9 Rose Lane

Traffic Impact Assessment

Old Launceston Seaport P/L

21 October 2022

→ **The Power of Commitment**

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1. Introduction

1.1 Background

GHD was engaged by Old Launceston Seaport P/L to prepare a Traffic Impact Assessment for a proposed commercial development at 9 Rose Lane, South Launceston.

1.2 Purpose of this report

The purpose of this report is to document the transport impacts of the development, to assess the impacts against the relevant sections of the Planning Scheme and to identify any impact mitigation treatments that may be required.

1.3 Scope and limitations

This report: has been prepared by GHD for Old Launceston Seaport P/L and may only be used and relied on by Old Launceston Seaport P/L for the purpose agreed between GHD and Old Launceston Seaport P/L as set out in this report.

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1.4 Assumptions

This Traffic Impact Assessment was developed based on the following assumptions as well as other assumptions documented in this report:

– The commercial development consists of 3 x private medical-use tenancies and 3 x professional office buildings.
– The type of delivery vehicle expected to access the development site is limited to small vans.
– Waste collection will occur on-site, and rubbish trucks will enter and exit the site via separate access points on Rose Lane.
– The Planning Scheme means the *Tasmanian Planning Scheme State Planning Provisions*.

1.5 References

The following documents and materials have been referred to for the purposes of this Traffic Impact Assessment:

– Dwg no. 211043-A002-Sk04 *Rose Lane Offices*, Artas Architects (9th September 2022).
– Tasmanian Planning Scheme State Planning Provisions.

- Roads and Traffic Authority (RTA) Guide to Traffic Generating Developments, Version 2.2, October 2002.
- Roads and Maritime Services (RMS) Guide to Traffic Generating Developments – updated traffic surveys, August 2013.
- ITE Trip Generation Manual, 6th Edition.
- Five-year crash history in the road network sourced from the Department of State Growth.
- SCATS data at Site 9238 for the period between 5th August 2021 to 12th August 2021, sourced from the Department of State Growth.
- Turning movement counts at Westbury Road and Wellington Street intersection, collected August 2017, sourced from City of Launceston.
- LGAT Standard Drawings.
- *Austroads Guide to Road Design Part 3: Geometric Design*
- AS2890.1 *Parking facilities, Part 1: Off-street car parking.*

1.6 Subject site

The subject site is a currently vacant parcel of land at 9 Rose Lane, South Launceston. The site and its surrounds are shown in Figure 1.

Figure 1 Subject site

Base imagery obtained from TheLIST @State of Tasmania (accessed August 2021)

2. Existing Conditions

2.1 Transport network

For the purposes of this Traffic Impact Assessment, the transport network is considered to consist of the following roads:

– Rose Lane,
– Westbury Road,
– Wellington Street, and
– Peel Street.

These roads are discussed further in the following sections.

2.1.1 Rose Lane

Rose Lane is a local access road providing direct access to residential land and the subject site. It is a two-way, undivided road with formal and informal on-street parking permitted in sections. It connects Wellington Street to the north and Peel Street to the south and intersects with Westbury Road. The intersections of Rose Lane with Wellington Street and Westbury Road are give-way controlled.

The default speed limit on Rose Lane is 50 km/h.

2.1.1.1 Traffic Volume Estimation

No traffic data could be sourced for Rose Lane. As a result, traffic volumes on Rose Lane have been estimated based on trip generation rates from the *RTA Guide to Traffic Generating Developments* (RTA Guide) (October 2002) and the *RMS Guide to Traffic Generating Developments* (RMS Guide) (August 2013).

Land uses, shown in Figure 2, have been assumed to consist of the following:

– Industry (all assumed to be factories to utilise higher trip generation rates)
– Residential (all assumed to be single dwellings to utilise higher trip generation rates), and
– Place of worship.

It is noted that the subject site (9 Rose Lane) is vacant and currently zoned for General Residential within the northern allotment on the corner of Rose Lane, and zoned for Recreation for the southern allotments. All parking demand relating to Glen Dhu Primary School and Watts Oval is assumed to be serviced by Pottery Court and not Rose Lane.

The trip generation rates for the above lands uses from the RTA and RMS guides supplemented by the *ITE Trip Generation Manual* are summarised in Table 1. Weekday trip generation rates have been used to align with higher traffic volumes in the network during weekday peak periods.

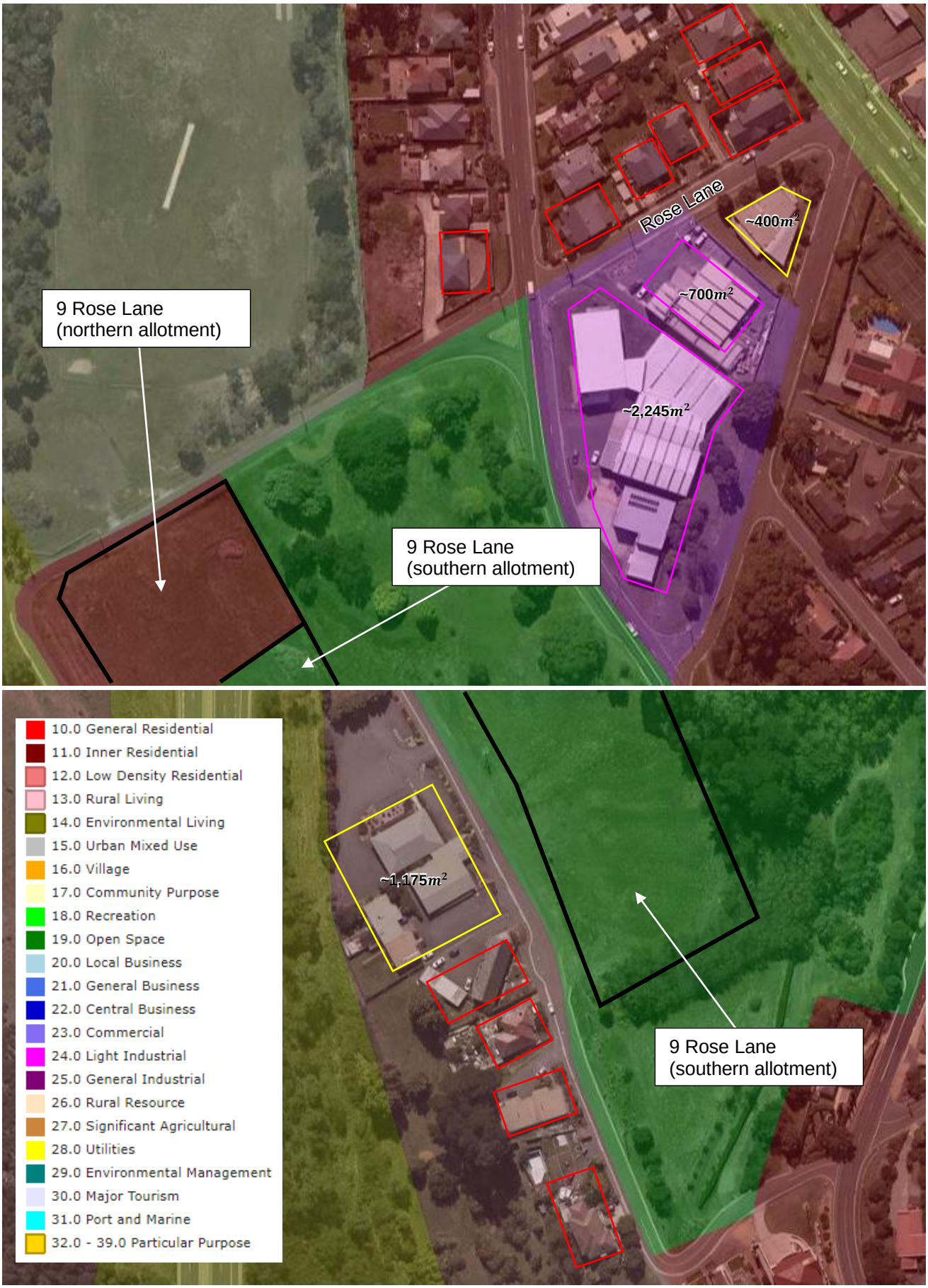


Figure 2 *Land uses accessed from Rose Lane*

Table 1 Weekday trip generation rates

Land use	Trip generation rate		Quantities	Number of vehicle trips	
	Peak hour	Daily		Peak hour	Daily
Rose Lane between Wellington Street and Westbury Road					
Residential	0.85 vehicle trips per dwelling	9 vehicle trips per dwelling	6 x dwellings	~5 vehicle trips	54 vehicle trips
Industry	1 vehicle trips per 100 m^2 of GFA	10 vehicle trip per 100 m^2 of GFA	2,945 m^2 of GFA (total)	~29 vehicle trips	~295 vehicle trips
Place of worship	1.34 vehicle trips per 1,000 m^2 of GFA*	9.57 vehicle trips per 1,000 m^2 of GFA	400 m^2 of GFA	~1 vehicle trips	~4 vehicle trips
			Total	**~35 vehicle trips**	**~352 vehicle trips**
Rose Lane between Westbury Road and Peel Street					
Residential	0.85 vehicle trips per dwelling	9 vehicle trips per dwelling	5 x dwellings	~4 vehicle trips	45 vehicle trips
Place of worship	1.34 vehicle trips per 1,000 m^2 of GFA*	9.57 vehicle trips per 1,000 m^2 of GFA	1,175 m^2 of GFA	~2 vehicle trips	~11 vehicle trips
			Total	**~6 vehicle trips**	**~56 vehicle trips**

*Calculated from a daily trip generation rate of 13.4 person trips/day (14% occurs during peak hour) with a vehicle occupancy of 1.4

Based on the trip generation rates and gross floor area estimates of the different lots on Rose Lane, the weekday peak hour traffic volume on Rose Lane is up to approximately 45 vehicles/hr (two-way).

The two-way daily weekday traffic volume on Rose Lane is approximately up to 450 vehicles/day.

It is noted that these values are conservative as there are two existing access points to Rose Lane.

2.1.2 Westbury Road

Westbury Road is an arterial road connecting Wellington Street in South Launceston to the north, and Prospect and Prospect Vale to the south, eventually joining Bass Highway. The three-legged intersection of Westbury Road and Wellington Street is signalised at an acute angle with right-in and left-out only access permitted from Westbury Road. In general, Westbury Road is a two-lane, two-way, undivided road with on-street parking and indented bus bays at intervals. South of Rose Lane intersection, Westbury Road has an auxiliary southbound traffic lane.

Based on data from a turning movement survey (August 2017) supplied by Launceston City Council, the peak hour traffic volumes on Westbury Road are as follows:

– AM peak hour 484 vehicles/hr (northbound), 359 vehicles/hr (southbound)
– PM peak hour 378 vehicles/hr (northbound), 553 vehicles/hr (southbound)

A check against SCATS data (August 2021) obtained from the Department of State Growth showed that the 2017 traffic data set is still relevant.

Route 160, 161 and 162 buses operate along Westbury Road in the vicinity of the subject site. The general posted speed limit on Westbury Road is 60 km/h but reduces to 40 km/h during school peak periods within the school zone near Wellington Street intersection.

2.1.3 Wellington Street

Wellington Street is an arterial road connecting the Midland Highway to the north and Hobart Road to the south. In the vicinity of the subject site, Wellington Street intersects with Westbury Road, Rose Lane and Peel Street.

Wellington Street is a two-way, two-lane road divided by a delineated centre median. Several bus routes operate along Wellington Street.

Based on data from a turning movement survey (August 2017) supplied by Launceston City Council, the peak hour traffic volumes on Wellington Street north of Westbury Road are as follows:

– AM peak hour 886 vehicles/hr (northbound), 814 vehicles/hr (southbound)
– PM peak hour 786 vehicles/hr (northbound), 1170 vehicles/hr (southbound)

A check against SCATS data (August 2021) obtained from the Department of State Growth showed that the 2017 traffic data set is still relevant.

