Appendix F: Traffic Impact Assessment

traverse

Traffic Impact Assessment

Modification 8 to MP07_0146

Increased Processing Capacity

Riverina Oils & Bio Energy (ROBE)

Prepared for:

Riverina Oils and Bio Energy Pty Ltd

Date:

27 March 2025

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Report Details

Version	Date	Reason for Issue	Authorised By
D01	03/03/2025	Draft	J.McKenzie – RPEng (Civil)
F01	27/03/2025	Final	J.McKenzie – RPEng (Civil)

Traverse Transport Pty Ltd

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1 Introduction:

1.1 Purpose

Traverse Transport was commissioned by the applicant (Riverina Oils and Bio Energy Pty Ltd) to assess the traffic engineering implications of Modification 8 to MP07_0146. This modification relates to the proposed increased processing capacity of the integrated oilseed processing facility on the site at 177 Trahairs Road, Bomen.

This Traffic Impact Assessment (TIA) has been prepared to address the traffic engineering considerations of Modification 8 to MP07_0146 and has been informed by traffic surveys, observed heavy vehicle movement data and previous traffic impact assessments.

1.2 Background

Riverina Oils and Bio Energy (ROBE) operate an integrated oil seed crushing and refining facility at 177 Trahairs Road, Bomen. The facility was originally approved for canola seed processing and biofuel production. A subsequent modification removed the biofuel component and revised the layout of the facility.

Since the original approval, various modifications have been approved, including changes to the facility's layout, storage capacity, and production limits. Modification 2 increased processing capacity from 160,000 to 200,000 tonnes per annum. The most recent modification (Modification 7) allowed for an increase in seed storage from 27,000 to 60,000 tonnes, including the establishment of permanent bunker storage to be filled once per year during the November–December harvest period. This on-site storage accounts for approximately 20% of the annual grain processed at the facility, enabling efficient year-round operations.

1.3 Proposal

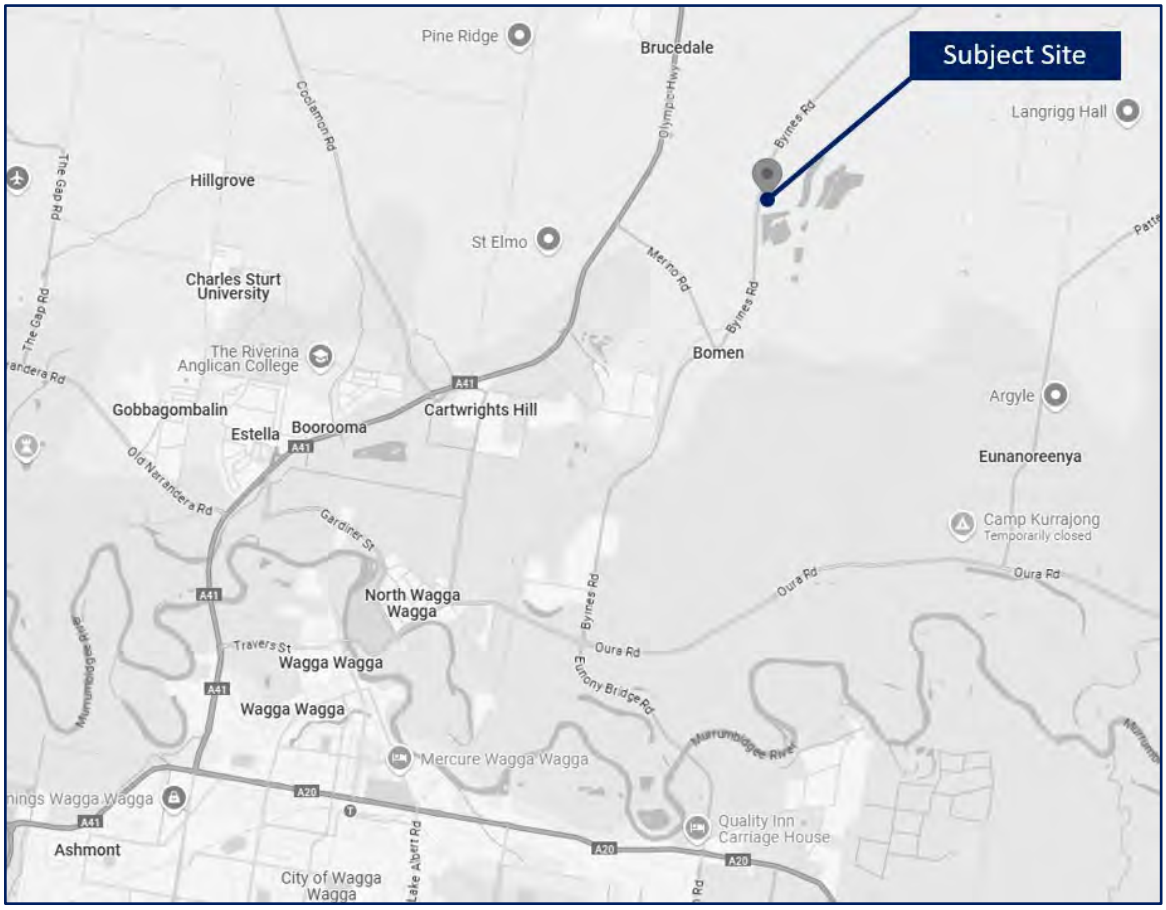
The proposed modification (Modification 8) seeks approval to increase seed processing capacity at the ROBE facility from 200,000 to 300,000 tonnes per annum. This involves expanding the facility's annual crushing capacity as part of ROBE's ongoing infrastructure and efficiency improvements. Internal plant upgrades are planned to enhance processing efficiency, supporting the increased capacity. The proposed modification will not require additional staff, as the increased capacity will be achieved through equipment enhancements. Additionally, no new storage facilities are proposed as part of this modification.

2 Existing Conditions:

2.1 Location and environment

The ROBE facility is located on the site at 177 Trahairs Road, Bomen, approximately 11km north-east of Wagga Wagga. It is situated to the north-east of the intersection of Byrnes Road and Trahairs Road. The site's location with respect to the wider road network is illustrated in Figure 2.1.

Figure 2.1: Site Locality



Source: google.com.au

The site is essentially rectangular in shape with a frontage to Byrnes Road of approximately 495m to the west, a frontage to Trahairs Road of approximately 350m to the south and an area of approximately 17 hectares. The site is currently occupied by an integrated oilseed crushing and refining facility operated by ROBE. Constructed in 2013, the facility is currently approved to process up to 200,000 tonnes of oilseed annually, producing refined vegetable oil (RVO) for domestic food manufacturing and vegetable protein meal (VPM) for local stock feed manufacturers.

Vehicular access to the site is currently provided via three separate access points along the site's southern boundary connecting to/from Trahairs Road. Heavy vehicles currently ingress the site via the easternmost gate (Gate 3) and egress the site via the central gate (Gate 2). A car park comprising 23 spaces is accessible via Gate 1 and a car park comprising nine spaces is accessible via Gate 2 & 3. A large vehicle standing area is also located within the boundaries of the site between Gate 2 & 3 which provides ample space for heavy vehicles to queue, park, and prepare for entry via the weighbridge, including removing load covers as needed.

The site is located within the Wagga Wagga Special Activation Precinct (SAP) and is subject to the Regional Enterprise Zone (REZ). Surrounding land use in the vicinity of the subject site is a mixture of isolated industrial sites, rural and agricultural land uses.

Figure 2.2 shows an aerial photograph of the subject site relative to its surroundings.

Figure 2.2: Aerial Photography

Source: *landchecker.com.au*

2.2 Road Network

Brynes Road

Brynes Road is classified as a sub-arterial road which essentially runs in a northeast to southwest alignment between Oura Road in the southwest and Edgars Road in the northeast. In the vicinity of the site, Brynes Road typically comprises a sealed carriageway of approximately 10 metres in width accommodating a single lane of traffic in each direction. Brynes Road has a posted speed limit of 100km per hour, and there are no pedestrian facilities along Byrnes Road proximate to the site.

Images of Brynes Road proximate to the subject site are shown in Figure 2.3 and Figure 2.3.

