rytenskild
Traffic Group

TRAFFIC IMPACT ASSESSMENT

PROPOSED EXPANSION OF EXISTING

AQUACULTURE INDUSTRY

CAPTAIN COOK HIGHWAY, KILLALOE

Prepared for

GOLD COAST MARINE AQUACULTURE (GCMA)

3 SEPTEMBER 2015

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1.0 INTRODUCTION

Rytenskild Traffic Group (RTG) has been engaged by the Gold Coast Marine Aquaculture (GCMA) to prepare a Traffic Impact Assessment of its proposed expansion of an existing aquaculture industry near Mossman.

This report forms part of a Development Application to be lodged with the Douglas Shire Council. The following issues have been assessed during the study:

- On-site traffic requirements (car parking and circulation);
- Potential traffic generation;
- Access design;
- Road network impact assessment.

The subject site is located just to the east of the Captain Cook Highway which is a State controlled road and therefore the Department of Transport and Main Roads (TMR) will act a Referral Agency.

It is noted that there was a pre-lodgement meeting with TMR. The pre-lodgement meeting record dated 3 September 2015 confirms TMR's requirements for a Traffic Impact Assessment. These are as follows:

Traffic Impact Assessment	
5.	A Traffic Impact Assessment Report by a Registered Professional Engineer of Queensland (RPEQ) should be submitted with the development application. The report will be required to assess the existing access servicing the aquaculture ponds via the Captain Cook Highway. The report must demonstrate that the existing access is adequate and that any additional traffic generated by the proposed development will not compromise the safety, efficiency and operations of the access and the Captain Cook Highway. The report should provide the following information: • provide traffic information / data in regards to pre development, construction phase and post development traffic generation numbers (AADT- annual average daily traffic) at the existing access location with the Captain Cook Highway. • identify traffic impacts (if any) and analyse all vehicle movements, frequency and type of vehicles arriving and departing the development site. • confirmation of the anticipated number of staff arriving from off-site, shift times and seasonal variation (if any). • details of the existing structures (presently totalling about 1,170m2) which will remain as part of the enlarged operation and their purposes (for example, factory / processing sales storage carports and so on). • provide access treatment road works to mitigate any traffic impacts identified post development at the access location with the Captain Cook Highway. • any proposed upgrades and works must comply with the Department Road Planning and Design Manual. The traffic report must demonstrate that there will be no worsening in the efficiency, management and safe operation of this access post development.

A summary a response to each of these Items is provided as follows:

- provide traffic information / data in regards to pre development, construction phase and post development traffic generation numbers (AADT- annual average daily traffic) at the existing access location with the Captain Cook Highway.

Response:

Information provided by the Applicant indicates that the traffic generation of the existing aquaculture use on the site will not change as a consequence of the proposed expansion. Staff and visitation demands will be approximately the same. Existing heavy vehicles used to access the site will accommodate the additional demand.

- identify traffic impacts (if any) and analyse all vehicle movements, frequency and type of vehicles arriving and departing the development site.

Response:

Given that the traffic generation of the site will not change as a consequence of the proposed expansion, there will not be any traffic impacts associated with the development proposal.

- confirmation of the anticipated number of staff arriving from off-site, shift times and seasonal variation (if any).

Response:

Current staff demands vary throughout the year depending on the phase of operations. These peak during the November and December harvesting period where up to 11 - 12 staff members work at the site. This will not change as a consequence of the proposed expansion.

- details of the existing structures (presently totalling about 1,170m2) which will remain as part of the enlarged operation and their purposes (for example, factory / processing sales storage carports and so on).

Response:

Please refer to Section 3 (Page 8).

- provide access treatment road works to mitigate any traffic impacts identified post development at the access location with the Captain Cook Highway.

Response:

Given that the traffic generation of the change as a consequence of the proposed expansion, there will be a 'no-worsening' of operations at the existing access intersection. The existing access only has basic turning provisions, however such function satisfactorily given the very low turning traffic volumes.