The general posted speed limit on Wellington Street is 60 km/h but reduces to 40 km/h during school peak periods within the school zone near Westbury Road intersection.

2.1.4 Peel Street

Peel Street is a local collector road connecting Rose Lane to the west and Wellington Street to the east. It intersects with Westbury Road at crossroads and provides access to residential land uses and local access roads.

The default speed limit on Peel Street is 50 km/h.

2.2 Bus network

Metro Tasmania and Tassielink buses operate on Wellington Street and Westbury Road in the vicinity of the subject site. An excerpt of the bus network is shown in Figure 3. The closest bus stops to the subject site are located on Westbury Road approximately 50 metres north of Rose Lane intersection and approximately 50 metres south of Rose Lane intersection. The bus stop south of Rose Lane is not connected to the sealed footpath network.

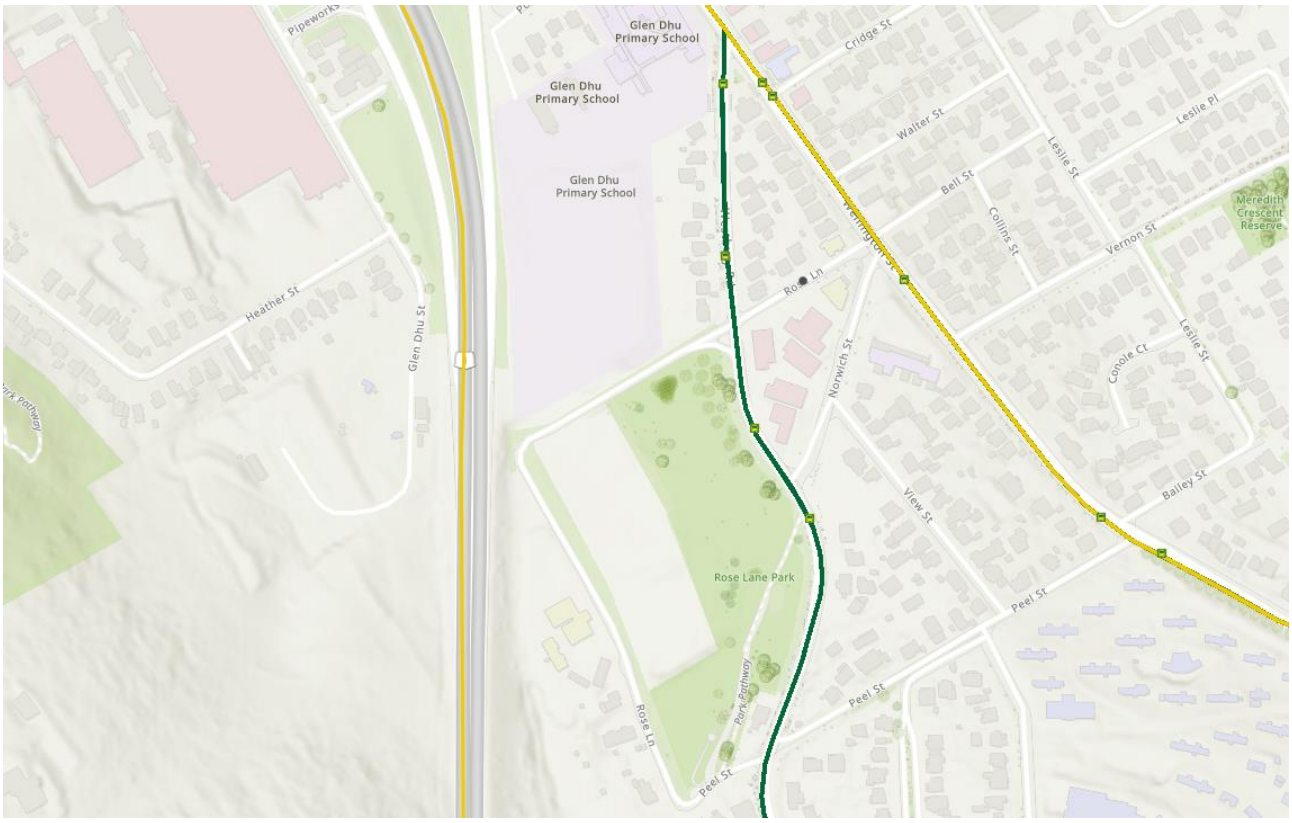


Figure 3 Excerpt of the bus network in the vicinity of the subject site

Base map obtained from TheLIST @State of Tasmania (accessed August 2021)

2.3 Cycling network

There is a northbound cycling lane on Wellington Street south of Peel Street intersection, and a delineated parking lane along the same section on the southbound side that cyclists can ride within. The remainder of the cycling network in the vicinity of the subject site is largely informal with cyclists able to ride within traffic on Rose Lane, Westbury Road and Wellington Street. This is a generally safe environment on Rose Lane where the typical daily volume of traffic is relatively low. However, the higher traffic volumes on Westbury Road are generally not conducive to cycling.

2.4 Pedestrian network

The pedestrian network in the vicinity of the subject site is summarised in Table 2.

Table 2 Summary of the pedestrian network in the vicinity of the subject site

Road	Pedestrian network breakdown
Rose Lane	– Continuous sealed footpaths on either side of the road between Westbury Road and Wellington Street. – Limited sealed footpath network between Peel Street and Westbury Road, northbound side only.
Westbury Road	– Pedestrian overpass across Westbury Road south of Wellington Street. – Continuous sealed footpaths on either side of the road between Rose Lane and Wellington Street. Footpath on Westbury Road northbound side is discontinuous and low-grade in sections.
Wellington Street	– Signalised pedestrian crossings at Westbury Road and Wellington Street intersection. – Pedestrian overpass across Wellington Street between Westbury Road and Cridge Street. – Unsignalised pedestrian crossing with refuge adjacent to Peel Street intersection. – Continuous footpaths on either side of the road north of Peel Street intersection. Footpath on Wellington Street northbound side stops at pedestrian refuge crossing.
Peel Street	– Continuous sealed footpath on Peel Street westbound side only.

2.5 Crash history

The road crash history in the vicinity of the subject site has been assessed for the five-year period, between 1 January 2017 to 31 December 2021. The summarised crash data sourced from the DSG is presented in Table 3 and Figure 4 and covers Westbury Road, between the intersection with Wellington Street and Peel Street.

Table 3 Summarised crash data

Location	Number of crashes		Dominant crash type(s)
	Total	Casualty	
Mid-block			
Westbury Road	8	1	Loss of control (4), rear end (2), side swipe (1), pedestrian (1)
Intersection			
Westbury Road / Wellington Street	4	1	Rear end (3), loss of control (1)
Westbury Road / Rose Lane	3	1	Cross traffic (2), right rear (1)
Westbury Road / Norwich Street	1	1	Right rear (1)
Westbury Road / Peel Street	1	1	Right through (1)
Total	***17***	***5***	

In total, 17 crashes were recorded in the vicinity of the subject site. There were no serious-injury or fatal-injury crashes. No crashes were recorded along Rose Lane or Peel Street except at the intersections with Westbury Road.

Crashes at the intersection of Westbury Road and Wellington Street were primarily rear end collisions associated with traffic signal control. There were eight crashes recorded mid-block along Westbury Road and the crash history included single vehicle incidents, rear end collisions, one side swipe and one pedestrian crash.

Two cross-traffic type crashes and one right-rear type crash were recorded at the intersection of Westbury Road and Rose Lane. While there is not a significant trend over the last five years, the presence of these crash types may suggest road safety deficiencies at this location. These are discussed further, along with potential mitigation measure, in Section 6.2.3 of this report.

Figure 4 ***Five-year crash history in the vicinity of the subject site***

Base map obtained from LISTMap © State of Tasmania

3. Proposed Conditions

3.1 Overview

The proposed development comprises of a new Local Business/Commercial block within a total site area of approximately 10,000 m^2 as shown in Appendix A. Vehicular access to the development site is proposed via the following three new crossovers:

– Main two-way access on the north-west property boundary at Rose Lane,
– Secondary two-way access on the west property boundary at Rose Lane, and
– Two-way (overflow car park) access on the west property boundary at Rose Lane.

The proposed development consists of six standalone buildings, each comprising of a single level. It is assumed that half (3) of these buildings would be allocated to medical uses (1x veterinary clinic, 1x medical centre, 1x dental clinic) and the other half (3) would be allocated to professional office uses (e.g., accountancy firm, law firm etc.). Tenancies 1 to 5 each have a Gross Floor Area (GFA) of 502.2$m^2$and Tenancy 6 has a GFA of 495.26m^2. It is assumed that Tenancy 6 would be used as a professional office building.

Surrounding these buildings are 123 off-street car parking spaces located within a main car park (83) and an overflow car park (40). Six of these car parking spaces are accessible parking spaces designed in accordance with AS 2890.6. A further three spaces are allocated to taxi parking.

3.2 Trip generation and distribution

The development site is assumed to consist of three medical-use tenancies and three professional office tenancies. The opening hours of each tenancy are assumed to be approximately between 9:00 AM – 5:00 PM Monday to Friday.

3.2.1 Trip generation

Trip generation rates were sourced from the RMS Guide to traffic generating developments – updated traffic surveys (August 2013) or derived from first principles.

Medical

The vehicle trip generation for each medical-use tenancy has been derived from first principles as detailed below.

The AM and PM peak hour trip generation rate is estimated to be up to 12 vehicle trips per hour per medical-use tenancy. This is based on the following assumptions:

– Staff arrivals in the morning occur before AM peak hour, and staff departures in the evening occur after PM peak hour. Peak hour trip generation is therefore made up of client trips.
– On average, up to four treatment rooms in each tenancy are in use during peak hour. Each of these treatment rooms accommodate one medical practitioner and one client at a time.
– The medical practitioner in each treatment room may see up to two clients per hour. This is assumed to equate to three vehicle trips per hour per treatment room. During AM peak hour, these three vehicle trips are composed of the first client's arrival trip, the second client's arrival trip and the first client's departure trip. During PM peak hour, these three vehicle trips are composed of the second client's arrival trip, the first client's departure trip, and the second client's departure trip.
– The proposed medical centre will likely have a higher trip generating potential that will be balanced out by the proposed dental clinic and veterinary clinic that will likely have lower trip generating potentials.

The daily trip generation rate is estimated to be up to 125 vehicle trips per day per medical-use tenancy. This is based on the following assumptions:

– The average number of staff for each tenancy is six medical practitioners and six support staff. At least two vehicle trips (arrival and departure) are generated by each staff member daily, and at least 50% of all staff generate an additional arrival and departure trip during lunchtime.

– Up to 12 vehicle trips are generated by clients each hour between 9:00 AM – 5:00 PM, except during the midday lunchtime period.
– On average, two service or delivery vehicle trips (1 x inbound trip, 1 x outbound trip) are generated by each medical tenancy daily and outside of peak period.