Figure 2.3: Byrnes Road (to the northeast)

Source: google.com.au

Figure 2.4: Byrnes Road (to the southwest)

Source: google.com.au

Trahairs Road

Trahairs Road is classified as a local road which essentially runs in an east to west alignment between Olympic Highway in the west and its termination approximately 1.8km to the east of Byrnes Road. The road is discontinued between Brynes Road and the railway line to the west. In the vicinity of the site, Trahairs Road comprises a sealed carriageway varying in width between approximately 6m and 8m and accommodates two-way vehicular movements. No central line-marking is provided to delineate traffic lanes. Trahairs Road has a default rural speed limit of 100km/hr, and there are no pedestrian facilities along Trahairs Road.

Images of Trahairs Road proximate to the subject site are shown in Figure 2.5 and Figure 2.6.

Figure 2.5: Trahairs Road (to the east)

Source: google.com.au

Figure 2.6: Trahairs Road (to the west)

Source: google.com.au

Brynes Road / Trahairs Road Intersection

The intersection of Brynes Road and Trahairs Road is a priority-controlled T-intersection with priority given to traffic travelling along Brynes Road. A rural auxiliary left-turn lane is provided on the northern approach of the intersection and a channelised right-turn lane is provided on the southern approach of the intersection. The layout of the Brynes Road / Trahairs Road intersection is shown in Figure 2.7.

Figure 2.7: Brynes Road / Trahairs Road Intersection

2.3 Traffic Survey Data

Peak period traffic movement counts were most recently undertaken at the intersection of Byrnes Road and Trahairs Road by Trans Traffic Survey Pty Ltd on Tuesday the 5th of December 2023. These counts and an existing conditions SIDRA analysis were presented within the Traffic Impact Assessment (TIA) prepared by GHD dated the 14th of March 2024 (12613295-REP-A_MOD 7 Traffic Assessment) which was prepared for Modification 7.

The survey periods were strategically selected to align with the anticipated peak traffic generation of the ROBE facility, as follows:

— 7:00am to 9:00am; and
— 4:00pm to 7:00pm.

The peak hour surveyed volumes are shown in Figure 2.8 and Figure 2.9.

Figure 2.8: AM Peak Hour Survey Volumes – Byrnes Road / Trahairs Road Intersection

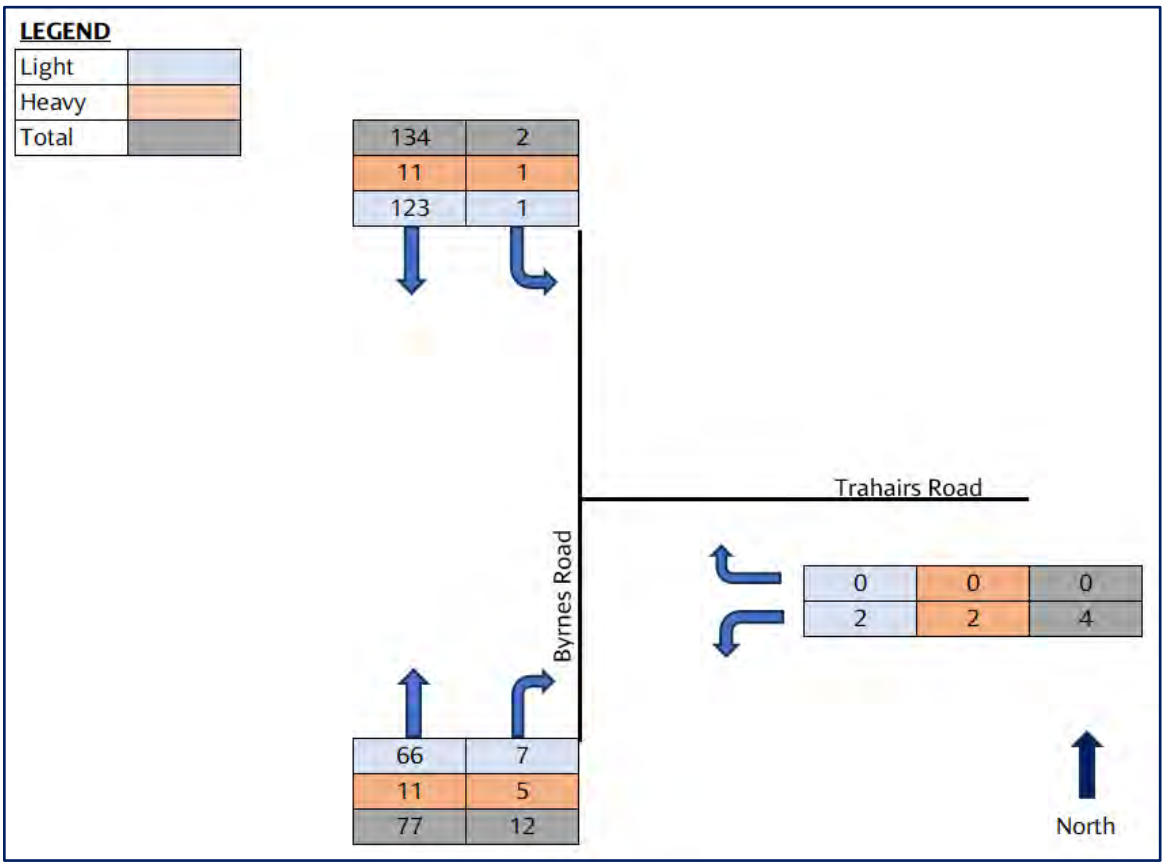
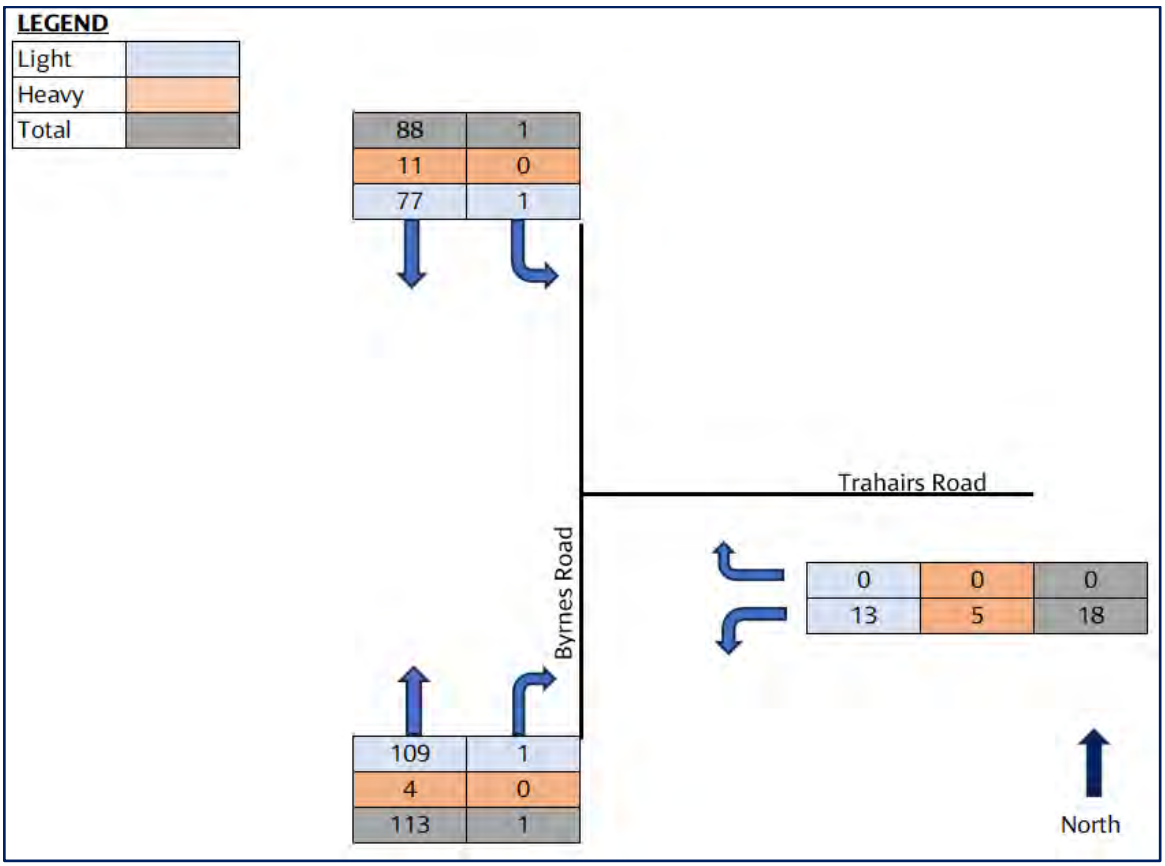


Figure 2.9: PM Peak Hour Survey Volumes – Byrnes Road / Trahairs Road Intersection



In summary, traffic surveys showed the following:

AM Peak Hour

- The AM peak hour occurred between 7:45am and 8:45am.
- There was a total of 229 vehicle movements travelling through the intersection in the AM peak hour.
- The dominant movement was southbound through movements along Byrnes Road with 134 vehicle movements.
- The vast majority of traffic accessed Trahairs Road via the south.
- There were eight heavy vehicle movements that accessed Trahairs Road in the AM peak hour, with seven movements occurring via the South.

