BETTER TRANSPORT FUTURES
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06 July 2012
P0961 Natural Gas Storage Facility Letter Ver2.doc

CB&I
Level 13, 197 St Georges Terrace
Perth, Western Australia, 6000

Attention: Jim Rutherford

Dear Jim,

Re: Natural Gas Storage Facility Project, Tomago, NSW

AGL Energy Limited (AGL) is proposing the construction and operation of the Newcastle Gas Storage Facility at Tomago, NSW. This site is north of the Tomago Aluminium Smelter on land currently owned by Tomago Aluminium Company (TAC).

The Project consists of:

- a processing plant capable of processing up to 66,500 tonnes of liquefied natural gas (LNG) per year;
- a storage tank capable of containing up to 30,000 tonnes of LNG;
- a truck loading facility to allow the dispatch of up to 1,000 tankers of LNG per year;
- a new road to connect the gas plant site to the northern access road currently serving the Tomago Aluminium Smelter; and
- a natural gas pipeline which connects the gas plant site to a receiving station in Hexham, NSW.

A Traffic Impact Assessment (TIA) for the proposed development, "*Natural Gas Storage Facility Project Traffic Study*" was completed by AECOM in 2011.

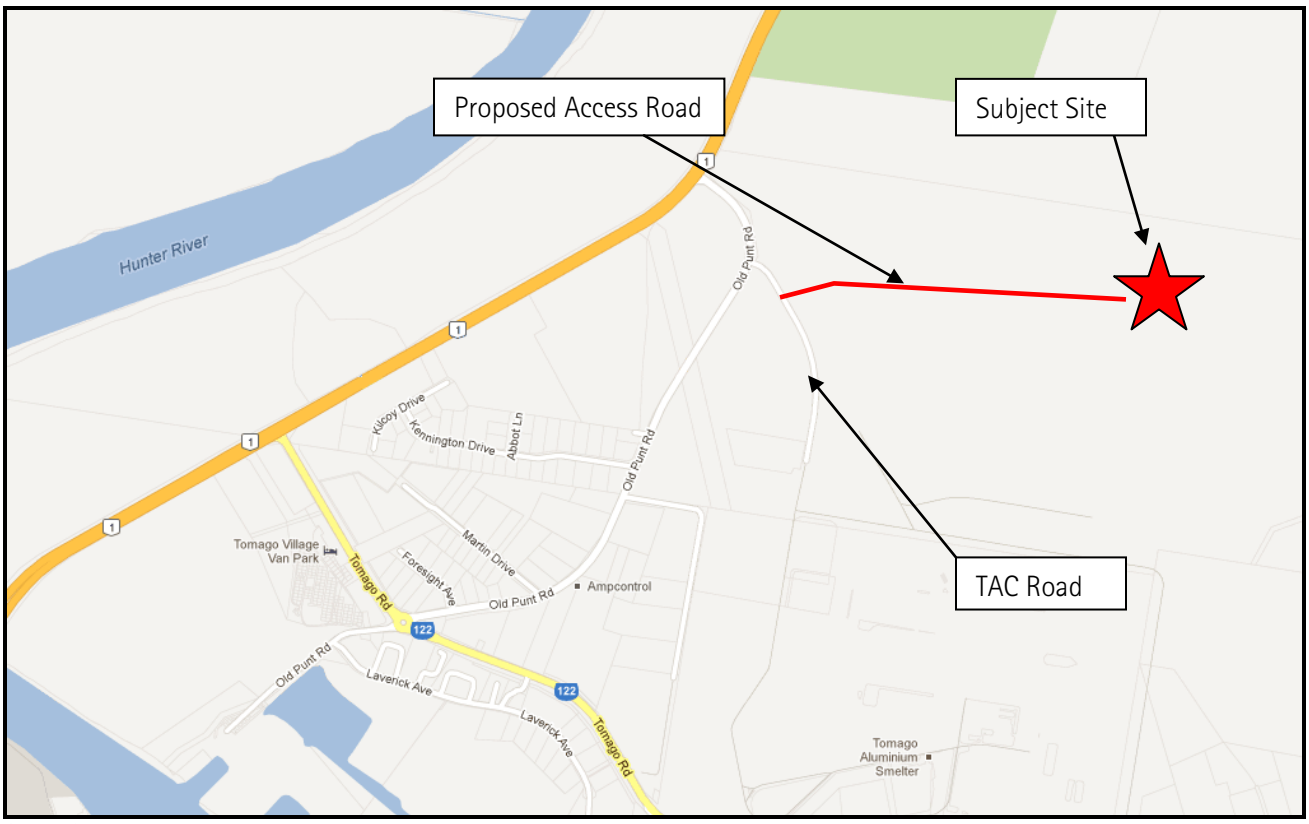
In response to the TIA the Director General of the Department of Planning and Infrastructure issued the following comment:

