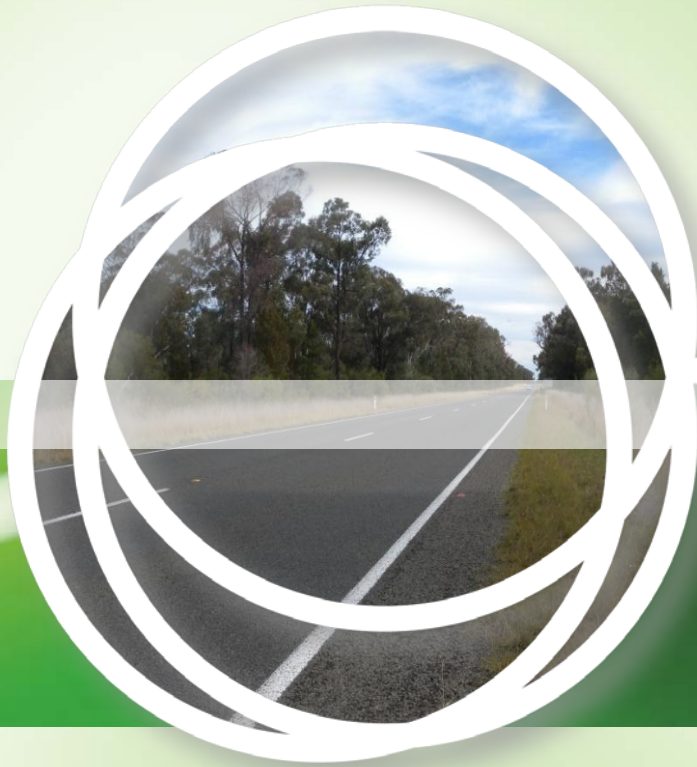


Appendix 7

Traffic and Transport Assessment



Dewhurst Gas Exploration
Dewhurst, Narrabri
Traffic and Transport Assessment

transportation planning, design and delivery

Dewhurst Gas Exploration

Dewhurst, Narrabri

Traffic and Transport Assessment

Issue: D 29/10/13

Client: RPS Australia East Pty Ltd

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Executive Summary

Summary of Existing Assets

A number of forestry and local roads provide access to the State Forest areas and internal properties including the Dewhurst 13-18H Pilot and the Dewhurst 26-31 Pilot. X-line Road and Westport Road link these roads with the Newell Highway. Both roads have previously been used for the construction and operation of existing pilot wells, including the Bibblewindi Multi-Lateral Pilot.

The Newell Highway is a major north-south inland transport corridor linking NSW with Victoria and Queensland. Existing traffic volumes along the Newell Highway are typically in the order of 1,860 vehicles per day with a 40% proportion of heavy vehicles. Based on this and peak hour traffic flows in the order of 150 vehicles, the Newell Highway has a Level of Service B (LOS) or better, with significant spare capacity.

Potential Impacts

Access to Dewhurst 13-18H and Dewhurst 26-31 will be from the Newell Highway via X-line Road in combination with several other minor roads including Tighes Gully Road and Killara Road, which lead to each site and other related services.

Westport Drillers Camp will accommodate all workers during drilling activities and will significantly reduce the number of daily trips made. The camp is located on the edge of the State Forests, approximately 10km north of Dewhurst 26-31 and is anticipated to generate 8 daily shuttle bus trips between each drilling site and the Camp. An additional 8 vehicle trips will be required for the delivery of meals to workers throughout the day.

There will be approximately 24 vehicle trips on a typical day where there are no equipment deliveries. This includes the shuttle buses transporting workers to and from the work site, with less than 10 external vehicle trips (using the Newell Highway) associated with construction vehicles or worker vehicles.

Based on the staging of construction works associated with the two pilots, it is estimated that the construction works would generate up to 66 vehicle trips during the peak day. This includes 44 construction vehicle trips, 16 shuttle bus trips and 6 external worker vehicle trips.

Given the existing traffic volumes on the Newell Highway and the distribution of vehicles over the day, the anticipated traffic generation (typical and maximum) would have a minimal impact on the surrounding road network. The Newell Highway would continue to operate at or near a LOS B with an increase in daily vehicle movements of up to 3%.

The intersection of the Newell Highway with X-line Road would adequately accommodate the increased vehicle volumes, with adequate gaps available in Newell Highway traffic and resulting in a minimal impact on existing intersection operation. Furthermore, the intersection has recently been upgraded and would be capable of accommodating the maximum vehicle size of a 20m long extended trailer truck.

It is recommended that a monitoring and maintenance program be implemented to ensure the intersection of the Newell Highway and X-line Road maintains a suitable condition to assist heavy vehicles and allow for safe operation.

Cumulative Impact Assessment

The Santos Energy NSW Coal Seam Gas Exploration and Appraisal Program (E&A Program) will be conducted over the next two to three years. It is understood that the current construction schedule for all relevant construction works specifies staggered construction activity. As such, cumulative vehicle trips associated with all projects that will occur simultaneously to the two Dewhurst Pilots would generate up to 88 vehicle trips per day on any peak day, including up to 61 construction vehicle trips and up to 26 worker vehicle trips including shuttle buses. This includes vehicles associated with the construction at the Dewhurst 13-18H Pilot and the Dewhurst 30-31 Pilot.

Given the temporary nature of the associated construction works, the impact on the surrounding road network and the Newell Highway would not be significant.

Furthermore, the operational impact on the surrounding road network would be negligible, with up to 10 vehicle trips (spread across the road network) being generated by a single vehicle accessing each of the pilots and other facilities. The majority of these would be retained within the State Forest area, with less than five vehicle trips travelling along the Newell Highway in any one day. Vehicle trips to the forest areas may occasionally increase for short periods for the purposes of well maintenance and work-over activities. However these trips would remain considerably less than those generated during construction. Therefore the road network would be capable of accommodating the temporary increase in vehicle volumes.

Mitigation Measures

It is recommended that signage be installed along the Newell Highway on approach to X-line Road to warn Newell Highway drivers of construction vehicle activity associated with the overall construction works.

The surface condition of X-line Road and site access tracks will be monitored by the contractor and repaired as needed to maintain all-weather access to the site and to minimise the impact on other road users. This will be undertaken in consultation with the appropriate authorities.

It is understood that water will be transported by truck as required, to provide for appropriate dust control and track stabilisation (not part of this assessment). Sediment tracking onto the Newell Highway will be monitored throughout all construction activities.

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1. Introduction

1.1 Background

It is understood that an Environmental Impact Statement (EIS) is to be lodged with the Department of Planning and Infrastructure on behalf of Santos NSW (Eastern) Pty Ltd (Santos) for the proposed expansion of operations at two pilots, referred to as Dewhurst 13-18H and Dewhurst 26-31. This work forms part of the Santos Energy NSW Coal Seam Gas Exploration and Appraisal Program (the E&A Program).

Santos is proposing to redrill three existing wells to convert single horizontal wells to triple stacked horizontal wells within Dewhurst 13-18H. The proposed works at Dewhurst 26-31 involves the construction of two additional wells on new lease areas (Dewhurst 30 and Dewhurst 31). As such, Santos is seeking approval for these construction works at both pilots in combination with the operation of both pilots.

RPS Australia East Pty Ltd commissioned GTA Consultants in July 2013 to prepare a traffic and transport assessment for inclusion in the EIS. The assessment, as detailed in this report identifies the anticipated traffic and transport impacts of the proposed activity.

1.2 Purpose of this Report

This report sets out an assessment of the anticipated traffic and transport implications of the project, as they relate to the proposed activity, including consideration of the following:

- i existing traffic conditions surrounding each site
- ii construction activities and associated traffic management
- iii construction vehicle requirements
- iv site accesses and truck routes
- v the traffic and transport impact of the construction works and site operation on the surrounding road network.

This report also addresses the relevant traffic and transport issues outlined in the Director General's Requirements (DGRs) issued on 22 July 2013 (reference number: SSD 6038) as detailed in Table 1.1.

Table 1.1: Director General's Requirements (DGRs)

Project Phase	DGR Description	Relevant Section
Traffic and Transport	an assessment of the project on the capacity, functionality, efficiency and safety of the local road network	Section 4.7
	details of road transport volumes and types broken down into origin and destination, travel routes and peak hours for the construction, operation and decommissioning of the project	Section 4.2 Section 4.5
	a description of the measures that would be implemented to maintain and/or improve the capacity, functionality, efficiency and safety of the road networks in the surrounding area over the life of the project	Section 6
	details of the location of all waterways crossings, including any new access tracks or existing waterway crossing upgrades	Not Applicable
	a description of the transfer of gas via pipeline and flowline to the Bibblewindi Water Management Facility and Wilga Park Power Station	Not Applicable

1.3 References

In preparing this Traffic and Transport Assessment, reference has been made to the following:

- Guide to Traffic Management, Part 2: Traffic Theory, Austroads, 2008
- Procedures for use in the Preparation of a Traffic Management Plan (TMP), Roads and Maritime Services, December 2001 (Version 2.0)
- Traffic Control at Work Sites manual, Roads and Maritime Services, June 2010
- Australian Standard, Manual of Uniform Traffic Control Devices – Part 3: Traffic Control for Works on Roads, AS1742.3:2009
- Guide to Traffic Generating Developments, Version 2.2, Roads and Maritime Services, October 2002
- Director General's Requirements, 20 May 2013 (SSD 5934)
- Class Speed Matrix, MetroCount Traffic Executive, 29 September 2011-21 November 2011, Narrabri Shire Council
- Roads and Maritime Services, Traffic Counts, January 2012-March 2012, Roads and Maritime Services
- other documents and data as referenced in this report.

2. Existing Environment

Dewhurst 13-18H

Dewhurst 13-18H encompasses existing well leases including three vertical wells (Dewhurst 13-15) and three horizontal wells (16H-18H). It is located on both private land and Crown land approximately 25km south of Narrabri and 15km east of the Newell Highway.

The surrounding properties predominantly include rural lands primarily for farming purposes, with Pilliga East State Forest and rural properties located south of the site. Jacks Creek State Forest and Bibblewindi State Forest are located immediately to the east and south-west respectively.

It is noted that the closest permanent residence is located 1.8km from the site. The closest dwelling is approximately 500m to the south, however it is understood that this dwelling will not be occupied during the construction phase.

Access to Dewhurst 13-18H is currently provided via X-line Road and/ or Westport Road from the Newell Highway and other local roads and internal forestry roads.

Dewhurst 26-31

Dewhurst 26-31 is a proposed six-well pilot located within the Pilliga East State Forest approximately 44km south of Narrabri and approximately 12km east of the Newell Highway.

The surrounding land use is dominated by the Pilliga East State Forest, the Bibblewindi State Forest and rural land predominantly used for farming. It is understood that the nearest dwellings are located more than 10km from the site, outside the State Forest areas, with Narrabri being the closest accessible town. The Bibblewindi Multi-Lateral Pilot is located approximately 4km north.

Access to Dewhurst 26-31 is provided via X-line Road from the Newell Highway and other local roads and internal forestry roads.

The locations of the subject sites and their surrounding environs are shown in Figure 2.1.

Figure 2.1: Subject Site and Its Environs



Basemap Source: Google Maps

2.1 Road Network

A number of local and forestry roads provide access to the State Forest areas including the Dewhurst 13-18H Pilot and the Dewhurst 26-31 Pilot. X-line Road and Westport Road link these roads with the Newell Highway.

The road network is shown in Figure 2.2 and includes identification of the key roads.

Figure 2.2: Road Network



Basemap Source: Santos

Newell Highway

The Newell Highway is a classified State Road and is a major north-south inland transport corridor linking NSW with Victoria and Queensland. West of the site, it is a two-way, sealed rural highway configured with a 2-lane, 7m wide carriageway, with approximately 0.5m sealed shoulders on both sides.

The Newell Highway carries approximately 1,900 vehicles per day¹ with a posted speed limit of 110km/h.

The Newell Highway is shown in Figure 2.3 and Figure 2.4.

¹ Based on the tube counts undertaken by Narrabri Shire Council in September to November 2011

Figure 2.3: The Newell Highway (looking north from X-line Road)



Figure 2.4: The Newell Highway (looking south from X-line Road)



X-line Road

X-line Road is generally an unsealed forestry road travelling in an east-west direction east of the Newell Highway. It connects with the Newell Highway at a priority controlled T-intersection located approximately 35km south of Narrabri. The intersection has recently been upgraded to include approximately 30m of sealed pavement.

X-line Road links with unsealed roads within Bibblewindi State Forest including Tighes Gully Road and Middle Road and is shown in Figure 2.5 and Figure 2.6.

Figure 2.5: X-line Road at the Newell Highway



Figure 2.6: X-line Road (looking east)



Westport Road

Westport Road is an unsealed local road generally aligned in a north-south direction east of the Newell Highway. It connects with the Newell Highway at a priority controlled T-intersection located approximately 15km south of Narrabri and links with a number of local and forestry roads within the State Forests including Killara Road. Westport Road is predominately used by local traffic to access the Newell Highway.

Westport Road is shown in Figure 2.7 and Figure 2.8.

Figure 2.7: Westport Road at the Newell Highway



Figure 2.8: Westport Road (looking east)



As discussed, there are several unsealed forestry roads located within the State Forests which will be used by construction vehicles during the proposed construction activities. These roads are shown in Figure 2.11 and listed below. Photos of select roads are also included.

- Local Roads: Killara Road, Rockdale Road, Westport Road
- Crown Roads: Killara Road (east), Jacks Creek Road
- Forestry Roads: X-line Road, Middle Road, Tighes Gully Road, Garlands Road, Mcfarlanes Road, Bibblewindi Creek Road, Self Camp Road and Beehive Road.