Based on the above, the adopted traffic generation for a single medical-use tenancy is as follows:

– Daily vehicle trips 125 vehicle trips per day
– AM peak hour trips 12 vehicle trips per hour
– PM peak hour trips 12 vehicle trips per hour

Given there are three proposed medical-use tenancies, the combined traffic generation for the medical-use tenancies are as follows:

– Daily vehicle trips 375 vehicle trips per day (two-way)
– AM peak hour trips 36 vehicle trips per hour (two-way)
– PM peak hour trips 36 vehicle trips per hour (two-way)

Professional offices

For professional offices, the RMS Guide recommends the following trip generation rates:

– Daily vehicle trips 11 vehicle trips per 100m^2 GFA per day
– AM peak hour trips 1.6 vehicle trips per 100m^2 GFA per hour
– PM peak hour trips 1.2 vehicle trips per 100m^2 GFA per hour

Based on the proposed combined GFA of 1502m^2discussed in Section 3.1, the combined trip generation for the proposed professional office tenancies is calculated to be as follows:

– Daily vehicle trips 165 vehicle trips per day
– AM peak hour trips 24 vehicle trips per hour
– PM peak hour trips 18 vehicle trips per hour

Summary

The total trip generation of the proposed development including both the medical-use tenancies and the professional office tenancies is estimated as follows:

– Daily vehicle trips 540 vehicle trips per day
– AM peak hour trips 60 vehicle trips per hour
– PM peak hour trips 54 vehicle trips per hour

3.2.2 Trip distribution

The following distribution of inbound and outbound vehicle trips to the development site have been assumed:

– During AM peak hour, 80% of vehicle trips are inbound and 20% are outbound
– During PM peak hour, 20% of vehicle trips are inbound and 80% are outbound

Based on the above assumption, the calculated number of inbound and outbound trips to and from the development site is summarised in Table 4.

Table 4 Inbound and outbound trips generated by the development site

Time of day	Inbound trips (to 9 Rose Lane)	Outbound trips
AM peak hour	48 vehicle trips	12 vehicle trips
PM peak hour	12 vehicle trips	42 vehicle trips

Launceston, Kings Meadows and Prospect/Prospect Vale are considered to be the key origins and destinations for inbound and outbound trips generated by the subject site. Primary and secondary routes to these origins and destinations are shown in Figure 5 whereby primary routes indicate the more likely routes to be taken.

Based on turning movement counts from a traffic survey undertaken in August 2017 at Westbury Road and Wellington Street intersection, the peak split of inbound and outbound trips is estimated as follows:

– To/from Launceston 52%
– To/from Kings Meadows 27%
– To/from Prospect/ Vale 21%

Assuming that all vehicles return to the subject site by retracing their outbound trip, the above percentages apply to both inbound and outbound trips during AM and PM peaks.

Considering the split of vehicle trips across the highlighted primary routes, Westbury Road and Wellington intersection and Rose Lane and Westbury Road intersection will experience the most impact from proposed developments. Intersection modelling has therefore been undertaken to assess the performance of the two intersections in Section 4.

Figure 5 Inbound and outbound routes

Base imagery obtained from TheLIST @State of Tasmania (accessed August 2021)

4. Traffic Assessment

4.1 Traffic data

Traffic data for Westbury Road and Wellington intersection and Rose Lane and Westbury Road intersection has been sourced as outlined in the below sections.

4.1.1 Westbury Road and Wellington Street intersection

A traffic survey was undertaken at Westbury Road and Wellington Street intersection in August 2017. It was determined that AM peak hour occurred between 8:15 AM to 9:15 AM and PM peak hour occurred between 4:15 PM to 5:15 PM. A comparison of the traffic volumes from this survey against SCATS data sourced in August 2021 indicated that there was no apparent traffic growth at the intersection between 2017 and 2021. The turning movements counts from this 2017 traffic survey were therefore used to represent existing condition volumes at the intersection.

4.1.2 Rose Lane and Westbury Road intersection

Turning movement counts at the Rose Lane and Westbury Road intersection could not be sourced and were therefore estimated based on:

– Turning movement counts at Westbury Road and Wellington Street intersection to determine traffic volumes on Westbury Road (refer to Section 4.1.1).
– Estimated traffic volumes on Rose Lane (refer to Section 2.1.1.1).

The approach taken to determine the split of turning movements at each approach of Rose Lane and Westbury Road intersection was to compare the two-way traffic volumes on each intersection leg being turned onto. An example to determine the turning movement splits at the north approach (Westbury Road) of the intersection during AM peak is shown as follows:

– Left turn movements 3.8% (portion of Rose Lane east volumes out of total volume)
– Through movements 95.6% (portion of Westbury Road volumes out of total volume)
– Right turn movements 0.6% (portion of Rose Lane west volumes out of total volume)

Note: Rose Lane east refers to the section of Rose Lane east of Westbury Road and Rose Lane west refers to the section of Rose Lane west of Westbury Road. Total volume refers to the sum of volumes on Rose Lane east, Rose Lane west and Westbury Road combined.

4.2 Intersection analysis

SIDRA Intersection modelling was undertaken for Westbury Road and Wellington intersection and Rose Lane and Westbury Road intersection. Four models were developed at each intersection as follows:

1. AM peak hour model – existing conditions
2. PM peak hour model – existing conditions
3. AM peak hour model – proposed conditions (10-year post development)
4. PM peak hour model – proposed conditions (10-year post development)

The key assumptions for traffic modelling are outlined as follows:

– Existing condition volumes are represented by the turning movement volumes outlined in Section 4.1.
– Proposed conditions include trips generated from the proposed development as outlined in Section 3.2.1 as well as 10-year background growth on Wellington Street at a rate of 1% per annum. All peak hour vehicle trips generated by the development site are light vehicle trips. The increase in turning movements at intersections due to the development incorporates the traffic distribution outlined in Section 3.2.2, as well as existing turning movement splits at intersection approaches.

– School zone speed limits are in place during the modelled peak hours.
– Bus volumes are included within heavy vehicle volumes from the survey outlined in Section 4.1.
– Left turning vehicles entering Rose Lane west from Westbury Road give way to right turn-in and through movements from Westbury Road and Rose Lane east due to slip lane arrangement.

Traffic volumes and model outputs are discussed for each intersection in the following sections.

4.2.1 Westbury Road and Wellington Street intersection

Based on the assumptions outlined in Section 4.2, traffic volumes at the Westbury Road and Wellington Street intersection under existing and proposed conditions were determined. The traffic volumes which form inputs to the model are presented in Appendix B.

The intersection was modelled using SIDRA Intersection 9 and outputs from the models are summarised in Table 5 and Table 6 for AM peak and PM peak respectively. Results are expressed based on the following performance metrics:

– Degree of saturation (DoS): a measure representing the ratio of traffic volume to movement capacity.
– Level of Service (LoS): a qualitative measure of the performance of the intersection described in terms of six levels from LoS A (representing very good performance) to LoS F (representing over-capacity).
– Average delay: measured in seconds, the average delay experienced by vehicles using the intersection.
– Queue: measured in metres, the 95th percentile queue length at the intersection.

Table 5 Westbury Road and Wellington Street intersection performance under existing and proposed conditions – AM Peak

Intersection Approach	Movement	Existing Conditions				Proposed Conditions + 10 Years			
		Degree of satn (DoS)	Level of service (LoS)	Delay (s)	Queue (m)	Degree of satn (DoS)	Level of service (LoS)	Delay (s)	Queue (m)
Westbury Rd South Approach	Left	0.806	C	20.4	82.9	0.816	C	20.9	85.3
Wellington Street South-East Approach	Through	0.663	B	13.0	57.1	0.663	B	13.0	57.1
Wellington Street North-West Approach	Through	0.753	B	15.1	72.0	0.753	B	15.1	72.0
	Right	0.626	B	15.0	51.2	0.666	B	15.7	56.5
Intersection Overall Performance		***0.806***	***B***	***16.1***	***82.9***	***0.816***	***B***	***16.4***	***85.3***

Table 6 Westbury Road and Wellington Street intersection performance under existing and proposed conditions – PM Peak

Intersection Approach	Movement	Existing Conditions				Proposed Conditions + 10 Years			
		Degree of satn (DoS)	Level of service (LoS)	Delay (s)	Queue (m)	Degree of satn (DoS)	Level of service (LoS)	Delay (s)	Queue (m)
Westbury Rd South Approach	Left	0.585	B	17.4	58.2	0.655	B	19.0	65.7
Wellington Street South-East Approach	Through	0.568	B	12.9	60.6	0.595	B	12.4	66.3
Wellington Street North-West Approach	Through	0.848	C	21.8	129.1	0.889	C	25.7	157.8
	Right	0.851	C	25.8	116.2	0.911	C	33.8	137.9
Intersection Overall Performance		***0.851***	***C***	***20.2***	***129.1***	***0.911***	***C***	***23.7***	***157.8***

Based on the model outputs, the performance of the intersection is considered to perform similarly to existing conditions under proposed conditions during AM peak. The north-west approach on Wellington Street remains at LOS B during AM peak with minor increases in delay and queuing.

During PM peak, there are existing queues in both lanes at the north-west approach on Wellington Street which stretch past Melbourne Street but are contained within the mid-block between Pipeworks Road and Westbury Road. Under proposed conditions, the intersection approaches capacity but continues to perform satisfactorily (LOS C). 95th percentile queue lengths at the north-west approach of the intersection reach Pipeworks Road intersection, however, this is largely attributed to 10-year background growth volumes and not the proposed development as shown in Table 7..

Table 7 Westbury Road and Wellington Street PM peak intersection performance with 10-year background growth

Scenario	Approach	Degree of Saturation	Level of Service	Average Delay [s]	95th% Back of Queue [m]
10 Year Background Growth + No Development (baseline)	Wellington Street North-West Approach	0.901	C	28.6	157.8
10 Year Background Growth + Proposed 9 Rose Lane Development		0.911	C	29.4	157.8

4.2.2 Rose Lane and Westbury Road intersection

Based on the assumptions outlined in Section 4.2, traffic volumes at the Westbury Road and Wellington Street intersection under existing and proposed conditions were determined. The traffic volumes which form inputs to the model are presented in Appendix B.

The intersection was modelled using SIDRA Intersection 9 and outputs from the models are summarised in Table 8 and Table 9 for the AM peak and PM peak respectively.

Table 8 Rose Lane and Westbury Road intersection performance under existing and proposed conditions – AM Peak

Intersection Approach	Movement	Existing Conditions				Proposed Conditions			
		Degree of satn (DoS)	Level of service (LoS)	Delay (s)	Queue (m)	Degree of satn (DoS)	Level of service (LoS)	Delay (s)	Queue (m)
Westbury Rd South Approach	Left	0.283	A	8.5	1.8	0.290	A	8.1	2.1
	Through	0.283	A	0.1	1.8	0.290	A	0.1	2.1
	Right	0.283	A	6.8	1.8	0.290	A	6.9	2.1
Westbury Rd North Approach	Left	0.215	A	6.9	0.3	0.240	A	8.7	3.0
	Through	0.215	A	0.0	0.3	0.240	A	0.3	3.0
	Right	0.215	A	7.1	0.3	0.240	A	7.2	3.0
Rose Ln South-West Approach	Left	0.012	A	6.3	0.3	0.036	A	6.4	0.8
	Through	0.012	A	9.5	0.3	0.036	B	10.1	0.8
	Right	0.012	B	13.4	0.3	0.036	B	14.4	0.8
Rose Ln North-East Approach	Left	0.077	A	5.8	1.8	0.113	A	5.8	2.6
	Through	0.077	A	9.8	1.8	0.113	B	10.5	2.6
	Right	0.077	B	13.7	1.8	0.113	B	14.5	2.6
Intersection Overall Performance		***0.283***	***NA***	***0.8***	***1.8***	***0.290***	***NA***	***1.5***	***3.0***

Table 9 Rose Lane and Westbury Road intersection performance under existing and proposed conditions – PM Peak

Intersection Approach	Movement	Existing Conditions				Proposed Conditions			
		Degree of satn (DoS)	Level of service (LoS)	Delay (s)	Queue (m)	Degree of satn (DoS)	Level of service (LoS)	Delay (s)	Queue (m)
Westbury Rd South Approach	Left	0.215	A	9.7	1.6	0.216	A	9.4	1.7
	Through	0.215	A	0.2	1.6	0.216	A	0.2	1.7
	Right	0.215	A	8.0	1.6	0.216	A	8.0	1.7
Westbury Rd North Approach	Left	0.319	A	6.8	0.4	0.324	A	7.2	1.1
	Through	0.319	A	0.0	0.4	0.324	A	0.1	1.1
	Right	0.319	A	6.5	0.4	0.324	A	6.6	1.1
Rose Ln South-West Approach	Left	0.015	A	5.7	0.3	0.101	A	5.8	2.3
	Through	0.015	B	10.6	0.3	0.101	B	11.4	2.3
	Right	0.015	B	14.8	0.3	0.101	C	15.8	2.3
Rose Ln North-East Approach	Left	0.075	A	6.9	1.7	0.088	A	7.1	2.1
	Through	0.075	B	10.9	1.7	0.088	B	11.1	2.1
	Right	0.075	C	15.1	1.7	0.088	C	15.9	2.1
Intersection Overall Performance		***0.319***	***NA***	***0.8***	***1.7***	***0.324***	***NA***	***1.3***	***2.3***

Based on the model outputs, the performance of the intersection is considered to perform similarly to existing conditions under proposed conditions for both peaks, with no material change in the level of service. Some movements experience increased delays, however the intersection remains well within the capacity given a maximum degree of saturation of 0.324.

