TRAFFIC IMPACT ASSESSMENT

Hubble Traffic

DECEMBER 2025 REV A

RESIDENTIAL UNIT DEVELOPMENT

19 HYSSOP ROAD, MARGATE

Hubble Traffic

E: Hubbletraffic@outlook.com

Disclaimer: This report has been prepared based on and in reliance upon the information provided to Hubble Traffic Pty Ltd by the client and gathered by Hubble Traffic Pty Ltd during the preparation of the report. Whilst all reasonable skill, care and diligence has been used in preparation of the report, Hubble Traffic Pty Ltd take no responsibility for errors or omissions arising from misstatements by third parties.

This report has been prepared specifically for the exclusive use of the client named in the report and to the extent necessary, Hubble Traffic Pty Ltd disclaim responsibility for any loss or damage occasioned by use of or reliance upon this report, or the date produced herein, by any third party.

Version	Date	Reason for Issue
Draft	October 2025	Draft issued for client feedback
Final	October 2025	Final issued
Rev A	December 2025	Incana Access modified to vehicular crossover

Table of Contents

1. Introduction

SJM Property Developments has engaged Hubble Traffic to prepare an independent Traffic Impact Assessment for a proposed residential development at 19 Hyssop Road, Margate.

This assessment addresses the traffic implications associated with the development of 26 residential units accessed via Incana Road, comprising stage 1 and 2 of the proposed stratum unit development. The analysis includes consideration of traffic generation, parking facilities, access arrangements, and operational impacts within the surrounding road network.

Stage 3 of the development, which is anticipated to deliver additional residential units on the remaining lots, and establish a new connection to Hyssop Road, is not included in this assessment. A separate traffic impact assessment will be required to support stage 3 at the time of its progression, ensuring that cumulative impacts and network integration are appropriately addressed.

This report has been prepared to satisfy the requirements of Austroads' Guide to Traffic Management Part 12: Traffic Impacts of Developments (2019), and refers to the following information and resources:

- Kingborough Interim Planning Scheme 2015 (Planning Scheme)
- Road Traffic Authority NSW (RTA) Guide to Traffic Generating Developments
- Australian Standards AS2890 parts 1, 2, and 6
- Austroads series of Traffic Management and Road Design
  - Part 4: Intersection and crossings, General
  - Part 4a: Unsignalised and Signalised Intersections
  - Part 12: Traffic Impacts of Development
- Department of State Growth crash database
- LIST – Land Information Database

2. Site Description

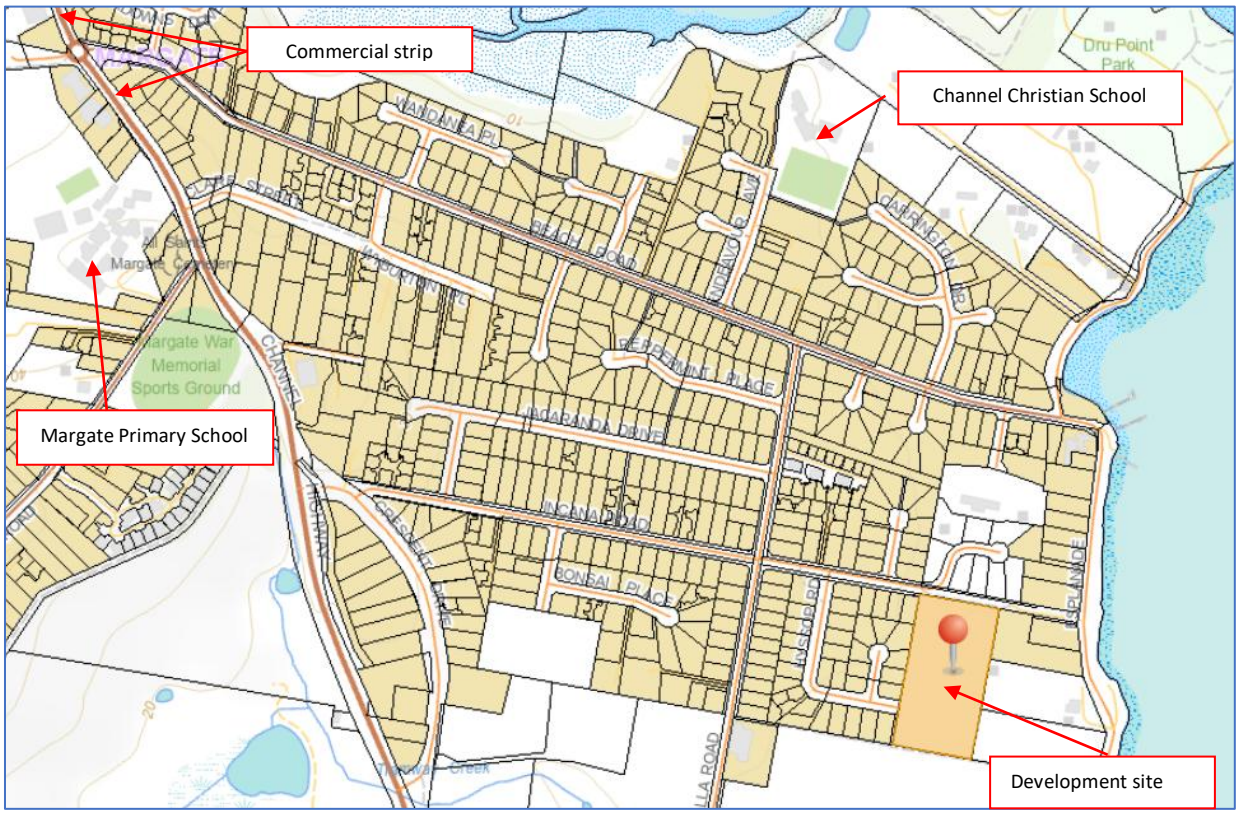
Situated at 19 Hyssop Road, the development site comprises a substantial parcel of vacant land featuring road frontage along Incana Road and an undeveloped access from Hyssop Road. The topography of the site is predominantly flat. The site is located next to existing residential properties to the west, and a new residential subdivision with nine additional lots to the north. These nine lots were established by extending Incana Road by 100 metres, resulting in a formal cul-de-sac at its end. At the time of this assessment, none of the nine lots were generating residential traffic.

The site will be integrated into the local road network via a newly constructed access onto Incana Road. The surrounding road network to the north and west comprises sealed urban streets with footpaths, offering direct connectivity to the Channel Highway. As the nearest State Road, Channel Highway serves as the primary transport corridor linking Margate north to Kingston and Hobart, and south to further Channel towns.

This strategic connection facilitates both commuter and service traffic and plays a critical role in supporting regional accessibility. Within Margate, the presence of two schools and a concentrated commercial strip, comprising food outlets, a hotel, and essential services, generates internal trips and pedestrian activity.

According to Land Information System Tasmania (LIST) the site is zoned as low density residential.

Diagram 2.0 – Site location (extract from the LIST land information database)



3. Development proposal

The proposed development will comprise 26 stratum lots with the remaining land being a balance lot, with stages 1 and 2 to be constructed concurrently, delivering a total of 26 residential units. The lots will be stratum title, with each unit allocated defined boundaries, while the common property, including all shared engineering infrastructure, will be managed by a body corporate

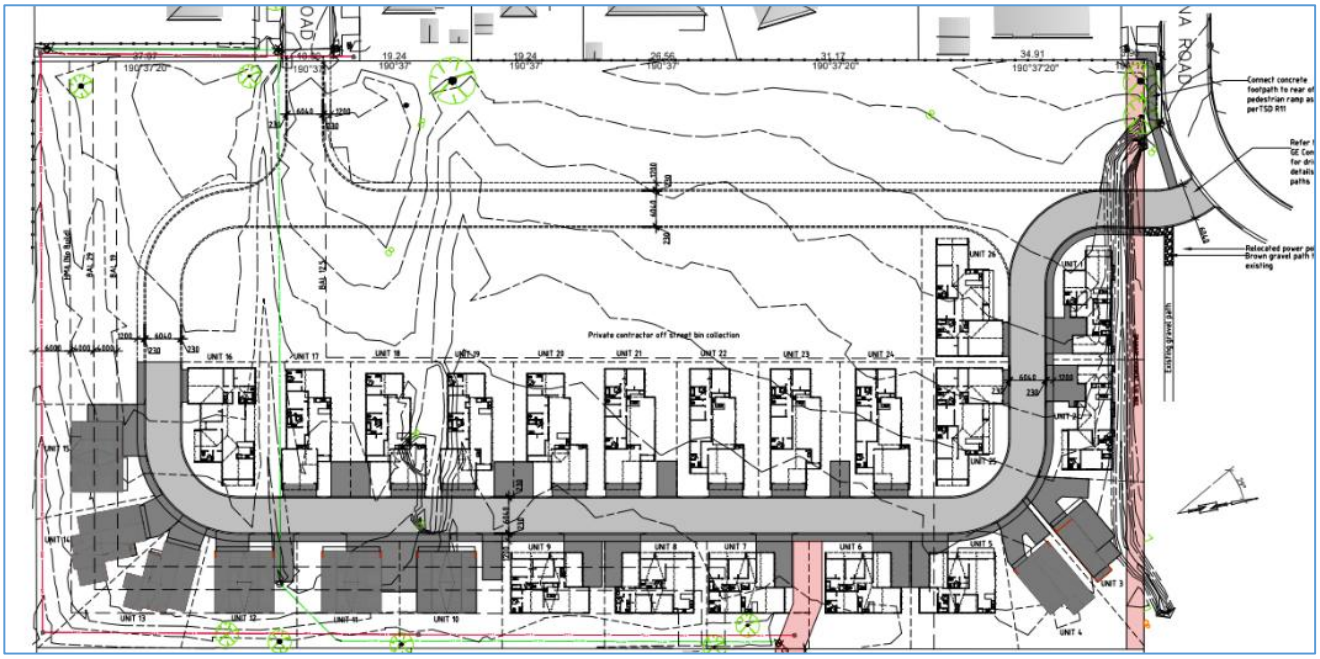
All units will have three bedrooms, with some being two-storey. Each unit will have at least two parking spaces, with various layouts including:

- A single garage and open parking space
- A double garage
- A third open parking space that may operate as a tandem parking space.

