

Proposed Medical Centre Redevelopment

Traffic Impact Assessment

**Cnr Lake Road & Gray St, Port
Macquarie, NSW**

for









On behalf of



27 June 2022

Traffic Impact Assessment Details

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1. INTRODUCTION

1.1 General

StreetWise Road Safety and Traffic Services have been engaged by Hopkins Consultants, on behalf of the Werin Aboriginal Corporation, to prepare a Traffic Impact Assessment report for a proposed Medical Centre at the corner of Lake Road & Gray Street, Port Macquarie, NSW.

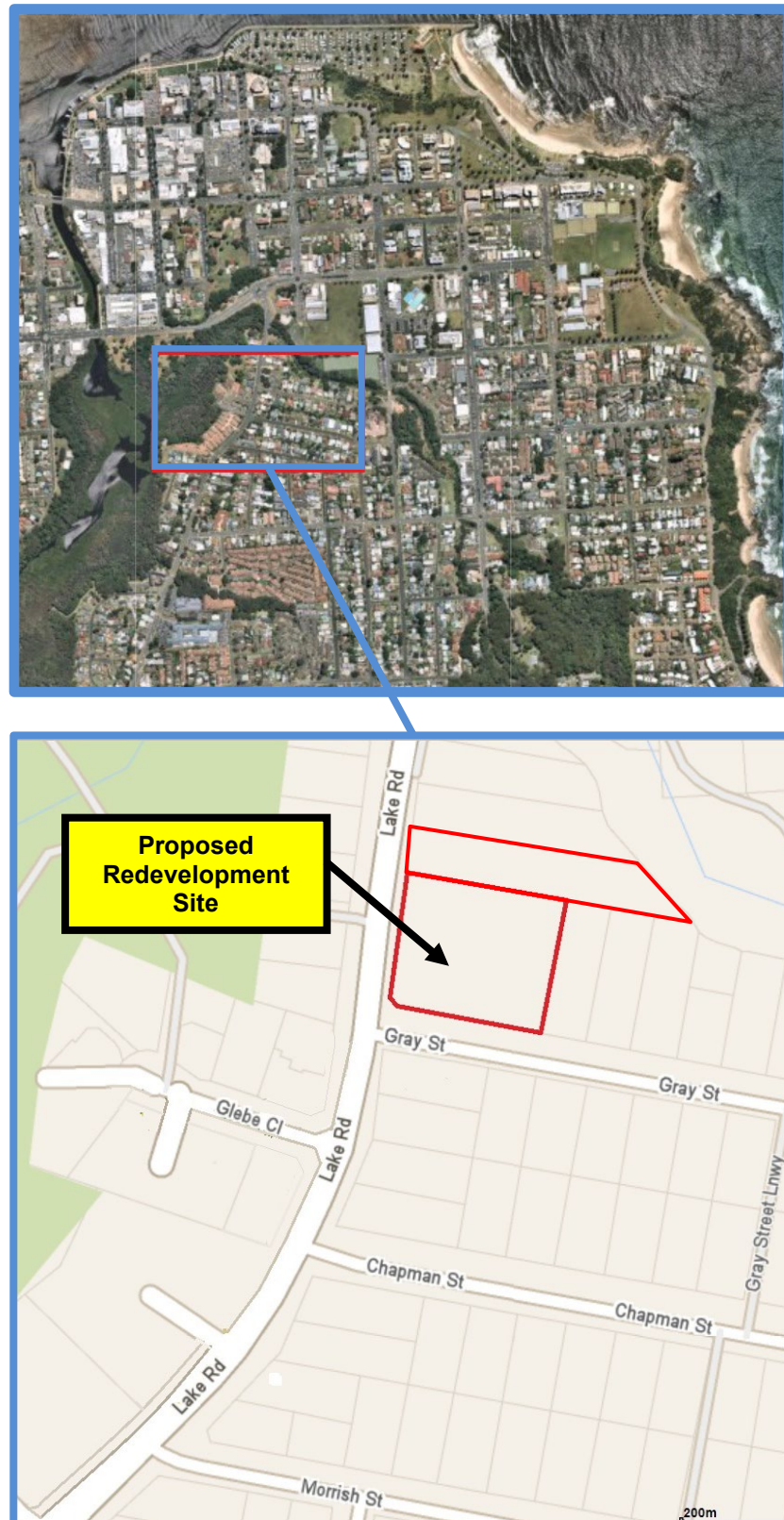


Figure 1.1 – LOCALITY SKETCH

1.2 Description of Project

This TIA will assess a proposed redevelopment of the existing Werin Aboriginal Corporation Medical Centre.

1.2.1 Existing Medical Centre Operation

The existing operation currently utilises the change of use of what were 5 low density residential properties being street numbers 8, 10, 12 & 14 Lake Road and 33 Gray Street. The following summary is provided for the current operation of the medical centre.

No. 8 Lake Road

- 3 x Clinical Rooms
- 1 x Waiting Room
- Toilet Facilities
- Storage (Garage)
- 11 Informal Ground Level Parking Spaces

No. 10 Lake Road

- Administration Offices
- 2 to 3 Informal Ground Level Parking Spaces

No. 12 & 14 Lake Road

- 8 x Clinical Rooms
- 1 x Waiting Room
- Administration Offices
- Staff Rooms
- Toilet Facilities
- 21 Formal Ground Level Parking Spaces

No. 33 Gray Street

- 4 x Consulting Rooms
- 1 x Waiting Room
- Kitchenette
- Toilet Facilities
- No carparking provided

1.2.2 Medical Centre Redevelopment Proposal

The proposed redevelopment of the site will cater for :-

- 9 Consulting Rooms (Ground Floor)
- Practice Manager and Administration space (Ground Floor)
- Staff Amenities (Ground Floor)
- 7 Consulting Rooms (First Floor)
- Chief Executive Officer and Administration space (first Floor)
- Staff Amenities (First Floor)
- 54 Ground Level Parking Spaces
- 2 Disabled Parking spaces plus 2 share spaces.
- Motorcycle and cyclist parking areas.
- 4 bay setdown / pickup area at the front entrance to the practice.
- Entry / Exit access to the site from Gray Street.

The site is located in the area of Port Macquarie known as “Eastport”.

1.3 Scope of Assessment

Hopkins Consultants have provided StreetWise Road Safety & Traffic Services with a Scope of Work for the assessment based on a Pre-lodgement meeting held with Port Macquarie Hastings Council staff on Tuesday 23 February 2021.

The following scope will form the basis of this assessment.

Assessment Requirement	Report Reference
Details and calculations of required off-street parking to serve the development consistent with the parking rates identified in DCP 2013. It should be noted that medical centres require 3 spaces per consultant and 1 per 2 staff.	Section 7.30 Carparking Requirement
Details of proposed waste management and collection arrangements.	Section 6.0 Site Servicing
The supplied parking layout looks feasible, but please show typical aisle and parking space dimensions on the DA plans so we can assess. We may also request at DA stage manoeuvring information for garbage collection. Internal access aisles and parking bays will be assessed for conformance with AS 2890, and in particular part 1 for cars, part 2 for garbage and delivery trucks, and part 6 for disabled parking (if required by the BCA or other standards).	Section 7 Carparking Assessment
The driveway crossover sections will need to be constructed to councils Heavy Duty standard ASD202.	Noted
A 1.2m wide pedestrian path will be required across the property Frontage in Gray Street.	Noted
A Traffic Impact Assessment (TIA) will be required. <ul style="list-style-type: none"> a) TIA is to be prepared by a qualified and/or experienced traffic consultant. b) TIA is to be prepared in accordance with guidelines contained in the Roads and Maritime Services Guide to Traffic Generating Developments (2002), and AUSTROADS Guide to Traffic Management, Part 12: Traffic Impacts of Development. c) TIA should use data obtained from an existing facility which operates in a similar manner to the proposed facility, and comment on any differences in operation. d) The likely traffic generation should be quantified, in terms of the number of vehicle trips during peak hours, number of trips per day, and breakdown of the types of vehicle users (e.g. residents' cars, staff cars, service trucks). e) The likely 85th percentile (time-weighted) parking demand is to be quantified. f) Comment on the likely traffic and parking demand ten years after the development. 	Noted Noted Noted Section 2.30 Development Traffic Generation Section 7.30 Carparking Requirement Section 2.6 Traffic Growth & Section 7.30 Carparking Requirement

Table 1.3 – SCOPE OF WORK TO BE ASSESSED

1.4 Road Network

The proposed development site is located in an existing mixed commercial/residential area, approximately 1km west of Port Macquarie CBD. The proposed medical development will also be located close to the Port Macquarie Private Hospital and adjacent medical precinct.