PM Peak Hour

- The PM peak hour occurred between 4:15pm and 5:15pm.
- There was a total of 221 vehicle movements travelling through the intersection in the PM peak hour.
- The dominant movement was northbound through movements along Byrnes Road with 113 vehicle movements.
- The vast majority of traffic again accessed Trahairs Road to/from the south.
- There were five heavy vehicle movements that accessed Trahairs Road in the PM peak hour, with all movements occurring via the South.

In summary, it is considered that the intersection of Byrnes Road / Trahairs Road was carrying a relatively low level of vehicular traffic on the survey data in December 2023. It is lastly noted that the additional heavy vehicle movements associated with Modification 7 were not captured within the traffic surveys and accordingly it is expected that the current traffic volumes during the November and December harvest period would be slightly higher than what is shown in the survey data presented above.

2.4 Sustainable Transport Services

Byrnes Road and Trahairs Road do not provide footpaths, cycle lanes, or public transport services. Accordingly, pedestrian, cyclist, and public transport access to the site is limited, which is expected given the site's location and surrounding land use characteristics.

2.5 Crash Statistics Analysis

A review has been conducted of Transport for NSW '*interactive crash statistics*' for the most recent five-year period of available data (2019 to 2023) for any reported crashes within the following search area:

- Byrnes Road approximately 1km north and 1km south of Trahairs Road;
- The entire length of Trahairs Road; and
- The intersection of Trahairs Road and Byrnes Road.

A summary of the crashes in the search area for the last five-year period is presented in Table 2.1.

Table 2.1: Summary of Crashes in the Vicinity of the Subject Site (5 Year Period)

Location	Accident No.
Frontage Roads	
Byrnes Road	0
Trahairs Road	0
Nearby Intersections	
Byrnes Road / Trahairs Road Intersection	1
Total	**1**

The crash statistics analysis reveals one reported crash within the last five-year period of available data which occurred at the Brynes Road / Trahairs Road intersection. The crash occurred in 2020 and was classified as an 'non-casualty' type crash which did not result in any injury. Given the road classifications and associated traffic volumes, it is considered that the surrounding road network is operating in a relatively safe manner under existing conditions.

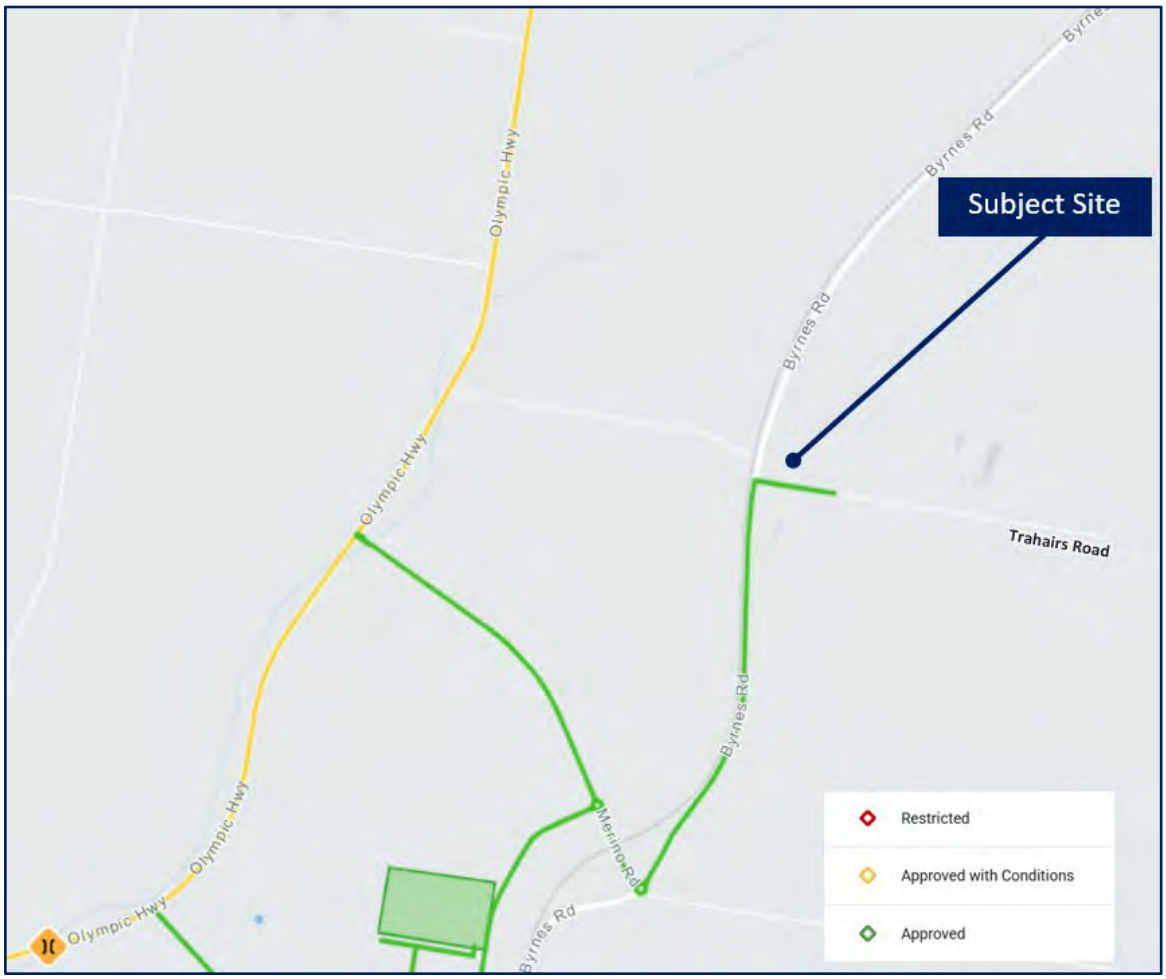
2.6 Heavy Vehicle Routes

The National Heavy Vehicle Regulator (NHVR) outlines all authorised heavy vehicle routes, through the National Network Map. The NHVR map indicates that Byrnes Road (both directions) and Trahairs along the site frontage are authorised to accommodate B-double combinations, as illustrated in Figure 2.10.

Figure 2.10: B-Double Authorised Routes

However, the NHVR map shows that only Byrnes Road, south of Trahairs, and Trahairs Road along the site frontage are authorised to accommodate AB-triple combinations, as illustrated in Figure 2.11.

Figure 2.11: AB-Triple Authorised Routes



3 Traffic Assessment

3.1 Introduction

The proposed modification will result in an increase in heavy vehicle movements to/from the facility due to an increase in annual processing capacity from 200,000 tonnes to 300,000 tonnes per annum. The additional heavy vehicle traffic will be associated with the following:

— **Inbound Truck Movements**: Increased deliveries of oil seed materials required to meet higher processing capacity.
— **Outbound Truck Movements:** Increased distribution of processed oil seed and meal products to accommodate greater production output.

It is noted that traffic volumes to/from the facility vary between two distinct operational periods: the harvest period (November–December) and the non-harvest period (January – October). This variation is primarily influenced by the seasonal nature of grain production and storage requirements, with these two periods briefly outlined below:

— **Harvest Period:** Heavy vehicle movements peak during this time as deliveries are required to meet daily plant demand while simultaneously filling on-site storage. This results in an increase in inbound truck movements associated with the delivery of oil seed materials.
— **Non-Harvest Period:** Traffic volumes decrease as the facility transitions to a combination of stored grain usage and ongoing external deliveries. Since on-site storage accounts for approximately 20% of annual processing, inbound deliveries are reduced compared to the harvest period, leading to lower overall traffic volumes.

The proposed modification will not require additional on-site storage facilities. Furthermore, no increase in staff numbers is required, as the additional processing capacity will be achieved through improvements in equipment and processing efficiencies.