Notably:

– Right turns out of Rose Lane (both directions) would operate at LoS C during the PM peak, with delays of around 16 seconds (increased from 15 seconds).

– The southbound right turn from Westbury Road onto Rose Lane would operate at LoS A during both the AM and PM peak periods, with average delays for this movement in the order of 6-7 seconds.

The 95th percentile queue length for all movements is less than one vehicle, which indicates that queues are not expected to develop on any intersection approaches for an extended period of time. It is noted that minor queues may develop on Westbury Road coinciding with vehicles undertaking right turns onto Rose Lane, however these would not be significant and would clear relatively quickly given the low traffic volume undertaking this movement and the low delay of around 6-7 seconds.

5. Parking Assessment

5.1 Parking spaces

The proposed development consists of a mix of medical-use tenancies and professional offices. By Table C2.1 of the Planning Scheme, the parking requirement for these uses is presented in Table 10.

Table 10 Table C2.1 requirements

Use	Car parking requirement	Bicycle parking requirement
Office	1 space per 40 m^2 of GFA.	1 space per 500m^2 of GFA
Doctors' surgery, clinic, consulting room	4 spaces per practitioner	2 spaces for each 8 practitioners
Veterinary centre	4 spaces per practitioner	No requirement

The total GFA for the proposed offices is approximately 1502 m^2, and the total number of registered practitioners for the medical-use tenancies is assumed to be 18 practitioners (six practitioners per medical use tenancy). Based on these quantities, the Table C2.1 parking requirements for the proposed development are calculated to be as follows:

– Car parking
  - Offices 38 parking spaces
  - Consulting rooms 72 parking spaces
  - Total 110 parking spaces
– Bicycle parking
  - Offices 4 bicycle spaces
  - Consulting rooms 2 bicycle spaces
  - Total 6 bicycle spaces

5.1.1 Car parking spaces

The Acceptable Solution of Clause C2.5.1-A1 of the Planning Scheme states that *"the number of car parking spaces must be no less than the number specified in Table C2.1"*. Given that the proposed parking supply of 123 spaces exceeds the requirements of Table C2.1 (110 spaces), the proposed development complies with the acceptable solution.

5.1.2 Bicycle parking spaces

The Acceptable Solution of Clause C2.5.2-A1 of the Planning Scheme states that *"Bicycle parking spaces must: (a) be provided on the site or within 50m of the site; and (b) be no less than the number specified in Table C2.1"*. The proposed development provides a total of eight bicycle parking spaces in the form of four, double-sided bicycle hoops, and therefore complies with the acceptable solution.

5.1.3 Motorcycle parking spaces

The Acceptable Solution of Clause C2.5.3-A1 of the Planning Scheme states that *"The number of on-site motorcycle parking spaces for all uses must: (a) be no less than the number specified in Table C2.4"*.

Based on Table C2.4, the required number of motorcycle parking spaces is one space for the first 40 car parking spaces required by Table C2.1 plus one additional space for every additional 20 car parking spaces required. Given a total requirement of 110 car parking spaces, the proposed development would require a total of five

motorcycle parking spaces. The proposed supply of eight designated motorcycle spaces exceeds this requirement and therefore the proposed development complies with the acceptable solution.

5.1.4 Loading bays

The Acceptable Solution of Clause C2.5.4-A1 of the Planning Scheme states that *"A loading bay must be provided for uses with a floor area or more than 1000 m^2 in a single occupancy."* Given that none of the proposed tenancies would have a floor area greater than 1000 m^2, dedicated loading bays are not required.

Notwithstanding, delivery vehicles will typically comprise of light vehicles (e.g. courier vans) that will be able to park within a standard car parking space. It is anticipated that each tenancy will generate up to two delivery vehicle movements per day (one delivery).

Note that waste collection arrangements are described in Section 5.4 of this report.

5.2 Parking areas

5.2.1 Construction of parking areas

The Acceptable Solution of Clause C2.6.1-A1 of the Planning Scheme states that*:*

"All parking, access ways, manoeuvring and circulation spaces must:

(a) be constructed with a durable all weather pavement;

(b) be drained to the public stormwater system, or contain stormwater on the site; and

(c) excluding all uses in the Rural Zone, Agriculture Zone, Landscape Conservation Zone, Environmental Management Zone, Recreation Zone and Open Space Zone, be surfaced by a spray seal, asphalt, concrete, pavers or equivalent material to restrict abrasion from traffic and minimise entry of water to the pavement."

The proposed car parking areas would be sealed and designed in accordance with the above requirements in compliance with the acceptable solution.

5.2.2 Design and layout of parking areas

The Acceptable Solution of Clause C2.6.2-A1.1 of the Planning Scheme states that:

"Parking, access ways, manoeuvring and circulation spaces must either:

(a) comply with the following:

(i) have a gradient in accordance with Australian Standard AS 2890 – Parking facilities, Parts 1-6;

(ii) provide for vehicles to enter and exit the site in a forward direction where providing for more than 4 parking spaces;

(iii) have an access width not less than the requirements in Table C2.2;

(iv) have car parking space dimensions which satisfy the requirements in Table C2.3;

(v) have a combined access and manoeuvring width adjacent to parking spaces not less than the requirements in Table C2.3 where there are 3 or more car parking spaces;

(vi) have a vertical clearance of not less than 2.1m above the parking surface level; and

(vii) excluding a single dwelling, be delineated by line marking or other clear physical means; or

(b) comply with Australian Standard AS 2890-Parking facilities, Parts 1-6."

The proposed car park is designed with the following dimensions:

– Access width 6.0 metres
– Parking aisle width 8.0 metres

– Parking space dimension 2.7 metres wide and 5.5 metres long

The above dimensions comply with the requirements of Table C2.2 and Table C2.3. The main car park allows good circulation, with two access points onto Rose Lane, and turning bays at the end of 'dead end' aisles. The overflow car park provides a turning facility at the end to allow forward entry and exit. There are no significant constraints that would prevent the car park being designed to meet the maximum gradients set out in AS 2890.

Based on the above assessment, the proposed car park complies with the Acceptable Solution A1.1.

The Acceptable Solution of Clause C2.6.2-A1.2 of the Planning Scheme states that:

> *"Parking spaces provided for use by persons with a disability must satisfy the following:*
>
> *(a) be located as close as practicable to the main entry point to the building;*
>
> *(b) be incorporated into the overall car park design; and*
>
> *(c) be designed and constructed in accordance with Australian/New Zealand Standard AS/NZS 2890.6:2009 Parking facilities, Off-street parking for people with disabilities."*

Note (1) to the clause states that: *"Requirements for the number of accessible car parking spaces are specified in part D3 of the National Construction Code 2016."* It is noted that the NCC 2016 has been superseded by the NCC 2019 version.

The proposed office buildings are classified in the NCC as Class 5 buildings and the proposed medical-use tenancies are classified as Class 9a buildings. The accessible parking spaces requirements for these buildings are summarised as follows:

– Class 5 Building 1 space for every 100 car parking spaces or part thereof
– Class 9a Building 1 space for every 50 car parking spaces or part thereof

Approximately 40% of the proposed car parking supply is allocated to Class 9a Buildings and approximately 60% is allocated to Class 5 Buildings. Based on this allocation and 123 proposed car parking spaces, the proposed development would require two accessible car parking spaces to be provided. The proposed site plan includes six accessible car parking spaces, with one located along the frontage of each of the proposed tenancies on the site. This satisfies the requirements of the NCC and therefore the proposed development complies with the acceptable solution.

5.3 Pedestrian access

The Acceptable Solution of Clause C2.6.5-A1.1 of the Planning Scheme states that:

> *"Uses that require 10 or more car parking spaces must:*
>
> *(a) have a 1m wide footpath that is separated from the access ways or parking aisles, excluding where crossing access ways or parking aisles, by:*
>
> *(i) a horizontal distance of 2.5m between the edge of the footpath and the access way or parking aisle; or*
>
> *(ii) protective devices such as bollards, guard rails or planters between the footpath and the access way or parking aisle; and*
>
> *(b) be signed and line marked at points where pedestrians cross access ways or parking aisles.*

The proposed development provides an internal network of connected footpaths and priority crossings which provide safe passage for pedestrians to and from car parking spaces. A 1.5-metre-wide footpath is proposed on Rose Lane for the section east of the main site access but does not continue through the access itself. A footpath connection is, however, provided to and from Rose Lane alongside the secondary site access.

As the closest access to Westbury Road and Wellington Street and the bus stops in the surrounding network, the main site access is anticipated to be used by the majority of pedestrians.

Subject to the provision of physical separation (e.g. bollards or similar device) between the main vehicular access points and the pedestrian access, the proposed development complies with the acceptable solution.

5.4 Waste collection

It is anticipated that rubbish generated by the proposed buildings would be stored in communal waste collection points at two locations on the site and collected by a contractor on a weekly basis. This may generate up to six vehicle movements per week (three collections) by a front or rear loading garbage truck. The swept path of a standard 10-metre rear-lift garbage truck through the site is demonstrated in Figure 6. Waste collection movements would typically occur outside of peak activity periods at the site, and would be done under a range of standard operating procedures implemented by the contractor including use of warning beepers for reversing movements.

Figure 6 *Swept path assessment – 10 m Rear-Lift Garbage Truck*

6. Impacts Assessment

6.1 Access arrangements

6.1.1 Intersection of Westbury Road and Rose Lane

The Austroads publication, *Guide to Traffic Management – Part 6: Intersections, Interchanges and Crossings* (2020) provides warrants for the provision of turn lanes at intersections. Based on the right turning volumes and through traffic volumes provided in Appendix B to this report, the warrants for a right turn lane are presented in Figure 7.