1.4.1 Lake Road

Lake Road is considered to be a distributor road providing connection between Port Macquarie CBD and Oxley Highway via the Port Macquarie Industrial Precinct. In the location of the development site the formation width of 12m provides for a single travel lane and sealed parking lane in each direction. Formal 1.2m wide concrete footpaths are located along both edges of the formation in the vicinity of the development site..

The posted speed limit of Lake Road in this location is 50km/h being the urban default speed limit.

1.4.2 Gray Street

Gray Street is a local road connecting Lake Road to Grant Street through an older residential precinct. The formation width is generally 8.0m with standard upright kerb and gutter on both sides. There are no formal footpaths provided in the vicinity of the development site. Only grass verges.

The posted speed limit of Gray Street is the urban default of 50km/h being the urban default speed limit.

1.4.3 Intersection of Lake Road and Gray Street

The intersection of Lake Road and Gray Street is a simple T - intersection with no formal widening or auxiliary turn lanes. As can be seen in Figure 1.4 below, Lake Road includes a sealed parking lane on both sides (which was formerly a cycle lane), which can provide additional width. However, parking is permitted in these lanes adjacent to intersections, and through traffic is often unable to pass any vehicle queuing to turn right into Gray Street (as shown in Figure 1.40).



FIGURE 1.40 LAKE ROAD & GRAY STREET INTERSECTION LAYOUT

In accordance with the Austroads Guide to Road Design, Part 4a – Unsignalised and Signalised Intersections a Safe Intersection Site Distance (SISD) of 97m (desirable reaction time of 2 sec) is required for the posted speed limit of 50km/h.

The existing intersection configuration does not comply for this sight distance requirement in both directions along Lake Road. SISD can be obstructed by vehicles parking kerbside on the southbound approach to the intersection for vehicles turning out of Gray Street. There is no parking restriction signage provided at the

intersection. The requirement to install this signage will be assessed later in this report.

SISD on the northbound approach to the intersection is obstructed for vehicles turning out of Gray Street by an existing tree located on the southeastern corner of the intersection. Figures 1.41 and 1.42 indicate the location of this tree at the intersection.



Figure 1.41 GRAY STREET, LOOKING SOUTH AT LAKE ROAD



Figure 1.42 GRAY STREET, PARTIALLY OBSCURED BY EXISTING TREE

Further assessment is provided in Section 3 for the future intersection requirements.

2. EXISTING TRAFFIC VOLUMES

2.1 Existing Traffic Volumes

StreetWise undertook a manual Intersection count at the intersection of Lake Road & Gray Street. The counts were undertaken for 2 hours in the morning and again in the afternoon of Friday 4 February 2022, to determine the AM & PM peak hours. The full results of the traffic count are included in the appendix, while a summary is shown below. Heavy vehicle numbers are shown in brackets.

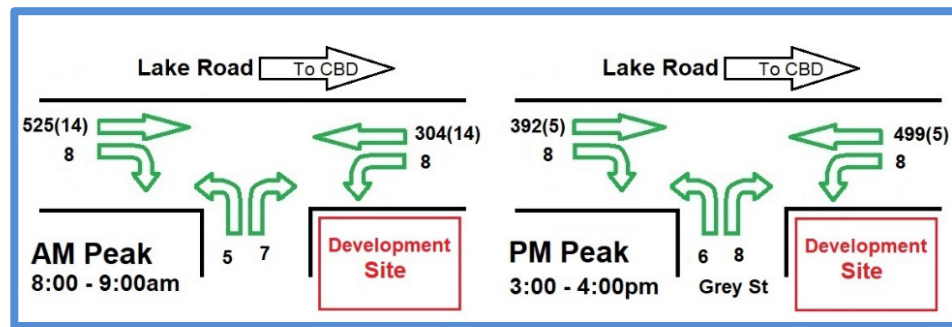


Figure 2.10 EXISTING AM & PM PEAK HOUR VOLUMES AT LAKE ROAD & GRAY STREET

2.2 Existing Intersection Operation

The existing intersection of Lake Road and Gray Street is a simple urban BAR / BAL T- intersection layout with no road widening or dedicated turn lanes. StreetWise undertook a manual traffic count at this location to determine AM & PM peak hour traffic volumes (see Section 2). Traffic volumes in & out of Gray Street were relatively low, but volumes on Lake Road are high.

As discussed elsewhere, there are generally no parking restrictions in the vicinity of the proposed development, and vehicles can legally park adjacent to the kerb in Lake Road. This results regular queuing of northbound traffic if any vehicles are waiting to turn right into Gray Street i.e. there is no space available for vehicles to pass to the left of any queuing vehicle.

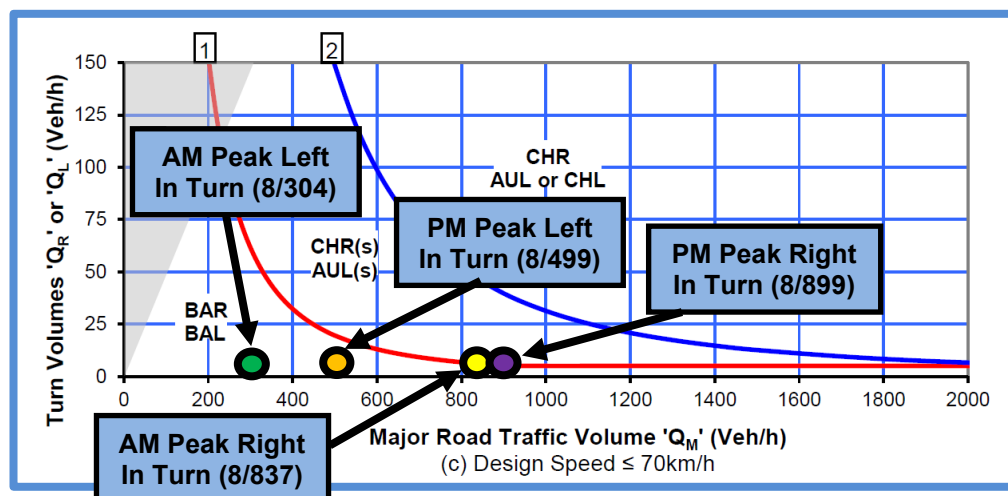


Figure 2.20 AUSTRAD INTERSECTION WARRANT, USING EXISTING PEAK HOUR VOLUMES

Figure 2.20 is based on Figure 3.25 of the Austroads Guide to Traffic Management, Part 6 – Intersections, Interchanges and Crossings. Based on the existing peak period traffic volumes at the intersection the turn warrants indicate the intersection is generally operating for a BAR / BAL layout. However, northbound right turn movement should be operating as a sheltered right turn bay. It shall be noted the above warrant requirements are based more on safety rather than the efficiency of the intersection operation.