The traffic impact assessment considers the projected increase in heavy vehicle movements and assesses the adequacy of the existing road network to support the modified operations, particularly during peak harvest periods.

3.2 Traffic Generation

Truck Movement Data

The traffic generation estimates for previous modifications of the facility were derived from theoretical calculations of the number of trucks expected to access the site, based on their estimated load capacities. However, in 2024, ROBE collected detailed data of observed truck movements to/from the facility. This data included the date of each truck movement, the weight of each truck load, and the purpose of each trip. It is noted from this data that the ROBE facility processed a total of 228,650 tonnes of oilseed in 2024, slightly exceeding its permitted capacity of 200,000 tonnes.

A summary of the observed truck movement data for the 2024 year is presented in Table 3.1.

Table 3.1: Observed Truck Movements – ROBE Facility - 2024

Purpose	Observed Truck Movements	
	Non-Harvest Period (January – October)	Harvest Period (November – December)
Oilseed Subtotal	25 vpd	71 vpd
Non-grain Subtotal	36 vpd	36 vpd
Total Daily Movements	**61 vpd**	**107 vpd**
Total Annual Movements	**25,071 vpa**	

The above table shows that the facility experienced an average of 61 heavy vehicle movements per day during the non-harvest period and 107 heavy vehicle movements per day during the harvest period, totalling 25,071 heavy vehicle movements for the year in 2024.

Truck Types

A range of truck types currently access the site for inbound deliveries of oilseed and outbound distribution of oil and meal products, including B-doubles, and truck-and-dog combinations. The observed truck data demonstrated the following average weight for each trip purpose.

Table 3.2: Summary of Average Truck Weight by Trip Purpose

Trip Purpose	Average Weight per Truck
Inbound (oilseed)	38.3 tonnes
Outbound (oil)	27.2 tonnes
Outbound (meal)	38.4 tonnes
Outbound (fatty acid)	20.5 tonnes
Overall Average	**35.3 tonnes**

The above table indicates that inbound deliveries of oilseed and outbound deliveries of meal are carried out by a larger combination of heavy vehicles, while outbound deliveries of oil and meal are typically limited to smaller combinations. No changes are proposed to the types of trucks accessing the site as part of this modification.

Estimated Traffic Generation – Modification 8

To estimate the traffic generation associated with the proposed modification to increase the facility's processing capacity to 300,000 tonnes, the heavy vehicle movements in Table 3.1 have been proportionally adjusted. These adjustments assume the same average weight per truck for each trip purpose, enabling an accurate projection of the additional truck movements resulting from the proposed increase in processing capacity.

The estimated traffic generation of the proposed modification is shown in Table 3.3.

Table 3.3: Estimated Traffic Generation – Modification 8

Purpose	Estimated Truck Movements	
	Non-Harvest Period (January – October)	Harvest Period (November – December)
Oilseed Subtotal	33 vpd	94 vpd
Non-grain Subtotal	48 vpd	48 vpd
Total Daily Movements	**81 vpd**	**142 vpd**
Total Annual Movements	**33,286 vpa**	

Accordingly, it is estimated that the proposed modification would result in an average of 81 heavy vehicle movements per day during the non-harvest period and 142 heavy vehicle movements per day during the harvest period, with an estimated 33,286 vehicle movements per annum. As expected, the highest level of truck movements occurs in the harvest period of November and December with an increase level of truck traffic associated with the storage of the bunkers.

Comparison with Existing Approval

The estimated traffic generation of the most recent approved modification of the facility (Modification 7) was outlined within the report prepared by GHD (12613295-REP_MOD 7). A comparison between the estimated traffic generation of the approved Modification 7 and proposed Modification 8 is shown in Table 3.4.

Table 3.4: Estimated Traffic Generation – Comparison between Modification 7 & Modification 8

Purpose	Modification 7		Modification 8	
	Non-Harvest Period (January – October)	Harvest Period (November – December)	Non-Harvest Period (January – October)	Harvest Period (November – December)
Oilseed Subtotal	24 vpd	79 vpd	33 vpd **(+9 vpd)**	94 vpd **(+15 vpd)**
Non-grain Subtotal	38 vpd	38 vpd	48 vpd **(+10 vpd)**	48 vpd **(+10 vpd)**
Total Daily Movements	**62 vpd**	**117 vpd**	**81 vpd (+19 vpd)**	**142 vpd (+25 vpd)**
Total Annual Movements	**25,985 vpa**		**33,286 vpa (+7,301 vpa)**	

On the basis of the above, it is estimated that the proposed modification would result in an average of 19 additional heavy vehicle movements per day during the non-harvest period and an average of 25 additional vehicle movements per day during the harvest period in comparison with the existing approval (Modification 7). This equates to an estimated 7,301 additional heavy vehicle movements per annum.

Peak Hourly Truck Movements

To estimate the peak hourly heavy vehicle movements at the ROBE facility once operating at the increased capacity of 300,000 tonnes per annum, the following assumptions have been applied:

— Half the total daily truck activity will occur in the AM peak hour, and half will occur in the PM peak hour. This is considered a conservative assumption, given that only 10-20% of daily traffic typically occurs during peak hours.
— In peak hours, half the heavy vehicle movements will be inbound trips and half the vehicle movements will be outbound trips.
— The peak hourly volumes have only been considered during the harvest period as this period represent the highest traffic volumes, with lower peak hourly traffic volumes expected during non-harvest periods.

The above assumptions are also consistent with the TIA prepared for the previous modification to the facility. On the basis of the above assumptions, the following peak hourly traffic volumes have been derived and are shown in Table 3.5.

Table 3.5: Projected Peak Hourly Traffic Generation – Modification 8

Direction	Projected Peak Hourly Truck Movements (Vehicles Per Hour)	
Inbound	36 vph	36 vph
Outbound	36 vph	36 vph
Total	**71 vph**	**71 vph**

On the basis of the above, it is conservatively estimated that there would be up to 71 heavy vehicle movements generated in the peak hour periods when the facility is operating at the increased capacity.

3.3 Traffic Distribution

The traffic distribution of heavy vehicle movements to/from the site has been determined with consideration of existing truck travel patterns, permitted truck routes and the traffic distribution assumptions of previous traffic assessments. Accordingly, it has been assumed that all heavy vehicle traffic will ingress and egress the site via the south along Byrnes Road.

3.4 Site Generated Traffic

The heavy vehicle movements generated in the peak hour periods when the facility is operating at the increased capacity are shown in Figure 3.1 and Figure 3.2.

