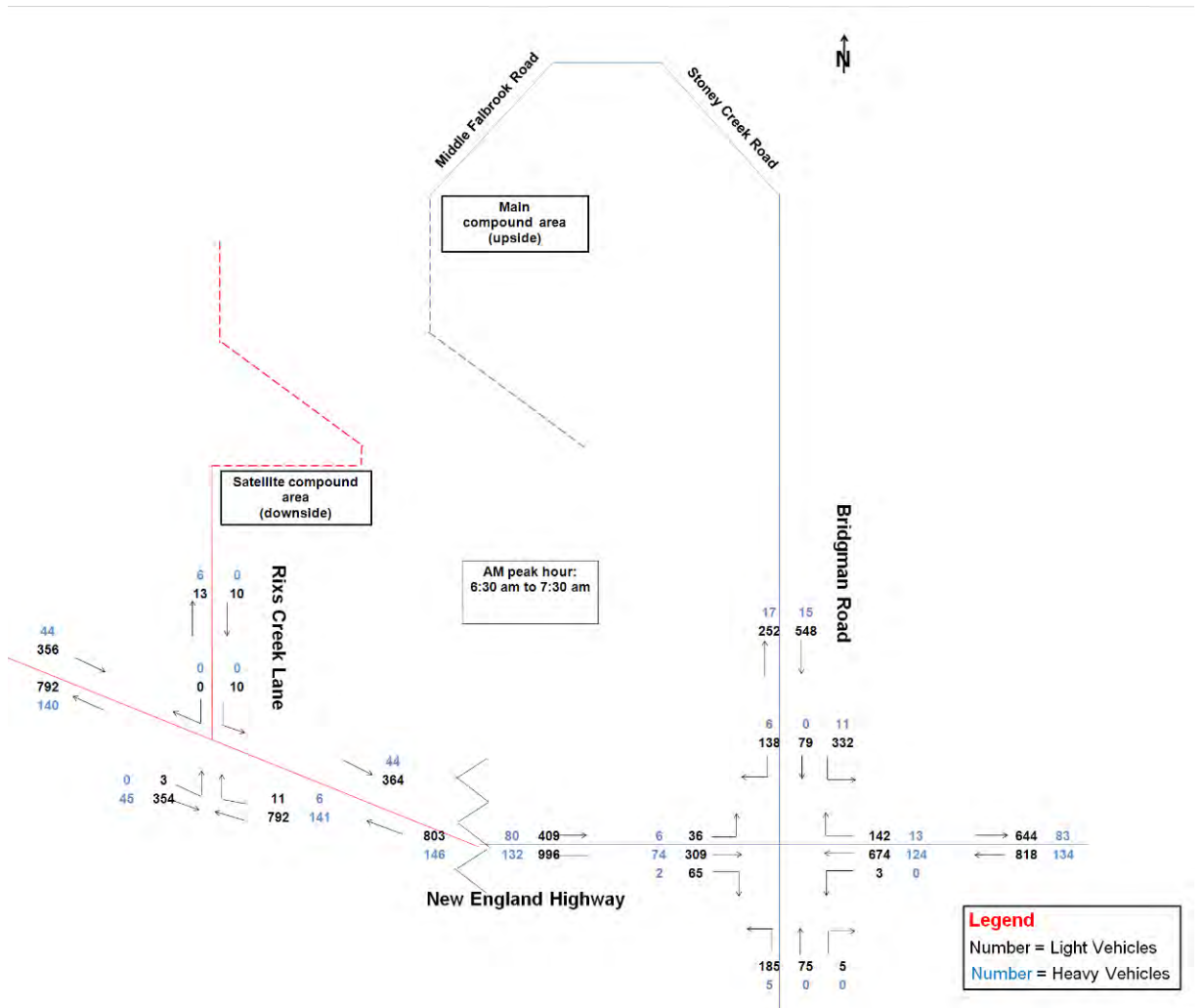
A haulage route is established to manage construction traffic associated with the work. To determine the impact of the construction activities, a 'do-nothing' scenario has been analysed to determine what the situation would be if construction did not proceed. The following scenarios were analysed:

- Scenario 1: do-nothing case (2012)
- Scenario 2: construction phase for the third track project (2012).

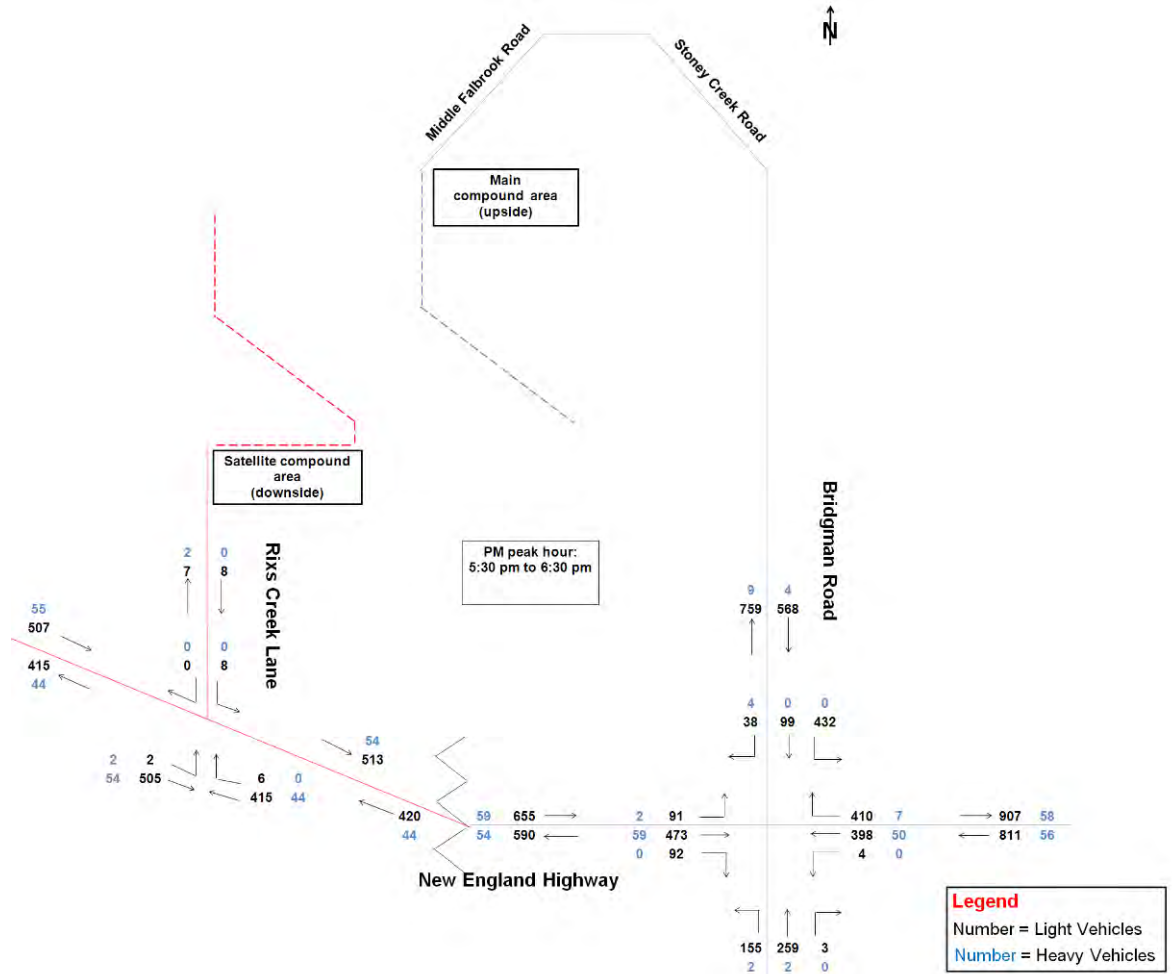
#### 3.7.1 Scenario 1: do-nothing case (2012)

Future 2012 'do-nothing' traffic volumes were calculated as the sum of the 2010 existing traffic and growth in the background traffic (0.7% p.a.).

Figures 3.6 and 3.7 show the forecast future traffic assigned to the road network during the peak hours.



**Figure 3.6 2012 AM peak hour (6:30 am–7:30 am) do-nothing case traffic volumes (veh/hr)**



**Figure 3.7 2012 PM peak hour (5:30 pm–6:30 pm) do-nothing case traffic volumes (veh/hr)**

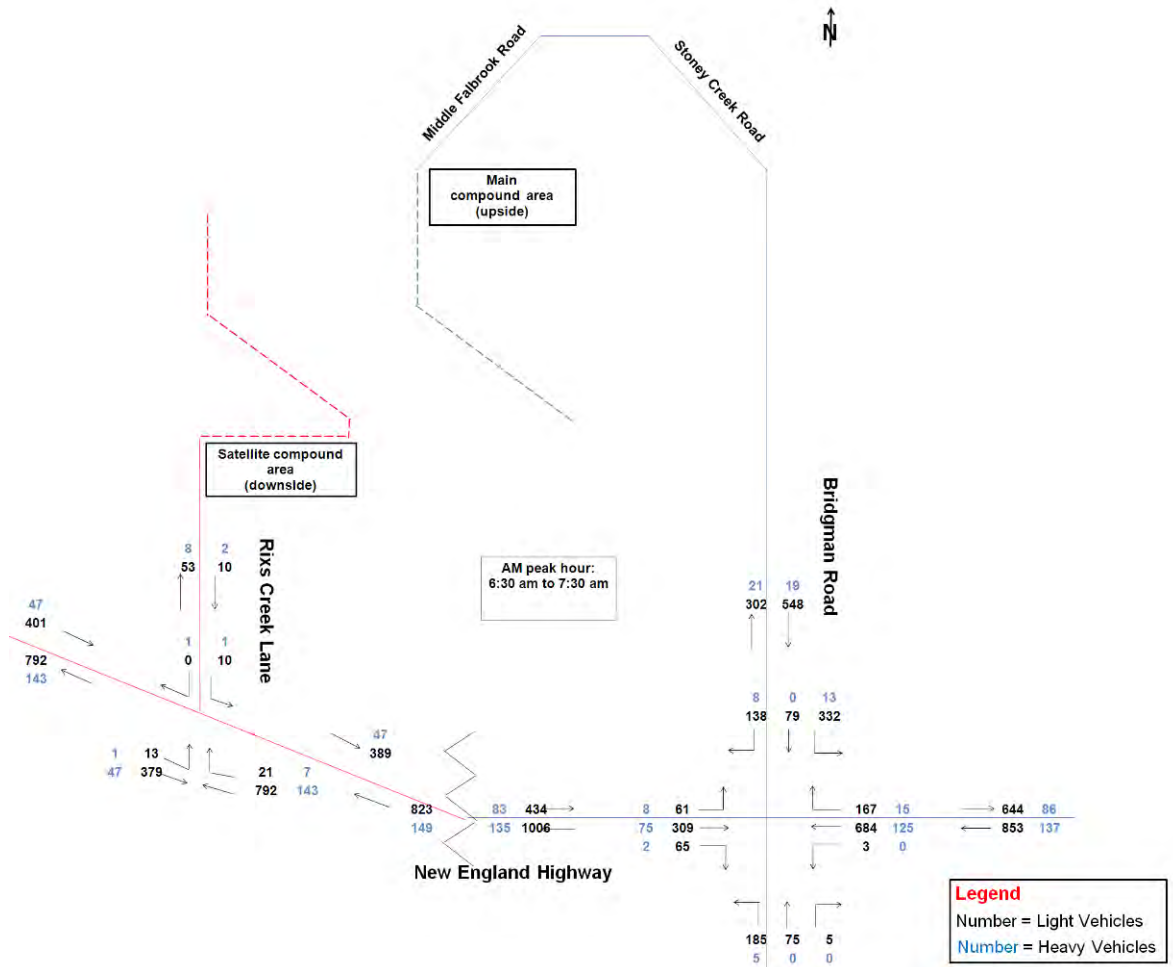
**3.7.2 Scenario 2: construction phase for the third track project (2012)**

Future traffic volumes were calculated as the sum of the 2010 existing traffic, growth in the background traffic (0.7% p.a.) and the traffic generation associated with the construction of the third track project (refer to Tables 3.1 and 3.2).

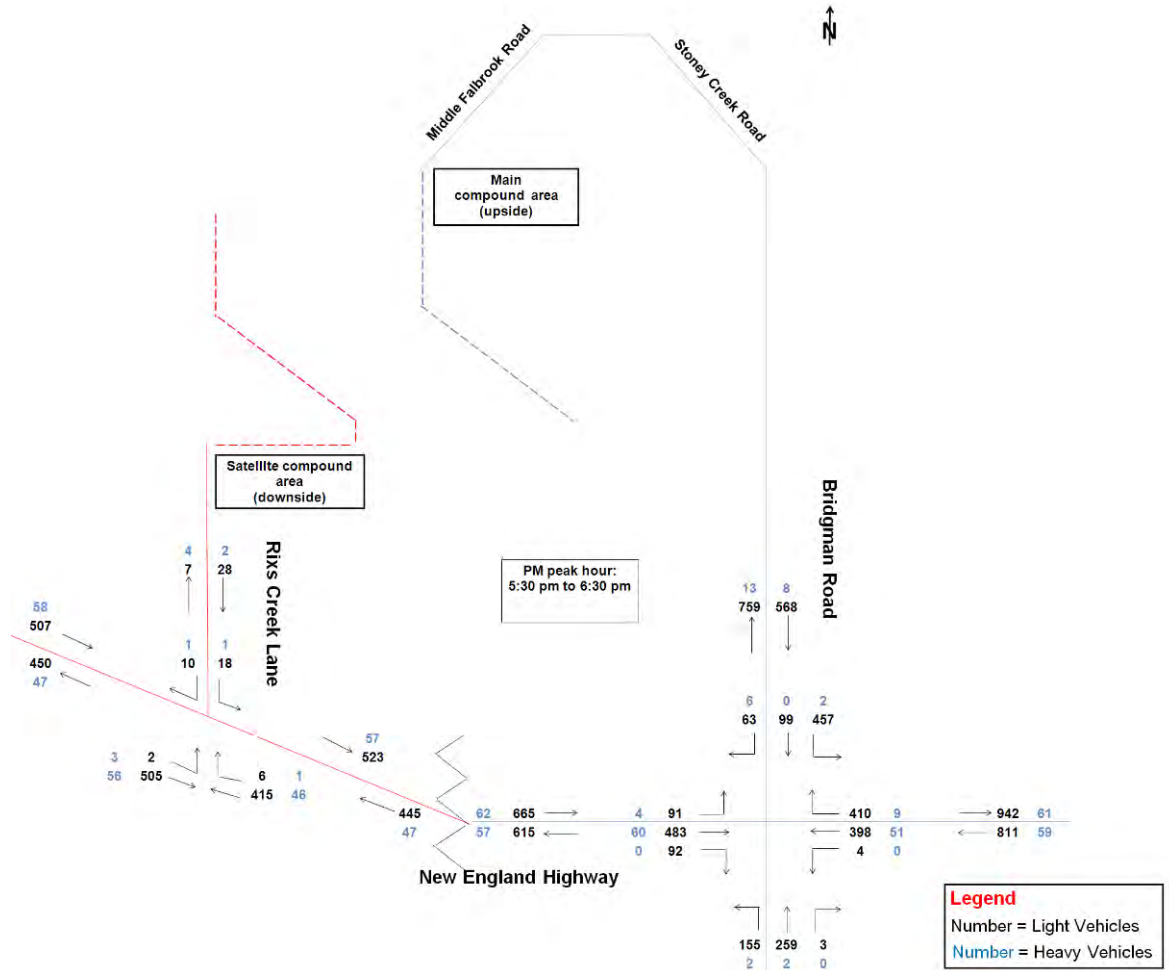
**Typical working day**

Figures 3.8 and 3.9 show the forecast future traffic assigned to the road network during the peak hour hours on a typical working day.

It is expected up to 20 employee vehicles and 4 construction vehicles would access the compound via the New England Highway/Rixs Creek Lane intersection during both AM and PM peak hours, and up to 50 employee vehicles and 8 construction vehicles would access the compound via the New England Highway/Bridgman Road intersection during both AM and PM peak hours.



**Figure 3.8 2012 AM peak hour (6:30 am–7:30 am) traffic volumes that include construction generated traffic on a typical working day**

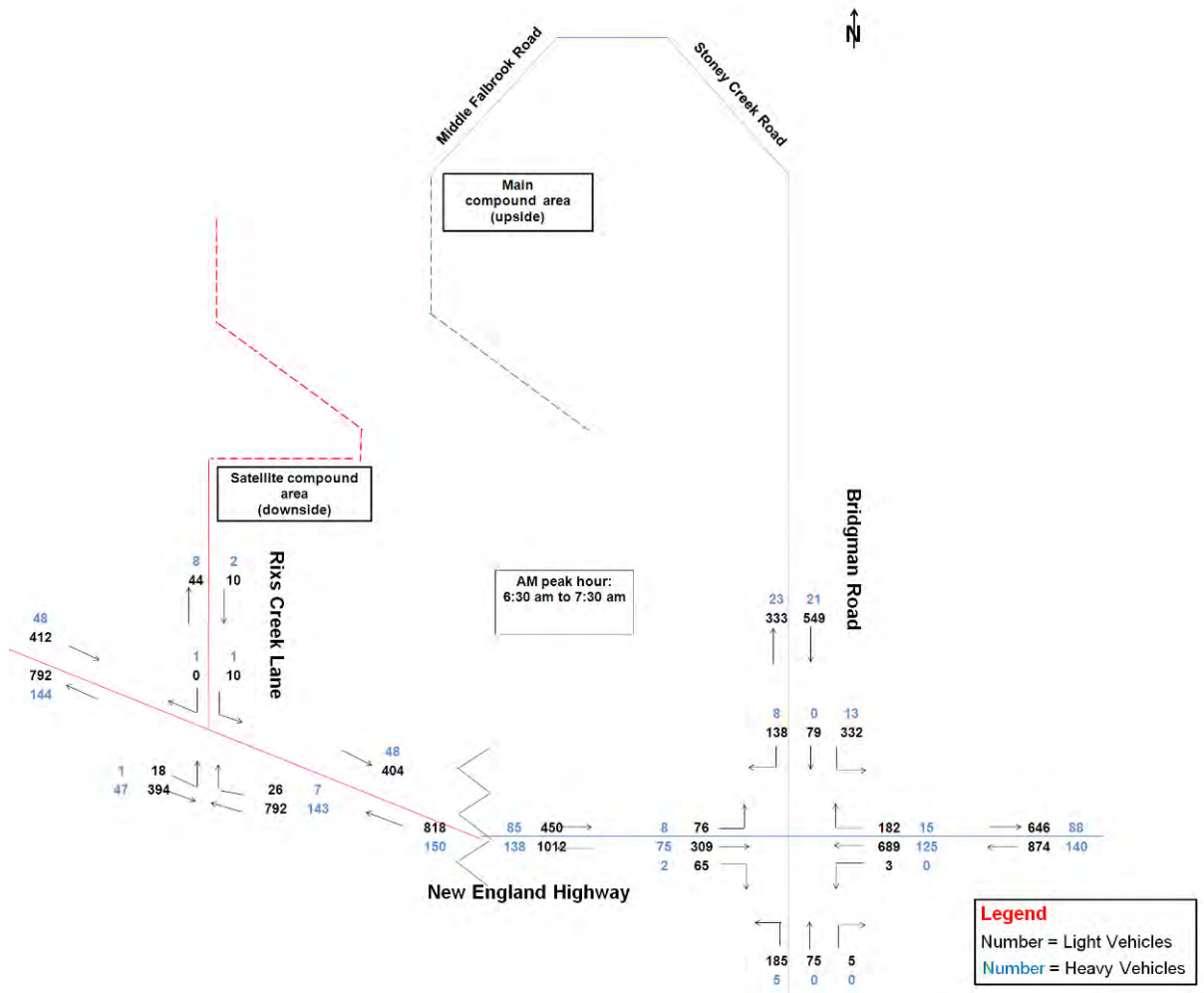


**Figure 3.9 2012 PM peak hour (5:30 pm–6:30 pm) traffic volumes that include construction generated traffic on a typical working day**

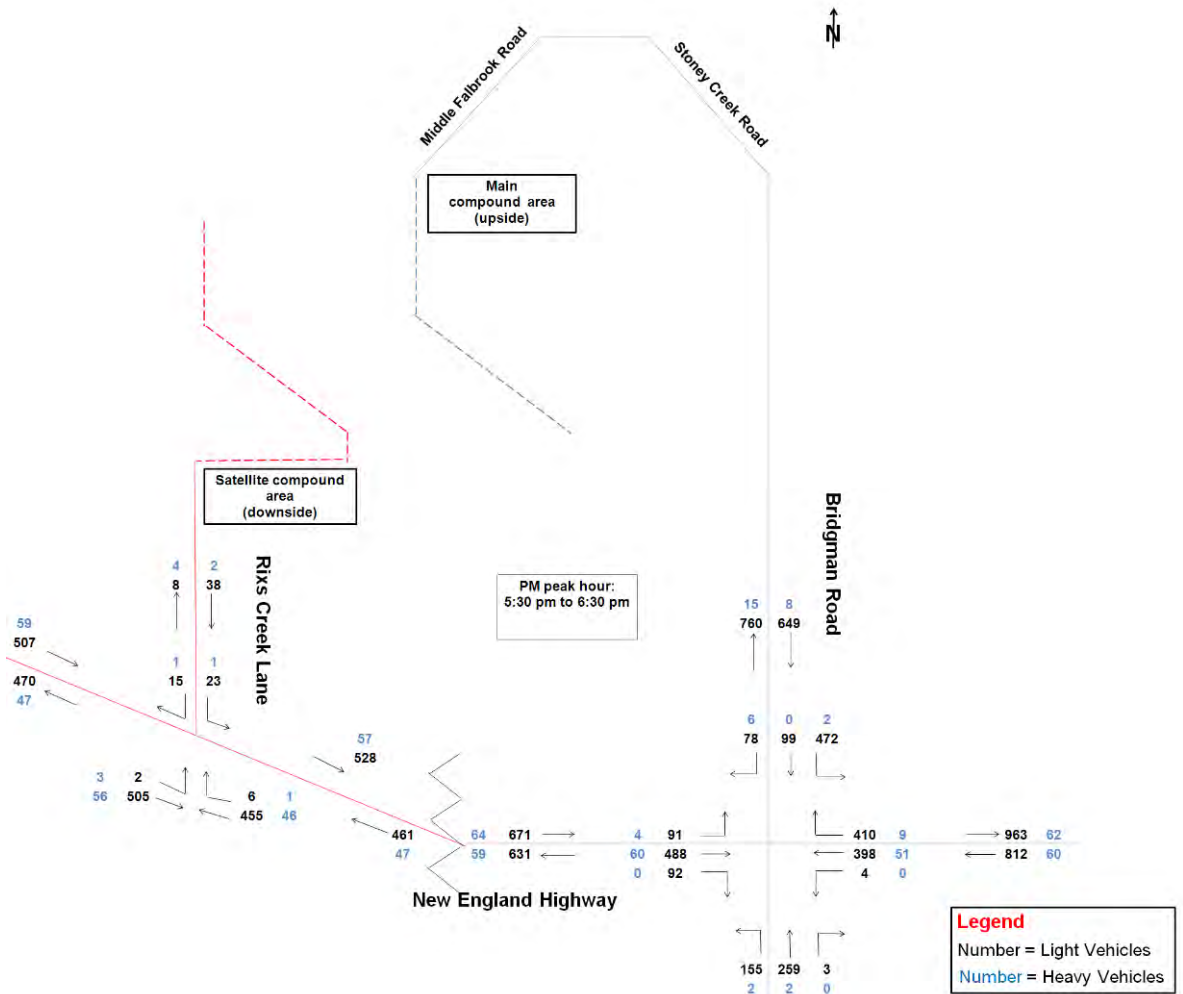
**Track possessions**

Figures 3.10 and 3.11 show the forecast future traffic assigned to the road network during the peak hour during track possessions.

It is expected up to 30 employee vehicles and 4 construction vehicles would access the compound via the New England Highway/Rixs Creek Lane intersection during both AM and PM peak hours, and up to 80 employee vehicles and 8 construction vehicles would access the compound via the New England Highway/Bridgman Road intersection during both AM and PM peak hours.



**Figure 3.10 2012 AM peak hour (6:30 am–7:30 am) traffic volumes that include construction generated traffic during track possessions**



**Figure 3.11 2012 PM peak hour (5:30 pm–6:30 pm) traffic volumes that include construction generated traffic during track possessions**

### 3.8 Mid-block level of service

The mid-block LoS was assessed on the expected construction traffic volumes for the key roads' sections (refer to Table 3.1), as compared with the base case mid-block LoS (refer to Table 2.5).

**Table 3.1 The expected mid-block LoS on a typical working day during construction period**

Road section	Peak hour	Volume (veh/hr)	Heavy vehicle %	Level of Service (LoS)
New England Highway, north of Rixs Creek Lane	AM peak	1,383	14%	D
	PM peak	1,062	10%	D
New England Highway, south of Rixs Creek Lane	AM peak	1,399	14%	D
	PM peak	1,048	10%	D

**Table 3.2 The expected mid-block LoS during track possessions throughout construction period**

Road section	Peak hour	Volume (veh/hr)	Heavy vehicle %	Level of Service (LoS)
New England Highway, north of Rixs Creek Lane	AM peak	1,396	14%	D
	PM peak	1,082	10%	D
New England Highway, south of Rixs Creek Lane	AM peak	1,420	14%	D
	PM peak	1,036	10%	D

Tables 3.1 and 3.2 show the key roads' sections would continue to operate at LoS D based on the anticipated construction traffic volumes, indicating the construction truck trips would not impose adverse impacts on the traffic efficiency on these rural highway sections.

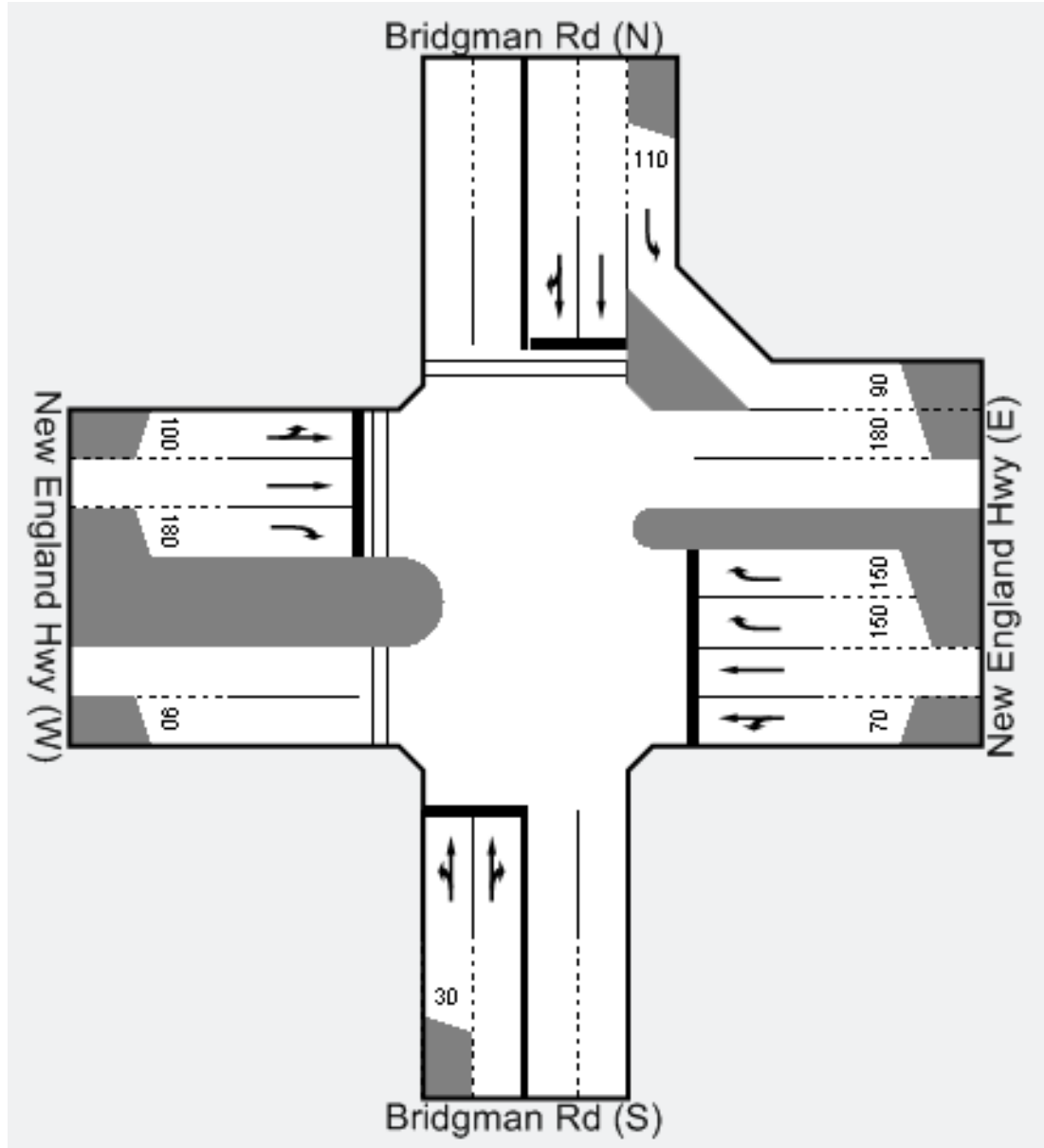
### 3.9 New England Highway/Bridgman Road intersection upgrade

Singleton Shire Council has planned to upgrade the New England Highway/Bridgman Road intersection to improve the intersection's capacity and access to North Singleton where new residential lots are planned or under construction. Council's intersection upgrade plan is shown in Appendix F.

Discussions with the Council confirmed the proposed construction schedule. Stage 1 upgrade works would be completed by the end of 2011. The Stage 1 works as depicted in Figure 3.12 include dual right turn lanes on New England Highway (east), extended lanes on New England Highway (west), additional departure lane on Bridgman Road (south), and additional approach and departure lanes on Bridgman Road (north).

The Council also advised that it has no funding or plans to complete further stages. Further staging would be determined by the amount of development occurring in the Singleton Heights/Hunter View area located to the north of the subject intersection.

The Nundah Bank project construction is expected to occur between the third quarter of 2011 and the fourth quarter of 2012. The upgraded layout would be used in both do-nothing case and construction phase of the third track project in 2012.



**Figure 3.12 New England Highway/Bridgman Road intersection layout following the completion of Council's Stage 1 works**

### 3.10 Intersection performance

#### 3.10.1 Scenario 1: do-nothing case (2012)

The analysis was based on the 2012 traffic volume (refer to Figures 3.6 and 3.7), as well as the intersection layout per the Council's Stage 1 upgrade works (refer to Figure 3.12).