> ***"B32*** *Prior to the commencement of construction of the project, the Proponent shall commission a suitably qualified road infrastructure specialist to assess the condition of all public roads proposed to be traversed by construction traffic associated with the project (including over-mass or over dimensional vehicles) in consultation with Council and the RMS, and to identify any upgrade requirements to accommodate project traffic for the duration of construction (including culvert, bridge and drainage design; intersection treatments; vehicle turning requirements; and site access), having regard to peak traffic volumes. The Pre-Construction Road Inspection Report shall be submitted to the Director-General prior to the commencement of construction works, clearly identifying recommendations made by the Council and the RMS and how these have been addressed. The Proponent shall ensure that*

all upgrade measures identified in the report are implemented to meet the reasonable requirements of Council and the RMS, prior to the commencement of construction."

Better Transport Futures has been commissioned by CB&I to assess the ability of the road network in immediate vicinity of the development subject site to accommodate the service vehicles that are expected to access the development during the construction phase of the project.

A new access road is proposed to serve the development that will intersect the existing privately owned TAC northern access road at a T-junction. The TAC northern access road joins Old Punt Road approximately 200m from the intersection of Old Punt Road and the Pacific Highway. The location of the proposed development is displayed in Figure 1.



Source: Google Maps

Figure 1 Gas Storage Facility Subject Site

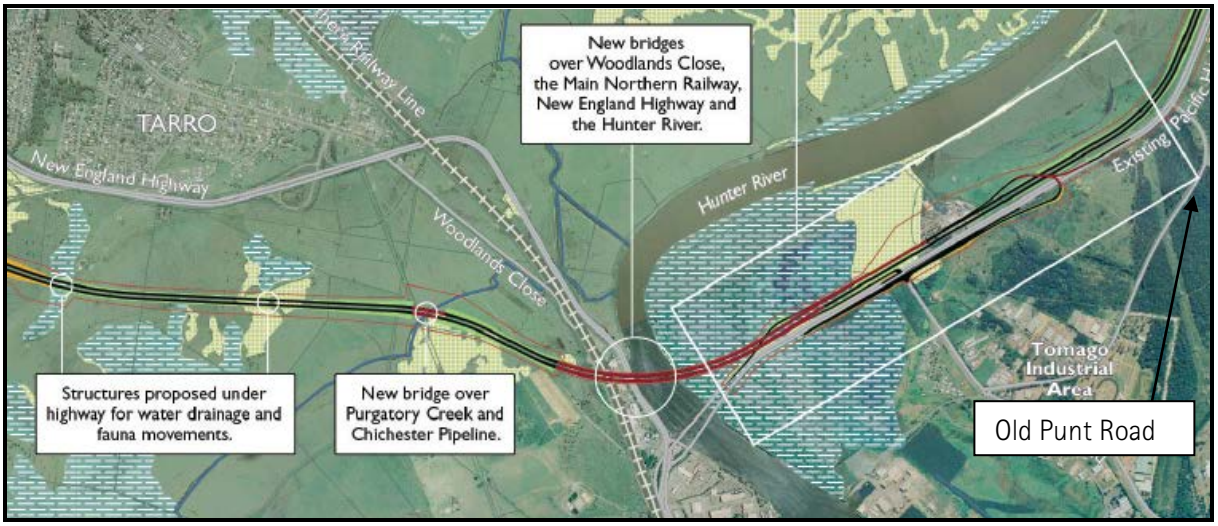
The route of inbound and outbound construction vehicles to/from the proposed gas plant will be exclusively along the Pacific Highway, Old Punt Road and the TAC northern access road.

The intersection of the Pacific Highway and Old Punt Road was upgraded from a priority controlled intersection to a signalised intersection in June 2007. At the same time, the intersection of the Pacific Highway and Tomago Road was upgraded, to allow for the dual right turn into Tomago Road off the Pacific Highway and the right turn out of Tomago Road was banned.

Council have indicated that no additional road works or traffic management works are planned at or in proximity to these intersections.

The RMS are planning an upgrade of the Pacific Highway between the F3 Freeway and Raymond Terrace, involving a 15 kilometer dual carriageway upgrade of the Pacific Highway bypassing Heatherbrae, to the north of the subject site. The RMS have approached Port Stephens and Newcastle Councils and formally reserved the highway corridor in the local environmental plans.

Upon completion of the upgrades access to Tomago Road and the industrial area for northbound traffic would be via an off ramp, from the upgraded arterial road network. The RMS has indicated construction of the proposed road upgrade will commence once funding for the project becomes available with no timetable for this work currently available. An image of the proposed road network upgrade is displayed below in Figure 2.