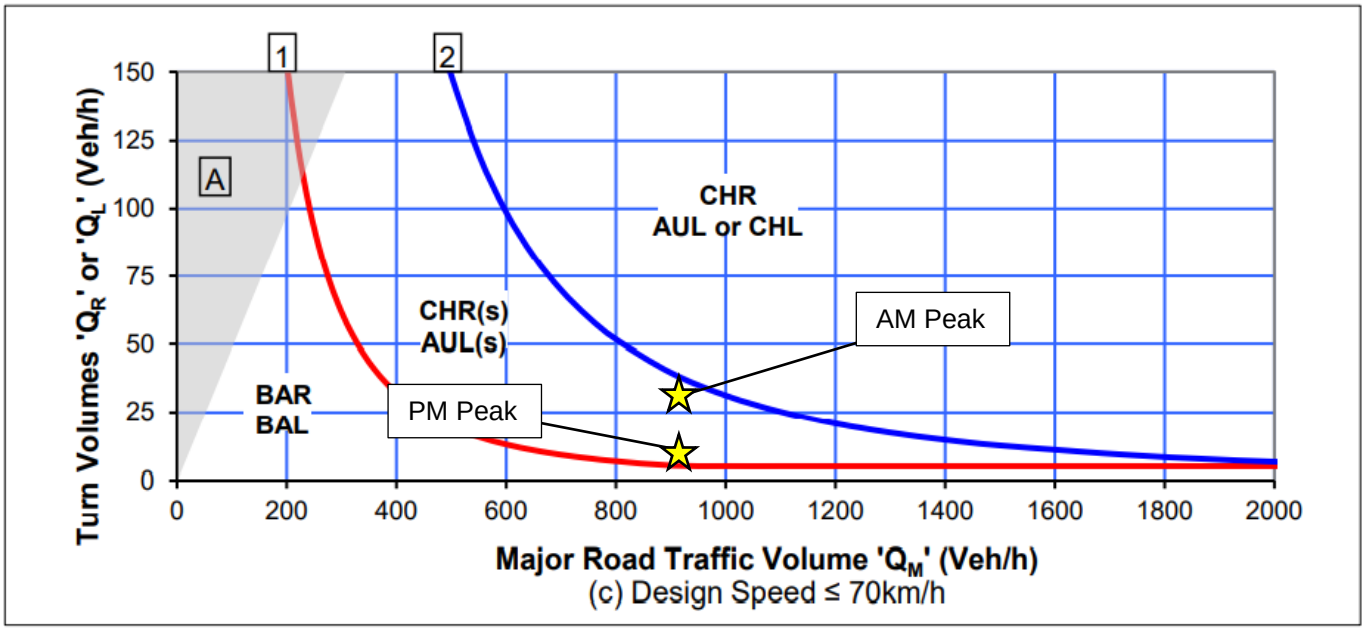


Figure 7 Turn lane warrants (Austroads 2020)

Based on a strict interpretation of the warrants, a CHR(s) treatment would be appropriate at the intersection of Westbury Road and Rose Lane to facilitate right turns into Rose Lane during the morning and afternoon peak periods. It is noted, however, that the warrants are a guide only and were developed primarily based on benefits and costs associated with treatments on new roads. While they can be used to inform decision making on existing roads and road upgrades, some of the benefits are eroded due to additional costs involved.

In the case of this intersection, it is not feasible to provide a formal, short channelised right turn treatment. This is due to a range of factors including:

– Limited ability to widen the road due to crossfalls
– Loss of parking and existing bus stop on Westbury Road

Notwithstanding the above, it is clear that some right turn treatment on Westbury Road for turns into Rose Lane is warranted.

It is recommended that a treatment similar to an Urban Basic Right (BAR) treatment be provided at this location to provide some measure of queue storage for right turns. This would involve widening the southbound traffic lane to six metres to allow a southbound vehicle to overtake a vehicle that is propped and waiting to turn right. The length of the widened southbound lane should be a minimum of 45 metres north of the centre-line on Rose Lane to allow for a 20 metre diverge taper, a 10 metre buffer and storage for one 12.5 metre truck. The widened southbound traffic lane should also be integrated with the start of the overtaking lane located south of the intersection.

A diagram of the recommended treatment is presented in Figure 8. Note that this would require amendments to existing kerbs, removal of vegetation and provision of new footpath, and the removal of two (2) existing parking

spaces on Westbury Road. Parking restrictions would need to be implemented in the form of “No Standing” signs in this location. The road works in this area would be subject to further investigation and design, however the proposed arrangements are considered to be feasible and to provide the ability for southbound vehicles to bypass vehicles turning right into Rose Lane generally in accordance with an Urban BAR treatment.

Figure 8 ***Westbury Road / Rose Lane right turn treatment***

Base map obtained from Metromap © Mapbox © OpenStreetMap

Note that the impacts of this treatment on traffic efficiency and road safety, and the additional traffic due to the proposed development, are described in Sections 6.2.1 and 6.2.3.

6.1.2 Geometry of Rose Lane

Rose Lane is the primary access road to the development site and has an existing sealed road width of approximately 5.8-5.9 metres. With reference to theLISTMap © Tasmania, the reservation width of Rose Lane (east-west alignment) is approximately 12 metres wide, and the reservation width of Rose Lane (north-south alignment) is approximately 20 metres wide.

A minimum road width of 8.9 metres is required by LGAT Standard Drawing dwg. no. TSD-R06-v1 *Urban Roads Typical Section and Pavement Widths* for an urban local through road. The current road width of Rose Lane therefore does not comply with the LGAT road requirements. As such, it would be unsuitable to significantly increase the amount of traffic on Rose Lane (particularly non-residential traffic) without an upgrade of the road.

Notwithstanding the above, it would be appropriate to consider a departure from the LGAT Standard Drawing TSD-R06-v1 requirements based on the following relevant considerations:

– Traffic volumes would remain relatively low at less than 1,000 vehicles per day (two-way)
– The road has a relatively steep gradient, and maintaining a narrower carriageway would aid in reducing vehicle speeds heading downhill
– There is very little demand for on-street parking
– It would tie in better with the existing sections of Rose Lane
– Existing power lines are present on the northern side of Rose Lane which may require relocation if the road is widened to 8.9 metres.

The proposed development generates up to an additional 540 vehicle trips per day on Rose Lane, and this is mostly concentrated between the proposed main site access and Westbury Road. In comparison, trip generation along Rose Lane is anticipated to be less concentrated between the proposed overflow car park access and the proposed main site access as most vehicle trips will access the development site via Rose Lane and Westbury Road intersection and the main site access on Rose Lane. The secondary site accesses will likely be used more for outbound trips due to the placement of car parking spaces but may attract inbound staff/employee vehicles to avoid parking congestion in the proposed main car park. It is assumed that up to approximately 30% of inbound vehicle trips will utilise one of the secondary site accesses, and approximately up to 50% of outbound vehicle trips will utilise one of the secondary site accesses. This equates to a peak increase in approximately 20-25 vehicle trips per hour along Rose Lane between the proposed main site access and the proposed secondary site accesses.

Based on the assessments outlined above, it is recommended that the following upgrades be considered for Rose Lane:

– Minimum width of 6.9 metres between the Westbury Road and the site access point
– New kerb and channel on the south-eastern side of Rose Lane
– New footpath along Rose Lane and connecting to existing bus stop and footpath on Westbury Road

The above road upgrades are shown diagrammatically in Figure 9.

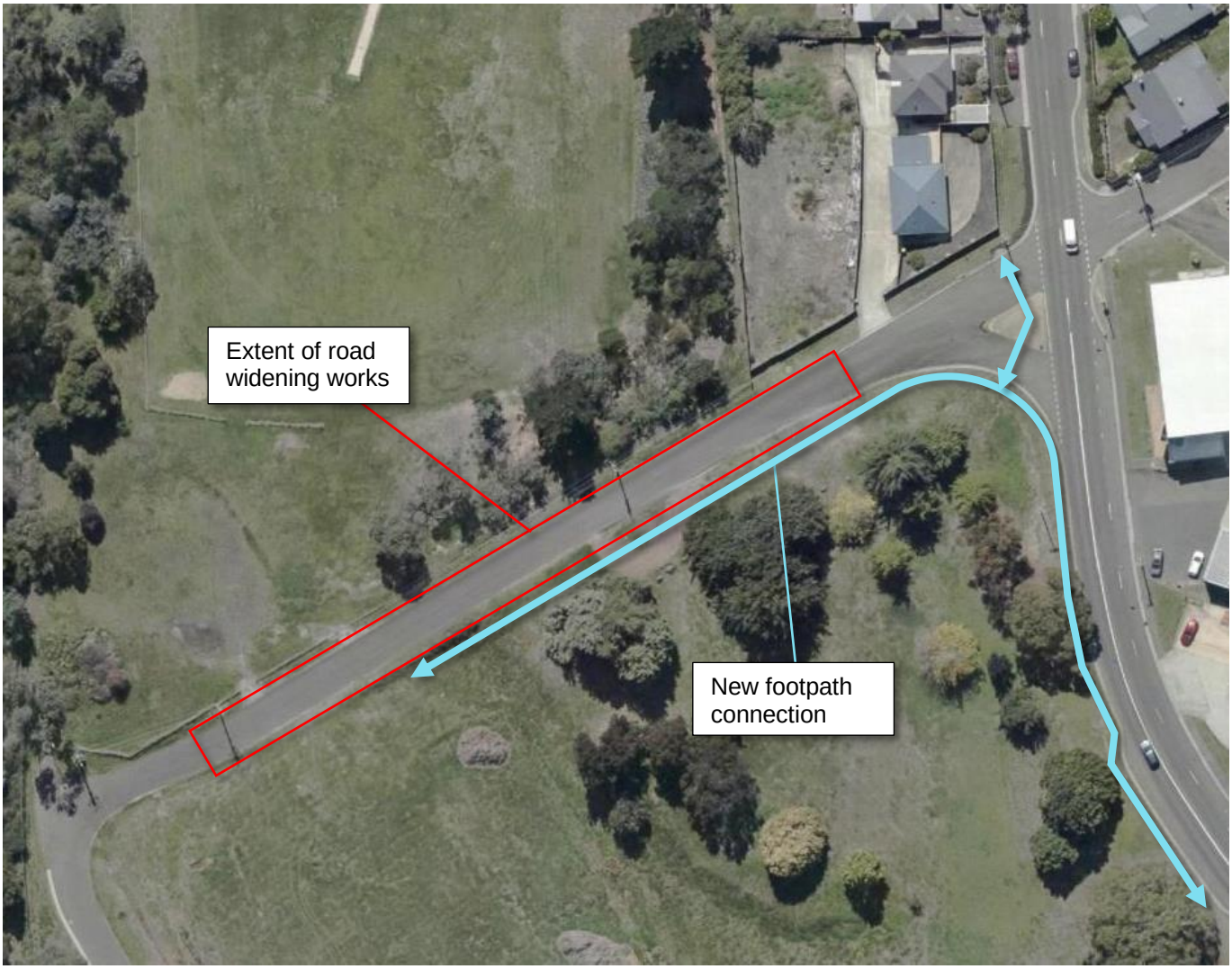


Figure 9 *Recommended Rose Lane upgrades*

"Road Narrowing" warning sign(s) should be considered in conjunction with any localised road widening, particularly in the westbound direction on Rose Lane (east-west aligned section) approaching the curve in the road. Due to the increase in non-residential traffic on Rose Lane and limited roadside street lighting, "Curve" warning signs could also be considered on either approach of the curve located west of the proposed main site access on Rose Lane.

6.1.3 Number of access points

The Acceptable Solution of Clause C2.6.3-A1 of the Planning Scheme states that: *"The number of accesses provided for each frontage must: (a) be no more than 1; or (b) no more than the existing number of accesses, whichever is the greater."*

The proposed development provides three new access points, and therefore relies on performance criteria which are as follows:

> *"P1 The number of accesses for each frontage must be minimised, having regard to:*
>
> *(a) any loss of on-street parking; and*
>
> *(b) pedestrian safety and amenity;*
>
> *(c) traffic safety;*
>
> *(d) residential amenity on adjoining land; and*

(e) the impact on the streetscape."

The proposed development would include two connected access points for the main car park (70 spaces) and a separate access point for the overflow car park (40 spaces). This arrangement is considered appropriate given the number of parking spaces served, and would aid in spreading the traffic impacts across the site.

The subject site has a very large frontage onto Rose Lane, with a total frontage length of approximately 280 metres. There would be minimal impacts to on-street parking given the length of frontage and the lack of significant parking generators in the area. The proposed access density is low and not expected to result in any impacts to traffic efficiency, pedestrian safety or amenity, or traffic safety.