It is noted that Beehive Road and an unnamed road to the north of Dewhurst 13-18H will have parallel gathering lines constructed along them.

Figure 2.9: Killara Road



Figure 2.10: Rockdale Road



2.2 Traffic Volumes

Narrabri Shire Council has provided GTA Consultants with recent traffic volume data for the Newell Highway. The tube count data was collected between September 2011 and November 2011, approximately 20km south of Narrabri and 20km north of X-line Road. The data results are summarised in Figure 2.11 and Figure 2.12 with the following key data gathered:

- Average Daily Traffic: 1,860 vehicles
- proportion heavy vehicles: 40%
- 7 day average peak hour: 134
- highest average peak hour: 156.

In addition, the survey data illustrates that the traffic flows are relatively consistent across the day time period of 8:00am to 4:00pm and are in the order of 140 vehicles per hour. Such observations are consistent with the intended use of the Newell Highway.

Figure 2.11: Newell Highway – 24 Hour Traffic Profile

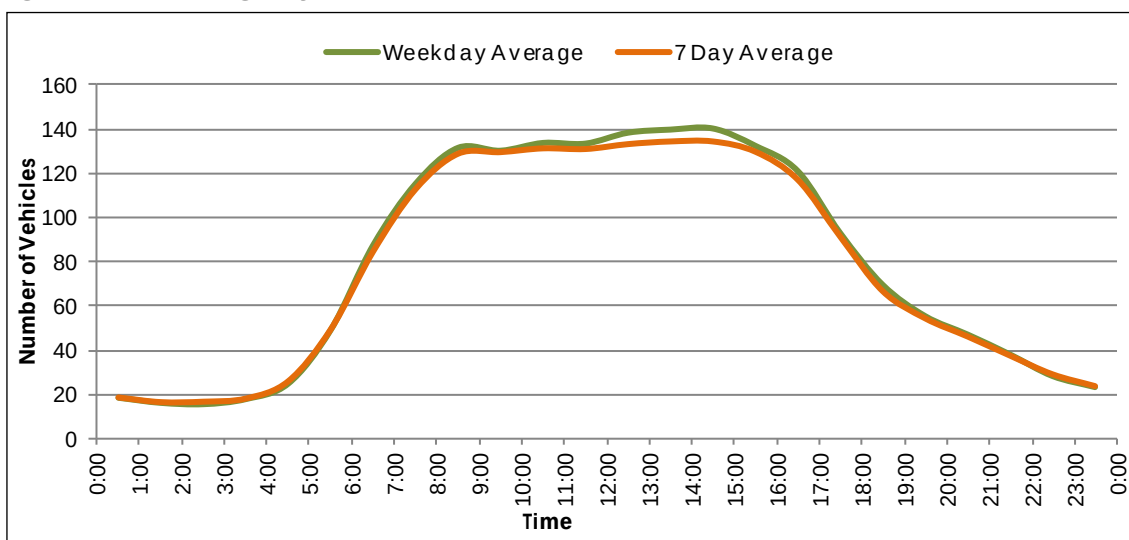


Figure 2.12 illustrates that the Newell Highway carries a high percentage of heavy vehicles, in particular articulated vehicles (Class 10) and B-doubles (Class 11). These two classes account for 32% of all traffic along the Newell Highway with light vehicles (cars, cars with trailers, motorbikes, etc.) accounting for 60% (Class 1-3). The analysis is based on the complete data set (two months) and is representative of the average percentage of vehicle types which typically use the Newell Highway.

Figure 2.12: Newell Highway – Percentage of Vehicle Type

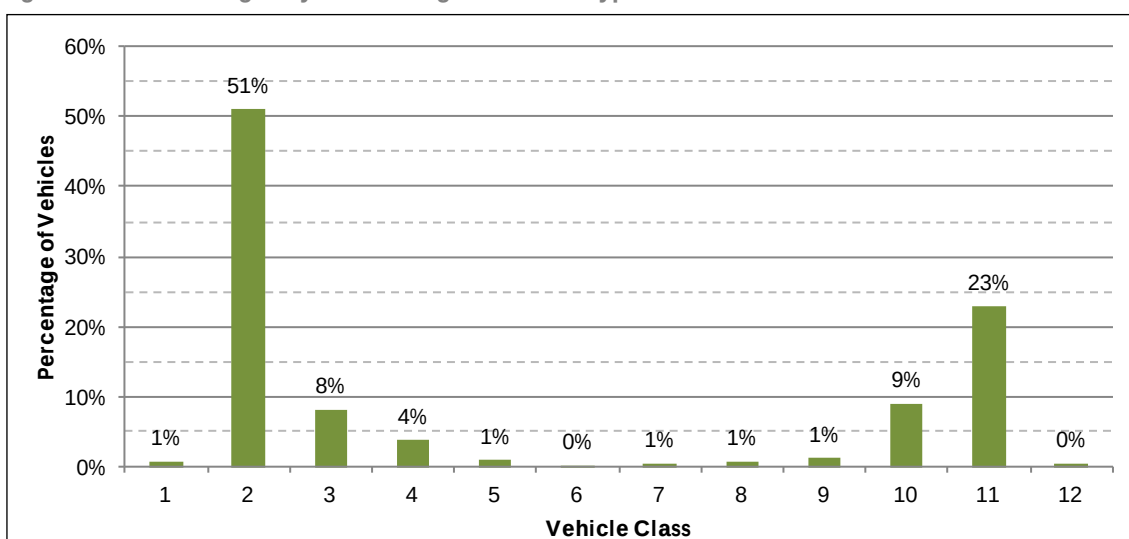


Figure 2.12 references the ARX classification system which is detailed as follows:

- Class 1: bicycle or motorcycle
- Class 2: car
- Class 3: car with trailer
- Class 4-6: two to four axle rigid vehicle
- Class 7-10: three to six axle articulated vehicle
- Class 11: B-double
- Class 12: double or triple road train.

Roads and Maritime Services (RMS) has also provided GTA Consultants with traffic volume data collected from a location near Delwood Road, approximately 18km south of X-line Road between January 2012 and March 2012. The data indicates that the average daily traffic along the Newell Highway is 1,465 vehicles.

Given that cotton harvesting generally peaks throughout April and wheat harvesting throughout September and October, it is apparent that harvesting activity can cause traffic fluctuations of up to 25% along the Newell Highway. As such, the data provided by Council could be considered representative of a peak season period and that provided by RMS as representative of a typical period.

The full traffic volume data is provided in Appendix A.

2.2.1 Site Visit

GTA Consultants undertook a site visit on 29 August 2013. This included an assessment of the surrounding road network, with a sample traffic movement survey at the intersection of Newell Highway and Westport Road during the peak weekday PM period (2:30pm to 4:00pm).

Vehicle movements along the Newell Highway were observed to peak at 143 two-way per hour, with a 35% heavy vehicle proportion, predominately B-doubles. As such, the data collected was generally consistent with the traffic volumes summarised above.

Westport Road at the Newell Highway typically generates less than 10 vehicle movements per hour.

It is worth noting that the local school bus pick-up/ set-down activity occurs on the Newell Highway at Westport Road. The bus was observed to use the Newell Highway road verge to set-down school children in the afternoon, with children collected by private vehicle.

Site observations also indicate that vehicle activity within the local road network is low, with a maximum of 10 vehicle movements in any peak hour, and less than 5 vehicle movements in a typical hour. The forestry roads typically carry even less vehicles.

2.2.2 Level of Service

Reference has been made to the Guide to Traffic Generating Developments (RMS, 2002) to estimate the existing Newell Highway Level of Service (LOS). LOS is a performance standard which describes the efficiency of traffic travelling along a stretch of road or at an intersection. It considers various factors for rural roads, including terrain (level, rolling, mountainous), speed and proportion of heavy vehicles.

The Guide indicates that in order to achieve a LOS B (the highest LOS detailed), traffic volumes are required to be less than 530 vehicles per hour with a 15% heavy vehicle proportion. Assuming a 40% heavy vehicle proportion along this section of the Newell Highway, this equates to 350-400

vehicles per hour. Given that the traffic volumes are approximately 150 vehicles in any peak hour along the Newell Highway this represents a LOS A or LOS B depending upon the seasonal factors. As such, the Newell Highway has considerable spare capacity to accommodate additional vehicle movements.

Given that there is negligible traffic travelling on internal roads in the State Forest areas, they are also assumed to be achieving a LOS A, representing considerable spare capacity.

3. Assessment Approach

The traffic and transport assessment approach identifies the expected impact of the proposal on the surrounding road network during both construction and operation, while incorporating the overall principles of traffic management including:

- identifying the peak and typical vehicle generations and their impact on the intersection of X-line Road with the Newell Highway
- restricting construction vehicle movements to designated routes to/ from each site via the Newell Highway
- managing and controlling construction vehicle activity in the vicinity of each site, particularly at the intersection of X-line Road with the Newell highway.

A conservative approach is generally adopted to understand the impacts of the proposal. As such, the peak construction period traffic generation is calculated using traffic data (provided by Santos) based on truck and worker vehicle generation and the construction works schedule.

Both peak and typical periods have been established, with consideration for the temporary nature of most construction vehicle volumes. This ensures that a greater understanding of the potential impacts associated with the proposal can be realised.

The assessment also considers the cumulative impacts associated with this project and other activities associated with the E&A Program within the State Forest areas, with the timing and staging of each being a key component.

Traffic impact and management considerations for the duration of the construction works and operational works have been developed on the basis of the following which are described in more detail in Section 4:

- overview of construction works
- site access routes
- hours of construction
- construction vehicle types
- construction traffic generation
- operational traffic generation
- traffic effects.

Traffic management measures have been addressed, including provision of signage at the intersection of X-line Road with the Newell Highway to address an increase in truck volumes during construction.

4. Potential Impacts

4.1 Overview of Construction Activities

It is understood that the proposed construction activities are anticipated to commence in April 2014 with completion in September 2014, a period of approximately 5-6 months.

The construction activities required for operation of the pilots include:

Dewhurst 13-18H (3 wells)

April 2014-September 2014

- Site preparation 30 days
- Drilling 65 days
- Surface facilities 65 days

Dewhurst 30-31 (2 wells)

June 2014-September 2014

- Site preparation 20 days
- Drilling 60 days
- Surface facilities 60 days.

Based on the above and with consideration that only one drill rig will be used for all wells, site preparation at Dewhurst 30-31 will occur once drilling has commenced at Dewhurst 13-18H. In addition, drilling at Dewhurst 30-31 can only commence once drilling at Dewhurst 13-18H has been completed.

4.2 Site Access Routes

It is anticipated that the majority of truck arrivals and departures will be via the north, to/ from Narrabri with minor interstate deliveries expected to approach/ depart via the south. All truck movements will be restricted to the most direct route via the Newell Highway and X-line Road with the aim of minimising the impact of construction traffic on the local roads and forestry roads, including Westport Road.

Truck drivers will be advised of the designated truck routes to/ from the site including the need to use X-line Road via the Newell Highway.

The site access routes between the Newell Highway and Dewhurst 13-18H and Dewhurst 26-31 are listed below and are illustrated in Figure 4.1. These routes will be used during construction and operational phases.

- Dewhurst 26-31: X-line Road, Tighes Gully Road, Beehive Road
- Dewhurst 13-18H: X-line Road, Garlands Road, Westport Road, Killara Road, unnamed road to the north.

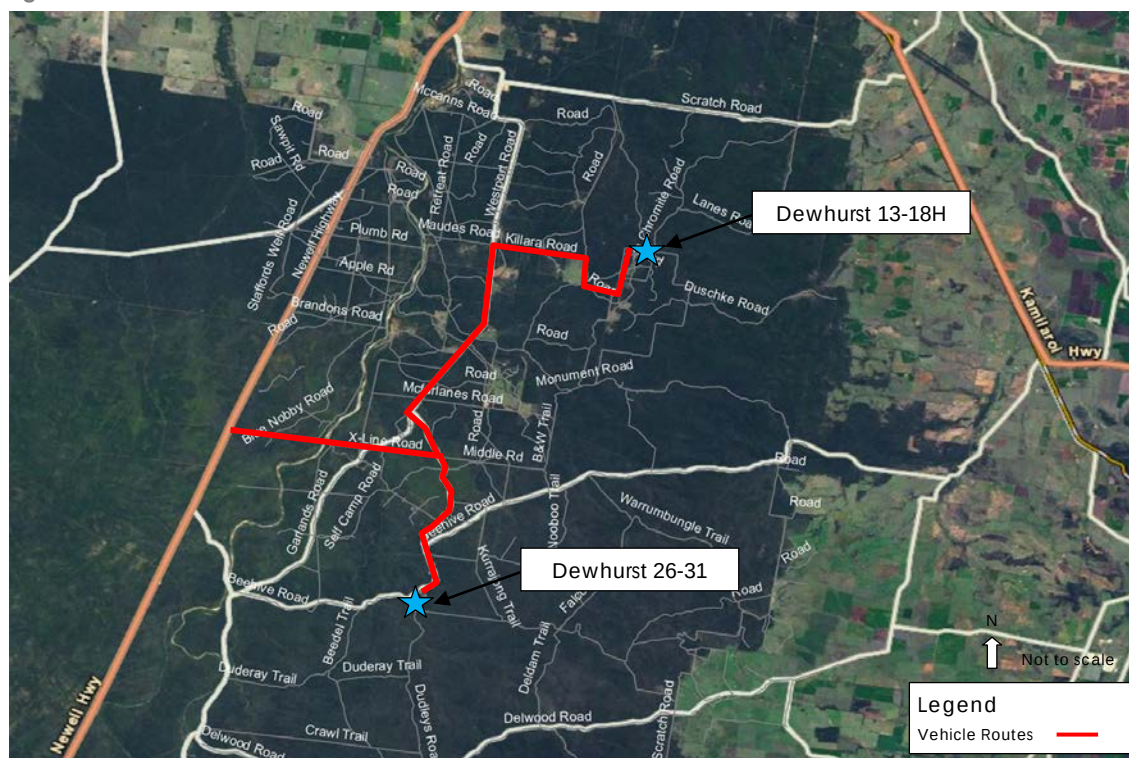
These routes also link Dewhurst 26-31 and Dewhurst 13-18H and would be required for the transportation of heavy machinery between sites.

