

MARCH 2011

Heavy vehicle study 2011 - summary

The RTA commissioned Arup and their specialist traffic and transport sub-consultants GTA Consultants to undertake a study of heavy vehicle movements in Grafton, South Grafton and adjacent areas on the arterial road network, including the traffic movements on Grafton Bridge and Summerland Way.

The 2011 study provides an understanding of the light and heavy vehicle travel patterns in and around Grafton. This study will help us assess the impacts of various route options for the additional crossing of the Clarence River on the road network in and around Grafton.

Study objectives

The RTA has engaged Arup to investigate preliminary route options for an additional crossing of the Clarence River at Grafton.

As part of these investigations Arup and their traffic and transport sub-consultants GTA, have undertaken a heavy vehicle study. The purpose of the study is to understand the heavy vehicle travel patterns in and around Grafton.

The heavy vehicle study started in August 2010.

The objectives of this heavy vehicle study were to understand for the Grafton township and at a wider regional level:

- The volume of heavy vehicles that are crossing the Clarence River.
- The existing origin (start) and destination (finish) points both internal and external of Grafton and South Grafton.
- The heavy vehicle travel patterns over a day and a week.
- The number of heavy vehicles and what types of vehicles - light vehicles, buses, or heavy vehicles.
- The industrial and business districts generating heavy vehicle trips.
- An understanding of the bus movements, time of day and utilisation.

For the purpose of this study a heavy vehicle is defined as medium rigid trucks and buses, semi trailers and B Doubles.

The *Austrroads Vehicle Classification System* classifies a heavy vehicle as between a class 3 and 12, as shown in the following table.

Vehicle Description	AUSTROADS Classification
Light Vehicles	AUSTROADS class 1 and 2
Buses	AUSTROADS class 3 and 4
Heavy Vehicles (rigid)	AUSTROADS class 3, 4 and 5
Heavy Vehicles (articulated)	AUSTROADS class 6, 7, 8 and 9
Heavy Vehicles (B Double)	AUSTROADS class 10, 11 and 12

Further information is available in *the Additional Crossing of the Clarence River: Heavy Vehicle Study*, March 2011.



Above: The areas we refer to as Grafton and South Grafton.

Study methodology

The study used three types of surveys to capture the movements of heavy vehicle and all other traffic in Grafton.

1) An origin-destination survey using video camera technology

To capture vehicles crossing the Grafton Bridge and within the Grafton and South Grafton townships, a series of cameras were located on key roads around Grafton and on roads leading in and out of Grafton and South Grafton, and on the Grafton Bridge.

The origin-destination survey was undertaken on Thursday 19 August 2010 for a 14 hour period between 5am and 7pm.

The video cameras used digital camera technology to record the registration (front number plate) of each vehicle passing each station.

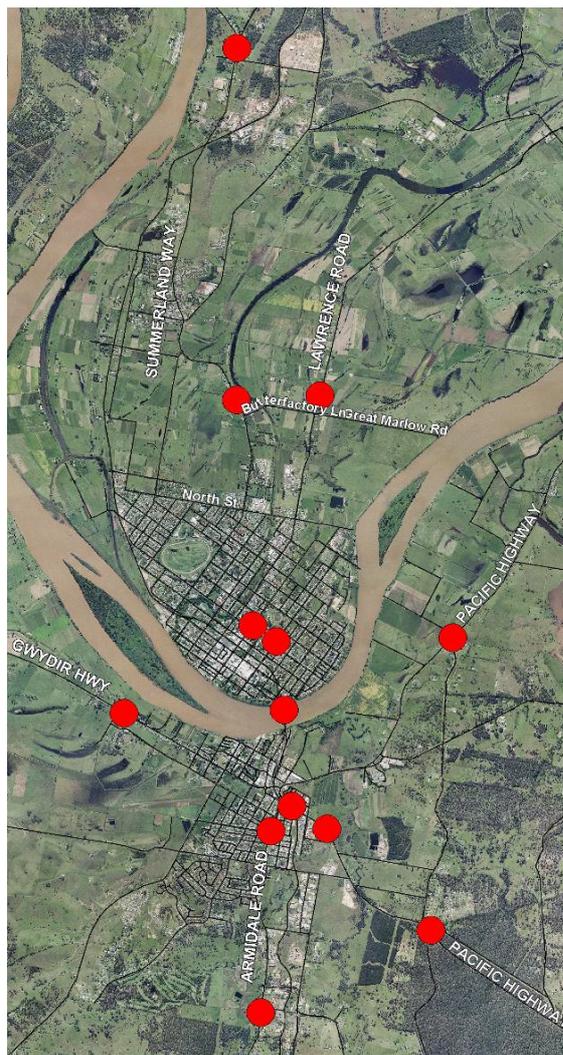
Number plate data was then matched from station to station. This gives us information about the journeys that heavy vehicles are taking.