Table 3.3 shows the intersection summary during the peak hours if the Nundah Bank construction does not proceed in 2012. Tables 3.4 and 3.5 show movement summary results. Those performance measure values that exceed the acceptable threshold are highlighted in red.

**Table 3.3 Intersection summary results 2012 (do-nothing case)**

Intersection	Peak hour	DoS	Delays (sec)	LoS	Queue (m)
New England Highway/Rixs Creek Lane	AM	0.55	24	B	3
	PM	0.32	19	B	1
New England Highway/Bridgman Road	AM	<b>1.00</b>	39	C	376
	PM	0.89	39	C	245

**Table 3.4 Movement summary results for 2012 (do-nothing case) – New England Highway/Rixs Creek Lane**

Peak hour	Approach	Movement	DoS	Delays (sec)	LoS	Queue (m)
AM (6:30 am– 7:30 am)	South	Through	0.55	0	A	0
		Right	0.07	23	B	3
	East	Left	0.01	8	A	0
		Right	0.01	24	B	1
	North	Left	0.00	10	A	1
		Through	0.23	0	A	0
PM (5:30 pm– 6:30 pm)	South	Through	0.26	0	A	0
		Right	0.02	19	B	1
	East	Left	0.01	8	A	0
		Right	0.00	17	B	1
	North	Left	0.01	12	A	1
		Through	0.32	0	A	0

**Table 3.5 Movement summary results for 2012 (do-nothing case) – New England Highway/Bridgman Road**

Peak hour	Approach	Movement	DoS	Delays (sec)	LoS	Queue (m)
AM (6:30 am– 7:30 am)	South	Left	<b>1.00</b>	32	C	<b>61</b>
		Through	0.28	38	C	61
		Right	0.28	45	D	46
	East	Left	0.49	27	B	61
		Through	0.94	51	D	376
		Right	0.41	56	D	43
	North	Left	0.20	6	A	-
		Through	0.21	38	C	86
		Right	0.92	<b>79</b>	<b>F</b>	86
	West	Left	0.25	27	B	38
		Through	0.47	22	B	117
		Right	0.38	56	D	36
PM (5:30 pm– 6:30 pm)	South	Left	0.88	35	C	61
		Through	0.76	55	D	131
		Right	0.74	<b>62</b>	<b>E</b>	131
	East	Left	0.35	38	C	45
		Through	0.66	36	C	162
		Right	0.53	50	D	96
	North	Left	0.25	6	A	-
		Through	0.36	49	D	52
		Right	0.48	<b>76</b>	<b>F</b>	31
	West	Left	0.44	41	C	68
		Through	0.83	45	D	245
		Right	0.25	47	D	45

The analysis indicated that:

- New England Highway/Rixs Creek Lane intersection would operate satisfactorily, with LoS of B during both the morning and afternoon peak hours. The intersection has sufficient capacity and experience acceptable delays under the 2012 do-nothing conditions.
- New England Highway/Bridgman Road intersection would operate at an acceptable LoS C during the AM and PM peak hours:
  - ▶ during the AM peak hour, the highest delay (79 seconds) is experienced by the southbound right turn traffic from Bridgman Road onto the New England Highway
  - ▶ during the PM peak hour, the highest delay (76 seconds) is experienced by the southbound right turn traffic from Bridgman Road onto the New England Highway.
- New England Highway/Bridgman Road intersection will not have spare capacity in the PM peak hour, with the northbound left turn movement from the Bridgman Road onto the New England Highway having DoS 1.0 during the AM peak hour.

- The following queues for turning movements exceed the length of the turn bays and overspill to the adjacent lane at the New England Highway/Bridgman Road intersection:
  - ▶ 61 m long queue in the northbound left turn movement on Bridgman Road during both AM and PM peak hours, whilst the available turn bay length is only 30 m.

### 3.10.2 Scenario 2: construction phase for the third track project (2012)

#### Typical working day

Analysis of the key intersections was undertaken for the Nundah Bank construction period based on the predicted 2012 traffic volume (refer to Figures 3.8 to 3.9) and including the proposed construction traffic, during a typical working day. Table 3.6 shows the intersection performance during the peak hours including employee and construction vehicles trips. Tables 3.7 to 3.8 show the movement summary results.

**Table 3.6 Intersection performance for 2012 (construction case – typical working day)**

Intersection	Peak hour	DoS	Delays (sec)	LoS	Queue (m)
New England Highway/Rixs Creek Lane	AM	0.56	238	F	4
	PM	0.32	21	B	1
New England Highway/Bridgman Road	AM	1.00	41	C	396
	PM	0.88	39	C	259

**Table 3.7 Movement summary results for 2012 (construction case – typical working day) – New England Highway/Rixs Creek Lane**

Peak hour	Approach	Movement	DoS	Delays (sec)	LoS	Queue (m)
AM (6:30 am– 7:30 am)	South	Through	0.56	0	A	0
		Right	0.10	21	B	4
	East	Left	0.01	8	A	0
		Right	0.07	238	F	3
	North	Left	0.01	10	A	1
		Through	0.25	0	A	0
PM (5:30 pm– 6:30 pm)	South	Through	0.27	0	A	0
		Right	0.03	23	B	1
	East	Left	0.01	8	A	0
		Right	0.03	18	B	1
	North	Left	0.01	12	A	1
		Through	0.32	0	A	0

**Table 3.8 Movement summary results for 2012 (construction case) – New England Highway/Bridgman Road**

Peak hour	Approach	Movement	DoS	Delays (sec)	LoS	Queue (m)
AM (6:30 am– 7:30 am)	South	Left	1.00	32	C	<b>61</b>
		Through	0.28	38	C	61
		Right	0.28	45	D	46
	East	Left	0.49	27	B	62
		Through	0.96	55	D	396
		Right	0.48	<b>57</b>	<b>E</b>	50
	North	Left	0.20	6	A	-
		Through	0.21	38	C	90
		Right	0.93	<b>83</b>	<b>F</b>	90
	West	Left	0.26	27	B	39
		Through	0.50	22	B	125
		Right	0.38	56	D	36
PM (5:30 pm– 6:30 pm)	South	Left	0.88	35	C	<b>61</b>
		Through	0.76	55	D	131
		Right	0.74	<b>62</b>	<b>E</b>	131
	East	Left	0.35	38	C	46
		Through	0.67	37	C	163
		Right	0.53	50	D	97
	North	Left	0.26	6	A	-
		Through	0.36	49	D	52
		Right	0.77	<b>81</b>	<b>F</b>	51
	West	Left	0.45	42	C	70
		Through	0.85	48	D	259
		Right	0.25	47	D	45

The potential impact of the additional construction related trips during a typical working day is analysed by comparing Tables 3.3–3.5 with Tables 3.6–3.8. The impact includes:

- although the New England Highway/Rixs Creek Lane intersection’s LoS is expected to be reduced from B to F during the AM peak hour, the LoS would remain B during the PM peak hour. During the AM peak the reduction in LoS would occur in the right turn movement from Rixs Creek Lane onto New England Highway, affecting only one project related heavy vehicle waiting to turn right from Rixs Creek Lane. As there would be no background traffic involved in the same movement during the AM peak hour, this heavy vehicle is unlikely to interrupt any background traffic
- similar intersection performance as the do-nothing case at the New England Highway/Bridgman Road intersection
- the future traffic volume at the New England Highway/Bridgman Road intersection would continue to exceed the intersection’s practical capacity, whether or not the Nundah Bank project proceeds.

Specific analysis results indicated that:

- During the AM peak hour, the highest delay (83 seconds) is experienced by the southbound right turn traffic from Bridgman Road onto the New England Highway. This is an increase of four seconds from the do-nothing case.
- During the PM peak hour, the highest delay (81 seconds) is experienced by the westbound right turn traffic from New England Highway onto the Bridgman Road. This is an increase of five seconds from the do-nothing case.
- Similar to the do-nothing case, the New England Highway/Bridgman Road intersection will not have spare capacity in the AM peak hour, with the northbound left turn movement from Bridgman Road onto the New England Highway at DoS 1.00
- Similar to the do-nothing case, the following queues for turning movements exceed the length of the turn bays and overspill to the adjacent lane at the New England Highway/Bridgman Road intersection:
  - ▶ 61 m long queue in the northbound left turn movement on Bridgman Road during both AM and PM peak hours, whilst the available turn bay length is only 30 m.
- The future traffic volume would continue to exceed the New England Highway/Bridgman Road intersections' practical capacity, whether or not the Nundah Bank project is proceeding.

**Track possessions**

Analysis of the key intersections was undertaken for the Nundah Bank construction period based on the predicted future traffic volume (refer to Figures 3.10 to 3.11) as a result of the proposed construction, during track possessions. Table 3.9 shows the intersection performance during the peak hours including employee and construction vehicles trips. Tables 3.10 to 3.11 show the movement summary results.

**Table 3.9 Intersection performance for 2012 (construction case – track possession)**

Intersection	Peak hour	DoS	Delays (sec)	LoS	Queue (m)
New England Highway/Rixs Creek Lane	AM	0.56	252	F	4
	PM	0.32	23	B	1
New England Highway/Bridgman Road	AM	<b>1.00</b>	41	C	406
	PM	0.93	40	C	263

**Table 3.10 Movement summary results for 2012 (construction case – track possession) – New England Highway/Rixs Creek Lane**

Peak hour	Approach	Movement	DoS	Delays (sec)	LoS	Queue (m)
AM (6:30 am– 7:30 am)	South	Through	0.56	0	A	0
		Right	0.12	21	B	4
	East	Left	0.01	8	A	0
		Right	0.08	<b>252</b>	<b>F</b>	3
	North	Left	0.02	10	A	1
		Through	0.26	0	A	0
PM (5:30 pm– 6:30 pm)	South	Left	0.29	0	A	0
		Through	0.03	23	C	1
	East	Left	0.01	8	A	0
		Through	0.05	18	B	1
	North	Left	0.01	12	A	1
		Through	0.32	0	A	0

**Table 3.11 Movement summary results for 2012 (construction – track possession) – New England Highway/Bridgman Road**

Peak hour	Approach	Movement	DoS	Delays (sec)	LoS	Queue (m)
AM (6:30 am– 7:30 am)	South	Left	<b>1.00</b>	32	C	<b>61</b>
		Through	0.28	38	C	61
		Right	0.28	45	D	46
	East	Left	0.49	27	B	62
		Through	0.96	<b>57</b>	<b>E</b>	406
		Right	0.52	<b>57</b>	<b>E</b>	53
	North	Left	0.20	6	A	-
		Through	0.21	38	C	90
		Right	0.93	<b>83</b>	<b>F</b>	90
	West	Left	0.27	27	B	40
		Through	0.52	23	B	130
		Right	0.38	56	D	36
PM (5:30 pm– 6:30 pm)	South	Left	0.88	35	C	<b>61</b>
		Through	0.76	55	D	131
		Right	0.74	<b>62</b>	<b>E</b>	131
	East	Left	0.35	38	C	46
		Through	0.67	37	C	163
		Right	0.53	50	D	97
	North	Left	0.27	6	A	-
		Through	0.36	49	D	64
		Right	0.93	<b>93</b>	<b>F</b>	64
	West	Left	0.45	42	C	70
		Through	0.86	48	D	263
		Right	0.25	47	D	45

The potential impact of the additional construction related trips during a track possession is analysed by comparing result in Tables 3.3–3.5 and Tables 3.9–3.11. The impact includes:

- although New England Highway/Rixs Creek Lane intersection's LoS is expected to be reduced from B to F during the AM peak hour, the LoS would remain B during the PM peak hour. The reduction in LoS during the AM peak would occur in the right turn movement from Rixs Creek Lane onto New England Highway, affecting only one project related heavy vehicle waiting to turn right from Rixs Creek Lane. As there would be no background traffic involved in the same movement during the AM peak hour, this heavy vehicle is unlikely to interrupt any background traffic
- similar intersection performance as the do-nothing case at the New England Highway/Bridgman Road intersection
- New England Highway/Bridgman Road intersection's LoS is expected to remain at a same level during both peak hours
- the future traffic volume at the New England Highway/Bridgman Road intersection would continue to exceed the intersection's practical capacity, whether or not the Nundah Bank project proceeds.

Specific analysis results indicated that:

- During the AM peak hour, the highest delay (83 seconds) is experienced by the southbound right turn traffic from Bridgman Road onto the New England Highway. This is an increase of four seconds from the do-nothing case.
- During the PM peak hour, the highest delay (93 seconds) is experienced by the southbound right turn traffic from Bridgman Road onto the New England Highway. This is an increase of 17 seconds from the do-nothing case.
- Similar to the do-nothing case, the New England Highway/Bridgman Road intersection will not have spare capacity in the AM peak hour, with the northbound left turn movement from Bridgman Road onto the New England Highway at DoS 1.00.
- Similar to the do-nothing case, the following queues for turning movements exceed the length of the turn bays and overspill to the adjacent lane at the New England Highway/Bridgman Road intersection:
  - ▶ 61 m long queue in the northbound left turn movement on Bridgman Road during the AM and PM peak hours, whilst the available turn bay length is only 30 m.
- The future traffic volume would continue to exceed the New England Highway/Bridgman Road intersections' practical capacity, whether or not the Nundah Bank project is proceeding.

### 3.11 Impacts on access of neighbouring residents and business

The following properties and business are located along the proposed haul route:

- residential properties along sections of Rixs Creek Lane
- residential properties along sections of Bridgman Road
- a residential property on which the primary compound site is to be located
- a coal mine with accesses located on Bridgman Road (north of Telstra Tower access road), the northern end of Rixs Creek Lane and Middle Falbrook Road (north of Camberwell level crossing).

Vehicles accessing these properties and businesses would encounter construction traffic when travelling on the roads identified as part of a haulage route. The increased traffic volume at the key intersections along the haul route due to construction has been analysed and would not significantly reduce intersections' capacity.

No parking would be allowed along the haulage route, therefore construction traffic would not affect the sight distance available at the property access point.

Property access would be maintained as far as practicable during the construction phase of the project. Where necessary, specific arrangements regarding property access would be further investigated in a Traffic Management Plan (refer to Section 3.16) and discussed with affected property owners prior to any changes.

### 3.12 Impacts on the regional road network

During peak hours, it is expected up to 30 additional trips would be assigned to Rixs Creek Lane and up to eight additional trips would be assigned to Bridgman Road. The intersections that would be immediately affected are the New England Highway's intersections with Rixs Creek Lane and Bridgman Road.

Section 3.9 indicated that there would be no significant traffic impacts associated with the increased traffic due to construction equipment and material delivery at the key intersections. Any impact would be further reduced as the employee trips disperse into the broader, regional road network distant from the construction site. Additionally, most of these employee trips would occur outside commuter peak hours, therefore they are unlikely to impose adverse traffic impacts on the regional road network.

Delivery vehicles would travel on a designated route along the New England Highway. The low magnitude (approximately eight heavy vehicles/hour) would not impose adverse impacts on the regional road network.

### 3.13 Public transport services

During the construction period of the proposed third track and ancillary infrastructure, the haulage trucks are unlikely to impose any impacts to the public transport services that are currently available on the New England Highway, Stoney Creek Road and Bridgman Road.

### 3.14 Pedestrian and cyclist facilities

Although the existing level of pedestrian and cycling activities is considered low, the safety of pedestrians and cyclists that may be using the haulage route will be considered in a construction traffic management plan (refer to Section 3.15).

The proposed construction works would not generate any pedestrian and cyclist activities, and are unlikely to impose any adverse impacts due to very few existing pedestrian and cycling facilities are available. There would be no blocking of access to these road users. Therefore, no additional facilities are considered for pedestrians and cyclists.

### 3.15 Road dilapidation

Road dilapidation inspections would be undertaken prior to and following construction with any change in conditions beyond normal wear and tear rectified at the contractors cost. Any other infrastructure damage would also be captured. Any rectification works would be conducted in accordance with the relevant asset owners' standards.

### 3.16 Construction traffic management

Prior to any construction commencing, a construction traffic management plan would be prepared as part of the pre-construction planning. The plan would detail how the traffic associated with the construction would be managed in accordance with the Roads and Traffic Authority 2010, *Traffic Control at Work Sites and Roads*, Traffic Authority 2001, *Procedure for use in the Preparation of a Traffic Management Plan*, as well as relevant Australian Standards.

The construction traffic management plan would also be used to develop site-specific traffic management measures once the construction methods and haulage routes are finalised. These measures would be developed as part of the site-specific management plans to indicate how traffic would be controlled and managed during each stage of the construction.

The construction traffic management plan would contain the following information:

- the proposed works and construction traffic impacts
  - ▶ proposed construction techniques
  - ▶ estimated duration of the works
  - ▶ increased traffic volume by vehicle type
  - ▶ anticipated or designated routes for the delivery of materials and equipment (e.g. avoid local roads and use main roads whenever possible).
  - ▶ summary of the potential construction impacts on the road network and any feasible measures to reduce the forecast impacts
- considerations
  - ▶ retention of local property and emergency access where practicable
  - ▶ provide a swept path analysis to ascertain that sufficient manoeuvring space is provided for all vehicles at intersections along the haulage routes

- ▶ warning signs to advise road users in advance of work zones and surrounding intersections
- ▶ safety signage to be installed to warn construction vehicle drivers of the presence of cyclists and pedestrians
- ▶ U-turn facilities for construction vehicles where necessary
- stakeholders
  - ▶ the main stakeholders in the plan
  - ▶ roles and responsibilities of all stakeholders
  - ▶ contact details for all stakeholders
  - ▶ the person responsible for developing, updating and implementing the plan
  - ▶ any required approvals and licenses
- community consultation
  - ▶ letterbox drops to local residents advising of potential property access restrictions (if required)
  - ▶ signposting and advertising to warn motorists of proposed road closures and traffic diversions and other temporary traffic arrangements
  - ▶ advertisements in local newspapers.

Traffic control plans should be prepared as part of the construction traffic management plan for specific stages of work or locations as required. Review temporary road work traffic control measures, signage and speed limits in areas of potential risk.

The construction traffic management plan would also outline procedures to audit implementation of the plan and particularly to ensure safety aspects are being observed.



## 4. Traffic impact at the Camberwell railway station level crossing

The following section assesses the impact of the operational phase of the Nundah Bank third track project at the Camberwell railway station level crossing.

Construction traffic generated by the third track has not been included in this assessment because this would not impose any traffic impact as the level crossing is not part of the proposed construction haulage route.

The Camberwell railway station level crossing is located on Middle Falbrook Road at its intersection with the ARTC main railway line approximately 6 km north-east of the New England Highway (NEH). The number and length of trains that will pass this crossing is proposed to increase as a result of increased coal mining activity within the area. This increased number and length of trains will increase the time the level crossing is closed to vehicle traffic and could lead to an increase in vehicle delays.

Middle Falbrook Road is a lightly trafficked rural local road which has a daily traffic volume of approximately 60 vehicles per day. To assess the likely traffic impact the following steps were undertaken:

- a 24 hour vehicle traffic survey was conducted at the level crossing to establish daily traffic volumes
- a 24 hour survey of trains was conducted to establish the current number, type and the time taken for a train to pass the level crossing
- a forecast for future (2012 and 2018) vehicle traffic was estimated based on current (2010) vehicular traffic and a background traffic growth of 1% per annum
- an estimation of the length of time per train that the level crossing would be closed to vehicle traffic in the future years 2012 and 2018
- an estimation of the delay to vehicles from the increased number and length of trains.

### 4.1 Existing vehicle traffic (2010)

A 24-hour vehicle traffic survey was conducted on Middle Falbrook Road, at the level crossing in Camberwell. The survey was undertaken from midnight on Monday 10 August to midnight on the Tuesday 11 August 2010 (the results of the survey are included in Appendix H). Table 4.1 summarises the results of the survey separating light and heavy vehicles by direction.

**Table 4.1 Existing traffic volume summary at the Camberwell railway station level crossing (2010)**

Time period	Movement direction	Light vehicles	Heavy vehicles	Total vehicles
Day (7:00 am to 10:00 pm)	Northbound	17	10	27
	Southbound	16	6	22
	Both directions	33	16	49
Night (10:00 pm to 7:00 pm)	Northbound	2	0	2
	Southbound	6	1	7
	Both directions	8	1	9
24-hour	Northbound	19	10	29
	Southbound	22	7	29
	Both directions	41	17	58

Note: Survey period between midnight on Monday 10 August 2010 and midnight on Tuesday 11 August 2010

Table 4.1 shows that:

- within the 24 hour period of the survey, a total of 58 vehicles passed the Middle Falbrook Road level crossing
- between 7:00 am and 10:00 pm, approximately 49 vehicles (84%) passed the level crossing
- between 10:00 pm and 7:00 am, approximately 9 vehicles (16%) passed the level crossing.

## 4.2 Existing train movements (2010)

A 24 hour survey of trains passing the Camberwell railway station level crossing was conducted at the same time as the vehicle traffic survey. This survey recorded:

- the type of train
- direction train heading
- time of day train passed level crossing
- duration train took to pass level crossing.

In addition, the survey also recorded the number of vehicles delayed and the duration of the delay for each train. However, due to the low volume of vehicles and because most trains passed the crossing at night no vehicles were observed being delayed by trains. Table 4.2 shows a summary of these survey data.

**Table 4.2 Train survey summary at the Camberwell railway station level crossing (2010)**

Train type	Direction of train	Train arrival time on the crossing	Train departure time from the crossing	Start of train to end of train
Freight	Westbound	0:42:41	0:43:30	0:00:49
Freight	Westbound	1:10:40	1:11:55	0:01:15
Freight	Eastbound	1:13:13	1:13:19	0:00:06
Freight	Westbound	1:28:53	1:30:01	0:01:08
Freight	Westbound	2:43:08	2:44:06	0:00:58
Freight	Westbound	3:15:20	3:16:48	0:01:28
Freight	Westbound	5:38:56	5:42:28	0:03:32
Passenger	Westbound	0:10:06	0:10:09	0:00:03
Passenger	Westbound	4:45:19	4:45:28	0:00:09

Note: Survey period between midnight on Monday 10 August 2010 and midnight on Tuesday 11 August 2010

The results show that on the day of the survey:

- a total of nine trains (seven freight trains and two passenger trains) passed the level crossing
- all the trains passed the level crossing between midnight and 6:00 am
- the longest time taken for a freight train to pass the level crossing was approximately 212 seconds (3 minutes and 32 seconds)
- the longest time for a passenger train to pass the level crossing was approximately 9 seconds
- no vehicles were observed being delayed by trains at the level crossing.

### 4.3 Future vehicle traffic volumes (2012 and 2018)

Traffic volumes have been estimated for the future years 2012 and 2018. These are based on the surveyed traffic volumes with an assumed 1% traffic growth per annum. The forecast traffic volumes based on background traffic growth are shown in Table 4.3.

**Table 4.3 Forecast traffic volumes for Year 2012 and 2018**

Time period	2012	2018
Day (7:00 am to 10:00 pm)	50	53
Night (10:00 pm to 7:00 am)	9	10
24-hour	59	63

#### 4.4 Future vehicle delay per train (2012 and 2018)

The vehicle delay per train in 2012 and 2018, has been estimated based on:

- the longest time taken for a train to pass the level crossing (2010) and the assumption that an increase in this time proportional to the increase in train length from the current 1,280 m to 1,925 m
- an additional vehicle stop line and geometric delay of 20 seconds for freight trains and 10 seconds for passenger trains to account for the additional time taken by a vehicle to slow then stop prior to a train and the start up delay after the train has passed. This additional delay is assumed and based on previous studies at rail crossing undertaken by PB.

Using the above the delay to vehicles per train in 2012 and 2018 could be:

- approximately 340 seconds per freight train
- approximately 20 seconds per passenger train.

#### 4.5 Future daily train movements (2012 and 2018)

The numbers of freight and passenger trains passing the level crossing at Camberwell railway station the years 2012 and 2018 were provided by KMH Consultants. These are shown in Table 4.5. This forecast is based on a train travelling in a single direction so a train would be counted twice if it is forecast to travel in both directions at the same location on a single day.

**Table 4.5 Forecast daily train movements for Year 2012 and 2018**

Train type	Train pass-bys per 24 hours					
	2012			2018		
	7:00 am–10:00 pm	10:00 pm – 7:00 am	24-hour	7:00 am – 10:00 pm	10:00 pm – 7:00 am	24-hour
Freight	54	32	86	127	76	204
Passenger	4	2	6	4	2	6
Total	58	34	92	131	78	210

Source: KMH Consultants

#### 4.6 Delayed vehicles per day (2012 and 2018)

The number of vehicles delayed between the hours of 7:00 am and 10:00 pm per day (which represents over 84% of all daily traffic) has been estimated by calculating the proportion of the total delay caused by trains during time period and then multiplying this proportion by the number of vehicles passing the level crossing in the same time period.

Table 4.6 shows the estimated average number of vehicles that may be delayed per day by the trains passing through the Camberwell railway station level crossing during the time period from 7:00 am to 10:00 pm for the years 2012 and 2018.

**Table 4.6 Daily average number of delayed vehicles (between 7:00 am and 10:00 pm) in 2012 and 2018**

	2012	2018
Freight train	17	43
Passenger train	1	1
Total	18	44

#### 4.7 Delayed vehicles per train (2012 and 2018)

By dividing the number of vehicles delayed between 7:00 am to 10:00 pm per day by the daily train movements during the same time period and by the two traffic approach directions, gives the average number of queued vehicles per train on each approach as shown in Table 4.7.

**Table 4.7 Average number of queuing vehicles in each direction per train movement (between 7:00 am and 10:00 pm) in 2012 and 2018**

	2012	2018
Freight train	1	1
Passenger train	1	1

#### 4.8 Traffic impacts at the level crossing

The traffic impact of increasing the numbers length of trains passing the level crossing at Camberwell railway station is likely to be minor. This is because even though the duration and frequency of closures of the level crossing would be significantly higher in the future years considered the traffic volumes using Middle Falbrook Road will still be low so few vehicles will be affected.

By 2018, there would be 131 train services per day between 7:00 am and 10:00 pm. As a result, an average of 44 vehicles per day would experience delays when the trains pass the level crossing during the same time period. For each train movement, only one vehicle, on average, is expected to queue on each approach at the level crossing. The delay as a result of this vehicle queue is expected to be approximately 340 seconds for a freight train or approximately 20 seconds for a passenger train.



## 5. Staff parking

The construction generates a parking demand for employees on site during the work shift. There is likely to be a small visitor demand.

Up to 70 vehicles are expected to arrive at the two compounds on a typical working day, whilst 110 vehicles are expected during track possession (refer to Section 3.3). Therefore approximately 110 parking spaces would be required to meet the parking demand during the construction phase of the project.

The car parks would be situated at the main compound off Middle Falbrook Road and satellite compound off Rixs Creek Lane.



## 6. Post construction

Maintenance works would be required in the rail corridor following the construction of the third track and ancillary infrastructure. The amount of operational activities and the associated number of maintenance vehicles will vary depending on what work needs to be undertaken. Some maintenance works will be scheduled (for example during scheduled possessions) and some will be undertaken on needs basis.

Maintenance vehicles' access to the corridor will be via Rixs Creek Lane and Middle Falbrook Road.

The amount of operational activities is expected to be less than the construction activities that have been considered in this traffic impact assessment. Based on the findings of this traffic impact assessment, it is anticipated the traffic generated by the operational activities would be less significant than that generated by the construction activities. Therefore, these maintenance vehicles are unlikely to impose adverse traffic impacts to the local and regional road network.



## 7. Mitigation measures

Sections 2 and 3 outlined the existing deficiencies of the proposed haulage route, and the potential traffic impacts as a result of the construction activities of the Nundah Bank project. These have been assessed below, and mitigation measures have been recommended where appropriate. It is recommended UHVA to undertake consultation with RTA and Singleton Council to rectify identified road safety deficiencies and ensure adequate levels of safety are maintained during construction.

### 7.1 Rixs Creek Lane

- provide delineation along the road (e.g. centre-line marking)
- the unsealed road should be sealed at least 20 m to the east of the intersection with Rixs Creek Lane.

### 7.2 New England Highway/Rixs Creek Lane intersection

- install a Give Way sign on the Rixs Creek Lane approach to the intersection
- provide centre-line marking on Rixs Creek Lane on approach to the New England Highway intersection
- install a Sight Board at the intersection
- clean up the gravel on Rixs Creek Lane's right turn lane and ensure regular and timely maintenance and cleaning.

### 7.3 Bridgman Road

- consider the provision of sufficient deflection distance in the back of the guardrail
- provide reflectors along the guardrails
- consider making the culvert traversable
- consider position of the trees within the clear zone and develop roadside management strategy to improve road safety regarding the trees near the road
- replace the Children Crossing warning sign
- re-paint the centre-line along Bridgman Road to the north of New England Highway
- consider the provision of centre-line marking along Bridgman Road to the south of Stoney Creek Road.

### 7.4 New England Highway/Bridgman Road intersection

- Clean up the soil stored on the gutter along Bridgman Road, and ensure regular and timely maintenance and cleaning.

## 7.5 Intersections along Bridgman Road

- provide a hold line at the following intersections:
  - ▶ Gardner Circuit (northern end)
  - ▶ Gardner Circuit (southern end)
  - ▶ Retreat Road
- install a standard Sight Board at the termination of Retreat Road
- clean up the gravel at the Bridgman Road/Retreat Road intersection, and ensure regular and timely maintenance and cleaning
- re-paint a stop line at the coal mine access road.

## 7.6 Stoney Creek Road

- provide line-marking along Stoney Creek Road
- check whether chevron alignment markers (CAM) signs are warranted at the horizontal curves where advisory speed limits are provided
- install wildlife warning signs.

## 7.7 Bridgman Road/Stoney Creek Road intersection

- re-paint the hold line on Stoney Creek Road
- re-install the Sight Board with a correct orientation at the termination of Stoney Creek Road.

## 7.8 Middle Falbrook Road/Stoney Creek Road intersection

- provide priority control at the intersection
- re-install the Sight Board and repair the sign posts.

## **7.9 Middle Falbrook Road**

- provide line-marking along Middle Falbrook Road
- provide at least three standard CAMs in each direction along the curve adjacent the Middle Falbrook Road/Stoney Creek Road intersection in accordance with AS 1742.2
- widen Middle Falbrook Road to sufficiently accommodate heavy vehicles travelling in both directions
- consider proper and timely pavement maintenance.

## **7.10 Middle Falbrook Road's level crossing at ARTC main line**

- Repair the Level Crossing sign.

## **7.11 Road dilapidation**

- Prepare pre- and post-construction road dilapidation reports for the haulage route that would be used for construction. Any damage resulting from construction (not normal wear and tear) would be repaired unless alternative arrangements are made with the relevant road authority.

## **7.12 Construction traffic management**

- Prepare a construction traffic management plan for approval of RTA prior to commencement of the construction works on the site (refer to Section 3.15 for details).