- any proposed upgrades and works must comply with the Department Road Planning and Design Manual. The traffic report must demonstrate that there will be no worsening in the efficiency, management and safe operation of this access post development.

Response:

Upgrade works are not proposed.

2.0 SUBJECT SITE

The existing site identified as Lot 201 on SP222765 and Lot 8 on NR153 is located on the eastern side of the Captain Cook Highway, approximately 1.6 kilometres of Port Douglas Road. As shown in Figure 2.1, Lot 7 on RP846941 (23.33 hectares), which is located to the west of the existing site, is proposed to be reconfigured into two lots and therefore the land to the north (8.38 hectares) is to be utilised for the proposed expansion.

FIGURE 2.1 - LOCATION OF SUBJECT SITE

3.0 DEVELOPMENT PROPOSAL

As shown in Figure 3.1, the existing development has approximately 26 ponds on-site. An additional 22 ponds are proposed to be constructed.

FIGURE 3.1 –EXISTING SITE (PONDS)

The applicant is of the view that the proposed expansion will not result in any significant increase in staff or visitation requirements and therefore traffic generation.

The existing development is generally operated by 2 or 3 staff members on a daily basis and 11-12 staff during peak seasonal periods.

The proposal also includes a new administration building with a floor area of approximately 200m^2. This building will act as the front of house facilities and administration office. A primary processing facility will be located at the rear of the administration building and will house processing machinery.

A waste storage and collection area will be located at the rear of the processing unit. A caretakers residence will also be constructed on the site. A total of 30 car parking spaces have been provided on the plan, and this is expected to easily accommodate the expected parking generation given that the peak seasonal staff demand may only reach in the order of 11 employees (including the existing staff demand).

The proposed site plan is shown in Figure 3.2.

FIGURE 3.2 – PROPOSED SITE PLAN

4.0 EXISTING ROADWAY CONDITIONS

The subject site is located adjacent to the Captain Cook Highway which is a State controlled road. The Captain Cook Highway is a rural two lane road with a pavement width of approximately 9 metres, comprising of 3.5 metre wide traffic lanes and a one metre sealed shoulder on each side.

Traffic counts provided by TMR (refer to Appendix A) indicate that the Captain Cook Highway is carrying in the order of 6,000 vehicles per day to the south of the Port Douglas Road, and 8,000 vehicles per day within the town centre of Mossman to the north of the site. Traffic counts are not available directly adjacent to the site, however it is estimated that the Highway would carry in the order of 5,000 vehicles per day at that location.

5.0 DEVELOPMENT TRAFFIC IMPACT

The existing development generates peak operations during the November and December period, in the lead up to Christmas. However, during this period only one Articulated Vehicle (AV) enters and exits the site on any given day and up to 11-12 staff members will work at the site. The traffic generation typically does not exceed 5 vehicles per hour during peak operation, and this will not change significantly with the proposed expansion.

As shown in Appendix B, a SIDRA analysis of the existing access intersection indicates that there is negligible queuing and delays at the existing access point. This will not change as a consequence of the proposed expansion.

6.0 PROPOSED ON-SITE TRAFFIC ARRANGEMENTS

As stated, the traffic generation of the proposed use is considered to be very low and there will be only in the order of 11-12 persons on-site during peak operating periods. It is proposed that a capacity of 30 car parking spaces be provided which will easily accommodate peak parking demands.

There are no constraints over the site with respect to the manoeuvring of heavy vehicles and the proposed loading area will comfortably accommodate Articulated Vehicle movement.

7.0 SUMMARY OF CONCLUSIONS & RECOMMENDATIONS

- The existing site identified as Lot 201 on SP222765 and Lot 8 on NR153 is located on the eastern side of the Captain Cook Highway, approximately 1.6 kilometres of Port Douglas Road.