It is understood that the majority of these roads have previously been used for the construction and operation of existing pilot wells including the Bibblewindi Multi-Lateral Pilot and Dewhurst 13-

18H. As such, these routes would adequately accommodate all vehicles throughout construction and operation.

All vehicles will be accommodated within the pilot sites throughout the construction period. Construction traffic will not be permitted to queue or park within X-Line Road, surrounding roads or along the Newell Highway.

Figure 4.1: Site Access Routes



Basemap Source: Santos

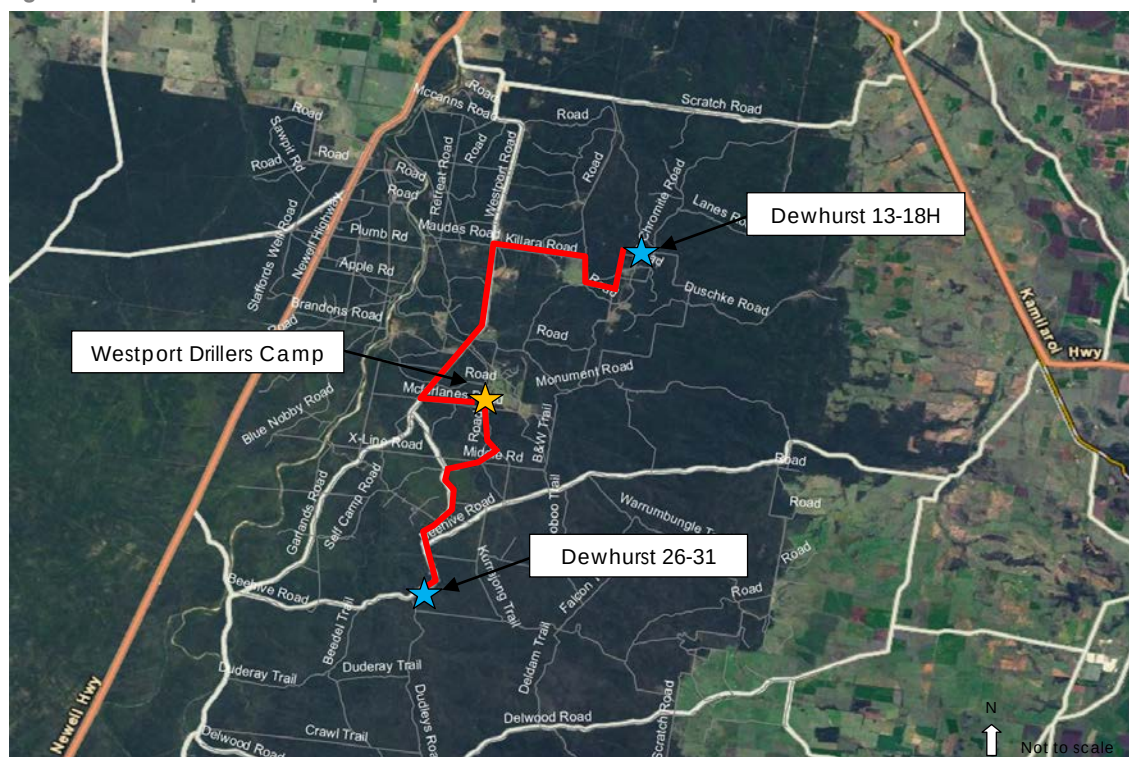
4.2.1 Westport Drillers Camp

It is understood that the Westport Drillers Camp (the camp) will accommodate all workers during drilling activities. A mini-bus will transport workers between the camp and the works site to significantly reduce the number of daily trips made. The camp is located on the edge of the State Forests, approximately 10km north of Dewhurst 26-31 as shown in Figure 4.2.

The site access routes between the camp and the pilots are listed below and shown in Figure 4.2.

- Dewhurst 26-31: Bibblewindi Creek Road, Self Camp Road, Tighes Gully Road, Beehive Road
- Dewhurst 13-18H: Mcfarlanes Road, Garlands Road, Westport Road, Killara Road and unnamed road to the north.

Figure 4.2: Westport Drillers Camp Access Routes



Basemap Source: Santos

4.3 Hours of Construction

The hours of construction work will be determined by the appointed construction contractor. However, it is anticipated that construction will occur across 24 hours, 7 days per week to maximise efficiencies and the use of remote workers.

Given the rural environment these work hours are not expected to negatively impact the surrounding area. However where practical, any associated heavy vehicle activity that passes through residential areas (including Narrabri Town Centre) should be scheduled to occur during typical construction hours (7:00am-6:00pm, Monday to Friday, 8:00am-1:00pm Saturdays).

The contractor will be responsible for instructing and managing all subcontractors with respect to the hours of work.

4.4 Construction Vehicle Types

Construction vehicles likely to be generated by the proposed construction activities include:

- 20m extended trailer truck
- 15m drill rig for drilling works at both sites
- 12m articulated flatbed trucks for the transportation of the excavator, piping and wellhead equipment
- standard operation vehicles including small rigid vehicles, utes, four wheel drives for smaller deliveries and some worker arrival and departures.

The existing intersection configuration at the Newell Highway and X-line Road is capable of accommodating typical vehicle sizes up to 19m, and would be capable of accommodating the

20m extended trailer truck, noting that this intersection was used by similar construction vehicles for construction of the existing pilot wells located within Bibblewindi and Dewhurst. As such, access to the site via X-line Road would be adequate to accommodate the proposed construction vehicles.

4.5 Construction Traffic Generation

The *Guide to Traffic Generating Developments* (the Guide) provides traffic generation estimates for different land uses. However, for construction works at the two pilots, the estimated traffic generation has been calculated based on the daily vehicle movements associated with workers and construction vehicles during each activity as detailed below and summarised in Table 4.1.

It is noted that the Guide defines a vehicle trip as a one-way vehicular movement from one point to another excluding the return journey. This approach has been used throughout this report with a return trip regarded as two vehicle trips.

4.5.1 Worker Vehicle Generation

It is understood that up to 40 workers will be accommodated at the camp at any one time. These workers are required for drilling activities only. Based on a 12 hour working day to accommodate 24 hour construction, there would likely be the need for two daily shift changes (i.e. 20 workers per daily shift).

A shuttle bus will transport up to 10 workers between the camp and the work site at the start and end of each shift. Assuming the transport of workers will be two-way to accommodate workers starting and ending their shifts, there would be up to 8 vehicle trips in any 24 hour period, or 4 vehicle trips per shift associated with the transport of drilling workers. The delivery of meals to the work site will also require 8 vehicle trips. These trips will not require access to the Newell Highway, thus having no impact on the surrounding arterial road network and minimal impact on the local road network.

It is noted that Narrabri Shire Council approved the Westport Drillers Camp in December 2012 with planned accommodation for 24-64 persons. As such, this assessment does not consider vehicles associated with the workforce rotation.

It is anticipated that minimal worker vehicle trips would be required during site preparation and surface facility construction, with workers travelling between Narrabri and the work site. Up to two daily vehicle trips are likely to occur during site preparation and up to 6 daily vehicle trips during surface facilities construction.

4.5.2 Construction Vehicle Generation

Typical construction vehicle volumes are anticipated to be minor, with peak volumes generated at the commencement and completion of a construction activity, when equipment is delivered or removed from a pilot.

Drilling will occur at one pilot well at any one time. As such, associated activities for each pilot well will occur consecutively, with the drilling rig travelling from one pilot well to another once drilling is complete. Relocation of the drilling rig would not impact the external road network.

However, following the completion of Dewhurst 31 drilling, the drilling equipment will be removed from site and likely transported to the Narrabri Operations Centre via the Newell Highway, as there will be no further drilling works.

Table 4.1: Estimated Daily Construction and Worker Vehicles

Site	Construction Activity	Estimated Duration	Construction Vehicles	Worker Vehicles	Total Vehicles	Total Trips
Dewhurst 13-18H	Site Preparation	0 days	0	0	0	0
	Delivery of Drilling Equipment	3 days	15	8 [1]	23	46
	Drilling	18 days	1	8 [1]	9	18
	Removal of Drilling Equipment	3 days	18	8 [1]	26	52
	Delivery of Gathering System Equipment	1 day	8	3	11	22
	Gathering System	7 days	0	3	3	6
	Delivery of Surface Facilities Equipment	1 day	3	3	6	12
	Surface Facilities	21 days	0	3	3	6
Dewhurst 30-31	Site Preparation	7 days	3	1	4	8
	Delivery of Drilling Equipment	3 days	19	8 [1]	27	54
	Drilling	25 days	1	8 [1]	9	18
	Removal of Drilling Equipment	3 days	18	8 [1]	26	52
	Delivery of Gathering System Equipment	1 day	3	3	6	12
	Gathering System	7 days	0	3	3	6
	Delivery of Surface Facilities Equipment	1 day	3	3	6	12
	Surface Facilities	21 days	0	3	3	6

[1] Vehicles associated with transportation of workers by bus and delivery of meals to workers at the works site.

Water may be required for dust suppression during construction. This does not form part of this assessment and will be addressed as required.

4.5.3 Typical Vehicle Generation

Table 4.1 indicates that on typical days where there are no equipment deliveries, there will be an expected overlap of drilling works at Dewhurst 30-31 and surface facility construction at Dewhurst 13-18H. As such, it is anticipated that approximately 24 vehicle trips will be generated on a typical day. This predominately includes shuttle buses transporting workers to the work site, with less than 10 external vehicle trips associated with construction vehicles and/ or worker vehicles.

As such, on a typical day there would be a negligible impact on the Newell Highway, with up to 10 daily vehicle trips at the intersection of X-line Road with the Newell Highway.

4.5.4 Peak Vehicle Generation

Table 4.1 indicates that the peak vehicle activity for each pilot occurs when drilling equipment is delivered to or removed from the work site. Between 46 and 54 daily vehicle trips are likely over a maximum of 3 days per well.

Based on the current staging schedule for each of the two pilots, there will be a peak of approximately 66 vehicle trips. This will occur where drilling activities at Dewhurst 13-18H overlap with surface facility works at Dewhurst 30-31. However, this peak vehicle generation will only occur when drilling equipment is being transported from one well to the next and overlapping

with surface facility equipment delivery at one well. Peak vehicle activity is likely to be over a maximum duration of 3 days and largely infrequent. This will likely include the following:

- 44 external construction vehicle trips including removing equipment from one site via X-line Road, delivering to the next well via internal roads and exiting the forest area via X-line Road
- 16 shuttle bus/ food delivery trips between Westport Drillers Camp and the work site
- 6 external worker vehicle trips between Narrabri and the work site.

Based on the above, a maximum of up to 50 vehicle trips would access X-line Road via its intersection with the Newell Highway.

4.6 Operational Traffic Generation

The pilot wells are anticipated to operate over a period of up to 3 years, with a similar number of staff expected to that of previous operations following the completion of construction works. 1-2 staff will visit each pilot every 1-2 days for monitoring and maintenance purposes for the whole pilot. For the purposes of this assessment, it is estimated that 1 vehicle would visit each well on a daily basis during operations. As such there will likely be two daily vehicle trips, where the vehicle enters the forest area to visit each well and then exits the forest area.

The workforce will be primarily drawn from the local area around Narrabri with arrival/ departures to/ from the north. The anticipated traffic volumes associated with the operation of the pilots will present a negligible impact to the operation of the Newell Highway at X-line Road and other forestry and local roads within the State Forest areas.

Vehicle trips to the forest area may occasionally increase for short periods for the purposes of well maintenance and work-over activities. However these trips would remain considerably less than those generated during construction. Therefore the road network would be capable of accommodating the temporary increase in vehicle volumes.

The operational workforce will function on a typical daytime shift basis and staff will typically travel to and from the sites by 4WD. The shift times are assumed to be between 7:00am and 5:00pm weekdays.

4.7 Traffic Effects

4.7.1 Traffic Generation

There will be up to 66 vehicle trips on a peak day associated with all construction activity at both sites. This includes all worker vehicles, shuttle buses and trucks, with a maximum of 50 external vehicle trips likely to access the Newell Highway via X-line Road.

The peak vehicle activity is likely to occur infrequently and for a maximum duration of 3 days at any one time. On typical days where there are equipment deliveries, there would be up to 24 vehicle trips. This includes construction vehicles and shuttle buses, with a maximum of 10 external vehicle trips likely to access the Newell Highway via X-line Road.

Given the existing traffic volumes on the Newell Highway and the distribution of vehicles over the day, the anticipated traffic generation (peak and typical) would have a minimal impact on the surrounding road network. The Newell Highway will continue to operate at or near LOS B with an increase in daily vehicle movements of between 1% and 3%.

4.7.2 Intersection Operation

Austroads Guide to Traffic Management Part 2: Traffic Theory provides further guidance when assessing the impacts associated with increased traffic volumes. This is particularly appropriate when considering the anticipated increase in truck volumes on X-line Road and through its intersection with the Newell Highway. Gap acceptance is the point at which a minor traffic stream can enter the major traffic stream when a suitable gap presents itself.

