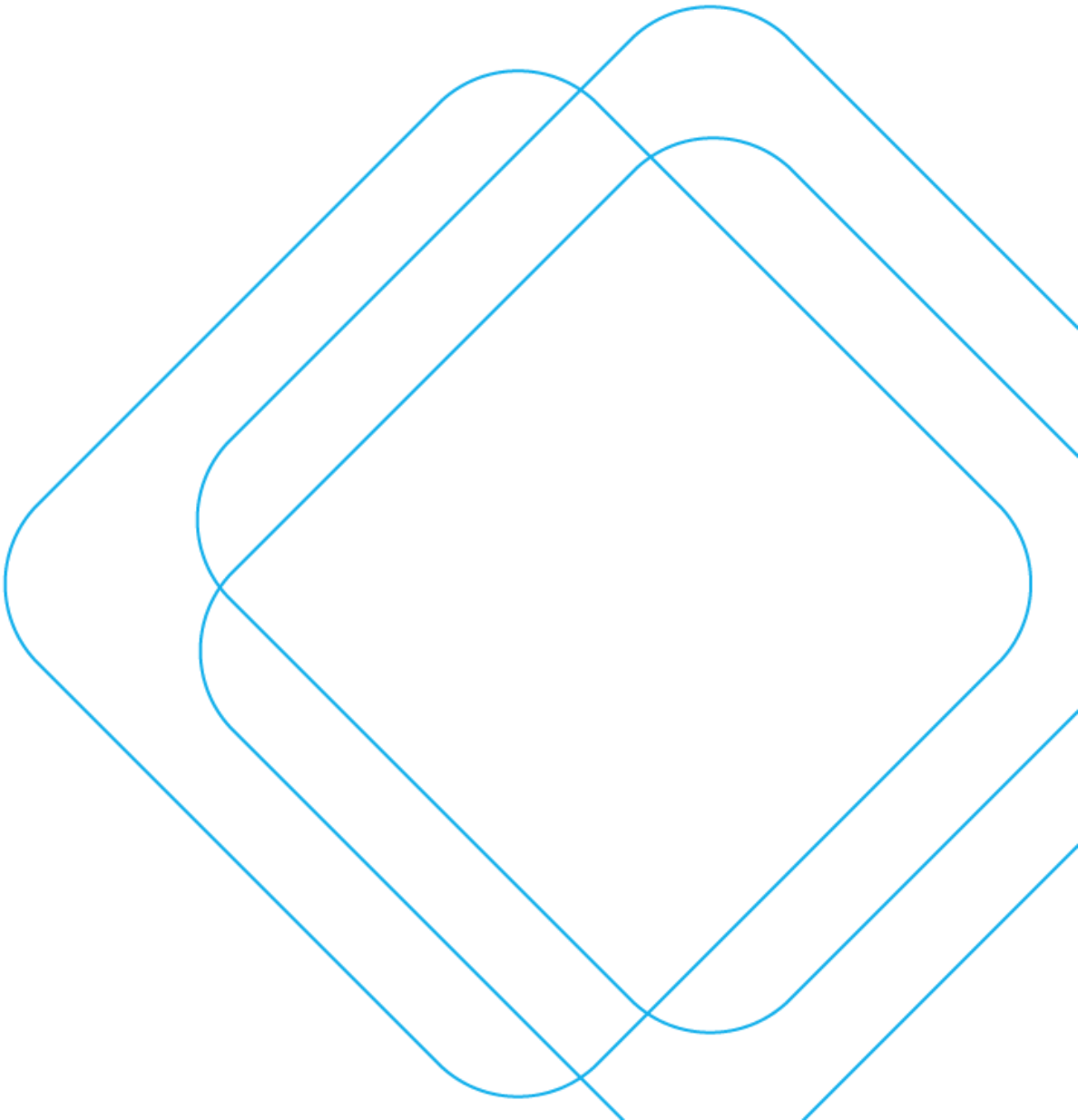
SCT Consulting

SOUTH-EAST DUBBO HAULAGE ROUTES

Options Study

22 MARCH 2024

SCT Consulting acknowledges the traditional owners of the lands on which we work.
We pay our respects to Elders past, present and emerging.



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Prepared by:	SCT Consulting PTY. LTD. (SCT Consulting)	**ABN:**	53 612 624 058

Information	Name	Position	Signature
Author:	Nick Bernard	Associate Director	
Reviewer:	Andy Yung	Director	
Authoriser:	Andy Yung	Director	

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Background

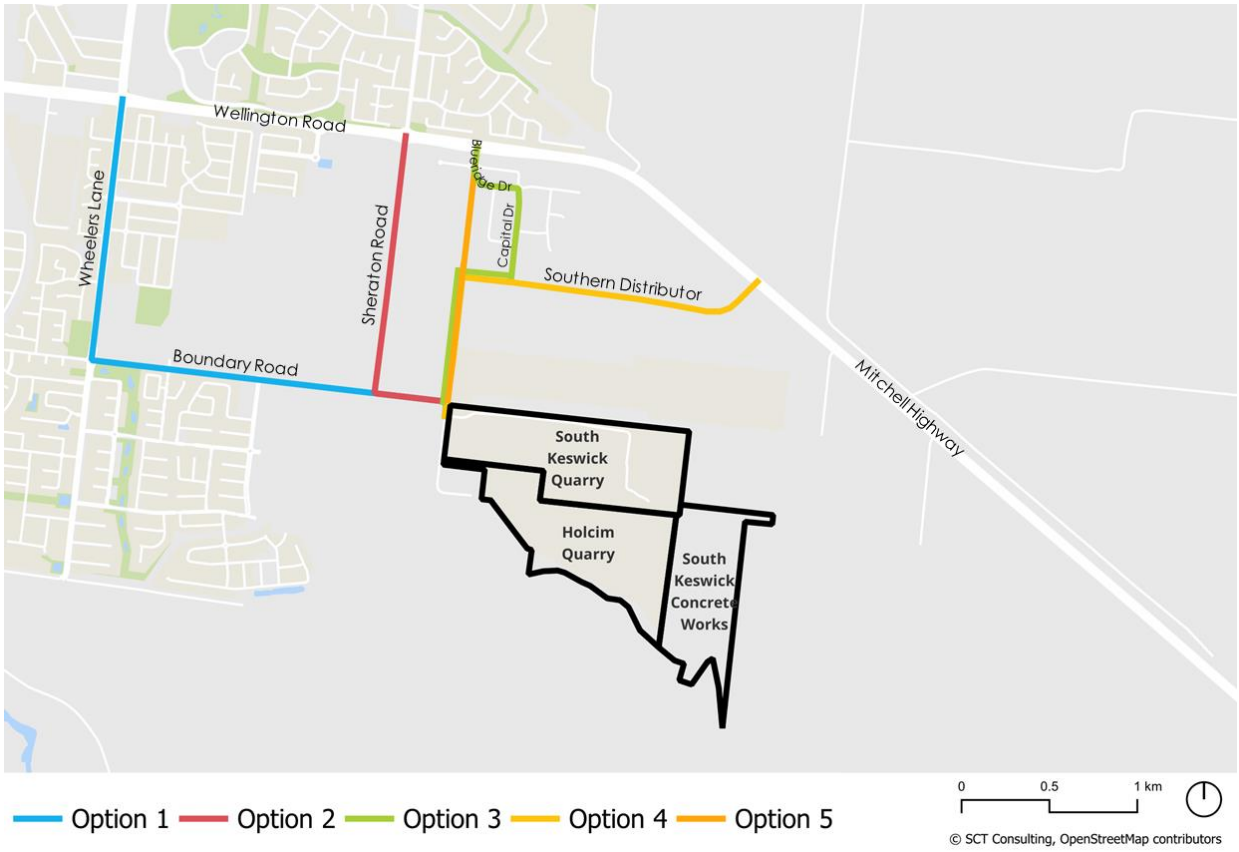
Currently, industrial sites in south-east Dubbo are hauling their material along existing roads, such as Sheraton Road, Boundary Road and Wheelers Lane, to access the Mitchell Highway. Concern around this routing has been expressed by the local community, especially around mixing of haulage vehicles with school traffic (St Johns Primary, St Johns College, Skillset High School and Dubbo Christian School) during drop-off and pick-up times along Sheraton Road. Haulage vehicles are also currently travelling on roads that were not designed and constructed for the heavy vehicle loadings that they are carrying. The industrial sites are forecast to increase their production, and therefore their haulage demand, over the next few years.

Purpose of study

This options study was undertaken to provide an assessment of potential haulage options, with a specific focus on the impacts on intersection performance, to inform Dubbo Regional Council in the development of a haulage strategy for this part of Dubbo.

A total of five haulage route options, presented in **Figure ES-1**, were assessed. These consisted of two existing routes and three future route options.

Figure ES-1 Existing and future haulage route options



Road network performance

A review of the performance of the intersections on the haulage route options was undertaken to gain an understanding of the existing and future capacity of the intersections and the likely impacts of future use of the haulage route options.

The results of the intersection modelling indicate that, except for the Wellington Road / Wheelers Lane roundabout, the intersections are forecast to still perform at a good level of service in the 2036 AM and PM peak hours. At the Wellington Road / Wheelers Lane roundabout, the growth in background traffic by 2036 is forecast to exceed the capacity of the roundabout and future upgrades may be required, irrespective of which haulage route option is chosen.

The route option modelling indicated that the different route options do not have a significant impact on the overall intersection performance, and that, aside from the Wellington Road / Wheelers Lane roundabout, the intersections have spare capacity to accommodate the industrial site traffic. The main impact is on the delay and queue length on the southern leg of the Wellington Road / Wheelers Lane roundabout in the AM peak hour for haulage route Option 1.

The traffic assessment is considered a worst-case scenario, as some quarry and cement trucks would serve local construction demand for the Southlakes sub-division development. Local deliveries would be taken via Boundary Road if the destination is south of Boundary Road and therefore reduce truck volumes on routes to Wellington Road.

Crash data from 2017 to 2021 was analysed to determine if any safety issues exist at the intersections. No fatal crashes occurred at any of the intersections over this five-year period. The intersection with the highest number of crashes was the Wellington Road / Wheelers Lane with 6 injury crashes and 1 non-injury crash, a significantly higher number than the other intersections. Other intersections had between zero and one crash occurring during the five-year period.

Multi-criteria assessment

A multi-criteria assessment (MCA) of the options was undertaken using criteria such as land use, social, community or stakeholder impacts, noise and air quality implications, traffic impacts, travel time impacts, engineering and pavement considerations, construction cost, including upgrades to existing road network and utilities impacts, ease of construction / program and suitability as a long-term haulage route.

Based on the analysis and MCA undertaken, the best performing option in the short term is **Option 3** (along new Blueridge Link Road, left into Capital Drive, left into Blueridge Drive and onto the highway at the Wellington Road / Blueridge Drive seagull intersection).

– It performs best or equal best against 5 of the 8 assessment criteria.

– The criteria that it performs equal worst against is noise and air quality due to the route generating new impacts. However, the noise and air quality impacts would be confined to land that is zoned as industrial, compared to other options, which currently impact residential zoned land.

In the longer term, **Option 4** (along new Blueridge Link Road, onto new Southern Distributor Road, onto the highway at a new Mitchell Highway / Southern Distributor intersection) would be the most appropriate haulage route as recognised in the Blueridge Business Park Road and Haulage Strategy and the draft Blueridge Precinct DCP (2023).

1.0 Introduction

1.1 Background

Currently, industrial sites in south-east Dubbo, indicated on **Figure 1-1**, are hauling their material along existing roads, such as Sheraton Road, Boundary Road and Wheelers Lane, to access the Mitchell Highway. Concern around this routing has been expressed by the local community, especially around mixing of haulage vehicles with school traffic (St Johns Primary, St Johns College, Skillset High School and Dubbo Christian School) during drop-off and pick-up times along Sheraton Road.

The haulage vehicles are also currently travelling on roads that were not designed and constructed for the heavy vehicle loadings that they are carrying. The industrial sites are forecast to increase their production, and therefore their haulage demand, over the next few years.

A Road and Haulage Strategy is being developed by Dubbo Regional Council (Council) for the Blueridge Business Park, which includes Stage 1 of the Blueridge Link Road (Southern Distributor), as shown in **Figure 1-2**. The Stage 1 alignment was adopted by Council in November 2022. Also shown on the figure, Stage 2 of the Southern Distributor is planned to be constructed in the future when required to support traffic generated by future developments.

Figure 1-1 Context of south-east Dubbo industrial sites

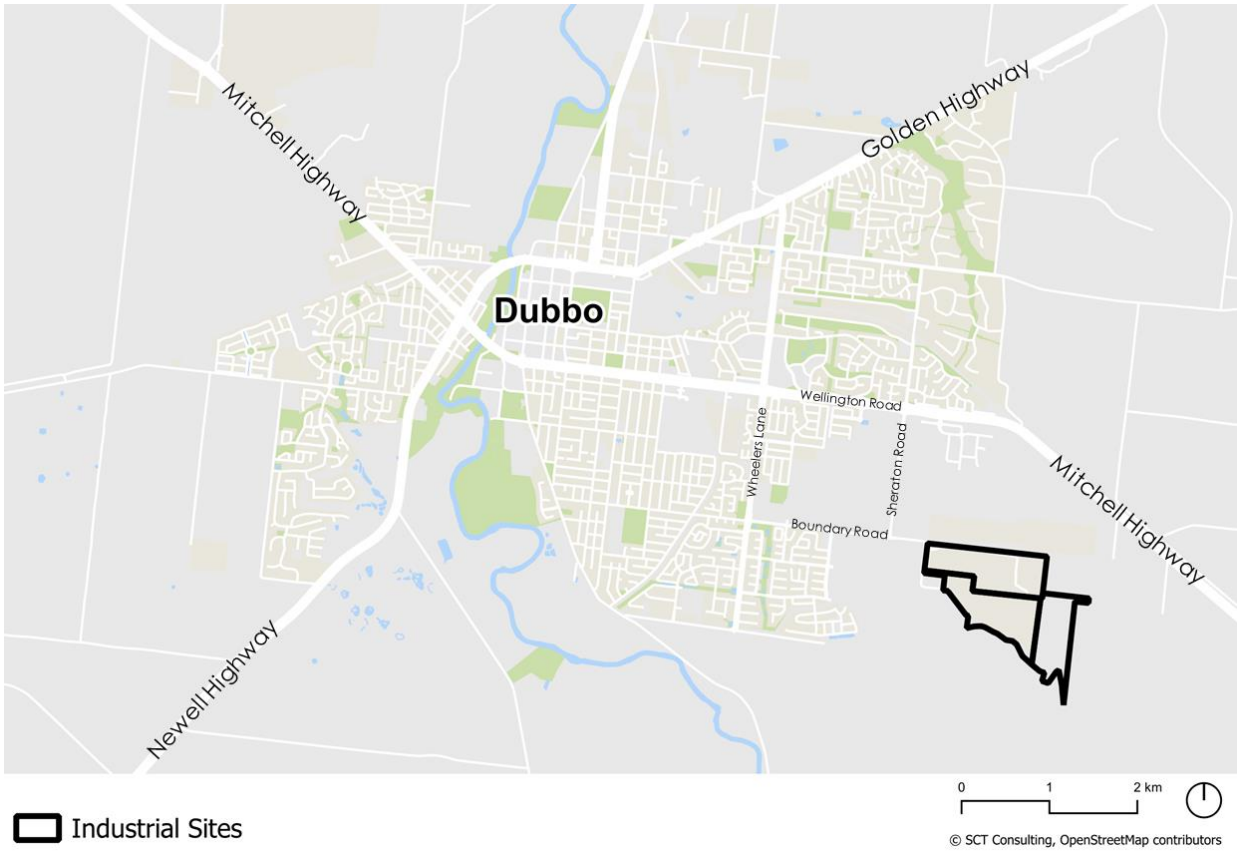
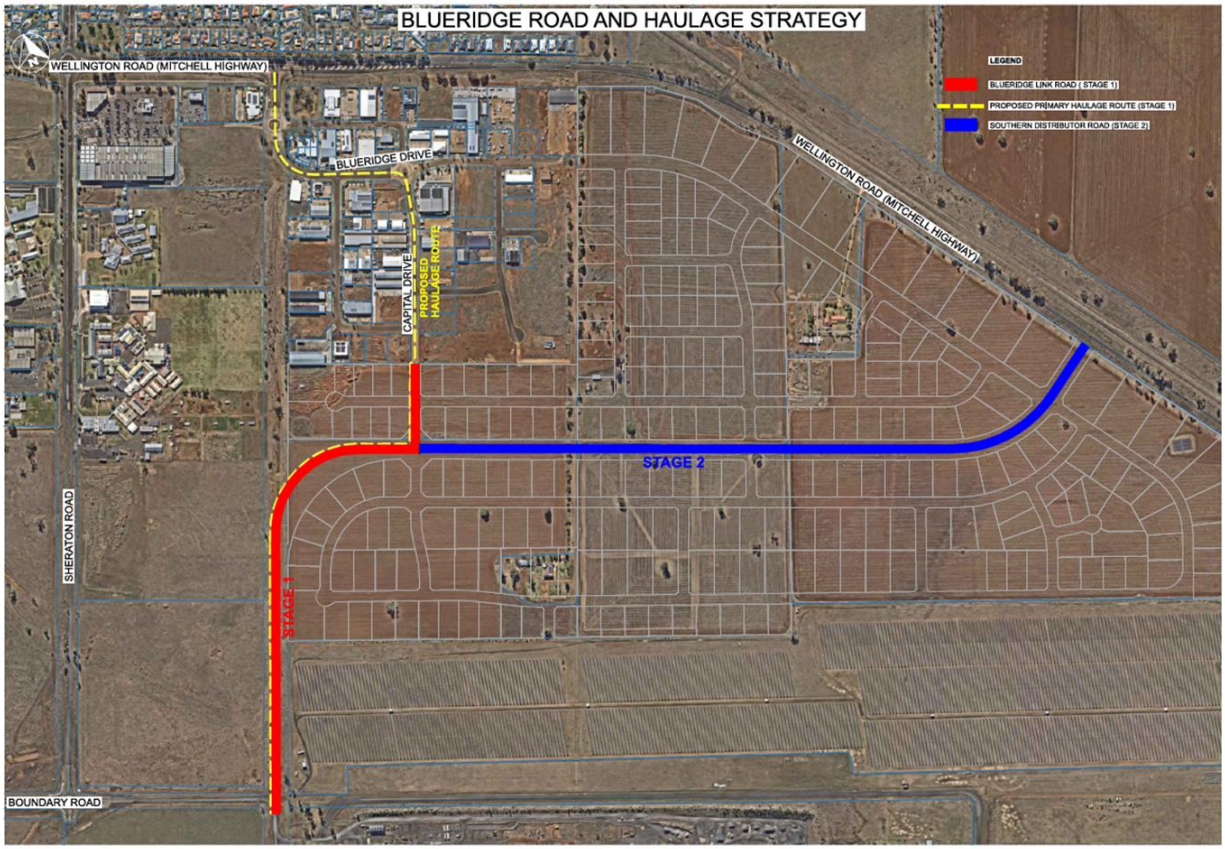


Figure 1-2 Blueridge Link Road (Southern Distributor)



Source: https://yoursay.dubbo.nsw.gov.au/blueridge-business-park-road-and-haulage-strategy

1.2 Purpose and report structure

The use and staging of the haulage routes in and out of the area is still to be confirmed. This options study was undertaken to provide an assessment of the potential haulage options, with a specific focus on the impacts on intersection performance, to inform Council in the development of a haulage strategy for this part of Dubbo.

The study has reviewed the following, which forms the structure of the report:

– **Chapter 2** provides a summary of the existing and future haulage demand.

– **Chapter 3** presents the existing and future route options.

– **Chapter 4** discusses the existing and future road network performance, including intersection performance and road safety.

– **Chapter 5** presents a high-level multi-criteria analysis of the options.

– **Chapter 6** provides a summary of the study conclusions.

2.0 Haulage demand

A review of the existing and future haulage traffic from the three industrial sites in south-east Dubbo, namely South Keswick Quarry, South Keswick Concrete Works and the Holcim Quarry, was undertaken.

2.1 Existing demand

Table 2-1 presents the currently maximum allowable heavy vehicle traffic from the three sites, based on a review of the planning approvals.

Table 2-1 Existing approved haulage traffic generated by the three sites

Sites	Daily truck movements	Peak hour truck movements
South Keswick Quarry (495k tpa*)	220	20
South Keswick Concrete Works (250 tpa)	170	11
Holcim Quarry (500 tpa) – on peak days	242	40
Total	**632**	**71**

*tpa = tonnes per annum

2.2 Future demand

Table 2-2 presents the forecast allowable heavy vehicle traffic from the three sites, based on a review of the current planning approvals. There may be further applications for increase in production volumes in the future, so these should not be taken as the maximum heavy traffic volumes that may be generated by the sites in the long term.

Table 2-2 Future haulage traffic generated by the three sites

Sites	Daily truck movements	Peak hour truck movements
South Keswick Quarry (application to increase from 495k tpa to 750k tpa*)	300	20
South Keswick Concrete Works (no change)	170	11
Holcim Quarry (no change) – on peak days	242	40
Total	**712**	**71**

*Note: This is based on the Scoping Report, and is not yet approved

3.0 Haulage routes

This section presents the existing and potential future haulage route options. The existing roads that could be used on the route options are:

– **Mitchell Highway**: A State Road, the highway forms part of the National Land Transport Network (a network of nationally important road and rail infrastructure links and their intermodal connections) and is the major east-west route through Dubbo. The highway is called Wellington Road in this part of Dubbo, and it generally has a two-way, four-lane divided configuration with a posted speed limit of 70km/h. This becomes 60km/h about 500m east of Wheelers Lane and becomes 110km/h about 270m east of Blueridge Drive.

– **Wheelers Lane**: A local road with a posted speed limit of 60km/h. The road has a two-way, four-lane undivided configuration and primarily provides residential access to Wellington Road. It connects to Wellington Road via a roundabout with two circulating lanes.

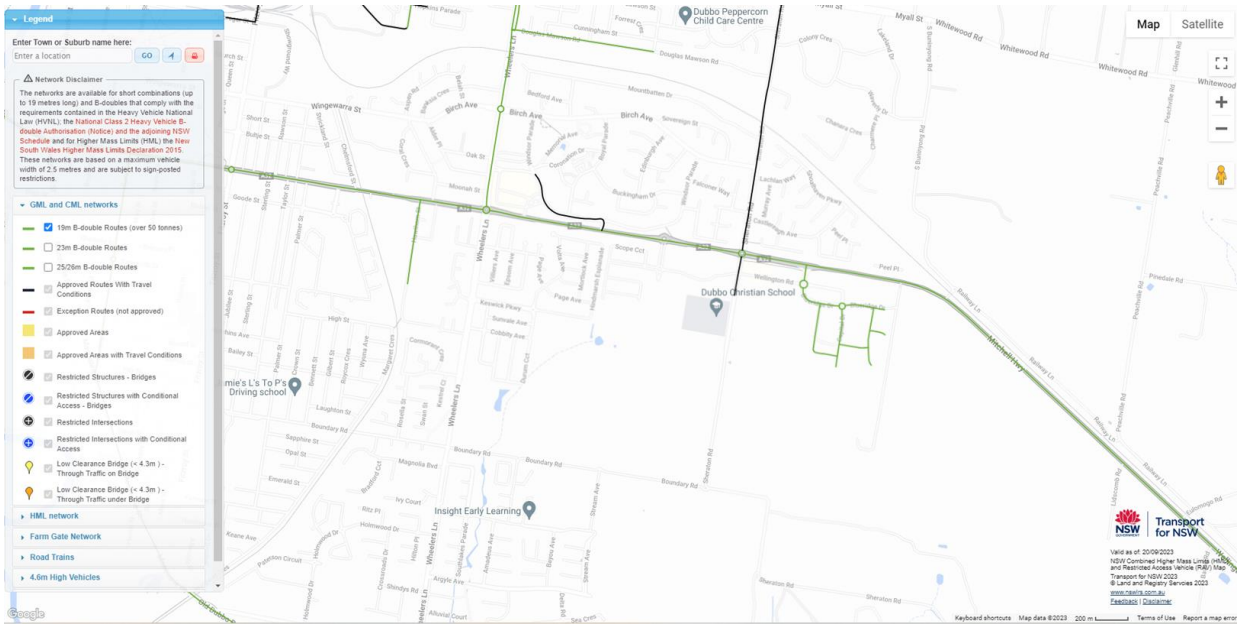
– **Boundary Road**: A local road with a posted speed limit of 60km/h. The road has a two-way, two-lane divided configuration and primarily provides for residential access. It connects to Wheelers Lane via a roundabout with two circulating lanes. While Boundary Road was recently constructed by Council from Wheelers Lane to Sheraton Road and is therefore a new pavement, the Boundary Road pavement was not designed for a haulage route, and a further review would be required to determine if the pavement has adequate strength to cater for the additional loading and whether an upgrade would be warranted.