The number plates were the only information recorded and this information was not used for any

other purpose. The collected information is protected under the requirements of the *NSW Privacy and Personal Information Protection Act 1998*.



Above: Video camera technology set up on the roadside to capture passing vehicles.



Above: Locations of the cameras installed to record passing vehicles in and around Grafton.

2) Tube count surveys

To understand the volumes of traffic and types of vehicles, tube counters were placed across the road at 14 locations in Grafton and South Grafton.

Continuous 24 hour, seven day classified traffic counts were completed between Thursday 19 August and Thursday 26 August 2010.

The data provides a summary of the travel patterns over a typical week.

Tube counters were installed at various locations around Grafton.



Example of tube counters placed on the roads in Grafton

3) Surveys of bridge users and businesses in the local area

Advice from heavy vehicle drivers is important to understand route choices and driver behaviour in and around Grafton.

A questionnaire was used to interview industry owners, freight operators and bus companies. If you want to read the survey questions and a summary of the responses, it is available in the *Heavy vehicle study*, March 2011 on the RTA website.

GTA provided the questionnaire surveys on Friday 27 August 2010.

Some brief conclusions

From the origin-destination survey using video camera technology:

- A total of 26,554 vehicles crossed the Grafton Bridge on Thursday 19 August 2010 between 5am and 7pm (travelling in both directions).
 - 15,466 (or 58 percent) were local traffic (internal start to internal finish).
 - 10,360 (or 39 percent) had a start or finish point in Grafton/South Grafton travelling to or from an external point (external to internal or internal to external journeys).

- 728 (or 3 percent) were through traffic. That is they had both a start and finish point outside of Grafton/South Grafton.
- Of the 26,554 total vehicles crossing the bridge on Thursday 19 August 2010 between 5am and 7pm, 1388 were heavy vehicles (class 3 to 12).
 - 658 (or 47 percent) were local traffic (internal to internal).
 - 567 (41 percent) had a start or finish point in Grafton/South Grafton travelling to or from an external point (external to internal).
 - 163 (12 percent) were through traffic (external to external).
- 92 percent of all northbound vehicles crossing the bridge on Thursday 19 August 2010 between 5am and 7pm had a finish point in Grafton south of Butterfactory Lane.
- 90 percent of all southbound vehicles crossing the bridge on Thursday 19 August 2010 between 5am and 7pm had a start point in Grafton south of Butterfactory Lane.

From tube count surveys

- The Grafton Bridge carries approximately 29,500 vehicles per week day.
- 94 percent of traffic that crosses bridge travels between 7am and 10pm (approximately 27,730 vehicles).
- Five percent of vehicles crossing the Grafton Bridge are heavy vehicles (class 3 to 12) (approximately 1475 heavy vehicles).
- 84 percent (approximately 1240) of heavy vehicles (class 3 to 12) that cross the Clarence River travel between 7am and 10pm and 16 Percent (approximately 235) travel between 10pm and 7am.

From surveys of bridge users and businesses in the local area

- Businesses and bus companies felt it was common for companies to establish routes and times to avoid peak hour congestion on the bridge, where possible.
- A prominent issue identified by business was the B double restriction on the bridge during peak traffic times.
- It was noted that late running of services due to bridge congestion incurred additional operation costs for business owners.

Report available

For the results of these studies and more information, the *Additional crossing of the Clarence River: Heavy vehicle study*, March 2011 is on the RTA's Grafton Bridge project website or alternatively you can contact the project team.

Upcoming community forum

We look forward to discussing traffic issues with you at the next forums on **Wednesday 16 March 2011** from 1pm to 3pm and from 6pm to 8pm at the Grafton Community Centre, 59 Duke Street Grafton.

Next steps

The data collected from the origin destination survey and the tube counter survey will be used to update the strategic traffic model for the Grafton and South Grafton areas.

The strategic traffic model will be used to forecast future traffic demands for the next 30 years. The results of this modelling will help the selection process for an additional bridge crossing. We will be able to insert a new crossing point in the model and look at the traffic benefits/impacts that would result.

To recap – there were some 41 community suggestions for crossing points. The next step is to define from these the feasible crossing points. The number 41 will then be reduced.

There are some important matters to consider in how the different options for the additional crossing of the Clarence River address congestion on the existing bridge.

Q: How much traffic would use each feasible crossing?

Q: What sorts of local traffic impacts would occur, on residential streets, with the different feasible crossing points?

Q: How many trucks would a heavy vehicle bypass of Grafton and South Grafton remove from the town centre or the wider town? Many people are keen to see trucks out of the town centre and many are keen to see them out of any residential areas.

A traffic study will consider the impacts of each feasible crossing.