## 8. Conclusion

The construction of the Nundah Bank third track and ancillary infrastructure would result in 140 to 220 light vehicles per day (i.e. 70 to 110 light vehicles per hour arriving at the compounds before the working shift, and 70 to 110 light vehicles per hour leaving after the working shift), as well as 80 to 120 trucks per day (i.e. six trucks per hour arriving and six trucks per hour departing from the site). These traffic volumes were assigned to the New England Highway, Rixs Creek Lane and Bridgman Road for intersection performance and mid-block capacity analyses.

The traffic impact assessment has identified minor traffic impacts associated with the forecast increase in traffic due to construction equipment and material delivery, during both typical working days and track possessions:

- reduction in New England Highway/Rixs Creek Lane intersection's performance between the 2012 do-nothing case and the 2012 construction cases, affecting only one project related right-turning heavy vehicle assigned on Rixs Creek Lane. It should be acknowledged that in the do-nothing case there would be no right turning traffic on Rixs Creek Lane approach, therefore this heavy vehicle is unlikely to interrupt any background traffic.
- New England Highway/Bridgman Road intersection would be facing capacity constraints, however this congestion is not caused by the Nundah Bank project.

Impact of traffic at the level crossing at Middle Falbrook Road, despite the increased number and length of trains by 2018 is expected to be minor. This is because even though the duration and frequency of closures of the level crossing would be significantly higher in the future years considered the traffic volumes using Middle Falbrook Road will still be low so few vehicles will be affected. By 2018, there would be 131 train services per day between 7:00 am and 10:00 pm. As a result, an average of 44 vehicles per day would experience delays when the trains pass the level crossing during the same time period. For each train movement, only one vehicle, on average, is expected to queue on each approach at the level crossing. The delay as a result of this vehicle queue is expected to be approximately 340 seconds for a freight train or approximately 20 seconds for a passenger train.

Access to the properties along the proposed haulage route would be maintained as far as practicable during the construction phase of the project. Where necessary, specific arrangements regarding property access would be further investigated in a Traffic Management Plan and discussed with affected property owners prior to any changes.

It is unlikely that there would be any significant traffic impacts associated with the increased traffic due to construction equipment and material delivery at the key intersections. Any impact would be further reduced as the construction trips disperse into the broader, regional road network distant from the construction site.

Following the completion of the construction, maintenance works would be required in the rail corridor. The amount of operational activities is expected to be less than the construction activities that have been considered in this traffic impact assessment. It is anticipated the traffic generated by the operational activities would be less significant than that generated by the construction activities and would not impose adverse impacts to the local and regional road network.

Road dilapidation inspections would be undertaken prior to and following construction with any change in conditions beyond normal wear and tear. Any damage resulting from construction would be repaired unless alternative arrangements are made with the relevant road authority.

A number of road safety issues have been identified in relation to deficiencies in signs and linemarking, pavement, guardrail and drainage. Other issues included unprotected roadside hazards identified within the clear zone. A number of mitigation measures have been recommended to improve road safety outcomes for the construction material haulage operation. Table 6.1 shows the identified issues, as well as the recommended mitigation measures (refer to Appendix A for site photos). The haulage operation and design of the road safety improvements should be undertaken in compliance with accepted traffic engineering practices (i.e. RTA and Austroads guidelines). It is recommended UHVA to undertake consultation with RTA and Singleton Council to rectify identified road safety deficiencies and ensure adequate levels of safety are maintained during construction.

A construction traffic management plan would need to be prepared as part of the overall construction occupational health and safety and environmental management planning, for RTA's approval prior to commencing any construction. The construction traffic management plan should recommend temporary road work traffic control measures, signage and speed limits in areas of potential risk. Traffic control plans should be prepared as part of the traffic management plan for specific stages of work or locations as required.

**Table 8.1 Summary of identified issues and recommended mitigation measures**

Location	Identified issues	Recommended mitigation measures
Rixs Creek Lane	<ul style="list-style-type: none"> <li>▪ insufficient delineation provided along Rixs Creek Lane (refer to Photo 1)</li> <li>▪ soil and gravel have been tracked onto the intersection of Rixs Creek Lane and the unsealed road (refer to Photo 2)</li> </ul>	<ul style="list-style-type: none"> <li>▪ provide delineation along the road (e.g. centre-line marking)</li> <li>▪ the unsealed road should be sealed at least 20 m to the east of the intersection with the Rixs Creek Lane</li> </ul>
New England Highway/Rixs Creek Lane intersection	<ul style="list-style-type: none"> <li>▪ Give Way sign is missing on Rixs Creek Lane approach to the intersection (refer to Photo 3)</li> <li>▪ lack of centreline marking on Rixs Creek Lane (refer to Photo 3)</li> <li>▪ there is no Sight Board at the intersection (refer to Photo 4)</li> <li>▪ gravel has been tracked onto Rixs Creek Lane, resulting in loose material being on the road surface (refer to Photo 4)</li> </ul>	<ul style="list-style-type: none"> <li>▪ install a Give Way sign on the Rixs Creek Lane approach to the intersection</li> <li>▪ provide centre-line marking on Rixs Creek Lane on approach to the New England Highway intersection</li> <li>▪ install a Sight Board at the intersection</li> <li>▪ clean up the gravel on Rixs Creek Lane's right turn lane, and ensure regular and timely maintenance and cleaning</li> </ul>
Bridgman Road	<ul style="list-style-type: none"> <li>▪ there is no deflection zone available in the back of the guardrail adjacent to a deep gully just to the north of Gardner Circuit (southern end) (refer to Photo 5)</li> <li>▪ there are no reflectors to provide sufficient delineation along the guardrails located just to the north of Gardner Circuit (southern end) (refer to Photo 5)</li> <li>▪ the driveway culverts to the north of Gardner Circuit (southern end) are not traversable and not protected (refer to Photo 6)</li> <li>▪ a few large trees to the north of Gardner Circuit (northern end) are located within the clear zone too close to the moving traffic.</li> <li>▪ faded Pedestrian Crossing warning sign (W6-1) to the north of Gardner Circuit (southern end)</li> <li>▪ faded centreline along Bridgman Road to the north of the New England Highway (refer to Photo 7)</li> <li>▪ no line-marking is provided along Bridgman Road to the south of Stoney Creek Road (refer to Photo 8)</li> </ul>	<ul style="list-style-type: none"> <li>▪ consider the provision of sufficient deflection distance in the back of the guardrail</li> <li>▪ provide reflectors along the guardrails</li> <li>▪ consider making the culvert traversable</li> <li>▪ consider position of the trees within the clear zone and develop roadside management strategy to improve road safety regarding the trees near the road</li> <li>▪ replace the Pedestrian Crossing warning sign</li> <li>▪ re-paint the centre-line along Bridgman Road to the north of New England Highway</li> <li>▪ consider the provision of centre-line marking along Bridgman Road to the south of Stoney Creek Road</li> </ul>

Location	Identified issues	Recommended mitigation measures
New England Highway/Bridgman Road intersection	<ul style="list-style-type: none"> <li>▪ the gutter is blocked with soil, reducing its efficiency to drain water from Bridgman Road (refer to Photo 9)</li> <li>▪ Singleton Council's construction staging plan is not yet available for performing a precise intersection analysis</li> </ul>	<ul style="list-style-type: none"> <li>▪ clean up the soil stored on the gutter along Bridgman Road, and ensure regular and timely maintenance and cleaning</li> <li>▪ review the intersection performance further when the Council's construction staging plan becomes available</li> <li>▪ undertake a swept path analysis to ascertain that sufficient manoeuvring space is provided when the upgraded works are being undertaken</li> </ul>
Intersections along Bridgman Road	<ul style="list-style-type: none"> <li>▪ both the hold line and Give Way sign are missing at the Bridgman Road intersections with Gardner Circuit (both ends) and Retreat Road</li> <li>▪ a non-standard Sight Board has been installed at the Retreat Road intersection (refer to Photo 10)</li> <li>▪ gravel has been tracked onto Retreat Road (refer to Photo 11)</li> <li>▪ stop line is faded on the coal mine access road (refer to Photo 12)</li> <li>▪ incorrect orientation of the Sight Board at the Bridgman Road/coal mine access road intersection (refer to Photo 13)</li> </ul>	<ul style="list-style-type: none"> <li>▪ provide a hold line and paint a hold line at the intersections with Gardner Circuit (both ends) and Retreat Road</li> <li>▪ install a standard Sight Board at the termination of Retreat Road</li> <li>▪ clean up the gravel at the Bridgman Road/Retreat Road intersection, and ensure regular and timely maintenance and cleaning</li> <li>▪ re-paint a stop line at the coal mine access road</li> </ul>
Telstra tower access road	<ul style="list-style-type: none"> <li>▪ deep gullies located on both sides of the access road at its intersection with Bridgman Road are not traversable and are not protected (refer to Photo 14)</li> </ul>	<ul style="list-style-type: none"> <li>▪ consider widening the access road with the provision of sufficient clear zone within the pavement, or install road safety barriers to protect errant vehicles from the deep gullies</li> </ul>
Stoney Creek Road	<ul style="list-style-type: none"> <li>▪ no line-marking is provided along Stoney Creek Road (refer to Photo 15)</li> <li>▪ there are no chevron alignment markers (CAMs) installed along the curves for which 55 km/h and 75 km/h advisory speed limits signs are provided (refer to Photo 15)</li> <li>▪ no wildlife warning signs provided on the road (refer to Photo 16)</li> </ul>	<ul style="list-style-type: none"> <li>▪ provide line-marking along Stoney Creek Road</li> <li>▪ check whether chevron alignment markers (CAM) signs are warranted at the horizontal curves where advisory speed limits are provided</li> <li>▪ install wildlife warning signs</li> </ul>
Bridgman Road/Stoney Creek Road intersection	<ul style="list-style-type: none"> <li>▪ the hold line is faded at Stoney Creek Road (refer to Photo 17)</li> <li>▪ the orientation of the Sight Board is upside down (refer to Photo 17)</li> </ul>	<ul style="list-style-type: none"> <li>▪ re-paint the hold line on Stoney Creek Road</li> <li>▪ re-install the Sight Board with a correct orientation at the termination of Stoney Creek Road</li> </ul>
Middle Falbrook Road/Stoney Creek Road intersection	<ul style="list-style-type: none"> <li>▪ no priority control is provided at the intersection (refer to Photo 18)</li> <li>▪ the Sight Board and its sign posts are damaged (refer to Photo 19)</li> <li>▪ non-standard installation of the chevron alignment markers (CAMs) along a curve adjacent the intersection (refer to Photo 20)</li> </ul>	<ul style="list-style-type: none"> <li>▪ provide priority control at the intersection</li> <li>▪ re-install the Sight Board and repair the sign posts</li> </ul>

Location	Identified issues	Recommended mitigation measures
Middle Falbrook Road	<ul style="list-style-type: none"> <li>▪ no line-marking is provided along Middle Falbrook Road, except for in the vicinity of its intersection with Stoney Creek Road (refer to Photo 21)</li> <li>▪ there is some pavement failure on Middle Falbrook Road which may cause safety problems (refer to Photo 22)</li> <li>▪ road delineation is insufficient on a curve leading to a crest just outside a mine site access (refer to Photo 23)</li> </ul>	<ul style="list-style-type: none"> <li>▪ provide line-marking along Middle Falbrook Road</li> <li>▪ provide at least three standard CAMs in each direction along the curve adjacent the Middle Falbrook Road/Stoney Creek Road intersection in accordance with AS 1742.2</li> <li>▪ widen Middle Falbrook Road to sufficiently accommodate heavy vehicles travelling in both directions</li> <li>▪ consider proper and timely pavement maintenance</li> </ul>
Middle Falbrook Road's level crossing at ARTC main line	<ul style="list-style-type: none"> <li>▪ the Railway Crossing sign is damaged (refer to Photo 24)</li> </ul>	<ul style="list-style-type: none"> <li>▪ repair the Level Crossing sign</li> </ul>

The construction material haulage operation should be undertaken in compliance with accepted traffic engineering practices, as well as the mitigation measures recommended in this report.



## 9. References

Roads and Traffic Authority of NSW, 2002 – *Guide to Traffic Generating Developments*

Roads and Traffic Authority of NSW, 2000 – *Road Design Guide (Section 6)*

Austrroads 2009, *Guide to Road Design – Part 4A Unsignalised and Signalised Intersections.*



## **Appendix A**

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Photos for road safety deficiencies





**Photo 1** New England Highway, looking towards Rixs Creek Lane



**Photo 2** Looking east from Rixs Creek Road towards an unsealed road



Photo 3 Rixs Creek Road on approach to its intersection with the New England Highway



Photo 4 Rixs Creek Road on approach to its intersection with the New England Highway



Photo 5 Bridgman Road, looking north from Gardner Circuit (southern end)



Photo 6 Bridgman Road, looking north from property at no. 207 Bridgman Road



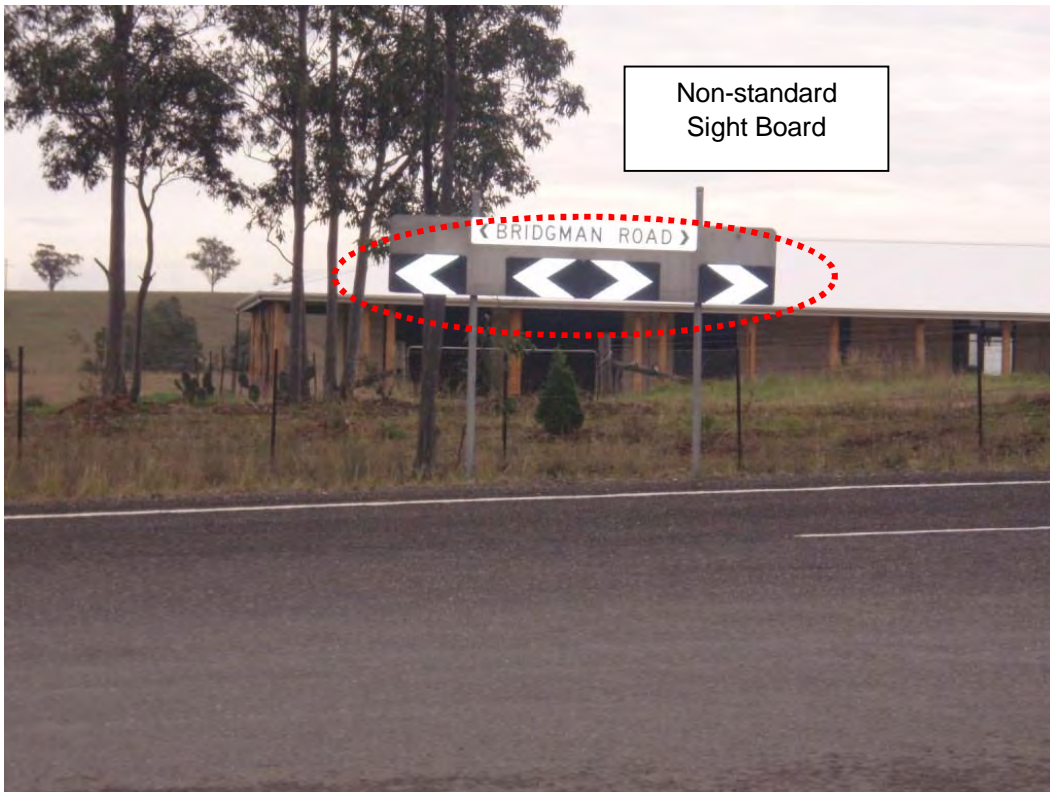
**Photo 7** Bridgman Road, looking south towards its intersection with New England Highway



**Photo 8** Bridgman Road, looking north towards the section to the south of Stoney Creek Road



**Photo 9** Bridgman Road, looking south towards its intersection with New England Highway



**Photo 10** Bridgman Road/ Retreat Road intersection



Photo 11 Looking north from Retreat Road towards Bridgman Road



Photo 12 Mine access road, looking east towards its intersection with Bridgman Road



Photo 13 Mine access road on approach to its intersection with Bridgman Road

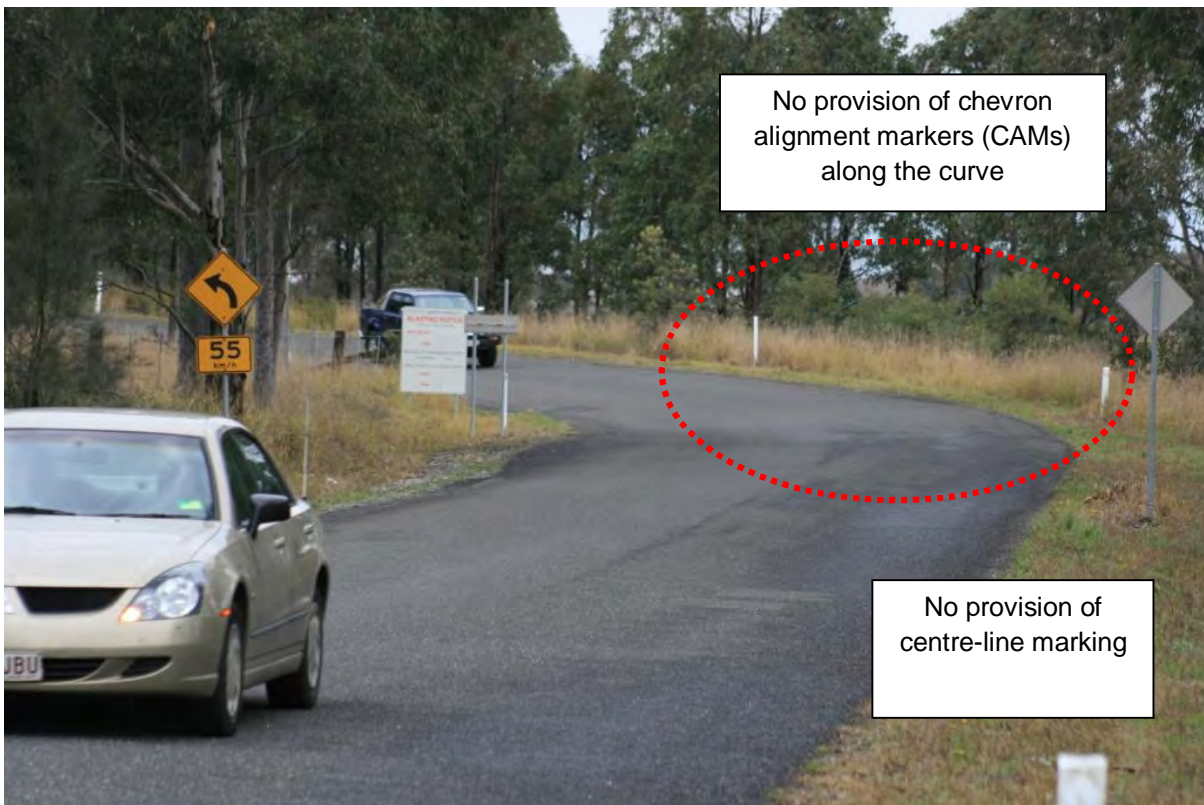


Photo 14 Middle Falbrook Road, looking towards Stoney Creek Road



Photo 15 Stoney Creek Road, looking towards Middle Falbrook Road



Photo 16 Stoney Creek Road on approach to its intersection with Bridgman Road



Photo 17 Middle Falbrook Road, looking towards its intersection with Stoney Creek Road



Photo 18 Middle Falbrook Road/ Stoney Creek Road intersection



**Photo 19** Middle Falbrook Road, looking west from its intersection with Stoney Creek Road



No provision of line-marking along the road nor chevron alignment markers along the curve

**Photo 20** Middle Falbrook Road, looking westbound



Damaged pavement  
with pot holes

**Photo 21 Middle Falbrook Road, looking west from the mine access**



Insufficient  
delineation along  
curve over the crest

**Photo 22 Middle Falbrook Road, looking west towards the mine access**



Damaged sign

Photo 23 Level crossing on Middle Falbrook Road looking eastbound

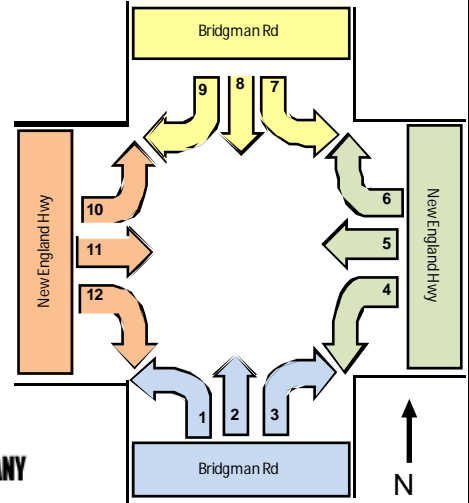
## **Appendix B**

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Traffic count survey and queue  
length survey data  
(August 2010)



<b>Client:</b>	PB		
<b>Site:</b>	Bridgman Rd		
	New England Hwy		
<b>Day:</b>	03.08.2010 (day)		
<b>Description:</b>	Pedestrians & Traffic Counts (15mins & 1hour Data)		
<b>Weather:</b>	Fine		
<b>AM Peak:</b>	8:30	to	9:30
<b>PM Peak:</b>	15:15	to	16:15



Approach	Bridgman Rd												New England Hwy											
	Direction 1 (Left turn)				Direction 2 (Through)				Direction 3 (Right turn)				Direction 4 (Left turn)				Direction 5 (Through)				Direction 6 (Right turn)			
	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total
6:00 to 6:15	68	3	0	71	15	0	0	15	1	0	0	1	0	0	0	0	190	6	0	196	20	0	0	20
6:15 to 6:30	66	0	0	66	7	1	0	8	1	0	0	1	0	0	0	0	227	11	1	239	26	0	0	26
6:30 to 6:45	60	1	0	61	15	0	0	15	1	0	0	1	1	0	0	1	173	24	0	197	34	2	0	36
6:45 to 7:00	47	1	0	48	24	0	0	24	1	0	0	1	0	0	0	0	199	36	2	237	43	1	3	47
7:00 to 7:15	29	1	0	30	16	0	0	16	1	0	0	1	0	0	0	0	144	34	0	178	35	1	0	36
7:15 to 7:30	46	1	0	47	18	0	0	18	1	0	0	1	1	0	0	1	148	25	0	173	28	4	0	32
7:30 to 7:45	35	1	0	36	13	0	0	13	1	0	0	1	1	0	0	1	108	16	1	125	20	1	0	21
7:45 to 8:00	23	4	0	27	21	0	0	21	0	0	0	0	1	0	0	1	115	18	2	135	41	4	1	46
8:00 to 8:15	27	1	0	28	17	0	0	17	1	0	0	1	0	0	0	0	104	23	0	127	26	3	1	30
8:15 to 8:30	32	2	0	34	14	0	0	14	1	0	0	1	4	0	0	4	94	19	2	115	36	2	1	39
8:30 to 8:45	20	1	0	21	24	1	0	25	2	0	0	2	2	0	0	2	98	20	5	123	47	3	4	54
8:45 to 9:00	30	1	0	31	39	0	0	39	1	0	0	1	3	0	0	3	77	20	6	103	69	4	1	74
9:00 to 9:15	24	0	0	24	31	0	0	31	0	0	0	0	1	1	0	2	90	18	5	113	66	3	1	70
9:15 to 9:30	27	1	0	28	26	0	0	26	0	1	0	1	3	0	0	3	89	18	5	112	67	3	1	71
9:30 to 9:45	35	1	0	36	39	0	0	39	0	0	0	0	1	0	1	2	74	16	1	91	61	3	1	65
9:45 to 10:00	23	1	0	24	42	0	0	42	2	0	0	2	3	0	0	3	91	20	0	111	39	3	0	42
10:00 to 10:15	33	1	0	34	30	0	0	30	0	0	0	0	1	0	0	1	88	14	1	103	41	2	1	44
10:15 to 10:30	28	0	0	28	44	0	0	44	0	0	0	0	2	0	0	2	74	25	0	99	46	0	1	47
10:30 to 10:45	46	2	0	48	42	1	0	43	0	0	0	0	1	0	0	1	76	22	0	98	40	1	0	41
10:45 to 11:00	29	2	0	31	37	0	0	37	0	0	0	0	2	0	0	2	59	18	0	77	47	2	0	49
11:00 to 11:15	35	1	0	36	39	0	0	39	0	0	0	0	0	0	0	0	73	22	0	95	62	5	0	67
11:15 to 11:30	24	2	0	26	44	0	0	44	0	0	0	0	0	0	0	0	72	17	1	90	46	5	0	51
11:30 to 11:45	45	1	0	46	47	1	0	48	0	0	0	0	2	0	0	2	97	22	0	119	64	1	0	65
11:45 to 12:00	29	1	0	30	44	0	0	44	0	0	0	0	4	0	0	4	73	14	1	88	62	2	0	64
<b>AM Totals</b>	<b>861</b>	<b>30</b>	<b>0</b>	<b>891</b>	<b>688</b>	<b>4</b>	<b>0</b>	<b>692</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>15</b>	<b>33</b>	<b>1</b>	<b>1</b>	<b>35</b>	<b>2633</b>	<b>478</b>	<b>33</b>	<b>3144</b>	<b>1066</b>	<b>55</b>	<b>16</b>	<b>1137</b>
12:00 to 12:15	33	1	0	34	36	0	0	36	0	0	0	0	1	0	0	1	70	17	1	88	60	1	1	62
12:15 to 12:30	27	0	0	27	45	0	0	45	1	1	0	2	2	0	0	2	74	16	1	91	62	1	1	64
12:30 to 12:45	27	1	0	28	48	0	0	48	1	0	0	1	3	0	0	3	71	22	0	93	65	3	0	68
12:45 to 13:00	48	1	0	49	37	0	0	37	0	0	0	0	1	0	0	1	80	10	0	90	62	3	0	65
13:00 to 13:15	34	0	0	34	34	0	0	34	1	0	0	1	1	0	0	1	71	29	0	100	66	4	0	70
13:15 to 13:30	31	0	0	31	36	1	0	37	1	1	0	2	2	1	0	3	70	20	0	90	41	2	0	43
13:30 to 13:45	41	0	0	41	35	0	0	35	0	0	0	0	0	0	0	0	90	21	0	111	38	2	0	40
13:45 to 14:00	34	0	0	34	42	0	0	42	0	0	0	0	1	0	0	1	88	21	0	109	44	1	0	45
14:00 to 14:15	34	0	0	34	38	0	0	38	0	0	0	0	1	0	0	1	68	18	1	87	43	3	1	47

14:15 to 14:30	35	0	0	35	32	0	0	32	0	0	0	0	4	0	0	4	76	13	0	89	72	8	0	80
14:30 to 14:45	35	2	0	37	46	0	0	46	0	0	0	0	2	0	0	2	65	20	0	85	67	0	0	67
14:45 to 15:00	42	1	0	43	41	0	0	41	0	0	0	0	0	0	0	83	18	1	102	52	0	1	53	
15:00 to 15:15	41	0	0	41	32	0	0	32	0	0	0	0	0	0	0	81	9	0	90	58	2	0	60	
15:15 to 15:30	36	0	0	36	72	0	0	72	0	0	0	0	0	1	0	1	75	16	4	95	99	2	4	105
15:30 to 15:45	32	0	0	32	66	0	0	66	0	0	1	1	1	0	0	1	84	19	3	106	116	5	3	124
15:45 to 16:00	35	0	0	35	59	0	0	59	0	0	0	0	2	0	0	2	89	14	8	111	97	1	8	106
16:00 to 16:15	36	3	0	39	72	0	0	72	0	0	0	0	0	1	0	1	98	16	1	115	102	3	1	106
16:15 to 16:30	23	1	0	24	69	0	0	69	1	0	0	1	2	0	0	2	79	13	0	92	102	2	0	104
16:30 to 16:45	35	0	0	35	77	0	0	77	0	0	0	0	3	0	0	3	83	11	2	96	124	1	2	127
16:45 to 17:00	24	0	0	24	75	0	0	75	1	0	0	1	1	1	0	2	89	15	0	104	95	1	0	96
17:00 to 17:15	32	0	0	32	76	0	0	76	2	0	0	2	2	0	0	2	82	11	0	93	122	1	0	123
17:15 to 17:30	32	0	0	32	66	0	0	66	2	0	0	2	1	0	0	1	106	10	1	117	164	2	1	167
17:30 to 17:45	41	0	0	41	82	0	0	82	2	0	0	2	0	0	0	0	86	13	0	99	125	1	0	126
17:45 to 18:00	41	0	0	41	63	0	0	63	0	0	0	0	1	0	0	1	113	13	0	126	101	1	0	102
18:00 to 18:15	38	0	0	38	53	1	0	54	0	0	0	0	2	0	0	2	99	9	0	108	100	2	0	102
18:15 to 18:30	32	1	0	33	57	0	0	57	0	0	0	0	0	0	0	0	94	14	0	108	78	2	0	80
18:30 to 18:45	22	0	0	22	56	0	0	56	0	0	0	0	2	0	0	2	48	10	0	58	62	0	0	62
18:45 to 19:00	26	0	0	26	33	0	0	33	0	0	0	0	1	0	0	1	42	13	0	55	57	3	0	60
<b>PM Totals</b>	<b>947</b>	<b>11</b>	<b>0</b>	<b>958</b>	<b>1478</b>	<b>2</b>	<b>0</b>	<b>1480</b>	<b>12</b>	<b>2</b>	<b>1</b>	<b>15</b>	<b>36</b>	<b>4</b>	<b>0</b>	<b>40</b>	<b>2254</b>	<b>431</b>	<b>23</b>	<b>2708</b>	<b>2274</b>	<b>57</b>	<b>23</b>	<b>2254</b>