– **Sheraton Road**: A local road with a posted speed limit of 60km/h, it has a 40mk/h school zone operating at the northern end providing access to St Johns Primary School, St Johns College, Skillset High School and Dubbo Christian School, and has a two-way, four-lane divided configuration. South of the schools, the road continues as a two-way, two-lane undivided configuration connecting to Boundary Road at its southern end. It connects to Wellington Road via a roundabout with two circulating lanes.

– **Blueridge Drive**: A local road, which is built to industrial standards, Blueridge Drive has a varied cross-section configuration. It provides access for businesses in the Blueridge Business Park to Wellington Road and connects to Wellington Road via an urban seagull give-way controlled intersection.

As shown in **Figure 3-1**, the Mitchell Highway (Wellington Road) and the roads within the Blueridge Business Park, including Blueridge Drive, are all Restricted Access Vehicle (RAV) approved routes. Other existing or potential future haulage routes are not RAV approved routes.

Figure 3-1 Restricted Access Vehicle (RAV) route map – 19m B-double routes



Source: TfNSW, 2023

3.1 Existing routes

The following two routes are currently used by haulage vehicles to access the Mitchell Highway (Wellington Road):

– Option 1 – along Boundary Road, right into Wheelers Lane and onto the highway at the Wellington Road / Wheelers Lane roundabout (shown in blue in **Figure 3-2**).

– Option 2 – along Sheraton Road and onto the highway at the Wellington Road / Sheraton Road roundabout (shown in red in **Figure 3-2**).

3.2 Future route options

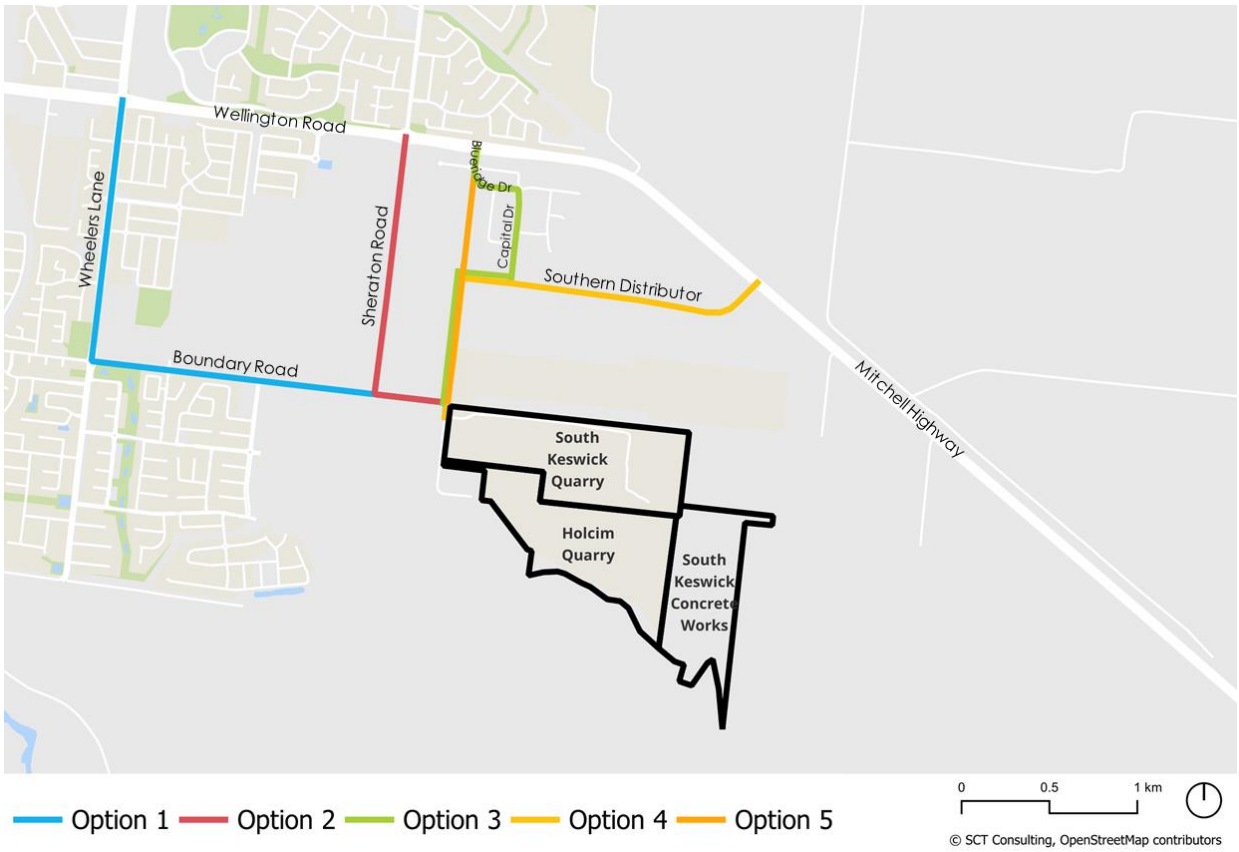
The following three route options could be used by haulage vehicles to access the Mitchell Highway (Wellington Road) in the future:

– Option 3 – along new Blueridge Link Road, left into Capital Drive, left into Blueridge Drive and onto the highway at the Wellington Road / Blueridge Drive seagull intersection (shown in green in **Figure 3-2**).

– Option 4 – along new Blueridge Link Road, onto new Southern Distributor Road, onto the highway at a new Mitchell Highway / Southern Distributor intersection (shown in green and yellow in **Figure 3-2**).

– Option 5 – new road along drainage channel alignment, linking into Blueridge Drive and onto the highway at the Wellington Road / Blueridge Drive seagull intersection (shown in orange in **Figure 3-2**).

Figure 3-2 Existing and future haulage route options



3.3 Initial review of route options

An initial review of the route options highlighting the main advantages and disadvantages was undertaken and is summarised in **Table 3-1**.

Table 3-1 Initial review of route options

Haulage route options	Advantages	Disadvantages
Option 1 (Boundary Road + Wheelers Lane)	– Avoids the schools precinct on Sheraton Road.	– Runs through a residential zoned area, including two existing early learning centres on Wheelers Lane. – Proposed night-time quarry operations would be a significant noise issue for residents living adjacent to these roads. – Requires significant pavement upgrade on Wheelers Lane – the pavement is already poor. Significant cost to upgrade. – Impacts on the Wheelers Lane / Wellington Road roundabout performance.
Option 2 (Sheraton Road)	– Although zoned residential, there is no existing residential development adjacent to Sheraton Road.	– Runs through a residential zoned area and schools precinct. – Proposed night-time quarry operations could be a significant noise issue for residents living adjacent to the road in the future. – Heavy industry operations are restricted, as sites are conditioned not to operate during school peak times. This can be hard to enforce, as the condition does not apply to customers for the quarry and therefore some truck and dog traffic still use Sheraton Road during school times. – Sheraton Road is not designed to cater for heavy haulage traffic. Requires significant pavement upgrade – the pavement is already poor. Significant cost to upgrade.
Option 3 (Blueridge Link Road + Capital Drive + Blueridge Drive)	– Avoids the schools precinct on Sheraton Road and residential area along Boundary Road and Wheelers Lane. Compatible with zoned industrial land use. – Capital Drive and Blueridge Drive have pavement design to support heavy vehicles.	– Impacts on existing businesses in Blueridge Business Park, including two existing early learning centres. – Impacts on Blueridge Drive / Wellington Road seagull intersection performance. – Significant cost of new road construction.
Option 4 (Blueridge Link Road + Southern Distributor Road)	– Avoids the schools precinct on Sheraton Road. Compatible with zoned industrial land use. – Roads would have pavement design to support heavy vehicles.	– Significant cost of new road construction – New intersection on the highway, which would introduce new conflicting traffic movements.
Option 5 (New road + Blueridge Drive)	– Avoids the schools precinct on Sheraton Road, though does run along the back of the school playing fields. Compatible with zoned industrial land use. – New road would have pavement design to support heavy vehicles	– Significant cost of new road construction and need for augmenting existing drainage channel on the alignment. – Impacts on some businesses at the northern end of Blueridge Business Park, including one existing early learning centre. – Impacts on Blueridge Drive / Wellington Road seagull intersection performance.

4.0 Road network performance

4.1 Intersection performance

A review of the performance of the intersections on the haulage route options was undertaken to gain an understanding of the existing and future capacity of the intersections and the likely impacts of future use of the haulage route options.

The following intersections were reviewed to inform the options assessment:

– Sheraton Road /Boundary Road roundabout

– Wheelers Lane / Boundary Road roundabout

– Wellington Road / Wheelers Lane roundabout.

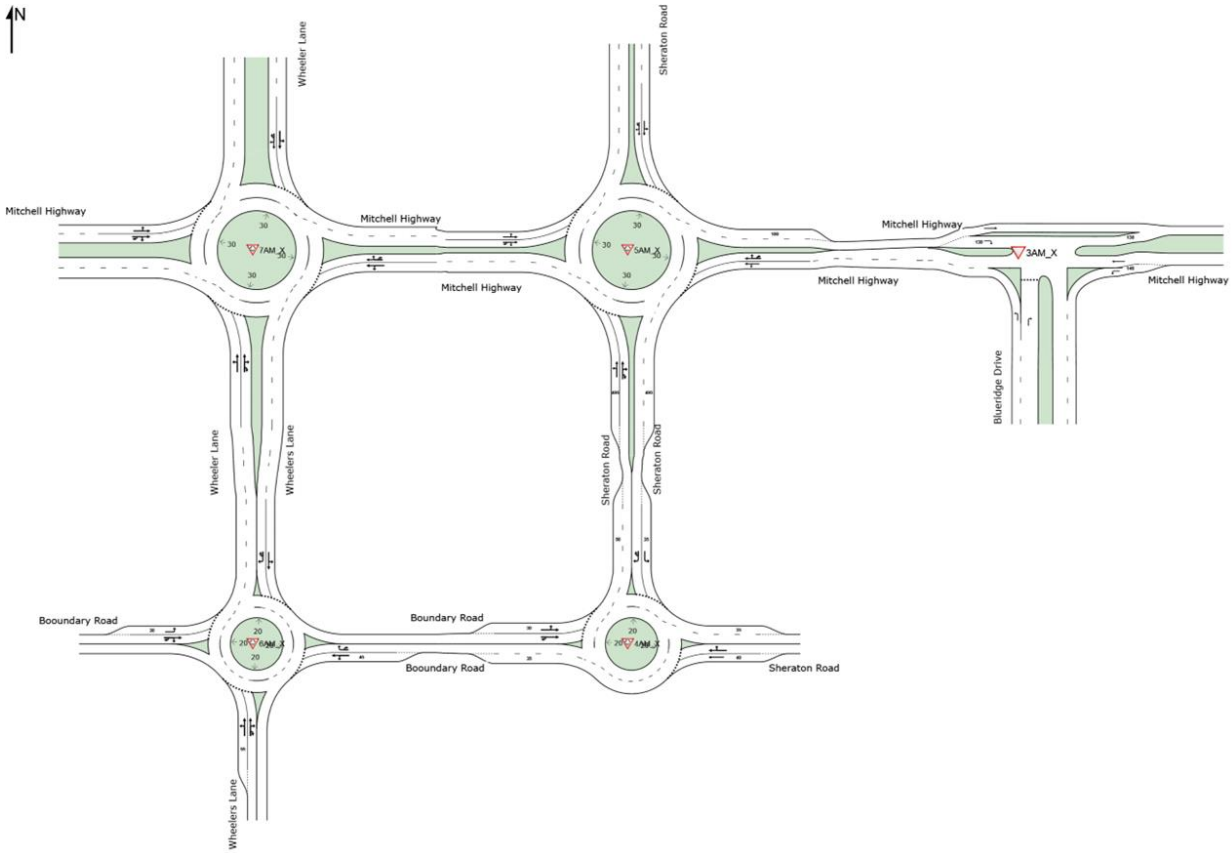
– Wellington Road / Sheraton Road roundabout

– Wellington Road / Blueridge Drive seagull intersection.

4.1.1 Existing intersection performance

Traffic data was sourced from publicly available reports and baselined to 2023, using a two per cent per annum growth factor, and the intersections were modelled in SIDRA. The SIDRA network layout is illustrated in **Figure 4-1**.

Figure 4-1 Intersection network layout in SIDRA



Intersection performance is typically assessed based on the average delay of vehicles. The average delay relates to a Level of Service (LoS) index, which characterises the intersection's operational performance, as seen in **Table 4-1**.

Intersection performance is also measured using the degree of saturation (DoS), which is a measure of the spare capacity of each intersection. A degree of DoS greater than 1.0 implies that the turning movement is at capacity and not acceptable.

For priority and roundabout intersections, the DoS, delay and LoS for the worst performing movement is reported.

Table 4-1 Level of Service Categories

Level of Service	Average delay per vehicle (seconds)	Performance explanation
A	Less than 14.5	Good operation
B	14.5 to 28.4	Good with acceptable delays and spare capacity
C	28.5 to 42.4	Satisfactory
D	42.5 to 56.4	Operating near capacity
E	56.5 to 70.4	At capacity. At signals, incidents will cause excessive delays. Roundabouts require other control method.
F	70.5 or greater	At capacity. At signals incidents will cause excessive delays. Roundabouts require other control method.

Source: Guide to Traffic Generating Development, TfNSW

The performances of the intersections in the 2023 AM and PM peak hours are presented in **Table 4-2**.

The results illustrate that the intersections are currently performing at a good level of service. The DoS at the Wellington Road / Wheelers Lane roundabout is higher than the other intersections, especially in the PM peak hour, indicating that it is starting to approach capacity during this peak hour.

There is traffic congestion observed at school drop-off and pick-up times, especially at the Wellington Road / Sheraton Road intersection but generally this is fairly short-lived (about 15 minutes). SIDRA is an analytical traffic modelling software that provides metrics that represent the average performance over the peak one-hour period. While short increases in delays and lower levels of service are incorporated into this average delay over the one-hour period, SIDRA does not model and report these spikes in delay.

Table 4-2 Existing level of service (2023)

Intersection	AM peak hour				PM peak hour			
	Total throughput	DoS	Delay (s)	LoS	Total throughput	DoS	Delay (s)	LoS
Sheraton Road / Boundary Road	408	0.144	10.3	A	345	0.114	10.3	A
Wheelers Lane / Boundary Road	1,488	0.253	10.7	A	1,392	0.275	12.8	A
Wellington Road / Wheelers Lane	3,451	0.684	16.6	B	3,475	0.783	25.0	B
Wellington Road / Sheraton Road	2,653	0.472	15.8	B	2,477	0.506	14.9	B
Wellington Road / Blueridge Drive	1,215	0.203	8.0	A	1,181	0.178	7.6	A

4.1.2 Future intersection performance

For the future intersection performance, the 2023 traffic volumes were grown to 2036, using a two per cent per annum growth factor.

4.1.2.1 Existing haulage routes – 2036 intersection performance

For this scenario, no changes in haulage routing were made and the intersections were remodelled in SIDRA to provide a future year baseline against which to measure the other options. The performances of the intersections in the 2036 AM and PM peak hours are presented in **Table 4-3**.

The results illustrate that, except for the Wellington Road / Wheelers Lane roundabout, the intersections are forecast to still perform at a good level of service. At the Wellington Road / Wheelers Lane roundabout, the growth in background traffic by 2036 is forecast to exceed the capacity of the roundabout and future upgrades may be required, irrespective of which haulage route option is chosen.

Table 4-3 Future level of service (2036) – Existing haulage routes

Intersection	AM peak hour				PM peak hour			
	Total throughput	DoS	Delay (s)	LoS	Total throughput	DoS	Delay (s)	LoS
Sheraton Road / Boundary Road	557	0.194	10.8	A	480	0.151	11.0	A
Wheelers Lane / Boundary Road	1,933	0.359	11.5	A	1,804	0.373	14.1	A
Wellington Road / Wheelers Lane	4,485	1.097	121.0	F	4,517	1.482	460.8	F
Wellington Road / Sheraton Road	3,459	0.751	25.4	B	3,231	0.762	21.1	B
Wellington Road / Blueridge Drive	1,580	0.302	9.2	A	1,536	0.231	7.9	A

4.1.2.2 Option 1 – 2036 intersection performance

For haulage route option 1, all the industrial site traffic was reallocated to use Boundary Road and Wheelers Lane. The performances of the intersections in the 2036 AM and PM peak hours are presented in **Table 4-4**.

Table 4-4 Future level of service (2036) – Haulage route option 1

Intersection	AM peak hour				PM peak hour			
	Total throughput	DoS	Delay (s)	LoS	Total throughput	DoS	Delay (s)	LoS
Sheraton Road / Boundary Road	586	0.196	10.9	A	508	0.165	11.2	A
Wheelers Lane / Boundary Road	1,988	0.366	12.0	A	1,861	0.411	15.1	A
Wellington Road / Wheelers Lane	4,510	1.137	153.5	F	4,542	1.500	477.2	F
Wellington Road / Sheraton Road	3,446	0.751	24.9	B	3,225	0.762	20.5	A
Wellington Road / Blueridge Drive	1,573	0.298	9.1	A	1,532	0.231	7.9	A

As noted above, the Wellington Road / Wheelers Lane roundabout is forecast to be overcapacity in 2036. In the AM peak period, the worst forecast queue is on the southern leg of Wheelers Lane. Haulage route option 1 adds more traffic to this southern leg in the morning and is forecast to extend the queue from about 400m to about 500m. The other intersections are forecast to still perform at a good level of service.

4.1.2.3 Option 2 – 2036 intersection performance

For haulage route option 2, all the industrial site traffic was reallocated to use Sheraton Road. The performances of the intersections in the 2036 AM and PM peak hours are presented in **Table 4-5**.

As before, except for the Wellington Road / Wheelers Lane roundabout, the intersections are forecast to still perform at a good level of service. The impact on the Wellington Road / Sheraton Road intersection is forecast to be small.

Table 4-5 Future level of service (2036) – Haulage route option 2

Intersection	AM peak hour				PM peak hour			
	Total throughput	DoS	Delay (s)	LoS	Total throughput	DoS	Delay (s)	LoS
Sheraton Road / Boundary Road	561	0.196	10.9	A	480	0.148	11.1	A
Wheelers Lane / Boundary Road	1,925	0.358	11.5	A	1,801	0.375	13.8	A
Wellington Road / Wheelers Lane	4,483	1.093	118.5	F	4,515	1.481	461.4	F
Wellington Road / Sheraton Road	3,466	0.754	25.6	B	3,238	0.768	21.4	B
Wellington Road / Blueridge Drive	1,580	0.302	9.2	A	1,536	0.231	7.9	A

4.1.2.4 Option 3/5 – 2036 intersection performance

For haulage route option 3, all the industrial site traffic was reallocated to use Blueridge Link Road, Capital Drive and Blueridge Drive to access Wellington Road. For haulage route option 5, all the industrial site traffic was reallocated to use a new north-south road that connects to Blueridge Drive, south of Wellington Road. Therefore, from an intersection performance perspective, the main impact of both option 3 and option 5 would at the same intersection – the Wellington Road / Blueridge Drive seagull. The performances of the intersections in the 2036 AM and PM peak hours are presented in **Table 4-6**.

As before, except for the Wellington Road / Wheelers Lane roundabout, the intersections are forecast to still perform at a good level of service. The impact on the Wellington Road / Blueridge Drive intersection is forecast to be quite small. There is only minor queuing forecast on the Blueridge Drive approach to the intersection and it is not forecast to extend back to the roundabout 80m south of the intersection.

Table 4-6 Future level of service (2036) – Haulage route option 3/5

Intersection	AM peak hour				PM peak hour			
	Total throughput	DoS	Delay (s)	LoS	Total throughput	DoS	Delay (s)	LoS
Sheraton Road / Boundary Road	522	0.196	11.3	A	449	0.148	11.2	A
Wheelers Lane / Boundary Road	1,924	0.357	11.5	A	1,802	0.374	13.8	A
Wellington Road / Wheelers Lane	4,478	1.090	116.3	F	4,518	1.476	455.6	F
Wellington Road / Sheraton Road	3,441	0.754	25.5	B	3,224	0.755	20.4	B
Wellington Road / Blueridge Drive	1,621	0.324	11.1	A	1,593	0.252	8.2	A

4.1.2.4.1 Wellington Road / Blueridge Drive intersection – sensitivity test

A sensitivity test was undertaken that assessed the available capacity of the Wellington Road / Blueridge Drive intersection in the AM peak hour with the further development of the Blueridge Estate.

The intersection is forecast to operate at or near capacity with about 1,100 additional vehicles from the Blueridge Estate area in the AM peak hour, assuming the same mix of light and heavy vehicles as existing. This equates to 680 vehicles in and 420 vehicles out in the AM peak hour.

Based on the trip generation rates from the Blueridge East Business Park TIA (Intersect Traffic, August 2023), the 1,100 vehicles would equate to about 45.3 ha of development. From the draft Blueridge Precinct Development Control Plan (DCP) (2023) and aerial imagery (Nov 2023), it is estimated that about 35 ha remains to be developed within Stage 1 of the precinct (equating to about 850 vehicles per hour), meaning the Blueridge Drive intersection would have spare capacity after completion of Stage 1 of the precinct.

SIDRA modelling indicates that this spare capacity could accommodate an extra 95 truck movements from the three quarries, in addition to the current truck movements per hour. This would accommodate additional growth in haulage demand from the three industrial sites.

4.1.2.5 Option 4 – 2036 intersection performance

For haulage route option 4, all the industrial site traffic would be allocated to a new link, the Southern Distributor, which would connect to the Mitchell Highway at a new intersection.

The configuration of this new intersection would depend on the staged development of the Blueridge Industrial Estate and the land connecting to the new road. Modelling would be undertaken once this information was known, and the intersection layout designed to accommodate the forecast demand and perform at a good level of service. Modelling has therefore not been undertaken as part of this study.

The rerouting of the industrial site traffic would mean that any trucks would remain on the Mitchell Highway, once connecting along the Southern Distributor, and not use the local road network.

4.1.3 Summary of intersection performance

Table 4-7 presents a summary of the level of service at each modelled intersection for the haulage route options. This indicates that the different options do not have a significant impact on the overall intersection performance, and that, aside from the Wellington Road / Wheelers Lane roundabout, the intersections have spare capacity to accommodate the industrial site traffic. The main impact is on the delay and queue length on the southern leg of the Wellington Road / Wheelers Lane roundabout in the AM peak hour for haulage route option 1.