Figure 3.1: Site Generated Heavy Vehicle Movements – AM Peak Hour

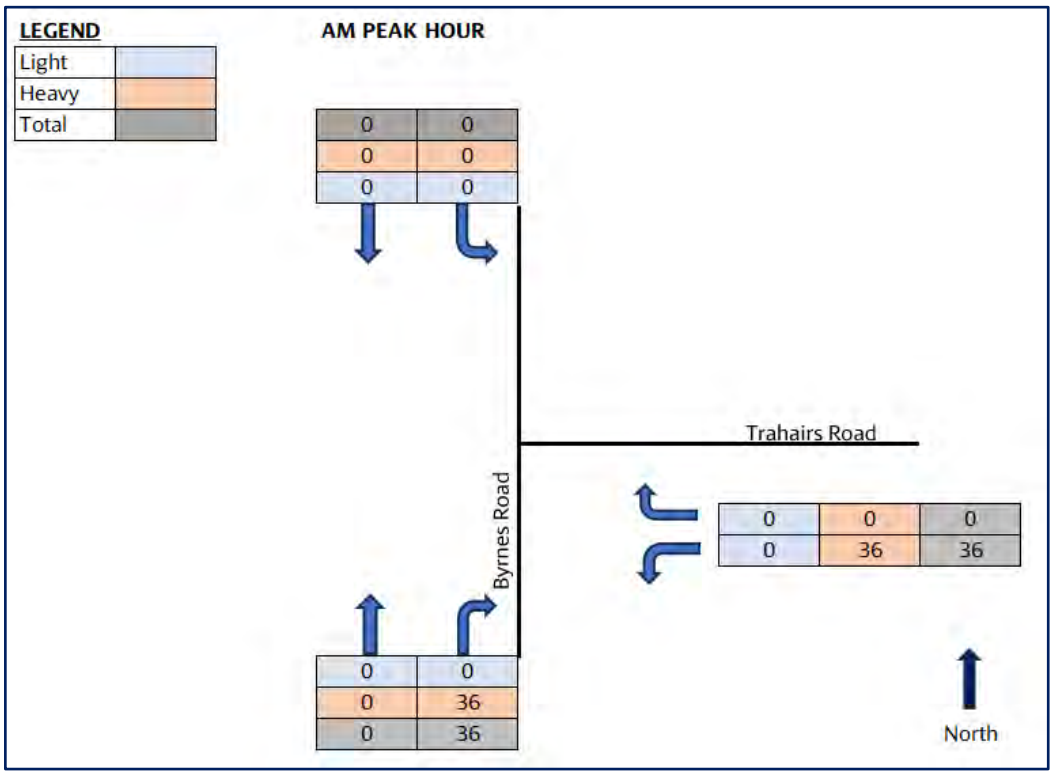
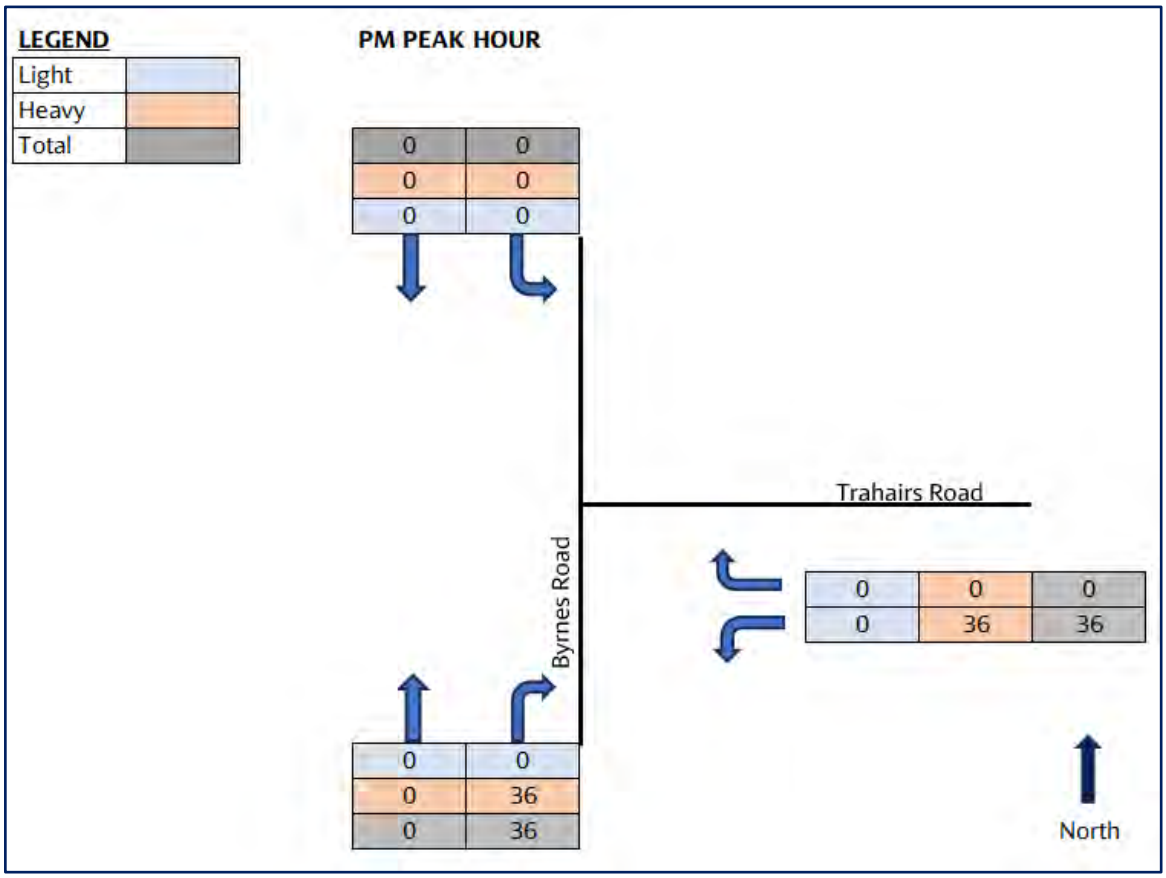


Figure 3.2: Site Generated Heavy Vehicle Movements – PM Peak Hour



3.5 Post Development Traffic Volumes

To determine post development traffic volumes at the intersection of Brynes Road and Trahairs Road, the following methodology has been used:

— The analysis considers a ten-year planning horizon to 2035. To estimate future traffic conditions, a two percent annual growth rate has been applied to the surveyed traffic volumes (as presented in Section 2.3) to project 2035 baseline traffic volumes.
— 2035 baseline traffic volumes have been combined with the additional site-generated traffic (as shown in Figure 3.1 and Figure 3.2).
— All site generated traffic is considered additional to those movements in the baseline traffic volumes. This represents a conservative approach, as the facility was already approved to operate at a processing capacity of 200,000 tonnes per annum at the time of the most recent traffic surveys and was already generating a proportion of heavy vehicle trips.

The post development peak hour traffic volumes are shown in Figure 3.3 and Figure 3.4

Figure 3.3: Post Development Traffic Volumes – AM Peak Hour

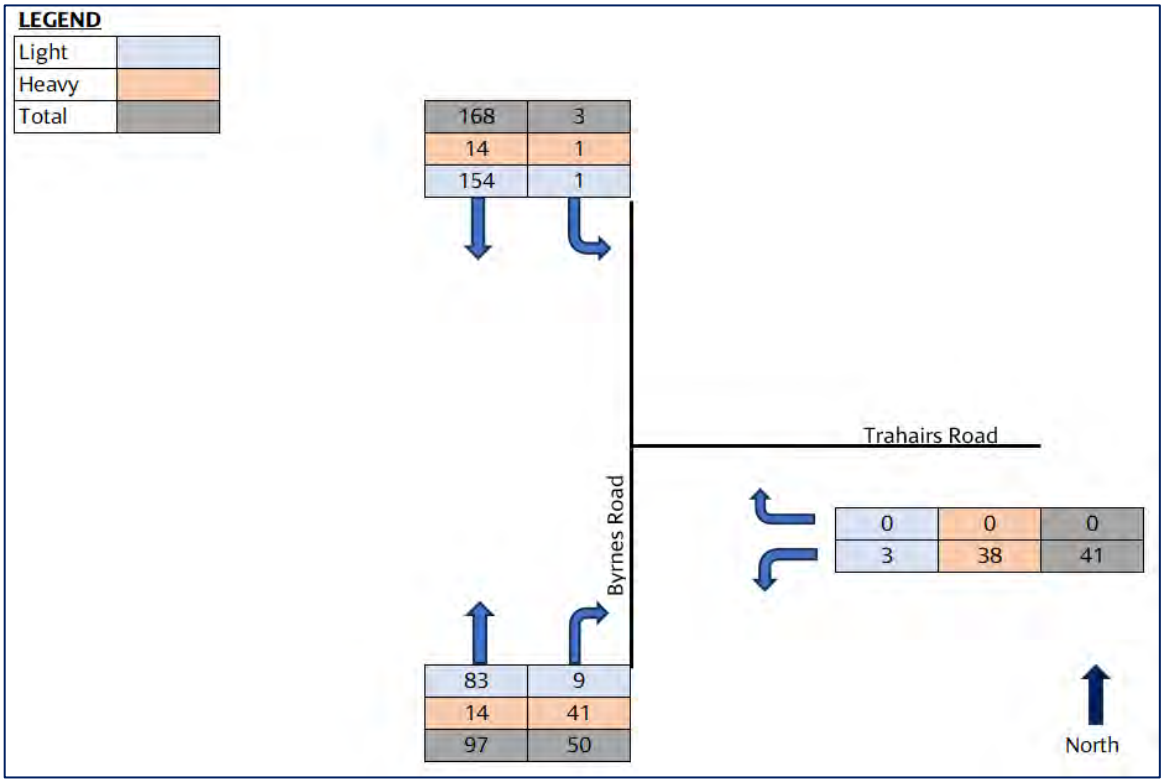
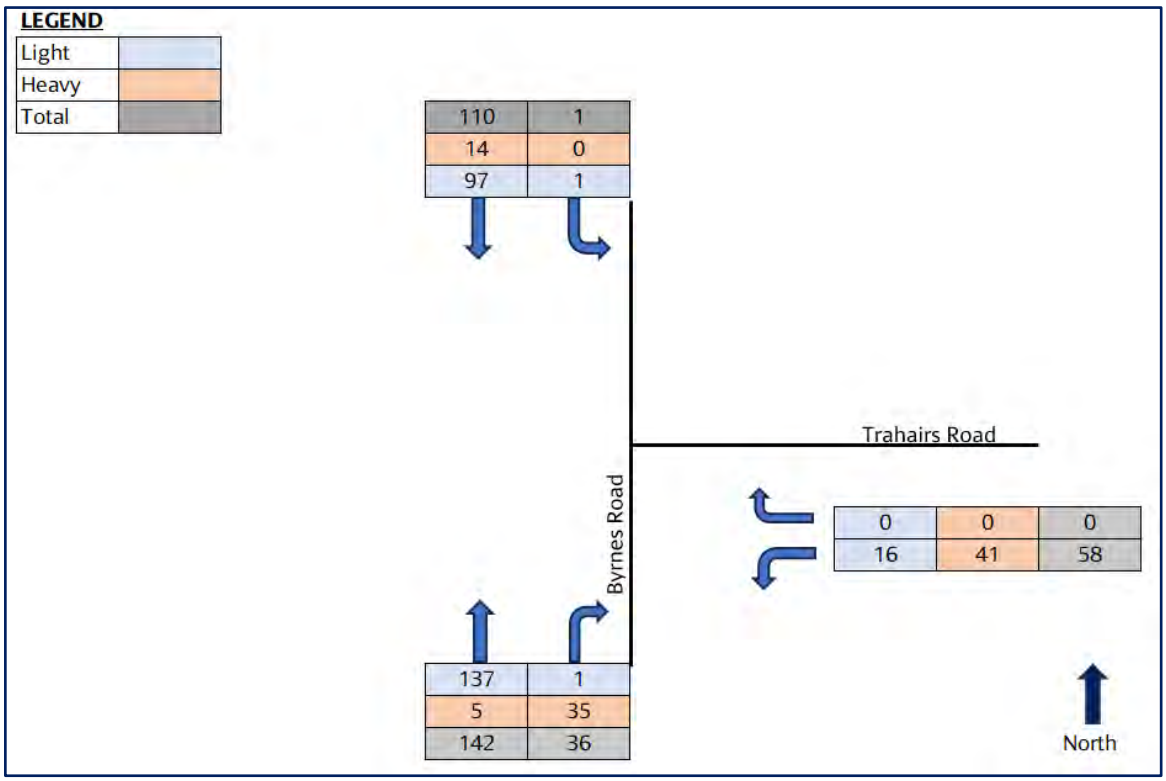