The units will have a concrete driveway with appropriate camber and drainage infrastructure, connecting onto Incana Road. The staging strategy, including the reason for a new Incana Road access, is covered in section 7.1 of this assessment.

The driveway infrastructure is designed for light vehicle traffic, with occasional access for heavy vehicles like waste collection, small delivery, or furniture removalist vans. A dedicated pedestrian pathway will run along one side of the driveway for safe and convenient access. The site layout includes three tight ninety-degree bends to moderate speeds, enhancing residential amenity and prioritising pedestrian safety.

Diagram 3.0 – Proposed unit layout under stages 1 and 2



4. Trip generation by this development

For the purpose of this assessment, a trip is defined as a one-way vehicular movement from one point to another, excluding the return journey. Therefore, a return trip to and from a land use is counted as two trips. To determine the number of trips likely to be generated by this development, reference has been taken from the RTA Guide to Traffic Generating Developments (RTA Guide), section 3.3 residential housing, recommending low density residential dwellings in regional areas (RTA update 4a - August 2013).

For large multiple units comprising of three or more bedrooms, the guide recommends the following trip generation rate:

- Daily vehicle trips of 6.5 per unit
- Weekday peak hour trips of 0.65 per unit

Based on these generation rates, the predicted trip generation for the proposed 26 residential units is expected to be 169 daily, with 17 of these trips operating in the weekday peak hours.

Table 4.0 – Predicted number of trips to be generated

Dwelling Type	RTA generation rate	Number of units	Daily trips	Peak hour trips
Three bedrooms	6.5 per day 0.65 per peak	26	169	17
Total		**26**	**169**	**17**

4.1 Additional trips generated by the new Incana Road subdivision

Incana Road has recently been extended by approximately 100 metres to accommodate nine additional residential lots. At the time of this assessment, construction activity has commenced on several of these lots, generating building-related traffic. However, no residential occupancy has yet occurred, and therefore no residential trips are currently being generated.

This assessment has considered the combined traffic impact of the nine new lots in conjunction with the proposed 26 residential units. In accordance with the RTA Guide, each standard residential lot is expected to generate approximately 7.4 daily vehicle trips, with 0.78 trips occurring during each weekday peak hour.

Collectively, the nine existing lots are anticipated to generate approximately 67 daily vehicle trips, including seven trips during each peak hour. For the purpose of assessing the net traffic impact of the proposed 26-unit development, it is appropriate to assume that these seven peak hour trips already operate on the surrounding road network. This approach provides a conservative baseline and enables a clearer evaluation of the incremental impact attributable to the proposed development.

5. Existing traffic conditions and road network

The development site will connect to the surrounding road network via Incana Road, a sealed local road that provides access to Beach Road and the Channel Highway through an existing roundabout. This roundabout facilitates efficient movement for commuter, service, and emergency vehicles, and represents the most direct and practical route to Hobart for future residents.

An alternative connection to the Channel Highway is available via Crescent Drive. However, its indirect alignment and reduced efficiency for northbound movements make it less appealing for regular residential use.

5.1 Incana Road characteristics

Incana Road is a local residential street serving both established and emerging residential developments. It extends about 830 metres east from Crescent Drive, ending in a cul-de-sac roughly 100 metres past the proposed access point to the development site. The road is built to urban standards with a sealed carriageway, concrete kerb and channel, formal footpaths on both sides, and street lighting. Given the surrounding road network and exclusive residential use along its frontage, Incana Road functions as a local residential street, despite being part of the local bus network.

Bundalla Road is situated approximately 220 metres west of the proposed access location and forms a cross intersection with Incana Road. This intersection operates under give-way control, with traffic priority afforded to Bundalla Road.

The section of Incana Road between Bundalla Road and the proposed access features a straight alignment on flat terrain, with a sealed pavement width of approximately 8.5 metres measured between kerb faces. This road width continues where the new access will operate. East of the proposed access, the new residential subdivision has been built, the road alignment becomes curvilinear, and the pavement width slightly reduces. The road operates under the urban default 50km speed limit.

Photograph 5.1A – Incana Road construction standard – west of development site

Photograph 5.1B – Incana Road construction standard –east of the development site

5.2 Bundalla Road characteristics

Bundalla Road runs in a south to north orientation, connecting Gemma Road at its southern end to Beach Road in the north. Within the surrounding road network, Bundalla Road is expected to function as a local collector, facilitating the movement of traffic from local streets to Beach Road, which is also a local collector.

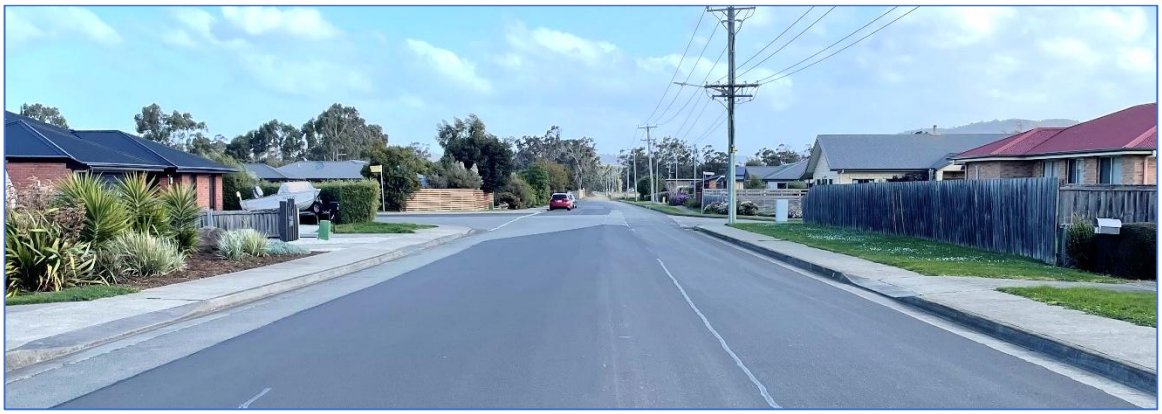
For the purpose of this assessment, emphasis is placed on the segment between Incana Road and Beach Road, as this section is anticipated to accommodate the majority of future residential traffic generated by the development site.

Bundalla Road exhibits a flat gradient and straight alignment, constructed to an urban standard with a bitumen carriageway measuring approximately 9.7 metres between kerb faces. The road includes concrete kerbing and channel, footpaths on both sides, and street lighting.

These design elements are consistent with the functional requirements of a local collector road, supporting two-way traffic flow, while accommodating on-street parking along both sides.

The default urban speed limit of 50 km/h applies, with all adjoining properties having direct vehicular access and off-street parking.

Photograph 5.2 – Road standard of Bundalla Road between Incana Road and Beach Road



5.3 Beach Road characteristics

Beach Road extends eastward from the highway, terminating at Dru Point recreational park. Along its length, there are residential properties with direct access and on-street parking facilities. Within the surrounding road network, Beach Road functions as a local collector, facilitating traffic movement from adjoining local streets and providing a direct connection to the highway.

The corridor is characterised by established residential development and nine intersecting side streets, most of which are cul-de-sacs. Bundalla Road intersects Beach Road and serves as the other local collector within this network, supporting broader connectivity and traffic distribution.

Beach Road is constructed to urban road standards, comprising a sealed bitumen surface with concrete kerbs and gutters, a concrete footpath along the northern side, and street lighting. The corridor includes a series of kerb outstands that narrow the carriageway and form indented parking bays, which also function as traffic calming devices.

At the outstands, the carriageway width reduces to approximately 7.0 metres between kerb faces, widening to 9.0 metres at the indented parking bays. This configuration supports the functional role of a local collector road, providing sufficient width to accommodate on-street parking while maintaining two-way traffic flow.

The default urban speed limit of 50 km/h applies.

Photograph 5.3 –– Typical cross section of Beach Road

5.4 Channel Highway characteristics

The Channel Highway (highway) is part of the State Road network managed by State Growth. Under the Tasmanian State Road hierarchy, it is classified as a Category 3 road, which is a Regional Feeder Road. The highway's function is to connect regional areas with Category 1 and 2 roads and is suitable for carrying large volumes of passenger vehicles, particularly commuter vehicles during peak periods.

As the highway passes through activity centres the efficient movement of vehicles must be balanced with the activity centre objectives. As this occurs through Margate, the highway's functional role transitions from a high-efficiency arterial to an urban arterial, where traffic movement is deliberately moderated to support pedestrian activity, local access, and streetscape amenity.

This shift prioritises safety, accessibility, and integration with adjacent land uses. As a result, the traffic flow becomes interrupted, such as the Beach Road roundabout, with delays and queuing commonly observed during weekday commuter peak periods. These conditions are an intentional outcome of the urban arterial function, to support pedestrian and commercial land-use activities. As these commercial activities within Margate expand, the number of internal trips is expected to grow, while the introduction of additional traffic controls is likely to further impact the efficiency of through traffic.

5.5 Summary of surrounding road network

The surrounding road network is built to appropriate urban standards and can accommodate the modest increase in residential traffic from the proposed development. Incana Road, Bundalla Road, Beach Road, and the Channel Highway all have suitable carriageway widths, pedestrian infrastructure, and align with their roles in the network. A route inspection confirmed that all roads are in good condition, with no deficiencies observed that would hinder safe or efficient vehicle movement.

5.6 Traffic activity

To evaluate the traffic impact generated by the development, it is important to understand the current traffic flow on the surrounding road network. Manual traffic surveys were undertaken at the following locations:

- roundabout of Beach Road and Channel Highway,
- junction of Beach Road and Bundalla Road, and
- intersection of Bundalla Road and Incana Road.