This assessment is considered a worst-case scenario, as some quarry and cement trucks would serve local construction demand for the Southlakes sub-division development. Local deliveries would be taken via Boundary Road if the destination is south of Boundary Road and therefore reduce truck volumes on routes to Wellington Road.

Table 4-7 Summary of future levels of service (2036)

Intersection	AM peak hour				PM peak hour			
	Existing routes	Option 1	Option 2	Option 3/5	Existing routes	Option 1	Option 2	Option 3/5
Sheraton Road / Boundary Road	A	A	A	A	A	A	A	A
Wheelers Lane / Boundary Road	A	A	A	A	A	A	A	A
Wellington Road / Wheelers Lane	F	F	F	F	F	F	F	F
Wellington Road / Sheraton Road	B	B	B	B	B	A	B	B
Wellington Road / Blueridge Drive	A	A	A	A	A	A	A	A

4.2 Road safety

Crash data from 2017 to 2021 has been analysed to determine if any safety issues exist at the intersections. These results are presented in **Figure 4-2** and **Table 4-8**.

No fatal crashes occurred at any of the intersections over this five-year period. The intersection with the highest number of crashes was the Wellington Road / Wheelers Lane with 6 injury crashes and 1 non-injury crash, a significantly higher number than the other intersections. Other intersections had between zero and one crash occurring during the five-year period.

Figure 4-2 Crashes in the vicinity of the south-east Dubbo industrial sites (2017-2021)

Source: Transport for NSW

Table 4-8 Crash data 2017-2021

Intersection	Fatal crashes	Injury crashes	Non-injury crashes
Sheraton Road / Boundary Road	0	0	0
Wheelers Lane / Boundary Road	0	1	0
Wellington Road / Wheelers Lane	0	6	1
Wellington Road / Sheraton Road	0	0	0
Wellington Road / Blueridge Drive	0	1	0

Source: Transport for NSW

A review of the acceleration and deceleration lane lengths of the Wellington Road / Blueridge Drive seagull intersection was undertaken and is presented in **Table 4-9**.

Based on the signposted speed limit of 70km/h (design speed of 80km/h), all lane lengths were found to comply with the guidance in Austroads *Guide to Road Design Part 4A: Unsignalised and Signalised Intersections*.

Table 4-9 Compliance of lane lengths at Wellington Road / Blueridge Drive seagull intersection

Lane	Existing length (including taper and storage)	Required length from AGRD Part 4A	Compliant?
Right turn deceleration lane into Blueridge Drive	157m	100m	Yes
Left turn deceleration lane into Blueridge Drive	211m	95m	Yes
Acceleration lane into Wellington Road eastbound	245m	220m	Yes

5.0 Assessment of options

5.1 Criteria

The following criteria were selected for use in a multi-criteria assessment (MCA) of the options:

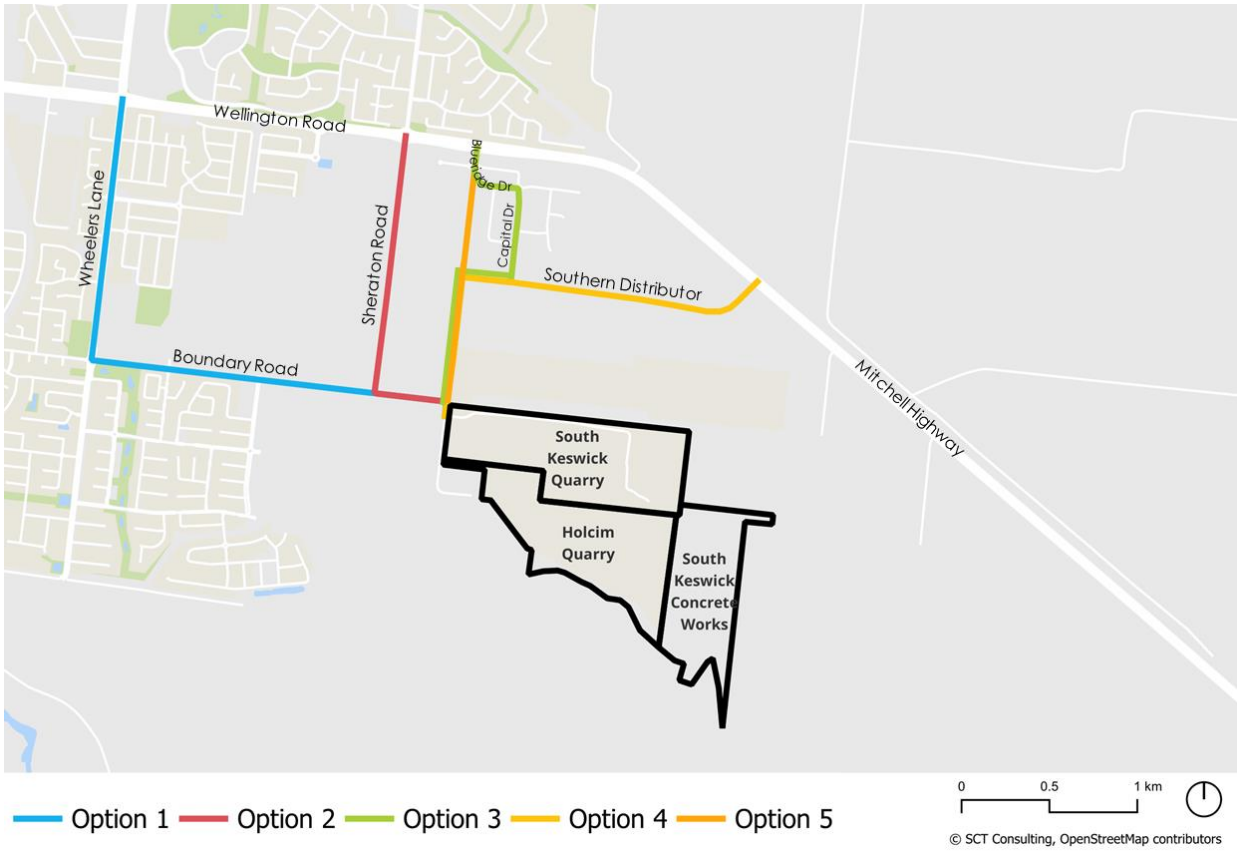
- Land use, social, community or stakeholder impacts – measured as negative impact on the community, primarily from a safety perspective
- Noise and air quality implications – measured as an increase in the noise and air quality impacts from existing traffic volumes
- Traffic impacts – measured as a significant increase in delay
- Travel time impacts – measured as a significant increase in travel time from the sites to their destinations.
- Engineering and pavement considerations – measured as compatibility with road design for heavy vehicles.
- Construction cost, including upgrades to existing road network and utilities impacts – measured as cost required to construct the route to the required standard.
- Ease of construction / program – measured as length or complexity of construction required.
- Suitability as a long-term haulage route – appropriateness for use as a haulage route in the long term.

The following criteria were not considered relevant for this study:

- Environmental / ecological / heritage impacts or constraints – areas were considered to already be highly disturbed, and Council has not identified any heritage issues.

The options are presented again for reference in **Figure 5-1**.

Figure 5-1 Haulage route options assessed



5.2 Assessment

Table 5-1 provides a summary of the assessment of the options using the above criteria.

Table 5-1 Assessment of haulage route options

Criteria / Options	Option 1: Boundary Rd & Wheelers Ln	Option 2: Sheraton Rd	Option 3: Connect to Capital Dr & Blueridge Dr	Option 4: Southern Distributor	Option 5: New road to Blueridge Dr
Land use, social, community or stakeholder impacts					
Noise and air quality implications					
Traffic and safety impacts					
Travel time impacts					
Engineering and pavement considerations					
Construction cost, including upgrades to existing road network and utilities impacts					
Ease of construction / program					
Suitability as a long-term haulage route					

The main reasons for the above assessment were:

– **Land use, social, community or stakeholder impacts**

  Options 1 and 2 were considered to have the largest impacts as the routes run through a residential zoned area. While Option 3 and 5 would have some impact, they would run through area zoned as industrial and would therefore have a lower comparative impact. With Option 4, a new road designated in the Blueridge Business Park Road and Haulage Strategy as a haulage route, future developments and businesses would be forewarned about the purpose of the road and therefore impacts would not be rated as high as the others.

– **Noise and air quality implications**

  Options 1 and 2 have existing noise and air quality impacts, while Options 3 and 5 would show a larger impact from a lower base. Option 4, as a new road corridor, would be designed to accommodate heavy vehicles (40m wide corridor) and as noted above, future developments and businesses would be forewarned about the purpose of this new road as a haulage route.

– **Traffic and safety impacts**

  As noted in section 4.1, Option 1 would cause the largest traffic impact (at the Wellington Road / Wheelers Lane roundabout in the AM peak hour) and the Wellington Road / Wheelers Lane roundabout has the highest number of crashes over past five years. Option 4 introduces a new intersection into the network and would therefore, by default, introduce traffic delays and a safety impact.

– **Travel time impacts**

  The distance travelled by the industrial sites' trucks are similar for all options, except for Option 4, where those trucks travelling to and from the west, the main destination for the haulage trucks, have more of a significant detour to the east to the new Mitchell Highway intersection before travelling back west. This would likely incur an additional 2 minutes of travel time on an existing travel time of about 3 minute 30 seconds. While not the main destination direction, there would be travel time savings for haulage traffic to and from the east.

– **Engineering and pavement considerations**

  Option 3, 4 and 5 have roads that are, or would be, designed to industrial standards and so perform better compared to Options 1 and 2, which are already showing pavement degradation.

– **Construction cost, including upgrades to existing road network and utilities impacts**

  Preliminary cost estimates were produced by Council for each of the options. Estimated quantities were based on preliminary assessments and concept plans. Rates were estimated based on available previous project data and assumptions, and the cost estimates include a 25% contingency. A summary of the cost estimates for the options is provided in **Table 5-2**. Based on these estimates, Option 3 is forecast to cost the least and so performs the best against this criterion.

Table 5-2 Preliminary cost estimates

Haulage route options	Preliminary cost estimate
Option 1 (Boundary Road + Wheelers Lane)	$16,922,763
Option 2 (Sheraton Road)	$13,850,328
Option 3 (Blueridge Link Road + Capital Drive + Blueridge Drive)	$10,391,878
Option 4 (Blueridge Link Road + Southern Distributor Road)	$25,323,191
Option 5 (New road + Blueridge Drive)	$17,972,658

Source: Dubbo Regional Council, 27 February 2024

– **Ease of construction / program**

  Options 3 and 4 would be able to be constructed offline without having to accommodate existing traffic operations, and so would have an easier construction program.

– **Suitability as a long-term haulage route**

  Option 1 and 2 are not designed to industrial standards, while Option 3 and 5 may present conflicts with existing business park traffic during the AM and PM peak periods. In the long term, Option 4 provides the most suitable route for haulage traffic.

5.3 Conclusions

Based on the analysis and MCA undertaken, the best performing option in the short term is **Option 3** (along new Blueridge Link Road, left into Capital Drive, left into Blueridge Drive and onto the highway at the Wellington Road / Blueridge Drive seagull intersection).

– It performs best or equal best against 5 of the 8 assessment criteria.

– The criteria that it performs equal worst against is noise and air quality due to the route generating new impacts. However, the noise and air quality impacts would be confined to land that is zoned as industrial, compared to Options 1 and 2, which currently impact residential zoned land.

In the longer term, **Option 4** (along new Blueridge Link Road, onto new Southern Distributor Road, onto the highway at a new Mitchell Highway / Southern Distributor intersection) would be the most appropriate haulage route as recognised in the Blueridge Business Park Road and Haulage Strategy and the draft Blueridge Precinct DCP (2023).

APPENDIX A

SIDRA MODELLING RESULTS

MOVEMENT SUMMARY

Site: 4AM_X [SHE_BOU_23_AM_X (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Sheraton Road / Boundary Road
Site Category: (None)
Roundabout

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
East: Sheraton Road															
5	T1	All MCs	10	44.0	10	44.0	0.025	5.6	LOS A	0.1	1.2	0.30	0.47	0.30	52.0
6	R2	All MCs	20	68.4	20	68.4	0.025	10.3	LOS A	0.1	1.2	0.28	0.56	0.28	48.5
Approach			30	60.6	30	60.6	0.025	8.8	LOS A	0.1	1.2	0.29	0.54	0.29	49.6
North: Sheraton Road															
7	L2	All MCs	31	65.5	31	65.5	0.039	4.8	LOS A	0.2	1.7	0.07	0.48	0.07	52.3
9	R2	All MCs	116	1.9	116	1.9	0.077	8.8	LOS A	0.3	2.4	0.05	0.64	0.05	50.7
9u	U	All MCs	5	0.0	5	0.0	0.077	10.9	LOS A	0.3	2.4	0.05	0.64	0.05	50.8
Approach			152	14.8	152	14.8	0.077	8.0	LOS A	0.3	2.4	0.06	0.61	0.06	51.0
West: Boundary Road															
10	L2	All MCs	217	1.5	217	1.5	0.144	4.3	LOS A	0.6	4.6	0.11	0.47	0.11	54.2
11	T1	All MCs	6	16.7	6	16.7	0.010	4.5	LOS A	0.0	0.3	0.13	0.49	0.13	52.9
12u	U	All MCs	2	0.0	2	0.0	0.010	11.1	LOS A	0.0	0.3	0.13	0.49	0.13	52.4
Approach			225	1.9	225	1.9	0.144	4.4	LOS A	0.6	4.6	0.11	0.47	0.11	54.1
All Vehicles			408	11.0	408	11.0	0.144	6.1	LOS A	0.6	4.6	0.11	0.53	0.11	52.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 4PM_X [SHE_BOU_23_PM_X (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Sheraton Road / Boundary Road
Site Category: (None)
Roundabout

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
East: Sheraton Road															
5	T1	All MCs	11	20.0	11	20.0	0.032	5.9	LOS A	0.1	1.3	0.36	0.48	0.36	52.5
6	R2	All MCs	28	46.2	28	46.2	0.032	10.3	LOS A	0.1	1.3	0.33	0.59	0.33	48.8
Approach			39	38.9	39	38.9	0.032	9.1	LOS A	0.1	1.3	0.34	0.56	0.34	49.8
North: Sheraton Road															
7	L2	All MCs	21	75.0	21	75.0	0.028	5.0	LOS A	0.1	1.2	0.08	0.48	0.08	52.0
9	R2	All MCs	180	1.8	180	1.8	0.114	8.8	LOS A	0.5	3.7	0.06	0.63	0.06	50.8
9u	U	All MCs	1	0.0	1	0.0	0.114	10.9	LOS A	0.5	3.7	0.06	0.63	0.06	50.8
Approach			203	9.5	203	9.5	0.114	8.4	LOS A	0.5	3.7	0.06	0.62	0.06	50.9
West: Boundary Road															
10	L2	All MCs	92	1.2	92	1.2	0.064	4.3	LOS A	0.3	2.0	0.12	0.47	0.12	54.2
11	T1	All MCs	9	25.0	9	25.0	0.013	4.6	LOS A	0.1	0.4	0.15	0.47	0.15	52.8
12u	U	All MCs	2	0.0	2	0.0	0.013	11.1	LOS A	0.1	0.4	0.15	0.47	0.15	52.5
Approach			103	3.1	103	3.1	0.064	4.5	LOS A	0.3	2.0	0.12	0.47	0.12	54.0
All Vehicles			345	10.9	345	10.9	0.114	7.3	LOS A	0.5	3.7	0.11	0.57	0.11	51.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 6AM_X [WHE_BOU_23_AM_X (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Booundary Road / Wheelers Lane
Site Category: (None)
Roundabout

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: Wheelers Lane															
1	L2	All MCs	125	0.0	125	0.0	0.253	5.8	LOS A	1.3	9.2	0.52	0.58	0.52	49.0
2	T1	All MCs	307	2.8	307	2.8	0.253	6.1	LOS A	1.3	9.2	0.52	0.60	0.52	52.4
3	R2	All MCs	78	0.0	78	0.0	0.253	10.7	LOS A	1.3	9.1	0.53	0.62	0.53	51.2
3u	U	All MCs	1	0.0	1	0.0	0.253	12.8	LOS A	1.3	9.1	0.53	0.62	0.53	51.2
Approach			511	1.7	511	1.7	0.253	6.7	LOS A	1.3	9.2	0.52	0.60	0.52	51.3
East: Boundary Road															
4	L2	All MCs	15	7.1	15	7.1	0.115	5.7	LOS A	0.5	3.8	0.48	0.55	0.48	52.4
5	T1	All MCs	104	1.0	104	1.0	0.115	5.6	LOS A	0.5	3.8	0.48	0.55	0.48	49.3
6	R2	All MCs	75	2.9	75	2.9	0.089	10.6	LOS A	0.4	2.9	0.49	0.69	0.49	49.4
6u	U	All MCs	4	0.0	4	0.0	0.089	12.6	LOS A	0.4	2.9	0.49	0.69	0.49	49.5
Approach			199	2.2	199	2.2	0.115	7.6	LOS A	0.5	3.8	0.48	0.61	0.48	49.6
North: Wheelers Lane															
7	L2	All MCs	45	2.4	45	2.4	0.163	5.5	LOS A	0.8	6.2	0.45	0.52	0.45	52.8
8	T1	All MCs	117	5.5	117	5.5	0.163	5.6	LOS A	0.8	6.2	0.45	0.52	0.45	53.2
9	R2	All MCs	221	6.8	221	6.8	0.204	10.1	LOS A	1.1	8.3	0.45	0.64	0.45	46.4
9u	U	All MCs	2	0.0	2	0.0	0.204	12.0	LOS A	1.1	8.3	0.45	0.64	0.45	49.7
Approach			385	5.8	385	5.8	0.204	8.2	LOS A	1.1	8.3	0.45	0.58	0.45	49.0
West: Boundary Road															
10	L2	All MCs	217	2.5	217	2.5	0.220	5.0	LOS A	1.1	8.0	0.55	0.59	0.55	49.2
11	T1	All MCs	133	1.6	133	1.6	0.197	5.0	LOS A	1.0	6.9	0.55	0.60	0.55	48.5
12	R2	All MCs	42	0.0	42	0.0	0.197	9.5	LOS A	1.0	6.9	0.55	0.60	0.55	47.9
12u	U	All MCs	1	0.0	1	0.0	0.197	11.3	LOS A	1.0	6.9	0.55	0.60	0.55	44.9
Approach			393	1.9	393	1.9	0.220	5.5	LOS A	1.1	8.0	0.55	0.60	0.55	48.8
All Vehicles			1488	2.9	1488	2.9	0.253	6.9	LOS A	1.3	9.2	0.50	0.60	0.50	49.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 6PM_X [WHE_BOU_23_PM_X (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Booundary Road / Wheelers Lane
Site Category: (None)
Roundabout

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: Wheelers Lane															
1	L2	All MCs	86	7.5	86	7.5	0.161	5.8	LOS A	0.8	5.8	0.47	0.56	0.47	49.1
2	T1	All MCs	207	6.7	207	6.7	0.161	5.9	LOS A	0.8	5.8	0.48	0.57	0.48	52.7
3	R2	All MCs	28	7.7	28	7.7	0.161	10.6	LOS A	0.8	5.7	0.48	0.58	0.48	51.4
3u	U	All MCs	1	0.0	1	0.0	0.161	12.4	LOS A	0.8	5.7	0.48	0.58	0.48	51.7
Approach			322	7.0	322	7.0	0.161	6.3	LOS A	0.8	5.8	0.48	0.57	0.48	51.5
East: Boundary Road															
4	L2	All MCs	43	2.5	43	2.5	0.140	6.3	LOS A	0.7	4.6	0.56	0.62	0.56	52.3
5	T1	All MCs	89	0.0	89	0.0	0.140	6.2	LOS A	0.7	4.6	0.56	0.62	0.56	49.1
6	R2	All MCs	45	9.5	45	9.5	0.080	12.8	LOS A	0.3	2.5	0.59	0.77	0.59	48.1
6u	U	All MCs	1	0.0	1	0.0	0.080	14.3	LOS A	0.3	2.5	0.59	0.77	0.59	48.4
Approach			178	3.0	178	3.0	0.140	8.0	LOS A	0.7	4.6	0.56	0.66	0.56	49.6
North: Wheelers Lane															
7	L2	All MCs	61	6.9	61	6.9	0.275	5.2	LOS A	1.6	11.7	0.41	0.48	0.41	52.7
8	T1	All MCs	266	3.6	266	3.6	0.275	5.2	LOS A	1.6	11.7	0.41	0.48	0.41	53.3
9	R2	All MCs	224	6.2	224	6.2	0.220	10.0	LOS A	1.2	8.8	0.41	0.63	0.41	46.5
9u	U	All MCs	3	0.0	3	0.0	0.220	11.9	LOS A	1.2	8.8	0.41	0.63	0.41	49.8
Approach			555	5.0	555	5.0	0.275	7.2	LOS A	1.6	11.7	0.41	0.54	0.41	50.2
West: Boundary Road															
10	L2	All MCs	173	6.8	173	6.8	0.161	4.4	LOS A	0.8	5.9	0.44	0.52	0.44	49.3
11	T1	All MCs	76	2.8	76	2.8	0.158	4.1	LOS A	0.8	5.6	0.44	0.57	0.44	48.3
12	R2	All MCs	85	3.8	85	3.8	0.158	8.7	LOS A	0.8	5.6	0.44	0.57	0.44	47.6
12u	U	All MCs	3	0.0	3	0.0	0.158	10.4	LOS A	0.8	5.6	0.44	0.57	0.44	44.7
Approach			337	5.1	337	5.1	0.161	5.5	LOS A	0.8	5.9	0.44	0.54	0.44	48.6
All Vehicles			1392	5.2	1392	5.2	0.275	6.6	LOS A	1.6	11.7	0.45	0.56	0.45	50.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 7AM_X [MIT_WHE_23_AM_X (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Wheeler Lane
Site Category: (None)
Roundabout

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: Wheeler Lane															
1	L2	All MCs	278	1.2	278	1.2	0.654	9.3	LOS A	5.3	37.5	0.85	0.92	1.13	51.2
2	T1	All MCs	498	2.8	498	2.8	0.654	9.9	LOS A	5.3	37.5	0.85	0.94	1.14	50.4
3	R2	All MCs	221	2.9	221	2.9	0.654	16.4	LOS B	4.8	34.6	0.85	0.97	1.16	48.1
3u	U	All MCs	1	0.0	1	0.0	0.654	18.6	LOS B	4.8	34.6	0.85	0.97	1.16	48.2
Approach			999	2.4	999	2.4	0.654	11.2	LOS A	5.3	37.5	0.85	0.94	1.14	50.1
East: Mitchell Highway															
4	L2	All MCs	114	12.3	114	12.3	0.502	7.2	LOS A	3.5	25.6	0.75	0.72	0.83	51.8
5	T1	All MCs	630	3.9	630	3.9	0.502	7.2	LOS A	3.5	25.6	0.75	0.75	0.85	51.9
6	R2	All MCs	110	8.8	110	8.8	0.502	13.7	LOS A	3.4	24.6	0.76	0.78	0.87	50.2
6u	U	All MCs	4	0.0	4	0.0	0.502	15.6	LOS B	3.4	24.6	0.76	0.78	0.87	50.5
Approach			858	5.6	858	5.6	0.502	8.1	LOS A	3.5	25.6	0.75	0.75	0.85	51.6
North: Wheeler Lane															
7	L2	All MCs	89	15.7	89	15.7	0.485	9.8	LOS A	3.5	25.8	0.87	0.85	1.01	50.9
8	T1	All MCs	269	3.6	269	3.6	0.485	9.3	LOS A	3.5	25.8	0.87	0.86	1.02	51.2
9	R2	All MCs	233	5.5	233	5.5	0.485	16.6	LOS B	3.2	23.5	0.86	0.92	1.03	46.7
9u	U	All MCs	9	0.0	9	0.0	0.485	18.6	LOS B	3.2	23.5	0.86	0.92	1.03	46.8
Approach			600	6.1	600	6.1	0.485	12.4	LOS A	3.5	25.8	0.87	0.88	1.02	49.2
West: Mitchell Highway															
10	L2	All MCs	210	4.6	210	4.6	0.684	12.1	LOS A	5.8	42.4	0.90	0.97	1.25	49.2
11	T1	All MCs	662	7.0	662	7.0	0.684	11.1	LOS A	6.2	45.8	0.90	0.95	1.23	49.8
12	R2	All MCs	108	2.0	108	2.0	0.684	15.9	LOS B	6.2	45.8	0.90	0.94	1.21	49.2
12u	U	All MCs	13	8.3	13	8.3	0.684	18.6	LOS B	6.2	45.8	0.90	0.94	1.21	49.0
Approach			994	5.9	994	5.9	0.684	11.9	LOS A	6.2	45.8	0.90	0.96	1.23	49.6
All Vehicles			3451	4.9	3451	4.9	0.684	10.8	LOS A	6.2	45.8	0.84	0.89	1.07	50.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 7PM_X [MIT_WHE_23_PM_X (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Wheeler Lane
Site Category: (None)
Roundabout