Figure 3.4: Post Development Traffic Volumes – PM Peak Hour



3.6 Post Development Intersection Operation

A peak hour intersection analysis of the Byrnes Road / Trahairs Road intersection has been conducted using the SIDRA Intersection software to assess post development traffic conditions.

SIDRA Parameters

The key parameters used to determine the operational capacity of an intersection are queue length, average delay and degree of saturation (or volume to capacity ratio). Degree of Saturation (DOS) is a ratio of arrival (or demand) flow to capacity. DOS above 1.0 represent oversaturated conditions and a DOS below 1.0 represent undersaturated conditions. The SIDRA operational ratings associated with the DOS is summarised in Table 3.6.

Table 3.6: SIDRA Rating of Degree of Saturation (DoS)

Degree of Saturation (DoS)	Rating
Up to 0.6	Excellent
0.61 – 0.70	Very Good
0.71 – 0.80	Good
0.81 – 0.90	Fair
0.91 – 1.00	Poor
Greater than 1.00	Very Poor

The 95th percentile queue length is the value below which 95 percent of all observed cycle queue lengths fall, or 5 percent of all observed queue lengths exceed.

Average Delay is the average time, in seconds, that all vehicles making a particular movement can expect to wait at an intersection.

Post Development Operation - Byrnes Road / Trahairs Road

The results of the post development AM and PM peak hour SIDRA analysis are detailed in Appendix A and summarised in Table 3.7 and Table 3.8.

Table 3.7: Post Development AM Peak SIDRA - Byrnes Road / Trahairs Road

Approach	Movement	AM Peak Period		
		DoS	95%ile Queue (m)	Ave. Delay (s)
Byrnes Road (S)	Through	0.06	0	0
	Right	0.07	3	8
Trahairs Road (E)	Left	0.06	3	8
	Right	0.06	3	8
Byrnes Road (N)	Left	0.00	0	6
	Through	0.10	0	0
Intersection		**0.10**	**3**	**2**

Table 3.8: Post Development PM Peak SIDRA - Byrnes Road / Trahairs Road

Approach	Movement	PM Peak Period		
		DoS	95%ile Queue (m)	Ave. Delay (s)
Bayswater Road (S)	Through	0.08	0	0
	Right	0.05	2	8
Trahairs Road (E)	Left	0.07	3	7
	Right	0.07	3	8
Bayswater Road (N)	Left	0.00	0	6
	Through	0.07	0	0
Intersection		**0.08**	**3**	**2**

As shown above, the Byrnes Road / Trahairs Road intersection is expected to operate under 'Excellent' conditions during the AM and PM peak hour in the post development scenario. Furthermore, the 95th percentile queues can comfortably be accommodated within the turning lanes of the intersection.

RTA Guide Parameters

The RTA Guide to Traffic Generating Development is a key reference document published by Roads and Traffic Authority (RTA). It provides guidelines and methodologies for assessing the traffic and transport impacts of developments. The guide is widely used by traffic engineers, urban planners, and developers in Australia.

The RTA Guide outlines the level of service criteria for intersections and has been reproduced below in Table 3.9.

Table 3.9: Level of service criteria for intersections

Level of Service	Average Delay per Vehicle (secs/vehicle)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	<14	Good operation	Good operation
B	15-28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29-42	Satisfactory	Satisfactory, but accident study required
D	43-56	Operating near capacity	Near capacity & accident study required
E	57-70	At capacity; at signals, incidents will cause excessive delays. Roundabouts require other control mode.	At capacity, requires other control mode

The average delay for each approach at the intersection is comfortably less than 14 seconds during both the AM and PM peak hours, indicating that the intersection will operate at 'Level of Service A' under post development conditions.

3.7 Summary of Traffic Impacts

In summary, it is considered that the traffic impacts of the proposed modification are acceptable for the following reasons:

— The most recent traffic survey data at the Byrnes Road / Trahairs Road intersection indicates that the intersection is currently carrying a relatively low level of traffic under existing conditions.
— The crash stats analysis indicates that Brynes Road / Trahairs Road intersection and the surrounding road network are currently operating in a relatively safe manner under existing conditions.
— The proposed modification is estimated to generate a relatively low level of additional truck traffic in comparison to the approved modification (Modification 7). Specifically, it is estimated that the proposed modification will result in an average of only 19 additional daily truck movements during non-harvest periods and 25 additional daily truck movements during peak harvest periods. These additional truck movements will be dispersed over the day which will reduce the traffic activity at any one particular time.
— The SIDRA analysis undertaken demonstrates that the additional truck movements associated with the proposed modification can comfortably be accommodated by the nearby Byrnes Road / Trahairs Road intersection in the 2035 post development scenario, with very minor queues and delays occurring on all legs of the intersection. Furthermore, the intersection is expected to operate under 'Excellent' conditions as per the SIDRA DoS Ratings and with a Level of Service of A as defined by the RTA Guide to Traffic Generating Development. These results are expected given the existing level of traffic carried by the intersection and the estimated site generated volumes.

On the basis of the above analysis, it is expected that the additional traffic generated by Modification 8 will not create adverse traffic safety or operational impacts along Byrnes Road, Trahairs Road and/or the surrounding road network.

3.8 Internal Truck Movements

No changes are proposed to the existing access points or internal circulation arrangements as part of this proposed modification. It is understood that a swept path assessment was previously undertaken with the largest vehicle expected to access the site, being a 36.5-metre-long AB-triple. The swept path assessment demonstrated that this vehicle could access, circulate and depart the site in a suitable manner.

Furthermore, the site comprises a large vehicle standing area within the boundaries of the site between Gate 2 & 3 which provides ample space for heavy vehicles to queue, park, and prepare for entry via the weighbridge, including removing load covers as needed. With additional inbound truck arrivals dispersed throughout the day, the impact on traffic flow and site access is expected to be minimal.