The surveys were conducted during the weekday peak periods, when the surrounding road network carries the highest traffic flows. From the survey data, the peak hour for both the morning and evening periods has been extracted and shown in the following table, while the traffic data and peak hour turning movements are available in Appendix E.

Survey data confirms that the highway accommodates high traffic volumes during peak periods, averaging slightly above 1,500 two-way vehicles per hour. The Beach Road roundabout plays a critical role in facilitating safe and efficient access for local traffic. As the primary collector road within the established residential catchment, Beach Road recorded peak hour flows of 439 vehicles in the morning and 331 in the evening, highlighting its strategic importance.

Traffic volumes progressively reduce downstream, reflecting the distribution function of Beach Road. On approach to Bundalla Road, volumes decrease to 258 vehicles in the morning and 189 in the evening. Bundalla Road itself accommodates 193 vehicles in the morning peak and 148 in the evening, which is appropriate for its role within the network. Incana Road, either side of Bundalla Road, experiences low traffic flows below 100 vehicles per hour, consistent with its local access function.

While the Beach Road roundabout contributes to moderate delays and queuing for highway users during peak periods, these queues are classified as moving, and dissipate periodically. This indicates that operational performance remains within acceptable limits and does not compromise overall network efficiency.

Table 5.6 – Peak hour two-way traffic flow

Road	Approach	Morning two-way flow	Evening two-way flow
Channel Highway	Southern approach to roundabout	1,254	1,347
	Northern approach to roundabout	1,532	1,566
Beach Road	Eastern approach to roundabout	439	331
	Approach to commercial car park	67	104
	Western approach to Bundalla Road	258	189
	Eastern approach to Bundalla Rd	111	142
Bundalla Road	South approach to Beach Road	193	148
Incana Road	Western approach to Bundalla Road	94	36
	Eastern approach to Bundalla Road	51	32

5.7 Public bus service

The development site benefits from close proximity to bus stops located on Incana Road. These stops are well serviced by Metro Tasmania, providing direct connections to Hobart and surrounding areas.

5.8 Traffic safety

A review of the State Growth crash database for the five most recently completed calendar years identified a number of reported crashes along the Beach Road corridor between the development site and the highway. One crash was recorded on Bundalla Road north of Incana Road in August 2022, involving a rear-end collision between two vehicles that resulted in property damage only.

Along Beach Road, between Bundalla Road and the highway roundabout, four link crashes were reported:

- Two involved vehicles losing control on the carriageway and colliding with other vehicles, both resulting in property damage, occurring in April and October 2023.
- One involved a pedestrian stepping from the footpath and receiving first aid at the scene in February 2022.
- One involved a parked vehicle rolling away, with no injuries reported.

At the Beach Road and highway roundabout, four crashes were recorded. These included two rear-end collisions, one angle collision, and one crash of unknown configuration. Of these, three resulted in property damage and one involved a minor injury.

The overall crash frequency and severity are not considered over-representative for a local collector road. The predominance of property damage-only crashes and the absence of serious injury or fatality are consistent with the low operating speeds along this corridor.

This crash history does not pose a constraint to the proposed development, and the expected minor increase in traffic volumes is unlikely to significantly change the crash risk, or pattern along Beach Road or at the highway roundabout.

6. Impact from traffic generated by this development

As determined in section 4 of this report, the development site has the potential to generate up to 169 additional traffic movements per weekday, with 17 of these trips likely to occur during the morning and evening peak periods.

6.1 Current trip distribution

Manual traffic surveys at the Bundalla Road and Incana Road intersection found that during the morning peak hour, 75% of traffic from Incana Road (east) and Bundalla Road (south) used the Beach Road route to connect to the highway roundabout, while only 25% used Incana Road (west) towards Crescent Drive. In the evening peak hour, traffic using the Beach Road route increased to 87%, with only 13% using Crescent Drive and Incana Road.

This trend aligns with the surrounding road network configuration and prevailing highway traffic controls. Notably, during the morning peak period, vehicles turning right from Beach Road are given priority over northbound highway traffic, reinforcing Beach Road as the dominant access route. This trend is expected to continue with the traffic generated by the development site.

6.2 Predicted trips assignment generated by development site

It is typical for residential developments that approximately 90% of trips generated during the morning peak hour are outbound, with the reverse pattern occurring in the evening peak. Based on the 26 units, the development is anticipated to generate approximately 17 vehicle movements during both the morning and evening weekday peak hours. Applying the observed route preferences, the trip assignment across the local road network is summarised in the table below.

Table 6.2 – Predicted network trips generated by the development

Period	Outbound trips		Inbound trips		Total trips
	Beach Road	Incana Rd	Beach Rd	Incana Rd	
Morning	12	3	1	1	17
Evening	1	1	13	2	17

6.3 Traffic efficiency on the surrounding junctions

The simplest method to determine the traffic performance at a junction or roundabout, is to use SIDRA Intersection traffic modelling software, which uses gap acceptance theory to determine the average delay, queue lengths, and degree of saturation, which are all measures of traffic congestion and level of service. The Austroads Guide provides six levels of service for junctions and roundabouts, as illustrated in the diagram below.

Diagram 6.3 – Austroads Guide for level of service at junctions, intersections, and roundabouts

Level of Service	Average delay per vehicle (secs/vehicle)	Traffic Signals and Roundabouts	Give Way and Stop controls
A	<10	Good operation	Good operation
B	10 to <20	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	20 to <35	Satisfactory	Satisfactory, but crash study required
D	35 to <50	Operating near capacity, acceptable for State Roads	Near capacity and crash study required
E	50 to <70	At capacity for signals, will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control modes
F	>70	Saturated flows – at signals, consider additional lanes	

The base model traffic data collected has been increased to represent traffic generated by the nine new subdivisional lots located east of the proposed development access.

Bundalla Road / Incana Road intersection and Beach Road / Bundalla Road junction

Traffic modelling confirms that both sites are lightly trafficked, with fewer than 303 vehicle movements during the peak hour. This volume corresponds to Level of Service A (LOS A), indicating minimal delay (less than five seconds per vehicle), with no notable queueing.

The additional trips generated by the proposed development have been assigned to both sites, with SIDRA modelling confirming no deterioration in traffic performance. Both sites will continue to operate at LOS A, demonstrating that the development will not result in any adverse traffic impacts.

The Degree of Saturation (DOS), which reflects how intensively an intersection is utilised, is predicted to remain below 0.11 (11%) at both sites. This indicates that the sites retain ample spare capacity to accommodate future traffic growth without requiring upgrades.

Table 6.3A – Summary of traffic modelling for Bundalla Rd/Incana Rd and Beach Rd/Bundalla Rd

Site	**Peak**	**Scenario**	**Total vehicles**	**DOS**	**Average delay**	**LOS**	Max Queue length
Bundalla Road and Incana Rd	Morning	Existing	192	0.039	4.7 secs	A	0.9m
		Development	209	0.040	4.7 secs	A	1.1m
	Evening	Existing	121	0.044	4.7 secs	A	1.1m
		Development	139	0.052	4.7 secs	A	1.4m
Beach Rd and Bundalla Road	Morning	Existing	303	0.102	4 secs	A	3m
		Development	317	0.110	4.1 secs	A	3.2m
	Evening	Existing	289	0.085	3.2 secs	A	2.6m
		Development	304	0.093	3.4 secs	A	3m

Beach Road and highway roundabout

Platooned vehicle arrivals were observed during manual traffic surveys, particularly on the southern approach to the roundabout in the morning. These platoons are attributed to the operation of the pedestrian crossing adjacent to Margate Primary School, which intermittently interrupts traffic flow and creates natural breaks. This regulated arrival pattern assists in maintaining manageable levels of delay and queueing, even along the highway approaches.

SIDRA modelling indicates that approximately 1,740 vehicles use the roundabout during the morning peak hour, with a Degree of Saturation (DOS) of 0.78. Despite this relatively high volume, the roundabout continues to operate at an overall Level of Service A, with some individual movements performing at LOS B. The highest average delay recorded was 17.5 seconds, and the longest queue, approximately 81 metres, occurring on the southern highway approach. These results confirm that the roundabout maintains acceptable operational performance under current conditions.

The evening peak hour recorded a traffic density of 1,771 vehicles. Similar to the morning performance, the modelling indicates that the roundabout is providing an acceptable level of performance, with an overall performance of LOS A, while some movements operate at LOS B. The maximum delay being 14 seconds.

This relatively high level of performance is likely attributed to the balanced traffic volumes across most of the roundabout approaches. When flows are evenly distributed, gap availability is more consistent, allowing vehicles from each leg to enter with minimal delay. This balance assists in reducing queue lengths and maintaining efficient roundabout operation.

The additional development traffic was assigned to the roundabout, representing less than a 1% increase in total peak hour traffic volume. This marginal increase is not expected to materially affect traffic performance. SIDRA modelling confirms this, with no deterioration in LOS, or operational efficiency. The roundabout will continue to operate at an acceptable level, demonstrating that the development will have minimal impact to the roundabout, or highway traffic performance.

Table 6.3B – Summary of traffic modelling for Beach Road and Highway roundabout

Site	Peak	Scenario	Total vehicles	DOS	Average delay	LOS	Max Queue length
Beach Road and Channel Hwy roundabout	Morning	Existing	1740	0.790	9 secs	A	87.9m
		Development	1755	0.780	8.8secs	A	81.1m
	Evening	Existing	1771	0.721	6.2 secs	A	66.9m
		Development	1785	0.730	6.2 secs	A	69.2m

6.4 Traffic impact to residential amenity for residential streets

New development within urban areas can often raise concerns among local residents, particularly in relation to increased traffic volumes and potential impacts on residential amenity. Recognising this, the RTA Guide provides environmental performance standards that assist in evaluating the acceptability of traffic increases in sensitive urban areas.