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: Wheeler Lane															
1	L2	All MCs	170	3.8	170	3.8	0.465	8.0	LOS A	3.0	22.2	0.81	0.81	0.92	51.7
2	T1	All MCs	301	5.7	301	5.7	0.465	8.4	LOS A	3.0	22.2	0.80	0.84	0.92	51.1
3	R2	All MCs	188	5.7	188	5.7	0.465	14.9	LOS B	2.8	20.5	0.80	0.89	0.94	48.5
3u	U	All MCs	1	0.0	1	0.0	0.465	17.0	LOS B	2.8	20.5	0.80	0.89	0.94	48.7
Approach			659	5.2	659	5.2	0.465	10.2	LOS A	3.0	22.2	0.80	0.85	0.93	50.5
East: Mitchell Highway															
4	L2	All MCs	165	9.7	165	9.7	0.659	11.6	LOS A	5.5	40.4	0.92	0.98	1.25	49.6
5	T1	All MCs	545	4.7	545	4.7	0.659	12.4	LOS A	5.5	40.4	0.92	0.99	1.26	49.0
6	R2	All MCs	65	4.9	65	4.9	0.659	19.2	LOS B	5.0	36.1	0.91	1.01	1.27	47.2
6u	U	All MCs	12	0.0	12	0.0	0.659	21.3	LOS B	5.0	36.1	0.91	1.01	1.27	47.4
Approach			788	5.7	788	5.7	0.659	13.0	LOS A	5.5	40.4	0.92	0.99	1.26	49.0
North: Wheeler Lane															
7	L2	All MCs	126	8.5	126	8.5	0.783	16.3	LOS B	8.5	61.2	0.98	1.12	1.61	46.9
8	T1	All MCs	435	2.0	435	2.0	0.783	16.0	LOS B	8.5	61.2	0.98	1.12	1.61	47.1
9	R2	All MCs	356	6.0	356	6.0	0.783	25.0	LOS B	7.4	54.5	0.96	1.16	1.63	42.2
9u	U	All MCs	33	0.0	33	0.0	0.783	26.9	LOS B	7.4	54.5	0.96	1.16	1.63	42.4
Approach			950	4.3	950	4.3	0.783	19.8	LOS B	8.5	61.2	0.97	1.14	1.62	44.9
West: Mitchell Highway															
10	L2	All MCs	164	2.6	164	2.6	0.602	8.7	LOS A	4.8	34.5	0.80	0.81	0.98	51.6
11	T1	All MCs	633	3.7	633	3.7	0.602	8.2	LOS A	5.0	35.8	0.80	0.81	0.96	51.2
12	R2	All MCs	264	2.0	264	2.0	0.602	13.3	LOS A	5.0	35.8	0.79	0.81	0.94	49.7
12u	U	All MCs	16	0.0	16	0.0	0.602	15.6	LOS B	5.0	35.8	0.79	0.81	0.94	49.8
Approach			1078	3.1	1078	3.1	0.602	9.7	LOS A	5.0	35.8	0.80	0.81	0.96	50.9
All Vehicles			3475	4.4	3475	4.4	0.783	13.3	LOS A	8.5	61.2	0.87	0.95	1.20	48.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 5AM_X [MIT_SHE_23_AM_X (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Sheraton Road
Site Category: (None)
Roundabout

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: Sheraton Road															
1	L2	All MCs	332	9.1	332	9.1	0.399	6.6	LOS A	2.4	18.2	0.73	0.71	0.74	55.1
2	T1	All MCs	220	7.8	220	7.8	0.399	7.3	LOS A	2.4	18.2	0.73	0.75	0.77	51.2
3	R2	All MCs	69	6.3	69	6.3	0.399	13.0	LOS A	2.3	17.3	0.74	0.75	0.77	51.5
3u	U	All MCs	26	0.0	26	0.0	0.399	15.1	LOS B	2.3	17.3	0.74	0.75	0.77	50.4
Approach			646	8.0	646	8.0	0.399	7.9	LOS A	2.4	18.2	0.73	0.73	0.75	53.1
East: Mitchell Highway															
4	L2	All MCs	68	15.9	68	15.9	0.448	12.1	LOS A	2.9	20.8	0.82	0.84	0.95	52.8
5	T1	All MCs	461	0.2	461	0.2	0.448	10.4	LOS A	3.1	21.9	0.82	0.83	0.93	56.3
6	R2	All MCs	106	5.1	106	5.1	0.448	15.8	LOS B	3.1	21.9	0.82	0.82	0.91	52.3
6u	U	All MCs	1	0.0	1	0.0	0.448	16.4	LOS B	3.1	21.9	0.82	0.82	0.91	52.5
Approach			636	2.7	636	2.7	0.448	11.5	LOS A	3.1	21.9	0.82	0.83	0.93	55.2
North: Sheraton Road															
7	L2	All MCs	134	3.2	134	3.2	0.430	8.1	LOS A	2.9	21.2	0.80	0.76	0.86	54.4
8	T1	All MCs	364	6.5	364	6.5	0.430	8.5	LOS A	2.9	21.2	0.80	0.79	0.88	51.2
9	R2	All MCs	123	4.3	123	4.3	0.430	14.9	LOS B	2.8	20.2	0.81	0.83	0.90	50.7
9u	U	All MCs	2	0.0	2	0.0	0.430	17.0	LOS B	2.8	20.2	0.81	0.83	0.90	49.2
Approach			624	5.3	624	5.3	0.430	9.7	LOS A	2.9	21.2	0.80	0.79	0.88	51.7
West: Mitchell Highway															
10	L2	All MCs	63	10.2	63	10.2	0.336	7.9	LOS A	2.0	15.3	0.66	0.64	0.66	54.9
11	T1	All MCs	292	8.1	292	8.1	0.472	8.2	LOS A	3.4	25.2	0.68	0.66	0.68	57.3
12	R2	All MCs	391	7.4	391	7.4	0.472	13.4	LOS A	3.4	25.2	0.71	0.70	0.71	51.6
12u	U	All MCs	1	0.0	1	0.0	0.472	14.1	LOS A	3.4	25.2	0.71	0.70	0.71	51.9
Approach			747	7.9	747	7.9	0.472	10.9	LOS A	3.4	25.2	0.69	0.68	0.69	54.0
All Vehicles			2653	6.1	2653	6.1	0.472	10.0	LOS A	3.4	25.2	0.76	0.75	0.81	53.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 5PM_X [MIT_SHE_23_PM_X (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Sheraton Road
Site Category: (None)
Roundabout

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: Sheraton Road															
1	L2	All MCs	339	9.8	339	9.8	0.401	6.6	LOS A	2.4	17.9	0.71	0.70	0.72	55.2
2	T1	All MCs	237	7.2	237	7.2	0.401	7.2	LOS A	2.4	17.9	0.72	0.74	0.75	51.4
3	R2	All MCs	50	10.6	50	10.6	0.401	13.1	LOS A	2.3	17.1	0.72	0.75	0.75	50.8
3u	U	All MCs	40	0.0	40	0.0	0.401	14.9	LOS B	2.3	17.1	0.72	0.75	0.75	50.5
Approach			667	8.4	667	8.4	0.401	7.8	LOS A	2.4	17.9	0.71	0.72	0.74	53.1
East: Mitchell Highway															
4	L2	All MCs	31	3.4	31	3.4	0.360	8.6	LOS A	2.1	14.4	0.73	0.72	0.73	54.5
5	T1	All MCs	410	0.3	410	0.3	0.360	8.4	LOS A	2.2	15.4	0.73	0.73	0.73	57.4
6	R2	All MCs	159	4.7	159	4.7	0.360	14.0	LOS A	2.2	15.4	0.72	0.74	0.72	52.5
6u	U	All MCs	1	0.0	1	0.0	0.360	14.7	LOS B	2.2	15.4	0.72	0.74	0.72	52.7
Approach			601	1.6	601	1.6	0.360	9.9	LOS A	2.2	15.4	0.73	0.73	0.73	55.9
North: Sheraton Road															
7	L2	All MCs	84	12.8	84	12.8	0.311	7.9	LOS A	1.9	14.6	0.76	0.70	0.76	54.2
8	T1	All MCs	247	15.2	247	15.2	0.311	7.9	LOS A	1.9	14.6	0.76	0.73	0.76	51.4
9	R2	All MCs	101	5.3	101	5.3	0.311	13.7	LOS A	1.8	13.5	0.76	0.77	0.76	50.8
9u	U	All MCs	3	33.3	3	33.3	0.311	17.8	LOS B	1.8	13.5	0.76	0.77	0.76	48.5
Approach			435	12.6	435	12.6	0.311	9.3	LOS A	1.9	14.6	0.76	0.73	0.76	51.7
West: Mitchell Highway															
10	L2	All MCs	132	4.1	132	4.1	0.360	8.2	LOS A	2.2	16.2	0.70	0.67	0.70	55.0
11	T1	All MCs	332	7.1	332	7.1	0.506	8.8	LOS A	3.9	29.1	0.73	0.71	0.76	56.6
12	R2	All MCs	309	6.6	309	6.6	0.506	14.3	LOS A	3.9	29.1	0.75	0.73	0.81	51.8
12u	U	All MCs	1	0.0	1	0.0	0.506	15.0	LOS B	3.9	29.1	0.75	0.73	0.81	52.0
Approach			774	6.4	774	6.4	0.506	10.9	LOS A	3.9	29.1	0.73	0.71	0.77	54.3
All Vehicles			2477	6.8	2477	6.8	0.506	9.5	LOS A	3.9	29.1	0.73	0.72	0.75	53.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 3AM_X [MIT_BLU_23_AM_X (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Blueridge Drive
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: Blueridge Drive															
1	L2	All MCs	212	3.0	212	3.0	0.116	4.4	LOS A	0.0	0.0	0.00	0.47	0.00	46.4
2	R2	All MCs	33	3.0	33	3.0	0.045	7.5	LOS A	0.1	1.0	0.50	0.69	0.50	49.4
Approach			244	3.0	244	3.0	0.116	4.8	LOS A	0.1	1.0	0.07	0.50	0.07	46.8
East: Mitchell Highway															
3	L2	All MCs	65	3.0	65	3.0	0.036	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	58.7
4	T1	All MCs	385	3.0	385	3.0	0.189	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach			451	3.0	451	3.0	0.189	1.0	NA	0.0	0.0	0.00	0.08	0.00	68.0
West: Mitchell Highway															
5	T1	All MCs	191	6.0	191	6.0	0.102	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
6	R2	All MCs	329	6.0	329	6.0	0.203	8.0	LOS A	1.1	8.3	0.50	0.64	0.50	50.3
Approach			520	6.0	520	6.0	0.203	5.1	NA	1.1	8.3	0.32	0.40	0.32	56.0
All Vehicles			1215	4.3	1215	4.3	0.203	3.5	NA	1.1	8.3	0.15	0.30	0.15	57.5

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.

MOVEMENT SUMMARY

Site: 3PM_X [MIT_BLU_23_PM_X (Site Folder: Existing Conditions)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Blueridge Drive
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: Blueridge Drive															
1	L2	All MCs	326	2.0	326	2.0	0.178	4.4	LOS A	0.0	0.0	0.00	0.47	0.00	46.4
2	R2	All MCs	61	2.0	61	2.0	0.063	6.1	LOS A	0.2	1.4	0.40	0.60	0.40	50.3
Approach			387	2.0	387	2.0	0.178	4.7	LOS A	0.2	1.4	0.06	0.49	0.06	47.0
East: Mitchell Highway															
3	L2	All MCs	21	2.0	21	2.0	0.011	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	58.9
4	T1	All MCs	281	2.0	281	2.0	0.137	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach			302	2.0	302	2.0	0.137	0.5	NA	0.0	0.0	0.00	0.04	0.00	69.0
West: Mitchell Highway															
5	T1	All MCs	319	8.0	319	8.0	0.172	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
6	R2	All MCs	173	8.0	173	8.0	0.097	7.6	LOS A	0.5	3.9	0.40	0.57	0.40	50.6
Approach			492	8.0	492	8.0	0.172	2.7	NA	0.5	3.9	0.14	0.20	0.14	61.6
All Vehicles			1181	4.5	1181	4.5	0.178	2.8	NA	0.5	3.9	0.08	0.25	0.08	57.3

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.

MOVEMENT SUMMARY

Site: 4AM_F [SHE_BOU_36_AM_F (Site Folder: 2036 Existing Routes)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Sheraton Road / Boundary Road
Site Category: (None)
Roundabout

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
East: Sheraton Road															
5	T1	All MCs	11	37.7	11	37.7	0.046	6.2	LOS A	0.2	2.3	0.36	0.46	0.36	52.6
6	R2	All MCs	39	78.6	39	78.6	0.046	10.8	LOS A	0.2	2.3	0.34	0.59	0.34	47.5
Approach			50	69.5	50	69.5	0.046	9.8	LOS A	0.2	2.3	0.34	0.56	0.34	48.6
North: Sheraton Road															
7	L2	All MCs	54	74.3	54	74.3	0.067	5.1	LOS A	0.3	3.3	0.11	0.47	0.11	51.9
9	R2	All MCs	150	1.9	150	1.9	0.102	8.8	LOS A	0.5	3.3	0.08	0.63	0.08	50.7
9u	U	All MCs	7	0.0	7	0.0	0.102	10.9	LOS A	0.5	3.3	0.08	0.63	0.08	50.7
Approach			211	20.3	211	20.3	0.102	7.9	LOS A	0.5	3.3	0.09	0.59	0.09	51.0
West: Boundary Road															
10	L2	All MCs	281	1.5	281	1.5	0.194	4.5	LOS A	0.9	6.7	0.18	0.47	0.18	53.9
11	T1	All MCs	13	44.6	13	44.6	0.020	5.0	LOS A	0.1	0.7	0.20	0.47	0.20	52.0
12u	U	All MCs	3	0.0	3	0.0	0.020	11.2	LOS A	0.1	0.7	0.20	0.47	0.20	52.2
Approach			296	3.3	296	3.3	0.194	4.6	LOS A	0.9	6.7	0.18	0.47	0.18	53.8
All Vehicles			557	15.7	557	15.7	0.194	6.3	LOS A	0.9	6.7	0.16	0.52	0.16	52.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 4PM_F [SHE_BOU_36_PM_F (Site Folder: 2036 Existing Routes)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Sheraton Road / Boundary Road
Site Category: (None)
Roundabout

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
East: Sheraton Road															
5	T1	All MCs	18	38.6	18	38.6	0.062	6.9	LOS A	0.3	2.9	0.43	0.53	0.43	51.8
6	R2	All MCs	49	60.1	49	60.1	0.062	11.0	LOS A	0.3	2.9	0.40	0.62	0.40	48.2
Approach			67	54.3	67	54.3	0.062	9.9	LOS A	0.3	2.9	0.41	0.60	0.41	49.1
North: Sheraton Road															
7	L2	All MCs	41	83.2	41	83.2	0.057	5.2	LOS A	0.2	2.6	0.11	0.48	0.11	51.6
9	R2	All MCs	233	1.8	233	1.8	0.151	8.8	LOS A	0.7	5.2	0.09	0.62	0.09	50.7
9u	U	All MCs	1	0.0	1	0.0	0.151	10.9	LOS A	0.7	5.2	0.09	0.62	0.09	50.7
Approach			276	14.0	276	14.0	0.151	8.3	LOS A	0.7	5.2	0.10	0.60	0.10	50.8
West: Boundary Road															
10	L2	All MCs	119	1.2	119	1.2	0.087	4.5	LOS A	0.4	2.7	0.17	0.47	0.17	54.0
11	T1	All MCs	15	45.6	15	45.6	0.024	5.0	LOS A	0.1	0.9	0.22	0.46	0.22	52.1
12u	U	All MCs	3	0.0	3	0.0	0.024	11.3	LOS A	0.1	0.9	0.22	0.46	0.22	52.3
Approach			138	6.1	138	6.1	0.087	4.7	LOS A	0.4	2.7	0.18	0.47	0.18	53.7
All Vehicles			480	17.4	480	17.4	0.151	7.5	LOS A	0.7	5.2	0.16	0.56	0.16	51.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 6AM_F [WHE_BOU_36_AM_F (Site Folder: 2036 Existing Routes)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Booundary Road / Wheelers Lane
Site Category: (None)
Roundabout

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: Wheelers Lane															
1	L2	All MCs	161	0.0	161	0.0	0.359	6.5	LOS A	2.0	14.0	0.62	0.64	0.62	48.6
2	T1	All MCs	397	2.8	397	2.8	0.359	6.8	LOS A	2.0	14.0	0.62	0.67	0.62	52.0
3	R2	All MCs	101	0.0	101	0.0	0.359	11.5	LOS A	1.9	13.7	0.63	0.68	0.63	50.7
3u	U	All MCs	1	0.0	1	0.0	0.359	13.6	LOS A	1.9	13.7	0.63	0.68	0.63	50.7
Approach			661	1.7	661	1.7	0.359	7.5	LOS A	2.0	14.0	0.62	0.66	0.62	50.9
East: Boundary Road															
4	L2	All MCs	19	7.1	19	7.1	0.160	6.2	LOS A	0.8	5.5	0.55	0.60	0.55	52.1
5	T1	All MCs	135	1.0	135	1.0	0.160	6.0	LOS A	0.8	5.5	0.55	0.60	0.55	49.0
6	R2	All MCs	101	6.9	101	6.9	0.135	11.3	LOS A	0.6	4.6	0.56	0.73	0.56	49.1
6u	U	All MCs	6	0.0	6	0.0	0.135	13.1	LOS A	0.6	4.6	0.56	0.73	0.56	49.3
Approach			261	3.7	261	3.7	0.160	8.2	LOS A	0.8	5.5	0.55	0.65	0.55	49.3
North: Wheelers Lane															
7	L2	All MCs	63	9.0	63	9.0	0.233	6.3	LOS A	1.3	9.6	0.53	0.56	0.53	52.2
8	T1	All MCs	151	5.5	151	5.5	0.233	6.2	LOS A	1.3	9.6	0.53	0.56	0.53	52.8
9	R2	All MCs	286	6.8	286	6.8	0.282	10.7	LOS A	1.7	12.4	0.54	0.66	0.54	46.2
9u	U	All MCs	3	0.0	3	0.0	0.282	12.6	LOS A	1.7	12.4	0.54	0.66	0.54	49.4
Approach			503	6.6	503	6.6	0.282	8.8	LOS A	1.7	12.4	0.54	0.62	0.54	48.7
West: Boundary Road															
10	L2	All MCs	281	2.5	281	2.5	0.314	5.7	LOS A	1.7	12.2	0.65	0.66	0.65	48.9
11	T1	All MCs	172	1.6	172	1.6	0.287	5.8	LOS A	1.5	10.6	0.65	0.67	0.65	48.2
12	R2	All MCs	54	0.0	54	0.0	0.287	10.3	LOS A	1.5	10.6	0.65	0.67	0.65	47.5
12u	U	All MCs	1	0.0	1	0.0	0.287	12.1	LOS A	1.5	10.6	0.65	0.67	0.65	44.5
Approach			508	1.9	508	1.9	0.314	6.2	LOS A	1.7	12.2	0.65	0.66	0.65	48.5
All Vehicles			1933	3.3	1933	3.3	0.359	7.6	LOS A	2.0	14.0	0.60	0.65	0.60	49.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 6PM_F [WHE_BOU_36_PM_F (Site Folder: 2036 Existing Routes)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Booundary Road / Wheelers Lane
Site Category: (None)
Roundabout

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: Wheelers Lane															
1	L2	All MCs	111	7.5	111	7.5	0.228	6.4	LOS A	1.2	8.6	0.56	0.61	0.56	52.3
2	T1	All MCs	268	6.7	268	6.7	0.228	6.5	LOS A	1.2	8.6	0.56	0.62	0.56	48.7
3	R2	All MCs	36	7.7	36	7.7	0.228	11.3	LOS A	1.1	8.4	0.57	0.63	0.57	51.0
3u	U	All MCs	1	0.0	1	0.0	0.228	13.1	LOS A	1.1	8.4	0.57	0.63	0.57	51.3
Approach			417	7.0	417	7.0	0.228	6.9	LOS A	1.2	8.6	0.56	0.62	0.56	49.8
East: Boundary Road															
4	L2	All MCs	56	2.5	56	2.5	0.202	6.9	LOS A	1.0	7.0	0.64	0.68	0.64	52.0
5	T1	All MCs	115	0.0	115	0.0	0.202	6.9	LOS A	1.0	7.0	0.64	0.68	0.64	48.8
6	R2	All MCs	63	15.6	63	15.6	0.129	14.1	LOS A	0.5	4.3	0.65	0.82	0.65	47.2
6u	U	All MCs	1	0.0	1	0.0	0.129	15.1	LOS B	0.5	4.3	0.65	0.82	0.65	47.7
Approach			235	4.8	235	4.8	0.202	8.9	LOS A	1.0	7.0	0.64	0.72	0.64	49.0
North: Wheelers Lane															
7	L2	All MCs	78	5.4	78	5.4	0.373	5.6	LOS A	2.4	17.5	0.52	0.52	0.52	52.3
8	T1	All MCs	344	3.6	344	3.6	0.373	5.6	LOS A	2.4	17.5	0.52	0.52	0.52	52.8
9	R2	All MCs	290	6.2	290	6.2	0.302	10.5	LOS A	1.8	13.1	0.50	0.64	0.50	46.3
9u	U	All MCs	4	0.0	4	0.0	0.302	12.4	LOS A	1.8	13.1	0.50	0.64	0.50	49.5
Approach			717	4.9	717	4.9	0.373	7.6	LOS A	2.4	17.5	0.51	0.57	0.51	49.9
West: Boundary Road															
10	L2	All MCs	224	6.8	224	6.8	0.223	4.8	LOS A	1.2	8.5	0.52	0.57	0.52	49.1
11	T1	All MCs	99	2.8	99	2.8	0.221	4.6	LOS A	1.1	8.1	0.52	0.62	0.52	48.1
12	R2	All MCs	110	3.8	110	3.8	0.221	9.2	LOS A	1.1	8.1	0.52	0.62	0.52	47.3
12u	U	All MCs	4	0.0	4	0.0	0.221	10.9	LOS A	1.1	8.1	0.52	0.62	0.52	44.5
Approach			436	5.1	436	5.1	0.223	5.9	LOS A	1.2	8.5	0.52	0.59	0.52	48.4
All Vehicles			1804	5.4	1804	5.4	0.373	7.2	LOS A	2.4	17.5	0.54	0.61	0.54	49.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 7AM_F [MIT_WHE_36_AM_F (Site Folder: 2036 Existing Routes)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Wheeler Lane
Site Category: (None)
Roundabout