Approach	Bridgman Rd												New England Hwy											
	Direction 7 (Left turn)				Direction 8 (Through)				Direction 9 (Right turn)				Direction 10 (Left turn)				Direction 11 (Through)				Direction 12 (Right turn)			
Time Period 15mins	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total
6:00 to 6:15	60	1	0	61	16	0	0	16	54	2	0	56	2	0	0	2	54	8	0	62	11	0	0	11
6:15 to 6:30	96	3	0	99	8	0	0	8	46	1	0	47	4	0	0	4	57	12	0	69	12	0	0	12
6:30 to 6:45	86	2	0	88	25	0	0	25	46	0	0	46	9	1	0	10	68	8	0	76	18	1	0	19
6:45 to 7:00	90	0	1	91	16	0	0	16	32	2	0	34	7	0	0	7	66	24	1	91	16	0	0	16
7:00 to 7:15	80	1	1	82	20	0	0	20	31	0	0	31	8	1	0	9	78	12	6	96	25	0	0	25
7:15 to 7:30	71	1	3	75	16	0	0	16	27	3	0	30	11	3	0	14	92	16	5	113	5	0	0	5
7:30 to 7:45	69	2	0	71	17	0	0	17	16	1	0	17	14	1	0	15	127	15	0	142	3	0	0	3
7:45 to 8:00	113	5	0	118	19	0	0	19	29	1	1	31	6	2	2	10	79	12	3	94	2	0	0	2
8:00 to 8:15	105	3	2	110	33	0	0	33	23	0	0	23	10	0	1	11	87	20	2	109	15	1	0	16
8:15 to 8:30	148	6	2	156	35	1	0	36	16	1	0	17	6	0	0	6	73	18	2	93	28	0	0	28
8:30 to 8:45	183	2	3	188	42	0	0	42	11	0	0	11	3	0	0	3	99	19	6	124	29	0	0	29
8:45 to 9:00	213	1	3	217	43	0	0	43	10	2	1	13	9	0	0	9	113	15	1	129	43	2	0	45
9:00 to 9:15	159	1	1	161	30	0	0	30	4	1	0	5	5	0	0	5	126	17	2	145	29	0	0	29
9:15 to 9:30	169	1	1	171	32	0	0	32	5	1	0	6	6	2	1	9	84	17	1	102	37	0	0	37
9:30 to 9:45	90	2	1	93	32	0	0	32	10	0	0	10	3	2	0	5	93	27	0	120	29	0	0	29
9:45 to 10:00	7	2	3	12	25	0	0	25	7	1	0	8	6	2	0	8	68	11	0	79	27	1	0	28
10:00 to 10:15	89	2	1	92	20	0	0	20	2	1	0	3	9	0	0	9	81	23	0	104	18	1	0	19
10:15 to 10:30	62	8	0	70	23	0	0	23	5	0	0	5	6	0	0	6	71	21	0	92	16	0	0	16
10:30 to 10:45	69	4	0	73	23	0	0	23	6	1	0	7	8	1	0	9	101	24	0	125	29	1	0	30
10:45 to 11:00	75	3	1	79	26	0	0	26	5	0	0	5	7	1	0	8	94	25	0	119	21	1	0	22
11:00 to 11:15	57	1	1	59	25	1	0	26	5	1	0	6	5	2	0	7	88	22	0	110	20	0	0	20
11:15 to 11:30	52	5	1	58	31	0	0	31	11	1	0	12	6	0	0	6	87	17	0	104	28	0	0	28
11:30 to 11:45	73	4	0	77	31	0	0	31	7	0	0	7	4	1	0	5	78	15	0	93	24	0	0	24
11:45 to 12:00	59	3	0	62	16	0	0	16	4	0	0	4	4	0	0	4	89	20	1	110	22	0	0	22
<b>AM Totals</b>	<b>2275</b>	<b>63</b>	<b>25</b>	<b>2363</b>	<b>604</b>	<b>2</b>	<b>0</b>	<b>606</b>	<b>412</b>	<b>20</b>	<b>2</b>	<b>434</b>	<b>158</b>	<b>19</b>	<b>4</b>	<b>181</b>	<b>2053</b>	<b>418</b>	<b>30</b>	<b>2501</b>	<b>507</b>	<b>8</b>	<b>0</b>	<b>515</b>
12:00 to 12:15	59	5	1	65	26	1	0	27	2	0	0	2	5	0	0	5	101	16	0	117	24	1	0	25
12:15 to 12:30	56	1	2	59	23	0	0	23	8	0	0	8	4	3	0	7	98	25	0	123	22	0	0	22
12:30 to 12:45	62	3	0	65	18	0	0	18	4	0	0	4	6	0	0	6	114	20	0	134	33	0	0	33
12:45 to 13:00	64	1	0	65	23	0	0	23	5	0	0	5	10	1	0	11	93	22	0	115	16	2	0	18
13:00 to 13:15	71	3	0	74	30	0	0	30	5	0	0	5	5	1	0	6	96	20	0	116	31	0	0	31
13:15 to 13:30	71	3	0	74	22	0	0	22	6	1	0	7	6	0	0	6	96	29	1	126	24	1	0	25
13:30 to 13:45	71	3	0	74	24	0	0	24	4	0	0	4	7	1	0	8	97	16	0	113	26	0	0	26
13:45 to 14:00	69	1	0	70	29	0	0	29	9	0	0	9	11	0	0	11	98	18	0	116	25	0	0	25
14:00 to 14:15	75	5	0	80	16	0	0	16	14	1	0	15	6	2	0	8	100	26	1	127	23	0	0	23
14:15 to 14:30	62	3	1	66	18	0	0	18	4	2	0	6	6	1	0	7	112	19	0	131	25	1	0	26
14:30 to 14:45	69	3	0	72	25	0	0	25	3	3	0	6	11	1	5	17	94	13	0	107	33	0	0	33
14:45 to 15:00	99	5	1	105	25	0	0	25	7	1	0	8	7	0	1	8	130	19	2	151	26	1	0	27
15:00 to 15:15	94	4	1	99	22	0	0	22	6	0	0	6	8	1	2	11	162	18	9	189	29	1	0	30
15:15 to 15:30	112	2	4	118	20	0	0	20	9	1	0	10	6	1	1	8	159	22	4	185	50	1	0	51
15:30 to 15:45	73	1	4	78	27	0	0	27	5	2	0	7	13	1	0	14	209	25	0	234	60	1	0	61
15:45 to 16:00	116	1	2	119	18	0	0	18	6	1	0	7	17	0	0	17	167	23	0	190	44	1	0	45
16:00 to 16:15	98	2	0	100	10	0	0	10	6	1	0	7	33	4	0	37	202	17	1	220	40	0	0	40
16:15 to 16:30	103	2	1	106	20	1	0	21	4	2	4	10	25	2	0	27	179	13	2	194	28	0	0	28
16:30 to 16:45	84	0	1	85	20	0	0	20	5	0	0	5	33	1	0	34	164	19	0	183	60	0	0	60
16:45 to 17:00	124	1	1	126	26	0	0	26	11	0	0	11	27	1	0	28	192	14	0	206	39	0	0	39
17:00 to 17:15	93	0	0	93	22	0	0	22	2	0	0	2	18	0	0	18	175	22	1	198	31	0	0	31
17:15 to 17:30	88	0	0	88	24	0	0	24	5	1	0	6	27	0	0	27	130	16	0	146	41	1	0	42
17:30 to 17:45	100	0	0	100	25	0	0	25	16	0	0	16	29	0	0	29	138	12	2	152	26	0	0	26

17:45 to 18:00	104	0	0	104	23	0	0	23	4	1	0	5	22	1	0	23	135	9	0	144	31	0	0	31
18:00 to 18:15	110	0	0	110	25	0	0	25	7	0	0	7	24	0	0	24	109	17	0	126	15	0	0	15
18:15 to 18:30	112	0	0	112	24	0	0	24	10	2	0	12	14	0	0	14	84	17	0	101	18	0	0	18
18:30 to 18:45	59	0	0	59	14	0	0	14	5	0	0	5	12	0	0	12	73	8	0	81	22	0	0	22
18:45 to 19:00	60	0	0	60	15	0	0	15	2	1	0	3	13	0	0	13	94	7	0	101	18	0	0	18
<b>PM Totals</b>	<b>2358</b>	<b>49</b>	<b>19</b>	<b>2426</b>	<b>614</b>	<b>2</b>	<b>0</b>	<b>616</b>	<b>174</b>	<b>20</b>	<b>4</b>	<b>198</b>	<b>405</b>	<b>22</b>	<b>9</b>	<b>436</b>	<b>3601</b>	<b>502</b>	<b>23</b>	<b>4126</b>	<b>860</b>	<b>11</b>	<b>0</b>	<b>871</b>

Approach	Bridgman Rd												New England Hwy											
	Direction 1 (Left turn)				Direction 2 (Through)				Direction 3 (Right turn)				Direction 4 (Left turn)				Direction 5 (Through)				Direction 6 (Right turn)			
	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total
6:00 to 7:00	241	5	0	246	61	1	0	62	4	0	0	4	1	0	0	1	789	77	3	869	123	3	3	129
6:15 to 7:15	202	3	0	205	62	1	0	63	4	0	0	4	1	0	0	1	743	105	3	851	138	4	3	145
6:30 to 7:30	182	4	0	186	73	0	0	73	4	0	0	4	2	0	0	2	664	119	2	785	140	8	3	151
6:45 to 7:45	157	4	0	161	71	0	0	71	4	0	0	4	2	0	0	2	599	111	3	713	126	7	3	136
7:00 to 8:00	133	7	0	140	68	0	0	68	3	0	0	3	3	0	0	3	515	93	3	611	124	10	1	135
7:15 to 8:15	131	7	0	138	69	0	0	69	3	0	0	3	3	0	0	3	475	82	3	560	115	12	2	129
7:30 to 8:30	117	8	0	125	65	0	0	65	3	0	0	3	6	0	0	6	421	76	5	502	123	10	3	136
7:45 to 8:45	102	8	0	110	76	1	0	77	4	0	0	4	7	0	0	7	411	80	9	500	150	12	7	169
8:00 to 9:00	109	5	0	114	94	1	0	95	5	0	0	5	9	0	0	9	373	82	13	468	178	12	7	197
8:15 to 9:15	106	4	0	110	108	1	0	109	4	0	0	4	10	1	0	11	359	77	18	454	218	12	7	237
8:30 to 9:30	101	3	0	104	120	1	0	121	3	1	0	4	9	1	0	10	354	76	21	451	249	13	7	269
8:45 to 9:45	116	3	0	119	135	0	0	135	1	1	0	2	8	1	1	10	330	72	17	419	263	13	4	280
9:00 to 10:00	109	3	0	112	138	0	0	138	2	1	0	3	8	1	1	10	344	72	11	427	233	12	3	248
9:15 to 10:15	118	4	0	122	137	0	0	137	2	1	0	3	8	0	1	9	342	68	7	417	208	11	3	222
9:30 to 10:30	119	3	0	122	155	0	0	155	2	0	0	2	7	0	1	8	327	75	2	404	187	8	3	198
9:45 to 10:45	130	4	0	134	158	1	0	159	2	0	0	2	7	0	0	7	329	81	1	411	166	6	2	174
10:00 to 11:00	136	5	0	141	153	1	0	154	0	0	0	0	6	0	0	6	297	79	1	377	174	5	2	181
10:15 to 11:15	138	5	0	143	162	1	0	163	0	0	0	0	5	0	0	5	282	87	0	369	195	8	1	204
10:30 to 11:30	134	7	0	141	162	1	0	163	0	0	0	0	3	0	0	3	280	79	1	360	195	13	0	208
10:45 to 11:45	133	6	0	139	167	1	0	168	0	0	0	0	4	0	0	4	301	79	1	381	219	13	0	232
11:00 to 12:00	133	5	0	138	174	1	0	175	0	0	0	0	6	0	0	6	315	75	2	392	234	13	0	247
<b>AM Total</b>	<b>861</b>	<b>30</b>	<b>0</b>	<b>891</b>	<b>688</b>	<b>4</b>	<b>0</b>	<b>692</b>	<b>14</b>	<b>1</b>	<b>0</b>	<b>15</b>	<b>33</b>	<b>1</b>	<b>1</b>	<b>35</b>	<b>2633</b>	<b>478</b>	<b>33</b>	<b>3144</b>	<b>1066</b>	<b>55</b>	<b>16</b>	<b>1137</b>
12:00 to 13:00	135	3	0	138	166	0	0	166	2	1	0	3	7	0	0	7	295	65	2	362	249	8	2	259
12:15 to 13:15	136	2	0	138	164	0	0	164	3	1	0	4	7	0	0	7	296	77	1	374	255	11	1	267
12:30 to 13:30	140	2	0	142	155	1	0	156	3	1	0	4	7	1	0	8	292	81	0	373	234	12	0	246
12:45 to 13:45	154	1	0	155	142	1	0	143	2	1	0	3	4	1	0	5	311	80	0	391	207	11	0	218
13:00 to 14:00	140	0	0	140	147	1	0	148	2	1	0	3	4	1	0	5	319	91	0	410	189	9	0	198
13:15 to 14:15	140	0	0	140	151	1	0	152	1	1	0	2	4	1	0	5	316	80	1	397	166	8	1	175
13:30 to 14:30	144	0	0	144	147	0	0	147	0	0	0	0	6	0	0	6	322	73	1	396	197	14	1	212
13:45 to 14:45	138	2	0	140	158	0	0	158	0	0	0	0	8	0	0	8	297	72	1	370	226	12	1	239
14:00 to 15:00	146	3	0	149	157	0	0	157	0	0	0	0	7	0	0	7	292	69	2	363	234	11	2	247
14:15 to 15:15	153	3	0	156	151	0	0	151	0	0	0	0	6	0	0	6	305	60	1	366	249	10	1	260
14:30 to 15:30	154	3	0	157	191	0	0	191	0	0	0	0	2	1	0	3	304	63	5	372	276	4	5	285
14:45 to 15:45	151	1	0	152	211	0	0	211	0	0	1	1	1	1	0	2	323	62	8	393	325	9	8	342
15:00 to 16:00	144	0	0	144	229	0	0	229	0	0	1	1	3	1	0	4	329	58	15	402	370	10	15	395
15:15 to 16:15	139	3	0	142	269	0	0	269	0	0	1	1	3	2	0	5	346	65	16	427	414	11	16	441
15:30 to 16:30	126	4	0	130	266	0	0	266	1	0	1	2	5	1	0	6	350	62	12	424	417	11	12	440
15:45 to 16:45	129	4	0	133	277	0	0	277	1	0	0	1	7	1	0	8	349	54	11	414	425	7	11	443
16:00 to 17:00	118	4	0	122	293	0	0	293	2	0	0	2	6	2	0	8	349	55	3	407	423	7	3	433
16:15 to 17:15	114	1	0	115	297	0	0	297	4	0	0	4	8	1	0	9	333	50	2	385	443	5	2	450
16:30 to 17:30	123	0	0	123	294	0	0	294	5	0	0	5	7	1	0	8	360	47	3	410	505	5	3	513
16:45 to 17:45	129	0	0	129	299	0	0	299	7	0	0	7	4	1	0	5	363	49	1	413	506	5	1	512

17:00 to 18:00	146	0	0	146	287	0	0	287	6	0	0	6	4	0	0	4	387	47	1	435	512	5	1	518
17:15 to 18:15	152	0	0	152	264	1	0	265	4	0	0	4	4	0	0	4	404	45	1	450	490	6	1	497
17:30 to 18:30	152	1	0	153	255	1	0	256	2	0	0	2	3	0	0	3	392	49	0	441	404	6	0	410
17:45 to 18:45	133	1	0	134	229	1	0	230	0	0	0	0	5	0	0	5	354	46	0	400	341	5	0	346
18:00 to 19:00	118	1	0	119	199	1	0	200	0	0	0	0	5	0	0	5	283	46	0	329	297	7	0	304
<b>PM Total</b>	<b>947</b>	<b>11</b>	<b>0</b>	<b>958</b>	<b>1478</b>	<b>2</b>	<b>0</b>	<b>1480</b>	<b>12</b>	<b>2</b>	<b>1</b>	<b>15</b>	<b>36</b>	<b>4</b>	<b>0</b>	<b>40</b>	<b>2254</b>	<b>431</b>	<b>23</b>	<b>2708</b>	<b>2274</b>	<b>57</b>	<b>23</b>	<b>2354</b>

Approach	Bridgman Rd												New England Hwy															
	Direction 7 (Left turn)				Direction 8 (Through)				Direction 9 (Right turn)				Direction 10 (Left turn)				Direction 11 (Through)				Direction 12 (Right turn)							
Time Period 1h	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total	Cars	Trucks	Buses	Total
6:00 to 7:00	332	6	1	339	65	0	0	65	178	5	0	183	22	1	0	23	245	52	1	298	57	1	0	58				
6:15 to 7:15	352	6	2	360	69	0	0	69	155	3	0	158	28	2	0	30	269	56	7	332	71	1	0	72				
6:30 to 7:30	327	4	5	336	77	0	0	77	136	5	0	141	35	5	0	40	304	60	12	376	64	1	0	65				
6:45 to 7:45	310	4	5	319	69	0	0	69	106	6	0	112	40	5	0	45	363	67	12	442	49	0	0	49				
7:00 to 8:00	333	9	4	346	72	0	0	72	103	5	1	109	39	7	2	48	376	55	14	445	35	0	0	35				
7:15 to 8:15	358	11	5	374	85	0	0	85	95	5	1	101	41	6	3	50	385	63	10	458	25	1	0	26				
7:30 to 8:30	435	16	4	455	104	1	0	105	84	3	1	88	36	3	3	42	366	65	7	438	48	1	0	49				
7:45 to 8:45	549	16	7	572	129	1	0	130	79	2	1	82	25	2	3	30	338	69	13	420	74	1	0	75				
8:00 to 9:00	649	12	10	671	153	1	0	154	60	3	1	64	28	0	1	29	372	72	11	455	115	3	0	118				
8:15 to 9:15	703	10	9	722	150	1	0	151	41	4	1	46	23	0	0	23	411	69	11	491	129	2	0	131				
8:30 to 9:30	724	5	8	737	147	0	0	147	30	4	1	35	23	2	1	26	422	68	10	500	138	2	0	140				
8:45 to 9:45	631	5	6	642	137	0	0	137	29	4	1	34	23	4	1	28	416	76	4	496	138	2	0	140				
9:00 to 10:00	425	6	6	437	119	0	0	119	26	3	0	29	20	6	1	27	371	72	3	446	122	1	0	123				
9:15 to 10:15	355	7	6	368	109	0	0	109	24	3	0	27	24	6	1	31	326	78	1	405	111	2	0	113				
9:30 to 10:30	248	14	5	267	100	0	0	100	24	2	0	26	24	4	0	28	313	82	0	395	90	2	0	92				
9:45 to 10:45	227	16	4	247	91	0	0	91	20	3	0	23	29	3	0	32	321	79	0	400	90	3	0	93				
10:00 to 11:00	295	17	2	314	92	0	0	92	18	2	0	20	30	2	0	32	347	93	0	440	84	3	0	87				
10:15 to 11:15	263	16	2	281	97	1	0	98	21	2	0	23	26	4	0	30	354	92	0	446	86	2	0	88				
10:30 to 11:30	253	13	3	269	105	1	0	106	27	3	0	30	26	4	0	30	370	88	0	458	98	2	0	100				
10:45 to 11:45	257	13	3	273	113	1	0	114	28	2	0	30	22	4	0	26	347	79	0	426	93	1	0	94				
11:00 to 12:00	241	13	2	256	103	1	0	104	27	2	0	29	19	3	0	22	342	74	1	417	94	0	0	94				
<b>AM Total</b>	<b>2275</b>	<b>63</b>	<b>25</b>	<b>2363</b>	<b>604</b>	<b>2</b>	<b>0</b>	<b>606</b>	<b>412</b>	<b>20</b>	<b>2</b>	<b>434</b>	<b>158</b>	<b>19</b>	<b>4</b>	<b>181</b>	<b>2053</b>	<b>418</b>	<b>30</b>	<b>2501</b>	<b>507</b>	<b>8</b>	<b>0</b>	<b>515</b>				
12:00 to 13:00	241	10	3	254	90	1	0	91	19	0	0	19	25	4	0	29	406	83	0	489	95	3	0	98				
12:15 to 13:15	253	8	2	263	94	0	0	94	22	0	0	22	25	5	0	30	401	87	0	488	102	2	0	104				
12:30 to 13:30	268	10	0	278	93	0	0	93	20	1	0	21	27	2	0	29	399	91	1	491	104	3	0	107				
12:45 to 13:45	277	10	0	287	99	0	0	99	20	1	0	21	28	3	0	31	382	87	1	470	97	3	0	100				
13:00 to 14:00	282	10	0	292	105	0	0	105	24	1	0	25	29	2	0	31	387	83	1	471	106	1	0	107				
13:15 to 14:15	286	12	0	298	91	0	0	91	33	2	0	35	30	3	0	33	391	89	2	482	98	1	0	99				
13:30 to 14:30	277	12	1	290	87	0	0	87	31	3	0	34	30	4	0	34	407	79	1	487	99	1	0	100				
13:45 to 14:45	275	12	1	288	88	0	0	88	30	6	0	36	34	4	5	43	404	76	1	481	106	1	0	107				
14:00 to 15:00	305	16	2	323	84	0	0	84	28	7	0	35	30	4	6	40	436	77	3	516	107	2	0	109				
14:15 to 15:15	324	15	3	342	90	0	0	90	20	6	0	26	32	3	8	43	498	69	11	578	113	3	0	116				
14:30 to 15:30	374	14	6	394	92	0	0	92	25	5	0	30	32	3	9	44	545	72	15	632	138	3	0	141				
14:45 to 15:45	378	12	10	400	94	0	0	94	27	4	0	31	34	3	4	41	660	84	15	759	165	4	0	169				
15:00 to 16:00	395	8	11	414	87	0	0	87	26	4	0	30	44	3	3	50	697	88	13	798	183	4	0	187				
15:15 to 16:15	399	6	10	415	75	0	0	75	26	5	0	31	69	6	1	76	737	87	5	829	194	3	0	197				
15:30 to 16:30	390	6	7	403	75	1	0	76	21	6	4	31	88	7	0	95	757	78	3	838	172	2	0	174				
15:45 to 16:45	401	5	4	410	68	1	0	69	21	4	4	29	108	7	0	115	712	72	3	787	172	1	0	173				
16:00 to 17:00	409	5	3	417	76	1	0	77	26	3	4	33	118	8	0	126	737	63	3	803	167	0	0	167				
16:15 to 17:15	404	3	3	410	88	1	0	89	22	2	4	28	103	4	0	107	710	68	3	781	158	0	0	158				
16:30 to 17:30	389	1	2	392	92	0	0	92	23	1	0	24	105	2	0	107	661	71	1	733	171	1	0	172				
16:45 to 17:45	405	1	1	407	97	0	0	97	34	1	0	35	101	1	0	102	635	64	3	702	137	1	0	138				

17:00 to 18:00	385	0	0	385	94	0	0	94	27	2	0	29	96	1	0	97	578	59	3	640	129	1	0	130
17:15 to 18:15	402	0	0	402	97	0	0	97	32	2	0	34	102	1	0	103	512	54	2	568	113	1	0	114
17:30 to 18:30	426	0	0	426	97	0	0	97	37	3	0	40	89	1	0	90	466	55	2	523	90	0	0	90
17:45 to 18:45	385	0	0	385	86	0	0	86	26	3	0	29	72	1	0	73	401	51	0	452	86	0	0	86
18:00 to 19:00	341	0	0	341	78	0	0	78	24	3	0	27	63	0	0	63	360	49	0	409	73	0	0	73
<b>PM Total</b>	2358	49	19	2426	614	2	0	616	174	20	4	198	405	22	9	436	3601	502	23	4126	860	11	0	871

prohibited

Time Period (H:Min:Sec)	North Leg - Bridgman		West Leg - New England Hwy			South Leg - Bridgman			Additional Lanes extending on Newton St. to Turn right into Bridgman Rd. - 3th Leg	East Leg - New England Hwy		
	Kerb Lane	Centre Lane	Kerb Lane	Centre Lane	Medium Lane	Kerb Lane	Medium Lane	Kerb Lane		Centre Lane	Medium Lane	
	↙	↓	↘	→	↵	↶	↑	↷		↶	←	↷
6:00:14											1	14
6:00:20	0	11										
6:01:01					3							
6:01:58						5	5		0			
6:02:25										2	0	
6:03:08	0	5										7
6:03:22						5	1		2			
6:03:42					1							
6:03:54			2	3								
6:04:30												9
6:04:44	0	8										
6:05:16						3	0		0			
6:05:45						3	0		0	2	0	
6:05:58										2	1	4
6:06:18	0	7										
6:06:47					2							
6:07:03			3	1								
6:07:59						4	2		8			
6:08:59										1	11	0
6:09:04	0	11										
6:09:41					1							
6:10:36						5	1		4			
6:11:19						1						2
6:11:33	4	8								2	13	
6:12:22					3							
6:12:40			2	3								
6:13:28						5	0		6			
6:14:01						0						2
6:14:24	0	10										
6:14:54										4	13	4
6:15:08			1	2	0							
6:15:18												
6:16:54						0	6		9			
6:17:58	0	11								0	8	
6:18:40				1	1							
6:20:12						5	3		4			
6:21:12										2	7	1
6:21:16	4	18										
6:22:01			1	2	1							
6:22:11						5	2		6			
6:22:53						0						4
6:24:09										3	11	
6:24:14	2	14										
6:24:56					2							
6:25:18			2	7	2							
6:26:14						2	4		9			
6:26:56						0						2
6:27:21	1	9										
6:27:48										2	13	1
6:28:04					6							
6:28:22			2	4								
6:29:45						5	2		4			
6:30:30						0						1
6:30:48	2	10										
6:31:32					3					1	12	
6:31:50			4	4								
6:32:57						4	2		2			
6:33:42						0						1
6:33:52										0	12	1
6:33:54	5	10										
6:34:38					4							
6:34:52			1									
6:35:32						4	1		5			
6:36:37						0						4
6:36:59	2	14										
6:37:02										1	10	0
6:37:41					5							
6:37:58			2	3								
6:38:52						5	3		5			
6:39:56	0	14										
6:40:24										3	9	7
6:40:41				1	3							
6:42:24						4	2		3			
6:43:08						0						4
6:43:21	1	16										
6:43:41										3	9	1
6:44:13					2							
6:44:33			6	4								
6:45:45						3	1		4			
6:46:29						0						4
6:46:43										2	13	0
6:46:48	1	12										
6:47:28					4							
6:47:53			3	5								
6:48:19						5	1		4			
6:48:18						0						5
6:49:29										1	12	2
6:49:45	0	7										
6:50:29					0							
6:50:47			4	8								
6:51:39						5	4		4			
6:51:44	1	7										
6:52:08						2						2
6:52:35										4	12	1
6:53:14					4							
6:53:28			1	2								
6:54:20						1	4		4			
6:55:02						5						5
6:55:20										2	12	0
6:55:25	0	10										
6:56:06					4							
6:56:39			11	8								
6:57:02						5	4		3			
6:57:09	0	10										
6:57:45						0						2
6:57:53					3							
6:58:04										2	11	5
6:58:07			4	9								
6:59:18						3	4		0			
6:59:44						0						4
7:00:04										0	9	0
7:00:21	1	3										
7:00:48					3							
7:00:58						2	1		0			
7:01:22			3	4								
7:01:48										0	12	0
7:01:59	1	6										
7:02:28			1	2	4							
7:03:08						1	1		0			
7:03:36						0						6
7:03:51										1	8	0
7:04:15	0	4										
7:04:39					4							
7:05:07			5	6								
7:05:11						0	2		0			
7:05:42						0						2
7:06:59										2	13	1
7:06:59	1	7										
7:06:55					2							
7:06:54						0	2		0			
7:07:05			2	4								
7:07:20										2	9	4
7:08:01	0	4										
7:08:16						3	1		0			
7:08:38						0						4
7:08:44			3	6								
7:09:19	0	3										
7:09:22					1					1	8	0
7:09:45												
7:10:12			2	9	1							
7:10:25						1	2		0			
7:10:52						0						2
7:11:07										1	11	0
7:11:30	1	4										
7:11:57					2							



Time Period (H:Min:Sec)	North Leg - Bridgman		West Leg - New England Hwy			South Leg - Bridgman			Address: Lane extending on Newton St to turn right into Bridgman Rd - Sth Leg	East Leg - New England Hwy		
	Kerb Lane	Centre Lane	Kerb Lane	Centre Lane	Medium Lane	Kerb Lane	Medium Lane			Kerb Lane	Centre Lane	Medium Lane
	↙	↓	↗	→	↘	↖	↑	↔		↖	←	↗
8:08:58						0	1	0				
8:09:04												
8:09:18			1	2	3							
8:09:40						0						
8:09:55												
8:10:09	0	5								1	7	0
8:10:47						3						
8:10:56						3	1	0				
8:11:14			4	6		0						
8:11:22						0						4
8:11:37										1	9	0
8:11:59	0	7				3	2	0				
8:12:19												
8:12:28					2							
8:12:45			0	0								3
8:12:52						0						
8:13:09										0	5	0
8:13:36	0	1										
8:13:53						0	1	0				
8:13:58					3							
8:14:15						0						3
8:14:17												
8:14:29			7	9								
8:14:53	0	6								0	6	0
8:15:22					0							
8:15:24						4	3	0				
8:15:40			3	2								
8:15:55						0						4
8:16:12										0	0	0
8:16:36	0	2										
8:16:55						0	2	0				
8:17:04					1							
8:17:25			3	7								
8:17:35						0						4
8:18:03	2	7										
8:18:05										1	11	0
8:18:41												
8:19:01			4	3	0							
8:19:22						3	0	0				
8:20:05						0						0
8:20:29	3	12										
8:20:43										1	10	0
8:21:10					4							
8:21:50			3	8		1	2	0				
8:22:08										0	4	6
8:22:50						1	2	0				
8:23:15	0	3										
8:24:13						3	0	0				
8:24:29			3	10								
8:24:46						0						2
8:25:09	0	2										
8:25:10										2	10	0
8:25:52					4							
8:26:05						2	1	0				
8:26:17												
8:26:41			2	9		0						7
8:27:08										0	9	0
8:27:17	0	2										
8:27:45					9							
8:27:54						1	1	0				
8:28:18			3	8								
8:28:28										0	3	1
8:29:02	0	3										
8:29:30						0	0	0				
8:29:48			3	6								
8:29:53												4
8:30:12										2	5	0
8:30:34	0	3										
8:30:56					4							
8:31:02						1	0	0				
8:31:18			3	5								
8:31:26						0						7
8:31:47										0	1	0
8:32:05	1	2										
8:32:32					4							
8:32:52						1	2	0				
8:32:52						0						5
8:32:59			1	2								
8:33:30										3	3	0
8:33:38	0	2										
8:33:56					2							
8:34:13						1	1	0				
8:34:23			2	2								
8:34:28						0						4
8:34:43										2	15	0
8:35:18	0	1										
8:35:38					2							
8:35:56						3	1	0				
8:36:07			1	1								4
8:36:30						0				2	8	0
8:36:42	0	6										
8:37:14					4							
8:37:19						3	1	0				
8:37:35			1	7								
8:37:40						0						6
8:38:01										1	5	0
8:38:24	0	2										
8:38:39						0	2	0				
8:38:45					3							
8:39:02										1	4	2
8:39:07			2	7								
8:39:48	0	2										
8:40:35			3	20								
8:40:38						0	3	0				
8:41:10						0						5
8:41:29										1	1	0
8:41:42	0	10										
8:42:18					3							
8:42:33						3	5	0				
8:42:43												
8:43:08			2	9		0						8
8:43:20										0	9	0
8:43:39	0	7										
8:44:10					5							
8:44:29						1	1	0				
8:44:47			3	4								
8:44:59												0
8:45:23												0
8:45:34	1	6										
8:46:05					3							
8:46:36			7	13								
8:46:38						3	4	0				
8:47:09												7
8:47:45	0	8								3	6	
8:48:18					8							
8:48:42			2	5								
8:48:46						4	3	0				
8:49:20												0
8:49:37										2	7	
8:49:48	0	7										
8:50:28					2							
8:50:42						2	4	0				
8:51:06												3
8:51:11			4	9								
8:51:23										2	4	
8:51:49	0	5										
8:52:09						2	4	5				
8:52:14					4							
8:52:49			1	6								
8:52:41												0
8:52:58										1	2	
8:53:14	0	3										
8:53:47					2							
8:54:04						3	2	0				
8:54:21			2	6								9
8:54:39												
8:55:07	0	7										
8:55:20										2	10	