For local residential streets, the environmental goal is a two-way flow of up to 200 vehicles during the peak hour, with an upper threshold of 300 vehicles. For urban collector roads, the desirable two-way flow is 300 vehicles, with a maximum of 500 vehicles in the peak hour. These benchmarks offer a useful reference point for assessing whether projected traffic volumes remain within acceptable limits.

Extract 6.4 – RTA Guide Environmental performance standards for residential streets

Environmental capacity performance standards on residential streets

Road class	Road type	Maximum Speed (km/hr)	Maximum peak hour volume (veh/hr)
Local	Access way	25	100
	Street	40	200 environmental goal
			300 maximum
Collector	Street	50	300 environmental goal
			500 maximum

Note: Maximum speed relates to the appropriate design maximum speeds in new residential developments. In existing areas maximum speed relates to 85th percentile speed.

The table below compares the existing two-way traffic volumes for each residential road (inclusive of thee additional nine lots) likely to be affected by the development, against the predicted volumes following full occupation. This comparison demonstrates that the additional trips generated by the development will not result in any adverse impact on residential amenity.

For local streets, the projected traffic volumes remain well below the environmental performance goal of 200 vehicles per peak hour, and comfortably under the maximum threshold of 300 vehicles. For collector roads, the predicted volumes remain below the upper limit of 500 vehicles per peak hour. These outcomes confirm that the development-generated traffic is consistent with the intended function of the surrounding road network and aligns with the environmental standards outlined in the RTA Guide.

Table 6.4 – Comparison of two-way peak hour traffic flows

Road	Road type	Existing two-way traffic flow (with nine new lots)		Predicted two-way traffic flow with development operating	
		AM Peak	PM Peak	AM Peak	PM Peak
Incana Road (east)	Local	57	38	74	55
Incana Road (west)	Local	95	37	96	38
Bundalla Road (north)	Collector	154	100	170	116
Beach Rd east of roundabout	Collector	264	195	280	211
Beach Rd west of Bundalla Rd	Collector	445	337	461	353

6.5 Summary of traffic impact

The proposed development will generate minimal impact on the surrounding local road network. SIDRA modelling confirms that all assessed sites will continue to operate at acceptable levels of service, with sufficient spare capacity to accommodate future traffic growth.

The additional trips generated by the development represent less than a 1% increase in peak hour volumes at the Beach Road and highway roundabout, with no deterioration in performance expected. Within the Margate activity centre, highway flow transitions to an interrupted pattern due to the roundabout, and part-time school crossing. These devices are essential for introducing gaps in traffic, enabling safe and efficient pedestrian movement. The resulting delays and queue lengths are considered within acceptable tolerances and reflect a balanced response to the competing needs of vehicle efficiency and pedestrian safety.

Residential amenity on the local road network will be maintained, with predicted traffic volumes remaining well below the acceptable thresholds outlined in the RTA Guide. No network upgrades are warranted as part of this proposal.

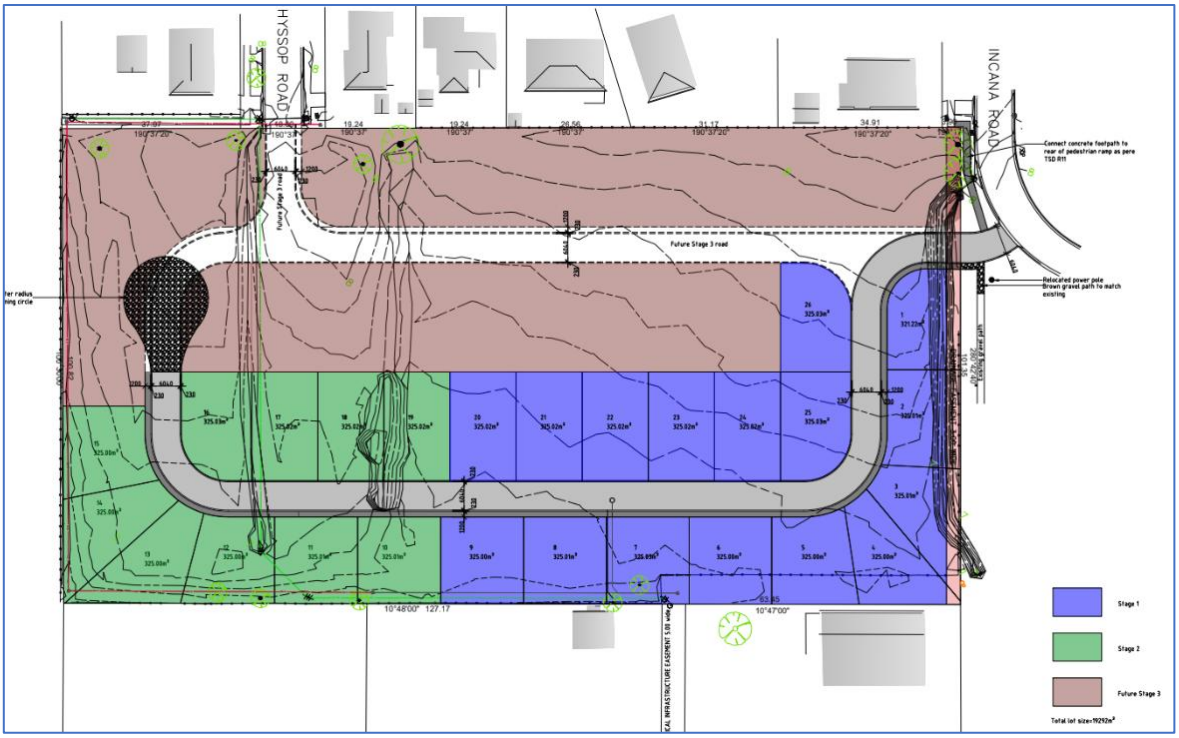
7. Development layout and internal road arrangements

7.1 Staging strategy to maximise infrastructure efficiency

The site has dual road frontage to both Hyssop Road and Incana Road. To maximise infrastructure efficiency and minimise upfront servicing costs, development will commence adjacent to Incana Road, where existing underground services are already available. This approach allows immediate connection to essential infrastructure and defers the need for new service extensions until later stages.

Additionally, the site's natural stormwater flow direction favours discharge towards Incana Road. By aligning the staging sequence with this drainage pattern, stormwater infrastructure can be incrementally installed as the development progresses. This reduces the need for temporary works and allows for a more efficient, cost-effective delivery of stormwater assets. The final stage will establish access via Hyssop Road, completing the servicing network in a logical and economically sound manner.

Diagram 7.1 – Staging plan



7.2 Creation of new vehicular access to Incana Road

At completion of all three stages, the development is expected to include an internal loop road connecting Hyssop Road and Incana Road, improving site access and traffic circulation. As detailed in the staging strategy, establishing initial access via Incana Road offers significant infrastructure efficiencies. Therefore, creating a new access onto Incana Road will be necessary as part of stages 1 and 2 works.

As the proposed development is stratum titled, the internal driveway will be constructed with a concrete surface, providing a clear contrast to the bitumen surface of Incana Road. Access will be via a standard concrete crossover designed in accordance with LGAT standard drawing TSD-R09, incorporating a 6.5 metre wide VEE channel vehicular crossing with sufficient width to accommodate two-way flow. Both the vehicular crossover and the concrete driveway will serve as a visual cue, clearly delineating the transition from the public road to private access, and reinforcing the distinction in road authority and ongoing maintenance responsibility.

Due to the curved alignment of Incana Road, the access will be located on the outside of a horizontal bend. The internal driveway will have a minimum carriageway width of 6.0 metres (kerb face to kerb face). The proposed access geometry is designed to accommodate simultaneous movements of light vehicles entering and exiting the site and will also facilitate access for medium rigid vehicles.

The existing open stormwater drain along the southern side of Incana Road will be replaced with underground piping, discharging at the lower corner of the site. This access is situated on flat terrain, allowing for construction with minimal impact on established vegetation and will operate with compliant sight distances.

7.3 Impact to future public road infrastructure

According to LIST mapping, an undeveloped public road corridor extends from Incana Road to the Esplanade. The proposed junction onto Incana Road has been positioned to avoid conflict with this future connection. If the corridor is formalised in the future, the junction can be easily adapted to function as a standard T-junction, ensuring long-term compatibility with the broader road network and preserving future road connectivity options.

Diagram 7.3 – LIST - Undeveloped road corridor between Incana Road and the Esplanade

7.4 Sight distance at the new Incana Road junction

The proposed junction has been assessed against the sight distance requirements outlined in table E5.1 of the planning scheme and supplemented by Austroads Guide to Road Design Part 4: Unsignalised and Signalised Intersections.

Vehicles approaching from Bundalla Road are expected to travel at 50 km/h, for which the planning scheme specifies a desirable intersection sight distance of 80 metres. In contrast, vehicles approaching from the cul-de-sac approach, are anticipated to travel below 40 km/h due to the curvilinear alignment and limited travel distance.

As the planning scheme does not specify sight distance requirements for speeds below 50 km/h, reference has been made to Austroads guidance, which recommends a minimum sight distance of 47 metres for an approach speed of 40 km/h.

On-site measurements, taken using standard Austroads parameters, confirm that available sight distances exceed these thresholds: over 100 metres to the left, approximately 70 metres to the right, and at least 65 metres for right-turning vehicles into the site. These measurements account for the current undeveloped state of the adjacent subdivision, ensuring that future fencing will not obstruct driver visibility.

The new junction is expected to have sufficient sight distance for the prevailing speed of approaching vehicles, to allow for vehicles to enter and leave in a safe and efficient manner, without causing adverse impact to other motorists.

Diagram 7.4 – Available sight distance

Photograph 7.4A – Available sight distance looking left from proposed access location

Photograph 7.4B – Available sight distance looking right from proposed access location

7.5 Number of parking spaces

All residential units will be provided with a minimum of two dedicated parking spaces, delivered either as a double garage or a single garage with an adjacent uncovered parking space. In addition, several units will include a third open parking space configured as tandem parking, allowing a second vehicle to be positioned directly behind the first.