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: Wheeler Lane															
1	L2	All MCs	363	2.0	363	2.0	1.097	111.1	LOS F	55.3	395.3	1.00	3.33	7.60	21.3
2	T1	All MCs	644	2.8	644	2.8	1.097	112.8	LOS F	55.3	395.3	1.00	3.18	7.33	21.2
3	R2	All MCs	287	3.3	287	3.3	1.097	121.0	LOS F	42.9	308.4	1.00	2.97	6.95	20.8
3u	U	All MCs	1	0.0	1	0.0	1.097	123.1	LOS F	42.9	308.4	1.00	2.97	6.95	20.8
Approach			1296	2.7	1296	2.7	1.097	114.2	LOS F	55.3	395.3	1.00	3.17	7.32	21.1
East: Mitchell Highway															
4	L2	All MCs	148	12.9	148	12.9	0.768	12.1	LOS A	7.9	58.7	0.94	1.01	1.37	49.4
5	T1	All MCs	822	4.7	822	4.7	0.768	12.5	LOS A	7.9	58.7	0.94	1.03	1.39	49.0
6	R2	All MCs	142	8.8	142	8.8	0.768	19.6	LOS B	7.4	54.2	0.94	1.05	1.42	46.9
6u	U	All MCs	6	0.0	6	0.0	0.768	21.3	LOS B	7.4	54.2	0.94	1.05	1.42	47.1
Approach			1117	6.3	1117	6.3	0.768	13.4	LOS A	7.9	58.7	0.94	1.03	1.39	48.7
North: Wheeler Lane															
7	L2	All MCs	115	15.7	115	15.7	0.789	20.7	LOS B	8.6	63.4	1.00	1.17	1.70	44.4
8	T1	All MCs	349	3.6	349	3.6	0.789	20.1	LOS B	8.6	63.4	1.00	1.17	1.70	44.6
9	R2	All MCs	301	5.5	301	5.5	0.789	29.3	LOS C	7.4	54.3	0.99	1.17	1.71	40.4
9u	U	All MCs	11	0.0	11	0.0	0.789	31.2	LOS C	7.4	54.3	0.99	1.17	1.71	40.5
Approach			776	6.1	776	6.1	0.789	23.9	LOS B	8.6	63.4	1.00	1.17	1.70	42.8
West: Mitchell Highway															
10	L2	All MCs	272	4.6	272	4.6	1.086	107.4	LOS F	42.2	311.3	1.00	2.87	6.34	21.8
11	T1	All MCs	863	7.7	863	7.7	1.086	104.6	LOS F	52.1	386.8	1.00	3.05	6.64	22.3
12	R2	All MCs	143	4.1	143	4.1	1.086	108.5	LOS F	52.1	386.8	1.00	3.15	6.80	22.3
12u	U	All MCs	17	8.3	17	8.3	1.086	111.2	LOS F	52.1	386.8	1.00	3.15	6.80	22.3
Approach			1296	6.6	1296	6.6	1.086	105.7	LOS F	52.1	386.8	1.00	3.03	6.60	22.2
All Vehicles			4485	5.3	4485	5.3	1.097	71.0	LOS F	55.3	395.3	0.98	2.25	4.66	27.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 7PM_F [MIT_WHE_36_PM_F (Site Folder: 2036 Existing Routes)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Wheeler Lane
Site Category: (None)
Roundabout

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: Wheeler Lane															
1	L2	All MCs	223	5.2	223	5.2	0.706	12.1	LOS A	6.2	45.1	0.94	1.01	1.33	49.2
2	T1	All MCs	389	5.7	389	5.7	0.706	12.7	LOS A	6.2	45.1	0.93	1.03	1.33	48.5
3	R2	All MCs	244	6.1	244	6.1	0.706	19.8	LOS B	5.4	40.0	0.92	1.06	1.34	45.6
3u	U	All MCs	1	0.0	1	0.0	0.706	21.8	LOS B	5.4	40.0	0.92	1.06	1.34	45.8
Approach			857	5.7	857	5.7	0.706	14.6	LOS B	6.2	45.1	0.93	1.03	1.33	47.8
East: Mitchell Highway															
4	L2	All MCs	215	10.2	215	10.2	0.861	19.8	LOS B	10.7	79.7	1.00	1.25	1.91	44.8
5	T1	All MCs	712	5.6	712	5.6	0.861	21.2	LOS B	10.7	79.7	0.99	1.26	1.92	44.0
6	R2	All MCs	85	4.9	85	4.9	0.861	28.7	LOS C	9.5	69.6	0.99	1.26	1.94	42.2
6u	U	All MCs	15	0.0	15	0.0	0.861	30.7	LOS C	9.5	69.6	0.99	1.26	1.94	42.3
Approach			1027	6.4	1027	6.4	0.861	21.7	LOS B	10.7	79.7	0.99	1.26	1.92	44.0
North: Wheeler Lane															
7	L2	All MCs	162	8.5	162	8.5	1.482	451.5	LOS F	155.4	1119.7	1.00	6.34	16.17	7.3
8	T1	All MCs	563	2.0	563	2.0	1.482	451.0	LOS F	155.4	1119.7	1.00	6.33	16.15	7.3
9	R2	All MCs	461	6.0	461	6.0	1.482	460.8	LOS F	110.6	810.6	1.00	5.22	13.81	7.3
9u	U	All MCs	43	0.0	43	0.0	1.482	462.5	LOS F	110.6	810.6	1.00	5.22	13.81	7.4
Approach			1229	4.3	1229	4.3	1.482	455.2	LOS F	155.4	1119.7	1.00	5.88	15.19	7.3
West: Mitchell Highway															
10	L2	All MCs	213	2.6	213	2.6	0.912	22.9	LOS B	14.4	104.0	1.00	1.36	2.16	43.1
11	T1	All MCs	826	4.5	826	4.5	0.912	21.4	LOS B	15.6	112.9	1.00	1.35	2.11	43.6
12	R2	All MCs	345	2.9	345	2.9	0.912	25.3	LOS B	15.6	112.9	1.00	1.33	2.07	43.3
12u	U	All MCs	21	0.0	21	0.0	0.912	27.5	LOS B	15.6	112.9	1.00	1.33	2.07	43.4
Approach			1404	3.7	1404	3.7	0.912	22.7	LOS B	15.6	112.9	1.00	1.34	2.11	43.5
All Vehicles			4517	4.9	4517	4.9	1.482	138.6	LOS F	155.4	1119.7	0.98	2.50	5.48	18.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 5AM_F [MIT_SHE_36_AM_F (Site Folder: 2036 Existing Routes)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Sheraton Road
Site Category: (None)
Roundabout

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: Sheraton Road															
1	L2	All MCs	435	10.4	435	10.4	0.645	10.7	LOS A	5.5	42.3	0.91	0.93	1.19	52.3
2	T1	All MCs	288	8.8	288	8.8	0.645	12.1	LOS A	5.5	42.3	0.90	0.96	1.21	48.5
3	R2	All MCs	92	9.5	92	9.5	0.645	18.1	LOS B	5.1	38.5	0.90	0.97	1.22	48.2
3u	U	All MCs	33	0.0	33	0.0	0.645	19.8	LOS B	5.1	38.5	0.90	0.97	1.22	47.7
Approach			849	9.3	849	9.3	0.645	12.3	LOS A	5.5	42.3	0.90	0.95	1.20	50.3
East: Mitchell Highway															
4	L2	All MCs	92	19.7	92	19.7	0.751	24.8	LOS B	6.9	50.8	0.96	1.13	1.65	45.0
5	T1	All MCs	597	0.4	597	0.4	0.751	20.9	LOS B	8.1	57.7	0.98	1.11	1.64	48.7
6	R2	All MCs	138	5.1	138	5.1	0.751	25.4	LOS B	8.1	57.7	0.99	1.10	1.64	46.5
6u	U	All MCs	1	0.0	1	0.0	0.751	26.0	LOS B	8.1	57.7	0.99	1.10	1.64	46.6
Approach			827	3.3	827	3.3	0.751	22.1	LOS B	8.1	57.7	0.98	1.11	1.64	47.9
North: Sheraton Road															
7	L2	All MCs	174	3.2	174	3.2	0.723	15.8	LOS B	7.3	53.7	0.98	1.06	1.48	49.4
8	T1	All MCs	474	7.1	474	7.1	0.723	16.8	LOS B	7.3	53.7	0.98	1.07	1.49	46.2
9	R2	All MCs	160	4.3	160	4.3	0.723	24.2	LOS B	6.5	47.9	0.97	1.09	1.50	45.1
9u	U	All MCs	3	0.0	3	0.0	0.723	26.2	LOS B	6.5	47.9	0.97	1.09	1.50	43.9
Approach			810	5.7	810	5.7	0.723	18.1	LOS B	7.3	53.7	0.98	1.07	1.49	46.6
West: Mitchell Highway															
10	L2	All MCs	82	10.2	82	10.2	0.499	10.5	LOS A	3.7	27.8	0.81	0.77	0.92	53.6
11	T1	All MCs	378	8.1	378	8.1	0.700	11.5	LOS A	8.0	59.8	0.84	0.81	1.01	55.4
12	R2	All MCs	512	8.6	512	8.6	0.700	18.1	LOS B	8.0	59.8	0.92	0.89	1.21	49.0
12u	U	All MCs	1	0.0	1	0.0	0.700	18.6	LOS B	8.0	59.8	0.92	0.89	1.21	49.2
Approach			973	8.5	973	8.5	0.700	14.9	LOS B	8.0	59.8	0.88	0.85	1.11	51.6
All Vehicles			3459	6.8	3459	6.8	0.751	16.7	LOS B	8.1	59.8	0.93	0.99	1.35	49.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 5PM_F [MIT_SHE_36_PM_F (Site Folder: 2036 Existing Routes)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Sheraton Road
Site Category: (None)
Roundabout

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: Sheraton Road															
1	L2	All MCs	445	11.1	445	11.1	0.635	10.1	LOS A	5.2	40.1	0.88	0.92	1.14	52.7
2	T1	All MCs	310	8.2	310	8.2	0.635	11.3	LOS A	5.2	40.1	0.88	0.95	1.17	49.1
3	R2	All MCs	68	14.8	68	14.8	0.635	17.7	LOS B	4.9	36.6	0.88	0.95	1.17	47.8
3u	U	All MCs	51	0.0	51	0.0	0.635	19.1	LOS B	4.9	36.6	0.88	0.95	1.17	48.2
Approach			875	9.7	875	9.7	0.635	11.6	LOS A	5.2	40.1	0.88	0.93	1.16	50.7
East: Mitchell Highway															
4	L2	All MCs	44	12.6	44	12.6	0.567	14.0	LOS A	4.3	30.4	0.87	0.91	1.14	51.5
5	T1	All MCs	532	0.5	532	0.5	0.567	12.5	LOS A	4.6	33.0	0.87	0.91	1.13	54.6
6	R2	All MCs	206	4.7	206	4.7	0.567	17.5	LOS B	4.6	33.0	0.88	0.90	1.11	50.7
6u	U	All MCs	1	0.0	1	0.0	0.567	18.2	LOS B	4.6	33.0	0.88	0.90	1.11	50.8
Approach			783	2.3	783	2.3	0.567	13.9	LOS A	4.6	33.0	0.87	0.91	1.12	53.3
North: Sheraton Road															
7	L2	All MCs	108	12.8	108	12.8	0.526	12.1	LOS A	4.1	32.1	0.92	0.90	1.12	51.8
8	T1	All MCs	323	16.0	323	16.0	0.526	12.3	LOS A	4.1	32.1	0.91	0.91	1.13	48.8
9	R2	All MCs	131	5.3	131	5.3	0.526	18.6	LOS B	3.8	28.8	0.91	0.94	1.14	47.7
9u	U	All MCs	4	33.3	4	33.3	0.526	23.3	LOS B	3.8	28.8	0.91	0.94	1.14	45.7
Approach			566	13.1	566	13.1	0.526	13.8	LOS A	4.1	32.1	0.91	0.92	1.13	49.0
West: Mitchell Highway															
10	L2	All MCs	171	4.1	171	4.1	0.543	11.7	LOS A	4.3	31.6	0.85	0.83	1.03	52.6
11	T1	All MCs	429	7.1	429	7.1	0.762	14.2	LOS A	9.9	73.6	0.92	0.92	1.27	52.8
12	R2	All MCs	406	8.0	406	8.0	0.762	21.1	LOS B	9.9	73.6	0.97	0.99	1.45	47.8
12u	U	All MCs	1	0.0	1	0.0	0.762	21.6	LOS B	9.9	73.6	0.97	0.99	1.45	48.0
Approach			1007	7.0	1007	7.0	0.762	16.6	LOS B	9.9	73.6	0.93	0.93	1.30	50.6
All Vehicles			3231	7.6	3231	7.6	0.762	14.1	LOS A	9.9	73.6	0.90	0.92	1.19	51.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 3AM_F [MIT_BLU_36_AM_F (Site Folder: 2036 Existing Routes)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Blueridge Drive
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: Blueridge Drive															
1	L2	All MCs	274	3.0	274	3.0	0.151	4.4	LOS A	0.0	0.0	0.00	0.47	0.00	46.4
2	R2	All MCs	42	3.0	42	3.0	0.076	9.2	LOS A	0.2	1.7	0.62	0.80	0.62	48.3
Approach			316	3.0	316	3.0	0.151	5.1	LOS A	0.2	1.7	0.08	0.51	0.08	46.7
East: Mitchell Highway															
3	L2	All MCs	84	3.0	84	3.0	0.046	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	58.6
4	T1	All MCs	504	4.0	504	4.0	0.248	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach			588	3.9	588	3.9	0.248	1.0	NA	0.0	0.0	0.00	0.08	0.00	68.0
West: Mitchell Highway															
5	T1	All MCs	250	7.2	250	7.2	0.134	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
6	R2	All MCs	426	6.0	426	6.0	0.302	8.7	LOS A	1.7	12.3	0.60	0.71	0.60	50.0
Approach			676	6.4	676	6.4	0.302	5.5	NA	1.7	12.3	0.38	0.45	0.38	55.8
All Vehicles			1580	4.8	1580	4.8	0.302	3.8	NA	1.7	12.3	0.18	0.32	0.18	57.4

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.

MOVEMENT SUMMARY

Site: 3PM_F [MIT_BLU_36_PM_F (Site Folder: 2036 Existing Routes)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Blueridge Drive
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: Blueridge Drive															
1	L2	All MCs	422	2.0	422	2.0	0.231	4.5	LOS A	0.0	0.0	0.00	0.47	0.00	46.4
2	R2	All MCs	79	2.0	79	2.0	0.094	6.9	LOS A	0.3	2.2	0.47	0.68	0.47	50.0
Approach			501	2.0	501	2.0	0.231	4.8	LOS A	0.3	2.2	0.07	0.50	0.07	46.9
East: Mitchell Highway															
3	L2	All MCs	27	2.0	27	2.0	0.015	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	58.9
4	T1	All MCs	369	3.4	369	3.4	0.181	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach			396	3.3	396	3.3	0.181	0.5	NA	0.0	0.0	0.00	0.04	0.00	69.0
West: Mitchell Highway															
5	T1	All MCs	416	8.7	416	8.7	0.225	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
6	R2	All MCs	223	8.0	223	8.0	0.137	7.9	LOS A	0.7	5.5	0.47	0.62	0.47	50.3
Approach			639	8.5	639	8.5	0.225	2.8	NA	0.7	5.5	0.16	0.22	0.16	61.5
All Vehicles			1536	5.0	1536	5.0	0.231	2.9	NA	0.7	5.5	0.09	0.26	0.09	57.3

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.

MOVEMENT SUMMARY

Site: 4AM_O1 [SHE_BOU_36_AM_O1 (Site Folder: 2036 Option 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Sheraton Road / Boundary Road
Site Category: (None)
Roundabout

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
East: Sheraton Road															
5	T1	All MCs	40	82.4	40	82.4	0.080	6.5	LOS A	0.4	4.3	0.35	0.53	0.35	50.7
6	R2	All MCs	43	80.7	43	80.7	0.080	10.9	LOS A	0.4	4.3	0.35	0.56	0.35	48.3
Approach			83	81.5	83	81.5	0.080	8.8	LOS A	0.4	4.3	0.35	0.54	0.35	49.4
North: Sheraton Road															
7	L2	All MCs	22	37.5	22	37.5	0.029	5.1	LOS A	0.1	1.2	0.22	0.48	0.22	52.7
9	R2	All MCs	150	1.9	150	1.9	0.112	9.0	LOS A	0.5	3.7	0.17	0.61	0.17	50.4
9u	U	All MCs	7	0.0	7	0.0	0.112	11.1	LOS A	0.5	3.7	0.17	0.61	0.17	50.5
Approach			179	6.2	179	6.2	0.112	8.6	LOS A	0.5	3.7	0.18	0.59	0.18	50.7
West: Boundary Road															
10	L2	All MCs	281	1.5	281	1.5	0.196	4.5	LOS A	1.0	6.8	0.19	0.47	0.19	53.9
11	T1	All MCs	41	82.9	41	82.9	0.063	5.5	LOS A	0.3	2.9	0.23	0.44	0.23	51.1
12u	U	All MCs	3	0.0	3	0.0	0.063	11.3	LOS A	0.3	2.9	0.23	0.44	0.23	52.1
Approach			324	11.7	324	11.7	0.196	4.7	LOS A	1.0	6.8	0.19	0.47	0.19	53.5
All Vehicles			586	19.9	586	19.9	0.196	6.5	LOS A	1.0	6.8	0.21	0.52	0.21	52.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 4PM_O1 [SHE_BOU_36_PM_O1 (Site Folder: 2036 Option 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Sheraton Road / Boundary Road
Site Category: (None)
Roundabout

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
East: Sheraton Road															
5	T1	All MCs	45	75.4	45	75.4	0.097	7.3	LOS A	0.4	5.0	0.42	0.57	0.42	50.4
6	R2	All MCs	53	63.3	53	63.3	0.097	11.2	LOS A	0.4	5.0	0.42	0.60	0.42	48.4
Approach			98	68.8	98	68.8	0.097	9.4	LOS A	0.4	5.0	0.42	0.58	0.42	49.3
North: Sheraton Road															
7	L2	All MCs	10	28.6	10	28.6	0.012	5.0	LOS A	0.1	0.5	0.22	0.47	0.22	53.0
9	R2	All MCs	233	1.8	233	1.8	0.165	9.0	LOS A	0.8	5.7	0.18	0.61	0.18	50.4
9u	U	All MCs	1	0.0	1	0.0	0.165	11.1	LOS A	0.8	5.7	0.18	0.61	0.18	50.5
Approach			244	2.8	244	2.8	0.165	8.9	LOS A	0.8	5.7	0.19	0.60	0.19	50.5
West: Boundary Road															
10	L2	All MCs	119	1.2	119	1.2	0.087	4.5	LOS A	0.4	2.8	0.18	0.47	0.18	53.9
11	T1	All MCs	43	80.8	43	80.8	0.063	5.5	LOS A	0.3	3.0	0.23	0.44	0.23	51.3
12u	U	All MCs	3	0.0	3	0.0	0.063	11.2	LOS A	0.3	3.0	0.23	0.44	0.23	52.2
Approach			166	22.0	166	22.0	0.087	4.9	LOS A	0.4	3.0	0.20	0.46	0.20	53.2
All Vehicles			508	21.8	508	21.8	0.165	7.7	LOS A	0.8	5.7	0.23	0.55	0.23	51.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 6AM_O1 [WHE_BOU_36_AM_O1 (Site Folder: 2036 Option 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Booundary Road / Wheelers Lane
Site Category: (None)
Roundabout

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: Wheelers Lane															
1	L2	All MCs	161	0.0	161	0.0	0.366	6.6	LOS A	2.0	14.0	0.63	0.66	0.63	48.6
2	T1	All MCs	397	2.8	397	2.8	0.366	7.0	LOS A	2.0	14.0	0.63	0.68	0.63	51.9
3	R2	All MCs	101	0.0	101	0.0	0.366	11.6	LOS A	1.9	13.7	0.64	0.70	0.64	50.6
3u	U	All MCs	1	0.0	1	0.0	0.366	13.7	LOS A	1.9	13.7	0.64	0.70	0.64	50.6
Approach			661	1.7	661	1.7	0.366	7.6	LOS A	2.0	14.0	0.63	0.68	0.63	50.9
East: Boundary Road															
4	L2	All MCs	19	7.1	19	7.1	0.160	6.2	LOS A	0.8	5.5	0.55	0.60	0.55	52.1
5	T1	All MCs	134	0.8	134	0.8	0.160	6.0	LOS A	0.8	5.5	0.55	0.60	0.55	49.0
6	R2	All MCs	129	26.7	129	26.7	0.185	12.0	LOS A	0.9	7.3	0.58	0.73	0.58	48.1
6u	U	All MCs	6	0.0	6	0.0	0.185	13.0	LOS A	0.9	7.3	0.58	0.73	0.58	49.0
Approach			288	12.8	288	12.8	0.185	8.8	LOS A	0.9	7.3	0.56	0.66	0.56	48.8
North: Wheelers Lane															
7	L2	All MCs	91	37.4	91	37.4	0.276	7.2	LOS A	1.6	12.6	0.56	0.58	0.56	51.3
8	T1	All MCs	151	5.5	151	5.5	0.276	6.2	LOS A	1.6	12.6	0.56	0.58	0.56	52.7
9	R2	All MCs	286	6.8	286	6.8	0.282	10.7	LOS A	1.7	12.4	0.54	0.66	0.54	46.2
9u	U	All MCs	3	0.0	3	0.0	0.282	12.5	LOS A	1.7	12.4	0.54	0.66	0.54	49.4
Approach			531	11.6	531	11.6	0.282	8.8	LOS A	1.7	12.6	0.55	0.62	0.55	48.7
West: Boundary Road															
10	L2	All MCs	281	2.5	281	2.5	0.322	5.9	LOS A	1.8	12.6	0.67	0.67	0.67	48.8
11	T1	All MCs	172	1.4	172	1.4	0.295	6.1	LOS A	1.5	10.9	0.66	0.68	0.66	48.1
12	R2	All MCs	54	0.0	54	0.0	0.295	10.5	LOS A	1.5	10.9	0.66	0.68	0.66	47.4
12u	U	All MCs	1	0.0	1	0.0	0.295	12.3	LOS A	1.5	10.9	0.66	0.68	0.66	44.5
Approach			508	1.8	508	1.8	0.322	6.5	LOS A	1.8	12.6	0.67	0.68	0.67	48.4
All Vehicles			1988	6.0	1988	6.0	0.366	7.8	LOS A	2.0	14.0	0.61	0.66	0.61	49.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 6PM_O1 [WHE_BOU_36_PM_O1 (Site Folder: 2036 Option 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Booundary Road / Wheelers Lane
Site Category: (None)
Roundabout