6.1.4 Sight distances at proposed new accesses

Figure 3.2 of AS2890.1 *Parking facilities, Part 1: Off-street car parking* recommends a sight distance of 45 metres for non-domestic property access on roads with a speed limit of 50 km/h.

The proposed development has an available sight distance of approximately 55 metres (considering maximum sight angle of 110 degrees, see Figure 10) at the west approach of the main site access and therefore meets the requirements of the Standard. Furthermore:

- Drivers are likely to reduce their speed whilst navigating the bend on Rose Lane. With reference to the *Austroads Guide to Road Design Part 3: Geometric Design*, the operating speed around the horizontal curve on Rose Lane is approximately 25 km/h.
- Vehicles are likely to reduce their speed whilst navigating the slope on Rose Lane. Rose Lane has a positive incline in the eastbound direction along its east-west aligned section.
- The available sight distance at the east approach of the main site access exceeds 80 metres.
- The available sight distances at the proposed secondary site accesses on Rose Lane exceeds 80 metres in either direction.
- Existing traffic volume on Rose Lane is low at up to 6 vehicles/hr during peak periods.

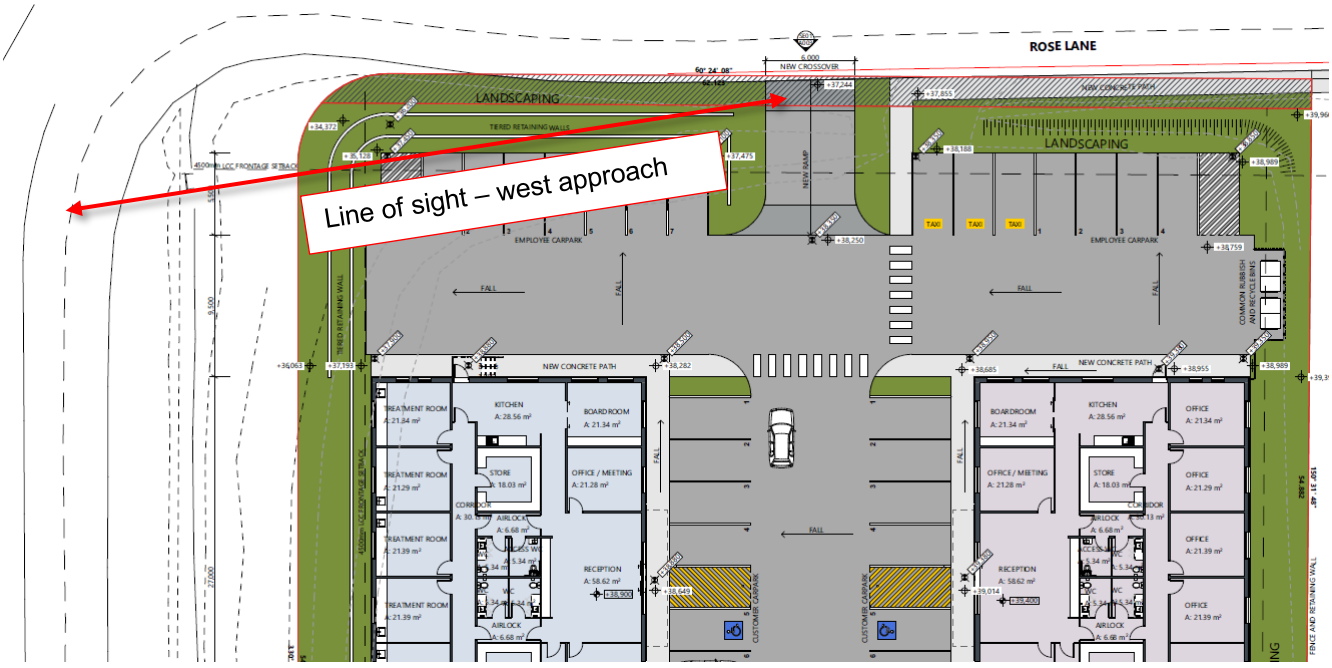


Figure 10 ***Line of sight at proposed main access on Rose Lane with maximum sight angle – west approach***

Drawing sourced from Artas Architects, dwg no. 211043-A002-Sk04 *Rose Lane Offices, 09.09.2022.*

6.2 Traffic and transport impacts

The Acceptable Solution of Clause C3.5.1-A1.4 of the Planning Scheme states that *"Vehicular traffic to and from the site, using an existing vehicle crossing or private level crossing, will not increase by more than: (a) the amounts in Table C3.1".* With respect to Table C3.1, the threshold for the proposed development is 20% or 40 vehicle movements per day, whichever is the greater.

Two-way traffic volumes on Rose Lane are expected to increase by up to 60 vehicles/hr (during peak periods) or 540 vehicles/day due to the proposed development. The majority of this increase is concentrated in the section between the proposed main site access and Westbury Road. Given that this section of Rose Lane has an estimated existing traffic volume of 6 vehicles/hr or 56 vehicles/day based on existing land uses, the proposal relies on Performance Criteria which are as follows:

> *"Vehicular traffic to and from the site must minimise any adverse effects on the safety of a junction, vehicle crossing or level crossing or safety or efficiency of the road or rail network, having regard to:*
>
> *(a) any increase in traffic caused by the use;*
>
> *(b) the nature of the traffic generated by the use;*
>
> *(c) the nature of the road;*
>
> *(d) the speed limit and traffic flow of the road;*
>
> *(e) any alternative access to a road;*
>
> *(f) the need for the use;*
>
> *(g) any traffic impact assessment; and*
>
> *(h) any advice received from the rail or road authority."*

Performance criteria are discussed in the following sections.

6.2.1 Traffic efficiency

With regard to the proposed development:

– The anticipated traffic generation is in the order of 60 vehicle movements per hour (two-way) during peak periods, representing one vehicle every minute travelling to or from the development site.
– The traffic would be primarily light vehicle traffic. Deliveries would be typically via light vans (e.g. courier vans) and waste collection would result in infrequent access movements by garbage trucks (refer Section 5.4).
– Rose Lane is a low volume, local access road. The geometry of Rose Lane is described in Section 6.1.2 and this report recommends road widening to a minimum of 6.9 metres between Westbury Road and the site access point.

Subject to the recommendation to widen the existing road, the proposed development traffic can be accommodated on Rose Lane. Intersections on Westbury Road are described in the following sections.

Intersection of Westbury Road and Wellington Street

The intersection of Westbury Road with Wellington Street was modelled using SIDRA Intersection 9 as detailed in Section 4.1.1 of this report. Based on the findings of the traffic modelling, the intersection is expected to operate at a similar level of service under the proposed conditions (with 10 year forecast traffic volumes) compared to the existing conditions. The level of service is LoS B in the AM peak and LoS C in the PM peak. On this basis, the proposed development is not expected to have any adverse effects on the efficiency of the existing intersection.

Intersection of Westbury Road and Rose Lane

The intersection of Westbury Road with Rose Lane was modelled using SIDRA Intersection 9 as detailed in Section 4.1.2 of this report. Based on the outcomes of the modelling, the intersection would operate generally at

LoS A and B during both the AM and PM peak periods with minimal impacts due to the proposed development. There is substantial capacity remaining in the intersection, with the largest Degree of Saturation being 0.29 in the morning peak period.

It is acknowledged that the following movements would experience increased delays:

– Rose Lane South-West Approach +1 second in the PM
– Rose Lane North-East Approach +0.5 seconds in the AM and +0.5 seconds in the PM
– Westbury Road North Approach (left turn) +2 seconds in the AM and +1 second in the PM

There would be a very minor increase in queuing for Westbury Road southbound traffic, with a 95th percentile queue of 3.0 metres in the AM peak (less than one vehicle) due to right turning vehicles. There would be no queues developing on Westbury Road in the PM peak due to low entry movements to Rose Lane.

Given the very low queues developing due to right turning vehicles, a treatment similar to a basic right turn treatment is considered appropriate at this location (refer Section 6.1.1) and a formal channelised turn lane is not considered to be necessary to accommodate the demands.

Intersection of Westbury Road and Peel Street

The impacts of the proposed development on the operation of Westbury Road and Peel Street is expected to be no worse than the performance of the intersection of Westbury Road and Rose Lane (described above). This is based on the following factors:

– The level of opposing traffic on Westbury Road would be effectively equal between the two intersections, resulting in similar delays for movements out of Peel Street compared to Rose Lane.
– The existing traffic using Peel Street is considered to be relatively low, consisting mainly of local trips. For inter-suburb trips (e.g. Kings Meadows to Prospect) the higher order route of Normanstone Road would be preferred.
– Based on the trip distribution presented in Section 3.2.2, this intersection would experience a lesser increase in traffic compared to Rose Lane. This is due to the majority of trips being to/from Launceston, and the proximity of the development site to the Rose Lane intersection.
– For the small number of trips generated at the Peel Street intersection, these would consist of left-in and right-out movements with occasional through movements. It is unlikely that there would be right-in movements generated at this intersection as these would use Rose Lane.
– The intersection at Peel Street forms a staggered T arrangement. This means that left-in and right-out movements to/from the western Peel Street leg do not conflict with traffic movements at the eastern leg.

Based on the above, and considering the preference for development from the proposed development to use Rose Lane rather than Peel Street for access, the impacts to traffic performance at this location are expected to be low.

6.2.2 Active transport

A connected network of footpaths and priority crossings are proposed within the development site. This provides pedestrians safe passage through the proposed car parking area.

The pedestrian network on Rose Lane consists of sealed footpaths in limited sections with pedestrians required to walk on the nature strip in large sections between Westbury Road and Peel Street. The footpath network on Westbury Road is limited with sections of discontinuity and noticeable gaps in linkages to public transport nodes.

The proposed footpath on Rose Lane should be extended (see Figure 9), to provide a sealed and continuous path for staff and clients to walk to/from Westbury Road. Whilst the road environment on Rose Lane is currently not conducive to pedestrians, it is anticipated that the majority of pedestrians would enter and exit the development site via the main site access to/from Wellington Street and Westbury Road.

6.2.3 Road safety

Intersection of Westbury Road and Rose Lane

At the intersection of Westbury Road and Rose Lane there have been two cross-traffic incidents and one rear end collision recorded over the reviewed 5 year period (2017 to 2021 inclusive). While the rate of these crashes is not considered high (with respect to the traffic volumes on Westbury Road), it is acknowledged that there may be contributing factors at this intersection, including the gradient of Rose Lane, high traffic volumes on Westbury Road and potential visibility issues at the intersection. These two crash types are assessed as follows:

– Cross-traffic crashes
  - These types of crashes are caused by vehicles on the minor road failing to give-way to traffic travelling on the major road (in this case, Rose Lane failing to give way to Westbury Road).
  - Typical causes are limited visibility of the intersection give-way signage and linemarking, gradients on the intersection approach, and/or limited sight distance at the intersection.
  - At this intersection, there is a large shed on one side and a fence and vegetation on the other side that reduces visibility for vehicles approaching from the east resulting in vehicles needing to drive right up to the holding line prior to being able to see traffic on Westbury Road.
  - For vehicles at the holding line, the available sight distance is around 125 metres in both directions. This meets the requirements set out in Austroads Guide to Road Design Part 4A for a vehicle speed of 60 km/h.
  - On this basis, it is important to ensure that vehicles approach the give-way line and stop, prior to proceeding through the intersection. It is recommended to convert the Give-way sign and holding line to a Stop sign and solid line to impose a legal obligation on vehicles using this intersection to stop at the minor road.
– Rear end crashes
  - Rear end crashes are caused by following vehicles failing to notice a vehicle in front stopping on the carriageway to turn right into the side road.
  - In this case, Westbury Road is on an uphill gradient heading southbound, and the preceding section of Westbury Road on approach to Rose Lane is relatively straight.
  - This report considers the provision of a treatment similar to a basic right turn treatment (refer Section 6.1.1), which will minimise queuing and allow vehicles to bypass a vehicle stopped and waiting to turn right onto Rose Lane.
  - Furthermore, the expected delays for right turning vehicles are very low during peak periods (around 6-7 seconds) indicating that drivers are unlikely to need to take risks turning right.
  - There are not considered to be any elevated risk factors for right turn related crashes (including rear ends) at this intersection.