Accordingly, it is considered that the internal truck movements are acceptable and will continue to be undertaken in a satisfactory manner.

4 Response to DPHI Items

It is understood that the Department of Planning, Housing and Infrastructure (DPHI) have requested a Traffic & Transport Impact Assessment to be undertaken as part of Modification 8. We have prepared a response to each of the items requested by DPHI below.

Traffic and Transport – a quantitative traffic impact assessment prepared in accordance with relevant Transport for NSW and Austroads guidelines, including:

a. details of all daily and peak traffic volumes likely to be generated, including a description of key access / haul routes, vehicle types and potential queuing impacts.

This TIA includes details of both daily and peak hourly traffic volumes likely to be generated by the proposed modification, with daily traffic volumes based on observed traffic movements at the ROBE facility in 2024. Furthermore, intended access routes / haul routes, vehicle types and potential queuing impacts have each been addressed within the TIA.

b. an assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of crash history and cumulative traffic impacts at key intersections using SIDRA or similar traffic model.

An assessment of the traffic impacts of the proposed modification has been undertaken within this TIA, including a SIDRA assessment of the Byrnes Road / Trahairs Road intersection. The SIDRA assessment demonstrates that the additional truck movements associated with the proposed modification can comfortably be accommodated by the nearby Byrnes Road / Trahairs Road intersection in the 2035 post development scenario, with very minor queues and delays occurring on all legs of the intersection. Furthermore, an assessment of the crash history has been undertaken in the existing conditions which concludes that the Byrnes Road / Trahairs Road intersection and the surrounding road network is operating in a relatively safe manner given associated traffic volumes and vehicle types.

c. details of road upgrades, infrastructure works or new roads or access points required for the development, including conceptual designs and swept path diagrams.

No road upgrades, infrastructure works, new roads or access points are required as part of the proposed modification to expand the facility's annual crushing capacity. The increased capacity will solely be achieved through equipment enhancements. Additionally, no new storage facilities are proposed as part of this modification.

Furthermore, the traffic analysis undertaken within this TIA demonstrates that the surrounding road network, including the Byrnes Road / Trahairs Road, will operate under excellent conditions within the 2035 post development scenario in its current form and therefore no upgrades are required to the surrounding road network to accommodate the additional traffic generated by the proposed modification.

d. plans demonstrating how all vehicles likely to be generated during construction, operation and awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing in the street network.

The site includes a large vehicle standing area located between Gate 2 and Gate 3, providing ample space for heavy vehicles to queue, park, and prepare for entry via the weighbridge, including any necessary load cover removal. As detailed in this TIA, the proposed modification is expected to generate only 19 additional daily truck movements during non-harvest periods and 25 additional daily truck movements during peak harvest periods (combined inbound and outbound trips). This equates to an increase of approximately nine to 13 inbound truck movements per day, depending on the season.

In practice, these inbound truck movements will be dispersed throughout the day, minimising the likelihood of traffic activity at any one time. The large available vehicle standing area is considered sufficient to accommodate queuing trucks before loading and unloading, ensuring that queuing does not extend onto the surrounding road network.

5 Conclusions

The proposed modification (Modification 8) seeks approval to increase seed processing capacity at the ROBE facility from 200,000 to 300,000 tonnes per annum. This involves expanding the facility's annual crushing capacity as part of ROBE's ongoing infrastructure and efficiency improvements. Internal plant upgrades are planned to enhance processing efficiency, supporting the increased capacity. The proposed modification will not require additional staff, as the increased capacity will be achieved through equipment enhancements. Additionally, no new storage facilities are proposed as part of this modification.

In summary, it is considered that the traffic impacts of the proposed modification are acceptable for the following reasons:

— The most recent traffic survey data at the Byrnes Road / Trahairs Road intersection indicates that this intersection is currently carrying a relatively low level of traffic under existing conditions.
— The crash stats analysis indicates that Brynes Road / Trahairs Road intersection and the surrounding road network are currently operating in a relatively safe manner under existing conditions.
— The proposed modification is estimated to generate a relatively low level of additional truck traffic in comparison to the approved modification (Modification 7). Specifically, it is estimated that the proposed modification will result in an average of only 19 additional daily truck movements during non-harvest periods and 25 additional daily truck movements during peak harvest periods. These additional truck movements will be dispersed over the day which will reduce the traffic activity at any one particular time.
— The SIDRA analysis undertaken demonstrates that the additional truck movements associated with the proposed modification can comfortably be accommodated by the nearby Byrnes Road / Trahairs Road intersection in the 2035 post development scenario, with very minor queues and delays occurring on all legs of the intersection. Furthermore, the intersection is expected to operate under 'Excellent' conditions as per the SIDRA DoS Ratings and with a Level of Service of A as defined by the RTA Guide to Traffic Generating Development. These results are expected given the existing level of traffic carried by the intersection and the estimated site generated volumes.
— No changes are proposed to the existing access points or the internal circulation arrangements. A previous swept path assessment confirmed that the largest expected vehicle, a 36.5-metre AB-triple, can manoeuvre within the site. Therefore, existing access points and internal truck movements are considered acceptable and will continue to operate efficiently.
— The site's designated vehicle standing area provides ample capacity to accommodate inbound truck movements, preventing queuing on the external road network. With inbound truck arrivals dispersed throughout the day, the impact on traffic flow and site access is expected to be minimal.

In summary, it is considered that the traffic engineering considerations of the proposed modification are acceptable and that the additional traffic generated by the proposed modification will not create adverse traffic safety or operational impacts along Byrnes Road, Trahairs Road and/or the surrounding road network.

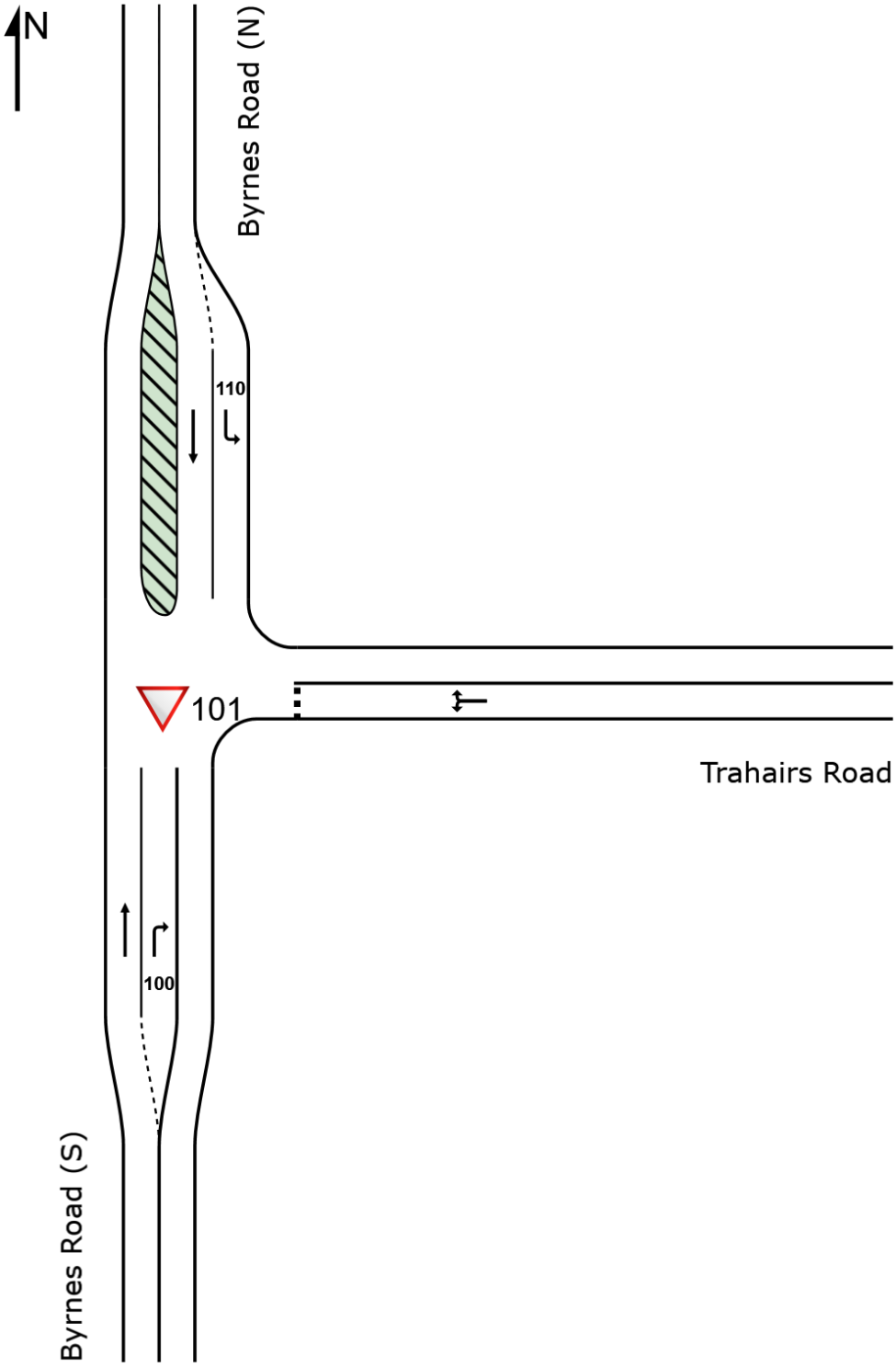
Appendix A: SIDRA Results – Post Development Conditions