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: Wheelers Lane															
1	L2	All MCs	111	7.5	111	7.5	0.233	6.5	LOS A	1.2	8.6	0.57	0.63	0.57	48.7
2	T1	All MCs	268	6.7	268	6.7	0.233	6.7	LOS A	1.2	8.6	0.57	0.64	0.57	52.2
3	R2	All MCs	36	7.7	36	7.7	0.233	11.5	LOS A	1.1	8.4	0.58	0.65	0.58	50.9
3u	U	All MCs	1	0.0	1	0.0	0.233	13.2	LOS A	1.1	8.4	0.58	0.65	0.58	51.2
Approach			417	7.0	417	7.0	0.233	7.1	LOS A	1.2	8.6	0.57	0.64	0.57	51.1
East: Boundary Road															
4	L2	All MCs	56	2.5	56	2.5	0.205	7.0	LOS A	1.0	7.2	0.64	0.69	0.64	52.0
5	T1	All MCs	116	0.9	116	0.9	0.205	6.9	LOS A	1.0	7.2	0.64	0.69	0.64	48.8
6	R2	All MCs	90	41.3	90	41.3	0.196	15.1	LOS B	0.8	7.8	0.68	0.83	0.68	46.0
6u	U	All MCs	1	0.0	1	0.0	0.196	14.6	LOS B	0.8	7.8	0.68	0.83	0.68	47.3
Approach			263	15.0	263	15.0	0.205	9.8	LOS A	1.0	7.8	0.66	0.73	0.66	48.4
North: Wheelers Lane															
7	L2	All MCs	106	30.7	106	30.7	0.411	6.4	LOS A	2.8	21.0	0.54	0.53	0.54	51.5
8	T1	All MCs	344	3.6	344	3.6	0.411	5.7	LOS A	2.8	21.0	0.54	0.53	0.54	52.7
9	R2	All MCs	290	6.2	290	6.2	0.307	10.5	LOS A	1.8	13.4	0.51	0.65	0.51	46.3
9u	U	All MCs	4	0.0	4	0.0	0.307	12.4	LOS A	1.8	13.4	0.51	0.65	0.51	49.5
Approach			745	8.5	745	8.5	0.411	7.7	LOS A	2.8	21.0	0.53	0.58	0.53	49.8
West: Boundary Road															
10	L2	All MCs	224	6.8	224	6.8	0.229	5.0	LOS A	1.2	8.7	0.54	0.58	0.54	49.1
11	T1	All MCs	98	2.5	98	2.5	0.227	4.8	LOS A	1.2	8.3	0.54	0.63	0.54	48.0
12	R2	All MCs	110	3.8	110	3.8	0.227	9.4	LOS A	1.2	8.3	0.54	0.63	0.54	47.2
12u	U	All MCs	4	0.0	4	0.0	0.227	11.1	LOS A	1.2	8.3	0.54	0.63	0.54	44.4
Approach			436	5.0	436	5.0	0.229	6.1	LOS A	1.2	8.7	0.54	0.60	0.54	48.3
All Vehicles			1861	8.3	1861	8.3	0.411	7.5	LOS A	2.8	21.0	0.56	0.62	0.56	49.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 7AM_O1 [MIT_WHE_36_AM_O1 (Site Folder: 2036 Option 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Wheeler Lane
Site Category: (None)
Roundabout

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: Wheeler Lane															
1	L2	All MCs	376	5.3	376	5.3	1.137	143.9	LOS F	69.9	506.1	1.00	3.94	9.27	17.9
2	T1	All MCs	644	2.8	644	2.8	1.137	145.2	LOS F	69.9	506.1	1.00	3.74	8.90	17.9
3	R2	All MCs	302	8.0	302	8.0	1.137	153.5	LOS F	53.4	391.7	1.00	3.46	8.37	17.6
3u	U	All MCs	1	0.0	1	0.0	1.137	155.3	LOS F	53.4	391.7	1.00	3.46	8.37	17.7
Approach			1323	4.7	1323	4.7	1.137	146.8	LOS F	69.9	506.1	1.00	3.73	8.88	17.9
East: Mitchell Highway															
4	L2	All MCs	163	20.8	163	20.8	0.778	13.0	LOS A	8.2	60.9	0.95	1.03	1.41	48.9
5	T1	All MCs	807	2.9	807	2.9	0.778	12.9	LOS A	8.2	60.9	0.95	1.05	1.43	48.6
6	R2	All MCs	142	8.8	142	8.8	0.778	20.1	LOS B	7.6	55.5	0.94	1.06	1.45	46.7
6u	U	All MCs	6	0.0	6	0.0	0.778	21.9	LOS B	7.6	55.5	0.94	1.06	1.45	46.9
Approach			1117	6.3	1117	6.3	0.778	13.9	LOS A	8.2	60.9	0.95	1.05	1.43	48.4
North: Wheeler Lane															
7	L2	All MCs	115	15.7	115	15.7	0.796	21.6	LOS B	8.8	65.3	1.00	1.19	1.73	44.0
8	T1	All MCs	349	3.6	349	3.6	0.796	21.1	LOS B	8.8	65.3	1.00	1.19	1.73	44.1
9	R2	All MCs	301	5.5	301	5.5	0.796	30.4	LOS C	7.6	55.9	0.99	1.19	1.74	40.0
9u	U	All MCs	11	0.0	11	0.0	0.796	32.3	LOS C	7.6	55.9	0.99	1.19	1.74	40.1
Approach			776	6.1	776	6.1	0.796	25.0	LOS B	8.8	65.3	1.00	1.19	1.74	42.3
West: Mitchell Highway															
10	L2	All MCs	272	4.6	272	4.6	1.069	94.1	LOS F	38.3	280.5	1.00	2.67	5.77	23.6
11	T1	All MCs	847	5.9	847	5.9	1.069	91.3	LOS F	46.3	344.9	1.00	2.82	5.99	24.2
12	R2	All MCs	157	12.5	157	12.5	1.069	95.8	LOS F	46.3	344.9	1.00	2.90	6.11	24.2
12u	U	All MCs	17	8.3	17	8.3	1.069	97.9	LOS F	46.3	344.9	1.00	2.90	6.11	24.2
Approach			1293	6.5	1293	6.5	1.069	92.5	LOS F	46.3	344.9	1.00	2.80	5.96	24.1
All Vehicles			4510	5.8	4510	5.8	1.137	77.3	LOS F	69.9	506.1	0.99	2.36	4.97	26.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 7PM_O1 [MIT_WHE_36_PM_O1 (Site Folder: 2036 Option 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Wheeler Lane
Site Category: (None)
Roundabout

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: Wheeler Lane															
1	L2	All MCs	235	10.3	235	10.3	0.736	13.2	LOS A	6.8	50.4	0.95	1.04	1.40	48.6
2	T1	All MCs	389	5.7	389	5.7	0.736	13.5	LOS A	6.8	50.4	0.94	1.06	1.40	47.9
3	R2	All MCs	259	11.5	259	11.5	0.736	21.1	LOS B	5.9	44.8	0.93	1.08	1.41	44.9
3u	U	All MCs	1	0.0	1	0.0	0.736	22.8	LOS B	5.9	44.8	0.93	1.08	1.41	45.1
Approach			884	8.6	884	8.6	0.736	15.7	LOS B	6.8	50.4	0.94	1.06	1.40	47.1
East: Mitchell Highway															
4	L2	All MCs	230	15.9	230	15.9	0.863	20.8	LOS B	10.8	81.5	1.00	1.27	1.94	44.3
5	T1	All MCs	697	3.6	697	3.6	0.863	21.7	LOS B	10.8	81.5	0.99	1.27	1.96	43.7
6	R2	All MCs	85	4.9	85	4.9	0.863	29.2	LOS C	9.8	70.4	0.99	1.27	1.97	42.1
6u	U	All MCs	15	0.0	15	0.0	0.863	31.2	LOS C	9.8	70.4	0.99	1.27	1.97	42.2
Approach			1027	6.4	1027	6.4	0.863	22.3	LOS B	10.8	81.5	1.00	1.27	1.95	43.7
North: Wheeler Lane															
7	L2	All MCs	162	8.5	162	8.5	1.500	467.9	LOS F	159.1	1146.9	1.00	6.42	16.40	7.1
8	T1	All MCs	563	2.0	563	2.0	1.500	467.4	LOS F	159.1	1146.9	1.00	6.41	16.39	7.1
9	R2	All MCs	461	6.0	461	6.0	1.500	477.2	LOS F	112.9	827.6	1.00	5.27	13.98	7.1
9u	U	All MCs	43	0.0	43	0.0	1.500	478.9	LOS F	112.9	827.6	1.00	5.27	13.98	7.1
Approach			1229	4.3	1229	4.3	1.500	471.6	LOS F	159.1	1146.9	1.00	5.94	15.40	7.1
West: Mitchell Highway															
10	L2	All MCs	213	2.6	213	2.6	0.925	25.2	LOS B	15.6	111.3	1.00	1.42	2.31	42.1
11	T1	All MCs	810	2.6	810	2.6	0.925	23.6	LOS B	16.9	122.5	1.00	1.42	2.27	42.6
12	R2	All MCs	359	6.6	359	6.6	0.925	27.7	LOS B	16.9	122.5	1.00	1.41	2.23	42.1
12u	U	All MCs	21	0.0	21	0.0	0.925	29.7	LOS C	16.9	122.5	1.00	1.41	2.23	42.3
Approach			1402	3.6	1402	3.6	0.925	25.0	LOS B	16.9	122.5	1.00	1.41	2.26	42.4
All Vehicles			4542	5.4	4542	5.4	1.500	143.4	LOS F	159.1	1146.9	0.99	2.54	5.58	18.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 5AM_O1 [MIT_SHE_36_AM_O1 (Site Folder: 2036 Option 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Sheraton Road
Site Category: (None)
Roundabout

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: Sheraton Road															
1	L2	All MCs	421	7.3	421	7.3	0.619	10.2	LOS A	5.1	38.3	0.90	0.92	1.16	52.8
2	T1	All MCs	279	6.0	279	6.0	0.619	11.6	LOS A	5.1	38.3	0.89	0.95	1.17	48.9
3	R2	All MCs	85	1.6	85	1.6	0.619	17.2	LOS B	4.8	34.7	0.89	0.95	1.18	50.0
3u	U	All MCs	33	0.0	33	0.0	0.619	19.5	LOS B	4.8	34.7	0.89	0.95	1.18	48.0
Approach			818	5.9	818	5.9	0.619	11.8	LOS A	5.1	38.3	0.90	0.93	1.17	50.9
East: Mitchell Highway															
4	L2	All MCs	83	11.7	83	11.7	0.751	23.2	LOS B	7.0	50.8	0.96	1.12	1.64	45.6
5	T1	All MCs	614	3.2	614	3.2	0.751	20.6	LOS B	8.0	57.8	0.98	1.10	1.63	49.0
6	R2	All MCs	138	5.1	138	5.1	0.751	24.9	LOS B	8.0	57.8	0.99	1.09	1.62	46.7
6u	U	All MCs	1	0.0	1	0.0	0.751	25.5	LOS B	8.0	57.8	0.99	1.09	1.62	46.8
Approach			836	4.3	836	4.3	0.751	21.6	LOS B	8.0	57.8	0.98	1.10	1.63	48.2
North: Sheraton Road															
7	L2	All MCs	174	3.2	174	3.2	0.721	15.9	LOS B	7.4	53.5	0.99	1.05	1.48	49.5
8	T1	All MCs	465	5.4	465	5.4	0.721	16.6	LOS B	7.4	53.5	0.98	1.07	1.49	46.3
9	R2	All MCs	167	8.6	167	8.6	0.721	24.7	LOS B	6.5	48.1	0.97	1.09	1.50	44.3
9u	U	All MCs	3	0.0	3	0.0	0.721	26.3	LOS B	6.5	48.1	0.97	1.09	1.50	43.8
Approach			809	5.5	809	5.5	0.721	18.2	LOS B	7.4	53.5	0.98	1.07	1.49	46.5
West: Mitchell Highway															
10	L2	All MCs	89	17.6	89	17.6	0.500	10.9	LOS A	3.7	28.9	0.80	0.77	0.92	53.2
11	T1	All MCs	397	12.6	397	12.6	0.703	11.8	LOS A	8.1	60.2	0.84	0.81	1.02	54.8
12	R2	All MCs	496	5.6	496	5.6	0.703	17.7	LOS B	8.1	60.2	0.91	0.88	1.20	49.3
12u	U	All MCs	1	0.0	1	0.0	0.703	18.4	LOS B	8.1	60.2	0.91	0.88	1.20	49.5
Approach			984	9.5	984	9.5	0.703	14.7	LOS B	8.1	60.2	0.87	0.84	1.10	51.8
All Vehicles			3446	6.5	3446	6.5	0.751	16.5	LOS B	8.1	60.2	0.93	0.98	1.33	49.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 5PM_O1 [MIT_SHE_36_PM_O1 (Site Folder: 2036 Option 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Sheraton Road
Site Category: (None)
Roundabout

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: Sheraton Road															
1	L2	All MCs	431	8.1	431	8.1	0.611	9.8	LOS A	4.9	36.6	0.88	0.90	1.12	53.1
2	T1	All MCs	301	5.5	301	5.5	0.611	11.0	LOS A	4.9	36.6	0.87	0.94	1.14	49.4
3	R2	All MCs	61	4.5	61	4.5	0.611	16.8	LOS B	4.6	33.4	0.87	0.94	1.14	49.9
3u	U	All MCs	51	0.0	51	0.0	0.611	18.8	LOS B	4.6	33.4	0.87	0.94	1.14	48.5
Approach			844	6.4	844	6.4	0.611	11.2	LOS A	4.9	36.6	0.87	0.92	1.13	51.1
East: Mitchell Highway															
4	L2	All MCs	46	14.6	46	14.6	0.580	14.1	LOS A	4.4	32.0	0.87	0.92	1.15	51.3
5	T1	All MCs	547	3.3	547	3.3	0.580	12.7	LOS A	4.8	34.6	0.87	0.91	1.14	54.4
6	R2	All MCs	206	4.7	206	4.7	0.580	17.5	LOS B	4.8	34.6	0.88	0.90	1.12	50.7
6u	U	All MCs	1	0.0	1	0.0	0.580	18.2	LOS B	4.8	34.6	0.88	0.90	1.12	50.8
Approach			799	4.3	799	4.3	0.580	14.0	LOS A	4.8	34.6	0.87	0.91	1.14	53.2
North: Sheraton Road															
7	L2	All MCs	108	12.8	108	12.8	0.523	12.1	LOS A	4.1	31.8	0.92	0.89	1.12	51.9
8	T1	All MCs	314	13.7	314	13.7	0.523	12.1	LOS A	4.1	31.8	0.91	0.91	1.12	49.0
9	R2	All MCs	138	10.4	138	10.4	0.523	19.0	LOS B	3.7	28.8	0.91	0.94	1.13	46.7
9u	U	All MCs	4	33.3	4	33.3	0.523	23.3	LOS B	3.7	28.8	0.91	0.94	1.13	45.6
Approach			564	12.9	564	12.9	0.523	13.9	LOS A	4.1	31.8	0.91	0.91	1.12	48.9
West: Mitchell Highway															
10	L2	All MCs	178	8.0	178	8.0	0.542	11.9	LOS A	4.3	32.2	0.84	0.83	1.03	52.4
11	T1	All MCs	447	10.9	447	10.9	0.762	14.3	LOS A	9.9	73.7	0.92	0.92	1.27	52.7
12	R2	All MCs	390	4.3	390	4.3	0.762	20.5	LOS B	9.9	73.7	0.97	0.98	1.43	48.2
12u	U	All MCs	1	0.0	1	0.0	0.762	21.2	LOS B	9.9	73.7	0.97	0.98	1.43	48.3
Approach			1017	7.8	1017	7.8	0.762	16.3	LOS B	9.9	73.7	0.92	0.93	1.29	50.8
All Vehicles			3225	7.5	3225	7.5	0.762	14.0	LOS A	9.9	73.7	0.90	0.92	1.18	51.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 3AM_O1 [MIT_BLU_36_AM_O1 (Site Folder: 2036 Option 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Blueridge Drive
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: Blueridge Drive															
1	L2	All MCs	274	3.0	274	3.0	0.151	4.4	LOS A	0.0	0.0	0.00	0.47	0.00	46.4
2	R2	All MCs	42	3.0	42	3.0	0.075	9.1	LOS A	0.2	1.6	0.62	0.80	0.62	48.3
Approach			316	3.0	316	3.0	0.151	5.1	LOS A	0.2	1.6	0.08	0.51	0.08	46.7
East: Mitchell Highway															
3	L2	All MCs	84	3.0	84	3.0	0.046	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	58.6
4	T1	All MCs	497	2.8	497	2.8	0.243	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach			582	2.8	582	2.8	0.243	1.0	NA	0.0	0.0	0.00	0.08	0.00	68.0
West: Mitchell Highway															
5	T1	All MCs	249	7.1	249	7.1	0.134	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
6	R2	All MCs	426	6.0	426	6.0	0.298	8.7	LOS A	1.7	12.2	0.59	0.70	0.59	50.0
Approach			676	6.4	676	6.4	0.298	5.5	NA	1.7	12.2	0.37	0.44	0.37	55.9
All Vehicles			1573	4.4	1573	4.4	0.298	3.8	NA	1.7	12.2	0.18	0.32	0.18	57.4

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.

MOVEMENT SUMMARY

Site: 3PM_O1 [MIT_BLU_36_PM_O1 (Site Folder: 2036 Option 1)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Blueridge Drive
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: Blueridge Drive															
1	L2	All MCs	422	2.0	422	2.0	0.231	4.5	LOS A	0.0	0.0	0.00	0.47	0.00	46.4
2	R2	All MCs	79	2.0	79	2.0	0.093	6.9	LOS A	0.3	2.1	0.46	0.67	0.46	50.1
Approach			501	2.0	501	2.0	0.231	4.8	LOS A	0.3	2.1	0.07	0.50	0.07	46.9
East: Mitchell Highway															
3	L2	All MCs	27	2.0	27	2.0	0.015	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	58.9
4	T1	All MCs	365	2.3	365	2.3	0.178	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach			392	2.3	392	2.3	0.178	0.5	NA	0.0	0.0	0.00	0.04	0.00	69.0
West: Mitchell Highway															
5	T1	All MCs	416	8.7	416	8.7	0.225	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
6	R2	All MCs	223	8.0	223	8.0	0.136	7.9	LOS A	0.7	5.5	0.47	0.62	0.47	50.4
Approach			639	8.4	639	8.4	0.225	2.8	NA	0.7	5.5	0.16	0.22	0.16	61.5
All Vehicles			1532	4.8	1532	4.8	0.231	2.9	NA	0.7	5.5	0.09	0.26	0.09	57.3

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.

MOVEMENT SUMMARY

Site: 4AM_O2 [SHE_BOU_36_AM_O2 (Site Folder: 2036 Option 2)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Sheraton Road / Boundary Road
Site Category: (None)
Roundabout

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
East: Sheraton Road															
5	T1	All MCs	11	37.7	11	37.7	0.016	6.2	LOS A	0.1	0.7	0.37	0.46	0.37	52.6
6	R2	All MCs	43	80.7	43	80.7	0.051	10.9	LOS A	0.2	2.6	0.34	0.60	0.34	47.4
Approach			54	71.9	54	71.9	0.051	9.9	LOS A	0.2	2.6	0.34	0.57	0.34	48.4
North: Sheraton Road															
7	L2	All MCs	58	76.1	58	76.1	0.068	5.0	LOS A	0.3	3.4	0.08	0.48	0.08	51.9
9	R2	All MCs	150	1.9	150	1.9	0.100	8.8	LOS A	0.5	3.2	0.06	0.63	0.06	50.7
9u	U	All MCs	7	0.0	7	0.0	0.100	10.9	LOS A	0.5	3.2	0.06	0.63	0.06	50.8
Approach			215	21.9	215	21.9	0.100	7.8	LOS A	0.5	3.4	0.07	0.59	0.07	51.0
West: Boundary Road															
10	L2	All MCs	281	1.5	281	1.5	0.196	4.5	LOS A	1.0	6.7	0.19	0.47	0.19	53.9
11	T1	All MCs	8	16.7	8	16.7	0.013	4.7	LOS A	0.1	0.4	0.20	0.49	0.20	52.6
12u	U	All MCs	3	0.0	3	0.0	0.013	11.3	LOS A	0.1	0.4	0.20	0.49	0.20	52.2
Approach			292	1.9	292	1.9	0.196	4.6	LOS A	1.0	6.7	0.19	0.47	0.19	53.9
All Vehicles			561	16.3	561	16.3	0.196	6.3	LOS A	1.0	6.7	0.16	0.53	0.16	52.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 4PM_O2 [SHE_BOU_36_PM_O2 (Site Folder: 2036 Option 2)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Sheraton Road / Boundary Road
Site Category: (None)
Roundabout

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
East: Sheraton Road															
5	T1	All MCs	14	20.0	14	20.0	0.021	6.8	LOS A	0.1	0.7	0.42	0.50	0.42	52.8
6	R2	All MCs	53	63.3	53	63.3	0.063	11.1	LOS A	0.3	3.0	0.40	0.63	0.40	47.8
Approach			67	54.3	67	54.3	0.063	10.2	LOS A	0.3	3.0	0.40	0.60	0.40	48.7
North: Sheraton Road															
7	L2	All MCs	46	84.8	46	84.8	0.062	5.1	LOS A	0.2	2.9	0.09	0.48	0.09	51.6
9	R2	All MCs	233	1.8	233	1.8	0.148	8.8	LOS A	0.7	5.1	0.08	0.63	0.08	50.7
9u	U	All MCs	1	0.0	1	0.0	0.148	10.9	LOS A	0.7	5.1	0.08	0.63	0.08	50.8
Approach			280	15.3	280	15.3	0.148	8.2	LOS A	0.7	5.1	0.08	0.60	0.08	50.9
West: Boundary Road															
10	L2	All MCs	119	1.2	119	1.2	0.087	4.5	LOS A	0.4	2.8	0.18	0.47	0.18	53.9
11	T1	All MCs	11	25.0	11	25.0	0.017	4.9	LOS A	0.1	0.6	0.22	0.48	0.22	52.5
12u	U	All MCs	3	0.0	3	0.0	0.017	11.3	LOS A	0.1	0.6	0.22	0.48	0.22	52.3
Approach			133	3.1	133	3.1	0.087	4.7	LOS A	0.4	2.8	0.19	0.47	0.19	53.8
All Vehicles			480	17.4	480	17.4	0.148	7.5	LOS A	0.7	5.1	0.15	0.57	0.15	51.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 6AM_O2 [WHE_BOU_36_AM_O2 (Site Folder: 2036 Option 2)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Booundary Road / Wheelers Lane
Site Category: (None)
Roundabout