Time Period (H:Min:Sec)	North Leg - Bridgman		West Leg - New England Hwy			South Leg - Bridgman		Additional Lanes extending on Newton St to turn right into Bridgman Rd - Sth Leg	East Leg - New England Hwy			
	Kerb Lane	Centre Lane	Kerb Lane	Centre Lane	Medium Lane	Kerb Lane	Medium Lane		Kerb Lane	Centre Lane	Medium Lane	
	↙	↓	↘	→	↘	↙	↑		↔	↙	←	↘
9:41:28						2						
9:41:40							3	4		2		
9:41:41			0	1								
9:42:00							0					3
9:42:11										0	2	
9:42:42	0	3										
9:43:05						2						
9:43:22							4	3		1		
9:43:23			3	10								
9:43:44												1
9:44:28	1	4										
9:44:29										0	3	
9:44:52						1						
9:44:57							2	3		0		
9:45:14							0					2
9:45:21			1	4								
9:45:38										0	4	
9:46:04	0	0										
9:46:22						4						
9:46:35							2	5		1		
9:46:38			2	3								
9:47:02												6
9:47:17										1	4	
9:47:41	0	3										
9:48:07						1						
9:48:11							2	4		1		
9:48:32							0					2
9:48:35			0	4								
9:48:49										0	3	
9:49:17	0	1										
9:49:25							3	2		0		
9:49:38						2						
9:49:56			2	3								
9:49:59							0					4
9:50:23										0	4	
9:50:34	0	1										
9:51:01						2	1	4		1		
9:51:02												2
9:51:20							0					
9:51:28			2	1								
9:51:38										0	1	
9:52:07	0	0										
9:52:20							1	3		0		
9:52:30						1						
9:52:43							0					5
9:52:46			0	6								
9:53:05										0	5	
9:53:29	0	3										
9:53:45							2	4		2		
9:53:49						4						
9:54:11							0					3
9:54:13			0	0								
9:54:31										0	5	
9:54:50	0	2										
9:55:17						2						
9:55:18							1	4		1		
9:55:36			1	3								
9:55:40							2					5
9:56:00						1				0	0	
9:56:25	0	0										
9:56:50												
9:56:57							3	4		0		
9:57:14			2	6								
9:57:18							0					1
9:57:29										3	4	
9:57:42	1	2										
9:58:10							0	4		0		
9:58:22						45						
9:58:41							0					1
9:58:51			0	2								
9:59:03										0	0	
9:59:25	0	3										
9:59:29						3	1	0		0		
9:59:48												
9:59:54							0					2
10:00:03			0	3								
10:00:12										1	0	
10:00:43	0	1										
10:00:45							2	0		0		
10:00:57												
10:01:05						1						5
10:01:14			2	2								
10:01:18										1	5	
10:01:51		30										
10:01:59							3	4		0		
10:02:10						1						
10:02:23							0					2
10:02:32			1	2								
10:02:40										2	4	
10:03:02	0	2										
10:03:23						1						
10:03:39							1	3		0		
10:03:44			2	10								
10:04:09							0					1
10:04:30										0	4	
10:04:46	0	4										
10:05:15						4						
10:05:28							1	2		0		
10:05:47							0					5
10:05:55			3	4								
10:06:00										0	5	
10:06:17	0	1										
10:06:39							2	0		0		
10:06:53							0					2
10:06:58						0						
10:07:12										1	4	
10:07:15			3	4								
10:07:44												
10:07:53	0	1					0	2		0		
10:07:58						4						
10:08:14			2	4								
10:08:16							0					3
10:08:31										0	2	
10:08:59	0	1										
10:09:11						1	1	2		0		
10:09:23												
10:09:43							0					3
10:09:45			2	2								
10:09:57										2	4	
10:10:15	0	1										
10:10:45							4	4				
10:10:49						1						
10:11:13							0					1
10:11:15			0	1								
10:11:34										1	2	
10:11:50	0	2										
10:12:20						3						
10:12:34							4	2		4		
10:12:51			4	6								
10:12:56							0					4
10:13:31										0	5	
10:13:43	1	1										
10:14:40						0						
10:14:55							2	4		0		
10:14:22			1	5								
10:14:26							0					5
10:15:04	1	2					0	2		0		
10:15:25							0					
10:15:46							0					2
10:15:59			2	2						0	1	
10:16:04												
10:16:31	0	5										
10:16:52							1	4		0		
10:16:55												
10:17:09			2	3	2							
10:17:34							0					6
10:17:52										2	4	
10:18:16	0	5										
10:18:23							0					1
10:18:40						3						



Time Period (H:Min:Sec)	North Leg - Bridgman		West Leg - New England Hwy			South Leg - Bridgman			East Leg - New England Hwy			
	Kerb Lane	Centre Lane	Kerb Lane	Centre Lane	Medium Lane	Kerb Lane	Medium Lane	← Turn right into Bridgman Rd - Sth Leg	Kerb Lane	Centre Lane	Medium Lane	
	↙	↓	↘	→	↵	↶	↑	↗	↶	←	↵	
11:00:21										1	9	
11:00:44												
11:01:27			4	5	3							
11:01:34						3	4	2				
11:01:56												7
11:02:38										0	3	
11:02:41	0	2										
11:03:22					4							
11:03:33						1	1	0				
11:04:05			5	8								
11:04:15												3
11:04:30										0	8	
11:04:39	0	4										
11:05:20					2							
11:06:43			2	11	2							
11:05:58						6	0	0				
11:06:22												6
11:06:40										0	5	
11:07:01	1	2										
11:07:29					1							
11:07:35						1	3	0				
11:07:56												3
11:07:57			1	3								
11:08:18									2	3		
11:08:41	0	0										
11:08:53					4	2	4	0				
11:09:01												
11:09:18												2
11:09:22			2	1								
11:09:38									2	3		
11:09:57	0	0										
11:10:21					0							
11:10:27						0	2	0				
11:10:48			2	5								
11:10:57												6
11:11:13									1	1		
11:11:42	0	1										
11:12:04					2	2	4	0				
11:12:27												4
11:12:33			2	2								
11:13:06									0	6		
11:13:10	0	4										
11:13:22					3							
11:13:55			4	0	3							
11:14:02						0	4	4				
11:14:32												5
11:14:40									1	7		
11:15:05	0	2										
11:15:30					4	0	3	0				
11:15:36												1
11:15:47												
11:16:02			2	3								
11:16:07									1	2		
11:16:33	0	2										
11:16:45						2	4	4				
11:16:51					2							
11:17:07			1	3	2							
11:17:12												4
11:17:24									1	10		
11:17:47	0	1										
11:18:18					1							
11:18:25						1	4	0				
11:18:40												2
11:18:45			3	6								
11:18:25	1	1										
11:19:29									2	5		
11:19:46					1							
11:20:05			1	2								
11:20:30						1	4	2				0
11:20:56												
11:21:21	0	4										
11:21:40									0	10		
11:22:02					2							
11:22:30			4	9								
11:22:36						2	2	0				
11:23:10												0
11:23:33									0	5		
11:23:43	0	8										
11:24:16					4							
11:24:25						2	2	0				
11:24:46												3
11:24:57			3	8								
11:25:17									1	4		
11:25:31	0	3										
11:25:48					3							
11:26:03						3	4	2				
11:26:09			2	4								
11:26:31												5
11:26:57									0	8		
11:27:08	0	7										
11:27:29						1	1	0				
11:27:37					5							
11:27:50												4
11:27:54			2	3								
11:28:38	0	2										
11:28:45									1	4		
11:28:55					3							
11:29:11						1	4	2				
11:29:27			1	5								
11:30:05												8
11:30:40	0	7										
11:31:00					2				4	13		
11:31:12												
11:31:54			2	2								
11:32:08						2	3	0				
11:32:38												7
11:32:54									0	6		
11:33:10	1	5										
11:33:45					2							
11:33:49						2	1	0				
11:34:09												4
11:34:10			1	2								
11:34:56	0	1										
11:35:04					1				0	12		
11:35:15												
11:35:33			0	0								
11:35:51						4	5	5				
11:36:28												9
11:36:57	0	1										
11:37:16									1	7		
11:37:28					8							
11:38:09						3	4	1				
11:38:18			1	4								
11:38:34												6
11:38:49									1	2		
11:39:15	0	1										
11:39:38					2							
11:39:40						6	4	2				
11:39:59			1	2								
11:40:10												3
11:40:25									0	5		
11:40:46	0	5										
11:41:16					2							
11:41:18						2	3	0				
11:41:26			2	3								
11:41:52												9
11:42:10									0	6		
11:42:24	0	3										
11:42:57					3							
11:43:14						2	5	0				
11:43:34												1
11:43:42			4	8								
11:43:48									0	2		
11:44:20	0	2										
11:44:34						1	0	0				2
11:44:41												
11:44:52					0							
11:44:55			2	5					0	4		
11:45:22						0	4	4				



Time Period (H:Min:Sec)	North Leg - Bridgman		West Leg - New England Hwy			South Leg - Bridgeman			East Leg - New England Hwy		
	Kerb Lane	Centre Lane	Kerb Lane	Centre Lane	Medium Lane	Kerb Lane	Medium Lane	Address: Lane extending on Newton St to turn right into Bridgeman Rd - Sth Leg	Kerb Lane	Centre Lane	Medium Lane
	↙	↓	↘	→	↘	↙	↑	↘	↙	←	↘
12:30:16											
12:30:24	0	3								0	4
12:30:57						1	5	1			
12:31:09					4					1	2
12:31:22			2	0							7
12:32:02	0	3									
12:32:37						4	5	0			
12:32:59			0	2							
12:33:07											2
12:33:34									3	6	
12:33:42	0	0			7						
12:34:14											
12:34:36			0	2		0	4	4			
12:34:37											
12:35:00											2
12:35:27									2	5	
12:35:42	0	1									
12:36:08					5						
12:36:45			5	0		4	3	1			
12:36:46											
12:37:14											7
12:37:28										1	5
12:37:52	0	3									
12:38:18						2	3	0			
12:38:19					2						
12:38:42									1	3	4
12:38:50			3	7							
12:39:24	0	1									
12:39:40						3	4	1			
12:40:10			2	0							
12:40:13											2
12:40:23									1	6	
12:40:48	0	0									
12:41:05						1	1	0			
12:41:20					4						
12:41:24											7
12:41:38			1	5							
12:41:57									0	7	
12:42:12	0	3									
12:42:45					2						
12:42:57			1	4							
12:43:27						2	4	4			
12:43:29											14
12:43:56									0	4	
12:44:04	0	2									
12:44:36					3						
12:44:58						2	3	0			
12:45:18											6
12:45:28			6	5							
12:45:41									1	11	
12:46:07	0	0									
12:46:28					2						
12:46:39						2	4	4			
12:46:51			2	2							
12:47:12											0
12:47:28									0	3	
12:47:43	0	3									
12:48:17					2						
12:48:23						2	2	0			
12:48:40											3
12:48:51			2	7							
12:48:56									0	4	
12:49:29	0	2									
12:49:25					2		1	4	1		
12:49:48											
12:49:56											7
12:50:09			2	1							
12:50:20									0	2	
12:50:42	0	1									
12:50:59						5	3	2			
12:51:03					1						
12:51:23											3
12:51:30			2	3							
12:51:39									0	3	
12:52:06	0	5				3	5	0			
12:52:25											
12:52:29					2						
12:52:50											7
12:52:53			2	5							
12:53:32	0	4							2	4	
12:53:44											
12:53:57					3						
12:54:24						2	3	0			
12:54:28			3	14							
12:54:39											0
12:55:20	0	0									
12:55:36									1	4	
12:55:48					1						
12:56:07			4	3							
12:56:19						1	2	0			
12:56:42											6
12:57:27	0	4							0	4	
12:57:36											
12:57:47					1						
12:58:18			4	4							
12:58:24						1	3	0			
12:58:42											0
12:59:26	0	2									
12:59:36									0	8	
12:59:46					0						
13:00:24						0	4	4			
13:00:26			3	5							
13:00:56											9
13:01:29	0	3									
13:01:50									2	9	
13:02:01											0
13:02:02					3						
13:02:37			4	7							
13:02:40						1	4	0			
13:03:48	0	4									
13:03:57									1	2	
13:04:09					2						
13:04:41			2	3							
13:04:46						2	3	0			
13:05:09											9
13:05:38									0	1	
13:05:53	0	3									
13:06:14					2						
13:06:48			3	4							
13:07:37						5	4	5			
13:08:08											9
13:08:42	0	5									
13:09:00									1	9	
13:09:15					3						
13:09:47			6	11							
13:10:00						2	5	4			
13:10:36											7
13:11:04	0	5									
13:11:29									1	12	
13:11:41					0						
13:12:15			4	11							
13:12:40						4	1	0			
13:13:17											10
13:13:49	0	9									
13:14:10									0	7	
13:14:20					2						
13:14:56						2	4	4			
13:15:03			1	0							
13:15:22											5
13:15:37									2	5	
13:15:52	1	2									
13:16:28					1						
13:16:38						0	4	5			
13:16:53			2	5							
13:17:01											3
13:17:22									2	2	
13:17:45	0	2									
13:18:07					2						
13:18:16						1	3	0			









LOCATION  
CLIENT  
PERIOD

SITE 2, BRIDGMAN RD & NEW ENGLAND HWY  
PB  
@100 - 19:00 (13 HRS)

DATE 3-Aug-18  
WEATHER FINE

Time Period (H:Min:Sec)	North Leg - Bridgman		West Leg - New England Hwy			South Leg - Bridgman		Address: Lane extending on Newton St to turn right into Bridgman Rd. SW Leg	East Leg - New England Hwy			
	Kerb Lane	Centre Lane	Kerb Lane	Centre Lane	Medium Lane	Kerb Lane	Medium Lane		Kerb Lane	Centre Lane	Medium Lane	
	↙	↓	↘	→	↘	↙	↑		↙	←	↘	
15:28:03					3							
15:28:26												
15:28:41			7	8		0	5		7			
15:29:09												12
15:29:21	0	4										
15:30:04					2					1	8	
15:30:34						0	5		3			
15:30:46			7	18								
15:31:05												12
15:31:38										0	5	
15:31:41	0	5										
15:32:14					7							
15:32:40						0	4		7			
15:33:00			9	19								
15:33:16												18
15:33:51	0	5										
15:33:58										2	11	
15:34:23												
15:34:59					14							
15:35:10			7	16								
15:35:32												18
15:36:04	0	7										
15:36:21										0	7	
15:36:38					2							
15:37:15						3	4		5			
15:37:26			18	36								
15:37:40												5
15:38:08										1	6	
15:38:18	0	6										
15:38:46					4							
15:39:37			14	24								
15:39:38							5		7			
15:40:19												14
15:40:43	0	9										
15:40:47										1	5	
15:41:16					9							
15:42:00			8	19								
15:42:03						0	4		6			
15:42:35												18
15:42:55										1	2	
15:43:08	0	6										
15:43:39					4							
15:44:25						3	4		5			
15:44:27			7	15								
15:44:59												12
15:45:33	0	2										
15:45:47										1	6	
15:46:03					9							
15:46:49						0	4		4			
15:46:51			14	26								
15:47:19												11
15:47:56	0	8										
15:47:56										2	11	
15:48:34												
15:49:06			15	20								
15:49:07						3	4		4			
15:49:25												9
15:50:10										1	12	
15:50:13	0	4										
15:50:40					2							
15:51:29			8	11								
15:51:30						0	4		6			
15:51:56												12
15:52:10										0	4	
15:52:36	0	8										
15:53:02					1							
15:53:46						2	4		5			
15:53:48												
15:54:11			9	12								8
15:54:36										0	1	
15:54:53	0	3										
15:55:16					4							
15:55:58			5	6								
15:56:16						0	5		8			
15:56:34										0	2	
15:57:00												10
15:57:16	1	1										
15:57:39					4							
15:58:04						1	4		5			
15:58:21			3	7								
15:58:29												6
15:58:54										1	4	
15:59:11	0	4										
15:59:35					5							
16:00:29			7	10								
16:00:38						2	5		8			
16:01:08												15
16:01:38										0	3	
16:01:47	0	6										
16:02:15					7							
16:03:04			8	23								
16:03:08						1	4		5			
16:03:37												16
16:04:16	0	3								0	4	
16:04:43					3							
16:05:19						5	4		7			
16:05:25			8	19								
16:05:48												15
16:06:11										0	12	
16:06:27	0	3										
16:06:54					4							
16:07:24						1	4		6			
16:08:01												18
16:08:13			7	14								
16:08:26										2	9	
16:08:44	0	5										
16:09:05					8							
16:09:53			6	17								
16:09:54						1	4		8			
16:10:29												12
16:10:52	0	8								1	5	
16:11:09												
16:11:26												
16:12:00						1	4		7			
16:12:13			6	7								
16:12:36												18
16:13:14	0	4								2	11	
16:13:44					3							
16:14:26						1	4		9			
16:14:32			3	19								
16:14:51												18
16:15:18	0	5								1	5	
16:15:33												
16:15:59					8							
16:16:36						1	4		12			
16:16:48			3	15								
16:17:02												17
16:17:21										1	3	
16:17:43	1	6										
16:18:08					2							
16:18:58			6	17								
16:19:50						0	5		8			
16:20:26												18
16:20:51										1	2	
16:20:52	0	5										
16:21:29					4							
16:21:46						0	5		11			
16:21:58												23
16:22:12												
16:22:34	0	4								0	11	
16:22:21					1							
16:22:57						0	4		12			
16:24:19			9	15								
16:24:26												11
16:25:06										1	6	
16:25:37	0	4										
16:25:43					5							
16:26:14			13	16								
16:26:46						0	4		12			
16:27:08												15
16:27:52										2	5	
16:27:47	0	4										
16:28:14					6							
16:28:35			8	15		1	5		9			
16:28:58												10
16:29:22										2	8	

Time Period (H:Min:Sec)	North Leg - Bridgman		West Leg - New England Hwy			South Leg - Bridgman		Address: Lane extending on Newton St to turn right into Bridgman Rd - Sth Leg	East Leg - New England Hwy			
	Kerb Lane	Centre Lane	Kerb Lane	Centre Lane	Medium Lane	Kerb Lane	Medium Lane		Kerb Lane	Centre Lane	Medium Lane	
	↙	↓	↗	→	↘	↖	↑		↔	↖	←	↗
16:29:40	0	4			4							
16:30:04												
16:30:28			2	7		1	4		9			
16:30:52												16
16:31:16	0	3								1	6	
16:31:40					7							
16:32:04						1	4		17			
16:32:28			12	21								
16:32:52												19
16:33:16	0	4								2	9	
16:33:40					4							
16:34:04			6	11		2	4		15			
16:34:28												10
16:34:52	0	2								0	1	
16:35:16												
16:35:40					2							
16:36:04						1	4		12			
16:36:28			13	20								8
16:36:52										2	6	
16:37:16	0	4										
16:37:40					5							
16:38:04						0	6		11			
16:38:28			8	13								18
16:38:52										1	6	
16:39:16	1	3										
16:39:40					8							
16:40:04			9	26		6	4		12			
16:40:28												21
16:40:52	0	3								6	7	
16:41:16					4							
16:41:40			13	12		0	5		7			
16:42:04												14
16:42:28										6	4	
16:42:52	0	2										
16:43:16					5							
16:43:40						3	4		7			
16:44:04			7	15								11
16:44:28										1	3	
16:44:52	0	6			1							
16:45:16						3	4		9			
16:45:40			11	14								13
16:46:04					5					1	6	
16:46:28	0	7										
16:46:52												
16:47:16			0	10		1	4		6			
16:47:40												14
16:48:04	1	5			4					2	4	
16:48:28						2	5		6			
16:48:52			6	6								18
16:49:16										1	11	
16:49:40	0	3			6							
16:49:52						1	4		10			
16:50:16			8	15								20
16:50:40										2	5	
16:51:04	0	6			4							
16:51:28						1	4		14			
16:51:52			9	12								8
16:52:16										2	11	
16:52:40	1	2			6				16			
16:53:04			12	18		0	4					16
16:53:28										2	8	
16:53:52	0	3			7				18			
16:54:16			9	12		0	5					22
16:54:40										3	5	
16:55:04	0	4			8							
16:55:28						2	5		8			
16:55:52			16	19								25
16:56:16					4					2	4	
16:56:40	0	2				1	4		12			
16:57:04			7	12								17
16:57:28										0	8	
16:57:52	0	3			3				15			
16:58:16			9	17		0	5					21
16:58:40										3	5	
16:59:04	0	3			4				17			
16:59:28			11	20		0	5					23
16:59:52										0	9	
17:00:16	0	4			7							
17:00:40			18	15		0	4		17			
17:01:04												16
17:01:28	0	2			4					2	6	
17:01:52			12	16								15
17:02:16										1	9	
17:02:40	0	2										
17:03:04					3							
17:03:28			7	12		1	5		16			
17:03:52												17
17:04:16										0	8	
17:04:40	0	3										
17:05:04					3				15			
17:05:28			9	17								21
17:05:52										3	5	
17:06:16	0	3			4							
17:06:40						0	5		17			
17:07:04			11	20								23
17:07:28										0	9	
17:07:52	0	4			7							
17:08:16												
17:08:40			15	20		2	4		13			
17:09:04												27
17:09:28	0	2								1	10	
17:09:52					4							
17:10:16			9	23		0	4		12			
17:10:40												28
17:11:04	0	1			4				16			
17:11:28			10	22		0	5					
17:11:52										0	12	
17:12:16	0	5										
17:12:40					4				12			
17:13:04												26
17:13:28			11	22								
17:13:52												28
17:14:16	0	2										
17:14:40					4							
17:15:04			15	20		2	4		13			
17:15:28												27
17:15:52	0	2								1	10	
17:16:16					4							
17:16:40			9	23		0	4		12			
17:17:04												28
17:17:28	0	1			4				16			
17:17:52			10	22		0	5					
17:18:16										0	12	
17:18:40	0	5										
17:19:04					4				15			
17:19:28										2	6	
17:19:52	0	5										15
17:20:16												
17:20:40			9	14		4	5		15			
17:21:04										1	8	
17:21:28	0	5										18
17:21:52												
17:22:16					4							
17:22:40						2	4		12			
17:23:04			8	13								14
17:23:28										0	9	
17:23:52	0	4			5							
17:24:16						3	5		18			
17:24:40			13	22								16
17:25:04										1	10	
17:25:28	0	1			4				15			
17:25:52						1	5					
17:26:16			8	12								15
17:26:40										2	6	
17:27:04	0	5										
17:27:28					4				15			
17:27:52												18
17:28:16												
17:28:40	0	5										
17:29:04												20
17:29:28			11	22								
17:29:52												21
17:30:16										1	7	
17:30:40	1	4			5							
17:31:04						1	4		17			
17:31:28			11	22								20
17:31:52										1	8	
17:32:16	0	6										
17:32:40					4							
17:33:04			13	17		0	4		15			
17:33:28												25
17:33:52	0	11								3	9	
17:34:16					6				15			
17:34:40			8	9		3						

Time Period (H:Min:Sec)	North Leg - Bridgman		West Leg - New England Hwy			South Leg - Bridgman		Additional: Lane to Turn right into Bridgman Rd - SW Leg	East Leg - New England Hwy		
	Kerb Lane	Centre Lane	Kerb Lane	Centre Lane	Medium Lane	Kerb Lane	Medium Lane		Kerb Lane	Centre Lane	Medium Lane
	↙	↓	↘	→	↵	↶	↑		↗	←	↵
17:40:40					3			14			
17:41:10											
17:41:16	0	6									
17:41:30											
17:41:49			4	0							13
17:41:56									0	0	
17:42:15	0	3									
17:42:45					2						
17:43:10						1	4	17			
17:43:27			11	14							
17:43:36											
17:43:54									1	0	18
17:44:15	0	4									
17:44:46					3						
17:45:20			2	0							
17:45:50						5	3	9			
17:46:19											
17:46:36									0	7	20
17:46:55	0	5									
17:47:23					3						
17:48:15			13	16							
17:48:29						2	5	5			
17:48:55											23
17:49:43	0	3							4	11	
17:49:59					3						
17:50:24						0	4	11			
17:50:52			4	0							
17:50:57											
17:51:29	0	0							2	13	11
17:51:31											
17:52:02					7						
17:52:38			4	0		1	5	11			
17:52:43											
17:53:06											
17:53:17	0	2			7				2	7	12
17:53:49											
17:54:20						2	4	9			
17:54:29			12	12							
17:54:59									1	0	0
17:55:35	0	4									
17:56:06			9	7		1	4	2			
17:56:27											
17:56:36											10
17:56:54									0	1	
17:57:15	0	0			2						
17:58:17			1	1	2						
17:58:22											
17:58:54						1	4	9			10
17:59:00									0	4	
17:59:29	0	2									
17:59:49					2	4	2	6			
17:59:49											
18:00:17											0
18:00:29			2	2					1	4	
18:00:35											
18:00:56	0	3									
18:01:24					2						
18:01:52			1	1	2						
18:01:58						3	4	3			
18:02:25											
18:02:42									1	1	0
18:03:05	0	4									
18:03:20					3						
18:03:40						2	4	9			
18:04:08			0	10							
18:04:14											14
18:04:33									2	9	
18:04:46	0	4									
18:05:10					0						
18:05:11			0	11							
18:05:35						3	4	0			
18:07:41	0	6							0	0	22
18:09:00											
18:09:05			0	14		4	5	7			
18:09:26											10
18:09:44									5	0	
18:10:07	0	2			3						
18:11:05			0	2	3						
18:11:56						1	4	12			
18:12:26									1	4	14
18:13:02	0	1									
18:13:24					2						
18:13:46						2	4	11			
18:14:17			0	0		2	4				
18:15:21											11
18:14:45									2	0	
18:15:52	0	3			0						
18:15:30						2	3	0			
18:15:57											12
18:16:12	0	3	4	0							
18:16:43											
18:16:47					0				0	12	
18:17:00			3	5	0						
18:17:40											
18:18:24						4	5	0			
18:19:13											
18:19:27									0	7	10
18:19:41	0	7									
18:20:16					0						
18:21:07			0	12							
18:21:54						4	4	11			
18:22:34											10
18:22:54	1	6									
18:23:00									3	14	
18:23:30					0						
18:24:25			4	0							
18:25:19						2	3	13			
18:25:47									0	2	0
18:26:07											
18:26:22	0	4									
18:27:52					4						
18:27:26			3	5		0	5	3			
18:27:56											13
18:27:52									0	6	
18:28:06	0	0									
18:28:39					2						
18:29:00						3	4	3			
18:29:22			3	2							
18:29:26											
18:30:04	0	0							1	0	0
18:30:24						0	3	2			
18:30:29											
18:30:53											0
18:31:00			4	0							
18:31:31	0	1							0	4	
18:31:42					1	2	3	1			
18:31:50											
18:32:06			1	1							0
18:32:45	0	2							0	2	
18:33:04											
18:33:10					1	0	4	2			
18:33:20											0
18:33:33			1	1							
18:34:07									0	6	
18:34:09	0	2									
18:34:40					4	1	4	6			
18:35:00			2	5							
18:35:18											2
18:35:44									0	4	
18:35:50	0	1									
18:36:10					0	1	3	0			
18:36:25											
18:36:36											0
18:36:41			1	5							
18:37:20	0	2							1	0	
18:37:42					1						
18:38:01											
18:38:05						4	5	0			
18:38:30											0
18:39:14	0	0							1	0	
18:39:25					1						
18:40:04						1	4	0			
18:40:09											
18:40:24											10
18:41:26	0	2									
18:41:30											
18:41:33					0				0	1	
18:42:00						0	4	3			
18:42:11			0	0							
18:42:26											10
18:42:46									0	1	
18:43:10	0	1			2						
18:43:40						1	2	0			
18:44:03											0
18:44:10			0	0							
18:44:45	0	3	0	0					1	2	
18:44:50											
18:45:00					0						
18:45:25						2	4	6			
18:45:40											0
18:46:29	0	0							1	4	
18:46:50											
18:47:09					1						
18:47:41						3	4	0			
18:47:54			2	4							



LOCATION: SITE 2, BRIDGMAN RD & NEW ENGLAND HWY  
 CLIENT: PB  
 PERIOD: 6:00 - 19:00 (13 HRS)  
 DATE: 3-Aug-18  
 WEATHER: FINE

Time Period (H:Min:Sec)	North Leg - Bridgman		West Leg - New England Hwy			South Leg - Bridgeman		Address: Unsub: extending on Newton St to turn right into Bridgeman Rd - Sth Leg	East Leg - New England Hwy				
	Kerb Lane	Centre Lane	Kerb Lane	Centre Lane	Medium Lane	Kerb Lane	Medium Lane		Kerb Lane	Centre Lane	Medium Lane		
	↙	↓	↘	→	↵	↶	↑		↗	←	↵		
18:48:02											1	3	0
18:48:15													
18:48:28	0	1			1								
18:48:41													
18:48:54			1	2									0
18:49:07													
18:49:20	0	0					1	0	0				
18:49:33													
18:49:46					2								4
18:49:59													
18:50:12			0	2							1	3	
18:50:25													
18:50:38	0	3					1	1	0				
18:50:51					1								
18:51:04													
18:51:17			2	0							0	4	2
18:51:30	0	0											
18:51:43													
18:51:56			2	0									
18:52:09													
18:52:22													
18:52:35					2		0	2	0				
18:52:48													
18:53:01			0	1									2
18:53:14													
18:53:27											0	1	
18:53:40	0	3					0	1	0				
18:53:53													
18:54:06											0	7	4
18:54:19			0	0									
18:54:32	0	0	0	0	2								
18:54:45													
18:54:58													
18:55:11			0	4			2	4	2				
18:55:24													1
18:55:37	0	2											
18:55:50											1	4	
18:56:03													
18:56:16					1		0	0	0				
18:56:29													10
18:56:42			0	2							0	0	
18:56:55													
18:57:08					1								
18:57:21	0	1					0	4	2				
18:57:34													
18:57:47			0	0									3
18:58:00			0	0							0	1	
18:58:13													
18:58:26	0	1											0
18:58:39													
18:58:52					1		2	2	0				
18:59:05													
18:59:18													3
18:59:31													
18:59:44													