Source: www.rta.nsw.gov.au

Figure 2 Gas Storage Facility Subject Site

It is noted that the Pacific Highway and Old Punt Road are designated by the Roads and Maritime Services (RMS) as being part of a restricted access vehicle route, capable of accommodating 26m B-double, articulated vehicles. The RMS defines the standard mass limit for 26m B-doubles as 62.5 tonnes.

Discussion with the superintendent at the Tomago Aluminium Smelter has confirmed that the TAC northern access road has also been designed to accommodate a vehicle up to the size of a 26m B-double, which are the largest vehicles that currently access the smelter. Thus all the roads in proximity to the development have been designed to accommodate very large heavy goods vehicles.

The AECOM TIA identifies the construction phases of the project as the following:

- Gas plant construction (three years);
- Pipeline construction (up to nine months);
- Access road and utility corridor construction (three months); and
- Hexham receiving station construction (up to nine months).

The volumes of heavy goods vehicles expected per day for each construction phase is presented below in Table 1.

Table 1 Project Construction Generated Traffic

Component	Task	HGV Deliveries per day
Gas Plant	Site Preparation	40 - 50
	Bulk earth works	20
	Structural works 1 (2month period)	20 - 30
	Structural works 2 (remainder of period)	5
	Commissioning	3
	Rehabilitation and landscaping	4
Pipeline	Construction	20
Access Road	Construction	10
Hexham receiving station	Construction	5

Source: New Gas Storage Facility Project Traffic Study (2011) prepared by AECOM

Table 1 above indicates that the highest volumes of heavy goods vehicles of 40 – 50 per day are expected during the site preparation process of the construction phase. The TIA indicates that the TAC currently accommodates 400 – 450 heavy good vehicle movements per day. Thus the heavy goods vehicle construction activity is significantly less than the current heavy goods vehicle activity associated with the current operation of the aluminium smelter.

The 2011 – 2013 SIDRA results from the AECOM TIA detailing the operation of the intersection of Pacific Highway and Old Punt Road with the background traffic and expected construction traffic (heavy and light) is presented below in Table 2.

Table 2 Pacific Highway and Old Punt Road Horizon Year Operation with Construction Traffic

Year	Demand Flow (veh/hr)	Level of Service	Average Delay (secs)
2011	2,833	B	17.2
2012	2,816	B	15.4
2013	2,962	B	17.7

Source: New Gas Storage Facility Project Traffic Study (2011) prepared by AECOM

Traffic modeling undertaken in the TIA indicates that the construction vehicles generated by the proposed Gas Storage Facility will have a negligible impact upon the intersection of Old Punt Road and the Pacific Highway, which will continue to operate with acceptable delays and level of service in the horizon year of analysis.

During the construction phase of the development a combination of rigid and articulated vehicles will be utilized. The largest rigid vehicle will be of 12.5m length and 2.5m width, which corresponds to an Australian Standard Heavy Rigid Vehicle. The largest semi-trailer will be of 19m length and 2.5m width which corresponds to an Australian Standard Articulated Vehicle. All construction vehicles accessing the site will have standard mass limits of less than 50 tonnes.

Accordingly as the adjoining road network has been designed to accommodate vehicles up to the size of a 26m B-double, the geometric layout of the roads and intersections in the vicinity of the subject site can safely and efficiently accommodate the swept path movements of the typical construction vehicles.

Some components of the proposed Gas Storage Facility will be prefabricated and delivered to the site. These components will have maximum load dimensions of 20m length, 5m width and 4m height. The delivery of these prefabricated components will occur a maximum of 6 times during the 3 year construction period of the proposed development. Whilst the length and height of these loads are considered acceptable, the RMS criteria specifies that a load carrying vehicles with a width of greater than 3.5m are requires a General Class 1 Oversize (Load Carrying Vehicle) Permit.

Key criteria applicable to the movement of oversize vehicles in order to obtain the necessary permits include:

- The definition of an appropriate route for the over sized vehicle;
- The provision of "Over Size" warning signs, warning lights and warning flags on of the vehicle;
- The use of a "pilot" vehicle to provide advance warning to approaching traffic and to be positioned to give adequate warning to other road users.; and
- Travelling in accordance with designated curfews to minimise the impact on peak hour road network traffic.

An oversize vehicle permit will be obtained prior to the delivery of each of the prefabricated components of the proposed development. Additionally in accordance with RMS requirements the permits will be carried with the oversize vehicle at all times on its route to and from the proposed Gas Storage Facility subject site.

The overall conclusions from investigations is that the current road network in vicinity of the subject site can accommodate the volume and size of the vehicles associated with the construction phase of the Gas Storage Facility and no road upgrades are required.

If you have any queries or require further information please contact our office.

Sincerely,

Mark Lucas
Senior Transport Planner