Observations by Streetwise staff found at times there were a number of vehicles had to queue behind the right turning vehicles due to the fact there were vehicles parked in the parking lane at the time. As can be seen from the warrant, the Gray Street intersection would likely benefit by upgrading the layout to a channelised intersection.

The queuing issue at Gray Street also occurs at a number of intersections along this section of Lake Road, including Glebe Close, Chapman Street, Morrish Street, Anita Crescent, Hill Street, and at intersections with other side roads further south (see Figure 2.21 below).



Lake Road & Glebe Close



Lake Road & Morrish Street



Lake Road & Chapman Street



Lake Road & Anita Crescent

Figure 2.21 LAYOUT OF ADJACENT INTERSECTIONS WITH LAKE ROAD

As can be seen from the aerial photos above, all the intersections in the vicinity of the proposed development are a similar layout, featuring:

- no widening on the through road
- no dedicated turn lanes
- high peak hour volumes on Lake Road

2.3 Existing Development Generated Traffic Movements

The site of the proposed development is currently the location of an existing medical centre run by the Werin Aboriginal Corporation. The existing centre is run from a number of older buildings on the site, with onsite parking also provided. Both formally and informally as can be seen in figure 2.30 below.



Figure 2.30 EXISTING LAYOUT WITH SITE ACCESS FROM LAKE ROAD & GRAY STREET

StreetWise undertook a manual count onsite to determine the number of vehicles entering and exiting the site. The count was undertaken on Wednesday 9th March 2022, between 9:30 and 10:30am, and the observations included:

- Gray St driveway - 8 vehicles in & 3 out
- Gray St driveway – 2 peds in & 1 ped out
- Lake Rd driveway – 1 vehicle in & 1 vehicle out
- Lake Road driveway - 2 peds in & 2 ped out
- Lake Road – 1 vehicle parked

The total movements in 1 hour were:

- 10 vehicles in & 4 vehicles out
- 4 pedestrian in & 3 out

2.4 Development Traffic Generation

2.4.1 General

The primary reference documents used to determine the traffic flow generated by the developments are the “TfNSW Guide to Traffic Generating Developments” and PMHC Development Control Plan 2013.

2.4.2 Transport for NSW Guidelines

The TfNSW Guide to Traffic Generating Developments does not provide trip generation rates for Medical Centres as the variance of generation rates for this land use indicates that satisfactory prediction rates cannot be recommended. The guide recommends an assessment of a similar like land use needs to be completed. In this case, StreetWise have spoken with the operators of the current WERIN medical centre, and have utilised patient, parking and trip generation rates based on existing operations.

2.4.3 Council Guidelines

Port Macquarie Hastings Council (PMHC) does not prescribe traffic generation rates.

2.4.4 Existing Use Traffic Generation Offset

As this proposed development is a redevelopment of an existing medical centre operation consideration of the existing traffic generation will need to be taken into account.

The following information has been provided by the Werin Medical Centre for its current operation as of February 2022.

- 4 x General Practitioners / day
- 1.60 x Clinic Nurses / day
- 1 x Social Worker / day
- 7 x Aboriginal Health Workers / day
- 7 x Administration Officers / day
- 1 x Speech, OT and Autism Specialist (fortnightly)
- 1 x Ear Noise & Throat Specialist (monthly)
- 1 x Optometrist (monthly)
- 1 x Neuro & ENY Specialist (Quarterly)
- 1 x Psychology Specialist (weekly)
- 3 x Mental Health Nurses (weekly)

The following shall also be noted when assessing the current traffic generation:-

- Hours of operation are 9.00am to 5.00pm. This assessment has assumed a 9 hour operational day including 0.5 hours each side of operating start and finish times for staff setup and lockdown.
- The existing serviceable floor area is 650m².

So as to provide an understanding of how the Werin Medical Centre operates now and into the future, the Chief Executive Officer, Fay Adamson has provided the following statement as regards the operation of the medical centre.

“Our General Practitioner’s and nurses use a clinical room every day, with our current building we are hot desking which is not desirable during a pandemic. Also on our staff are 7 Aboriginal Health Workers who provide a variety of clinical services such as health assessments, diabetic assessments, screening for visiting specialists.

Currently we have specialists and allied health staff visiting from out of town, usually Sydney based -sometimes local, they all require some sort of equipment and the space to house this equipment. For example, an optometrist who visits our service maybe one day per month uses a retinal camera (an expensive piece of equipment) we are currently rolling this equipment to a vacant room to use it. The new building will enable us to have a room for eyes as an example which can be utilised by anyone who needs the equipment. Our endocrinologist comes from Sydney once per month and requires resources to hand out and new medications to try, we have staff running and interrupting whoever is in the room with all the diabetic resources.

We ideally would like a special consult room with all required equipment in the room for use, such as an Ear Nose and Throat surgeon who visits every 3 months to use a room that has a specialized otoscope in room and that equipment can stay in that room and the equipment would be used by any clinician who requires it.

So in summary, the clinical rooms whilst not utilised daily will hold specialized equipment than can be used by any clinician and also have a permanent home for the equipment. I am surmising that we would have a diabetes room, an eye room, an ear room etc.”

The following summary is provided for the current operation with regard to traffic generation.

Staff Type	Number of.	Numbers / Day	Daily Trip Generation	Peak Hr Period Trip Generation
General Practitioner	4	4	8	0.89
Clinic Nurse	8	1.6	3.2	0.36
Social Worker	1	1	2	0.22
Speech, OT & Autism	1	0.1	0.20	0.02
Aboriginal Health Workers	7	7	14	1.56
Ear Noise & Throat Specialist	1	0.05	0.10	0.01
Optometrist	1	0.05	0.10	0.01
Neuro & ENY Specialist	1	0.02	0.03	0.004
Psychology Specialist	1	0.20	0.40	0.04
Mental Health Nurses	3	0.60	1.20	0.13
Administration Officers	8	8	16	1.78
Staff Sub Totals	36	23	45	5.03
Patients	40.60	40.60	81.20	5.08
Totals for Current Operation	36	63.60	126.20	10.10

Assumptions

- Assume 1 trip in / 1 trip out per day per staff member or patient.
- Hours of operation (8.30am – 5.00pm) plus 0.50 hours each side for staff setup and lockdown.
- Total of 9.50 hours for assessment per day.
- Average 40.6 face to face patients / day (Provided by Werin Medical Centre)

2.4.5 Proposal Redevelopment Traffic Generation

As indicated in Section 2.3.4 of this report there is no expectation to increase the services currently being offered or a substantial increase in staffing levels for the future operation of the medical centre. Therefore, there is no expectation of an increase in traffic being generated as a result of the redevelopment of the medical centre.

However, to provide a worst case scenario for any increase in services being offered and therefore staffing increase the following assessment is provided based on the increased floor space ratio to the existing floor space ratio.

The current operation caters for a floor area usage of 650m². The proposed floor area for the redevelopment proposal will be in the vicinity of 1454m². This represents an increase in available floor area over the current operation of 2.24 times available floor area.

The following summary is provided for a worst case operation into the future with regard to traffic generation.

