

7 August 2020

Demi Leggerini  
City of Karratha  
Lot 1083 Welcome Road  
KARRATHA, WA 6714

Dear Demi,

**RE: LOT 4613 STREET FOOD VENDOR OPERATIONS, DREAMERS HILL cnr DAMPIER ROAD & BATHGATE ROAD - MILLARS WELL, CITY OF KARRATHA – PEER REVIEW**

Transcore was engaged by City of Karratha to undertake the following tasks:

- ✚ Undertake Peer Review of the Traffic Impact Report (hereafter TIR) prepared by PTM Pilbara Traffic Management with respect to the existing street food vendor operation taking place at Lot 4613, also known as Dreamers Hill site, in Millars Well; and,
- ✚ Assess the combined impact of street trading activity at Dreamers Hill site and Tambrey Neighbourhood Centre on the operation of Bathgate Road and the adjacent Dampier Road/Bathgate Road roundabout;

The focus of this Peer Review will be on the statements and conclusions drawn in relation to the existing informal street food vendor operation currently taking place at the site located immediately northeast of the existing intersection of Dampier Road/Bathgate Road and its traffic, parking and safety implications within the site and on adjacent roads.

In addition, Transcore has also been requested to review the current and future traffic operation and safety implications of the virtual 4-way intersection on Bathgate Road created by Dreamers Hill site and Tambrey Neighbourhood Centre (Tambrey NC) crossovers.

The following documents were reviewed for the purpose of this peer review:

- ✚ Dreamers Hill Food Van Traffic Impact Report – PTM, June 2020;
- ✚ Proposed Mixed Use Development Bathgate Road, Karratha Traffic Report – Transcore, January 2019;
- ✚ Other relevant traffic and crash data sourced from Main Roads WA;

It should be noted that Transcore did not have the opportunity to observe the operation of the site directly and will rely on street food vendor festival reports observed by PTM as presented in the TIR and anecdotal evidence by observers passing this site during critical peak hours.

With respect to the TIR report review Transcore wishes to provide the following comments:

#### **TIR ASSESSMENT SCOPE**

The TIR focuses solely on the internal site operations and associated safety issues but fails to undertake adequate traffic impact assessment of the Dreamers Hill activity on the external road network. This is of particular concern as TIR fails to give due regard to the current and future operation of the 4-way intersection on Bathgate Road created by Dreamers Hill site and Tambrey NC crossovers which, according to anecdotal evidence, is exhibiting signs of serious operational and safety issues.

#### **TRIP GENERATION**

The vehicular attraction to the site has been estimated in the TIR report. This is not sufficient for determining the impact on Bathgate Road and formal traffic count data and vehicular queueing information during peak traffic activity at the site is required. Such up-to-date information forms critical input into intersection modelling and operational analysis of the mutual impacts of the two key crossovers on Bathgate Road.

#### **TOTAL DAILY AND PEAK HOUR OPERATION PERIODS**

The TIR provides only limited and general information on traffic activity at the site suggesting higher volumes of traffic occur on Friday to Saturday evenings; however, more detailed information outlining existing traffic patterns and overall peak traffic activity periods (i.e. peak hours) is required. Such information would allow us to undertake capacity assessment of the Lot 4613 and Tambrey Neighbourhood Centre crossovers on Bathgate Road during combined peak hour traffic operation and confirm anticipated queues, delays and capacity.

#### **PARKING DEMAND AND SUPPLY**

The TIR provides general observation of parking occupancy and parking behaviour at the subject site but does not provide appropriate assessment of parking supply and demand for the site. It is unclear if on-site parking supply is sufficient to support the existing operations of parking overflows onto adjacent roads thus impacting existing traffic operations within the immediate vicinity.

Additionally, the TIR does not provide an estimate of the total daily trip generation of the site.

#### **OTHER REPORT SHORTCOMINGS**

- ✚ Although there is some general information on pedestrian movement within the site there is an obvious gap in information relating to the external pedestrian and/or cyclist attraction and accessibility to the site. It is expected that some of the site patrons would arrive on foot or by bicycle from the residential areas in the relative vicinity of the site.

- ✚ The TIR does not provide any information in relation to crash data in the immediate vicinity of the site. Such information usually provides insight into traffic behaviour and potential safety issues within the subject locality.
- ✚ The TIR does not provide any information in relation to availability of any public transport opportunities for the site. The assessment of public transport opportunities and facilities as well as potential upgrade requirements should form an integral part of the report.