\* Notes: A road works truck blocked the right turning lane from 7:21:39 - 8:09:02 on West Leg of New England Hwy

## **Appendix C**

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RTA IDM survey data  
(August 2010)



# Intersection Diagnostic Monitor (IDM) Data

for TCS 3626

New England Highway and Bridgman Road, SINGLETON

10:30 – 00:00

Tuesday 03.08.2010

**Statistics** X

Statistics for I=3626 from TUE 3-AUG-2010 10:31 to TUE 3-AUG-2010 10:45 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	33	116	49	48	445						1			1	
B												2	1		2	2
C												3	6	9	3	1
D	9	17	31	22	22	199						4	2		4	16
E	9	18	54	30	30	276						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	79	167	102								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

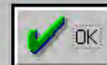


**Statistics** X

Statistics for I=3626 from TUE 3-AUG-2010 10:45 to TUE 3-AUG-2010 11:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	37	72	44	42	448						1	1		1	
B												2	9		2	1
C												3		10	3	3
D	10	17	33	25	24	253						4			4	18
E	10	18	54	35	34	355						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	80	130	105								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 11:00 to TUE 3-AUG-2010 11:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	34	77	48	43	434						1	9		1	1
B												2			2	
C												3		9	3	
D	9	19	42	29	26	262						4			4	16
E	9	22	54	35	32	323						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	76	158	113								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

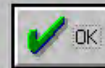


**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 11:15 to TUE 3-AUG-2010 11:29 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	33	59	43	42	391						1	7		1	
B												2	2		2	
C												3		9	3	
D	9	17	32	25	25	228						4			4	16
E	9	22	55	33	33	305						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	72	133	102								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 11:29 to TUE 3-AUG-2010 11:45 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	35	67	47	42	428						1	9		1	
B												2			2	1
C												3		9	3	
D	9	19	33	27	24	248						4			4	14
E	9	19	54	39	34	355						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	87	150	114								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 11:45 to TUE 3-AUG-2010 12:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	32	56	40	39	407						1	10		1	
B												2			2	3
C												3		10	3	
D	9	18	42	27	24	245						4			4	15
E	10	14	55	38	37	383						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	60	140	103								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 12:00 to TUE 3-AUG-2010 12:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	33	61	43	46	477						1	6		1	
B												2	3		2	2
C												3	2	11	3	1
D	11	17	35	24	26	267						4			4	13
E	11	18	34	25	28	283						5			5	
F												6			6	
G												7			7	
Act. Cycle	11	81	112	93								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 12:15 to TUE 3-AUG-2010 12:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	28	66	45	43	407						1			1	
B												2	4		2	1
C												3	5	9	3	2
D	9	16	39	26	25	237						4			4	11
E	9	14	54	33	32	297						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	61	142	104								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 12:30 to TUE 3-AUG-2010 12:44 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	28	66	43	47	438						1			1	
B												2	10		2	3
C												3		10	3	1
D	9	17	33	25	24	227						4			4	15
E	10	14	38	27	29	275						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	61	130	94								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

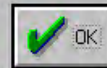


**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 12:44 to TUE 3-AUG-2010 13:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	32	61	41	41	419						1			1	
B												2	10		2	1
C												3		10	3	3
D	10	17	33	22	22	229						4			4	14
E	10	23	55	38	37	386						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	72	122	103								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 13:00 to TUE 3-AUG-2010 13:16 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	36	115	59	43	476						1	5		1	
B												2	3		2	1
C												3		8	3	4
D	8	20	36	27	20	219						4			4	18
E	8	33	55	51	37	413						5			5	
F												6			6	
G												7			7	
Act. Cycle	8	122	170	138								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 13:16 to TUE 3-AUG-2010 13:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	28	58	43	42	392						1	1		1	
B												2	7		2	1
C												3	1	9	3	2
D	9	19	36	26	25	238						4			4	16
E	9	19	55	34	33	313						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	71	133	104								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

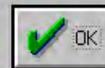


**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 13:30 to TUE 3-AUG-2010 13:44 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	32	115	57	47	461						1	2		1	
B												2	6		2	
C												3		8	3	4
D	8	19	29	22	18	182						4			4	12
E	8	22	55	43	35	348						5			5	
F												6			6	
G												7			7	
Act. Cycle	8	87	177	123								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 13:44 to TUE 3-AUG-2010 14:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	30	59	44	47	492						1			1	
B												2	8		2	7
C												3	3	11	3	5
D	11	17	33	27	29	302						4			4	20
E	10	16	52	26	25	263						5			5	
F												6			6	
G												7			7	
Act. Cycle	11	83	109	96								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 14:00 to TUE 3-AUG-2010 14:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	29	60	43	47	475						1			1	
B												2	6		2	4
C												3	5	11	3	2
D	10	18	33	25	26	257						4			4	18
E	10	14	46	27	27	273						5			5	
F												6			6	
G												7			7	
Act. Cycle	11	48	131	91								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 14:15 to TUE 3-AUG-2010 14:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	24	50	41	41	414						1	8		1	
B												2	2		2	1
C												3		10	3	
D	10	17	33	22	22	222						4			4	
E	10	22	54	36	36	364						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	72	128	100								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 14:30 to TUE 3-AUG-2010 14:45 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	35	51	42	40	384						1	8		1	
B												2	1		2	2
C												3		9	3	
D	9	16	42	30	29	277						4			4	
E	9	20	54	33	31	302						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	79	129	107								8			8	
Nom. Cycle																

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 14:45 to TUE 3-AUG-2010 15:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	36	49	42	45	462	5					1	5		1	
B												2	4		2	2
C												3	2	11	3	
D	11	14	33	24	26	265	4					4			4	
E	11	20	47	28	30	311	4					5			5	
F												6			6	
G												7			7	
Act. Cycle	11	80	105	94								8			8	
Nom. Cycle	4	80	91	82												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 15:00 to TUE 3-AUG-2010 15:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	34	54	45	50	495	11					1			1	
B												2	1		2	
C												3	7	11	3	
D	11	12	21	16	19	184	11					4	3		4	
E	11	19	45	28	31	308	11					5			5	
F												6			6	
G												7			7	
Act. Cycle	11	75	112	89								8			8	
Nom. Cycle	11	80	101	89												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 15:15 to TUE 3-AUG-2010 15:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	48	55	50	46	452	9					1	2		1	
B												2	5		2	
C												3	2	9	3	
D	9	14	32	21	20	196	9					4			4	
E	9	28	45	36	33	325	9					5			5	
F												6			6	
G												7			7	
Act. Cycle	9	90	120	108								8			8	
Nom. Cycle	9	88	124	108												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 15:30 to TUE 3-AUG-2010 15:45 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	46	67	55	41	442	8					1	7		1	1
B												2	1		2	2
C												3		8	3	
D	8	25	35	32	24	257	8					4			4	
E	8	38	53	47	35	380	8					5			5	
F												6			6	
G												7			7	
Act. Cycle	8	120	145	134								8			8	
Nom. Cycle	8	124	140	135												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 15:45 to TUE 3-AUG-2010 15:59 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	7	51	79	64	47	452	7					1	1		1	1
B												2	6		2	1
C												3		7	3	
D	7	20	33	26	19	185	7					4			4	
E	7	41	49	46	34	326	7					5			5	
F												6			6	
G												7			7	
Act. Cycle	7	112	146	137								8			8	
Nom. Cycle	7	138	140	139												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 15:59 to TUE 3-AUG-2010 16:16 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	51	77	62	46	503	8					1			1	2
B												2	8		2	
C												3		8	3	
D	8	20	30	26	19	210	8					4			4	
E	8	41	56	47	35	380	8					5			5	
F												6			6	
G												7			7	
Act. Cycle	8	112	153	136								8			8	
Nom. Cycle	8	130	140	136												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 16:16 to TUE 3-AUG-2010 16:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	8	91	49	47	448	6					1	3		1	1
B												2	6		2	1
C												3		9	3	
D	7	22	33	26	20	188	6					4			4	
E	7	35	61	45	33	320	6					5			5	
F												6			6	
G												7			7	
Act. Cycle	9	8	154	106								8			8	
Nom. Cycle	6	114	138	132												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 16:30 to TUE 3-AUG-2010 16:44 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	47	56	51	43	413	8					1	4		1	3
B												2	4		2	2
C												3		8	3	
D	8	24	33	28	24	231	8					4			4	
E	8	35	48	40	33	320	8					5			5	
F												6			6	
G												7			7	
Act. Cycle	8	114	128	120								8			8	
Nom. Cycle	8	114	122	119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 16:44 to TUE 3-AUG-2010 16:59 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	46	66	53	42	430	8					1	8		1	
B												2			2	1
C												3		8	3	
D	8	25	33	28	22	224	8					4			4	
E	8	31	50	45	36	365	8					5			5	
F												6			6	
G												7			7	
Act. Cycle	8	121	133	127								8			8	
Nom. Cycle	8	120	133	126												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 16:59 to TUE 3-AUG-2010 17:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	47	66	54	41	438	8					1	8		1	
B												2			2	3
C												3		8	3	
D	8	26	33	29	22	234	8					4			4	
E	8	31	58	50	38	404	8					5			5	
F												6			6	
G												7			7	
Act. Cycle	8	123	142	134								8			8	
Nom. Cycle	8	123	140	133												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

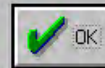


**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 17:15 to TUE 3-AUG-2010 17:29 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	7	47	57	52	37	365	7					1	7		1	1
B												2			2	2
C												3		7	3	
D	7	27	34	30	21	211	7					4			4	
E	7	55	61	58	42	411	7					5			5	
F												6			6	
G												7			7	
Act. Cycle	7	132	147	141								8			8	
Nom. Cycle	7	138	140	139												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 17:29 to TUE 3-AUG-2010 17:44 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	39	57	49	37	399	8					1	8		1	1
B												2			2	2
C												3		8	3	
D	8	29	34	31	23	249	8					4			4	
E	8	42	59	53	40	426	8					5			5	
F												6			6	
G												7			7	
Act. Cycle	8	118	145	134								8			8	
Nom. Cycle	8	136	140	139												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

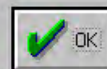


**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 17:44 to TUE 3-AUG-2010 17:59 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	38	85	57	45	462	7					1	8		1	
B												2			2	1
C												3		8	3	
D	8	26	33	29	22	232	8					4			4	
E	8	25	55	42	33	338	8					5			5	
F												6			6	
G												7			7	
Act. Cycle	8	97	160	129								8			8	
Nom. Cycle	8	125	140	133												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 17:59 to TUE 3-AUG-2010 18:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	34	116	65	49	520						1	8		1	1
B												2			2	
C												3		8	3	
D	8	21	31	26	20	213	1					4			4	
E	8	29	55	41	31	330	1					5			5	
F												6			6	
G												7			7	
Act. Cycle	8	88	177	132								8			8	
Nom. Cycle	1	129	129	129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

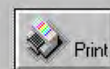
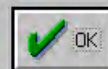


**Statistics** ✕

Statistics for I-3626 from TUE 3-AUG-2010 18:15 to TUE 3-AUG-2010 18:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	7	32	116	69	48	486						1	7		1	3
B												2			2	1
C												3		7	3	
D	7	19	42	30	21	216						4			4	
E	7	33	54	45	31	321						5			5	
F												6			6	
G												7			7	
Act. Cycle	7	104	200	146								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 18:30 to TUE 3-AUG-2010 18:45 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	30	51	37	37	374						1	5		1	1
B												2	3		2	
C												3	2	10	3	
D	10	19	33	24	24	244						4			4	
E	10	23	55	38	38	382						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	79	119	100								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 18:45 to TUE 3-AUG-2010 19:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	23	47	34	40	384						1	4		1	
B												2	5		2	
C												3	2	11	3	
D	11	14	29	20	23	221						4			4	
E	11	15	54	32	37	357						5			5	
F												6			6	
G												7			7	
Act. Cycle	11	60	130	87								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 19:00 to TUE 3-AUG-2010 19:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	24	51	36	39	404						1	1		1	
B												2	10		2	1
C												3		11	3	
D	11	16	34	23	25	261						4			4	
E	11	17	54	34	37	383						5			5	
F												6			6	
G												7			7	
Act. Cycle	11	62	130	95								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 19:15 to TUE 3-AUG-2010 19:29 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	21	56	41	45	413						1		1	1	
B												2	3		2	
C												3	6	9	3	
D	8	14	32	24	21	192						4	1		4	
E	10	14	54	30	34	305						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	58	120	91								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 19:29 to TUE 3-AUG-2010 19:44 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	12	26	47	38	48	457						1			1	
B												2	2		2	1
C												3	10	12	3	
D	12	16	33	21	28	262						4			4	
E	11	14	32	20	24	227						5			5	
F												6			6	
G												7			7	
Act. Cycle	12	43	106	78								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 19:44 to TUE 3-AUG-2010 20:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	14	18	52	33	45	467						1		3	1	
B												2			2	2
C												3	7	11	3	
D	14	13	33	19	26	269						4	7		4	
E	13	13	54	23	29	302						5			5	
F												6			6	
G												7			7	
Act. Cycle	14	37	106	74								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

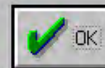


**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 20:00 to TUE 3-AUG-2010 20:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	16	18	50	30	51	488						1		7	1	
B												2			2	
C												3		9	3	
D	13	12	22	16	22	208						4	16		4	
E	13	13	51	20	28	269						5			5	
F												6			6	
G												7			7	
Act. Cycle	16	37	85	60								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 20:15 to TUE 3-AUG-2010 20:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	20	58	33	41	372						1		1	1	
B												2			2	
C												3	2	10	3	
D	11	13	21	16	20	183						4	9		4	
E	10	14	54	35	39	357						5			5	
F												6			6	
G												7			7	
Act. Cycle	11	41	109	82								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 20:30 to TUE 3-AUG-2010 20:45 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	13	20	58	33	45	430						1		6	1	
B												2			2	
C												3	1	7	3	
D	10	14	22	17	18	170						4	12		4	
E	11	13	54	32	37	352						5			5	
F												6			6	
G												7			7	
Act. Cycle	13	45	119	73								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 20:45 to TUE 3-AUG-2010 21:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	16	20	38	29	48	468						1		2	1	
B												2			2	
C												3	4	14	3	
D	14	13	23	16	23	224						4	12		4	
E	12	14	54	23	29	278						5			5	
F												6			6	
G												7			7	
Act. Cycle	16	38	102	60								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

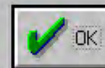


**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 21:00 to TUE 3-AUG-2010 21:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	20	38	28	32	313						1		4	1	
B												2			2	
C												3	3	7	3	
D	8	13	25	16	14	133						4	8		4	
E	11	15	55	47	54	522						5			5	
F												6			6	
G												7			7	
Act. Cycle	11	35	107	88								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 21:15 to TUE 3-AUG-2010 21:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	13	19	120	36	46	468						1		1	1	
B												2			2	
C												3	2	12	3	
D	11	13	24	16	18	177						4	11		4	
E	10	13	54	36	36	364						5			5	
F												6			6	
G												7			7	
Act. Cycle	13	32	187	77								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

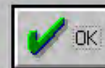


**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 21:30 to TUE 3-AUG-2010 21:44 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	19	152	90	76	724						1		3	1	
B												2			2	
C												3		5	3	
D	8	12	19	14	12	117						4	8		4	
E	5	14	54	23	12	115						5			5	
F												6			6	
G												7			7	
Act. Cycle	8	32	191	119								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 21:44 to TUE 3-AUG-2010 21:59 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	13	15	120	49	62	643						1		2	1	
B												2			2	
C												3	3	11	3	
D	10	12	22	15	15	153						4	10		4	
E	6	15	55	41	24	247						5			5	
F												6			6	
G												7			7	
Act. Cycle	13	32	191	80								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

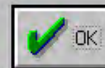


**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 21:59 to TUE 3-AUG-2010 22:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	12	20	78	31	37	378						1		5	1	
B												2			2	
C												3	8	7	3	
D	8	12	16	14	11	112						4	4		4	
E	12	13	55	43	52	527						5			5	
F												6			6	
G												7			7	
Act. Cycle	12	48	117	84								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 22:15 to TUE 3-AUG-2010 22:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	20	34	24	25	247						1		6	1	
B												2	1		2	
C												3	3	4	3	
D	8	12	43	26	22	209						4	6		4	
E	10	29	55	51	53	514						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	72	117	97								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

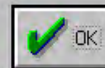


**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 22:30 to TUE 3-AUG-2010 22:44 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	20	150	44	42	443						1	2	5	1	
B												2	5		2	
C												3	3	5	3	
D	8	13	43	24	19	196						4			4	
E	9	14	55	46	40	419						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	72	163	105								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 22:44 to TUE 3-AUG-2010 23:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	14	21	150	59	82	828						1		11	1	
B												2			2	
C												3	5	3	3	
D	6	12	13	12	8	77						4	9		4	
E	5	12	52	20	10	104						5			5	
F												6			6	
G												7			7	
Act. Cycle	14	22	163	72								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

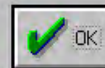


**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 23:00 to TUE 3-AUG-2010 23:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	14	20	65	31	44	441						1		3	1	
B												2	7		2	
C												3	6	11	3	
D	5	12	14	13	6	65						4	1		4	
E	11	12	55	45	50	496						5			5	
F												6			6	
G												7			7	
Act. Cycle	14	34	94	71								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 23:15 to TUE 3-AUG-2010 23:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	12	20	145	52	59	625						1		12	1	
B												2	7		2	
C												3	2		3	
D	5	13	16	13	7	69						4	3		4	
E	9	12	55	40	34	360						5			5	
F												6			6	
G												7			7	
Act. Cycle	12	34	173	87								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 23:30 to TUE 3-AUG-2010 23:44 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	20	150	98	87	885						1		9	1	
B												2			2	
C												3			3	
D	2	12	13	12	2	25						4	9		4	
E	5	12	53	20	10	104						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	33	173	112								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from TUE 3-AUG-2010 23:44 to TUE 3-AUG-2010 23:59 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	18	150	44	51	489						1		8	1	
B												2			2	
C												3	1	3	3	
D	4	12	14	13	5	52						4	10		4	
E	8	50	54	52	44	422						5			5	
F												6			6	
G												7			7	
Act. Cycle	11	18	162	87								8			8	
Nom. Cycle				129												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



# Intersection Diagnostic Monitor (IDM) Data

for TCS 3626

New England Highway and Bridgman Road, SINGLETON

06:00 – 12:00

Wednesday 04.08.2010

**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 06:00 to WED 4-AUG-2010 06:14 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	7	29	121	88	63	622						1			1	
B												2			2	
C												3		7	3	
D	7	28	43	35	25	247						4	7		4	
E	6	14	29	18	12	113						5			5	
F												6			6	
G												7			7	
Act. Cycle	7	76	179	140								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 06:14 to WED 4-AUG-2010 06:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	7	54	120	101	65	707						1			1	
B												2			2	
C												3		7	3	
D	7	28	43	38	25	271						4	7		4	
E	6	15	23	19	10	114						5			5	
F												6			6	
G												7			7	
Act. Cycle	7	118	178	156								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 06:30 to WED 4-AUG-2010 06:44 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	6	54	121	93	57	560						1			1	
B												2			2	
C												3		6	3	
D	6	32	43	37	23	227						4	6		4	
E	6	19	54	31	19	190						5			5	
F												6			6	
G												7			7	
Act. Cycle	6	118	207	162								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 06:44 to WED 4-AUG-2010 06:59 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	34	115	56	50	511						1			1	
B												2			2	1
C												3		9	3	
D	9	23	42	30	27	273						4	9		4	
E	9	17	54	25	23	233						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	77	192	113								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

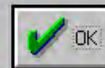


**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 06:59 to WED 4-AUG-2010 07:14 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	36	70	53	54	536						1			1	
B												2			2	
C												3		10	3	
D	10	15	35	24	25	244						4	10		4	
E	10	16	28	20	21	204						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	85	116	98								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 07:14 to WED 4-AUG-2010 07:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	27	95	59	56	590						1			1	
B												2			2	
C												3		10	3	
D	10	15	43	26	25	262						4	10		4	
E	8	17	30	24	19	197						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	56	159	104								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 07:30 to WED 4-AUG-2010 07:46 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	30	62	45	49	504						1			1	
B												2			2	
C												3		11	3	
D	11	19	32	24	26	265						4	11		4	
E	10	14	54	25	25	254						5			5	
F												6			6	
G												7			7	
Act. Cycle	11	56	137	93								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 07:46 to WED 4-AUG-2010 08:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	28	63	46	43	418						1			1	1
B												2			2	1
C												3	7	9	3	
D	9	16	41	26	25	239						4	2		4	
E	9	19	54	34	32	309						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	81	155	107								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 08:00 to WED 4-AUG-2010 08:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	12	33	61	40	48	487						1			1	1
B												2			2	2
C												3	5	12	3	
D	11	16	33	25	27	276						4	7		4	
E	12	14	37	21	25	253						5			5	
F												6			6	
G												7			7	
Act. Cycle	12	58	113	84								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 08:15 to WED 4-AUG-2010 08:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	34	64	46	48	466						1			1	1
B												2			2	3
C												3	1	10	3	
D	10	20	33	28	29	285						4	9		4	
E	10	14	33	22	23	225						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	81	122	97								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 08:30 to WED 4-AUG-2010 08:44 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	30	75	50	48	456						1			1	
B												2	2		2	1
C												3	6	9	3	
D	9	16	37	26	25	234						4	1		4	
E	9	17	36	29	28	263						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	72	142	105								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 08:44 to WED 4-AUG-2010 09:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	33	75	54	45	491						1			1	
B												2	5		2	2
C												3	4	9	3	
D	9	23	42	33	27	298						4			4	
E	9	28	43	34	28	306						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	84	142	121								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 09:00 to WED 4-AUG-2010 09:14 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	33	69	45	45	411						1			1	
B												2	5		2	1
C												3	4	9	3	
D	9	16	33	25	25	225						4			4	
E	9	26	39	30	30	277						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	84	122	101								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

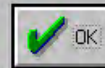


**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 09:14 to WED 4-AUG-2010 09:29 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	31	59	45	46	459						1			1	
B												2	4		2	1
C												3	6	10	3	
D	10	16	33	24	25	245						4			4	
E	10	20	38	28	29	284						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	87	110	98								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 09:29 to WED 4-AUG-2010 09:45 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	33	59	45	48	500						1			1	
B												2	3		2	
C												3	6	11	3	
D	11	17	33	23	25	262						4	2		4	
E	11	16	54	26	27	288						5			5	
F												6			6	
G												7			7	
Act. Cycle	11	76	136	95								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

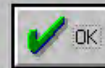


**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 09:45 to WED 4-AUG-2010 09:59 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	35	69	49	46	447						1			1	
B												2	3		2	
C												3	5	9	3	
D	9	13	28	22	20	198						4	1		4	
E	9	19	54	35	33	323						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	87	143	107								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 09:59 to WED 4-AUG-2010 10:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	13	24	58	39	47	516						1			1	2
B												2	1		2	
C												3	12	13	3	
D	12	15	28	21	24	258						4			4	
E	13	14	54	24	29	317						5			5	
F												6			6	
G												7			7	
Act. Cycle	13	57	132	83								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I=3626 from WED 4-AUG-2010 10:15 to WED 4-AUG-2010 10:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	27	116	55	53	496						1			1	
B												2	1		2	1
C												3	6	9	3	
D	9	14	36	22	21	198						4	2		4	
E	9	14	37	26	26	238						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	65	181	103								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

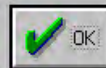


**Statistics** ✕

Statistics for I-3626 from WED 4-AUG-2010 10:30 to WED 4-AUG-2010 10:44 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	29	112	55	49	495						1	1		1	
B												2	3		2	
C												3	5	9	3	
D	9	13	32	24	21	216						4			4	
E	9	17	54	33	30	301						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	70	169	112								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from WED 4-AUG-2010 10:44 to WED 4-AUG-2010 10:59 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	29	110	57	50	513						1			1	1
B												2	1		2	
C												3	7	9	3	
D	8	14	38	25	20	201						4	1		4	
E	9	16	54	34	30	306						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	67	193	113								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from WED 4-AUG-2010 10:59 to WED 4-AUG-2010 11:15 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	10	16	84	45	46	452						1			1	
B												2	3		2	
C												3	7	10	3	
D	10	16	31	23	24	238						4			4	
E	10	20	50	30	31	303						5			5	
F												6			6	
G												7			7	
Act. Cycle	10	53	142	99								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from WED 4-AUG-2010 11:15 to WED 4-AUG-2010 11:30 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	9	16	93	48	43	438						1	1		1	1
B												2	2		2	2
C												3	5	9	3	
D	9	16	42	28	25	254						4	1		4	
E	9	20	55	37	32	333						5			5	
F												6			6	
G												7			7	
Act. Cycle	9	53	181	113								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Statistics** ✕

Statistics for I-3626 from WED 4-AUG-2010 11:30 to WED 4-AUG-2010 11:45 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	8	23	93	52	40	416						1	4		1	
B												2	4		2	2
C												3		8	3	
D	8	18	39	27	21	223						4			4	
E	8	33	55	50	39	402						5			5	
F												6			6	
G												7			7	
Act. Cycle	8	106	181	130								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time

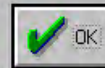


**Statistics** ✕

Statistics for I-3626 from WED 4-AUG-2010 11:45 to WED 4-AUG-2010 12:00 inclusively.

Phase	Freq	Min	Max	Av"	Av%	Total"	MX	FG	RT	W'	W"	Plan	#SP	#LP	Ped	Occ.
A	11	28	73	43	46	477						1	8		1	
B												2	1		2	2
C												3	2	11	3	
D	10	13	33	24	24	244						4			4	
E	11	17	45	28	30	312						5			5	
F												6			6	
G												7			7	
Act. Cycle	11	65	125	93								8			8	
Nom. Cycle				119												

Av" = Total Time / Frequency  
 Av% = Total Phase Time / Total Cycle Time



**Lee, Doris**

**Subject:** FW: Maximum flow for New England Hwy/Bridgman Road intersection

From: REZAEISARLAK Ali [mailto:Ali\_REZAEISARLAK@rta.nsw.gov.au]  
Sent: Monday, 16 August 2010 11:38 AM  
To: Chen, Xiaofen  
Subject: RE: Maximum flow for New England Hwy/Bridgman Road intersection

Bill

The MF's for 03/08/10 were:

detector 9 MF is 1290, 10 is 1773  
detector 3 is 1525, 4 is 1667  
detector 12 is 1390  
detector 6 is 1809  
detector 14 is 1374  
detector 13 is 1765, 15 is 1309

and for 04/08/10 were:

detector 9 MF is 1343, 10 is 1773  
detector 3 is 1525, 4 is 1644  
detector 12 is 1412  
detector 6 is 1809  
detector 14 is 1348  
detector 13 is 1782, 15 is 1328

	A	B	C	D	E
Late start	5.0	5.0	5.0	0	2.0
Minimum green	8.0	5.0	5.0	5.0	5.0
Early cutoff green	0	0	0	0	0
Yellow	4.0	4.0	4.0	4.0	4.0
Red	2.5	2.5	2.5	2.5	2.5
Maximum green	70	20	10	30	40
Variable green increment	0	0	0	0	0
Maximum initial green	0	0	0	0	0
Special red	0	0	0	0	0
Special time	0	0	0	0	0

Kind Regards

**Ali Rezaeisarlak**  
Traffic Operations Officer (T),  
Network Operations

## **Appendix D**

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RTA crash data  
(2004 to 2009)





Detailed Crash Report - sorted

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
<b>Natural Lighting</b>																				
<b>Hunter Region Singleton LGA Singleton Heig New England Hwy</b>																				
450246	25/10/2004	Mon	10:45	at MAISON DIEU RD		TJN	STR	Fine	Dry	60	2	CAR	F19	N in MAISON DIEU RD	40	Turning right	N	0	0	
E21862160				Daylight		DCA: 104		Adj - Right-thru from right				CAR	M57	W in NEW ENGLAND HWY	60	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
459048	01/12/2004	Wed	10:00	at BRIDGMAN RD		XJN	STR	Fine	Dry	60	2	CAR	M28	N in NEW ENGLAND HWY	40	Turning right	I	0	1	
E22264022				Daylight		DCA: 303		Same - Rear right				CAR	F30	N in NEW ENGLAND HWY	0	Wait turn right				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
461275	25/01/2005	Tue	18:08	at MAISON DIEU RD		TJN	CRV	Overcast	Wet	80	2	CAR	M62	N in MAISON DIEU RD	Unk	Turning right	I	0	2	S
E23088558				Daylight		DCA: 104		Adj - Right-thru from right				TRK	M21	W in NEW ENGLAND HWY	75	Proceeding in lane				
<b>Hunter Region Singleton LGA Dunolly New England Hwy</b>																				
462366	05/02/2005	Sat	16:25	500 m W BRIDGEMAN RD		2WY	STR	Fine	Dry	60	1	CAR	M48	E in NEW ENGLAND HWY	60	Proceeding in lane	N	0	0	
E22727552				Daylight		DCA: 703		Left off cway into object						Signpost						
<b>Hunter Region Singleton LGA Dunolly New England Hwy</b>																				
465684	14/02/2005	Mon	16:00	5 m E BRIDGMAN RD		XJN	STR	Fine	Dry	60	2	CAR	F20	N in NEW ENGLAND HWY	10	Proceeding in lane	I	0	1	
E23206226				Daylight		DCA: 303		Same - Rear right				CAR	F38	N in NEW ENGLAND HWY	0	Wait turn right				
<b>Hunter Region Singleton LGA Dunolly New England Hwy</b>																				
467646	17/03/2005	Thu	15:45	10 m W BRIDGMAN RD		XJN	STR	Raining	Wet	60	2	CAR	M27	E in NEW ENGLAND HWY	30	Proceeding in lane	I	0	1	
E23401473				Daylight		DCA: 301		Same - Rear end				CAR	F17	E in NEW ENGLAND HWY	0	Stationary				
<b>Hunter Region Singleton LGA Singleton Heig New England Hwy</b>																				
475010	02/05/2005	Mon	13:25	at WHITE AVE		TJN	STR	Fine	Dry	60	2	CAR	F20	S in WHITE AVE	10	Turning right	N	0	0	
E23655764				Daylight		DCA: 104		Adj - Right-thru from right				4WD	M62	E in NEW ENGLAND HWY	60	Proceeding in lane				
<b>Hunter Region Singleton LGA Mcdougall Hill New England Hwy</b>																				
481492	21/06/2005	Tue	06:55	at NUMBER 4949 HN		2WY	CRV	Fine	Dry	80	2	LOR	M30	E in NEW ENGLAND HWY	5	Forward from drive	I	0	1	S
E24270713				Dawn		DCA: 406		Manov - Emerging from drivewa				CAR	M22	N in NEW ENGLAND HWY	80	Proceeding in lane				
<b>Hunter Region Singleton LGA Dunolly New England Hwy</b>																				
490412	31/08/2005	Wed	17:00	50 m E BRIDGMAN RD		DIV	STR	Fine	Dry	60	3	4WD	F49	W in NEW ENGLAND HWY	20	Proceeding in lane	I	0	2	
E24644672				Dusk		DCA: 301		Same - Rear end				WAG	F31	W in NEW ENGLAND HWY	0	Stationary				
												WAG	M18	W in NEW ENGLAND HWY	0	Stationary				