Across stages two and three of the development, a total of 26 residential units will be constructed, supported by 59 parking spaces allocated exclusively to occupants, with this number of parking spaces satisfying the requirements of table E6.6.1 of the planning scheme.

Diagram 7.5 – Location of parking spaces

7.6 Number of visitor parking spaces

Stages two and three of the development will provide seven dedicated visitor parking spaces, meeting the planning scheme requirement of one space per four dwellings under Table E6.1. With 26 units proposed, this provision ensures compliance and helps prevent parking overflow onto surrounding streets.

7.7 Dimensions of parking spaces

All external parking spaces will be designed to dimensions of 2.7 metres in width and 5.4 metres in length, consistent with the requirements for User Class 1A under the Standard, and suitable for residential use.

Uncovered spaces will be arranged at 90 degrees to the internal roadway and supported by a minimum manoeuvring area of 5.8 metres, ensuring compliance with the Standard and facilitating safe vehicle movement.

Single and double garages will also operate at 90 degrees to the roadway, with single garages provided with at least 6.3 metres of manoeuvring space, satisfying the Standard's requirement for a 2.7 metre wide garage opening.

Overall, the parking layout enables efficient access and circulation without adversely impacting other users or compromising functionality.

7.8 Car parking manoeuvrability

The parking layout provides sufficient manoeuvring area behind all car parking spaces to allow vehicles to enter and exit efficiently. Vehicle swept path analysis confirms that all spaces can be accessed without conflict or excessive adjustment. A sample of the swept path diagrams are provided in appendix C to illustrate compliance and operational performance.

7.9 Other parking requirements

Motorcycle parking

This is a residential development, and the provision of separate motorcycle parking spaces is considered unnecessary, as motorcycles are able to occupy standard car parking spaces without compromising functionality or access. This approach is consistent with typical residential design practice, where motorcycle parking demand is low and can be accommodated within existing parking allocations.

Bicycle parking

Bicycle and accessible parking spaces are not a requirement for residential units.

Accessible parking

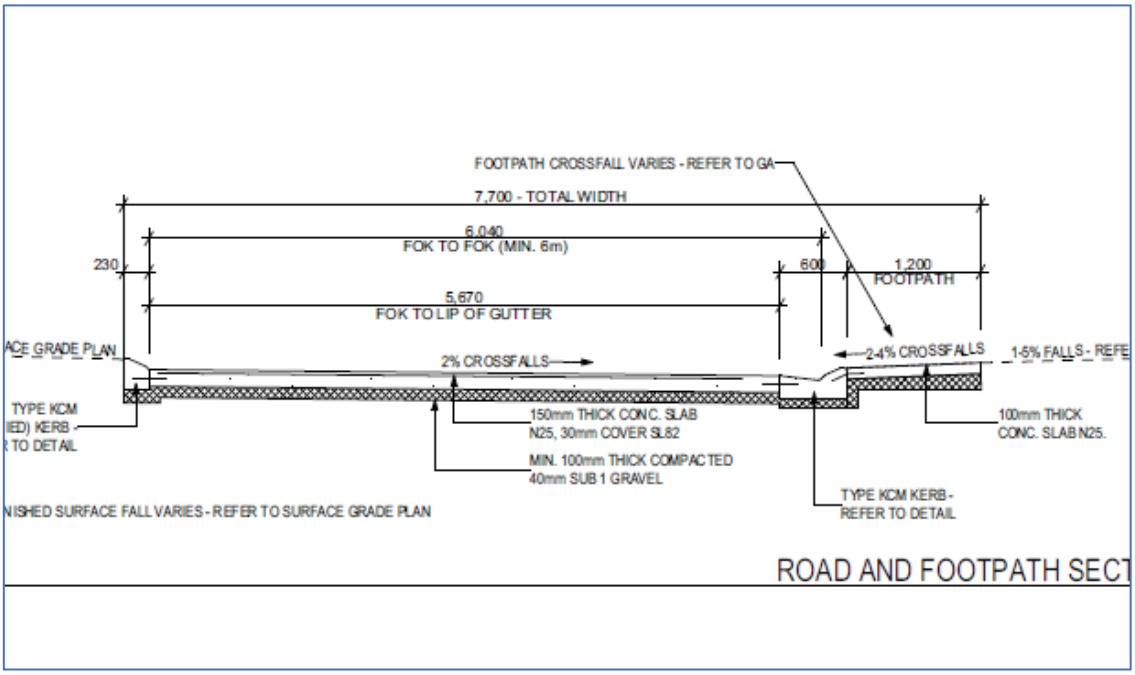
The National Construction Code classifies multiple dwelling unit development as class a 1b building, and this building type do not require the provision of accessible parking.

7.10 Internal driveway design

For the first two stages of the development, the internal driveway will extend from Incana Road and terminate at a temporary cul-de-sac. The alignment includes three 90-degree bends and has been designed specifically for light vehicle use. The proposed cross-section comprises a 600 mm wide mountable concrete kerb with integrated drainage channel on the lower side, and a 230 mm wide mountable concrete kerb on the opposite side. The carriageway will feature a 2% crossfall directing surface water toward the channelled side, discharging into an approved drainage system.

The pavement width between kerb lips will be 5.67 metres, with a minimum trafficable width of six metres when accounting for the drainage channel. This configuration supports safe and efficient two-way movement for light vehicles. Given the design vehicle class and low-speed environment, road widening through the 90 degree bends is not required, as the swept path envelope for light vehicles is adequately accommodated within the standard carriageway width.

Diagram 7.10 – Proposed road cross section



7.11 Internal driveway gradients

Civil plans prepared by GE Consulting Engineers, indicate that the site features predominantly flat topography. Consequently, the proposed driveway gradients are also minimal. Analysis of the longitudinal profile demonstrates a maximum grade of 2.7%, and a maximum change in grade of 4.7%. Both values are well below the acceptable tolerance of the Standard.

This proposed driveway allows for vehicles to enter, circulate, and leave the site without experiencing ground clearance difficulties, or operational restrictions. The table below illustrates the proposed gradients and change-in-grades.

Table 7.11 – Proposed vertical grades on the internal driveway

Chainage	Distance	Gradient	Change in grade
0 to 13m	13m	2.7%	
13 to 33m	20m	-2.0%	4.7%
33 to 274m	241m	-0.5%	1.5%
274 to 375	101m	0.5%	1.0%
375 to 416m	41m	1.9%	1.4%

7.12 Grades of the parking spaces

With the site being predominately flat, all the parking spaces will be located on grades less than 5%, complying with section 2.4.6 of the Standard.

7.13 Pedestrian access

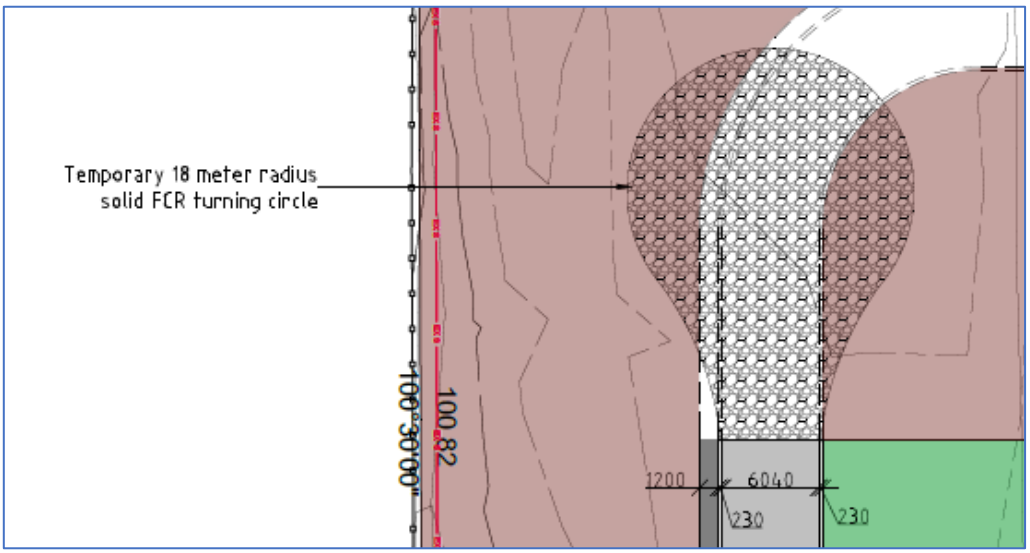
An internal pedestrian pathway will be constructed along the side of the driveway that incorporates the drainage channel, extending the full length of the internal road and terminating at a connection point with the existing footpath on the northern side of Incana Road. The pathway will be 1.2 metres wide, formed in concrete with a 2 to 4% crossfall toward the drainage channel, ensuring compliant surface water management. The pathway will design provide for safe and accessible pedestrian movement throughout the site and be separated from the driveway by kerbing.

7.14 Temporary turning head

For the first two stages of development, the internal driveway will terminate at a temporary turning head adjacent to the final units, providing sufficient space for vehicles to safely turn around. This interim arrangement provides functional access and egress prior to the completion of the full internal road network. Under Stage 3, the turning head will be removed as the driveway is extended to connect with Hyssop Road, forming a looped arrangement with Incana Road. The geometric layout will comply with LGAT Standard Drawing TSD-R07-V3, providing adequate turning area for a medium rigid vehicle, representative of a standard waste collection vehicle.

Due to the temporary nature of the turning head, the road surface will be constructed in gravel, sufficient to support light vehicle movements and occasional service vehicle access. The gravel surface will be compacted and graded to maintain surface integrity and drainage performance until the permanent road connection is completed.

Diagram 7.14 – Temporary turning head (18 metre diameter)



7.15 Waste collection

The internal driveway has been designed with sufficient trafficable width to accommodate a medium rigid vehicle, enabling entry, turnaround, and exit in a forward-driving direction. This allows for waste collection services to operate without the need for reversing manoeuvres, whether undertaken by a private contractor or by Council, providing for safe and efficient operation.