It is however acknowledged that the TIR observes events of informal parking along Dampier Road and associated safety implications and proposed mitigating actions.

## **CONCLUSION**

The review of the TIR prepared for the Dreamers Hill food vendor operation has identified several key shortcomings of the report including: omitted daily and peak hour trip generation data, lack of parking demand and supply analysis and most importantly no traffic impact analysis of the Dreamers Hill operation or capacity assessment of the adjacent road network.

These issues create uncertainties in relation to the operation of Dreamers Hill street trade activity, including the likely traffic and parking impacts on the immediate road network and the safety risks associated with the operation and the adequacy of the proposed mitigating strategies for the subject site.

## ***REVIEW OF EXISTING STREET FOOD VENDOR OPERATIONS AT DREAMERS HILL***

### **ACCESS SYSTEM**

The Lot 4613 crossover is located on Bathgate Road approximately 75m north of Dampier Road roundabout and directly opposite the Tambrey NC crossover thus creating a 4-way intersection at this location. This is not a desirable situation as it often creates confusion regarding priority movements particularly for directly competing/conflicting right-out movements onto Bathgate Road from the opposing crossovers.

Furthermore, based on anecdotal evidence during peak evening road network activity periods, the queues from the entry into the Dreamers Hill site can extend back to the Bathgate Road/Dampier Road intersection thus directly impacting the operation of this roundabout. Queuing back along Bathgate Road from Dampier Road roundabout past the Lot 4613 site are also observed during peak road network activity periods. This suggests potential crossover capacity constraints or queue backs as a result of internal site congestion blocking entry into the site. It is clear that such situation results in operational and safety concerns for road users.

A number of mitigating measures that could potentially resolve the current situation are analysed and discussed below. The merits and drawbacks of each option would need to be considered by the local authority to establish the most applicable solution.

### **Offset existing Lot 4613 crossover**

Available crash records for Bathgate Road do not indicate any crashes in the vicinity of the two crossovers in the previous 5-year period. However, once Tambrey NC is fully developed, the Tambrey NC crossover on Bathgate Road is expected to accommodate up to 340 vehicles per hour (vph) during the weekday evening peak hour, of which approximately 140vph would be making a right turn out movement. The TIR states that about 90 vehicles were observed on Friday evenings under regular operation. Assuming 25% of total evening peak hour trips are right-out movements (i.e. 23 trips), a combined direct right-out movement conflict of 140 and 25 vehicles is to be expected between the two crossovers under potentially diminishing daylight conditions.

This situation significantly increases the risk of vehicular crashes, particularly during evening peak periods. It is therefore recommended that the existing crossover to Lot 4613 should ideally be offset 20-30m to the north in order to remove the conflict between the right-out movements from the subject site and Tambrey NC site crossovers. It is however recognised that the shape of the subject site combined with existing on-site drainage requirements may prevent such an offset. Accordingly, the feasibility of proposed crossover offset would need to be investigated further based on detailed site survey plans. It should be noted that, if feasible, this measure would need to be implemented in conjunction with the resolution of internal Lot 4613 congestion issues through appropriate formalisation of internal parking, movement areas and internal driveways. It is strongly suggested that appropriate modelling be undertaken beforehand to confirm if the proposal would secure sufficient capacity to accommodate the anticipated traffic volumes.

### **Upgrade of section of Bathgate Road**

The current situation suggests that additional queueing capacity for vehicles turning into respective sites would need to be secured to improve current traffic operations at this location. This can potentially be achieved through comprehensive upgrade of Bathgate Road section between the Dampier Road roundabout and the Lot 4613/Tambrey NC crossovers. A boulevard-style treatment comprising one through lane in each direction and a right-turning pocket into Lot 4613 site would improve the accessibility of the Dreamers Hill site.

It is acknowledged however that such road upgrade may be cost-prohibitive due to the scope of the scheme which would also need to allow for the operational requirements of Tambrey NC crossover and the proximity of the Dampier Road roundabout to the south. If this option is pursued, it is strongly recommended that appropriate modelling be undertaken beforehand to confirm if the proposal would secure sufficient capacity to accommodate the anticipated traffic volumes. A concept plan and costing would need to be prepared to confirm the feasibility of this measure.

### **Relocation of Lot 4613 site access**

Additional proposal that may be entertained could be the closure of the existing Bathgate Road crossover and its relocation to the northeast point of the site where a shorth link would be constructed to connect to Gleeson Place in order to provide access to the site from the residential road network to the north of the site.