- The existing development has approximately 26 ponds on-site. An additional 22 ponds are proposed to be constructed. The existing development generates peak operations during the November and December period, in the lead up to Christmas. However, during this period only one Articulated Vehicle (AV) enters and exits the site on any given day and up to 11-12 staff members work at the site.

- The proposal also includes a new administration building which will act as the front of house facilities and administration office. A primary processing facility will be located at the rear of the administration building and will house processing machinery.

- The subject site is located adjacent to the Captain Cook Highway which is a State controlled road. The Captain Cook Highway is a rural two lane road with a pavement width of approximately 9 metres.

- Traffic counts are not available directly adjacent to the site, however it is estimated that the highway would carry in the order of 5,000 vehicles per day adjacent to the site.

- The development generates peak operations during the November and December period, in the lead up to Christmas. However, during this period only one Articulated Vehicle (AV) enters and exits the site on any given day. The traffic generation typically does not exceed 5 vehicles per hour during peak operation, and this will not change significantly with the proposed expansion.

- SIDRA analysis of the existing access intersection indicates that there is negligible queuing and delays at the existing access point. This will not change as a consequence of the proposed expansion.

- There are no constraints over the site with respect to achieving sufficient car parking and the manoeuvring of heavy vehicles. The proposed loading area will comfortably accommodate Articulated Vehicle movement.

APPENDIX A – TMR TRAFFIC COUNT DATA

Queensland Government

26-May-2015 10:17

Traffic Analysis and Reporting System
AADT Segment Report
Road Section 20A - Captain Cook Highway (Cairns - Mossman)
Traffic Year 2014

TARS

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Road Segments Summary - All Vehicles