SITE LAYOUT

Site: 101 [Byrnes Road / Trahairs Road - Post Development Conditions - AM Peak (Site Folder: Post Development Conditions)]

Byrnes Road / Trahairs Road - Post Development Conditions - AM Peak
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101 [Byrnes Road / Trahairs Road - Post Development Conditions - AM Peak (Site Folder: Post Development Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Byrnes Road / Trahairs Road - Post Development Conditions - AM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Byrnes Road (S)															
2	T1	All MCs	102	14.4	102	14.4	0.057	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	53	82.0	53	82.0	0.067	8.0	LOS A	0.3	3.2	0.36	0.62	0.36	48.2
Approach			155	37.4	155	37.4	0.067	2.7	NA	0.3	3.2	0.12	0.21	0.12	55.4
East: Trahairs Road															
4	L2	All MCs	43	92.7	43	92.7	0.063	8.3	LOS A	0.2	2.8	0.34	0.60	0.34	48.2
6	R2	All MCs	1	0.0	1	0.0	0.063	8.3	LOS A	0.2	2.8	0.34	0.60	0.34	51.7
Approach			44	90.5	44	90.5	0.063	8.3	LOS A	0.2	2.8	0.34	0.60	0.34	48.3
North: Byrnes Road (N)															
7	L2	All MCs	2	50.0	2	50.0	0.002	6.1	LOS A	0.0	0.0	0.00	0.57	0.00	50.9
8	T1	All MCs	177	8.3	177	8.3	0.096	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			179	8.8	179	8.8	0.096	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.8
All Vehicles			378	30.1	378	30.1	0.096	2.1	NA	0.3	3.2	0.09	0.16	0.09	56.4

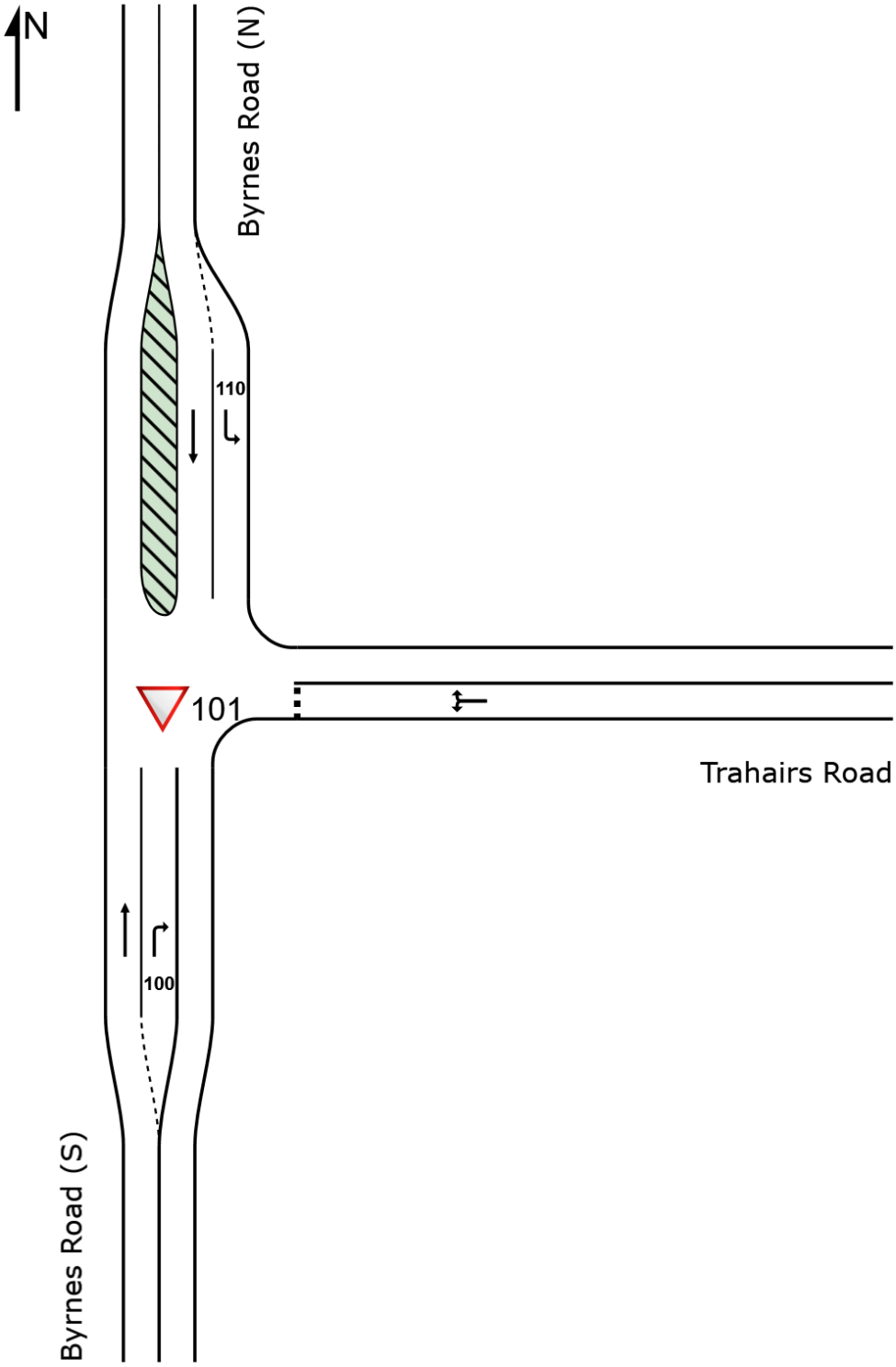
Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

SITE LAYOUT

Site: 101 [Byrnes Road / Trahairs Road - Post Development Conditions - PM Peak (Site Folder: Post Development Conditions)]

Byrnes Road / Trahairs Road - Post Development Conditions - PM Peak
Site Category: (None)
Give-Way (Two-Way)

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: 101 [Byrnes Road / Trahairs Road - Post Development Conditions - PM Peak (Site Folder: Post Development Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.4.221

Byrnes Road / Trahairs Road - Post Development Conditions - PM Peak
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Byrnes Road (S)															
2	T1	All MCs	149	3.5	149	3.5	0.078	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	38	97.2	38	97.2	0.047	7.7	LOS A	0.2	2.4	0.29	0.59	0.29	47.9
Approach			187	22.5	187	22.5	0.078	1.6	NA	0.2	2.4	0.06	0.12	0.06	57.1
East: Trahairs Road															
4	L2	All MCs	60	71.9	60	71.9	0.073	7.3	LOS A	0.3	3.0	0.27	0.56	0.27	49.3
6	R2	All MCs	1	0.0	1	0.0	0.073	8.0	LOS A	0.3	3.0	0.27	0.56	0.27	52.1
Approach			61	70.7	61	70.7	0.073	7.3	LOS A	0.3	3.0	0.27	0.56	0.27	49.4
North: Byrnes Road (N)															
7	L2	All MCs	1	0.0	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.00	0.58	0.00	52.9
8	T1	All MCs	117	12.6	117	12.6	0.065	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
Approach			118	12.5	118	12.5	0.065	0.1	NA	0.0	0.0	0.00	0.01	0.00	59.9
All Vehicles			366	27.3	366	27.3	0.078	2.0	NA	0.3	3.0	0.07	0.16	0.07	56.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
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