The critical gap acceptance and follow-up headways for right turning and left turning vehicles from a minor road onto a major road are 7-8 seconds and 3.5 seconds respectively². These thresholds have been determined based on a scenario where the traffic volumes are more than double those on the Newell Highway, including truck volumes.

Based on a worst case scenario, during a weekday peak period, a vehicle would pass X-line Road along the Newell Highway every 20-30 seconds. Given this and with consideration for the known critical gaps, the intersections would be capable of safely accommodating the anticipated increase in vehicles associated with the construction works. In addition, the implementation of the mitigation measures detailed in this report, including the site access plan to provide approaching vehicles with greater awareness of the X-line Road intersection and associated site vehicle activity mean that the Newell Highway would continue to operate in a safe manner throughout the works program.

4.7.3 Emergency Vehicles and Heavy Vehicles

No special provisions are required or proposed for emergency vehicles and there would be no adverse impact on emergency services.

There would be an increase in two-way daily traffic flows of up to 3%, and a 6% increase in truck movements along the Newell Highway on a peak day during construction. This increase in total traffic is considered low and would have a negligible impact on the operation of the Newell Highway.

As discussed, the increase in heavy vehicles represents a low increase in truck proportions and overall the intersection of the Newell Highway and X-line Road would continue to operate at a similar level of service as under existing conditions, therefore having minimal impact on existing truck/ traffic volumes.

4.7.4 Existing and Future Developments

It is understood that there are currently no existing or proposed land use developments within the vicinity of the site that would be adversely impacted by the construction works.

4.7.5 Traffic Movements in Adjoining Council Areas

No adverse effects are expected from the movement of heavy vehicles through adjacent council areas.

² Austroads Guide to Traffic Management Part 2: Traffic Theory, Section 5.5, Table 5.2, 2008

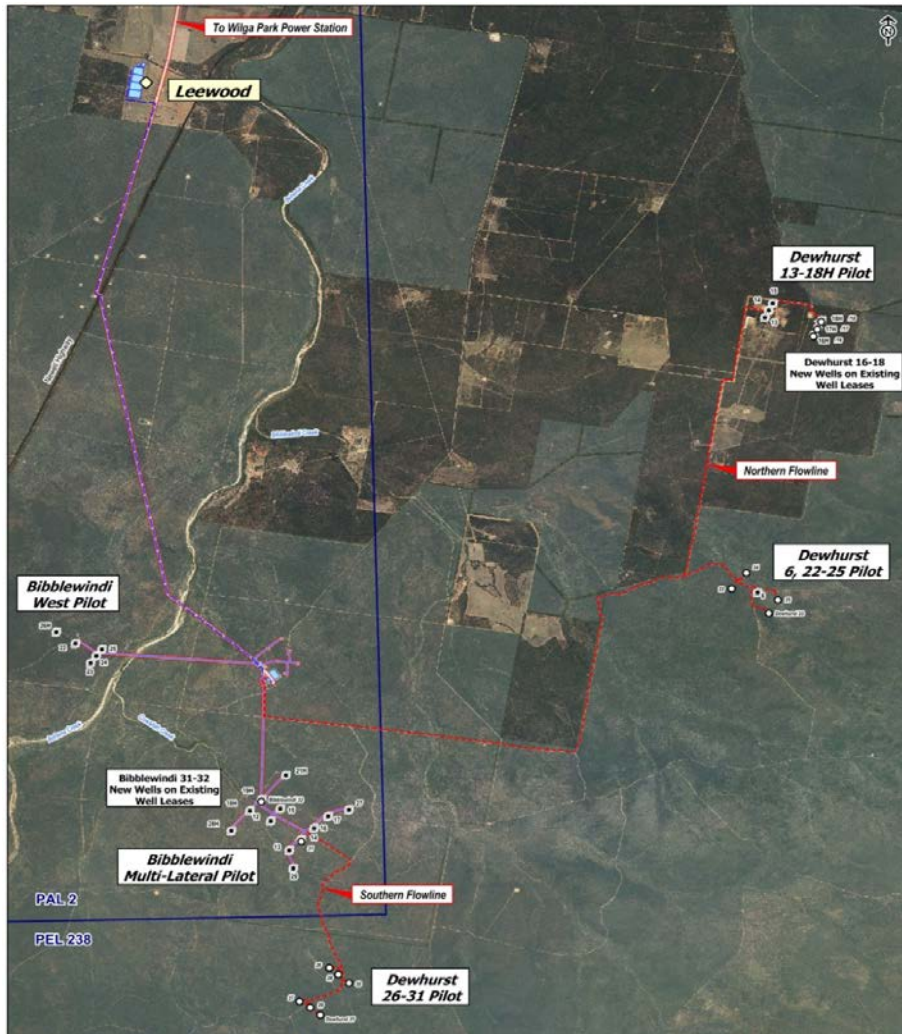
5. Potential Cumulative Impacts

The E&A Program will be conducted over the next two to three years and will include:

- operation of the existing Dewhurst 13-18H Pilot and the construction, drilling and operation of additional lateral wells from well casing within Dewhurst 16H, 17H and 18H (the proposed activity, subject of the EIS)
- construction, drilling and operation of the Dewhurst 26-31 Pilot (incorporates the proposed activity, partially subject of the EIS)
- construction, drilling and operation of the Dewhurst 22-25 Pilot
- operation of the existing Bibblewindi Multi-Lateral Pilot, and the construction, drilling and operation of two additional pilot wells (Bibblewindi 31 and 32) from existing well leases within the pilot
- operation of the existing Bibblewindi West Pilot
- operation of the existing Tintfield Pilot
- construction of the Dewhurst Northern Water and Gas Flow Lines and operation the Dewhurst Northern Water Flow Line
- construction of the Dewhurst Southern Water and Gas Flow Lines and operation of the Dewhurst Southern Water Flow Line
- construction and operation of the Leewood Produced Water Facility and ancillary infrastructure
- gas and water management during operation of the E&A Program.

These activities are subject to separate environmental assessment and approval processes and most of their locations are shown in Figure 5.1.

Figure 5.1: Santos Activities - Narrabri



Source: Santos

5.1 Construction Vehicle Generation

It is understood that the current construction schedule generally includes staggered commencement dates for each construction activity. As such, a cumulative assessment has been conducted to identify the peak construction traffic impact where an overlap of works occurs with the expansion of two pilots discussed in this report.

The peak construction period is expected to occur mid-way through the proposed works in mid 2014, where there is potential for overlap of construction at three pilots as summarised in Table 5.1.

Table 5.1: Peak Daily Cumulative Construction Vehicle Activity

Project	Stage of Works	Maximum Construction Vehicles	Maximum Worker Vehicles	Total Vehicle Volumes	Total Vehicle Trips
Bibblewindi 31-32	Surface Facility Construction	10	4	14	28
Dewhurst 13-18H	Drilling	18	8	26	52
Dewhurst 30-31	Site Preparation	3	1	4	8
Total		31	13	44	88

It is estimated that approximately 88 vehicle trips could potentially occur on any peak day. This includes 62 construction vehicle trips and 26 worker vehicle trips.

Given that this also includes 16 daily trips generated internally by shuttle buses transporting workers internally within the State Forests, it is anticipated that up to 72 vehicle trips would occur along the Newell Highway and X-line Road on a peak day.

The cumulative impact of the construction works associated with the E&A Program results in less than a 4% increase on existing Newell Highway traffic. The Newell Highway has considerable spare capacity and would be capable of accommodating the peak traffic volumes generated by the E&A Program at Bibblewindi and Dewhurst.

Based on the critical gap acceptance and follow-up headways for right turning and left turning vehicles from a minor road onto a major road as discussed in Section 3, the intersection of the Newell Highway with X-line Road would be capable of accommodating the peak vehicle activity associated with the cumulative vehicle generation.

The specific details regarding the traffic volumes associated with E&A Program works are addressed in their specific approval applications.

5.2 Operational Vehicle Generation

It is anticipated that all pilots will operate simultaneously at some point during the three year operational phase.

During the operational phase, it is envisaged that 1-2 workers in one vehicle will attend all of the pilots and inspect each of the pilot wells and associated facilities (including the flow lines). As such, the cumulative operational vehicle generation would be approximately 10 vehicle trips (spread across the road network). The majority of these would be retained within the State Forest area, with less than five trips along sections of the Newell Highway.

Vehicle trips to the forest areas may occasionally increase for short periods for the purposes of well maintenance and work-over activities. However these trips would remain considerably less than those generated during construction. Therefore the road network would be capable of accommodating the temporary increase in vehicle volumes.

Overall, cumulative activity would have a negligible impact on the Newell Highway and its intersection with X-line Road, with negligible long term impacts on the local road network.

6. Mitigation Measures

6.1 Site Access Plan

Given that X-line Road is anticipated to experience temporary increases in traffic volumes, GTA Consultants has prepared a site access plan for the intersection of the Newell Highway with X-line Road. The site access plan presents the principles of construction traffic management in accordance with the *Traffic Control at Work Sites* manual (RMS, 2010), while also considering permanent directional signage as shown in Appendix B.

Similar signage will be installed at X-line Road during prior works including construction of the Bibblewindi Water Transfer Facility. Based on the current construction schedule, it is understood that there will be continual use of X-line Road for Santos construction activity beyond the completion of works at the Bibblewindi Water Transfer Facility. As such, it is recommended that the signage either be maintained or re-instated for construction works associated with the pilot expansions.

All signage should be covered where construction vehicles no longer occur at this intersection.

All Santos workers and sub-contractors are required to limit vehicle speeds on unsealed roads to less than 80km/h at all times. In-vehicle monitoring systems (VMS) are fitted to all Santos vehicles to ensure that driver activity is safe and compliant with all speed limits.

6.2 Road Maintenance

It is recommended that the surface condition of X-line Road and other local, forestry and site access tracks be monitored by the contractor and repaired as required to maintain all-weather access to the site and to minimise the impact on other road users. This would be undertaken in consultation with the appropriate authorities.

It is understood that water will be transported by truck as required, to provide for appropriate dust control and track stabilisation (not part of this assessment). Sediment tracking onto the Newell Highway will be monitored throughout all construction activities.

Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

- i Santos is proposing to expand and operate two pilots, referred to as Dewhurst 13-18H and Dewhurst 26-31.
- ii The Newell Highway in the vicinity of the site currently carries approximately 1,860 vehicles per day with relatively consistent hourly flows in the order of 140 vehicles per hour between 8:00am and 4:00pm.
- iii The proposed construction works are scheduled to be carried out over a period of up to 5-6 months, with works planned to commence in April 2014 and continue through to September 2014.
- iv The Westport Drillers Camp will minimise daily vehicle trips by reducing trips associated with worker movements. It will generate up to 8 shuttle bus trips per day and 8 for food deliveries.
- v Up to 40 drilling workers will be accommodated at the Westport Drillers Camp at any one time with up to 20 workers on-site during each shift.
- vi It is anticipated that up to 24 vehicle trips will be likely to occur on a typical day, increasing to 66 vehicle trips on a peak day.
- vii X-line Road would adequately accommodate all truck movements to/ from the Newell Highway.
- viii The operational workforce is expected to be 1-2 staff every 1-2 days, generating two vehicle trips per day, with additional deliveries and visitors anticipated to be minor.
- ix A cumulative peak vehicle generation of up to 88 vehicle trips could occur where the proposed construction works overlap with other activities associated with the E&A Program.
- x The cumulative operational vehicle activity is expected to have a negligible impact on the surrounding road network.
- xi It is recommended that a monitoring and maintenance program be implemented to ensure the intersection of the Newell Highway and X-line Road is in suitable condition to assist heavy vehicles and allow for safe operation.
- xii A site access plan has been prepared and signage should be implemented along the Newell Highway, to warn drivers of increased truck activity at X-line Road.

Appendix A

Survey Data

MetroCount Traffic Executive Class Speed Matrix

ClassMatrix-180 -- English (ENA)

Datasets:

Site: [SH17] 200m north of SR59
Direction: 3 - South bound, A hit first., **Lane:** 0
Survey Duration: 9:07 Thursday, 20 October 2011 => 20:36 Monday, 21 November 2011
File: G:\Eng\Design\MetroCount v315\User\Data\SH17\2011\SH1710Dec2011.EC0 (Plus)
Identifier: CG48BDKS MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default
Data type: Axle sensors - Paired (Class/Speed/Count)

Site: [SH17] 200m north of SR59
Direction: 3 - South bound, A hit first., **Lane:** 0
Survey Duration: 13:04 Thursday, 29 September 2011 => 13:04 Thursday, 29 September 2011
File: G:\Eng\Design\MetroCount v315\User\Data\SH17\2011\SH1729Sep2011.EC0 (Plus)
Identifier: CG48BDKS MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default
Data type: Axle sensors - Paired (Class/Speed/Count)

Site: [SH17] 200m north of SR59
Direction: 3 - South bound, A hit first., **Lane:** 0
Survey Duration: 13:32 Wednesday, 5 October 2011 => 9:03 Thursday, 20 October 2011
File: G:\Eng\Design\MetroCount v315\User\Data\SH17\2011\SH1720Oct2011.EC0 (Plus)
Identifier: CG48BDKS MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default
Data type: Axle sensors - Paired (Class/Speed/Count)

Site: [SH17] 200m north of SR59
Direction: 3 - South bound, A hit first., **Lane:** 0
Survey Duration: 13:06 Thursday, 29 September 2011 => 13:30 Wednesday, 5 October 2011
File: G:\Eng\Design\MetroCount v315\User\Data\SH17\2011\SH1705Oct2011.EC0 (Plus)
Identifier: CG48BDKS MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 13:04 Thursday, 29 September 2011 => 20:36 Monday, 21 November 2011
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound)
Separation: All - (Headway)
Name: Factory default profile

Scheme: Vehicle classification (ARX)
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 99331 / 99402 (99.93%)

Class Speed Matrix

ClassMatrix-180

Site: SH17.0S SH17.0S SH17.0S SH17.0S

Description: Multiple sites - See Header sheet for site descriptions.