The residential unit development is expected to predominantly generate light vehicle movements associated with urban living. In accordance with Australian Standard AS 2890.2:2018, a medium rigid vehicle is classified as an occasional vehicle within this development, and it is acceptable for such vehicles to utilise the full width of the driveway when required. Given the low traffic volumes anticipated within the development, this approach is considered appropriate and does not present any operational or safety concerns.

7.16 Access for emergency vehicles

All residential units within the development must be accessible to fire emergency vehicles in accordance with relevant safety and planning requirements. The Tasmania Fire Service's largest pump truck measures approximately 8.8 metres in length, consistent with the dimensions of a medium rigid vehicle.

As discussed above, the internal driveway has been designed with sufficient trafficable width and turning geometry to accommodate this vehicle type, enabling emergency service vehicles to reach each unit without obstruction.

7.17 Stopping sight distance through the bends

The internal driveway features 90-degree bends without pavement widening. Therefore, it is essential for drivers to be able to observe oncoming vehicles, identify vehicles manoeuvring into or out of parking spaces, detect pedestrians crossing the driveway, and react in time to avoid collisions.

As the driveway serves only the residential units within the development, the minimum required standard for sight distance is the Stopping Sight Distance (SSD). A higher coefficient of deceleration of 0.5 has been adopted in calculating SSD, which is considered appropriate for this development.

The internal driveway is designed for low-speed operation, with typical vehicle speeds not exceeding 30 km/h. It will be lightly trafficked, reducing the likelihood of multiple vehicles using the driveway simultaneously. The concrete pavement provides a stable, non-slip surface conducive to safe braking, and the vertical alignment is generally flat.

Based on Austroads guidance and applying the adopted coefficient of deceleration, the SSD for vehicles travelling at 30 km/h is calculated to be 24 metres. This distance is sufficient to allow drivers to perceive, react, and stop safely in response to potential conflicts, supporting the proposed driveway geometry and sightline provisions.

SSD will be maintained throughout the development site to provide drivers with adequate visibility to perceive and respond to potential hazards. Sight triangles will be incorporated at tight horizontal curves to preserve clear lines of sight, with vertical obstructions and landscaping restricted to a maximum height of 600 mm within these zones. This approach aims to prevent visibility from being compromised by vegetation or built elements.

To further support safe vehicle circulation, a posted speed limit of 20 km/h will be installed at the driveway entrance, reinforcing the low speed design intent of the internal driveway. Should any operational issues emerge following implementation, additional traffic calming measures, such as road humps, may be introduced to manage vehicle speeds. Diagrams of the sight distance through the bends are available in appendix D.

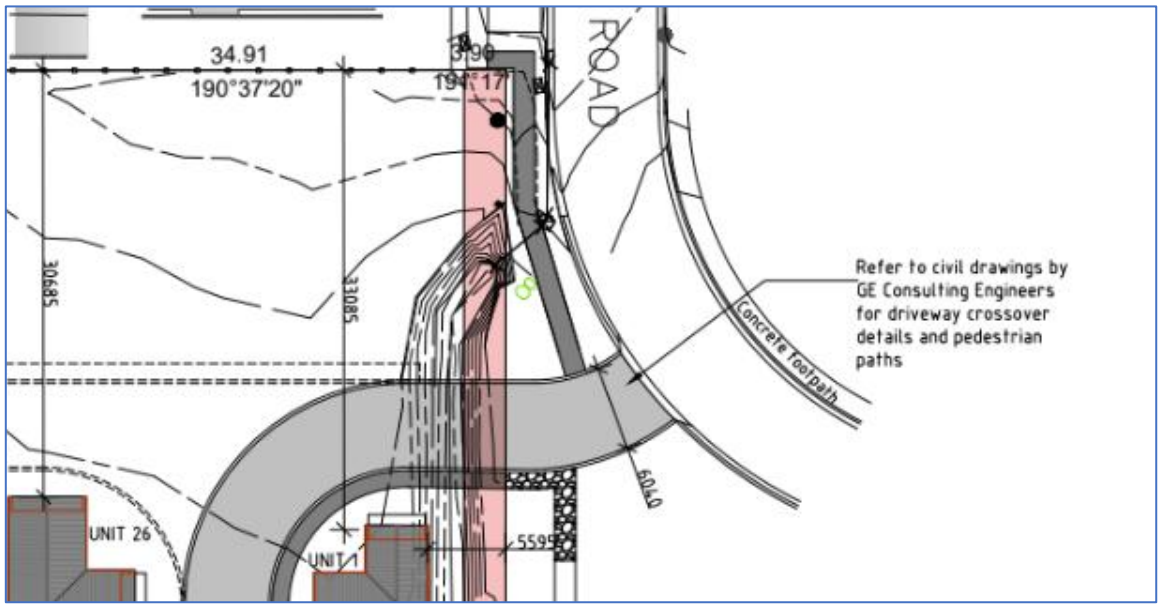
7.18 Continuation of external footpath along Incana Road

Currently, a concrete footpath is located along the southern side of Incana Road adjacent to the property boundary, terminating at the western boundary of the development site. Beyond this point, the footpath transitions to an unsealed gravel surface, as shown in the photograph below.

Photograph 7.18 – Current external footpath along Incana Road

To maintain footpath continuity, the concrete footpath will be extended in an easterly direction to the side of the new driveway, where a pram crossing will be constructed in accordance with LGAT standard drawing TSD-R18-V3. On the opposite side of the driveway, an equivalent kerb access ramp will be provided to ensure safe pedestrian movement across the access. Beyond the eastern kerb access ramp, the concrete footpath will transition into a gravel surface, merging with the existing unsealed footpath as illustrated in the accompanying diagram. This treatment ensures a consistent and accessible pedestrian link while accommodating the driveway connection.

Diagram 7.18 – New footpath works at the Incana Road access



8. Planning scheme

8.1 E5.0 Road and Railway Assets Code

E5.6.1 Development adjacent to roads and railways

The development is not located next to a category 1 or 2 road, or the rail network, so this clause does not apply.

E5.6.2 Road accesses and junctions

To maximise infrastructure efficiency and minimise upfront servicing costs, development will commence adjacent to Incana Road, where existing underground services are already available. This approach enables immediate connection to essential infrastructure and defers the need for new service extensions until later stages.

Additionally, the site's natural stormwater flow direction favours discharge towards Incana Road. By aligning the staging sequence with this drainage pattern, stormwater infrastructure can be incrementally installed as the development progresses. This reduces the need for temporary works and allows for a more efficient, cost-effective delivery of stormwater assets. The final stage will establish access via Hyssop Road, completing the servicing network in a logical manner.

Consequently, a new access onto Incana Road will be necessary, and must be assessed against the performance criteria P1, demonstrating the access can be achieved without impacting traffic safety or efficiency.

Performance criteria	**Assessment**
To ensure that the safety and efficiency of roads is not reduced by the creation of new accesses and junctions.	
a) The nature and frequency of the traffic generated by the use,	The stratum-titled residential development will comprise 26 new three-bedroom units, serviced by a single internal driveway. The development is expected to generate approximately 169 daily vehicle trips, with 17 trips occurring during each weekday peak hour. Given the residential nature of the site, the predominant vehicle type is anticipated to be light vehicles under 5.5 metres in length.
b) The nature of the road;	The proposed access will intersect Incana Road, a local residential street constructed to an acceptable urban standard. The road features an 8.5 metres wide, sealed pavement between kerb faces, concrete kerbing with drainage channels, a concrete footpath, and street lighting. The access point will be located on the outside of a horizontal curve, where the flat terrain and road geometry allow for adequate sight distance to be achieved. The access will be constructed with a concrete crossover, and the internal driveway will also be of a concrete surface, providing a contrast with the bitumen surface of Incana Road. This change in pavement material provides a

	clear visual cue to drivers, reinforcing the transition from public road to private access, to support safe and efficient vehicle movements.
c) The speed limit and traffic flow of the road;	The urban default speed limit of 50 km/h applies to Incana Road, which terminates approximately 100 metres east of the proposed access point. The road services a limited number of residential properties and is lightly trafficked, with recent surveys confirming two-way peak hour volumes of fewer than 100 vehicles. This low traffic environment supports safe and efficient vehicle movements to and from the site, consistent with performance expectations.
d) Any alternative access;	While the site includes an undeveloped access to Hyssop Road, full development at Stage 3 will introduce an internal loop driveway connecting Hyssop Road and Incana Road to optimise traffic circulation and provide suitable access to all units. For the initial two stages, which are being developed concurrently, it is preferable to establish access via Incana Road to maximise infrastructure efficiency and minimise upfront servicing costs. This new access location benefits from existing underground services and aligns with the site's natural stormwater flow direction, allowing for staged installation of drainage infrastructure without the need for temporary works.
e) The need for the access or junction;	A new access onto Incana Road is required to support the first two stages of the development, enabling immediate connection to existing underground services and aligning with the site's natural stormwater flow. This avoids temporary works and reduces upfront servicing costs. While the Hyssop Road access will be completed in Stage 3, the Incana Road access provides for safe and efficient vehicle movements and supports the internal loop driveway layout.
f) any traffic impact assessment; and	The proposed development has been assessed against relevant traffic performance criteria and is not expected to adversely affect the safety, efficiency, or operational capacity of the surrounding road network. SIDRA modelling confirms that all affected sites will continue to operate at acceptable levels of service, with sufficient spare capacity to accommodate development generated traffic, and future growth. Increased traffic volumes remain below environmental thresholds for residential streets, with no adverse impact on residential amenity expected. The assessment found no upgrades are warranted on the existing road network.
g) Any written advice received from the road authority.	Aware of none.

E5.6.3 New level crossings

Not applicable for this development.

E5.6.4 Sight distance at access, junction and level crossing

The proposed access onto Incana Road is located on the outside of a horizontal curve, with flat terrain and road geometry providing clear sight lines in both directions. Vehicles approaching from the left may travel up to 50 km/h, with available sight distance exceeding 90 metres, satisfying table E5.1 of the planning scheme.