Staff Type	Number of.	Numbers / Day	Daily Trip Generation	Peak Period Trip Generation
General Practitioner	9	4.50	9	1.00
Clinic Nurse	18	3.58	7.16	0.80
Social Worker	2.24	2.24	4.48	0.50
Speech, OT & Autism	2.24	0.22	0.45	0.05
Aboriginal Health Workers	15.66	15.66	31.32	3.48
Ear Noise & Throat Specialist	2.24	0.11	0.22	0.02
Optometrist	2.24	0.11	0.22	0.02
Neuro & ENY Specialist	2.24	0.04	0.07	0.01
Psychology Specialist	2.24	0.45	0.89	0.10
Mental Health Nurses	6.71	1.34	2.68	0.30
Administration Officers	17.90	17.90	35.80	3.98
Staff Sub Totals	81	46	92	10.30
Patients	90.82	90.82	181.64	10.09
Totals for Worst Case Future Operation	171	137	274	20.35

Assumptions

- Assume 1 trip in / 1 trip out per day per staff member or patient.
- Hours of operation (8.30am – 5.00pm) plus 0.50 hours each side for staff setup and lockdown.
- Total of 9.50 hours for assessment per day.
- Average 90.82 face to face patients / day (Calculated from floor area increase ratio)

2.5 Traffic Distribution

The preliminary design plans indicate access to the site will be via Gray Street, where a 2-way driveway is proposed approximately 45m east of Lake Road. It is assumed that the majority of future patients (say 80%) visiting the proposed medical centre will arrive and depart via Lake Road, with the remainder (20%) from the east via Gray Street.

At the Lake Road intersection, based on the manual traffic count undertaken by StreetWise, the following splits can be assumed:

- 50:50 split turning into Gray Street from Lake Road
- 60:40 split turning out of Gray Street onto Lake Road (60% to north & 40% south)

Given the nominal AM and PM peak traffic period fall outside the hours of operation for opening and closing the following distributions are provided for traffic entering and exiting the medical centre for each of the peak periods. For AM peak the traffic generated will be mainly staff entering for start of work before 9.00am. For the PM peak the distribution will mainly be for patients leaving the medical centre with staff leaving the medical centre between 4.30 and 5.30pm which is outside the nominal PM peak period of 3.00 to 4.00pm.

- AM Peak Period – 90% in and 10% out, and
- PM Peak Period – 10% in and 90% out.

Figures 2.50 and 2.51 provide a summary of the predicted traffic generation distribution for the normal and worst case scenario operations.

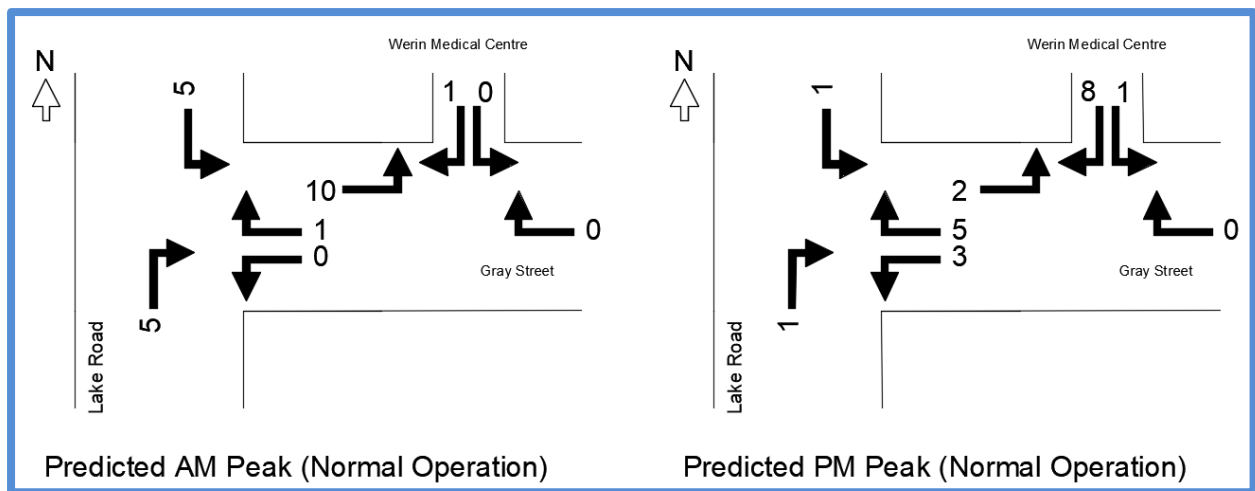


Figure 2.50 – AM & PM PEAK TRIP DISTRIBUTION (NORMAL OPERATION)

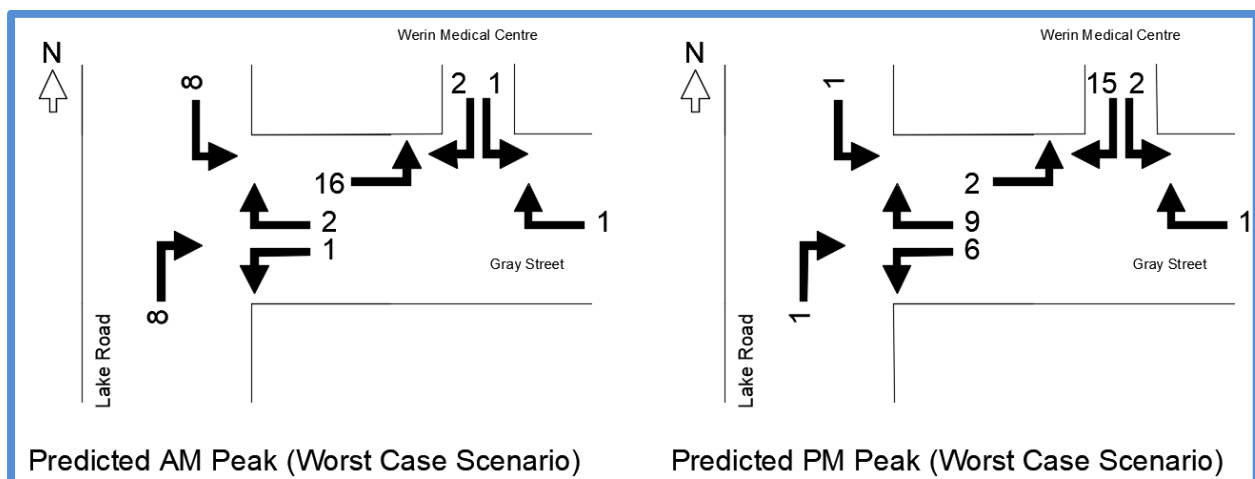


Figure 2.51 – AM & PM PEAK TRIP DISTRIBUTION (WORST CASE SCENARIO)

2.6 Traffic Growth

Based on Port Macquarie Hastings Council's Community Profile website the 2018 population growth figures for the Port Macquarie – Eastport area (development locality) was approximately + 1.58%.

For the purposes of this assessment 1.60% will be used as the traffic growth in the area, allowing for traffic influences outside the area.

2.7 Future Predicted Traffic Volumes

Using the existing peak period traffic volumes for the intersection of Lake Road and Gray Street and incorporating the predicted traffic generation (normal and worst case scenarios) for the development and traffic growth for a design horizon of 10 years for the existing peak period volumes the following flows are provided in Figures 2.70 and 2.71.