Filter time: 13:04 Thursday, 29 September 2011 => 20:36 Monday, 21 November 2011

Scheme: Vehicle classification (ARX)

Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12) Dir(NESW) Sp(10,160) Headway(>0)

Speed (km/h)													Speed Totals		
Class															
	1	2	3	4	5	6	7	8	9	10	11	12			
10 – 20	.	1	.	.	.	.	.	.	.	.	.	.	1	0.0%	
20 – 30	.	21	1	.	2	.	.	.	2	1	.	.	27	0.0%	
30 – 40	1	19	1	4	1	.	.	.	1	2	4	.	33	0.0%	
40 – 50	1	14	4	6	2	1	.	2	1	1	2	.	34	0.0%	
50 – 60	1	40	12	27	2	.	.	2	.	5	3	1	93	0.1%	
60 – 70	1	220	36	63	5	.	2	6	.	7	8	2	350	0.4%	
70 – 80	4	717	256	173	17	7	11	16	10	32	50	16	1309	1.3%	
80 – 90	24	2385	1610	427	58	13	53	126	50	218	386	62	5412	5.4%	
90 – 100	130	10248	2971	1468	585	116	218	450	885	5779	13879	261	36990	37.2%	
100 – 110	312	25357	2585	1199	240	47	192	178	217	2917	8246	108	41598	41.9%	
110 – 120	262	10323	629	357	13	14	58	13	4	39	129	11	11852	11.9%	
120 – 130	54	1131	43	42	.	5	5	.	.	6	8	7	1301	1.3%	
130 – 140	13	230	6	9	1	2	.	1	.	.	1	.	263	0.3%	
140 – 150	.	45	2	3	.	1	.	.	.	.	.	.	51	0.1%	
150 – 160	.	17	.	.	.	.	.	.	.	.	.	.	17	0.0%	
	803	50768	8156	3778	926	206	539	794	1170	9007	22716	468	99331		
	0.8%	51.1%	8.2%	3.8%	0.9%	0.2%	0.5%	0.8%	1.2%	9.1%	22.9%	0.5%			
	Class Totals														

MetroCount Traffic Executive Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-178 -- English (ENA)

Datasets:

Site: [SH17] 200m north of SR59
Direction: 3 - South bound, A hit first., **Lane:** 0
Survey Duration: 9:07 Thursday, 20 October 2011 => 20:36 Monday, 21 November 2011
File: G:\Eng\Design\MetroCount v315\User\Data\SH17\2011\SH1710Dec2011.EC0 (Plus)
Identifier: CG48BDKS MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default
Data type: Axle sensors - Paired (Class/Speed/Count)

Site: [SH17] 200m north of SR59
Direction: 3 - South bound, A hit first., **Lane:** 0
Survey Duration: 13:04 Thursday, 29 September 2011 => 13:04 Thursday, 29 September 2011
File: G:\Eng\Design\MetroCount v315\User\Data\SH17\2011\SH1729Sep2011.EC0 (Plus)
Identifier: CG48BDKS MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default
Data type: Axle sensors - Paired (Class/Speed/Count)

Site: [SH17] 200m north of SR59
Direction: 3 - South bound, A hit first., **Lane:** 0
Survey Duration: 13:32 Wednesday, 5 October 2011 => 9:03 Thursday, 20 October 2011
File: G:\Eng\Design\MetroCount v315\User\Data\SH17\2011\SH1720Oct2011.EC0 (Plus)
Identifier: CG48BDKS MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default
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Site: [SH17] 200m north of SR59
Direction: 3 - South bound, A hit first., **Lane:** 0
Survey Duration: 13:06 Thursday, 29 September 2011 => 13:30 Wednesday, 5 October 2011
File: G:\Eng\Design\MetroCount v315\User\Data\SH17\2011\SH1705Oct2011.EC0 (Plus)
Identifier: CG48BDKS MC56-L5 [MC55] (c)Microcom 19Oct04
Algorithm: Factory default
Data type: Axle sensors - Paired (Class/Speed/Count)

Profile:

Filter time: 13:04 Thursday, 29 September 2011 => 20:36 Monday, 21 November 2011
Included classes: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12
Speed range: 10 - 160 km/h.
Direction: North, East, South, West (bound)
Separation: All - (Headway)
Name: Factory default profile
Scheme: Vehicle classification (ARX)
Units: Metric (meter, kilometer, m/s, km/h, kg, tonne)
In profile: Vehicles = 99331 / 99402 (99.93%)

Weekly Vehicle Counts (Virtual Week)

VirtWeeklyVehicle-178

Site: SH17.0S SH17.0S SH17.0S SH17.0S

Description: Multiple sites - See Header sheet for site descriptions.

Filter time: 13:04 Thursday, 29 September 2011 => 20:36 Monday, 21 November 2011

Scheme: Vehicle classification (ARX)

Filter: Cls(1 2 3 4 5 6 7 8 9 10 11 12) Dir(NESW) Sp(10,160) Headway(>0)

	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Averages	
								1 - 5	1 - 7
Hour									
0000-0100	17.4	11.3	21.9	19.3	23.6	17.5	20.6	18.8	18.9
0100-0200	11.9	8.3	20.3	21.7	20.6	15.3	19.3	16.5	16.8
0200-0300	11.0	8.1	20.9	17.0	22.1	18.0	21.0	15.9	17.0
0300-0400	15.0	11.7	19.0	21.7	23.3	17.6	19.9	18.2	18.4
0400-0500	18.3	20.6	30.3	29.0	28.3	30.9	26.6	25.2	26.2
0500-0600	36.5	40.3	59.7	58.9	53.0	51.0	48.4	49.4	49.5
0600-0700	68.8	73.7	100.6	97.0	98.9	83.6	71.9	87.6	84.6
0700-0800	88.6	108.0	135.7	119.4	126.9	115.3	97.8	115.3	112.6
0800-0900	125.6	112.6	151.6<	124.9	142.0	130.3<	113.1	131.5	128.5
0900-1000	118.1	117.3	136.0	132.6<	146.4	129.4	124.8	130.2	129.2
1000-1100	128.1<	121.4	139.9	127.9	149.8<	121.0	128.1<	133.7<	130.9<
1100-1200	124.0	132.0<	140.6	124.3	145.6	125.9	122.3	133.4	130.6
1200-1300	134.3	120.7	148.6<	136.3	150.4	124.8<	115.3	138.3	132.8
1300-1400	146.4<	122.7	143.6	138.8<	145.3	119.1	122.0	139.7	134.0<
1400-1500	138.9	129.6<	141.6	134.3	155.6<	120.8	117.6	140.2<	134.0
1500-1600	125.0	124.9	139.4	133.5	139.4	122.4	122.0<	132.4	129.4
1600-1700	99.1	117.9	128.6	122.8	137.1	114.1	99.4	121.0	116.8
1700-1800	69.5	92.9	98.9	95.4	109.1	90.3	83.9	93.0	91.2
1800-1900	55.0	68.0	78.0	72.6	75.5	63.4	55.9	69.7	66.7
1900-2000	43.1	57.7	54.3	57.0	66.1	51.9	50.8	55.6	54.4
2000-2100	30.4	47.7	52.0	56.8	50.3	47.1	40.8	47.3	46.3
2100-2200	28.4	40.0	35.7	45.4	40.5	34.6	37.9	38.3	37.7
2200-2300	20.6	33.1	24.9	33.5	29.9	26.6	35.3	28.6	29.3
2300-2400	14.4	24.9	27.7	28.4	22.3	23.8	25.9	23.6	24.0
Totals									
0700-1900	1352.6	1367.9	1582.3	1462.5	1623.0	1376.5	1302.0	1478.2	1436.7
0600-2200	1523.3	1587.0	1824.9	1718.7	1878.8	1593.8	1503.3	1707.0	1659.6
0600-0000	1558.3	1645.0	1877.4	1780.5	1930.9	1644.1	1564.4	1759.2	1712.9
0000-0000	1668.3	1745.3	2049.4	1948.1	2101.8	1794.4	1720.1	1903.1	1859.6
AM Peak	1000	1100	0800	0900	1000	0800	1000		
	128.1	132.0	151.6	132.6	149.8	130.3	128.1		
PM Peak	1300	1400	1200	1300	1400	1200	1500		
	146.4	129.6	148.6	138.8	155.6	124.8	122.0		

* - No data.

Traffic Volumes

Station ID: 92742, **Prescribed Direction:** NORTH, **Road Loc Reference :** 0000017~3120~A (**Road Number~Road Link~Carriageway**), **Report Values Based On:** Vehicle Count,
Station Name: , **Station Description:** SH17 (Newell Hwy), at Wiggans Ck Br, **RMS Region:** WESTERN, **Local Government Area:** NARRABRI, **Suburb:** THE PILLIGA, **Date Range:** 20120101 to 20121231, **Days Available:** 86,
4-Bin Classifications: ALL, **12-Bin Classifications:** ALL, **Days of Week:** ALL, **Hours of Day:** ALL, **Public Holiday:** ALL Days (including public holidays), **School Holiday:** ALL Days (including school holidays)
For information relating to this report, you can contact us via email at: RISS.Info

92742: Traffic Volume - Vehicle Count - Date and Hours by Station

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	TOTAL	
Sun, 01/01/2012	8	9	7	12	8	6	20	30	67	93	131	118	141	126	127	149	130	97	88	62	50	33	30	31	1,573	
Mon, 02/01/2012	19	13	9	12	16	19	52	76	131	153	178	202	178	165	224	206	215	168	137	74	61	50	22	32	2,412	
Tue, 03/01/2012	31	17	22	9	8	37	50	90	145	143	162	156	175	161	169	182	158	149	96	86	56	54	43	44	2,243	
Wed, 04/01/2012	33	23	16	23	24	32	58	113	140	169	172	197	182	194	166	179	162	142	127	93	51	57	46	39	2,438	
Thu, 05/01/2012	43	36	26	23	25	34	62	106	141	180	191	188	208	161	184	164	187	168	111	76	81	61	36	27	2,519	
Fri, 06/01/2012	19	18	19	14	16	29	58	100	127	175	213	191	169	159	188	205	164	163	102	59	65	53	41	29	2,376	
Sat, 07/01/2012	27	23	26	19	23	21	43	111	100	169	143	183	138	160	174	160	126	133	99	67	73	61	30	30	2,139	
Sun, 08/01/2012	22	18	22	14	14	27	46	84	101	121	150	147	157	157	160	173	138	135	94	52	45	38	27	19	1,961	
Mon, 09/01/2012	19	10	12	10	14	15	52	78	91	115	111	118	139	144	113	152	161	132	99	91	68	43	50	35	1,872	
Tue, 10/01/2012	27	21	24	12	21	30	60	81	111	156	152	148	177	156	157	140	170	136	109	73	55	45	42	42	2,145	
Wed, 11/01/2012	20	21	25	22	22	28	52	84	119	134	176	165	136	126	135	150	157	156	101	74	70	52	41	26	2,092	
Thu, 12/01/2012	36	16	25	15	24	21	60	93	105	145	142	166	169	159	135	137	156	131	112	83	56	49	34	31	2,100	
Fri, 13/01/2012	26	10	15	15	17	17	49	83	98	141	146	143	125	108	139	125	151	129	89	57	44	49	42	35	1,853	
Sat, 14/01/2012	31	21	15	27	12	24	52	81	105	121	133	129	124	136	142	156	137	131	82	64	60	42	38	32	1,895	
Sun, 15/01/2012	20	13	20	11	16	17	41	76	104	123	150	151	144	135	147	180	124	96	75	53	43	30	28	13	1,810	
Mon, 16/01/2012	9	10	10	5	7	16	37	55	66	90	103	105	104	115	97	104	116	120	69	72	38	47	47	29	1,471	
Tue, 17/01/2012	27	20	16	15	21	35	54	74	100	113	147	121	114	126	130	143	123	124	73	82	49	48	35	36	1,826	
Wed, 18/01/2012	12	16	26	14	13	22	61	82	111	112	122	99	137	119	108	136	125	109	100	79	76	41	37	39	1,796	
Thu, 19/01/2012	26	28	23	20	18	20	43	79	117	133	135	112	108	137	144	130	129	111	90	93	50	44	33	31	1,854	
Fri, 20/01/2012	20	20	15	16	21	26	46	64	91	124	105	110	108	122	120	126	99	111	76	69	51	52	42	20	1,654	
Sat, 21/01/2012	23	23	21	16	18	22	35	71	87	100	106	103	123	126	141	114	112	82	83	56	53	40	39	28	1,622	
Sun, 22/01/2012	28	20	8	9	9	8	28	73	97	109	124	101	121	110	119	129	126	101	66	67	40	21	26	20	1,560	
Mon, 23/01/2012	11	11	12	12	17	17	36	49	70	95	77	72	87	94	99	101	121	80	84	50	60	49	44	29	1,377	
Tue, 24/01/2012	36	18	21	16	22	30	45	72	95	118	120	123	137	147	120	118	142	139	93	68	58	47	37	25	1,847	
Wed, 25/01/2012	13	24	11	15	17	14	42	56	82	108	120	115	105	103	123	103	92	94	72	73	68	50	46	42	1,588	
Thu, 26/01/2012	34	14	25	25	22	24	37	64	87	119	113	141	131	123	115	125	127	84	102	68	39	37	25	26	1,707	
Fri, 27/01/2012	12	14	7	12	17	14	20	34	61	77	65	60	75	67	75	79	72	74	60	60	44	45	24	24	1,092	
Sat, 28/01/2012	24	12	15	19	10	24	36	64	68	99	112	122	96	100	109	99	118	122	70	34	47	38	15	28	1,481	
Sun, 29/01/2012	19	22	14	9	12	16	35	59	75	102	115	105	114	119	114	109	102	100	64	46	38	20	20	13	1,442	
Mon, 30/01/2012	7	13	8	8	8	7	28	53	67	73	83	84	81	75	77	90	79	84	72	47	47	56	34	34	1,215	
Tue, 31/01/2012	33	25	12	23	19	21	39	71	91	102	118	120	134	120	101	108	113	127	71	69	47	48	28	27	1,667	
Wed, 01/02/2012	24	14	24	18	6	22	28	54	95	90	92	112	93	97	89	99	68	74	51	31	9	3	2	1	1,196	
Thu, 02/02/2012			1	1	1		8	17	30	31	23	18	19	7	11	12	9	8	1	4	4	2		1	208	
Fri, 03/02/2012							7	6	11	10	19	12	8	16	13	8	15	13	5	8	4	10	5		5	175
Sat, 04/02/2012	3	1	2	1		3	6	14	17	20	21	47	25	21	17	32	25	24	17	11	15	3	4	3	332	
Sun, 05/02/2012	3	3		1		6	6	14	23	21	39	37	20	22	28	29	39	15	16	15	9	8	8	4	366	
Mon, 06/02/2012		1	1	1	2	8	15	12	31	22	30	37	31	47	51	44	44	57	54	45	30	35	32	40	670	
Tue, 07/02/2012	22	10	12	10	16	17	22	48	80	66	79	77	80	85	95	92	96	81	60	46	61	53	53	33	1,294	
Wed, 08/02/2012	21	20	17	17	11	31	38	46	61	97	88	72	104	75	94	91	96	104	72	54	44	48	41	31	1,373	
Thu, 09/02/2012	34	21	19	20	21	15	35	45	81	87	87	71	87	104	128	96	101	80	72	69	46	44	45	44	1,452	
Fri, 10/02/2012	23	22	18	11	15	17	30	39	88	63	80	79	70	74	64	88	90	76	59	44	47	47	33	37	1,214	
Sat, 11/02/2012	23	21	19	15	13	18	24	49	55	68	65	82	91	82	82	94	112	76	67	69	45	52	45	27	1,294	
Sun, 12/02/2012	31	26	23	20	16	7	23	41	65	83	84	98	100	122	99	121	94	71	75	51	43	41	33	17	1,384	
Mon, 13/02/2012	12	11	18	2	9	20	28	39	63	71	74	66	73	87	79	81	82	78	76	63	44	51	39	46	1,212	
Tue, 14/02/2012	26	26	17	19	36	18	39	59	84	98	100	95	101	133	108	111	101	94	89	69	56	53	37	25	1,594	
Wed, 15/02/2012	26	19	12	15	24	23	36	71	99	115	111	110	115	100	111	110	99	101	102	76	64	55	47	42	1,683	
Thu, 16/02/2012	25	18	36	14	21	25	50	73	93	129	100	112	107	128	102	140	126	106	90	83	46	42	49	36	1,751	