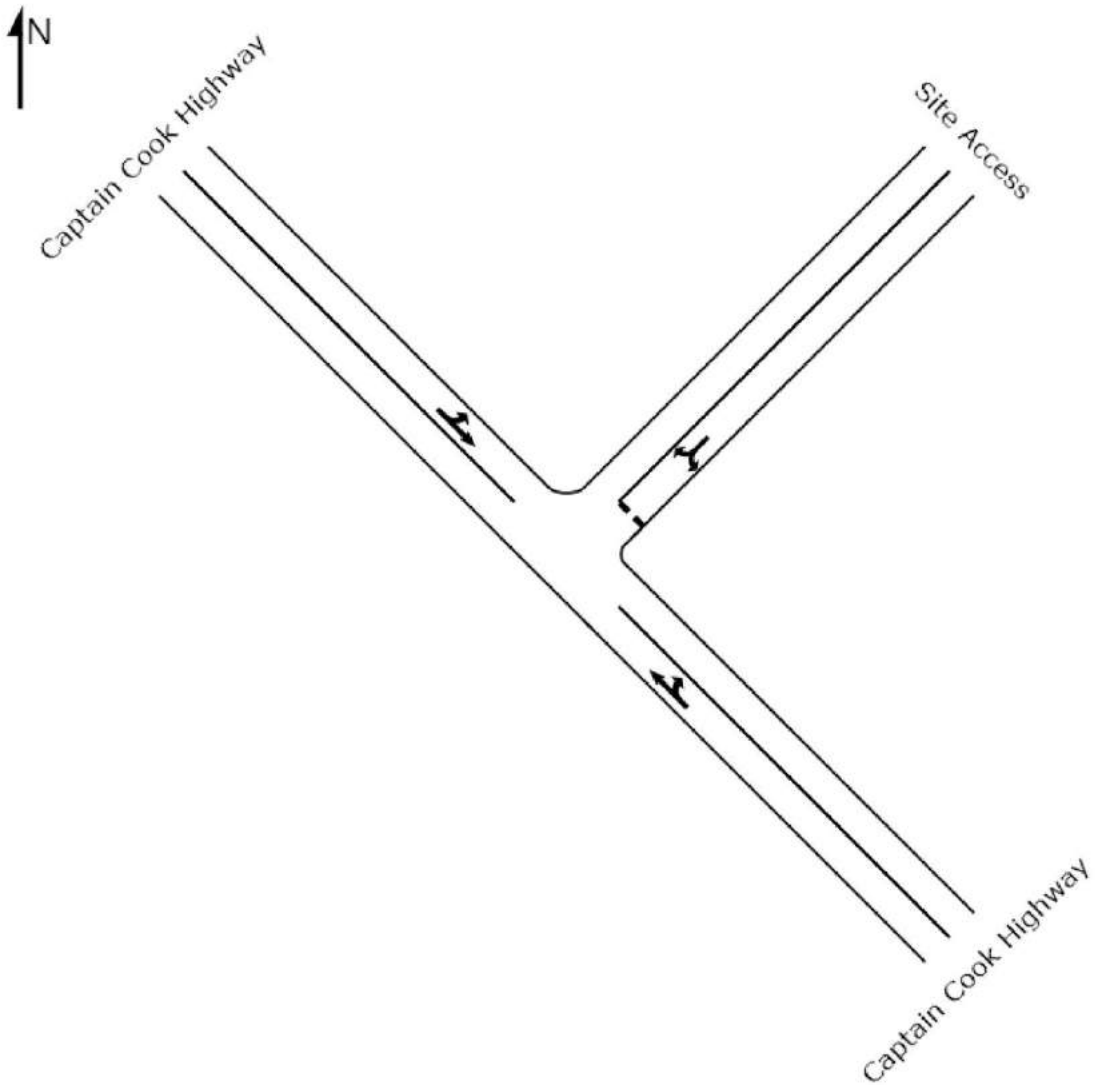
Region	Segment Start TDist	Segment End TDist	Site	Site TDist	Description	AADT			VKT (Millions)			Data Year
						G	A	B	G	A	B	
403	0.000 km	0.490 km	111587	0.100 km	100m north of Florence St	12,817	14,718	27,535	2.29232	2.63231	4.92463	2014
403	0.490 km	1.690 km	111677	1.295 km	100m south of James Street	13,751	17,548	31,299	6.02294	7.68602	13.70896	2014
403	1.690 km	2.430 km	111596	2.330 km	100M EAST OF ARTHUR ST	18,866	18,585	37,451	5.09571	5.01981	10.11552	2014
403	2.430 km	3.710 km	110013	3.500 km	Southern Abutment of Saltwater Ck Bridge	19,585	19,491	39,076	9.15011	9.10620	18.25631	2014
403	3.710 km	8.360 km	111601	6.700 km	Sth abut Barron River Bridge	15,894	16,076	31,970	26.97609	27.28499	54.26108	2014
403	8.360 km	11.483 km	111597	9.550 km	Thomatis Creek	14,467	14,679	29,146	16.49086	16.73252	33.22338	2014
403	11.483 km	12.940 km	110045	12.200 km	Avondale Ck, 700m sth of Kennedy Hwy	22,165	22,254	44,419	11.78746	11.83479	23.62225	2014
403	12.940 km	16.190 km	111619	13.900 km	100m north of Stanton Rd	16,583	17,090	33,673	19.67158	20.27301	39.94460	2011
403	16.190 km	21.320 km	110021	19.500 km	100m South of Deep Creek, Kewarra	9,310	9,306	18,616	17.43251	17.42502	34.85753	2014
403	21.320 km	24.450 km	111579	23.090 km	Delaneys Creek	6,420	6,237	12,657	7.33453	7.12546	14.45999	2014
403	24.450 km	60.666 km	110022	60.000 km	Craiglie, 800m South of Port Douglas Rd	2,942	2,922	5,864	38.88983	38.62545	77.51528	2014
403	70.801 km	74.931 km	111623	74.000 km	Parker Ck	4,037	4,016	8,053	6.08558	6.05392	12.13949	2013
								Totals	167.22951	169.79950	337.02902	

Road Segments Summary - Heavy Vehicles only
VKT totals are calculated only if traffic class data is available for all sites.