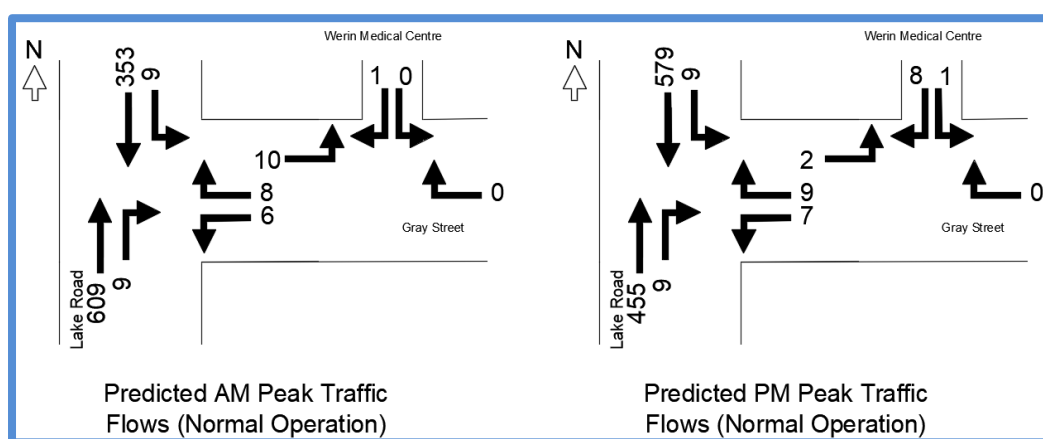


Figure 2.70 – AM & PM PEAK TRIP DISTRIBUTION (NORMAL OPERATION)

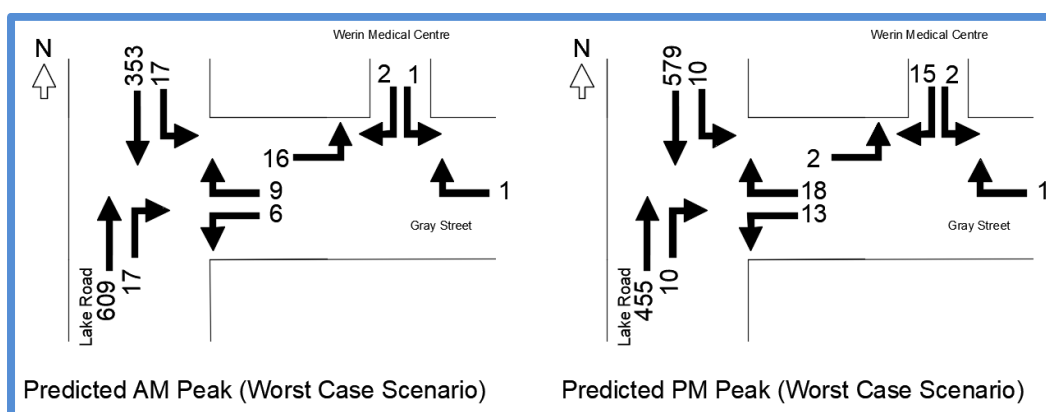


Figure 2.71 – AM & PM PEAK TRIP DISTRIBUTION (WORST CASE SCENARIO)

2.8 Road Capacity

In accordance with Port Macquarie Hastings Council's version of the AUSPEC-1 D01-Geometric Road Design – Table D1.5 the existing operation of Lake Road is classified as being a Distributor Road (up to 10 000 vehicles a day) and Gray Street is classified as an Access Place (up to 300 vehicles a day or 30 dwellings) .

In accordance with the Austroads Guide to Traffic Management the lane capacity for an urban road can be up to 900 vehicles per hour or 9000 vehicles per day per lane (Table 2.80 below).

Type of lane	One-way mid-block capacity (pc/hr)
Median or inner lane	
• Divided road	1000
• Undivided road	900
Middle lane (of a 3-lane carriageway)	
• Divided road	900
• Undivided road	1000
Kerb lane	
• Adjacent to parking lane	900
• Occasional parked vehicles	600
• Clearway conditions	900

Source: Table 5.1 of Austroads Guide to Traffic Management Part 3

Table 2.80 – URBAN ROAD LANE CAPACITY (AUSTRADS)

In considering the Austroads roadway capacities for an urban road, Lake Road is estimated to be currently operating at approximately 50% of capacity for a single lane in each direction (ie. 50% of 900 vphr)

For the purposes of this assessment, the lane capacities prescribed by the Austroads Guide have been adopted, as they are the most current data for road capacities.

3. FUTURE INTERSECTION REQUIREMENTS

3.1 Intersection of Lake Road & Gray Street

The following assessment is based on the preceding Traffic Generation, Traffic Growth and Traffic Distribution calculations for both the normal and worst case scenario operations.

The following assessments have been completed to determine what the predicted turn treatments should be provided at the intersection of the Lake Road and Gray Street based on Figure 3.25 of the Austroads Guide to Traffic Management, Part 6 – Intersections, Interchanges and Crossings. Both Figures 3.10 and 3.11 indicates the intersection should be upgraded to a CHR(s) layout for both peak periods for both operation scenarios.

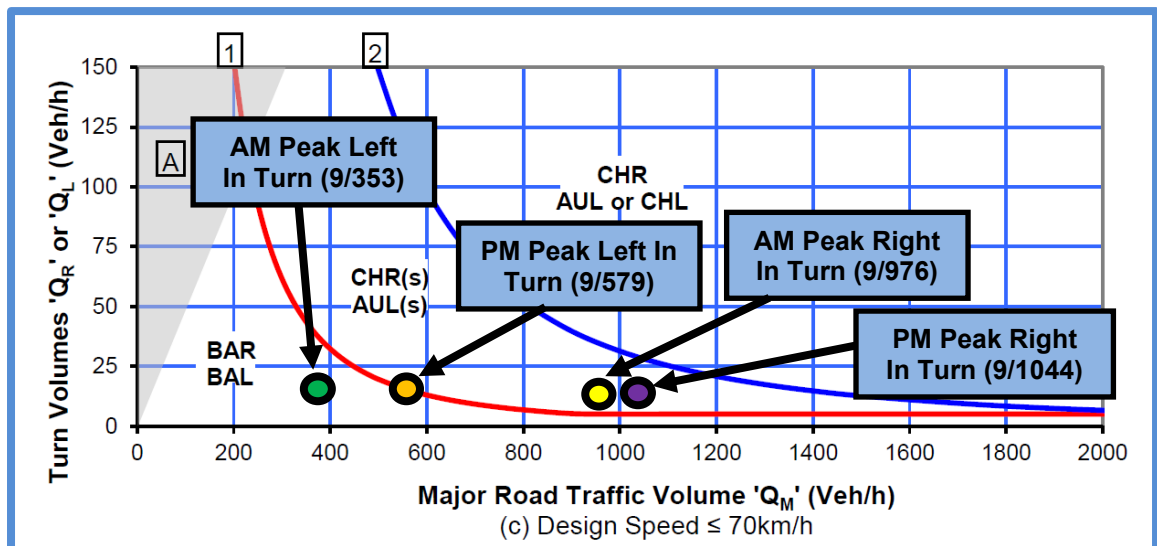


Figure 3.10 – AM & PM PREDICTED TRAFFIC FLOWS
(NORMAL OPERATION – DEVELOPMENT TRAFFIC & 10 YEAR TRAFFIC GROWTH)