Vehicles approaching from the right are moderated by the curved alignment and short distance from the cul-de-sac, resulting in operating speeds below 40 km/h. In accordance with the Austroads Guide, the required SISD at 40 km/h is 47 metres, and the available sight distance exceeds 65 metres. The access location therefore meets sight distance requirements and supports safe, efficient vehicle movements. Sight distance at the new access will comply with the intent of acceptable solution A1, based on the approaching operating speed.

8.2 E6.0 Parking and Access Code

E6.6.1 Number of parking spaces

The proposed development includes 26 three-bedroom residential units. Each unit will be allocated two resident parking spaces in accordance with Table E6.1 of the planning scheme. Selected units will also include a third tandem space. In total, 59 resident parking spaces will be provided, exceeding the minimum requirement and providing sufficient on-site capacity to accommodate resident demand without reliance on surrounding streets. The proposal complies with Acceptable Solution A1.

E6.6.2 Number of accessible parking spaces

The proposed development comprises multiple residential units classified as a Class 1b building under the National Construction Code. In accordance with this code accessible parking spaces are not required for this building class. The proposal therefore complies with Acceptable Solution A1.

E6.6.3 Number of motorcycle parking spaces

The proposed development does not include dedicated motorcycle parking spaces. Given the residential nature of the site, the absence of formal motorcycle parking is not expected to compromise the safety, convenience, or efficiency of the transport network. The site layout provides ample resident car parking and internal circulation space, allowing informal accommodation of occasional motorcycle use without impacting vehicle or pedestrian movements. Each unit has sufficient space within its allocated parking area to accommodate or store a motorcycle, ensuring practical and convenient provision without the need for dedicated bays.

This development has been assessed against the performance criteria P1.

Performance criteria	**Assessment**
To ensure enough motorcycle parking is provided to meet the needs of likely users of a use or development.	
a) Motorcycle parking demand;	Given the residential nature of the development, the likely demand for motorcycle parking is expected to be low. No dedicated motorcycle spaces are proposed; however, the generous supply of on-site car parking allows for informal accommodation of occasional motorcycle use within individual unit sites. This arrangement is not expected to compromise safety, access, or efficiency.
b) The availability of on street and public motorcycle parking in the locality;	The development will be fully self-contained in terms of parking provision and will not rely on street or public parking spaces to meet resident or operational needs.
c) Availability and likely use of other modes of transport,	The site is located within close proximity to a frequent public bus service operating along the nearby collector road, providing direct access to key destinations including local centres, schools, and employment areas. This availability supports alternative transport options for residents and reduces reliance on private vehicles, further lowering the demand for motorcycle parking. The proposal aligns with the performance criteria by facilitating access to sustainable transport modes.
d) The availability and suitability of alternative arrangements for motorcycle parking provision.	The development provides generous on-site car parking and internal driveway areas that can accommodate occasional motorcycle use informally and safely. Each unit has sufficient space within its allocated parking area to accommodate or store a motorcycle, ensuring practical and convenient provision without the need for dedicated motorcycle bays.

E6.6.4 Number of bicycle parking spaces

Table E6.2 of the planning scheme does not require bicycle parking for residential uses. Dedicated bicycle parking has not been provided and complies with Acceptable Solution A1.

E6.7. Development standards

Development standards	Comment
6.7.1 Number of Vehicular Accesses;	Under stage 1 and 2, the development will create a new access onto Incana Road, and operate with a single access point, complying with the Acceptable Solution A1.
6.7.2 Design of Vehicular Access;	The new access onto Incana Road will be designed to comply with both LGAT standards and AS2890.1:2004. It will be located where it will not adversely impact nearby properties, have sufficient width to accommodate two-way traffic flow, compliant vertical grades, and adequate sight distance. The design complies with the Acceptable Solution A1(a).
6.7.3 Vehicular Passing Areas Along an Access;	The access and internal driveway will include a minimum six metre wide pavement suitable to accommodate two-way traffic flow, providing suitable passing for vehicles, complying with the Acceptable Solution A1.
6.7.4 On-site Turning;	The units will have a single internal driveway with a temporary turning head that complies with LGAT standards. This setup will allow all vehicles to enter and leave in a forward driving direction, meeting the requirements of Acceptable Solution A1.
6.7.5 Layout of Parking Areas;	The parking spaces have been designed as user class 1a under AS2890.1:2004, with uncovered spaces being 2.7 metres wide, 5.4 metres long and supported with minimum manoeuvring area of 5.8 metres. These dimensions allow for vehicles to enter and leave the spaces in a safe and efficient manner. The single enclosed garage will have a minimum opening width of 2.7 metres and be supported with a minimum manoeuvring area of 6.3 metres, complying with AS2890.1:2004 section 5.4. The enclosed garages will include a minimum headroom clearance of 2.1 metres. The grades of the parking spaces will not exceed 5%. Overall, the layout of the parking spaces will comply with the Acceptable Solution A1.
6.7.6 Surface Treatment of Parking Areas;	The internal driveway and parking areas will be constructed with a concrete surface, complying with Acceptable Solution A1. The temporary turning head will be finished with compacted gravel, which is considered suitable for its interim function and will not compromise access, safety, or drainage performance during the temporary period.
6.7.7 Lighting of Parking Areas;	Lighting of the development site will be provided to meet the required standard for multiple residential unit development and comply with the Acceptable Solution A1.
6.7.8 Landscaping of Parking Areas;	Landscaping will be provided in the development site to meet the Acceptable Solution A1.
6.7.9 Design of Motorcycle Parking Areas;	Not applicable
6.7.10 Design of Bicycle Parking Facilities;	Not applicable

6.7.11 Bicycle End of Trip Facilities;	Not applicable,
6.7.12 Siting of Car Parking;	Not applicable for a multiple residential unit development
6.7.13 Facilities for Commercial Vehicles;	Not applicable for a multiple residential unit development
6.7.14 Access to a Road;	The development will create a new access onto Incana Road.

9. Conclusion

From a traffic engineering and road safety perspective, the additional vehicle movements generated by this development are not expected to create any adverse safety or traffic impact.

- The amount of traffic expected during peak hour periods is reasonably low, and detailed traffic analysis has demonstrated that there is sufficient capacity within the surrounding roads to absorb the extra vehicle movements without adversely impacting other users.
- Route assessment has found that the intersection controls between the site and the Channel Highway are of a suitable standard, providing an appropriate level of operation with no upgrades required.
- Drivers will have suitable sight distance to enter and leave in a safe and efficient manner, considering the operating speeds of approaching vehicles.
- A single driveway will serve the 26 units and operate with a temporary turning head to allow all vehicles to enter, circulate, and leave in a forward driving direction. The concrete internal driveway will have sufficient width to accommodate two-way traffic flow and the movement of medium rigid vehicles, allowing for waste collection and emergency vehicles to access the units in a safe and efficient manner.
- The site layout includes pedestrian pathways that connect to the existing footpath along Incana Road.
- There will be a sufficient number of resident and visitor parking spaces, as well as areas to accommodate motorcycles, to meet reasonable demand without relying on on-street parking outside the site.

This traffic impact assessment found no reason for this development not to proceed.

10. Appendix A – Traffic modelling results

MOVEMENT SUMMARY

Site: 101 [Bundalla and Incana - Morning existing with nine lots]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Bundalla Road								
1	L2	1	0.0	0.025	5.7	LOS A	0.1	0.8
2	T1	15	0.0	0.025	0.2	LOS A	0.1	0.8
3	R2	28	0.0	0.025	5.6	LOS A	0.1	0.8
Approach		44	0.0	0.025	3.8	NA	0.1	0.8
East: Incana Rd (Development)								
4	L2	14	0.0	0.034	5.6	LOS A	0.1	0.9
5	T1	19	0.0	0.034	4.4	LOS A	0.1	0.9
6	R2	11	0.0	0.034	6.0	LOS A	0.1	0.9
Approach		43	0.0	0.034	5.2	LOS A	0.1	0.9
North: Bundalla Rd (Beach Rd)								
7	L2	64	0.0	0.039	5.5	LOS A	0.0	0.1
8	T1	6	0.0	0.039	0.0	LOS A	0.0	0.1
9	R2	2	0.0	0.039	5.5	LOS A	0.0	0.1
Approach		73	0.0	0.039	5.1	NA	0.0	0.1
West: Incana Rd								
10	L2	3	0.0	0.026	5.6	LOS A	0.1	0.6
11	T1	27	0.0	0.026	4.5	LOS A	0.1	0.6
12	R2	1	0.0	0.026	5.8	LOS A	0.1	0.6
Approach		32	0.0	0.026	4.7	LOS A	0.1	0.6
All Vehicles		192	0.0	0.039	4.7	NA	0.1	0.9

MOVEMENT SUMMARY

Site: 101 [Bundalla and Incana - Evening existing with none lots]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Bundalla Road								
1	L2	1	0.0	0.011	5.6	LOS A	0.0	0.3
2	T1	4	0.0	0.011	0.0	LOS A	0.0	0.3
3	R2	14	0.0	0.011	5.5	LOS A	0.0	0.3
Approach		19	0.0	0.011	4.3	NA	0.0	0.3
East: Incana Rd (Development)								
4	L2	20	0.0	0.044	5.6	LOS A	0.2	1.1
5	T1	23	0.0	0.044	4.2	LOS A	0.2	1.1
6	R2	15	0.0	0.044	5.7	LOS A	0.2	1.1
Approach		58	0.0	0.044	5.1	LOS A	0.2	1.1
North: Bundalla Rd (Beach Rd)								
7	L2	15	0.0	0.011	5.5	LOS A	0.0	0.1
8	T1	5	0.0	0.011	0.0	LOS A	0.0	0.1
9	R2	1	0.0	0.011	5.5	LOS A	0.0	0.1
Approach		21	0.0	0.011	4.2	NA	0.0	0.1
West: Incana Rd								
10	L2	1	0.0	0.018	5.6	LOS A	0.1	0.4
11	T1	21	0.0	0.018	4.3	LOS A	0.1	0.4
12	R2	1	0.0	0.018	5.7	LOS A	0.1	0.4
Approach		23	0.0	0.018	4.4	LOS A	0.1	0.4
All Vehicles		121	0.0	0.044	4.7	NA	0.2	1.1