Fri, 17/02/2012	32	12	26	12	17	24	50	79	67	90	103	98	87	118	88	119	107	94	71	39	41	49	38	38	1,499
Sat, 18/02/2012	33	29	20	18	10	21	39	56	82	104	118	89	88	97	103	95	105	106	86	66	36	55	47	27	1,530
Sun, 19/02/2012	26	22	20	15	19	15	27	44	72	90	93	110	104	100	109	99	102	75	58	61	39	27	27	15	1,369
Mon, 20/02/2012	21	14	5	5	8	20	44	45	74	91	64	77	85	91	115	107	118	78	68	56	56	49	52	34	1,377
Tue, 21/02/2012	24	16	13	13	18	29	43	60	91	105	101	121	124	122	114	117	97	110	79	77	49	53	37	36	1,649
Wed, 22/02/2012	31	14	19	18	20	24	56	68	77	87	108	123	110	130	123	115	116	106	88	83	66	52	38	48	1,720
Thu, 23/02/2012	27	25	23	13	18	22	55	75	98	115	130	108	119	140	134	104	126	106	76	61	49	56	40	23	1,743
Fri, 24/02/2012	28	22	21	21	17	10	43	66	110	109	84	103	103	104	114	111	103	79	83	56	57	37	35	24	1,540
Sat, 25/02/2012	31	22	15	23	19	16	35	45	65	97	87	99	110	100	95	118	95	90	82	38	59	43	38	32	1,454
Sun, 26/02/2012	23	21	11	16	13	13	31	55	69	79	69	150	141	114	124	117	123	63	68	54	40	46	31	27	1,498
Mon, 27/02/2012	16	5	5	6	5	22	30	58	70	70	88	94	83	86	96	77	92	86	68	54	47	44	49	37	1,288
Tue, 28/02/2012	23	16	17	17	25	40	38	75	84	100	104	124	138	125	118	128	101	113	80	68	59	61	37	23	1,714
Wed, 29/02/2012	14	12	13	19	18	33	32	81	81	103	93	109	95	108	110	98	102	109	79	70	55	50	48	28	1,560
Thu, 01/03/2012	30	17	20	17	21	26	40	75	83	98	121	113	109	102	129	127	123	113	85	61	58	53	23	26	1,670
Fri, 02/03/2012	17	14	16	11	21	21	32	61	87	95	111	92	93	103	98	100	102	80	107	43	36	38	19	30	1,427
Sat, 03/03/2012	19	17	17	8	18	18	36	46	52	86	96	85	80	120	91	65	81	69	67	52	54	37	31	21	1,266
Sun, 04/03/2012	21	18	8	6	10	13	18	45	63	59	96	69	88	81	73	82	90	67	52	46	33	31	23	14	1,106
Mon, 05/03/2012	8	4	4	2	6	15	30	43	53	72	52	57	83	57	59	76	69	57	62	37	42	29	18	18	953
Tue, 06/03/2012	13	8	13	5	5	13	31	53	56	76	83	62	69	81	56	62	89	63	45	40	22	30	14	14	1,003
Wed, 07/03/2012	13	10	10	3	17	13	29	55	66	74	66	78	62	72	73	83	88	67	45	42	42	20	27	28	1,083
Thu, 08/03/2012	12	8	8	6	15	16	44	36	57	53	75	76	66	80	78	65	66	71	70	41	41	35	36	19	1,074
Fri, 09/03/2012	10	8	14	10	8	14	35	34	65	77	63	82	82	68	88	70	75	72	61	30	31	22	21	25	1,065
Sat, 10/03/2012	11	13	10	12	11	23	22	36	59	58	80	61	73	72	74	75	83	53	54	37	41	40	16	24	1,038
Sun, 11/03/2012	5	8	8	11	6	11	19	29	47	66	70	67	77	89	97	78	96	76	60	43	35	27	23	17	1,065
Mon, 12/03/2012	6	10	6	6	3	16	26	43	49	58	63	79	61	75	66	83	63	89	49	34	33	45	35	28	1,026
Tue, 13/03/2012	30	17	12	9	19	16	45	49	81	75	97	88	96	75	72	68	76	68	55	45	42	28	20	20	1,203
Wed, 14/03/2012	15	10	12	7	19	21	43	51	77	73	83	76	79	89	83	104	101	73	68	64	37	40	46	29	1,300
Thu, 15/03/2012	19	13	12	14	19	13	30	49	70	93	65	93	86	116	100	115	87	76	78	52	37	42	43	18	1,340
Fri, 16/03/2012	25	21	11	9	12	15	40	70	69	85	111	113	80	91	101	89	81	82	72	58	32	30	24	22	1,343
Sat, 17/03/2012	20	19	9	12	13	9	20	44	50	75	103	75	77	82	70	86	72	62	62	39	32	31	30	15	1,107
Sun, 18/03/2012	23	13	8	5	11	17	24	23	52	50	89	76	79	94	96	83	87	99	59	45	41	34	35	14	1,157
Mon, 19/03/2012	5	7	6	6	6	18	28	41	70	69	50	77	60	72	94	81	84	74	64	40	28	37	38	26	1,081
Tue, 20/03/2012	29	12	15	25	12	21	31	50	70	61	111	93	104	101	112	128	102	109	87	57	54	40	33	22	1,479
Wed, 21/03/2012	19	20	7	16	12	26	34	60	61	114	112	94	109	111	137	112	98	98	75	60	51	53	35	40	1,554
Thu, 22/03/2012	22	17	22	15	15	20	37	65	88	95	115	117	126	119	123	116	104	100	94	72	53	36	47	26	1,644
Fri, 23/03/2012	20	17	16	20	22	20	30	60	83	90	113	99	79	86	111	88	89	108	90	54	43	40	29	29	1,436
Sat, 24/03/2012	18	15	22	19	20	24	46	65	82	114	107	117	92	107	83	103	113	80	75	56	56	42	30	25	1,511
Sun, 25/03/2012	19	17	13	9	14	17	27	49	100	85	87	126	98	139	168	147	89	93	68	56	30	33	26	16	1,526
Mon, 26/03/2012	15	9	6	9	11	20	26	49	55	74	72	79	91	85	94										695
TOTAL	1,761	1,344	1,259	1,105	1,255	1,648	3,118	5,021	6,811	8,148	8,740	8,869	8,847	9,052	9,192	9,211	8,924	8,000	6,362	4,822	3,907	3,462	2,794	2,266	125,918

92742: Traffic Volume - Vehicle Count - Date and Hours by Direction

NORTH

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	TOTAL
Sun, 01/01/2012	5	1	4	7	7	3	14	13	30	60	80	77	86	74	56	84	71	47	44	28	18	17	16	14	856
Mon, 02/01/2012	11	9	3	7	11	8	26	50	81	95	108	116	94	80	104	103	104	93	73	43	34	29	11	17	1,310
Tue, 03/01/2012	19	13	11	6	6	22	31	51	87	88	103	98	117	75	81	88	89	86	44	38	29	28	17	17	1,244
Wed, 04/01/2012	19	8	6	5	11	16	27	64	89	96	102	113	104	105	77	87	91	69	74	57	32	38	25	21	1,336
Thu, 05/01/2012	22	19	11	5	12	9	29	56	73	112	107	110	119	80	101	78	97	81	65	45	39	25	15	14	1,324
Fri, 06/01/2012	10	6	5	4	5	8	24	49	67	95	123	105	103	79	92	91	76	77	54	25	36	22	16	14	1,186
Sat, 07/01/2012	9	4	10	5	10	11	20	60	64	105	87	111	82	75	79	81	62	80	58	33	33	27	13	16	1,135
Sun, 08/01/2012	9	8	13	7	9	13	28	50	65	68	91	83	89	84	80	95	89	82	53	34	31	26	16	13	1,136
Mon, 09/01/2012	12	7	7	6	9	7	30	42	45	62	67	61	79	78	57	76	75	59	46	47	20	17	20	12	941
Tue, 10/01/2012	12	6	10	3	7	9	23	46	45	88	77	90	97	88	71	73	103	71	68	46	34	22	21	18	1,128
Wed, 11/01/2012	9	11	13	8	14	14	19	49	66	69	108	102	82	69	65	78	88	93	44	41	32	20	14	7	1,115
Thu, 12/01/2012	12	9	10	4	9	8	22	40	53	71	74	88	106	85	72	63	92	71	60	55	37	30	23	14	1,108