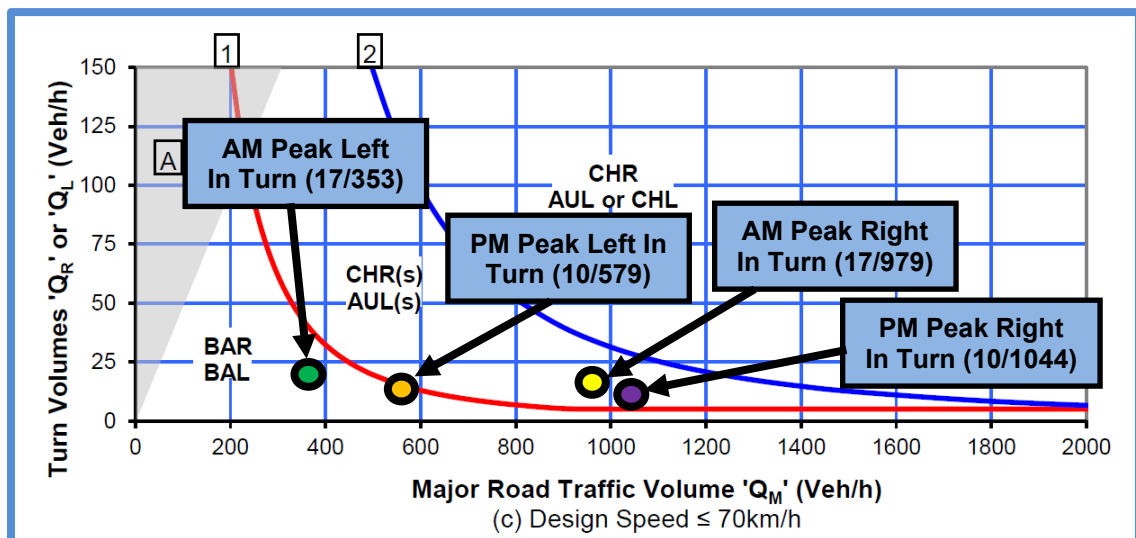


Figure 3.11 – AM & PM PREDICTED TRAFFIC FLOWS
(WORST CASE SCENARIO – DEVELOPMENT TRAFFIC & 10 YEAR TRAFFIC GROWTH)

The above warrant assessment indicates the intersection should be operating as a type CHR(s) intersection treatment when considering the safety of the operation of the intersection which is consistent with the findings in Section 2.2 of this report for the existing intersection operation.

3.2 Sidra Intersection Modelling

SIDRA software modelling had been completed for the intersection of Lake Road and Gray Street as part of the 1Werin Medical Centre development proposal to determine the Level of Service (LoS) for the future intersection operation. The modelling has been based on the previously determine normal medical centre operation.

Table 3.21 provides a summary of the AM and PM Peak SIDRA modelling results for the existing intersection operation.

The following inputs were used in the setup of the model: -

- Posted speed limits, Lake Road = 50km/h, Gray Street = 50km/h.
- SIDRA default values used unless noted otherwise.
- GAP acceptance for sign-controlled intersections adopted from Appendix E of TfNSW Traffic Modelling Guidelines v1.0 (2013), and are summarised in the table below:

Movement	Gap Acceptance (s)	Follow Up Headway (s)
Right turn from Major Rd	4.0	2.0
Left Turn from Minor Rd	4.5	2.5
Right Turn from Minor Rd	5.5	3.5

TABLE 3.20 – GAP ACCEPTANCE FOR CONTROLLED INTERSECTIONS

Assumptions and/or modifications to Sidra model defaults

- HV of 5% on all turning movements;
- SIDRA default values for Peak Flow Factor (95%) and Peak Period (30 minutes per hour); and
- Model Type = New South Wales
- GAP acceptance for sign-controlled intersections adopted from Appendix E of TfNSW Traffic Modelling Guidelines v1.0 (2013), with TWSC calibration factors turned off. Gap Acceptance parameters are summarised in the table below:

	Overall Intersection		Worst Movement (Right Out)		
	Average Delay	Degree of Saturation	Average Delay	Degree of Saturation	Level of Service
AM Peak	0.40 sec	0.348	21.60 sec	0.050	B
PM Peak	0.50 sec	0.328	24.00 sec	0.066	B

TABLE 3.21 – SIDRA MODELLING SUMMARY FOR AM AND PM PEAK PERIODS (FUTURE OPERATION)

Based on the Sidra Modelling, the worst movement at the intersection is the right turn out of Gray Street.

3.3 Road Safety

As discussed previously in this report, the proposed development will not significantly increase traffic volumes, and there is minimal likelihood of the redevelopment increasing traffic flows through the intersection of Lake Road and Gray Street. However, there will be an overall general increase in traffic flows as a result of traffic

growth in the area that may increase any existing road safety issues at the intersection.

A review of the available crash history data indicates there have been no recorded crashes at the intersection between October 2014 to now.

This report has indicated the intersection should currently be operating as a Type CHR(s) intersection treatment without considering this development from an efficiency point of view. However, from a road safety point of view there is no requirement to upgrade this intersection as a result of the development given the lack of crash history at this location.

3.4 Summary of Future Intersection Requirements.

This report has assessed what the future intersection requirements will need to be for the Lake Road and Gray Street intersection based on Austroads Turn Warrants, Sidra Modelling and existing Road Safety for the intersection.

The Austroads Turn Warrants have indicated the existing operation of the intersection should be as a minimum a CHR(s) intersection treatment based on safety for the right turn movement. However, the intersection currently efficiently operates as a BAR / BAL intersection treatment. There is minimal ability for vehicles to pass turning vehicles in Lake Road given the current allowable kerbside parking around the intersection. The future operation reinforces this requirement based on added traffic growth in the area for a 10 year design horizon with regard to safety for the right turn movement.

The requirement for the intersection to operate as a CHR(s) treatment is a sheltered right turn bay allows a vehicle to safely turn right from the sheltered bay without the possibility of being rear ended by a following vehicle. This possibility increases where there are increased through traffic volumes and no turn bay is provided.

Based on the Sidra Modelling the current intersection configuration will operate adequately into the future based on the medical centre normal operation and traffic growth in the area over a period of 10 years into the future.

As a minimum the kerbside parking should be removed so as to provide the ability for following vehicles to pass right turning vehicles at the intersection and to improve Safe Intersection Sight Distance (SISD) at the intersection.

To improve safety through the intersection Figure 3.40 provides an indicative linemarking upgrade for the intersection of Lake road and Gray Street to decrease the possibility of rear end crashes for vehicles waiting to turn right into Gray Street. As discussed in Section 2.2 of this report this safety situation for turning traffic along Lake Road at a number of intersections is consistent with the Gray Street intersection so it is suggested Port Macquarie Hastings Council complete an investigation for similar intersection treatment so to decrease the perceived road safety issues for turning traffic at these intersections.



Figure 3.40 – INDICATIVE LAKE ROAD & GRAY STREET INTERSECTION UPGRADE SUGGESTION

This upgraded intersection treatment is not a requirement of this development as there is likely minimal increase in traffic volumes caused by the development. However, there will be an overall increase in traffic on Lake Road due to annual traffic growth in the area.

4. PEDESTRIAN ACCESS

As stated previously in this report there are formal 1.20m wide concrete footpaths running along each edge of the formation in Lake Road while there are informal grass verges running along each edge of Gray Street in the vicinity of the development site.

Port Macquarie Hastings Council has stipulated that as part of the development consent a formal 1.20m concrete footpath will need to be constructed along the frontage of the site in Gray Street.

Pedestrian access to the site will be provided via connections off Lake Road and Gray Street. A marked pedestrian access path is to be provided through the carpark from the Gray Street access to the front of the medical centre.

5. PUBLIC TRANSPORT

Busway's Port Macquarie currently runs four (4) regular Bus Routes (323, 324, 333 & 334) along Lake Road each day. There is currently a bus stop located 200m to the north of the site in Lake Road on the southbound approach while there are 2 bus stops located to the south of the site in Lake Road with formal footpaths providing connection from the development site to the bus stops.