The feasibility of such proposition would need to be investigated as it is unclear if appropriate road reserve to secure the driveway link is in fact available. The driveway link would also need to be designed to address the stormwater drainage requirements at the site.

An obvious downside to the proposal would be the resulting amenity impacts on the residential areas to the northeast of the site. Adequate traffic modelling would need to be undertaken to confirm the capacity of the associated roads and intersections to accommodate the new traffic.

### **Reduction in traffic generation of Lot 4613 site**







An alternative to the aforementioned proposals would be the reduction of trip generation of the subject site. The consequential abatement of site-generated traffic would result in improvement in operational conditions along Bathgate Road and at the adjacent Dampier Road intersection. It is however difficult to determine exact level of traffic reduction required due to lack of relevant traffic data. However, comprehensive traffic surveys at this location would assist in developing appropriate traffic model which would help to establish the level of increase in traffic activity that can be accommodated on Bathgate Road. This would serve to confirm the extent of Dreamers Hill operation that would be acceptable to maintain good operational conditions on the adjacent road network.

### **SITE LAYOUT**

The TIR has identified three potential mitigation strategies to improve on-site traffic and parking operation and overall pedestrian and vehicular safety (Options 1 to 3). Attachment PTM-INFO-DH-005\_RevB in the TIR represents a reasonably legitimate site layout proposition for separation of food stall parking from patron parking. It is however, possible that the parking component could be further optimised to accommodate more parking bays.

Should the current level of activity at Dreamers Hill be retained or intensified then it is recommended that most capital-intensive TIR Option 3 (sealing of the surface of entire site) should be implemented in this instance.

This Option would also need to include the following additional measures:

-  Delineation of inbound and outbound lanes at the Bathgate Road crossover;
-  Delineation of internal driveway connecting the site crossover with the car park area;
-  Demarcation and separation of the food stall parking/laydown area from visitor parking;
-  Formalisation of the internal car parking area – parking bays delineation;
-  Line-marking of internal site pedestrian walkway through internal car park areas;
-  Provision of appropriate signage for vehicles and pedestrians;

In addition to the aforementioned measures it is recommended that appropriate lighting be installed at the site to improve pedestrian safety and driver visibility during dusk and night time.



It should be noted however that the aforementioned measures may still not be sufficient to ensure good on-site traffic and parking operations if the parking demand outstrips the on-site parking supply. It is therefore critical that the parking demand of the Dreamers Hill operation be adjusted to meet the on-site parking supply through establishing the optimal level of activity/site attraction.

#### EXTERNAL PEDESTRIAN AND CYCLIST ACCESSIBILITY

If Dreamers Hill is to remain a mobile trading area, particularly at the current level of activity, then the existing pedestrian and shared path network within 800m radius of the site should be reviewed and upgraded to facilitate safe, convenient and legible access to the site. Refer **Figure 1** for more details.

One of the most notable pedestrian/cycling path gaps is the missing link between the existing path along the southern side of Dampier Road and the path around the Dampier Road/Bathgate Road roundabout.

Within the 800m catchment is also the Pilbara Holiday Park bus stop (bus route 880/881) and as such the formal pedestrian path connection to the site could potentially facilitate access to the site by way of public transport, subject to bus frequency and overlap with the street food festival operating times.

The site should also be formally connected with the pedestrian paths leading to the site to ensure all elements of the accessibility are met.



**Figure 1: 800m walking catchment around the subject site**

**PARKING MANAGEMENT ON ADJACENT ROADS**

The TIR has also identified incidents of temporary verge parking along Dampier Road frontage of the site. There have also been anecdotal reports of informal parking along Bathgate Road as well. Such uncontrolled parking is clearly a safety concern. It is therefore recommended that measures be introduced to prevent parking along Dampier Road and Bathgate Road. It is likely that new parking regulation should be policed in the initial implementation stage until patrons become accustomed to the new situation.

The on-site parking operations should be monitored over a period of time to confirm if the on-site parking supply meets the actual demand. If it is established that the demand outstrips supply a new overflow parking facility could be contemplated in the vicinity of the site but ensuring formal and legible pedestrian links to the site are established.

I trust the information provided in this letter will assist in your deliberations.

Sincerely,

A handwritten signature in black ink, appearing to read 'V. Baltic', written in a cursive style.

Vladimir Baltic  
Traffic & Transport Engineer