Based on the above discussion, this development is unlikely to significantly increase the crash risk at this junction due to the following:

– It is expected that there would be an additional 16 vehicles per hour undertaking through movements at this junction during peak periods which equates to less than one vehicle every 3 minutes on average.
– The intersection performance would remain approximately at current levels, with no noticeable change in delays or queuing, such that there would be no increase in any risk-taking behaviour
– The provision of a basic right turn treatment would allow southbound vehicles to bypass a vehicle stopped and waiting to turn right onto Rose Lane, thereby reducing the potential for any queuing on Westbury Road.

To address the existing crash history at this location, Council may consider the provision of Stop control (to replace the existing Give-Way control) or alternatively other means to increase the visibility of the junction such as pavement markings, tactile pavement bars, threshold treatment or advance warning signage.

Intersection of Westbury Road and Peel Street

The intersection of Westbury Road and Peel Street is configured as an staggered T-intersection arrangement. It is left-right aligned which is the preferred treatment specified in Austroads Guide to Traffic Management Part 6. The gradient of Peel Street is relatively steep, which results in limited sight distance for vehicles turning right or through from the eastern Peel Street approach.

The crash history indicates one crash in the last five years at this intersection. It was a right-through crash involving a vehicle turning right and heading eastbound along Peel Street. There were no intersection-related crashes recorded for the western side of Peel Street.

Notwithstanding existing sight distance limitations, the proposed development is not expected to cause significant detrimental impact to the road safety performance of this intersection given that:

– The preferred access would be via Rose Lane. The site would generate very little traffic at the intersection of Peel Street and Westbury Road, and the majority of those movements would be left-in (from Westbury Road northbound to Peel Street) or right out (from Peel Street to Westbury Road southbound).
– For vehicles undertaking through movements from Peel Street (east) to Peel Street (west), vehicles must first turn left onto Westbury Road and then turn right into Peel Street, thereby substantially improving sight distances for this movement.
– There were no specific crash trends identified in the crash data for the last five years at this intersection.

7. Conclusion

This Traffic Impact Assessment report has investigated the potential traffic and transport related impacts associated with the proposed development and rezoning of 9 Rose Lane, South Launceston to a commercial block consisting of three medical-use tenancies and three office buildings.

The key findings are as follows:

- The proposed development is anticipated to generate up to 540 additional vehicle trips per day. This includes 60 vehicles trips in the AM peak and 54 vehicle trips in the PM peak.
- The estimated increase in traffic on Rose Lane, Westbury Road and Wellington Street from the proposed development is considered to be within the capacity of these roads given existing traffic volumes.
- SIDRA analysis of the Westbury Road intersections with Rose Lane and Wellington Street indicated that the intersections would perform satisfactorily under proposed conditions.
- Sufficient sight distance is provided at the proposed accesses on Rose Lane given the prevailing vehicle speed on the frontage road.
- 123 car parking spaces are proposed within the development site. Six of these parking spaces are accessible parking spaces. The proposed parking supply complies with the Planning Scheme requirements.
- Crash trends in the vicinity of development site are not expected to be exacerbated by the proposed development.
- The proposed development complies with the *Tasmanian Planning Scheme State Planning Provisions* subject to the following recommendations:
    - Provision of a right turn treatment on Westbury Road for turns into Rose Lane in the form of widening of the southbound traffic lane to 6.0 metres for 35 metres north of the centre-line on Rose Lane and tying into the existing overtaking lane to the south.
    - Widening of Rose Lane to a minimum width of 6.9 metres for the section between the proposed main site access and Westbury Road. Refer to Section 6.1.2.
    - Consider warning signs on Rose Lane to assist non-residential traffic with navigating changes in the alignment and geometry of Rose Lane. Refer to Section 6.1.2.
    - Parking areas to be constructed in alignment with the Acceptable Solution of Clause C2.6.1-A1. Refer to Section 5.2.1.

Based on the findings of this report, and subject to the recommendations outlined above, the proposed development is supported on traffic grounds.

Appendix A

Proposed development

REVISION			
Rev	Description	Date	Int.	App
Sk01	ISSUED TO CONSULTANTS FOR INFORMATION	10/06/2022	BT	BT
Sk02	ISSUED TO CLIENT FOR INFORMATION	22/06/2022	MG	BT
Sk03	ISSUED TO CLIENT FOR INFORMATION	29/06/2022	BT	BT
Sk04	ISSUED TO CLIENT FOR INFORMATION	29/06/2022	BT	BT
Sk05	ISSUED FOR INFORMATION	30/08/2022	BT	BT
Sk06	ISSUED FOR INFORMATION	9/09/2022	BT	BT
Sk07	ISSUED FOR INFORMATION	19/10/2022	BT	BT

MIDLAND HIGHWAY

ROSE LANE

PROPOSED BOUNDARY ADJUSTMENT OF 130.5m² FOR ROAD WIDENING SHOWN HATCHED

RECOMMENDED WIDENING OF Ex. ROAD TO 6.9m AS PER LCC COMMENTS AND TRAFFIC IMACT ASSESSMENT.

ROSE LANE

60° 24' 08"
62.123

6.900

RECOMMENDED WIDENING OF Ex. ROAD TO 6.9m AS PER LCC COMMENTS AND TRAFFIC IMACT ASSESSMENT.

RECOMMENDED PATH AS PER TRAFFIC IMPACT ASSESSMENT.

RECOMMENDED WIDENING OF LANE/ROAD TO 6.0m AS PER LCC COMMENTS AND TRAFFIC IMACT ASSESSMENT. REALIGN PATH AND RETAINING WALL AS REQUIRED.

Ex. PATH

8.000

1.500

6.000

ROSE LANE

RECESS INTERSECTION LINEWORK TO SUIT AS PER LCC COMMENTS AND TRAFFIC IMPACT ASSESSMENT.

RECOMMENDED ADDITIONAL PATH AND KERB RAMPS ON EXISTING ISLAND

RECOMMENDED ADDITIONAL PEDESTRIAN BUS STOP ACCESS.

WESTBURY ROAD

NORWICH STREET

TENANCY 1
MEDICAL CENTRE
502.20 m²
PROPOSED FLOOR LEVEL
38,900 AHD
0.4m MAX CUT
0.6m FILL (U/S SLAB)

TENANCY 4
ACCOUNTANTS
502.20 m²
PROPOSED FLOOR LEVEL
39,400 AHD
0.8m MAX CUT
0.2m FILL (U/S SLAB)

TENANCY 2
DENTAL CLINIC
502.20 m²
PROPOSED FLOOR LEVEL
39,400 AHD
0.4m MAX CUT
0.3m FILL (U/S SLAB)

TENANCY 5
LEGAL SERVICE
502.20 m²
PROPOSED FLOOR LEVEL
39,900 AHD
1.0m MAX CUT
0.2m FILL (U/S SLAB)

TENANCY 3
VETERINARY CLINIC
502.20 m²
PROPOSED FLOOR LEVEL
40,300 AHD
0.6m MAX CUT
0.6m FILL (U/S SLAB)

TENANCY 6
ENGINEERING
495.26 m²
PROPOSED FLOOR LEVEL
40,900 AHD
1.3m MAX CUT
0.4m FILL (U/S SLAB)

CONSOLIDATE TITLES (REMOVED BOUNDARY SHOWN DOTTED)

TITLE BOUNDARY

54.682
330° 04' 08"
150° 31' 48"
46.932
158° 00' 01"
36.190
339° 00' 08"
77.368
78.888
64.575
240° 40' 08"

Ex. TREES TO BE REMOVED SHOWN OUTLINED

GRASSED AREA

Ex. TREES

CT159336-1

CT247578-2

CT200709-1

PROPOSED CONSOLIDATED TITLE AREA: 14,070.5m²

LOCATION PLAN
SCALE 1:500
North
0mm 5000 10000 15000 20000 25000

SITE SUBDIVISION PLAN
SCALE 1:1000
North
0mm 10000 20000 30000 40000 50000

ROSE LANE OFFICES

ERROL STEWART

SKETCH
211043
SHEET SIZE: A1 (LANDSCAPE)

A001-Sk07

ARTAS ARCHITECTS

SITE PLAN
SCALE 1:200
North
0mm 2000 4000 6000 8000 10000

REVISION				
Rev	Description	Date	Int.	App
Sk01	ISSUED TO CONSULTANTS FOR INFORMATION	10/06/2022	BT	BT
Sk02	ISSUED TO CLIENT FOR INFORMATION	22/06/2022	MG	BT
Sk03	ISSUED FOR INFORMATION	30/08/2022	BT	BT
Sk04	ISSUED FOR INFORMATION	9/09/2022	BT	BT

ARTAS ARCHITECTS

PROJECT NAME
ROSE LANE OFFICES

CLIENT NAME
ERROL STEWART

DRAWING NAME
SITE PLAN

DRAWN	APPROVED	SHEET SIZE
BT, MG	SC	A1 (PORTRAIT)