Detailed Crash Report - sorted

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
<b>Natural Lighting</b>																				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
515844	18/03/2006	Sat	15:50	100 m E	BRIDGMAN RD	DIV	STR	Fine	Dry	60	1	CAR	F64	W in NEW ENGLAND HWY	60	Proceeding in lane	I	0	2	F
E26712105				Daylight		DCA: 703		Left off cway into object				Fence								
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
515859	25/03/2006	Sat	06:00	200 m N	PARKVIEW AVE	2WY	CRV	Fine	Dry	80	2	CAR	M24	E in NEW ENGLAND HWY	20	Forward from drive	I	0	1	
E27850455				Darkness		DCA: 406		Manov - Emerging from drivewa				BDBL	M27	S in NEW ENGLAND HWY	50	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
524809	14/04/2006	Fri	16:05	5 m N	SIMPSON TCE	TJN	STR	Fine	Dry	60	3	CAR	M17	S in NEW ENGLAND HWY	50	Proceeding in lane	I	0	1	
E52236901				Daylight		DCA: 301		Same - Rear end				CAR	F23	S in NEW ENGLAND HWY	0	Stationary				
												CAR	F43	S in NEW ENGLAND HWY	0	Stationary				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
526353	15/05/2006	Mon	17:15	50 m N	BRIDGMAN RD	2WY	STR	Fine	Dry	60	3	TRK	M39	S in NEW ENGLAND HWY	Unk	Proceeding in lane	I	0	1	
E29406986				Dusk		DCA: 301		Same - Rear end				TRK	F35	S in NEW ENGLAND HWY	0	Stationary				
												CAR	F38	S in NEW ENGLAND HWY	0	Stationary				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
525903	16/06/2006	Fri	17:00	150 m E	WHITE AVE	2WY	STR	Fine	Dry	60	2	CAR	F22	E in NEW ENGLAND HWY	50	Proceeding in lane	N	0	0	
E26938044				Dusk		DCA: 301		Same - Rear end				TRK	M37	E in NEW ENGLAND HWY	Unk	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
526264	30/06/2006	Fri	14:35	400 m S	RIXS CREEK RD	2WY	STR	Overcast	Wet	100	1	CAR	M32	N in NEW ENGLAND HWY	130	Proceeding in lane	I	0	1	S
E27648919				Daylight		DCA: 703		Left off cway into object				Embankment								
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
533969	11/08/2006	Fri	14:35	20 m E	BRIDGEMAN RD	DIV	STR	Fine	Dry	60	4	WAG	M35	E in NEW ENGLAND HWY	40	Proceeding in lane	I	0	2	
E96016496				Daylight		DCA: 301		Same - Rear end				TRK	M36	E in NEW ENGLAND HWY	10	Proceeding in lane				
												CAR	F50	E in NEW ENGLAND HWY	0	Stationary				
												CAR	M46	E in NEW ENGLAND HWY	0	Stationary				
<b>Hunter Region Singleton LGA Mcdougall Hill New England Hwy</b>																				
537196	06/10/2006	Fri	21:20	500 m N	MAISON DIEU RD	2WY	STR	Fine	Dry	80	3	LOR	M38	S in NEW ENGLAND HWY	Unk	Other reversing	F	1	0	
E28313413				Darkness		DCA: 4		Ped - On carriageway				SEM		N in NEW ENGLAND HWY	0	Parked				
												PED	M55	NEW ENGLAND HWY		Work on vehicle				



Detailed Crash Report - sorted

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
<b>Natural Lighting</b>																				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
546035	26/11/2006	Sun	16:50	at WHITE AVE		TJN	CRV	Raining	Wet	50	1	M/C	M43	S in NEW ENGLAND HWY	10	Turning left	I	0	1	S
E29264678				Daylight		DCA: 706		Left turn												
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
565777	30/03/2007	Fri	18:40	420 m E RIXS CREEK RD		2WY	STR	Fine	Dry	100	2	WAG	M46	W in NEW ENGLAND HWY	50	Turning right	I	0	1	
E30062012				Darkness		DCA: 202		Opp - Right-thru				TRK	M26	E in NEW ENGLAND HWY	90	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
583136	13/07/2007	Fri	14:50	30 m E BRIDGMAN RD		DIV	STR	Fine	Dry	60	2	CAR	M30	E in NEW ENGLAND HWY	30	Proceeding in lane	N	0	0	
E33253786				Daylight		DCA: 301		Same - Rear end				CAR	M57	E in NEW ENGLAND HWY	10	Veering right				
<b>Hunter Region Singleton LGA Singleton Heig New England Hwy</b>																				
594382	19/10/2007	Fri	18:50	at WHITE AVE		TJN	STR	Fine	Dry	60	2	CAR	F62	S in WHITE AVE	45	Turning left	N	0	0	
E31387330				Darkness		DCA: 107		Adj - Left-thru from right				CAR	M23	E in NEW ENGLAND HWY	60	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
598944	28/10/2007	Sun	19:20	200 m S RIXS CREEK RD		2WY	STR	Fine	Dry	100	2	CAR	F35	N in NEW ENGLAND HWY	20	Perform U-turn	I	0	2	
E31777427				Dusk		DCA: 304		Same - U-turn				CAR	M25	N in NEW ENGLAND HWY	75	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
600169	27/11/2007	Tue	17:30	300 m W BRIDGMAN RD		2WY	STR	Fine	Dry	60	2	CAR	M41	E in NEW ENGLAND HWY	40	Proceeding in lane	N	0	0	
E143151593				Daylight		DCA: 301		Same - Rear end				CAR	M U	E in NEW ENGLAND HWY	Unk	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
627014	05/12/2007	Wed	14:00	5 m W BRIDGMAN RD		XJN	STR	Fine	Dry	60	2	TRK	M25	E in NEW ENGLAND HWY	40	Proceeding in lane	I	0	2	
E32101123				Daylight		DCA: 301		Same - Rear end				UTE	F44	E in NEW ENGLAND HWY	0	Stationary				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
609004	12/02/2008	Tue	14:50	10 m E BRIDGMAN ST		XJN	STR	Overcast	Dry	60	3	TRK	M28	W in NEW ENGLAND HWY	60	Proceeding in lane	N	0	0	
E62920102				Daylight		DCA: 301		Same - Rear end				UTE	F47	W in NEW ENGLAND HWY	0	Wait turn right				
												TRK	M46	W in NEW ENGLAND HWY	0	Stationary				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
614888	18/02/2008	Mon	16:15	40 m S BRIDGMAN RD		DIV	STR	Fine	Dry	60	3	4WD	M38	N in NEW ENGLAND HWY	40	Proceeding in lane	I	0	1	
E33141519				Daylight		DCA: 301		Same - Rear end				CAR	M30	N in NEW ENGLAND HWY	Unk	Proceeding in lane				
												TRK	M23	N in NEW ENGLAND HWY	Unk	Proceeding in lane				



Detailed Crash Report - sorted

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
<b>Natural Lighting</b>																				
<b>Hunter Region Singleton LGA Singleton Heig New England Hwy</b>																				
616612	16/03/2008	Sun	21:40	at WHITE AVE		TJN STR		Fine Dry	60	2	P/C	M15	N in NEW ENGLAND HWY		Along footpath		I	0	1	
E138396494				Darkness		DCA: 408		Manov - From footway				OMV	M U	W in NEW ENGLAND HWY	Unk Proceeding in lane					
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
628993	08/05/2008	Thu	12:40	5 m E BRIDGEMAN RD		XJN STR		Fine Dry	60	2	CAR	M20	W in NEW ENGLAND HWY		25 Proceeding in lane		N	0	0	
E33447925				Daylight		DCA: 301		Same - Rear end				CAR	F20	W in NEW ENGLAND HWY	0 Stationary					
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
625379	29/05/2008	Thu	10:10	at BRIDGMAN RD		XJN STR		Fine Dry	60	3	4WD	F60	E in NEW ENGLAND HWY		60 Proceeding in lane		N	0	0	
E34270869				Daylight		DCA: 101		Adj - Cross traffic				TRK	F21	S in BRIDGMAN RD	60 Proceeding in lane					
												CAR	F29	N in BRIDGMAN RD	1 Proceeding in lane					
<b>Hunter Region Singleton LGA Singleton Bridgman Rd</b>																				
627579	29/05/2008	Thu	18:15	5 m S NEW ENGLAND HWY		XJN STR		Fine Dry	60	3	CAR	M20	S in BRIDGMAN RD		40 Proceeding in lane		N	0	0	
E34278369				Darkness		DCA: 301		Same - Rear end				CAR	M44	S in BRIDGMAN RD	0 Stationary					
												CAR	M46	S in BRIDGMAN RD	0 Stationary					
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
625572	01/06/2008	Sun	19:35	50 m W BRIDGMAN RD		2WY STR		Fog or mist Dry	60	2	UTE	M37	W in NEW ENGLAND HWY		60 Proceeding in lane		N	0	0	
E200328492				Darkness		DCA: 301		Same - Rear end				CAR	M34	W in NEW ENGLAND HWY	50 Proceeding in lane					
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
630030	13/06/2008	Fri	18:15	at BRIDGMEN RD		XJN STR		Fine Dry	60	2	CAR	M21	W in NEW ENGLAND HWY		50 Proceeding in lane		N	0	0	
E34082864				Darkness		DCA: 301		Same - Rear end				UTE	M42	W in NEW ENGLAND HWY	0 Stationary					
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
627918	18/06/2008	Wed	17:50	102 m E BRIDGMAN RD		DIV STR		Fine Dry	60	2	CAR	M18	W in NEW ENGLAND HWY		30 Proceeding in lane		N	0	0	
E34877841				Darkness		DCA: 301		Same - Rear end				TRK	M U	W in NEW ENGLAND HWY	Unk Proceeding in lane					
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
634709	14/08/2008	Thu	06:30	350 m N PARK VIEW CRES		2WY CRV		Fine Dry	80	1	TRK	M58	S in NEW ENGLAND HWY		80 Proceeding in lane		N	0	0	F
E36949681				Daylight		DCA: 803	L	Off right bend into obj				Signpost								
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
650114	18/12/2008	Thu	14:50	5 m E BRIDGMAN RD		XJN STR		Fine Dry	60	2	4WD	M45	W in NEW ENGLAND HWY		Unk Proceeding in lane		N	0	0	
E35906706				Daylight		DCA: 301		Same - Rear end				CAR	F28	W in NEW ENGLAND HWY	0 Stationary					

Detailed Crash Report - sorted

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
<b>Natural Lighting</b>																				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
664757	06/03/2009	Fri	15:30	500 m E	WHITE AVE	2WY	STR	Fine	Dry	60	3	TRK	M42	E in NEW ENGLAND HWY	50	Proceeding in lane	N	0	0	
E121779598				Daylight		DCA: 301		Same - Rear end				CAR	F48	E in NEW ENGLAND HWY	0	Stationary				
												VAN	M23	E in NEW ENGLAND HWY	0	Stationary				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
666414	04/05/2009	Mon	16:20	3 m W	BRIDGMAN RD	XJN	STR	Fine	Dry	60	2	P/C	M15	NEW ENGLAND HWY		Along footpath	I	0	1	
E37515319				Daylight		DCA: 408		Manov - From footway				OMV	F U	NEW ENGLAND HWY		Unk Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
683685	25/09/2009	Fri	18:20		at SIMPSON TCE	TJN	STR	Fine	Dry	50	2	CAR	F28	N in SIMPSON TCE	5	Turning right	N	0	0	S
E38689645				Darkness		DCA: 104		Adj - Right-thru from right				TRK	M42	W in NEW ENGLAND HWY	60	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
691496	22/11/2009	Sun	04:15	100 m W	MAISON DEIU RD	2WY	CRV	Fine	Dry	80	1	BDBL	M31	W in NEW ENGLAND HWY	80	Proceeding in lane	N	0	0	S
E39475958				Darkness		DCA: 802	L	Off cway left bend												
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
692202	05/12/2009	Sat	06:50	5 m W	BRIDGMAN RD	XJN	STR	Fine	Dry	60	2	WAG	M33	E in NEW ENGLAND HWY		Unk Proceeding in lane	N	0	0	
E39036217				Daylight		DCA: 303		Same - Rear right				OMV	U U	E in NEW ENGLAND HWY	0	Wait turn right				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
701280	23/12/2009	Wed	08:40	5 m E	BRIDGMAN RD	XJN	STR	Fine	Dry	60	2	TRK	M23	W in NEW ENGLAND HWY	30	Proceeding in lane	N	0	0	
E41311285				Daylight		DCA: 301		Same - Rear end				WAG	M18	W in NEW ENGLAND HWY	0	Stationary				
<b>Hunter Region Singleton LGA Rixs Creek New England Hwy</b>																				
695186	01/01/2010	Fri	06:46	50 m N	RIXS CREEK RD	2WY	STR	Fine	Dry	80	1	WAG	M29	N in NEW ENGLAND HWY	80	Proceeding in lane	N	0	0	
E39451427				Daylight		DCA: 704		Right off cway into obj						Other fixed object						
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
699494	29/01/2010	Fri	20:40		at BRIDGEMAN RD	XJN	STR	Fine	Dry	50	2	UTE	M33	W in NEW ENGLAND HWY	5	Turning right	I	0	1	
E39675714				Darkness		DCA: 202		Opp - Right-thru				CAR	F43	E in NEW ENGLAND HWY	50	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton New England Hwy</b>																				
699658	20/02/2010	Sat	15:10	400 m W	BRIDGMAN RD	2WY	STR	Fine	Dry	60	2	CAR	M58	W in NEW ENGLAND HWY	60	Proceeding in lane	N	0	0	
E39767970				Daylight		DCA: 301		Same - Rear end				4WD	M66	W in NEW ENGLAND HWY	50	Proceeding in lane				
<b>Report Totals:</b>				Total Crashes: 44		Fatal Crashes: 1		Injury Crashes: 20						Killed: 1		Injured: 26				



## Detailed Crash Report - sorted

Crashid dataset New England Highway, 100m nth Rixs Creek Ln to 100m east Bridgman Rd, Rixs Creek - 5 years complete data - 01/10/2004 to 30/09/2009 plus provisional data to date

**Note:** Ordered by: Crash Date, Crash Time, Crash No. Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.

Detailed Crash Report - sorted

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
<b>Natural Lighting</b>																				
<b>Hunter Region Singleton LGA Mt Olive Bridgeman Rd</b>																				
448947	17/10/2004	Sun	17:15	1 km N	RETREAT RD	2WY STR		Overcast	Dry	100	1	CAR	F62 N in BRIDGEMAN RD		80	Proceeding in lane	N	0	0	S F
E24360886					Daylight	DCA: 702		Off carriageway to right												
<b>Hunter Region Singleton LGA Middle Falbroo Bridgman Rd</b>																				
460111	09/01/2005	Sun	13:20	200 m N	COAL MINE ENT	2WY STR		Fine	Dry	100	1	CAR	M20 N in BRIDGMAN RD		100	Proceeding in lane	N	0	0	
E23481141					Daylight	DCA: 704		Right off cway into obj					Embankment							
<b>Hunter Region Singleton LGA Bridgeman Bridgeman Rd</b>																				
484840	19/07/2005	Tue	11:30	940 m S	STONEY CREEK RD	2WY CRV		Fine	Dry	100	1	CAR	F48 N in BRIDGEMAN RD		80	Proceeding in lane	I	0	1	
E26045087					Daylight	DCA: 804 R		Off left bend into obj					Guide Post							
<b>Hunter Region Singleton LGA Singleton Heig Acacia Ct</b>																				
486610	02/08/2005	Tue	15:15		at BRIDGMAN RD	TJN STR		Fine	Dry	60	2	CAR	F59 N in BRIDGMAN RD		15	Turning right	I	0	1	
E24800677					Daylight	DCA: 202		Opp - Right-thru					TRK M34 S in BRIDGMAN RD		40	Proceeding in lane				
<b>Hunter Region Singleton LGA Dunolly Bridgman Rd</b>																				
509920	14/02/2006	Tue	10:00		at BLAXLAND AVE	TJN STR		Overcast	Dry	60	2	4WD	M61 E in BLAXLAND AVE		15	Proceeding in lane	N	0	0	
E152534992					Daylight	DCA: 101		Adj - Cross traffic					TRK M19 N in BRIDGMAN RD		55	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton Heig Bridgman Rd</b>																				
522408	19/05/2006	Fri	22:10	50 m S	WATTLE PONDS RD	2WY STR		Fine	Dry	60	1	M/C	M14 S in BRIDGMAN RD		110	Proceeding in lane	I	0	1	S
E26776852					Darkness	DCA: 705		Out of control on cway												
<b>Hunter Region Singleton LGA Singleton Heig Blaxland Ave</b>																				
529801	21/07/2006	Fri	09:40		at BRIDGEMAN RD	TJN STR		Overcast	Dry	60	2	CAR	M41 E in BLAXLAND AVE		5	Turning right	N	0	0	
E29218287					Daylight	DCA: 104		Adj - Right-thru from right					CAR M58 N in BRIDGEMAN RD		50	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton Heig Bridgman Rd</b>																				
545960	20/11/2006	Mon	10:40	300 m N	NEW ENGLAND HWY	2WY STR		Fine	Dry	60	2	CAR	F18 N in BRIDGMAN RD		60	Proceeding in lane	N	0	0	
E54598202					Daylight	DCA: 303		Same - Rear right					CAR F38 N in BRIDGMAN RD		Unk	Turning right				
<b>Hunter Region Singleton LGA Singleton Acacia Cct</b>																				
593785	18/03/2007	Sun	14:30	5 m E	BRIDGMAN RD	TJN STR		Overcast	Dry	50	2	CAR	F50 W in ACACIA CCT		10	Proceeding in lane	N	0	0	
E29585654					Daylight	DCA: 301		Same - Rear end					4WD M41 W in ACACIA CCT		0	Stationary				
<b>Hunter Region Singleton LGA Bridgeman Bridgman Rd</b>																				
569422	13/04/2007	Fri	15:10	550 m N	STONEY CREEK RD	2WY STR		Fine	Dry	100	1	CAR	M U S in BRIDGMAN RD		100	Proceeding in lane	N	0	0	
E30249003					Daylight	DCA: 702		Off carriageway to right												

Detailed Crash Report - sorted

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
<b>Natural Lighting</b>																				
<b>Hunter Region Singleton LGA Singleton Blaxland Ave</b>																				
576639	01/06/2008	Fri	07:50	at BRIDGMAN RD		TJN STR		Fine Dry	60	2	CAR	F18	E in BLAXLAND AVE	Unk	Turning right		N	0	0	
E30590438				Daylight		DCA: 104		Adj - Right-thru from right				CAR	F27	N in BRIDGMAN RD	Unk	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton Bridgman Rd</b>																				
606726	18/01/2008	Fri	23:40	20 m S RETREAT RD		2WY STR		Fine Dry	60	1	CAR	M16	S in BRIDGMAN RD	20	Proceeding in lane		N	0	0	
E32484014				Darkness		DCA: 701		Off carriageway to left												
<b>Hunter Region Singleton LGA Singleton Heig Bridgman Rd</b>																				
615513	05/02/2008	Tue	07:45	at GARDNER CCT		TJN STR		Raining Wet	80	1	LOR	M60	W in BRIDGMAN RD	40	Turning right		N	0	0	S
E33128969				Daylight		DCA: 707		Right turn												
<b>Hunter Region Singleton LGA Singleton Bridgman Rd</b>																				
673113	19/05/2009	Tue	23:35	15 m S BLAXLAND AVE		2WY STR		Fine Dry	60	3	CAR	M19	S in BRIDGMAN RD	50	Proceeding in lane		N	0	0	
E37667219				Darkness		DCA: 301		Same - Rear end				CAR	M20	S in BRIDGMAN RD	0	Stationary				
												CAR	F17	S in BRIDGMAN RD	50	Proceeding in lane				
<b>Hunter Region Singleton LGA Bridgeman Bridgman Rd</b>																				
670912	06/06/2009	Sat	18:45	20 m N SUNNYSIDE LANE		2WY STR		Fine Dry	100	1	CAR	F18	N in BRIDGMAN RD	90	Proceeding in lane		N	0	0	
E39925881				Darkness		DCA: 609		On path - Hit animal					Kangaroo							
<b>Hunter Region Singleton LGA Singleton Heig Blaxland Ave</b>																				
681341	07/08/2009	Fri	16:55	at BRIDGMAN RD		TJN STR		Fine Dry	50	2	CAR	M60	E in BLAXLAND AVE	50	Turning right		N	0	0	
E142564295				Daylight		DCA: 102		Adj - Right-thru from left				CAR	F20	S in BRIDGMAN RD	50	Proceeding in lane				
<b>Hunter Region Singleton LGA Singleton Heig Bridgman Rd</b>																				
681490	28/08/2009	Fri	13:45	at WATTLE PONDS RD		TJN STR		Fine Dry	60	2	CAR	F26	N in BRIDGMAN RD	58	Proceeding in lane		N	0	0	
E39623755				Daylight		DCA: 303		Same - Rear right				4WD	F43	N in BRIDGMAN RD	10	Turning right				
<b>Hunter Region Singleton LGA Singleton Heig Acacia Cl</b>																				
683515	29/08/2009	Sat	18:00	at BRIDGMAN RD		TJN STR		Fine Dry	60	2	CAR	M17	N in BRIDGMAN RD	Unk	Turning right		N	0	0	
E38382148				Dusk		DCA: 202		Opp - Right-thru				TRK	F26	S in BRIDGMAN RD	60	Proceeding in lane				
<b>Hunter Region Singleton LGA Dunolly Blaxland Ave</b>																				
690424	12/11/2009	Thu	16:55	at BRIDGEMAN RD		TJN STR		Fine Dry	60	2	CAR	F17	E in BLAXLAND AVE	10	Turning right		N	0	0	
E38816017				Daylight		DCA: 104		Adj - Right-thru from right				4WD	F59	N in BRIDGEMAN RD	50	Proceeding in lane				



Detailed Crash Report - sorted

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors
<b>Natural Lighting</b>																				
<b>Hunter Region Singleton LGA Singleton Heig Bridgman Rd</b>																				
695714	10/01/2010	Sun	16:30	150 m S	BLAXLAND AVE	2WY STR		Fine	Dry	60	1	M/C	M57 N in BRIDGMAN RD		Unk Proceeding in lane		I	0	1	
E39967258					Daylight	DCA: 702		Off carriageway to right												
<b>Hunter Region Singleton LGA Singleton Heig Acacia Cct</b>																				
711526	11/05/2010	Tue	17:30		at BRIDGMAN RD	TJN STR		Fine	Dry	60	2	4WD	F37 N in BRIDGMAN RD		5 Turning right		I	0	1	
E40602617					Dusk	DCA: 202		Opp - Right-thru				CAR	M16 S in BRIDGMAN RD		56 Proceeding in lane					
<b>Report Totals:</b>				Total Crashes: 21		Fatal Crashes: 0		Injury Crashes: 5						Killed: 0		Injured: 5				

Crashid dataset Bridgman Rd, NEH to Sunnyside Ln, Bridgman - 5 years complete data - 01/10/2004 to 30/09/2009 plus provisional data to date

**Note:** Ordered by: Crash Date, Crash Time, Crash No. Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.



Detailed Crash Report - sorted

Crash No.	Date	Day of Week	Time	Distance	ID Feature	Loc Type	Alignment	Weather	Surface Condition	Speed Limit	No. of Tus	Tu Type/Obj	Age/Sex	Street Travelling	Speed Travelling	Manoeuvre	Degree of Crash	Killed	Injured	Factors	
<b>Natural Lighting</b>																					
<b>Hunter Region</b>				<b>Singleton LGA</b>				<b>Bridgeman</b>				<b>Stoney Creek Rd</b>									
617610	30/03/2008	Sun	12:50	2 km W	BRIDGEMAN RD	2WY	STR	Fine	Dry	80	1	RTKR	M21	W in STONEY CREEK RD	Unk Proceeding in lane		I	0	1	F	
E33026135					Daylight	DCA: 701				Off carriageway to left											
<b>Report Totals:</b>					Total Crashes: 1	Fatal Crashes: 0				Injury Crashes: 1				Killed: 0				Injured: 1			

Crashid dataset Stoney Creek Rd, Middle Falbrook Rd to Bridgman Rd, Bridgman - 5 years complete data - 01/10/2004 to 30/09/2009 plus provisional data to date

**Note:** Ordered by: Crash Date,Crash Time,Crash No. Data for the 9 month period prior to the generated date of this report are incomplete and are subject to change.

## **Appendix E**

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Capacity assessment criteria



## **Assessment criteria**

### **Intersections**

The operation of key intersections within the two subject sites was assessed using the SIDRA intersection modelling software. SIDRA calculates intersection performance measures including:

- level of service
- degree of saturation
- average delay
- maximum queue length.

#### **Level of service**

Level of service (LoS) is one of the basic performance parameters used to describe the operation of an intersection. The levels of service range from A (indicating good intersection operation) to F (indicating over saturated conditions with long delays and queues). At signalised and roundabout intersections, the LoS criteria are related to average intersection delay (seconds per vehicle). At priority controlled intersections, the LoS is based on the average delay (seconds per vehicle) for the worst movement.

#### **Degree of saturation**

Degree of saturation (DoS) is defined as the ratio of demand flow to capacity, and therefore has no unit. As it approaches 1.0, extensive queues and delays could be expected. For DoS greater than 1.0, a small increment in traffic volumes would result in an exponential increase in delays and queue length. The intersection DoS is based on the movement with the highest ratio for all types of intersection.

#### **Average delay**

Delay is the difference between interrupted and uninterrupted travel times through the intersection and is measured in seconds per vehicle. The delays include queued vehicles decelerating and accelerating to and/or from stop, as well as delays experienced by all vehicles negotiating the intersection. At signalised and roundabout intersections, the average intersection delay is usually reported and is taken as the weighted average delay by summing the product of the individual movement traffic volume and its corresponding calculated delays, and dividing by the total traffic volume at the intersection. At priority controlled intersections, the average delay for the worse movement is usually reported.

#### **Maximum queue length**

Queue length is measured in metres reflecting the number of vehicles waiting at the stop line and is usually quoted as the 95<sup>th</sup> percentile back of queue, which is the value below which 95% of all observed queue lengths fall. It reflects the number of vehicles per traffic lane at the start of the green period, when traffic starts moving again after a red signal. The intersection queue length is usually taken from the movement with the longest queue length.

**Table B1 Level of service criteria for intersections**

<b>Level of Service</b>	<b>Average delay (seconds per vehicle)</b>	<b>Traffic signals, roundabout</b>	<b>Give Way and Stop signs</b>
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; requires other control mode
F	Greater than 71	unsatisfactory with excessive queuing	unsatisfactory with excessive queuing; requires other control mode

Source: Roads and Traffic Authority 2002, *Guide to Traffic Generating Developments*

## Mid-block level of service descriptions

Source: Highway Capacity Manual 2000, Section 12-7

Each of these measures indicates how well the highway accommodates traffic flow.

Density is the assigned primary performance measure for estimating LoS. The three measures of speed, density, and flow or volume are interrelated. If the values of two of these measures are known, the remaining measure can be computed.

Los A describes completely free-flow conditions. The operation of vehicles is virtually unaffected by the presence of other vehicles, and operations are constrained only by the geometric features of the highway and by driver preferences. Manoeuvrability within the traffic stream is good. Minor disruptions to flow are easily absorbed without a change in travel speed.

LOS B also indicates free flow, although the presence of other vehicles becomes noticeable. Average travel speeds are the same as in LOS A, but drivers have slightly less freedom to manoeuvre. Minor disruptions are still easily absorbed, although local deterioration in LOS will be more obvious.

In LOS C, the influence of traffic density on operations becomes marked. The ability to manoeuvre within the traffic stream is clearly affected by other vehicles. On multilane highways with an FFS above 80 km/h, the travel speeds reduce somewhat. Minor disruptions can cause serious local deterioration in service, and queues will form behind any significant traffic disruption.

At LOS D, the ability to manoeuvre is severely restricted due to traffic congestion. Travel speed is reduced by the increasing volume. Only minor disruptions can be absorbed without extensive queues forming and the service deteriorating.

LOS E represents operations at or near capacity, an unstable level. The densities vary, depending on the FFS. Vehicles are operating with the minimum spacing for maintaining uniform flow. Disruptions cannot be dissipated readily, often causing queues to form and service to deteriorate to LOS F. For the majority of multilane highways with FFS between 70 and 100 km/h, passenger-car mean speeds at capacity range from 68 to 88 km/h but are highly variable and unpredictable.

LOS F represents forced or breakdown flow. It occurs either when vehicles arrive at a rate greater than the rate at which they are discharged or when the forecast demand exceeds the computed capacity of a planned facility. Although operations at these points — and on sections immediately downstream — appear to be at capacity, queues form behind these breakdowns. Operations within queues are highly unstable, with vehicles experiencing brief periods of movement followed by stoppages. Travel speeds within queues are generally less than 48 km/h. Note that the term LOS F may be used to characterise both the point of the breakdown and the operating condition within the queue.

Although the point of breakdown causes the queue to form, operations within the queue generally are not related to deficiencies along the highway segment.



## **Appendix F**

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Singleton Council's intersection  
upgrade plan



## 2 THE PROJECT

### 2.1 Project Definition and Staged Management

This brief is for the purpose of designing the staged intersection improvement at Bridgman Road and the New England Highway (staging generally as detailed below).

#### 2.1.1 Staging

Note: Drawings are diagrammatic only.