Region	Segment Start TDist	Segment End TDist	Site	Site TDist	Description	HV AADT						HV VKT (Millions)			Data Year
						G		A		B					
						AADT	HV %	AADT	HV %	AADT	HV %	G	A	B	
403	0.000 km	0.490 km	111587	0.100 km	100m north of Florence St	615	4.80%	647	4.40%	1,262	4.58%	0.10999	0.11572	0.22571	2014
403	0.490 km	1.690 km	111677	1.295 km	100m south of James Street	492	3.58%	1,320	7.52%	1,812	5.79%	0.21550	0.57816	0.79366	2014
403	1.690 km	2.430 km	111596	2.330 km	100M EAST OF ARTHUR ST	1,136	6.02%	1,072	5.77%	2,208	5.90%	0.30683	0.28955	0.59638	2014
403	2.430 km	3.710 km	110013	3.500 km	Southern Abutment of Saltwater Ck Bridge	1,058	5.40%	1,058	5.43%	2,116	5.42%	0.49430	0.49430	0.98860	2014
403	3.710 km	8.360 km	111601	6.700 km	Sth abut Barron River Bridge	893	5.62%	871	5.42%	1,764	5.52%	1.51564	1.47830	2.99395	2014
403	8.360 km	11.483 km	111597	9.550 km	Thomatis Creek	866	5.99%	802	5.46%	1,668	5.72%	0.98715	0.91420	1.90134	2014
403	11.483 km	12.940 km	110045	12.200 km	Avondale Ck, 700m sth of Kennedy Hwy										2014
403	12.940 km	16.190 km	111619	13.900 km	100m north of Stanton Rd	686	4.14%	658	3.85%	1,344	3.99%	0.81377	0.78055	1.59432	2011
403	16.190 km	21.320 km	110021	19.500 km	100m South of Deep Creek, Kewarra	564	6.06%	562	6.04%	1,126	6.05%	1.05606	1.05232	2.10838	2014
403	21.320 km	24.450 km	111579	23.090 km	Delaneys Creek	457	7.12%	441	7.07%	898	7.09%	0.52210	0.50382	1.02592	2014
403	24.450 km	60.666 km	110022	60.000 km	Craiglie, 800m South of Port Douglas Rd	285	9.69%	285	9.75%	570	9.72%	3.76737	3.76737	7.53474	2014
403	70.801 km	74.931 km	111623	74.000 km	Parker Ck	346	8.57%	347	8.64%	693	8.61%	0.52158	0.52309	1.04466	2013
											Totals				

APPENDIX B – SIDRA ANALYSIS

SIDRA analysis of the existing access intersection with Captain Cook Highway



MOVEMENT SUMMARY

Site: 2015 Peak - With Development

15070 - Captain Cook highway / Site Access Intersection

Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South East: Captain Cook Highway											
2	T	316	5.0	0.171	3.8	LOS A	2.2	16.4	0.69	0.00	48.8
3	R	2	50.0	0.171	14.3	LOS B	2.2	16.4	0.69	1.03	48.0
Approach		318	5.3	0.171	3.9	NA	2.2	16.4	0.69	0.01	48.8
North East: Site Access											
4	L	1	100.0	0.007	20.1	LOS C	0.0	0.2	0.58	0.70	40.1
6	R	1	0.0	0.007	16.7	LOS C	0.0	0.2	0.58	0.77	41.1
Approach		2	50.0	0.007	18.4	LOS C	0.0	0.2	0.58	0.73	40.6
North West: Captain Cook Highway											
7	L	1	0.0	0.168	8.2	LOS A	0.0	0.0	0.00	1.09	49.0
8	T	316	5.0	0.168	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		317	5.0	0.168	0.0	NA	0.0	0.0	0.00	0.00	60.0
All Vehicles		637	5.3	0.171	2.0	NA	2.2	16.4	0.34	0.01	53.7

Level of Service (LOS) Method: Delay (HCM 2000).
Vehicle movement LOS values are based on average delay per movement
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model used.