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: Wheelers Lane															
1	L2	All MCs	161	0.0	161	0.0	0.358	6.5	LOS A	2.0	14.0	0.62	0.64	0.62	48.6
2	T1	All MCs	397	2.8	397	2.8	0.358	6.8	LOS A	2.0	14.0	0.62	0.66	0.62	52.0
3	R2	All MCs	101	0.0	101	0.0	0.358	11.5	LOS A	1.9	13.7	0.63	0.68	0.63	50.7
3u	U	All MCs	1	0.0	1	0.0	0.358	13.6	LOS A	1.9	13.7	0.63	0.68	0.63	50.7
Approach			661	1.7	661	1.7	0.358	7.5	LOS A	2.0	14.0	0.62	0.66	0.62	50.9
East: Boundary Road															
4	L2	All MCs	19	7.1	19	7.1	0.160	6.2	LOS A	0.8	5.5	0.55	0.60	0.55	52.1
5	T1	All MCs	135	1.0	135	1.0	0.160	6.0	LOS A	0.8	5.5	0.55	0.60	0.55	49.0
6	R2	All MCs	97	2.9	97	2.9	0.127	11.2	LOS A	0.6	4.2	0.55	0.73	0.55	49.2
6u	U	All MCs	6	0.0	6	0.0	0.127	13.1	LOS A	0.6	4.2	0.55	0.73	0.55	49.3
Approach			257	2.2	257	2.2	0.160	8.1	LOS A	0.8	5.5	0.55	0.65	0.55	49.3
North: Wheelers Lane															
7	L2	All MCs	58	2.4	58	2.4	0.227	6.1	LOS A	1.3	9.2	0.53	0.56	0.53	52.4
8	T1	All MCs	151	5.5	151	5.5	0.227	6.2	LOS A	1.3	9.2	0.53	0.56	0.53	52.8
9	R2	All MCs	286	6.8	286	6.8	0.282	10.7	LOS A	1.7	12.4	0.54	0.66	0.54	46.2
9u	U	All MCs	3	0.0	3	0.0	0.282	12.6	LOS A	1.7	12.4	0.54	0.66	0.54	49.4
Approach			499	5.8	499	5.8	0.282	8.8	LOS A	1.7	12.4	0.54	0.62	0.54	48.7
West: Boundary Road															
10	L2	All MCs	281	2.5	281	2.5	0.313	5.7	LOS A	1.7	12.2	0.65	0.66	0.65	48.9
11	T1	All MCs	172	1.6	172	1.6	0.286	5.8	LOS A	1.5	10.5	0.65	0.67	0.65	48.2
12	R2	All MCs	54	0.0	54	0.0	0.286	10.2	LOS A	1.5	10.5	0.65	0.67	0.65	47.5
12u	U	All MCs	1	0.0	1	0.0	0.286	12.1	LOS A	1.5	10.5	0.65	0.67	0.65	44.5
Approach			508	1.9	508	1.9	0.313	6.2	LOS A	1.7	12.2	0.65	0.66	0.65	48.5
All Vehicles			1925	2.9	1925	2.9	0.358	7.6	LOS A	2.0	14.0	0.60	0.65	0.60	49.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 6PM_O2 [WHE_BOU_36_PM_O2 (Site Folder: 2036 Option 2)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Booundary Road / Wheelers Lane
Site Category: (None)
Roundabout

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: Wheelers Lane															
1	L2	All MCs	111	7.5	111	7.5	0.228	6.4	LOS A	1.2	8.6	0.56	0.61	0.56	48.8
2	T1	All MCs	268	6.7	268	6.7	0.228	6.5	LOS A	1.2	8.6	0.56	0.62	0.56	52.3
3	R2	All MCs	36	7.7	36	7.7	0.228	11.3	LOS A	1.1	8.4	0.57	0.63	0.57	51.0
3u	U	All MCs	1	0.0	1	0.0	0.228	13.1	LOS A	1.1	8.4	0.57	0.63	0.57	51.3
Approach			417	7.0	417	7.0	0.228	6.9	LOS A	1.2	8.6	0.56	0.62	0.56	51.2
East: Boundary Road															
4	L2	All MCs	56	2.5	56	2.5	0.202	6.9	LOS A	1.0	7.0	0.64	0.68	0.64	52.0
5	T1	All MCs	115	0.0	115	0.0	0.202	6.9	LOS A	1.0	7.0	0.64	0.68	0.64	48.8
6	R2	All MCs	58	9.5	58	9.5	0.117	13.8	LOS A	0.5	3.7	0.65	0.82	0.65	47.5
6u	U	All MCs	1	0.0	1	0.0	0.117	15.2	LOS B	0.5	3.7	0.65	0.82	0.65	47.8
Approach			231	3.0	231	3.0	0.202	8.7	LOS A	1.0	7.0	0.64	0.72	0.64	49.1
North: Wheelers Lane															
7	L2	All MCs	79	6.9	79	6.9	0.375	5.7	LOS A	2.4	17.7	0.52	0.52	0.52	52.3
8	T1	All MCs	344	3.6	344	3.6	0.375	5.6	LOS A	2.4	17.7	0.52	0.52	0.52	52.8
9	R2	All MCs	290	6.2	290	6.2	0.302	10.5	LOS A	1.8	13.1	0.50	0.65	0.50	46.3
9u	U	All MCs	4	0.0	4	0.0	0.302	12.4	LOS A	1.8	13.1	0.50	0.65	0.50	49.5
Approach			718	5.0	718	5.0	0.375	7.6	LOS A	2.4	17.7	0.51	0.57	0.51	49.9
West: Boundary Road															
10	L2	All MCs	224	6.8	224	6.8	0.223	4.8	LOS A	1.1	8.5	0.52	0.56	0.52	49.1
11	T1	All MCs	99	2.8	99	2.8	0.220	4.6	LOS A	1.1	8.1	0.52	0.61	0.52	48.1
12	R2	All MCs	110	3.8	110	3.8	0.220	9.2	LOS A	1.1	8.1	0.52	0.61	0.52	47.3
12u	U	All MCs	4	0.0	4	0.0	0.220	10.9	LOS A	1.1	8.1	0.52	0.61	0.52	44.5
Approach			436	5.1	436	5.1	0.223	5.9	LOS A	1.1	8.5	0.52	0.59	0.52	48.4
All Vehicles			1801	5.2	1801	5.2	0.375	7.2	LOS A	2.4	17.7	0.54	0.61	0.54	49.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 7AM_O2 [MIT_WHE_36_AM_O2 (Site Folder: 2036 Option 2)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Wheeler Lane
Site Category: (None)
Roundabout

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: Wheeler Lane															
1	L2	All MCs	360	1.2	360	1.2	1.093	108.5	LOS F	54.1	385.5	1.00	3.27	7.46	21.7
2	T1	All MCs	644	2.8	644	2.8	1.093	110.2	LOS F	54.1	385.5	1.00	3.13	7.20	21.5
3	R2	All MCs	286	2.9	286	2.9	1.093	118.5	LOS F	42.0	300.8	1.00	2.92	6.82	21.0
3u	U	All MCs	1	0.0	1	0.0	1.093	120.6	LOS F	42.0	300.8	1.00	2.92	6.82	21.1
Approach			1291	2.4	1291	2.4	1.093	111.6	LOS F	54.1	385.5	1.00	3.12	7.19	21.4
East: Mitchell Highway															
4	L2	All MCs	147	12.3	147	12.3	0.768	12.0	LOS A	8.0	58.9	0.94	1.01	1.37	49.4
5	T1	All MCs	825	5.0	825	5.0	0.768	12.5	LOS A	8.0	58.9	0.94	1.03	1.39	49.0
6	R2	All MCs	142	8.8	142	8.8	0.768	19.5	LOS B	7.4	54.4	0.94	1.05	1.42	46.9
6u	U	All MCs	6	0.0	6	0.0	0.768	21.3	LOS B	7.4	54.4	0.94	1.05	1.42	47.1
Approach			1119	6.4	1119	6.4	0.768	13.3	LOS A	8.0	58.9	0.94	1.03	1.39	48.8
North: Wheeler Lane															
7	L2	All MCs	115	15.7	115	15.7	0.789	20.7	LOS B	8.6	63.3	1.00	1.17	1.70	44.4
8	T1	All MCs	349	3.6	349	3.6	0.789	20.1	LOS B	8.6	63.3	1.00	1.17	1.70	44.6
9	R2	All MCs	301	5.5	301	5.5	0.789	29.3	LOS C	7.4	54.2	0.99	1.17	1.71	40.4
9u	U	All MCs	11	0.0	11	0.0	0.789	31.2	LOS C	7.4	54.2	0.99	1.17	1.71	40.5
Approach			776	6.1	776	6.1	0.789	23.9	LOS B	8.6	63.3	1.00	1.17	1.70	42.8
West: Mitchell Highway															
10	L2	All MCs	272	4.6	272	4.6	1.087	107.9	LOS F	42.3	312.2	1.00	2.87	6.36	21.7
11	T1	All MCs	866	8.0	866	8.0	1.087	105.1	LOS F	52.4	388.2	1.00	3.06	6.67	22.2
12	R2	All MCs	140	2.0	140	2.0	1.087	108.8	LOS F	52.4	388.2	1.00	3.16	6.82	22.3
12u	U	All MCs	17	8.3	17	8.3	1.087	111.6	LOS F	52.4	388.2	1.00	3.16	6.82	22.3
Approach			1296	6.6	1296	6.6	1.087	106.2	LOS F	52.4	388.2	1.00	3.03	6.62	22.1
All Vehicles			4483	5.3	4483	5.3	1.093	70.3	LOS E	54.1	388.2	0.98	2.24	4.63	28.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 7PM_O2 [MIT_WHE_36_PM_O2 (Site Folder: 2036 Option 2)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Wheeler Lane
Site Category: (None)
Roundabout

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: Wheeler Lane															
1	L2	All MCs	219	3.8	219	3.8	0.702	12.0	LOS A	6.1	44.5	0.94	1.01	1.32	49.3
2	T1	All MCs	389	5.7	389	5.7	0.702	12.6	LOS A	6.1	44.5	0.93	1.02	1.32	48.6
3	R2	All MCs	243	5.7	243	5.7	0.702	19.7	LOS B	5.4	39.4	0.91	1.05	1.33	45.7
3u	U	All MCs	1	0.0	1	0.0	0.702	21.7	LOS B	5.4	39.4	0.91	1.05	1.33	45.8
Approach			852	5.2	852	5.2	0.702	14.5	LOS B	6.1	44.5	0.93	1.03	1.33	47.9
East: Mitchell Highway															
4	L2	All MCs	214	9.7	214	9.7	0.862	19.8	LOS B	10.8	80.2	1.00	1.25	1.91	44.8
5	T1	All MCs	715	6.0	715	6.0	0.862	21.3	LOS B	10.8	80.2	0.99	1.26	1.93	44.0
6	R2	All MCs	85	4.9	85	4.9	0.862	28.8	LOS C	9.6	70.1	0.99	1.27	1.95	42.2
6u	U	All MCs	15	0.0	15	0.0	0.862	30.7	LOS C	9.6	70.1	0.99	1.27	1.95	42.3
Approach			1029	6.6	1029	6.6	0.862	21.7	LOS B	10.8	80.2	0.99	1.26	1.93	43.9
North: Wheeler Lane															
7	L2	All MCs	162	8.5	162	8.5	1.481	450.4	LOS F	155.1	1117.9	1.00	6.34	16.15	7.3
8	T1	All MCs	563	2.0	563	2.0	1.481	450.0	LOS F	155.1	1117.9	1.00	6.33	16.13	7.3
9	R2	All MCs	461	6.0	461	6.0	1.481	459.7	LOS F	110.5	809.5	1.00	5.21	13.79	7.4
9u	U	All MCs	43	0.0	43	0.0	1.481	461.4	LOS F	110.5	809.5	1.00	5.21	13.79	7.4
Approach			1229	4.3	1229	4.3	1.481	454.1	LOS F	155.1	1117.9	1.00	5.87	15.17	7.3
West: Mitchell Highway															
10	L2	All MCs	213	2.6	213	2.6	0.910	22.7	LOS B	14.3	103.4	1.00	1.35	2.15	43.2
11	T1	All MCs	829	4.8	829	4.8	0.910	21.2	LOS B	15.5	112.0	1.00	1.34	2.10	43.7
12	R2	All MCs	342	2.0	342	2.0	0.910	25.0	LOS B	15.5	112.0	1.00	1.33	2.05	43.4
12u	U	All MCs	21	0.0	21	0.0	0.910	27.3	LOS B	15.5	112.0	1.00	1.33	2.05	43.5
Approach			1404	3.7	1404	3.7	0.910	22.4	LOS B	15.5	112.0	1.00	1.34	2.10	43.6
All Vehicles			4515	4.8	4515	4.8	1.481	138.3	LOS F	155.1	1117.9	0.98	2.50	5.47	18.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 5AM_O2 [MIT_SHE_36_AM_O2 (Site Folder: 2036 Option 2)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Sheraton Road
Site Category: (None)
Roundabout

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: Sheraton Road															
1	L2	All MCs	439	11.0	439	11.0	0.650	10.8	LOS A	5.6	43.1	0.91	0.94	1.20	52.1
2	T1	All MCs	288	8.8	288	8.8	0.650	12.2	LOS A	5.6	43.1	0.90	0.97	1.22	48.5
3	R2	All MCs	93	10.5	93	10.5	0.650	18.3	LOS B	5.2	39.1	0.90	0.97	1.22	47.9
3u	U	All MCs	33	0.0	33	0.0	0.650	19.9	LOS B	5.2	39.1	0.90	0.97	1.22	47.6
Approach			853	9.8	853	9.8	0.650	12.5	LOS A	5.6	43.1	0.91	0.95	1.21	50.2
East: Mitchell Highway															
4	L2	All MCs	93	20.6	93	20.6	0.754	25.3	LOS B	7.0	51.3	0.97	1.13	1.66	44.8
5	T1	All MCs	596	0.2	596	0.2	0.754	21.1	LOS B	8.2	58.2	0.98	1.11	1.66	48.6
6	R2	All MCs	138	5.1	138	5.1	0.754	25.6	LOS B	8.2	58.2	0.99	1.10	1.65	46.3
6u	U	All MCs	1	0.0	1	0.0	0.754	26.2	LOS B	8.2	58.2	0.99	1.10	1.65	46.5
Approach			827	3.3	827	3.3	0.754	22.4	LOS B	8.2	58.2	0.98	1.11	1.66	47.7
North: Sheraton Road															
7	L2	All MCs	174	3.2	174	3.2	0.728	16.0	LOS B	7.4	54.4	0.99	1.06	1.50	49.3
8	T1	All MCs	474	7.1	474	7.1	0.728	17.1	LOS B	7.4	54.4	0.98	1.08	1.50	46.1
9	R2	All MCs	160	4.3	160	4.3	0.728	24.5	LOS B	6.6	48.5	0.97	1.09	1.52	44.9
9u	U	All MCs	3	0.0	3	0.0	0.728	26.5	LOS B	6.6	48.5	0.97	1.09	1.52	43.7
Approach			810	5.7	810	5.7	0.728	18.4	LOS B	7.4	54.4	0.98	1.08	1.50	46.5
West: Mitchell Highway															
10	L2	All MCs	82	10.2	82	10.2	0.502	10.5	LOS A	3.8	28.2	0.81	0.77	0.93	53.5
11	T1	All MCs	378	8.1	378	8.1	0.705	11.6	LOS A	8.1	61.1	0.84	0.81	1.02	55.3
12	R2	All MCs	515	9.1	515	9.1	0.705	18.3	LOS B	8.1	61.1	0.92	0.90	1.23	48.8
12u	U	All MCs	1	0.0	1	0.0	0.705	18.8	LOS B	8.1	61.1	0.92	0.90	1.23	49.1
Approach			976	8.8	976	8.8	0.705	15.0	LOS B	8.1	61.1	0.88	0.85	1.12	51.5
All Vehicles			3466	7.0	3466	7.0	0.754	16.9	LOS B	8.2	61.1	0.93	0.99	1.36	49.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 5PM_O2 [MIT_SHE_36_PM_O2 (Site Folder: 2036 Option 2)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Sheraton Road
Site Category: (None)
Roundabout

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: Sheraton Road															
1	L2	All MCs	448	11.7	448	11.7	0.640	10.2	LOS A	5.3	40.8	0.88	0.92	1.15	52.6
2	T1	All MCs	310	8.2	310	8.2	0.640	11.4	LOS A	5.3	40.8	0.88	0.95	1.18	49.0
3	R2	All MCs	69	16.1	69	16.1	0.640	17.8	LOS B	5.0	37.3	0.88	0.96	1.18	47.5
3u	U	All MCs	51	0.0	51	0.0	0.640	19.1	LOS B	5.0	37.3	0.88	0.96	1.18	48.2
Approach			879	10.1	879	10.1	0.640	11.8	LOS A	5.3	40.8	0.88	0.94	1.16	50.5
East: Mitchell Highway															
4	L2	All MCs	46	14.6	46	14.6	0.569	14.2	LOS A	4.3	30.6	0.87	0.92	1.15	51.3
5	T1	All MCs	531	0.3	531	0.3	0.569	12.6	LOS A	4.6	33.2	0.88	0.91	1.13	54.5
6	R2	All MCs	206	4.7	206	4.7	0.569	17.6	LOS B	4.6	33.2	0.88	0.90	1.12	50.6
6u	U	All MCs	1	0.0	1	0.0	0.569	18.3	LOS B	4.6	33.2	0.88	0.90	1.12	50.8
Approach			783	2.3	783	2.3	0.569	14.0	LOS A	4.6	33.2	0.88	0.91	1.13	53.3
North: Sheraton Road															
7	L2	All MCs	108	12.8	108	12.8	0.530	12.2	LOS A	4.1	32.4	0.92	0.90	1.13	51.7
8	T1	All MCs	323	16.0	323	16.0	0.530	12.4	LOS A	4.1	32.4	0.92	0.92	1.14	48.8
9	R2	All MCs	131	5.3	131	5.3	0.530	18.7	LOS B	3.8	29.1	0.91	0.95	1.14	47.6
9u	U	All MCs	4	33.3	4	33.3	0.530	23.4	LOS B	3.8	29.1	0.91	0.95	1.14	45.6
Approach			566	13.1	566	13.1	0.530	13.9	LOS A	4.1	32.4	0.92	0.92	1.14	49.0
West: Mitchell Highway															
10	L2	All MCs	171	4.1	171	4.1	0.547	11.8	LOS A	4.4	32.1	0.85	0.84	1.04	52.5
11	T1	All MCs	429	7.1	429	7.1	0.768	14.4	LOS A	10.1	75.5	0.92	0.93	1.28	52.7
12	R2	All MCs	409	8.8	409	8.8	0.768	21.4	LOS B	10.1	75.5	0.98	1.00	1.48	47.6
12u	U	All MCs	1	0.0	1	0.0	0.768	21.9	LOS B	10.1	75.5	0.98	1.00	1.48	47.8
Approach			1011	7.3	1011	7.3	0.768	16.8	LOS B	10.1	75.5	0.93	0.94	1.32	50.4
All Vehicles			3238	7.8	3238	7.8	0.768	14.3	LOS A	10.1	75.5	0.90	0.93	1.20	50.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 3AM_O2 [MIT_BLU_36_AM_O2 (Site Folder: 2036 Option 2)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Blueridge Drive
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: Blueridge Drive															
1	L2	All MCs	274	3.0	274	3.0	0.151	4.4	LOS A	0.0	0.0	0.00	0.47	0.00	46.4
2	R2	All MCs	42	3.0	42	3.0	0.076	9.2	LOS A	0.2	1.7	0.62	0.80	0.62	48.3
Approach			316	3.0	316	3.0	0.151	5.1	LOS A	0.2	1.7	0.08	0.51	0.08	46.7
East: Mitchell Highway															
3	L2	All MCs	84	3.0	84	3.0	0.046	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	58.6
4	T1	All MCs	504	4.0	504	4.0	0.248	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach			588	3.9	588	3.9	0.248	1.0	NA	0.0	0.0	0.00	0.08	0.00	68.0
West: Mitchell Highway															
5	T1	All MCs	250	7.2	250	7.2	0.134	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
6	R2	All MCs	426	6.0	426	6.0	0.302	8.7	LOS A	1.7	12.3	0.60	0.71	0.60	50.0
Approach			676	6.4	676	6.4	0.302	5.5	NA	1.7	12.3	0.38	0.45	0.38	55.8
All Vehicles			1580	4.8	1580	4.8	0.302	3.8	NA	1.7	12.3	0.18	0.32	0.18	57.4

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.

MOVEMENT SUMMARY

Site: 3PM_O2 [MIT_BLU_36_PM_O2 (Site Folder: 2036 Option 2)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Blueridge Drive
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: Blueridge Drive															
1	L2	All MCs	422	2.0	422	2.0	0.231	4.5	LOS A	0.0	0.0	0.00	0.47	0.00	46.4
2	R2	All MCs	79	2.0	79	2.0	0.094	6.9	LOS A	0.3	2.2	0.47	0.68	0.47	50.0
Approach			501	2.0	501	2.0	0.231	4.8	LOS A	0.3	2.2	0.07	0.50	0.07	46.9
East: Mitchell Highway															
3	L2	All MCs	27	2.0	27	2.0	0.015	6.7	LOS A	0.0	0.0	0.00	0.57	0.00	58.9
4	T1	All MCs	369	3.4	369	3.4	0.181	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach			396	3.3	396	3.3	0.181	0.5	NA	0.0	0.0	0.00	0.04	0.00	69.0
West: Mitchell Highway															
5	T1	All MCs	416	8.7	416	8.7	0.225	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
6	R2	All MCs	223	8.0	223	8.0	0.137	7.9	LOS A	0.7	5.5	0.47	0.62	0.47	50.3
Approach			639	8.5	639	8.5	0.225	2.8	NA	0.7	5.5	0.16	0.22	0.16	61.5
All Vehicles			1536	5.0	1536	5.0	0.231	2.9	NA	0.7	5.5	0.09	0.26	0.09	57.3

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.