#### Existing

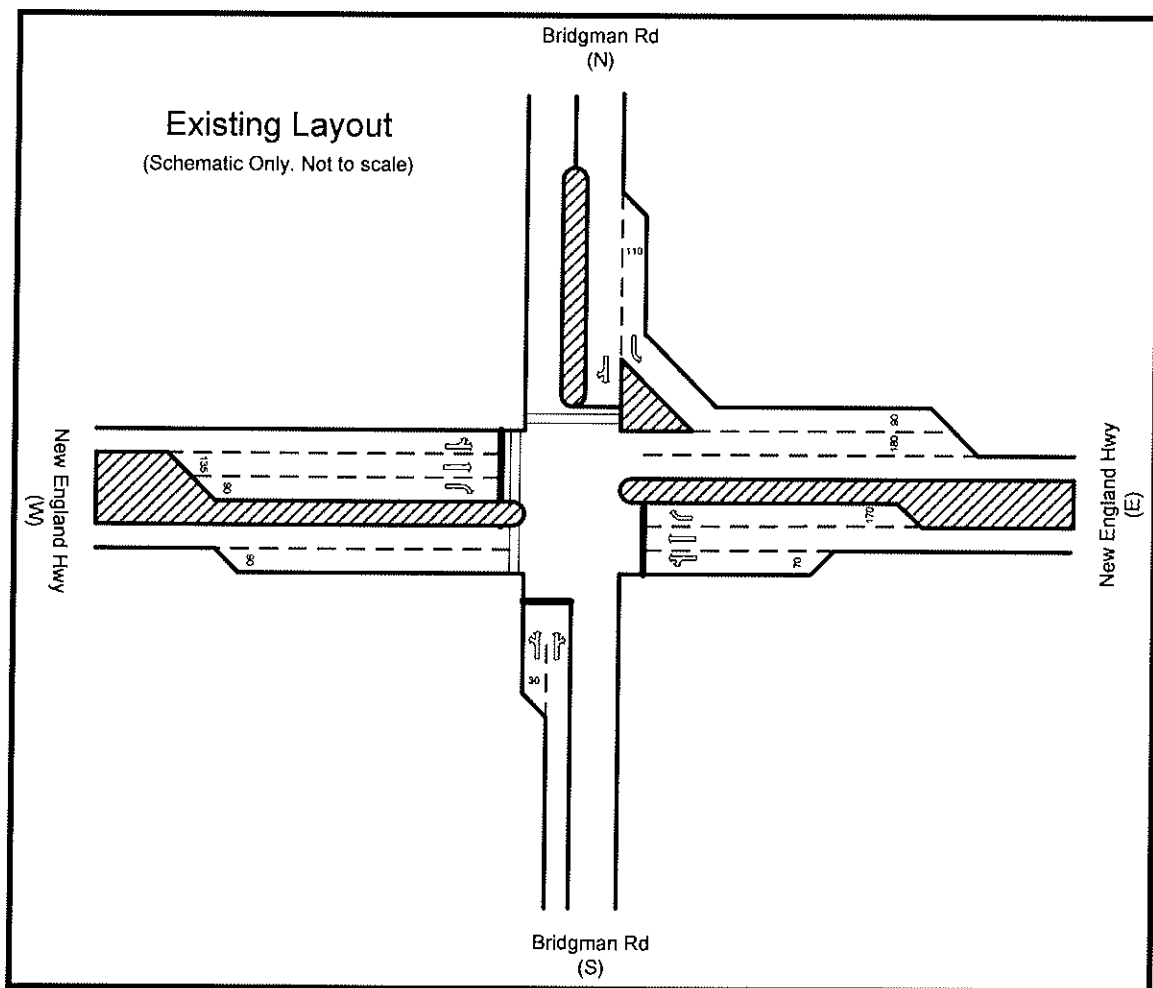


Figure 2-1 -- Staging: Existing Layout

## Stage 1

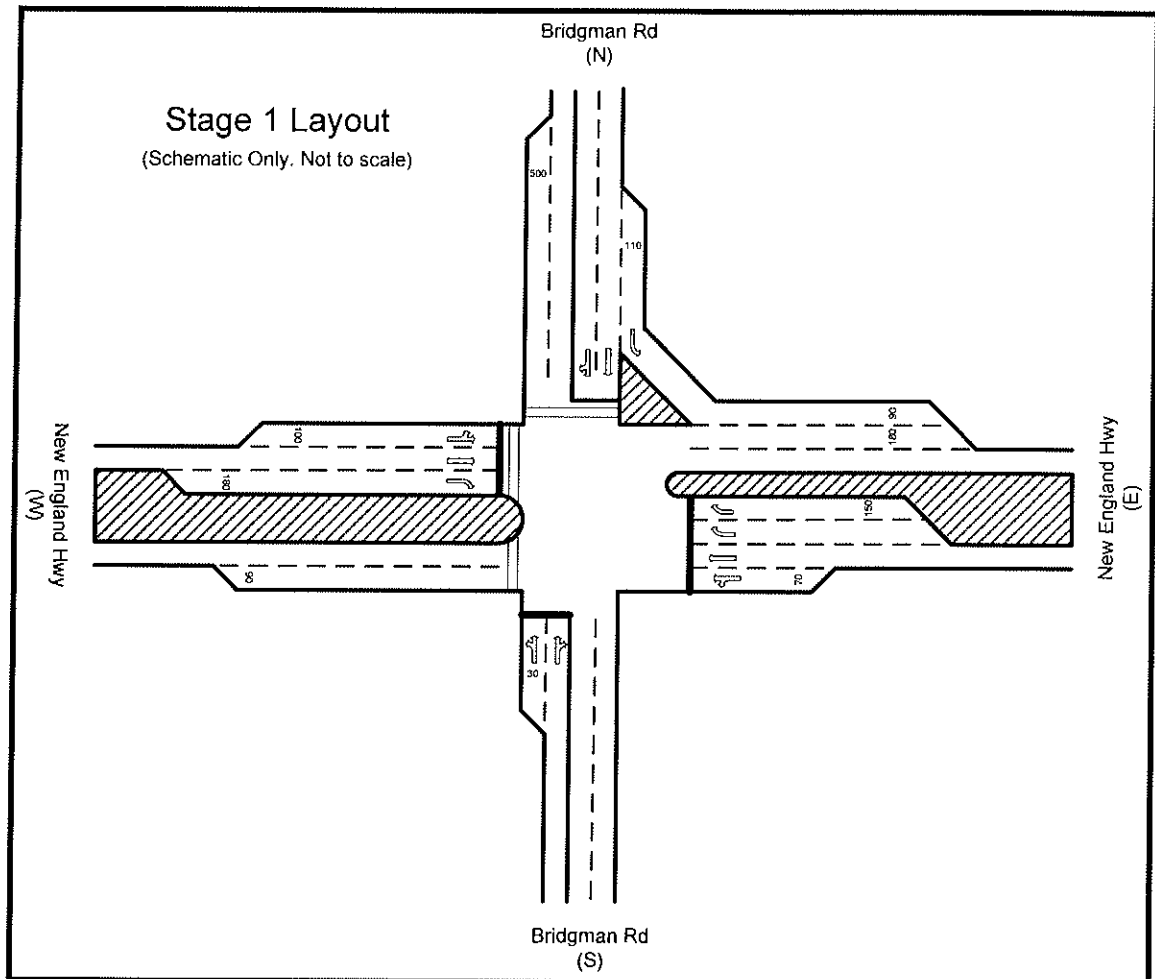


Figure 2-2 -- Staging: Stage 1

- a) New England Highway – Eastern Approach
  - Additional lane to provide
    - Dual through lanes (west bound)
    - Dual right turn lanes (into Bridgman Rd (N))
- b) New England Highway -- Western Approach
  - Align through lane (east bound)
  - Define left turn/ through lane (east bound and into Bridgman Rd (N))
- c) Bridgman Road – Northern Approach
  - Restrict parking in
  - to create two travel lanes
  - Line mark, with minimal shoulder construction, southbound lanes to provide;
    - Single left turn slip lane
    - Single through lane
    - Single right turn lane
- d) Bridgman Road – Southern Approach
  - Line mark, with minimal shoulder construction, southbound lanes to provide two lanes

## Stage 2

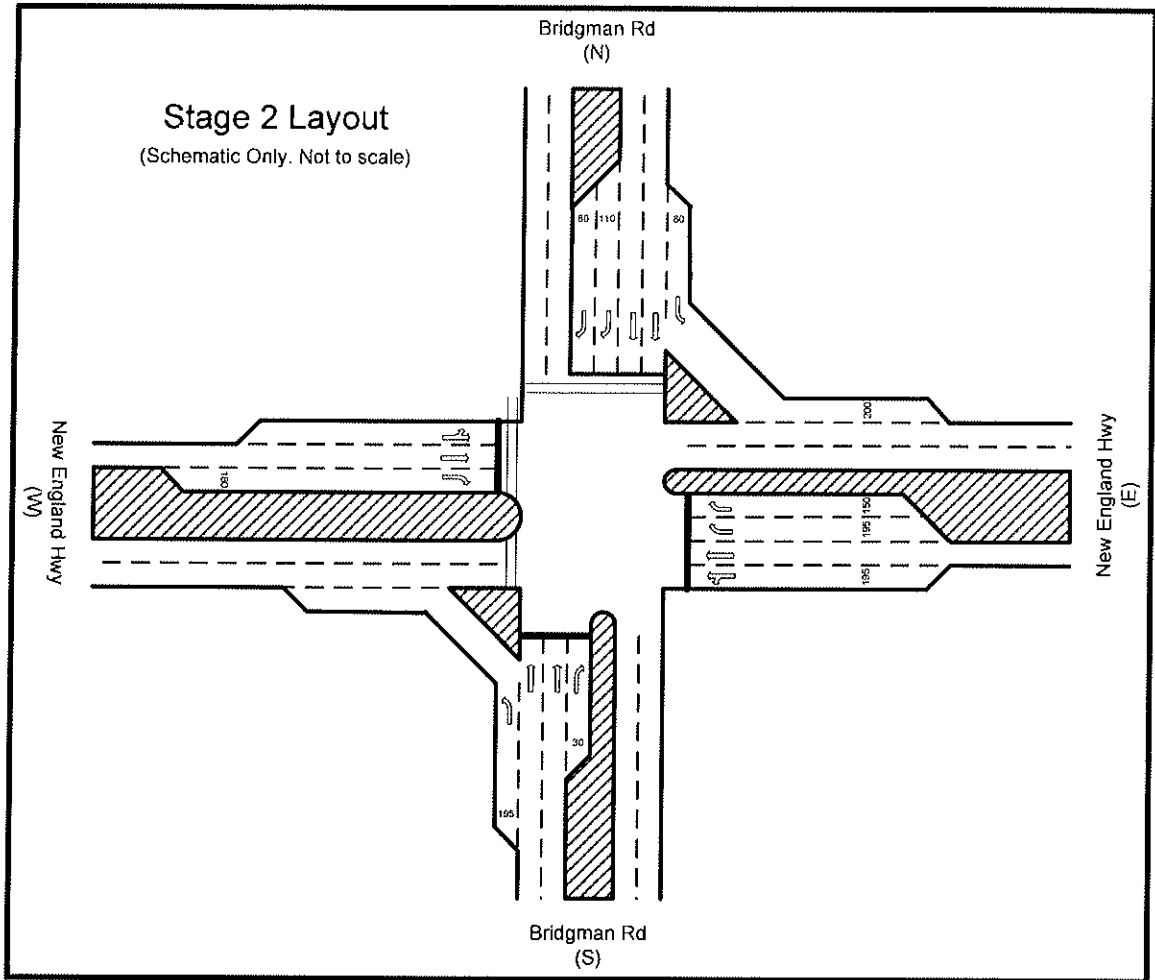
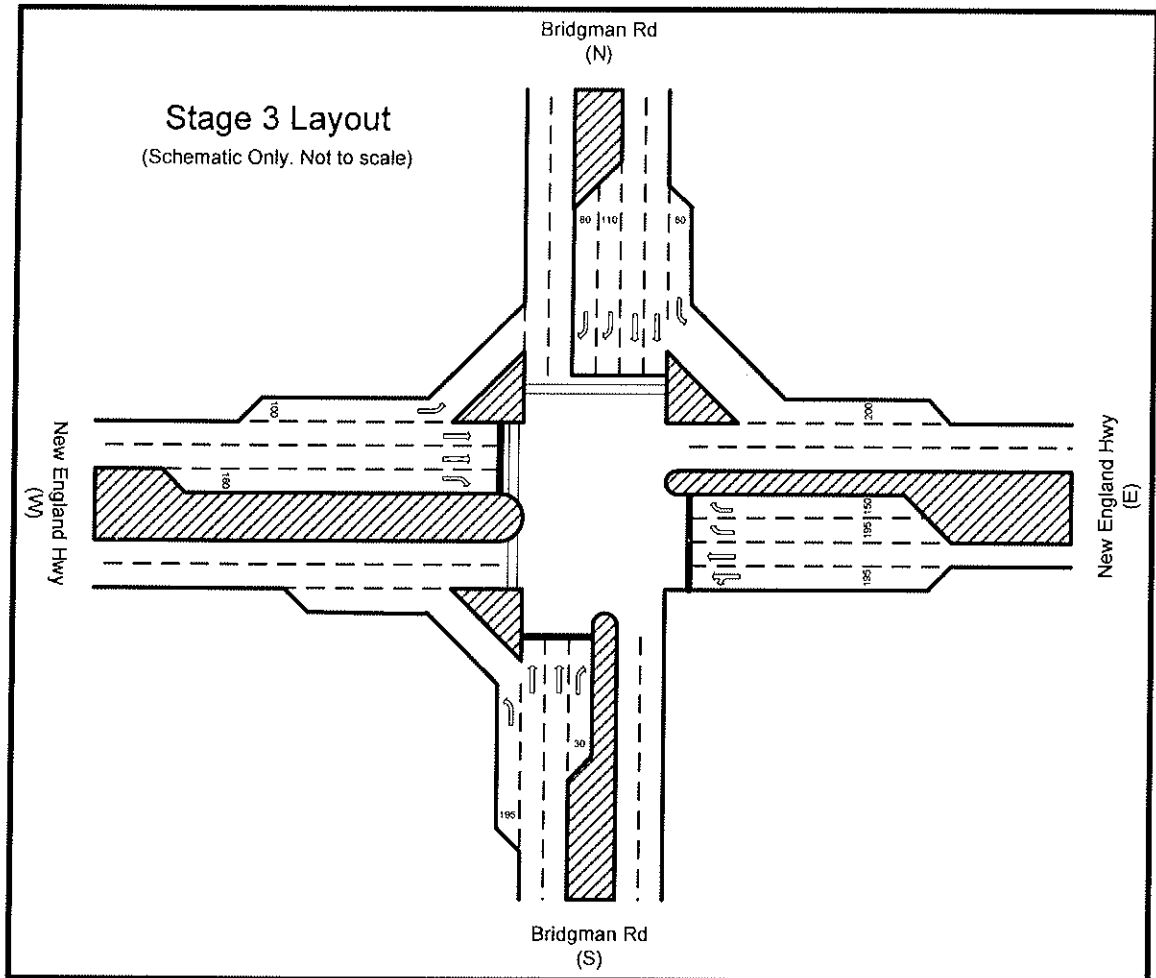


Figure 2-3 -- Staging: Stage 2

- a) New England Highway – Eastern Approach
  - Extend slip lane east bound from Bridgman Road (N) and through lane merge
- b) New England Highway -- Western Approach
  - Widen west bound to provide;
    - Extend through lane merge
    - Slip lane west bound from Bridgman Road (S)
- c) Bridgman Road – Northern Approach
  - Widen to provide;
    - Two through lanes south
    - Two right turn lanes
    - Slip lane into NEH east bound
- d) Bridgman Road – Southern Approach
  - Widen to provide;
    - Two through lanes south bound
    - Two through lanes (northbound)
    - Single right turn lane northbound into NEH
    - Slip lane into NEH west bound

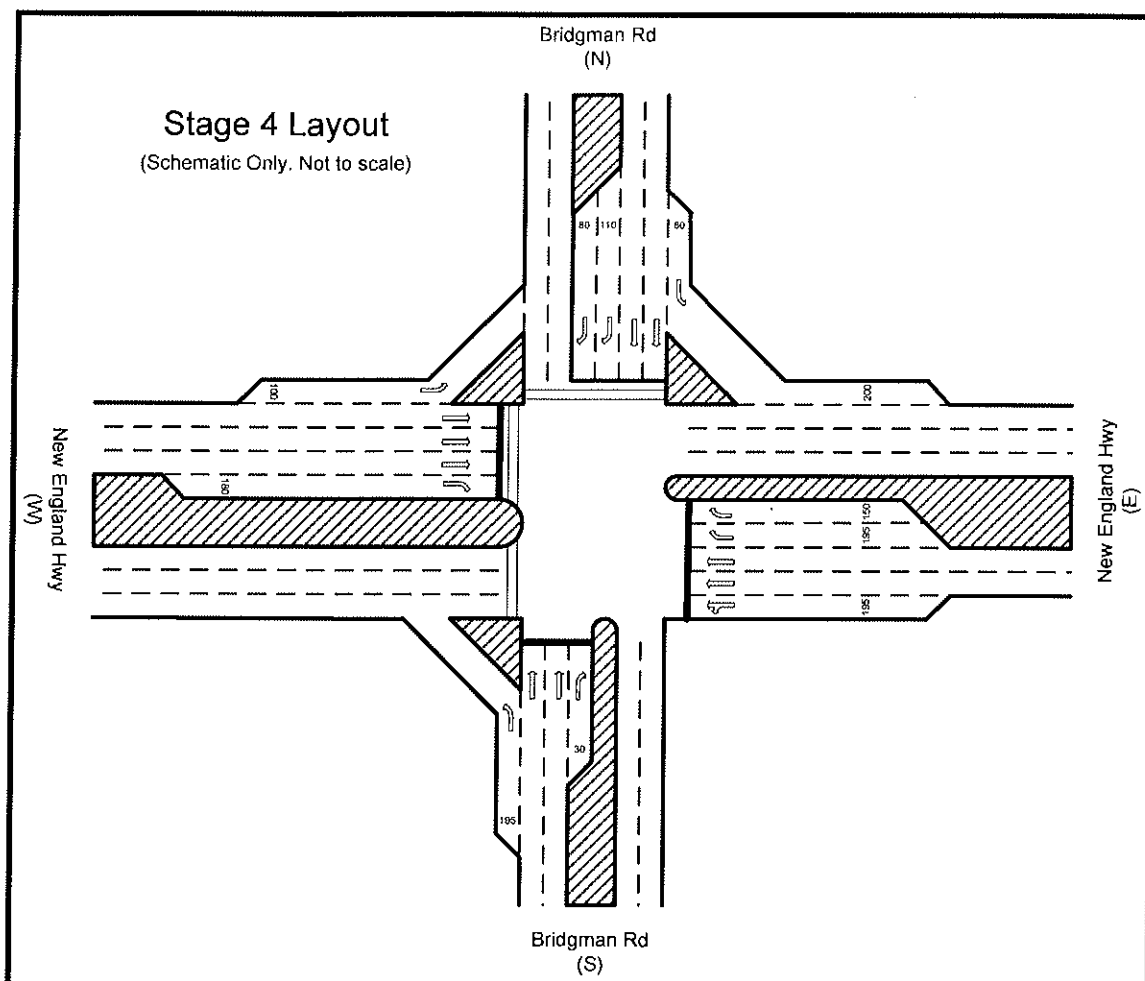
## Stage 3



**Figure 2-4 -- Staging: Stage 3**

- a) New England Highway – Eastern Approach
  - Provide slip lane into Bridgman Road (N)
  - Extend through lane and merge
- b) New England Highway -- Western Approach
  - No further change
- c) Bridgman Road – Northern Approach
  - No further change
- d) Bridgman Road – Southern Approach
  - No further change

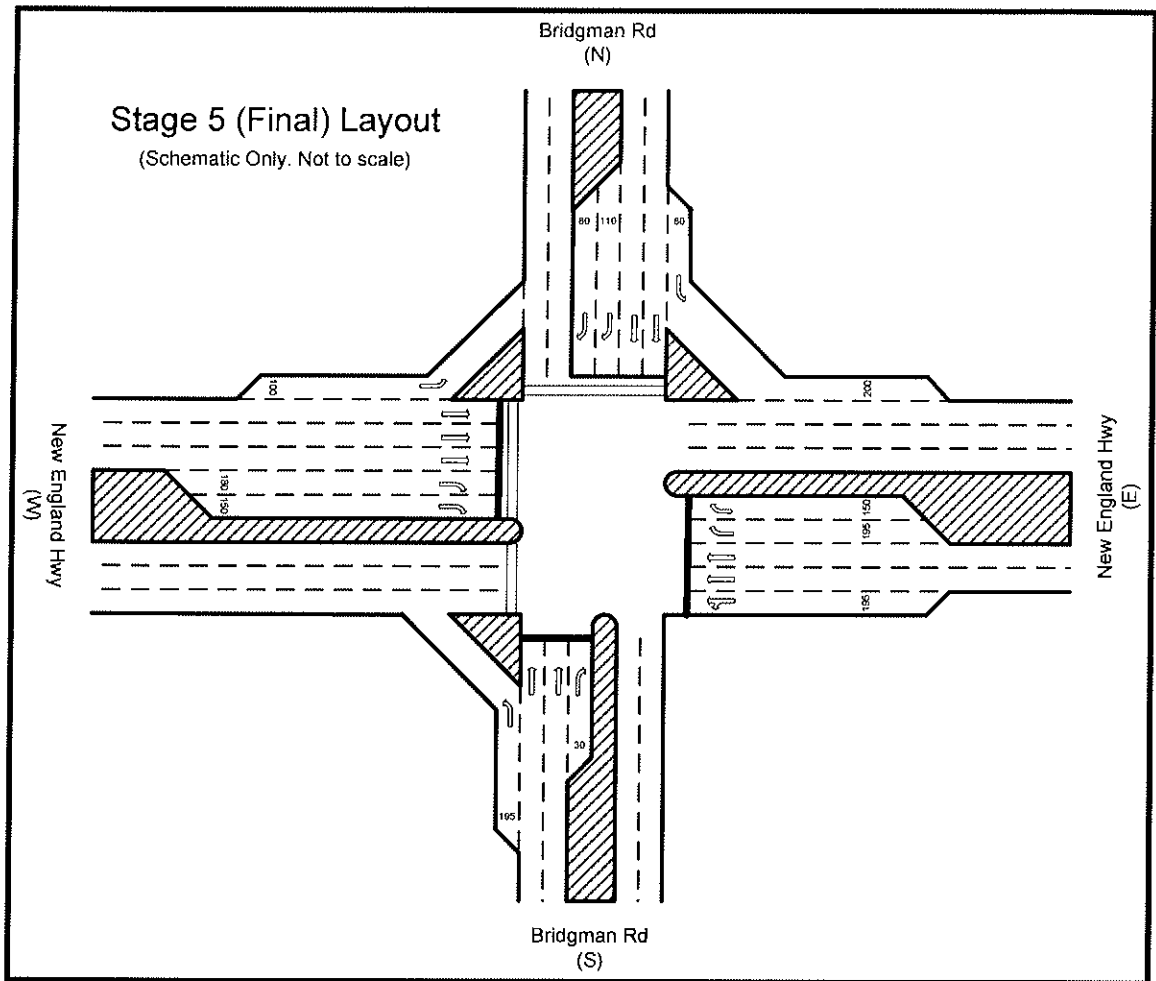
## Stage 4



**Figure 2-5 -- Staging: Stage 4**

1. New England Highway – Eastern Approach
  - Widen to three through lanes
2. New England Highway -- Western Approach
  - Widen to three through lanes
3. Bridgman Road – Northern Approach
  - No further change
4. Bridgman Road – Southern Approach
  - No further change

## Stage 5



**Figure 2-6 -- Staging: Stage 5 (Final)**

1. New England Highway – Eastern Approach
  - No further change
2. New England Highway – Western Approach
  - Provide additional right turn lane into Bridgman Rd (S)
3. Bridgman Road – Northern Approach
  - No further change
4. Bridgman Road – Southern Approach
  - No further change

## **Appendix G**

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Level crossing survey data  
(August 2010)





LOCATION CAMBERWELL LEVEL CROSSING ON MIDDLE FALBROOK RD, CAMBERWELL  
 CLIENT PARSONS BRINCKERHOFF DATE 3-Aug-10  
 PERIOD 00:00 - 00:00 (24HRS) WEATHER SHOWERS

Time Period			North Bound		South Bound	
			Lights	Heavies	Lights	Heavies
0:00	to	0:15	0	0	0	0
0:15	to	0:30	0	0	0	0
0:30	to	0:45	0	0	0	0
0:45	to	1:00	0	0	0	0
1:00	to	1:15	0	0	0	0
1:15	to	1:30	0	0	0	0
1:30	to	1:45	0	0	0	0
1:45	to	2:00	0	0	0	0
2:00	to	2:15	0	0	0	0
2:15	to	2:30	0	0	0	0
2:30	to	2:45	0	0	0	0
2:45	to	3:00	0	0	0	0
3:00	to	3:15	0	0	0	0
3:15	to	3:30	0	0	0	0
3:30	to	3:45	0	0	0	0
3:45	to	4:00	0	0	0	0
4:00	to	4:15	0	0	0	0
4:15	to	4:30	0	0	0	0
4:30	to	4:45	0	0	0	0
4:45	to	5:00	0	0	0	0
5:00	to	5:15	0	0	0	0
5:15	to	5:30	0	0	1	0
5:30	to	5:45	0	0	0	0
5:45	to	6:00	1	0	1	0
6:00	to	6:15	0	0	1	0
6:15	to	6:30	0	0	2	1
6:30	to	6:45	0	0	1	0
6:45	to	7:00	1	0	0	0
7:00	to	7:15	1	0	0	0
7:15	to	7:30	1	0	1	0
7:30	to	7:45	2	1	1	0
7:45	to	8:00	0	1	0	0
8:00	to	8:15	1	0	1	1
8:15	to	8:30	0	1	0	0
8:30	to	8:45	0	1	0	0
8:45	to	9:00	0	0	0	0
9:00	to	9:15	0	0	1	0
9:15	to	9:30	0	0	0	0
9:30	to	9:45	0	0	2	0
9:45	to	10:00	1	0	0	0
10:00	to	10:15	0	0	0	0
10:15	to	10:30	0	1	1	1
10:30	to	10:45	0	0	0	1
10:45	to	11:00	0	0	0	1
11:00	to	11:15	0	2	0	0
11:15	to	11:30	0	0	0	0
11:30	to	11:45	2	0	0	0
11:45	to	12:00	1	0	0	0
<b>AM TOTALS</b>			<b>11</b>	<b>7</b>	<b>13</b>	<b>5</b>
12:00	to	12:15	0	0	0	1
12:15	to	12:30	0	1	1	0
12:30	to	12:45	1	0	1	0
12:45	to	13:00	0	0	1	0
13:00	to	13:15	1	1	0	0
13:15	to	13:30	0	0	1	0



LOCATION CAMBERWELL LEVEL CROSSING ON MIDDLE FALBROOK RD, CAMBERWELL  
 CLIENT PARSONS BRINCKERHOFF DATE 3-Aug-10  
 PERIOD 00:00 - 00:00 (24HRS) WEATHER SHOWERS

Time Period			North Bound		South Bound	
			Lights	Heavies	Lights	Heavies
13:30	to	13:45	0	0	0	0
13:45	to	14:00	0	0	0	0
14:00	to	14:15	1	0	1	1
14:15	to	14:30	0	0	0	0
14:30	to	14:45	0	0	0	0
14:45	to	15:00	2	0	0	0
15:00	to	15:15	0	1	1	0
15:15	to	15:30	0	0	0	0
15:30	to	15:45	0	0	0	0
15:45	to	16:00	1	0	0	0
16:00	to	16:15	0	0	0	0
16:15	to	16:30	0	0	0	0
16:30	to	16:45	0	0	0	0
16:45	to	17:00	0	0	0	0
17:00	to	17:15	0	0	0	0
17:15	to	17:30	0	0	0	0
17:30	to	17:45	0	0	0	0
17:45	to	18:00	0	0	0	0
18:00	to	18:15	1	0	0	0
18:15	to	18:30	0	0	0	0
18:30	to	18:45	0	0	1	0
18:45	to	19:00	1	0	0	0
19:00	to	19:15	0	0	0	0
19:15	to	19:30	0	0	0	0
19:30	to	19:45	0	0	1	0
19:45	to	20:00	0	0	0	0
20:00	to	20:15	0	0	0	0
20:15	to	20:30	0	0	0	0
20:30	to	20:45	0	0	0	0
20:45	to	21:00	0	0	0	0
21:00	to	21:15	0	0	0	0
21:15	to	21:30	0	0	1	0
21:30	to	21:45	0	0	0	0
21:45	to	22:00	0	0	0	0
22:00	to	22:15	0	0	0	0
22:15	to	22:30	0	0	0	0
22:30	to	22:45	0	0	0	0
22:45	to	23:00	0	0	0	0
23:00	to	23:15	0	0	0	0
23:15	to	23:30	0	0	0	0
23:30	to	23:45	0	0	0	0
23:45	to	0:00	0	0	0	0
<b>PM TOTALS</b>			<b>8</b>	<b>3</b>	<b>9</b>	<b>2</b>

\*\*Notes: A car was travelling Westbound next to railway track at 9:04:10 and travelled back to Eastbound at 9:11:36



# SKYHIGH

THE TRAFFIC SURVEY COMPANY

LOCATION	CAMBERWELL LEVEL CROSSING ON MIDDLE FALBROOK RD, CAMBERWELL		
CLIENT	PARSONS BRINCKERHOFF	DATE	3-Aug-10
PERIOD	00:00 - 00:00 (24HRS)	WEATHER	SHOWERS

Direction of Train	Type of Train (Passenger/Freight)	No of Carriages	Train Arrival Time on Crossing(TA)	Train Departure Time from Crossing(TD)	Total Train travel Time on Crossing(TD - TA)	North Leg - Total Queuing Time(QE - QS)	South Leg - Total Queuing Time(QE - QS)	North Leg - Middle Falbrook Rd			South Leg - Middle Falbrook Rd		
								Queue Start Time(QS)	Queue End Time(QE)	Total Vehicles Queued	Queue Start Time(QS)	Queue End Time(QE)	Total Vehicles Queued
Westbound	Passenger	Too Dark	0:10:06	0:10:09	0:00:03	-	-	-	-	0	-	-	0
Westbound	Freight	Too Dark	0:42:41	0:43:30	0:00:49	-	-	-	-	0	-	-	0
Westbound	Freight	Too Dark	1:10:40	1:11:55	0:01:15	-	-	-	-	0	-	-	0
Eastbound	Freight	Too Dark	1:13:13	1:13:19	0:00:06	-	-	-	-	0	-	-	0
Westbound	Freight	Too Dark	1:28:53	1:30:01	0:01:08	-	-	-	-	0	-	-	0
Westbound	Freight	Too Dark	2:43:08	2:44:06	0:00:58	-	-	-	-	0	-	-	0
Westbound	Freight	Too Dark	3:15:20	3:16:48	0:01:28	-	-	-	-	0	-	-	0
Westbound	Passenger	Too Dark	4:45:19	4:45:28	0:00:09	-	-	-	-	0	-	-	0
Westbound	Freight	Too Dark	5:38:56	5:42:28	0:03:32	-	-	-	-	0	-	-	0