Fri, 13/01/2012	8	2	7	5	6	5	19	36	52	74	80	73	74	59	61	54	83	65	49	28	19	23	18	16	916
Sat, 14/01/2012	12	13	3	7	3	9	19	28	51	77	77	82	67	65	70	85	71	66	51	33	31	20	21	20	981
Sun, 15/01/2012	5	7	10	6	10	10	24	38	48	67	92	95	96	77	93	106	90	60	56	29	25	13	16	7	1,080
Mon, 16/01/2012	5	7	8	3	2	5	17	25	25	59	61	68	61	70	55	58	54	61	25	22	18	9	15	5	738
Tue, 17/01/2012	12	7	7	3	5	10	22	32	46	57	86	72	73	77	88	86	71	77	48	62	38	22	16	15	1,032
Wed, 18/01/2012	3	6	11	5	7	12	25	42	44	60	65	53	65	72	67	78	69	67	50	50	41	16	20	9	937
Thu, 19/01/2012	11	12	4	9	5	9	18	32	54	70	69	64	61	82	91	81	75	63	58	60	31	16	16	13	1,004
Fri, 20/01/2012	10	11	9	7	10	12	20	24	34	61	54	59	51	65	62	60	56	65	42	35	32	25	19	10	833
Sat, 21/01/2012	6	9	7	5	8	6	13	40	52	44	70	58	71	70	63	63	53	37	40	28	23	14	23	8	811
Sun, 22/01/2012	13	11	6	6	5	4	8	37	43	57	64	49	67	70	60	71	71	69	43	48	24	7	12	11	856
Mon, 23/01/2012	5	8	8	4	10	10	21	25	34	50	40	39	45	51	50	43	57	40	25	18	21	18	14	13	649
Tue, 24/01/2012	13	4	4	2	7	8	17	35	40	39	52	59	64	81	74	62	80	81	51	37	32	29	23	11	905
Wed, 25/01/2012	4	9	5	6	12	5	13	25	44	51	52	56	50	46	66	58	46	39	29	31	27	16	15	10	715
Thu, 26/01/2012	10	6	4	9	6	7	13	21	32	49	60	92	77	79	68	64	74	57	60	47	27	25	13	16	916
Fri, 27/01/2012	5	11	4	4	7	6	7	20	33	40	29	33	36	27	30	36	28	28	25	18	11	16	3	11	468
Sat, 28/01/2012	5	5	4	6	1	5	8	20	28	41	48	53	48	54	58	41	59	59	43	9	28	14	1	13	651
Sun, 29/01/2012	9	11	7	5	6	8	23	27	37	56	62	69	64	66	63	71	61	58	35	32	20	7	7	7	811
Mon, 30/01/2012	3	9	6	2	5	2	15	25	34	42	45	50	55	38	39	40	38	38	36	14	17	18	15	12	598
Tue, 31/01/2012	17	13	5	6	5	4	19	32	42	51	69	63	74	68	61	70	75	66	49	40	23	23	14	13	902
Wed, 01/02/2012	6	8	7	4	2	10	12	28	40	43	52	61	47	43	47	44	34	30	17	8	4	1	2		550
Thu, 02/02/2012			1				4	7	7	12	9	7	5	3	6	6	3	8		1	1	1			81
Fri, 03/02/2012							4		6	4	3	8	5	5	4	6	5	1	3	5	3	10	5	3	80
Sat, 04/02/2012	2	1	2			2	2	3	6	3	6	9	5	5	8	14	19	17	11	8	9	1	2	3	138
Sun, 05/02/2012	2	3		1		3	2	1	2	2	13	13	9	11	18	14	28	11	12	14	6	6	5	2	178
Mon, 06/02/2012		1				2	10	3	12	11	18	23	16	25	29	26	23	26	27	21	13	9	11	10	316
Tue, 07/02/2012	7	6	4	1	1	4	10	12	44	29	45	45	45	35	61	64	58	63	35	28	35	17	30	16	695
Wed, 08/02/2012	12	10	2	2	4	16	18	18	27	44	38	46	69	51	54	63	48	62	49	35	23	16	11	14	732
Thu, 09/02/2012	15	3	7	4	11	5	18	13	36	39	47	42	37	59	83	60	61	50	43	37	29	19	26	15	759
Fri, 10/02/2012	9	9	9	2	7	4	14	17	40	29	40	37	33	39	30	39	48	34	34	25	26	22	13	18	578
Sat, 11/02/2012	6	9	2	4	3	8	9	23	29	29	27	47	47	52	40	52	50	55	35	39	22	27	18	17	650
Sun, 12/02/2012	13	17	7	12	9	4	6	20	48	47	55	55	65	83	64	85	56	47	51	38	27	26	20	12	867
Mon, 13/02/2012	6	7	10	2	5	12	16	27	32	42	31	42	38	58	46	40	34	32	23	19	15	18	7	11	573
Tue, 14/02/2012	5	7	4	2	13	6	11	28	34	43	49	50	62	83	73	71	59	59	54	39	30	30	17	6	835
Wed, 15/02/2012	8	6	3	4	8	7	13	29	36	53	50	68	71	57	75	64	41	63	64	45	35	17	19	13	849
Thu, 16/02/2012	8	7	8	6	6	8	18	24	40	58	59	52	66	79	64	77	69	59	53	51	22	21	23	16	894
Fri, 17/02/2012	17	6	8	6	5	11	17	28	33	38	55	48	51	45	41	63	58	46	39	19	18	23	18	10	703
Sat, 18/02/2012	8	9	3	3	3	5	14	21	32	57	57	49	49	44	45	51	57	62	51	30	18	24	17	12	721
Sun, 19/02/2012	16	9	11	5	10	10	12	21	39	51	59	66	64	78	76	59	66	49	33	38	27	12	12	4	827
Mon, 20/02/2012	11	9	3	3	3	7	22	26	36	41	34	43	47	45	60	51	61	38	35	23	18	11	21	11	659
Tue, 21/02/2012	6	2	6	2	6	4	16	28	40	51	45	72	68	78	70	75	58	68	49	44	30	30	14	17	879
Wed, 22/02/2012	16	3	8	6	8	10	22	17	33	45	71	57	56	72	70	65	78	64	54	42	22	17	12	12	860
Thu, 23/02/2012	10	6	7	4	7	9	17	29	37	62	79	54	69	67	72	63	73	63	52	38	29	27	24	14	912
Fri, 24/02/2012	16	10	9	7	8	2	14	20	44	46	45	54	48	50	51	55	60	36	42	30	30	12	11	7	707
Sat, 25/02/2012	14	8	4	11	7	7	8	18	33	40	52	51	69	54	51	65	53	58	38	20	27	18	14	13	733
Sun, 26/02/2012	14	8	9	7	7	4	21	24	33	47	34	99	94	65	68	62	77	42	41	41	20	27	21	13	878
Mon, 27/02/2012	11	3	2	1	4	13	13	28	36	45	56	52	49	41	49	29	50	47	45	19	18	14	11	13	649
Tue, 28/02/2012	10	8	6	3	12	19	17	28	44	50	45	83	90	74	84	81	63	67	47	41	43	26	16	10	967
Wed, 29/02/2012	5	5	5	7	9	10	12	37	34	55	43	53	65	58	59	59	62	70	50	39	31	21	11	10	810
Thu, 01/03/2012	12	3	10	6	12	8	16	33	42	41	64	68	61	54	72	72	71	73	59	40	36	29	12	7	901
Fri, 02/03/2012	6	8	5	5	7	4	13	21	31	46	63	48	48	38	56	64	57	45	52	19	19	20	8	6	689
Sat, 03/03/2012	10	7	5	2	5	5	10	23	25	34	54	47	43	72	41	31	38	38	35	31	25	12	17	6	616
Sun, 04/03/2012	11	9	4	1	8	5	9	19	25	26	60	36	69	38	40	50	57	42	30	35	21	16	13	7	631
Mon, 05/03/2012	5	2	3	1	3	4	12	20	29	36	24	31	51	23	28	39	26	24	36	22	20	11		6	456
Tue, 06/03/2012	9	4	7	3	2	2	11	20	33	30	39	27	37	40	37	27	57	34	27	26	13	13	9	5	512
Wed, 07/03/2012	8	6	4		9	4	10	27	34	30	38	44	35	44	26	46	40	40	24	25	25	13	10	16	558
Thu, 08/03/2012	5	5	1	2	6	3	10	13	23	22	31	28	42	39	39	35	35	42	40	21	32	19	23	10	526
Fri, 09/03/2012	3	5	7	5	5	6	16	17	26	23	27	32	39	28	37	34	35	39	30	11	18	9	11	9	472

Sat, 10/03/2012	4	4	3	3	3	8	5	12	22	26	40	33	44	29	43	36	40	27	34	27	21	26	5	13	508
Sun, 11/03/2012	2	5	3	10	2	8	11	15	26	34	41	45	49	47	61	47	58	48	29	28	23	10	9	6	617
Mon, 12/03/2012	2	5	4	4	1	7	10	25	27	30	32	34	29	41	24	41	36	47	23	17	10	12	8	6	475
Tue, 13/03/2012	12	5	3	1	5	8	13	17	37	22	36	42	47	39	29	37	47	38	25	16	24	14	5	8	530
Wed, 14/03/2012	3	5	4	2	4	5	17	18	38	35	29	38	31	45	50	57	61	53	49	39	24	24	22	11	664
Thu, 15/03/2012	10	8	2	9	9	2	11	19	32	47	32	50	36	56	47	62	57	43	50	33	17	23	15	5	675
Fri, 16/03/2012	16	10	5	4	6	5	13	25	35	36	53	47	37	36	54	41	30	49	43	36	19	10	9	10	629
Sat, 17/03/2012	4	6	3	6	4	6	6	14	26	35	52	44	42	43	37	43	31	37	34	26	14	14	11	6	544
Sun, 18/03/2012	11	6	3	2	5	8	14	12	24	32	46	46	52	47	56	44	47	76	35	27	25	19	14	9	660
Mon, 19/03/2012	5	4	3	5	3	11	10	20	30	38	36	42	29	31	51	49	45	38	31	14	15	16	13	11	550
Tue, 20/03/2012	8	4	2	6	4	8	11	19	28	26	62	58	64	52	59	83	60	66	60	34	29	28	15	9	795
Wed, 21/03/2012	9	10	2	4	7	13	15	25	32	47	59	52	63	59	74	60	55	47	47	39	23	20	15	16	793
Thu, 22/03/2012	6	8	4	6	7	6	18	27	36	45	47	68	74	57	67	63	66	59	46	54	26	16	23	18	847
Fri, 23/03/2012	10	7	5	7	7	5	16	26	37	46	52	52	43	41	72	50	42	62	51	32	21	16	14	8	722
Sat, 24/03/2012	7	8	6	10	7	9	18	19	41	55	63	72	48	47	41	59	58	47	47	23	28	18	10	12	753
Sun, 25/03/2012	7	11	6	4	6	10	12	25	38	42	40	74	52	79	107	100	60	61	43	32	23	20	15	9	876
Mon, 26/03/2012	8	5	3	3	4	4	17	20	27	33	41	47	52	46	57										367
TOTAL	751	602	476	387	529	631	1,310	2,243	3,255	4,087	4,680	4,932	5,013	4,819	4,957	4,997	4,909	4,507	3,565	2,677	2,045	1,563	1,205	928	65,068