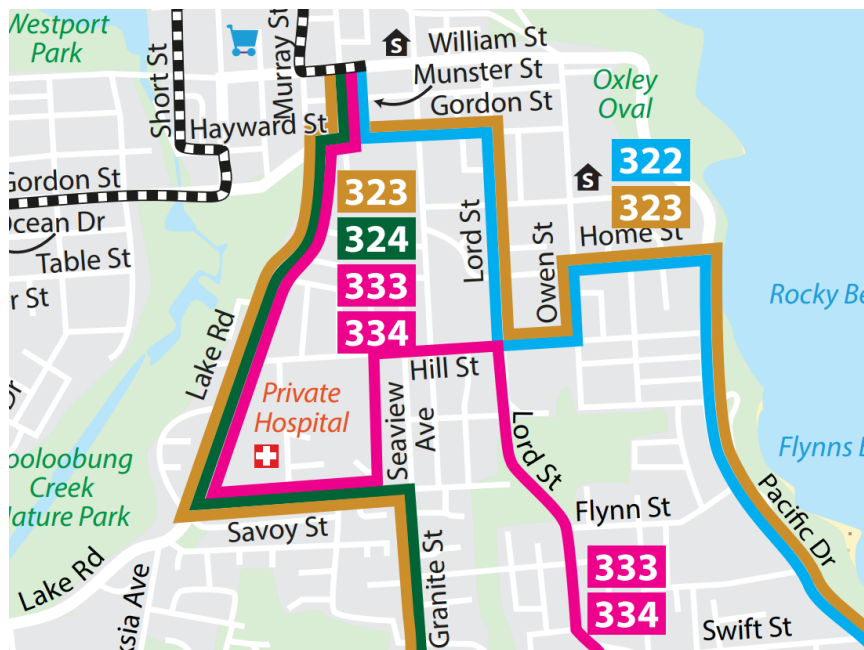


FIGURE 5.00 – BUSWAYS ROUTES 323,324,333 & 334

6. SITE SERVICING

It is anticipated the site will more than likely need to be serviced by

- Small delivery Vehicles / Couriers (Weekly)
- Garbage refuse will be removed from site via the normal domestic garbage service. (Weekly)
- Private bulk garbage service by JR Richards (Fortnightly)
- Private specialist medical waste collector (Currently weekly due to Covid requirements. Normally monthly outside of Covid requirements.)

The client has advised deliveries to the site will be infrequent with approximately one delivery per week for medical supplies by a small rigid truck (SRV). Setdown by these vehicles currently are via the existing carpark with minimal (if any) interruption to the operation of the carpark. The same can be said for private bulk bin service.

In the redevelopment proposal deliveries and bulk garbage removal will be via the carpark with again minimal interruption to the carpark operation to be expected.

7. CARPARKING ASSESSMENT

7.1 Geometric Carpark Design Assessment

The design of the carparking layout is specified in the 'Australian/New Zealand Standard, Parking Facilities Part 1; Off Street Carparking (AS/NZS 2890.1) of 2004 and Australian/New Zealand Standard, Parking Facilities Part 6: Off street parking for People with Disabilities of 2009.

7.2 Carparking Classification

Part 1 of AS2890 classifies this development as a Class 3 off-street car parking facility requiring a Category 2 Driveway. Table 7.20 provides a comparison on the requirements of AS/NZS 2890.1 and AS/NZS 2890.6 applicable to the car parking proposal to be provided for the development.

Design Component	AS / NZS 2890.1 & AS / NZS 2890.6 Requirement	Proposed	Conformance with Standard
Parking Space (90 degree bays, Rear)	5.4m x 2.6m car space End Bays to be 2.9m wide where adjacent to a kerb or wall	5.4m x 2.6m car space 5.4m x 2.9m end bay car space	YES
Disabled Access Parking	5.4m x 2.4m plus 5.4m x 2.4m shared zone disabled	5.4m x 2.6m plus 5.4m x 2.6m shared zone disabled	YES
Aisle Width	5.8m min	5.1m	YES
Blind Aisle	1.0m	Not Required	N / A
Driveway Width	Category 2 d/w = 6.0m – 9.0m Note: Driveways are normally combined, but if separate, both entry and exit widths should be 3.0m min.	Combined driveway width of 6.20m.	YES

TABLE 7.20 – SUMMARY OF AUSTRALIAN STANDARD GEOMETRIC DESIGN REQUIREMENTS

Table 7.20 shows this development proposal is consistent with the above Australian Standard Requirements.

The footpath crossing / driveway design will need to comply with Port Macquarie Hastings Council's standard drawings ASD 103, ASD 202 and ASD 207.

7.3 Carparking Requirement

The following assessments have been completed for this development proposal with regard to the amount of carparking to be provided on site.

7.3.1 Port Macquarie Hastings Council DCP Requirements

Council's Development Control Plan (Port Macquarie Hastings Council Development Control Plan 2013) specifies the following car parking requirements:

- Off-street parking shall be provided in accordance with Table 2.5-1 of the DCP.
- Parking design and layout to be completed in accordance with AS2890.1 & 6 for this development.
- Bicycle and motorcycle parking to be considered.

Community land uses	
child care centres	1 per 4 children and set down and pick up area.
health services facilities	
medical centres	3 per consultant + 1 per 2 employees
health consulting rooms	3 per consultant + 1 per 2 employees + any dwelling requirement.

FIGURE 7.30 – EXTRACT OF TABLE 2.5-1 FROM PMHC DCP 2013

Table 2.5-1 above, requires 3 parking spaces per 1 consultant + 1 per 2 employees are required for this type of development land use.

The following carparking calculation is provided for this development.

Number Consultants / Rooms	8
Number Staff	23 (15 consultants, 8 admin staff)

**3 spaces x 8 consultants / rooms + 8 consultant / employee parking space = 32
total carparking spaces required**

When considering the worst case scenario for the redevelopment the following carparking assessment is provided.

Number Consultants / Rooms	16
Number Staff	46 (28 consultants, 18 admin staff)

**3 spaces x 16 consultants / rooms + 23 consultant / employee parking space = 71
total carparking spaces required**

As previously discussed there is no likelihood of the worst case operation existing given the numbers of the clientele and formalisation of the operation into the future.

In total, the development is proposing 56 carparking spaces, including 2 disabled spaces and shared areas to be provided as part of the carparking layout when considering the normal / current operation.

7.4 Disabled Parking

Council's DCP does not have a formal requirement for the provision of off street disabled parking for this development.

However, the Building Code of Australia (BCA) has the following requirements for the provision of disabled parking. Under the code this landuse is classified as a Class 9a Building, being *"a health-care building including any parts of the building set aside as laboratories, and includes a health-care building used as a residential care building"*. Table D3.5 Carparking spaces for people with a disability, requires a clinic or day surgery not forming part of a hospital provide 1 space for every 50 carparking provided or part thereof.

As outlined previously this development proposal is proposing to provide 54 carparking spaces which will require the provision of 2 disabled access spaces including shared spaces. This development proposal will be providing 2 disabled access spaces in accordance with the BCA requirements.

7.5 Bicycle and Motorcycle Parking

Council's DCP 2013 requires the consideration of off-street parking for bicycle and motorcycles for all developments.

It is proposed the development will allocate areas for both bicycle and motorcycle parking adjacent to the entrance of the medical centre.

7.6 Driveway Access

Patrons to the Medical Centre will enter the site via a dual entry / exit driveway to be located along the southern side of the property off Gray Street. On entering the carpark patrons will manoeuvre around the carpark in a clockwise direction to find a carpark or access the setdown / pickup bay to be located at the front entrance to the medical centre. Pavement markings are proposed to enhance / direct the access requirements for patrons entering / exiting the carpark.

The Australian Standard has a requirement for this type of development to provide a two way driveway of sufficient width to allow vehicles to pass each other at a given point.

The standard requires that a combined driveway with a minimum width of 6.0m be provided to allow vehicles to pass each other. This development is proposing to provide a combined entry / exit driveway width of 6.20m which conforms with the minimum requirements of the Australian Standard.