DRAWING ISSUE
SKETCH
PROJECT NUMBER:
211043

DRAWING NUMBER
A002-Sk04

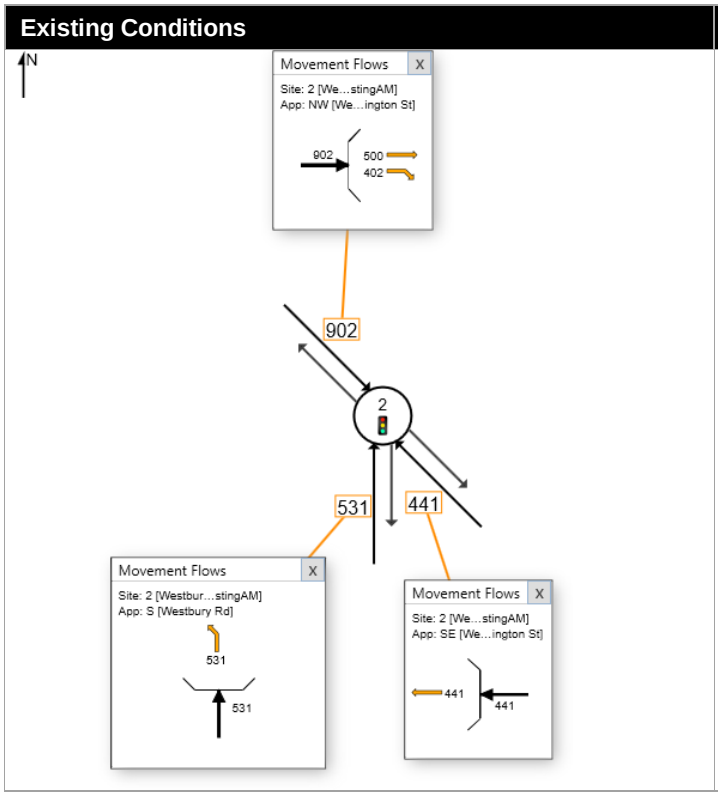
Appendix B

Intersection volumes

Turning movement diagrams

Table 11 *Westbury Rd and Wellington Street intersection – AM Peak*

Existing Conditions



Proposed Conditions

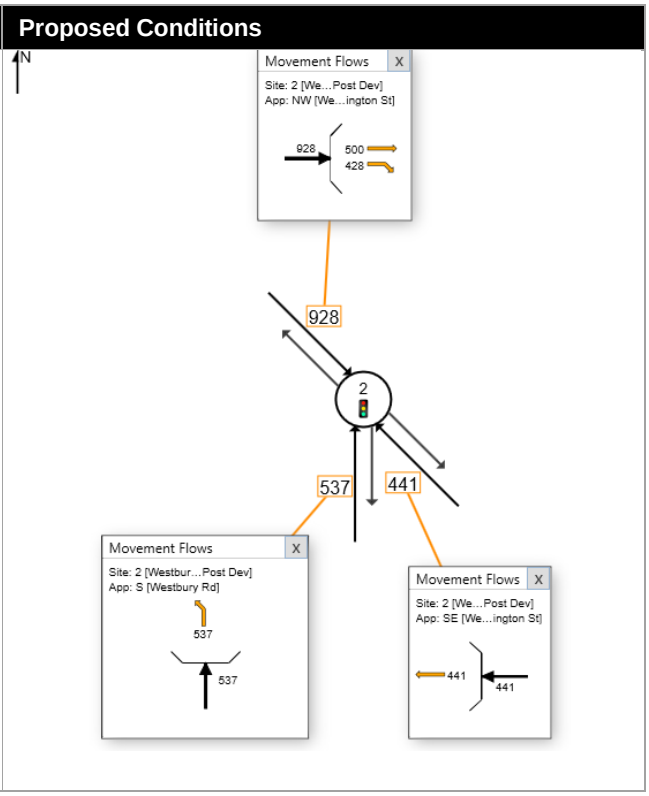
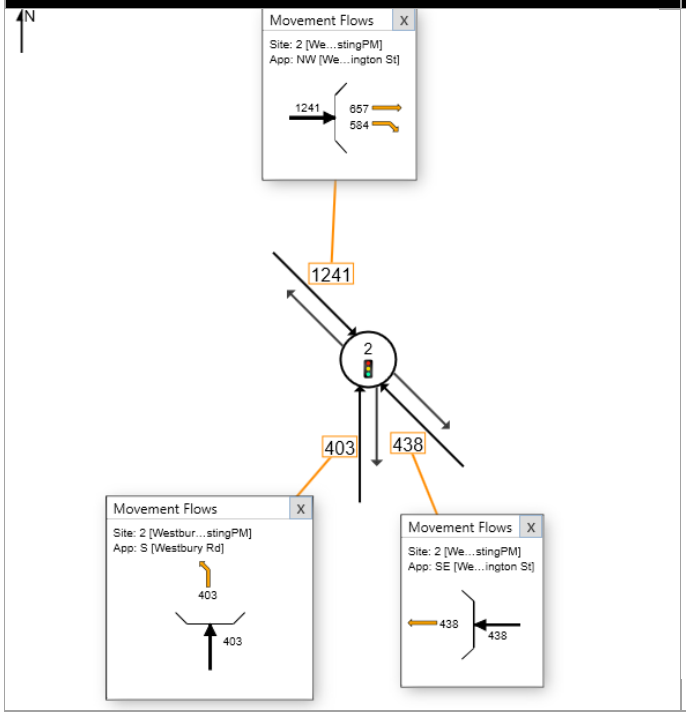


Table 12 *Westbury Rd and Wellington Street intersection – PM Peak*

Existing Conditions



Proposed Conditions

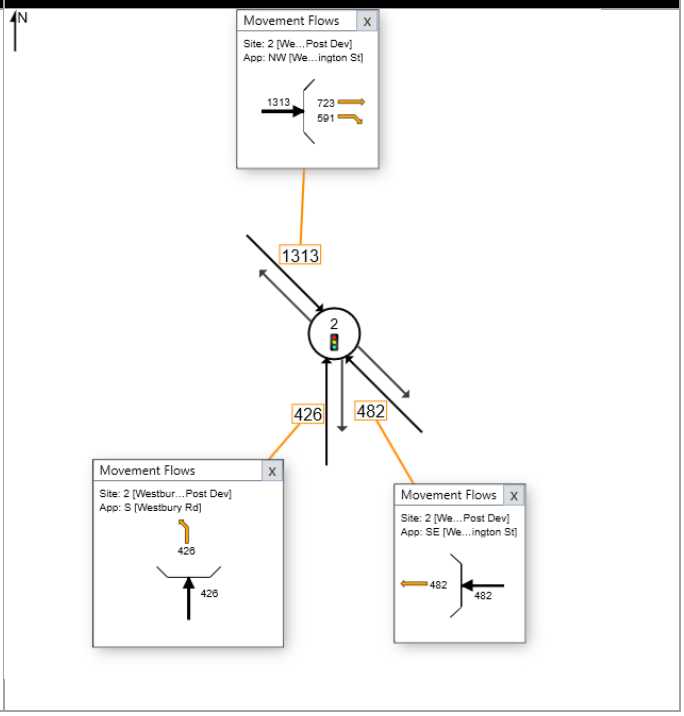


Table 13 Rose Lane and Westbury Road intersection – AM Peak

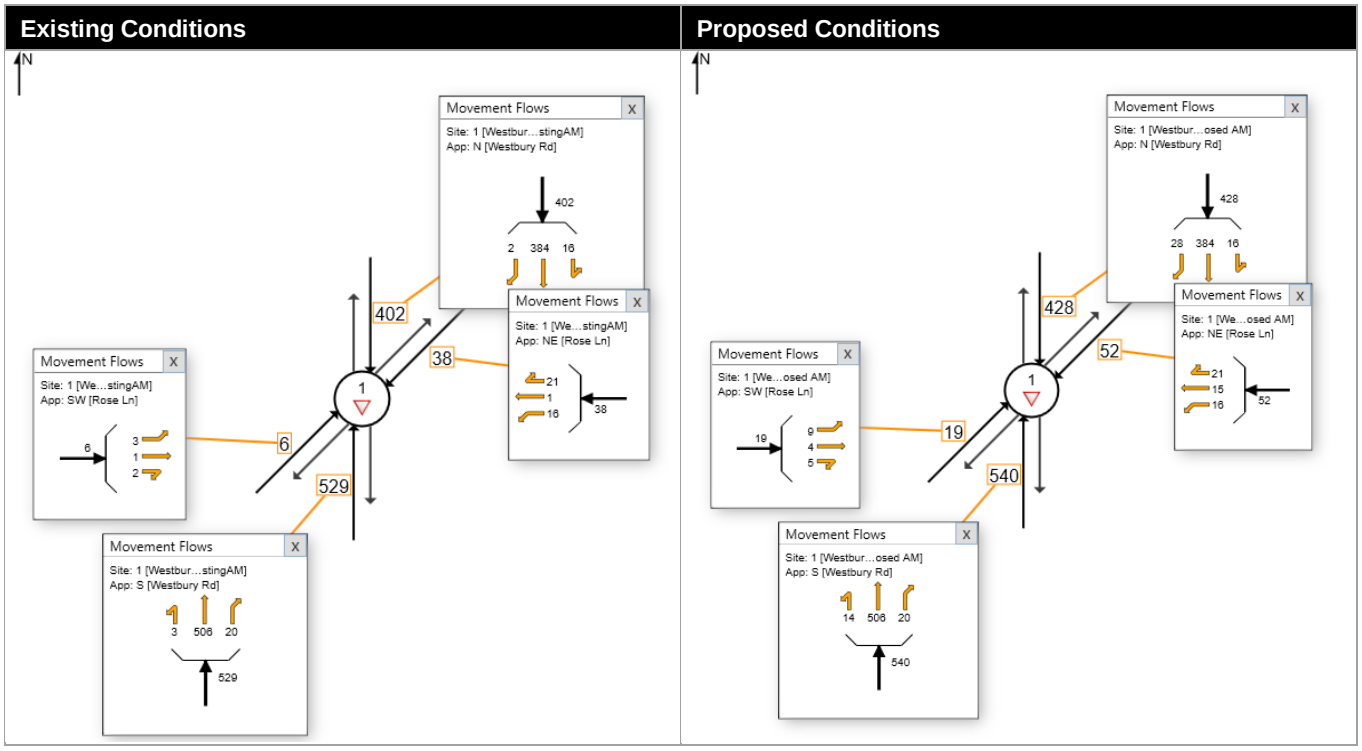
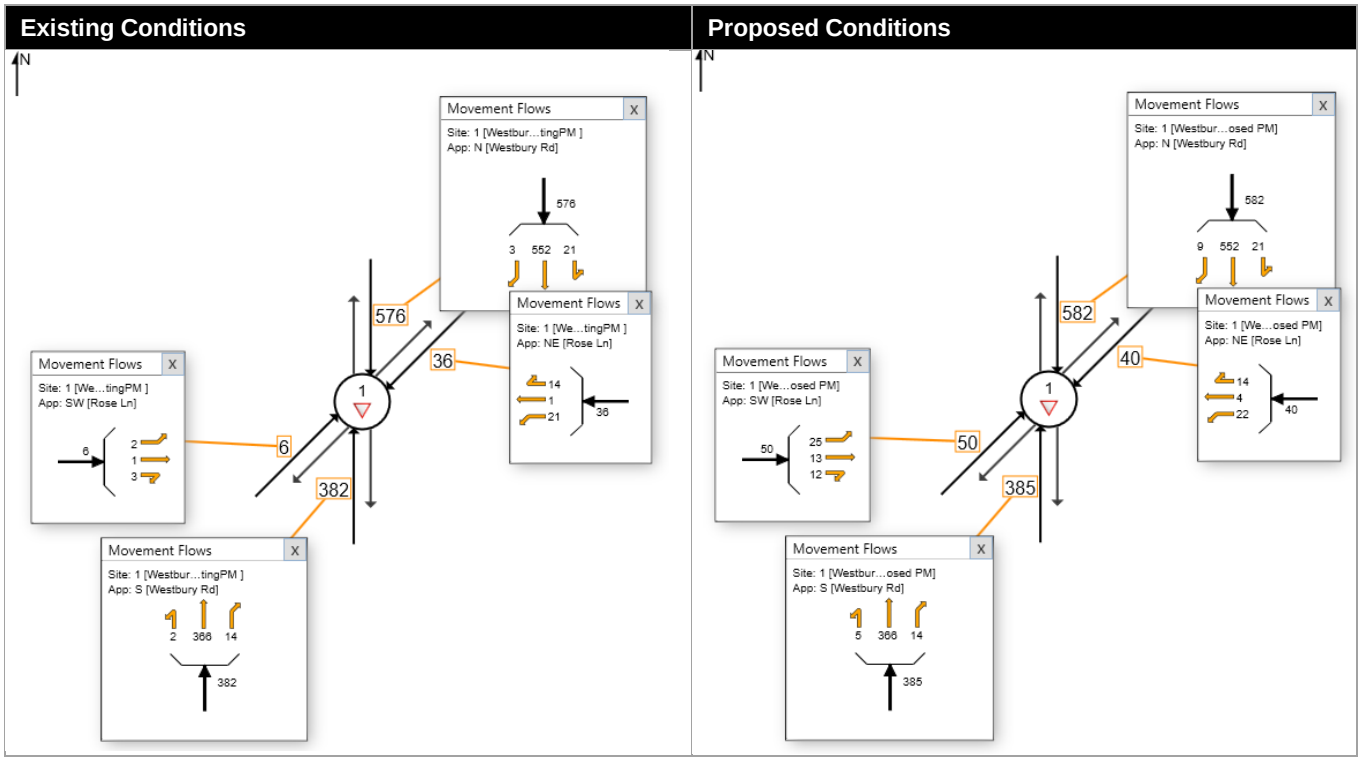


Table 14 Rose Lane and Westbury Road intersection – PM Peak



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