92742: Traffic Volume - Vehicle Count - Date and Hours by Direction

SOUTH

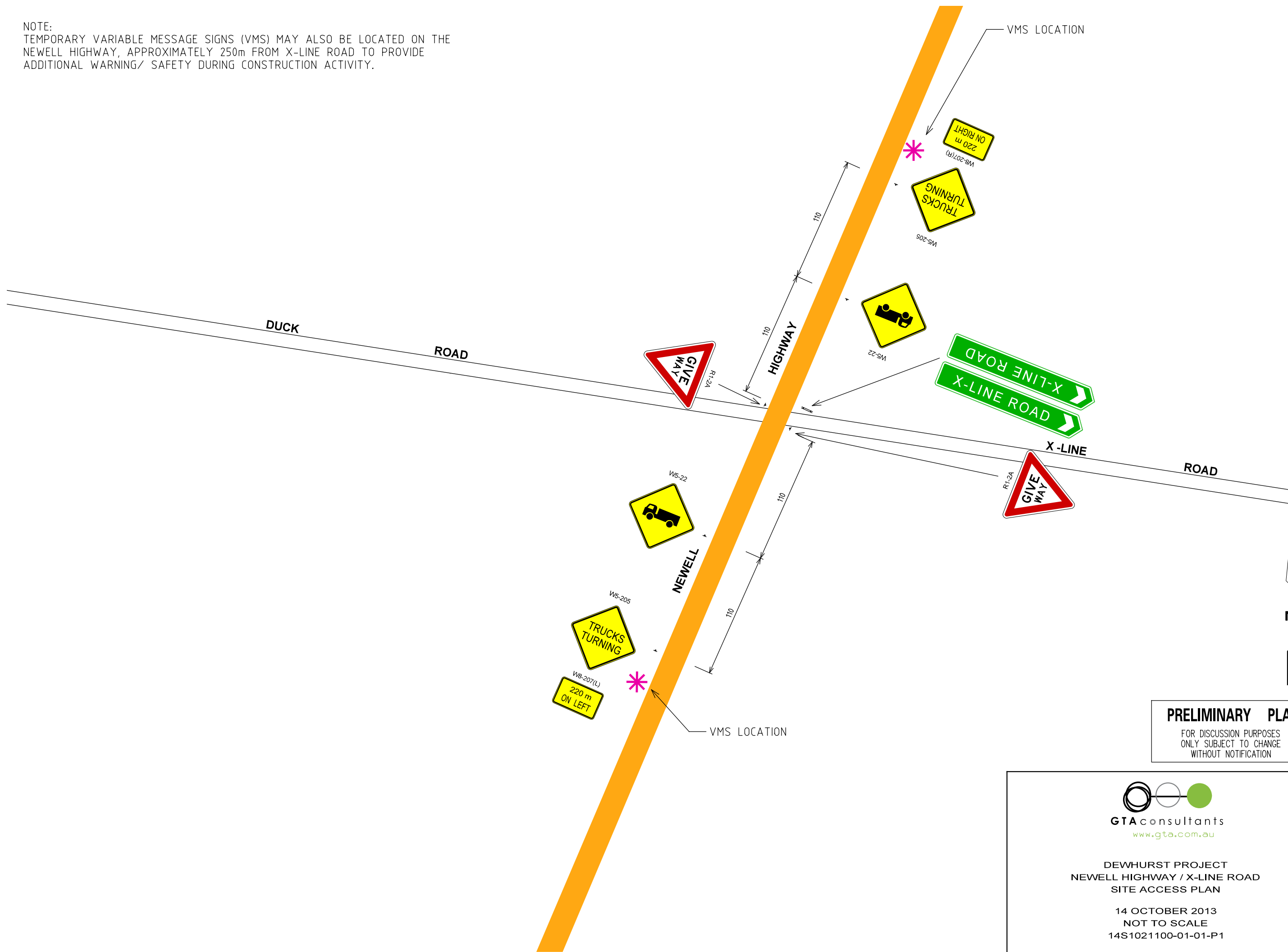
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Sun, 01/01/2012	3	8	3	5	1	3	6	17	37	33	51	41	55	52	71	65	59	50	44	34	32	16	14	17	717
Mon, 02/01/2012	8	4	6	5	5	11	26	26	50	58	70	86	84	85	120	103	111	75	64	31	27	21	11	15	1,102
Tue, 03/01/2012	12	4	11	3	2	15	19	39	58	55	59	58	58	86	88	94	69	63	52	48	27	26	26	27	999
Wed, 04/01/2012	14	15	10	18	13	16	31	49	51	73	70	84	78	89	89	92	71	73	53	36	19	19	21	18	1,102
Thu, 05/01/2012	21	17	15	18	13	25	33	50	68	68	84	78	89	81	83	86	90	87	46	31	42	36	21	13	1,195
Fri, 06/01/2012	9	12	14	10	11	21	34	51	60	80	90	86	66	80	96	114	88	86	48	34	29	31	25	15	1,190
Sat, 07/01/2012	18	19	16	14	13	10	23	51	36	64	56	72	56	85	95	79	64	53	41	34	40	34	17	14	1,004
Sun, 08/01/2012	13	10	9	7	5	14	18	34	36	53	59	64	68	73	80	78	49	53	41	18	14	12	11	6	825
Mon, 09/01/2012	7	3	5	4	5	8	22	36	46	53	44	57	60	66	56	76	86	73	53	44	48	26	30	23	931
Tue, 10/01/2012	15	15	14	9	14	21	37	35	66	68	75	58	80	68	86	67	67	65	41	27	21	23	21	24	1,017
Wed, 11/01/2012	11	10	12	14	8	14	33	35	53	65	68	63	54	57	70	72	69	63	57	33	38	32	27	19	977
Thu, 12/01/2012	24	7	15	11	15	13	38	53	52	74	68	78	63	74	63	74	64	60	52	28	19	19	11	17	992
Fri, 13/01/2012	18	8	8	10	11	12	30	47	46	67	66	70	51	49	78	71	68	64	40	29	25	26	24	19	937
Sat, 14/01/2012	19	8	12	20	9	15	33	53	54	44	56	47	57	71	72	71	66	65	31	31	29	22	17	12	914
Sun, 15/01/2012	15	6	10	5	6	7	17	38	56	56	58	56	48	58	54	74	34	36	19	24	18	17	12	6	730
Mon, 16/01/2012	4	3	2	2	5	11	20	30	41	31	42	37	43	45	42	46	62	59	44	50	20	38	32	24	733
Tue, 17/01/2012	15	13	9	12	16	25	32	42	54	56	61	49	41	49	42	57	52	47	25	20	11	26	19	21	794
Wed, 18/01/2012	9	10	15	9	6	10	36	40	67	52	57	46	72	47	41	58	56	42	50	29	35	25	17	30	859
Thu, 19/01/2012	15	16	19	11	13	11	25	47	63	63	66	48	47	55	53	49	54	48	32	33	19	28	17	18	850
Fri, 20/01/2012	10	9	6	9	11	14	26	40	57	63	51	51	57	57	58	66	43	46	34	34	19	27	23	10	821
Sat, 21/01/2012	17	14	14	11	10	16	22	31	35	56	36	45	52	56	78	51	59	45	43	28	30	26	16	20	811
Sun, 22/01/2012	15	9	2	3	4	4	20	36	54	52	60	52	54	40	59	58	55	32	23	19	16	14	14	9	704
Mon, 23/01/2012	6	3	4	8	7	7	15	24	36	45	37	33	42	43	49	58	64	40	59	32	39	31	30	16	728
Tue, 24/01/2012	23	14	17	14	15	22	28	37	55	79	68	64	73	66	46	56	62	58	42	31	26	18	14	14	942
Wed, 25/01/2012	9	15	6	9	5	9	29	31	38	57	68	59	55	57	57	45	46	55	43	42	41	34	31	32	873
Thu, 26/01/2012	24	8	21	16	16	17	24	43	55	70	53	49	54	44	47	61	53	27	42	21	12	12	12	10	791
Fri, 27/01/2012	7	3	3	8	10	8	13	14	28	37	36	27	39	40	45	43	44	46	35	42	33	29	21	13	624
Sat, 28/01/2012	19	7	11	13	9	19	28	44	40	58	64	69	48	46	51	58	59	63	27	25	19	24	14	15	830
Sun, 29/01/2012	10	11	7	4	6	8	12	32	38	46	53	36	50	53	51	38	41	42	29	14	18	13	13	6	631
Mon, 30/01/2012	4	4	2	6	3	5	13	28	33	31	38	34	26	37	38	50	41	46	36	33	30	38	19	22	617
Tue, 31/01/2012	16	12	7	17	14	17	20	39	49	51	49	57	60	52	40	38	38	61	22	29	24	25	14	14	765
Wed, 01/02/2012	18	6	17	14	4	12	16	26	55	47	40	51	46	54	42	55	34	44	34	23	5	2		1	646
Thu, 02/02/2012				1	1		4	10	23	19	14	11	14	4	5	6	6		1	3	3	1		1	127
Fri, 03/02/2012							3	6	5	6	16	4	3	11	9	2	10	12	2	3	1			2	95

Sat, 04/02/2012	1				1		1	4	11	11	17	15	38	20	16	9	18	6	7	6	3	6	2	2		194
Sun, 05/02/2012	1						3	4	13	21	19	26	24	11	11	10	15	11	4	4	1	3	2	3	2	188
Mon, 06/02/2012			1	1	2	6	5	9	19	11	12	14	15	22	22	18	21	31	27	24	17	26	21	30		354
Tue, 07/02/2012	15	4	8	9	15	13	12	36	36	37	34	32	35	50	34	28	38	18	25	18	26	36	23	17		599
Wed, 08/02/2012	9	10	15	15	7	15	20	28	34	53	50	26	35	24	40	28	48	42	23	19	21	32	30	17		641
Thu, 09/02/2012	19	18	12	16	10	10	17	32	45	48	40	29	50	45	45	36	40	30	29	32	17	25	19	29		693
Fri, 10/02/2012	14	13	9	9	8	13	16	22	48	34	40	42	37	35	34	49	42	42	25	19	21	25	20	19		636
Sat, 11/02/2012	17	12	17	11	10	10	15	26	26	39	38	35	44	30	42	42	62	21	32	30	23	25	27	10		644
Sun, 12/02/2012	18	9	16	8	7	3	17	21	17	36	29	43	35	39	35	36	38	24	24	13	16	15	13	5		517
Mon, 13/02/2012	6	4	8			4	8	12	12	31	29	43	24	35	29	33	41	48	46	53	44	29	33	32	35	639
Tue, 14/02/2012	21	19	13	17	23	12	28	31	50	55	51	45	39	50	35	40	42	35	35	30	26	23	20	19		759
Wed, 15/02/2012	18	13	9	11	16	16	23	42	63	62	61	42	44	43	36	46	58	38	38	31	29	38	28	29		834
Thu, 16/02/2012	17	11	28	8	15	17	32	49	53	71	41	60	41	49	38	63	57	47	37	32	24	21	26	20		857
Fri, 17/02/2012	15	6	18	6	12	13	33	51	34	52	48	50	36	73	47	56	49	48	32	20	23	26	20	28		796
Sat, 18/02/2012	25	20	17	15	7	16	25	35	50	47	61	40	39	53	58	44	48	44	35	36	18	31	30	15		809
Sun, 19/02/2012	10	13	9	10	9	5	15	23	33	39	34	44	40	22	33	40	36	26	25	23	12	15	15	11		542
Mon, 20/02/2012	10	5	2	2	5	13	22	19	38	50	30	34	38	46	55	56	57	40	33	33	38	38	31	23		718
Tue, 21/02/2012	18	14	7	11	12	25	27	32	51	54	56	49	56	44	44	42	39	42	30	33	19	23	23	19		770
Wed, 22/02/2012	15	11	11	12	12	14	34	51	44	42	37	66	54	58	53	50	38	42	34	41	44	35	26	36		860
Thu, 23/02/2012	17	19	16	9	11	13	38	46	61	53	51	54	50	73	62	41	53	43	24	23	20	29	16	9		831
Fri, 24/02/2012	12	12	12	14	9	8	29	46	66	63	39	49	55	54	63	56	43	43	41	26	27	25	24	17		833
Sat, 25/02/2012	17	14	11	12	12	9	27	27	32	57	35	48	41	46	44	53	42	32	44	18	32	25	24	19		721
Sun, 26/02/2012	9	13	2	9	6	9	10	31	36	32	35	51	47	49	56	55	46	21	27	13	20	19	10	14		620
Mon, 27/02/2012	5	2	3	5	1	9	17	30	34	25	32	42	34	45	47	48	42	39	23	35	29	30	38	24		639
Tue, 28/02/2012	13	8	11	14	13	21	21	47	40	50	59	41	48	51	34	47	38	46	33	27	16	35	21	13		747
Wed, 29/02/2012	9	7	8	12	9	23	20	44	47	48	50	56	30	50	51	39	40	39	29	31	24	29	37	18		750
Thu, 01/03/2012	18	14	10	11	9	18	24	42	41	57	57	45	48	48	57	55	52	40	26	21	22	24	11	19		769
Fri, 02/03/2012	11	6	11	6	14	17	19	40	56	49	48	44	45	65	42	36	45	35	55	24	17	18	11	24		738
Sat, 03/03/2012	9	10	12	6	13	13	26	23	27	52	42	38	37	48	50	34	43	31	32	21	29	25	14	15		650
Sun, 04/03/2012	10	9	4	5	2	8	9	26	38	33	36	33	19	43	33	32	33	25	22	11	12	15	10	7		475
Mon, 05/03/2012	3	2	1	1	3	11	18	23	24	36	28	26	32	34	31	37	43	33	26	15	22	18	18	12		497
Tue, 06/03/2012	4	4	6	2	3	11	20	33	23	46	44	35	32	41	19	35	32	29	18	14	9	17	5	9		491
Wed, 07/03/2012	5	4	6	3	8	9	19	28	32	44	28	34	27	28	47	37	48	27	21	17	17	7	17	12		525
Thu, 08/03/2012	7	3	7	4	9	13	34	23	34	31	44	48	24	41	39	30	31	29	30	20	9	16	13	9		548
Fri, 09/03/2012	7	3	7	5	3	8	19	17	39	54	36	50	43	40	51	36	40	33	31	19	13	13	10	16		593
Sat, 10/03/2012	7	9	7	9	8	15	17	24	37	32	40	28	29	43	31	39	43	26	20	10	20	14	11	11		530
Sun, 11/03/2012	3	3	5	1	4	3	8	14	21	32	29	22	28	42	36	31	38	28	31	15	12	17	14	11		448
Mon, 12/03/2012	4	5	2	2	2	9	16	18	22	28	31	45	32	34	42	42	27	42	26	17	23	33	27	22		551
Tue, 13/03/2012	18	12	9	8	14	8	32	32	44	53	61	46	49	36	43	31	29	30	30	29	18	14	15	12		673
Wed, 14/03/2012	12	5	8	5	15	16	26	33	39	38	54	38	48	44	33	47	40	20	19	25	13	16	24	18		636
Thu, 15/03/2012	9	5	10	5	10	11	19	30	38	46	33	43	50	60	53	53	30	33	28	19	20	19	28	13		665
Fri, 16/03/2012	9	11	6	5	6	10	27	45	34	49	58	66	43	55	47	48	51	33	29	22	13	20	15	12		714
Sat, 17/03/2012	16	13	6	6	9	3	14	30	24	40	51	31	35	39	33	43	41	25	28	13	18	17	19	9		563
Sun, 18/03/2012	12	7	5	3	6	9	10	11	28	18	43	30	27	47	40	39	40	23	24	18	16	15	21	5		497
Mon, 19/03/2012		3	3	1	3	7	18	21	40	31	14	35	31	41	43	32	39	36	33	26	13	21	25	15		531
Tue, 20/03/2012	21	8	13	19	8	13	20	31	42	35	49	35	40	49	53	45	42	43	27	23	25	12	18	13		684
Wed, 21/03/2012	10	10	5	12	5	13	19	35	29	67	53	42	46	52	63	52	43	51	28	21	28	33	20	24		761
Thu, 22/03/2012	16	9	18	9	8	14	19	38	52	50	68	49	52	62	56	53	38	41	48	18	27	20	24	8		797
Fri, 23/03/2012	10	10	11	13	15	15	14	34	46	44	61	47	36	45	39	38	47	46	39	22	22	24	15	21		714
Sat, 24/03/2012	11	7	16	9	13	15	28	46	41	59	44	45	44	60	42	44	55	33	28	33	28	24	20	13		758
Sun, 25/03/2012	12	6	7	5	8	7	15	24	62	43	47	52	46	60	61	47	29	32	25	24	7	13	11	7		650
Mon, 26/03/2012	7	4	3	6	7	16	9	29	28	41	31	32	39	39	37											328
TOTAL	1,010	742	783	718	726	1,017	1,808	2,778	3,556	4,061	4,060	3,937	3,834	4,233	4,235	4,214	4,015	3,493	2,797	2,145	1,862	1,899	1,589	1,338	60,850	

Appendix B

Site Access Plan

NOTE:
TEMPORARY VARIABLE MESSAGE SIGNS (VMS) MAY ALSO BE LOCATED ON THE
NEWELL HIGHWAY, APPROXIMATELY 250m FROM X-LINE ROAD TO PROVIDE
ADDITIONAL WARNING/ SAFETY DURING CONSTRUCTION ACTIVITY.



PRELIMINARY PLAN
FOR DISCUSSION PURPOSES
ONLY SUBJECT TO CHANGE
WITHOUT NOTIFICATION



DEWHURST PROJECT
NEWELL HIGHWAY / X-LINE ROAD
SITE ACCESS PLAN

14 OCTOBER 2013
NOT TO SCALE
14S1021100-01-01-P1

Melbourne

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