The location of the driveway in Gray Street will be 43.50m from Lake Road at its nearest point. The proposed driveway is considered to be located on flat terrain with minimum sight distance issues. The main issue being cars parked kerbside in Gray Street may decrease available sight distance for patrons exiting the medical centre.

Also to maintain acceptable sight distance at the driveway entry / exit and through the carparking it is recommended any landscaping to be provided attain a maximum height of 0.60m so as not to obstruct vision between pedestrians and vehicles using the site.

7.7 Carparking Assessment Summary

The development is required to provide a total of 32 off –street parking spaces in accordance with Council's DCP when considering its normal operation into the future. The development is proposing to provide a total of 56 off street spaces including 2 disabled parking and shared spaces.

Areas for motorcycle and cyclist parking will also be provided as part of the redevelopment of the site.

The geometric design of the carpark conforms with AS2890.1.

8. SUMMARY

StreetWise Road Safety and Traffic Services have been engaged by Hopkins Consultants, on behalf of the Werin Aboriginal Corporation, to prepare a Traffic Impact Assessment report for a proposed Medical Centre at the corner of Lake Road & Gray Street, Port Macquarie, NSW.

Given the development is located within an existing residential area, traffic impacts generated by the development are in keeping with the existing traffic flows in the area. That being said advice from the medical centre administration has indicated there will be no increase in the services to be offered into the future. The redevelopment will centralise the services offered where currently they are spread over a number of isolated buildings across the site.

Manual intersection counts have indicated Lake Road currently operates at approximately 50% of capacity in accordance with the Austroads guidelines. Future traffic volumes considering traffic growth for a 10 year design horizon indicate the capacity will increase to 65 – 70% into the future.

The development is proposing to provide 56 (including 2 disabled access spaces) off street carparking spaces. As there will be no increase in the services to be provided the number of carparking spaces to be provided in accordance with PMHC's DCP is

32 spaces. Areas for motorcycle and cyclist parking will also be provided as part of the redevelopment of the site.

The configuration of the parking bay sizes and the aisle widths proposed will be provided in accordance with the Australian Standard 2890.

The development will provide a single dedicated entry / exit driveway access off the Gray Street frontage of the site.

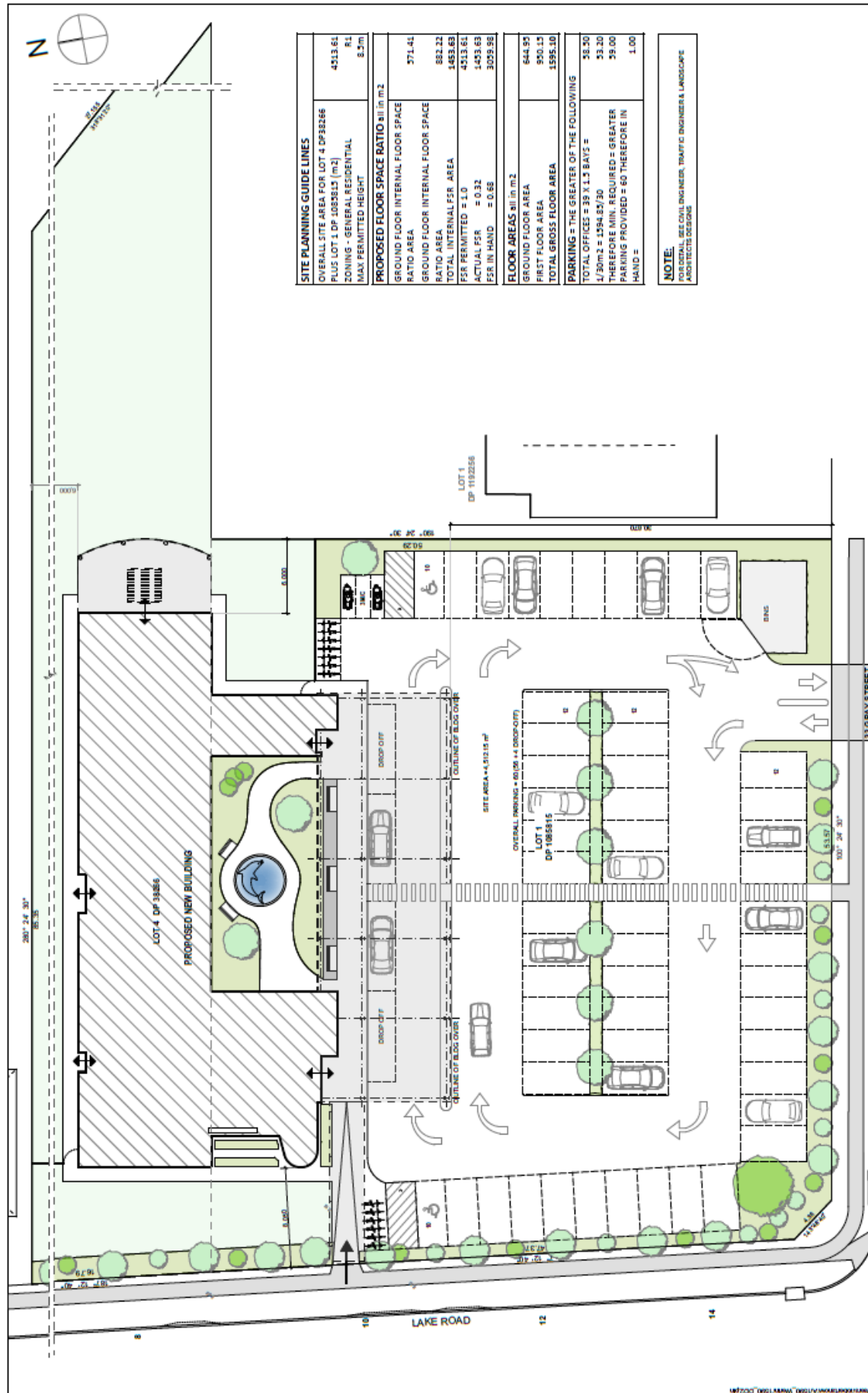
Pedestrian access to and from the site will be via either the Lake Road or Gray Street frontages. Port Macquarie Hastings Council has required a formal 1.20m concrete footpath be provided along the Gray Street frontage as part of the redevelopment.

There are adequate provisions for site servicing to be provided as part of the development. All expected deliveries can be completed on site. The garbage collection will happen outside of peak period times.

9. RECOMMENDATIONS

- The proposed development be approved by Port Macquarie Hastings Council on traffic grounds including the provision of off street parking which is justified in accordance with PMHC's DCP requirements.
- There is no requirement by this redevelopment proposal to upgrade the current Lake Road and Gray Street intersection arrangement.
- The proposed development will provide a single combined entry / exit driveway access off the Gray Street frontage.
- Landscaping adjacent to the driveway accesses is to attain and be maintained to a maximum height of 0.60m to minimise sight distance conflicts with oncoming traffic and pedestrians walking along the footpath fronting the site.
- Kerbside parallel parking in the vicinity of the Lake Road and Gray Street intersection being removed for the following:-
 - Lake Road East – 70m from Gray Street heading north,
 - Lake Road East – between Gray Street and Chapman Street,
 - Lake Road West – 80m from Glebe Close heading north, and
 - Lake Road West – 25m from Glebe Close heading south.to improve Safe Intersection Sight Distance (SISD) at the intersection, and improve traffic flows on Lake Road.
- PMHC complete further investigation along Lake Road at its intersection to reduce perceived road safety issues relating to right turning vehicles into the side streets.

APPENDIX A DEVELOPMENT PROPOSAL



APPENDIX B SIDRA MODELLING PUTPUTS