MOVEMENT SUMMARY

Site: 4AM_O3 [SHE_BOU_36_AM_O3 (Site Folder: 2036 Option 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Sheraton Road / Boundary Road
Site Category: (None)
Roundabout

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
East: Sheraton Road															
5	T1	All MCs	8	13.2	8	13.2	0.011	5.9	LOS A	0.0	0.4	0.35	0.44	0.35	53.3
6	R2	All MCs	43	80.7	43	80.7	0.051	10.9	LOS A	0.2	2.6	0.34	0.60	0.34	47.4
Approach			51	70.2	51	70.2	0.051	10.1	LOS A	0.2	2.6	0.34	0.57	0.34	48.2
North: Sheraton Road															
7	L2	All MCs	22	37.5	22	37.5	0.026	4.6	LOS A	0.1	1.0	0.08	0.47	0.08	53.1
9	R2	All MCs	150	1.9	150	1.9	0.099	8.8	LOS A	0.5	3.2	0.06	0.63	0.06	50.7
9u	U	All MCs	7	0.0	7	0.0	0.099	10.9	LOS A	0.5	3.2	0.06	0.63	0.06	50.8
Approach			179	6.2	179	6.2	0.099	8.3	LOS A	0.5	3.2	0.06	0.61	0.06	51.0
West: Boundary Road															
10	L2	All MCs	281	1.5	281	1.5	0.196	4.5	LOS A	1.0	6.7	0.19	0.47	0.19	53.9
11	T1	All MCs	8	13.2	8	13.2	0.013	4.7	LOS A	0.1	0.4	0.20	0.49	0.20	52.7
12u	U	All MCs	3	0.0	3	0.0	0.013	11.3	LOS A	0.1	0.4	0.20	0.49	0.20	52.2
Approach			291	1.8	291	1.8	0.196	4.6	LOS A	1.0	6.7	0.19	0.47	0.19	53.9
All Vehicles			522	10.0	522	10.0	0.196	6.4	LOS A	1.0	6.7	0.16	0.53	0.16	52.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 4PM_O3 [SHE_BOU_36_PM_O3 (Site Folder: 2036 Option 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Sheraton Road / Boundary Road
Site Category: (None)
Roundabout

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
East: Sheraton Road															
5	T1	All MCs	14	18.0	14	18.0	0.020	6.8	LOS A	0.1	0.7	0.43	0.50	0.43	52.8
6	R2	All MCs	58	66.4	58	66.4	0.070	11.2	LOS A	0.3	3.4	0.40	0.63	0.40	47.7
Approach			71	57.2	71	57.2	0.070	10.4	LOS A	0.3	3.4	0.41	0.60	0.41	48.6
North: Sheraton Road															
7	L2	All MCs	10	28.6	10	28.6	0.012	4.5	LOS A	0.0	0.4	0.09	0.47	0.09	53.4
9	R2	All MCs	233	1.8	233	1.8	0.148	8.8	LOS A	0.7	5.1	0.07	0.63	0.07	50.7
9u	U	All MCs	1	0.0	1	0.0	0.148	10.9	LOS A	0.7	5.1	0.07	0.63	0.07	50.8
Approach			244	2.8	244	2.8	0.148	8.6	LOS A	0.7	5.1	0.08	0.62	0.08	50.8
West: Boundary Road															
10	L2	All MCs	119	1.2	119	1.2	0.088	4.5	LOS A	0.4	2.8	0.19	0.48	0.19	53.9
11	T1	All MCs	11	22.7	11	22.7	0.017	4.9	LOS A	0.1	0.6	0.23	0.48	0.23	52.5
12u	U	All MCs	3	0.0	3	0.0	0.017	11.4	LOS A	0.1	0.6	0.23	0.48	0.23	52.2
Approach			133	2.9	133	2.9	0.088	4.7	LOS A	0.4	2.8	0.20	0.48	0.20	53.7
All Vehicles			449	11.5	449	11.5	0.148	7.7	LOS A	0.7	5.1	0.16	0.57	0.16	51.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 6AM_O3 [WHE_BOU_36_AM_O3 (Site Folder: 2036 Option 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Booundary Road / Wheelers Lane
Site Category: (None)
Roundabout

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: Wheelers Lane															
1	L2	All MCs	161	0.0	161	0.0	0.357	6.5	LOS A	2.0	14.0	0.62	0.64	0.62	48.6
2	T1	All MCs	397	2.8	397	2.8	0.357	6.8	LOS A	2.0	14.0	0.62	0.66	0.62	52.0
3	R2	All MCs	101	0.0	101	0.0	0.357	11.5	LOS A	1.9	13.7	0.63	0.68	0.63	50.7
3u	U	All MCs	1	0.0	1	0.0	0.357	13.6	LOS A	1.9	13.7	0.63	0.68	0.63	50.7
Approach			661	1.7	661	1.7	0.357	7.5	LOS A	2.0	14.0	0.62	0.66	0.62	50.9
East: Boundary Road															
4	L2	All MCs	19	7.1	19	7.1	0.160	6.2	LOS A	0.8	5.5	0.55	0.60	0.55	52.1
5	T1	All MCs	134	0.8	134	0.8	0.160	6.0	LOS A	0.8	5.5	0.55	0.60	0.55	49.0
6	R2	All MCs	97	2.9	97	2.9	0.127	11.2	LOS A	0.6	4.2	0.55	0.72	0.55	49.2
6u	U	All MCs	6	0.0	6	0.0	0.127	13.1	LOS A	0.6	4.2	0.55	0.72	0.55	49.3
Approach			257	2.0	257	2.0	0.160	8.1	LOS A	0.8	5.5	0.55	0.65	0.55	49.3
North: Wheelers Lane															
7	L2	All MCs	58	2.4	58	2.4	0.227	6.1	LOS A	1.3	9.1	0.53	0.56	0.53	52.4
8	T1	All MCs	151	5.5	151	5.5	0.227	6.2	LOS A	1.3	9.1	0.53	0.56	0.53	52.8
9	R2	All MCs	286	6.8	286	6.8	0.282	10.7	LOS A	1.7	12.4	0.54	0.66	0.54	46.2
9u	U	All MCs	3	0.0	3	0.0	0.282	12.5	LOS A	1.7	12.4	0.54	0.66	0.54	49.4
Approach			499	5.8	499	5.8	0.282	8.8	LOS A	1.7	12.4	0.54	0.62	0.54	48.7
West: Boundary Road															
10	L2	All MCs	281	2.5	281	2.5	0.313	5.7	LOS A	1.7	12.2	0.65	0.66	0.65	48.9
11	T1	All MCs	172	1.4	172	1.4	0.285	5.8	LOS A	1.5	10.5	0.65	0.67	0.65	48.2
12	R2	All MCs	54	0.0	54	0.0	0.285	10.2	LOS A	1.5	10.5	0.65	0.67	0.65	47.5
12u	U	All MCs	1	0.0	1	0.0	0.285	12.1	LOS A	1.5	10.5	0.65	0.67	0.65	44.5
Approach			508	1.8	508	1.8	0.313	6.2	LOS A	1.7	12.2	0.65	0.66	0.65	48.5
All Vehicles			1924	2.9	1924	2.9	0.357	7.6	LOS A	2.0	14.0	0.60	0.65	0.60	49.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 6PM_O3 [WHE_BOU_36_PM_O3 (Site Folder: 2036 Option 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Booundary Road / Wheelers Lane
Site Category: (None)
Roundabout

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: Wheelers Lane															
1	L2	All MCs	111	7.5	111	7.5	0.228	6.4	LOS A	1.2	8.6	0.56	0.61	0.56	48.8
2	T1	All MCs	268	6.7	268	6.7	0.228	6.5	LOS A	1.2	8.6	0.56	0.62	0.56	52.3
3	R2	All MCs	36	7.7	36	7.7	0.228	11.3	LOS A	1.1	8.5	0.57	0.63	0.57	51.0
3u	U	All MCs	1	0.0	1	0.0	0.228	13.1	LOS A	1.1	8.5	0.57	0.63	0.57	51.3
Approach			417	7.0	417	7.0	0.228	6.9	LOS A	1.2	8.6	0.56	0.62	0.56	51.2
East: Boundary Road															
4	L2	All MCs	56	2.5	56	2.5	0.205	7.0	LOS A	1.0	7.1	0.64	0.68	0.64	52.0
5	T1	All MCs	116	0.9	116	0.9	0.205	6.9	LOS A	1.0	7.1	0.64	0.68	0.64	48.8
6	R2	All MCs	58	9.5	58	9.5	0.118	13.8	LOS A	0.5	3.7	0.65	0.82	0.65	47.5
6u	U	All MCs	1	0.0	1	0.0	0.118	15.2	LOS B	0.5	3.7	0.65	0.82	0.65	47.8
Approach			232	3.5	232	3.5	0.205	8.7	LOS A	1.0	7.1	0.64	0.72	0.64	49.1
North: Wheelers Lane															
7	L2	All MCs	79	6.9	79	6.9	0.374	5.7	LOS A	2.4	17.6	0.52	0.52	0.52	52.3
8	T1	All MCs	344	3.6	344	3.6	0.374	5.6	LOS A	2.4	17.6	0.52	0.52	0.52	52.8
9	R2	All MCs	290	6.2	290	6.2	0.302	10.5	LOS A	1.8	13.1	0.50	0.64	0.50	46.3
9u	U	All MCs	4	0.0	4	0.0	0.302	12.4	LOS A	1.8	13.1	0.50	0.64	0.50	49.5
Approach			718	5.0	718	5.0	0.374	7.6	LOS A	2.4	17.6	0.51	0.57	0.51	49.9
West: Boundary Road															
10	L2	All MCs	224	6.8	224	6.8	0.223	4.8	LOS A	1.1	8.5	0.52	0.56	0.52	49.1
11	T1	All MCs	98	2.5	98	2.5	0.220	4.6	LOS A	1.1	8.1	0.52	0.61	0.52	48.1
12	R2	All MCs	110	3.8	110	3.8	0.220	9.2	LOS A	1.1	8.1	0.52	0.61	0.52	47.3
12u	U	All MCs	4	0.0	4	0.0	0.220	10.9	LOS A	1.1	8.1	0.52	0.61	0.52	44.5
Approach			436	5.0	436	5.0	0.223	5.9	LOS A	1.1	8.5	0.52	0.59	0.52	48.4
All Vehicles			1802	5.3	1802	5.3	0.374	7.2	LOS A	2.4	17.6	0.54	0.61	0.54	49.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 7AM_O3 [MIT_WHE_36_AM_O3 (Site Folder: 2036 Option 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Wheeler Lane
Site Category: (None)
Roundabout

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: Wheeler Lane															
1	L2	All MCs	360	1.2	360	1.2	1.090	106.3	LOS F	53.3	379.1	1.00	3.24	7.35	21.9
2	T1	All MCs	644	2.8	644	2.8	1.090	108.1	LOS F	53.3	379.1	1.00	3.10	7.10	21.8
3	R2	All MCs	286	2.9	286	2.9	1.090	116.3	LOS F	41.3	296.3	1.00	2.89	6.73	21.3
3u	U	All MCs	1	0.0	1	0.0	1.090	118.5	LOS F	41.3	296.3	1.00	2.89	6.73	21.3
Approach			1291	2.4	1291	2.4	1.090	109.4	LOS F	53.3	379.1	1.00	3.09	7.09	21.7
East: Mitchell Highway															
4	L2	All MCs	147	12.3	147	12.3	0.766	12.0	LOS A	7.9	58.4	0.94	1.01	1.36	49.5
5	T1	All MCs	823	4.8	823	4.8	0.766	12.4	LOS A	7.9	58.4	0.94	1.02	1.38	49.0
6	R2	All MCs	142	8.8	142	8.8	0.766	19.5	LOS B	7.3	53.9	0.93	1.04	1.41	47.0
6u	U	All MCs	6	0.0	6	0.0	0.766	21.2	LOS B	7.3	53.9	0.93	1.04	1.41	47.2
Approach			1117	6.3	1117	6.3	0.766	13.3	LOS A	7.9	58.4	0.94	1.03	1.38	48.8
North: Wheeler Lane															
7	L2	All MCs	115	15.7	115	15.7	0.789	20.7	LOS B	8.6	63.3	1.00	1.17	1.70	44.4
8	T1	All MCs	349	3.6	349	3.6	0.789	20.1	LOS B	8.6	63.3	1.00	1.17	1.70	44.6
9	R2	All MCs	301	5.5	301	5.5	0.789	29.3	LOS C	7.4	54.2	0.99	1.17	1.71	40.4
9u	U	All MCs	11	0.0	11	0.0	0.789	31.2	LOS C	7.4	54.2	0.99	1.17	1.71	40.5
Approach			776	6.1	776	6.1	0.789	23.9	LOS B	8.6	63.3	1.00	1.17	1.70	42.8
West: Mitchell Highway															
10	L2	All MCs	272	4.6	272	4.6	1.085	106.5	LOS F	41.8	308.0	1.00	2.85	6.30	21.9
11	T1	All MCs	864	7.7	864	7.7	1.085	103.7	LOS F	51.7	382.8	1.00	3.03	6.60	22.4
12	R2	All MCs	140	2.0	140	2.0	1.085	107.5	LOS F	51.7	382.8	1.00	3.13	6.75	22.5
12u	U	All MCs	17	8.3	17	8.3	1.085	110.3	LOS F	51.7	382.8	1.00	3.13	6.75	22.5
Approach			1293	6.5	1293	6.5	1.085	104.8	LOS F	51.7	382.8	1.00	3.01	6.55	22.3
All Vehicles			4478	5.2	4478	5.2	1.090	69.3	LOS E	53.3	382.8	0.98	2.22	4.58	28.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 7PM_O3 [MIT_WHE_36_PM_O3 (Site Folder: 2036 Option 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Wheeler Lane
Site Category: (None)
Roundabout

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: Wheeler Lane															
1	L2	All MCs	219	3.8	219	3.8	0.708	12.2	LOS A	6.2	45.1	0.94	1.02	1.34	49.2
2	T1	All MCs	389	5.7	389	5.7	0.708	12.8	LOS A	6.2	45.1	0.93	1.03	1.34	48.4
3	R2	All MCs	243	5.7	243	5.7	0.708	20.0	LOS B	5.4	40.0	0.92	1.06	1.34	45.5
3u	U	All MCs	1	0.0	1	0.0	0.708	22.0	LOS B	5.4	40.0	0.92	1.06	1.34	45.7
Approach			852	5.2	852	5.2	0.708	14.7	LOS B	6.2	45.1	0.93	1.04	1.34	47.7
East: Mitchell Highway															
4	L2	All MCs	214	9.7	214	9.7	0.873	20.8	LOS B	11.3	84.6	1.00	1.29	1.99	44.2
5	T1	All MCs	721	6.8	721	6.8	0.873	22.5	LOS B	11.3	84.6	1.00	1.29	2.01	43.3
6	R2	All MCs	85	4.9	85	4.9	0.873	30.0	LOS C	10.0	73.8	0.99	1.30	2.03	41.6
6u	U	All MCs	15	0.0	15	0.0	0.873	32.0	LOS C	10.0	73.8	0.99	1.30	2.03	41.7
Approach			1035	7.2	1035	7.2	0.873	22.9	LOS B	11.3	84.6	1.00	1.29	2.00	43.3
North: Wheeler Lane															
7	L2	All MCs	162	8.5	162	8.5	1.476	446.3	LOS F	154.1	1111.0	1.00	6.32	16.08	7.4
8	T1	All MCs	563	2.0	563	2.0	1.476	445.8	LOS F	154.1	1111.0	1.00	6.31	16.07	7.4
9	R2	All MCs	461	6.0	461	6.0	1.476	455.6	LOS F	109.9	805.1	1.00	5.20	13.75	7.4
9u	U	All MCs	43	0.0	43	0.0	1.476	457.3	LOS F	109.9	805.1	1.00	5.20	13.75	7.4
Approach			1229	4.3	1229	4.3	1.476	450.0	LOS F	154.1	1111.0	1.00	5.85	15.12	7.4
West: Mitchell Highway															
10	L2	All MCs	213	2.6	213	2.6	0.908	22.4	LOS B	14.1	101.9	1.00	1.34	2.13	43.4
11	T1	All MCs	827	4.6	827	4.6	0.908	20.9	LOS B	15.3	110.3	1.00	1.33	2.08	43.9
12	R2	All MCs	342	2.0	342	2.0	0.908	24.8	LOS B	15.3	110.3	1.00	1.32	2.03	43.6
12u	U	All MCs	21	0.0	21	0.0	0.908	27.0	LOS B	15.3	110.3	1.00	1.32	2.03	43.6
Approach			1402	3.6	1402	3.6	0.908	22.1	LOS B	15.3	110.3	1.00	1.33	2.07	43.7
All Vehicles			4518	4.9	4518	4.9	1.476	137.3	LOS F	154.1	1111.0	0.99	2.50	5.47	18.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 5AM_O3 [MIT_SHE_36_AM_O3 (Site Folder: 2036 Option 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Sheraton Road
Site Category: (None)
Roundabout

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: Sheraton Road															
1	L2	All MCs	421	7.3	421	7.3	0.618	10.2	LOS A	5.1	38.1	0.90	0.92	1.15	52.8
2	T1	All MCs	279	6.0	279	6.0	0.618	11.5	LOS A	5.1	38.1	0.89	0.95	1.17	49.0
3	R2	All MCs	85	1.6	85	1.6	0.618	17.1	LOS B	4.8	34.5	0.89	0.95	1.17	50.0
3u	U	All MCs	33	0.0	33	0.0	0.618	19.4	LOS B	4.8	34.5	0.89	0.95	1.17	48.1
Approach			818	5.9	818	5.9	0.618	11.7	LOS A	5.1	38.1	0.90	0.93	1.16	50.9
East: Mitchell Highway															
4	L2	All MCs	83	11.7	83	11.7	0.754	23.4	LOS B	7.1	51.7	0.97	1.12	1.65	45.5
5	T1	All MCs	612	2.8	612	2.8	0.754	20.8	LOS B	8.1	59.1	0.98	1.11	1.64	48.8
6	R2	All MCs	145	9.9	145	9.9	0.754	25.5	LOS B	8.1	59.1	0.99	1.10	1.64	46.3
6u	U	All MCs	1	0.0	1	0.0	0.754	25.7	LOS B	8.1	59.1	0.99	1.10	1.64	46.6
Approach			841	4.9	841	4.9	0.754	21.9	LOS B	8.1	59.1	0.98	1.11	1.64	48.0
North: Sheraton Road															
7	L2	All MCs	181	7.1	181	7.1	0.714	15.7	LOS B	7.1	52.4	0.98	1.05	1.46	49.5
8	T1	All MCs	465	5.4	465	5.4	0.714	16.3	LOS B	7.1	52.4	0.97	1.06	1.46	46.5
9	R2	All MCs	160	4.3	160	4.3	0.714	23.6	LOS B	6.4	46.7	0.96	1.08	1.48	45.5
9u	U	All MCs	3	0.0	3	0.0	0.714	25.6	LOS B	6.4	46.7	0.96	1.08	1.48	44.3
Approach			809	5.5	809	5.5	0.714	17.6	LOS B	7.1	52.4	0.97	1.06	1.46	46.9
West: Mitchell Highway															
10	L2	All MCs	82	10.2	82	10.2	0.495	10.4	LOS A	3.6	27.9	0.80	0.77	0.91	53.5
11	T1	All MCs	395	12.0	395	12.0	0.695	11.7	LOS A	7.9	58.4	0.84	0.81	1.01	55.0
12	R2	All MCs	496	5.6	496	5.6	0.695	17.7	LOS B	7.9	58.4	0.91	0.88	1.19	49.3
12u	U	All MCs	1	0.0	1	0.0	0.695	18.3	LOS B	7.9	58.4	0.91	0.88	1.19	49.5
Approach			973	8.6	973	8.6	0.695	14.6	LOS B	7.9	58.4	0.87	0.84	1.09	51.8
All Vehicles			3441	6.3	3441	6.3	0.754	16.4	LOS B	8.1	59.1	0.93	0.98	1.33	49.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 5PM_O3 [MIT_SHE_36_PM_O3 (Site Folder: 2036 Option 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Sheraton Road
Site Category: (None)
Roundabout

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: Sheraton Road															
1	L2	All MCs	431	8.1	431	8.1	0.611	9.7	LOS A	4.9	36.6	0.88	0.90	1.11	53.1
2	T1	All MCs	301	5.5	301	5.5	0.611	10.9	LOS A	4.9	36.6	0.87	0.94	1.14	49.4
3	R2	All MCs	61	4.5	61	4.5	0.611	16.7	LOS B	4.6	33.3	0.87	0.94	1.14	49.9
3u	U	All MCs	51	0.0	51	0.0	0.611	18.8	LOS B	4.6	33.3	0.87	0.94	1.14	48.5
Approach			844	6.4	844	6.4	0.611	11.2	LOS A	4.9	36.6	0.87	0.92	1.13	51.2
East: Mitchell Highway															
4	L2	All MCs	47	17.4	47	17.4	0.586	14.4	LOS A	4.5	32.9	0.87	0.92	1.16	51.2
5	T1	All MCs	546	3.1	546	3.1	0.586	12.8	LOS A	4.9	35.7	0.88	0.92	1.15	54.3
6	R2	All MCs	213	8.0	213	8.0	0.586	17.8	LOS B	4.9	35.7	0.88	0.91	1.13	50.4
6u	U	All MCs	1	0.0	1	0.0	0.586	18.3	LOS B	4.9	35.7	0.88	0.91	1.13	50.6
Approach			807	5.3	807	5.3	0.586	14.2	LOS A	4.9	35.7	0.88	0.91	1.15	53.0
North: Sheraton Road															
7	L2	All MCs	116	18.4	116	18.4	0.518	12.3	LOS A	4.0	31.4	0.91	0.89	1.11	51.6
8	T1	All MCs	314	13.7	314	13.7	0.518	12.0	LOS A	4.0	31.4	0.91	0.91	1.11	49.0
9	R2	All MCs	131	5.3	131	5.3	0.518	18.3	LOS B	3.7	28.1	0.90	0.93	1.12	47.9
9u	U	All MCs	4	33.3	4	33.3	0.518	23.0	LOS B	3.7	28.1	0.90	0.93	1.12	45.9
Approach			564	12.9	564	12.9	0.518	13.6	LOS A	4.0	31.4	0.91	0.91	1.11	49.2
West: Mitchell Highway															
10	L2	All MCs	171	4.1	171	4.1	0.538	11.6	LOS A	4.2	31.4	0.84	0.83	1.02	52.6
11	T1	All MCs	446	10.6	446	10.6	0.755	14.3	LOS A	9.7	71.7	0.91	0.91	1.25	52.8
12	R2	All MCs	390	4.3	390	4.3	0.755	20.4	LOS B	9.7	71.7	0.96	0.98	1.42	48.2
12u	U	All MCs	1	0.0	1	0.0	0.755	21.2	LOS B	9.7	71.7	0.96	0.98	1.42	48.3
Approach			1008	7.0	1008	7.0	0.755	16.2	LOS B	9.7	71.7	0.92	0.92	1.28	50.9
All Vehicles			3224	7.5	3224	7.5	0.755	13.9	LOS A	9.7	71.7	0.90	0.92	1.18	51.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout 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.

MOVEMENT SUMMARY

Site: 3AM_O3 [MIT_BLU_36_AM_O3 (Site Folder: 2036 Option 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Blueridge Drive
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: Blueridge Drive															
1	L2	All MCs	297	10.6	297	10.6	0.172	4.5	LOS A	0.0	0.0	0.00	0.46	0.00	46.3
2	R2	All MCs	51	19.1	51	19.1	0.113	11.1	LOS A	0.3	2.7	0.67	0.82	0.67	44.5
Approach			347	11.8	347	11.8	0.172	5.5	LOS A	0.3	2.7	0.10	0.51	0.10	46.1
East: Mitchell Highway															
3	L2	All MCs	93	11.8	93	11.8	0.054	6.8	LOS A	0.0	0.0	0.00	0.56	0.00	56.4
4	T1	All MCs	489	1.1	489	1.1	0.237	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach			582	2.8	582	2.8	0.237	1.1	NA	0.0	0.0	0.00	0.09	0.00	67.3
West: Mitchell Highway															
5	T1	All MCs	241	3.9	241	3.9	0.127	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
6	R2	All MCs	450	11.1	450	11.1	0.324	8.9	LOS A	1.9	14.7	0.60	0.71	0.62	49.9
Approach			691	8.5	691	8.5	0.324	5.8	NA	1.9	14.7	0.39	0.46	0.41	55.4
All Vehicles			1621	7.2	1621	7.2	0.324	4.1	NA	1.9	14.7	0.19	0.34	0.19	56.5

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.

MOVEMENT SUMMARY

Site: 3PM_O3 [MIT_BLU_36_PM_O3 (Site Folder: 2036 Option 3)]

Output produced by SIDRA INTERSECTION Version: 9.1.5.224

Mitchell Highway / Blueridge Drive
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: Blueridge Drive															
1	L2	All MCs	445	7.1	445	7.1	0.252	4.5	LOS A	0.0	0.0	0.00	0.46	0.00	46.3
2	R2	All MCs	87	11.4	87	11.4	0.119	7.6	LOS A	0.4	2.9	0.50	0.72	0.50	47.8
Approach			533	7.8	533	7.8	0.252	5.0	LOS A	0.4	2.9	0.08	0.50	0.08	46.6
East: Mitchell Highway															
3	L2	All MCs	36	25.2	36	25.2	0.023	7.0	LOS A	0.0	0.0	0.00	0.56	0.00	53.3
4	T1	All MCs	370	3.8	370	3.8	0.182	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
Approach			406	5.7	406	5.7	0.182	0.6	NA	0.0	0.0	0.00	0.05	0.00	68.0
West: Mitchell Highway															
5	T1	All MCs	407	6.8	407	6.8	0.218	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.9
6	R2	All MCs	248	17.0	248	17.0	0.163	8.2	LOS A	0.9	7.0	0.49	0.63	0.49	50.2
Approach			655	10.6	655	10.6	0.218	3.2	NA	0.9	7.0	0.19	0.24	0.19	60.8
All Vehicles			1593	8.4	1593	8.4	0.252	3.1	NA	0.9	7.0	0.10	0.28	0.10	56.6

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.

Thoughtful Transport Solutions

Suite 4.03, Level 4, 157 Walker Street, North Sydney NSW 2060
sctconsulting.com.au