MOVEMENT SUMMARY

Site: 101 [Bundalla and Incana - Morning with new residential]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Bundalla Road								
1	L2	1	0.0	0.034	5.7	LOS A	0.2	1.1
2	T1	18	0.0	0.034	0.2	LOS A	0.2	1.1
3	R2	41	0.0	0.034	5.6	LOS A	0.2	1.1
Approach		60	0.0	0.034	4.0	NA	0.2	1.1
East: Incana Rd (Development)								
4	L2	15	0.0	0.035	5.6	LOS A	0.1	0.9
5	T1	19	0.0	0.035	4.5	LOS A	0.1	0.9
6	R2	11	0.0	0.035	6.0	LOS A	0.1	0.9
Approach		44	0.0	0.035	5.2	LOS A	0.1	0.9
North: Bundalla Rd (Beach Rd)								
7	L2	64	0.0	0.040	5.5	LOS A	0.0	0.1
8	T1	7	0.0	0.040	0.0	LOS A	0.0	0.1
9	R2	2	0.0	0.040	5.5	LOS A	0.0	0.1
Approach		74	0.0	0.040	5.0	NA	0.0	0.1
West: Incana Rd								
10	L2	3	0.0	0.026	5.6	LOS A	0.1	0.7
11	T1	27	0.0	0.026	4.6	LOS A	0.1	0.7
12	R2	1	0.0	0.026	5.9	LOS A	0.1	0.7
Approach		32	0.0	0.026	4.7	LOS A	0.1	0.7
All Vehicles		209	0.0	0.040	4.7	NA	0.2	1.1

MOVEMENT SUMMARY

Site: 101 [Bundalla and Incana - Evening with development]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Bundalla Road								
1	L2	1	0.0	0.012	5.6	LOS A	0.1	0.4
2	T1	5	0.0	0.012	0.1	LOS A	0.1	0.4
3	R2	15	0.0	0.012	5.5	LOS A	0.1	0.4
Approach		21	0.0	0.012	4.1	NA	0.1	0.4
East: Incana Rd (Development)								
4	L2	34	0.0	0.052	5.6	LOS A	0.2	1.4
5	T1	23	0.0	0.052	4.3	LOS A	0.2	1.4
6	R2	15	0.0	0.052	5.7	LOS A	0.2	1.4
Approach		72	0.0	0.052	5.2	LOS A	0.2	1.4
North: Bundalla Rd (Beach Rd)								
7	L2	15	0.0	0.012	5.5	LOS A	0.0	0.1
8	T1	7	0.0	0.012	0.0	LOS A	0.0	0.1
9	R2	1	0.0	0.012	5.5	LOS A	0.0	0.1
Approach		23	0.0	0.012	3.8	NA	0.0	0.1
West: Incana Rd								
10	L2	1	0.0	0.018	5.6	LOS A	0.1	0.4
11	T1	21	0.0	0.018	4.3	LOS A	0.1	0.4
12	R2	1	0.0	0.018	5.8	LOS A	0.1	0.4
Approach		23	0.0	0.018	4.4	LOS A	0.1	0.4
All Vehicles		139	0.0	0.052	4.7	NA	0.2	1.4

MOVEMENT SUMMARY

▽ Site: 101 [Beach Road and Bundalla Rd - Morning existing with nine lots]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Bundalla Rd								
1	L2	143	0.0	0.102	5.7	LOS A	0.4	3.0
3	R2	12	0.0	0.102	6.0	LOS A	0.4	3.0
Approach		155	0.0	0.102	5.7	LOS A	0.4	3.0
East: Beach Rd								
4	L2	13	0.0	0.036	5.5	LOS A	0.0	0.0
5	T1	58	0.0	0.036	0.0	LOS A	0.0	0.0
Approach		71	0.0	0.036	1.0	NA	0.0	0.0
West: Beach Rd								
11	T1	35	0.0	0.044	0.2	LOS A	0.2	1.3
12	R2	43	0.0	0.044	5.6	LOS A	0.2	1.3
Approach		78	0.0	0.044	3.2	NA	0.2	1.3
All Vehicles		303	0.0	0.102	4.0	NA	0.4	3.0

MOVEMENT SUMMARY

▽ Site: 101 [Beach Road and Bundalla Rd - Evening existing with nine lots]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Bundalla Rd								
1	L2	61	0.0	0.050	5.7	LOS A	0.2	1.4
3	R2	12	0.0	0.050	6.2	LOS A	0.2	1.4
Approach		73	0.0	0.050	5.8	LOS A	0.2	1.4
East: Beach Rd								
4	L2	12	0.0	0.034	5.5	LOS A	0.0	0.0
5	T1	54	0.0	0.034	0.0	LOS A	0.0	0.0
Approach		65	0.0	0.034	1.0	NA	0.0	0.0
West: Beach Rd								
11	T1	73	0.0	0.085	0.1	LOS A	0.4	2.6
12	R2	79	0.0	0.085	5.6	LOS A	0.4	2.6
Approach		152	0.0	0.085	3.0	NA	0.4	2.6
All Vehicles		289	0.0	0.085	3.2	NA	0.4	2.6

MOVEMENT SUMMARY

Site: 101 [Beach Road and Bundalla Rd - Morning with development]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Bundalla Rd								
1	L2	156	0.0	0.110	5.7	LOS A	0.5	3.2
3	R2	12	0.0	0.110	6.0	LOS A	0.5	3.2
Approach		167	0.0	0.110	5.7	LOS A	0.5	3.2
East: Beach Rd								
4	L2	13	0.0	0.036	5.5	LOS A	0.0	0.0
5	T1	58	0.0	0.036	0.0	LOS A	0.0	0.0
Approach		71	0.0	0.036	1.0	NA	0.0	0.0
West: Beach Rd								
11	T1	35	0.0	0.044	0.2	LOS A	0.2	1.4
12	R2	44	0.0	0.044	5.6	LOS A	0.2	1.4
Approach		79	0.0	0.044	3.2	NA	0.2	1.4
All Vehicles		317	0.0	0.110	4.1	NA	0.5	3.2

MOVEMENT SUMMARY

Site: 101 [Beach Road and Bundalla Rd - Evening with development]

New Site
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Bundalla Rd								
1	L2	62	0.0	0.051	5.7	LOS A	0.2	1.4
3	R2	12	0.0	0.051	6.3	LOS A	0.2	1.4
Approach		74	0.0	0.051	5.8	LOS A	0.2	1.4
East: Beach Rd								
4	L2	12	0.0	0.034	5.5	LOS A	0.0	0.0
5	T1	54	0.0	0.034	0.0	LOS A	0.0	0.0
Approach		65	0.0	0.034	1.0	NA	0.0	0.0
West: Beach Rd								
11	T1	73	0.0	0.093	0.2	LOS A	0.4	3.0
12	R2	93	0.0	0.093	5.6	LOS A	0.4	3.0
Approach		165	0.0	0.093	3.2	NA	0.4	3.0
All Vehicles		304	0.0	0.093	3.4	NA	0.4	3.0

MOVEMENT SUMMARY

Site: 101 [Beach Road and Channel Hwy - Morning existing with nine lots]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Channel Highway								
1	L2	105	0.0	0.428	4.5	LOS A	3.7	26.8
2	T1	449	5.0	0.428	4.8	LOS A	3.7	26.8
3	R2	43	0.0	0.428	8.8	LOS A	3.7	26.8
Approach		598	3.8	0.428	5.0	LOS A	3.7	26.8
East: Commerical leg								
4	L2	7	0.0	0.037	13.2	LOS B	0.3	1.8
5	T1	2	0.0	0.037	13.4	LOS B	0.3	1.8
6	R2	5	0.0	0.037	17.6	LOS B	0.3	1.8
Approach		15	0.0	0.037	14.8	LOS B	0.3	1.8
North: Channel Highway								
7	L2	4	0.0	0.790	10.6	LOS B	12.1	87.9
8	T1	761	5.0	0.790	11.1	LOS B	12.1	87.9
9	R2	55	0.0	0.790	15.0	LOS B	12.1	87.9
Approach		820	4.6	0.790	11.3	LOS B	12.1	87.9
West: Beach Road								
10	L2	45	0.0	0.040	5.8	LOS A	0.2	1.6
11	T1	8	0.0	0.241	6.8	LOS A	1.5	10.7
12	R2	254	0.0	0.241	10.9	LOS B	1.5	10.7
Approach		307	0.0	0.241	10.0	LOS B	1.5	10.7
All Vehicles		1740	3.5	0.790	9.0	LOS A	12.1	87.9

MOVEMENT SUMMARY

Site: 101 [Beach Road and Channel Hwy - Evening existing with nine lots]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Channel Highway								
1	L2	167	0.0	0.721	4.8	LOS A	9.2	66.9
2	T1	819	5.0	0.721	5.2	LOS A	9.2	66.9
3	R2	54	0.0	0.721	9.2	LOS A	9.2	66.9
Approach		1040	3.9	0.721	5.3	LOS A	9.2	66.9
East: Commerical leg								
4	L2	18	0.0	0.054	7.7	LOS A	0.3	2.2
5	T1	5	0.0	0.054	8.0	LOS A	0.3	2.2
6	R2	18	0.0	0.054	12.1	LOS B	0.3	2.2
Approach		41	0.0	0.054	9.7	LOS A	0.3	2.2
North: Channel Highway								
7	L2	5	0.0	0.460	5.2	LOS A	3.6	26.3
8	T1	500	5.0	0.460	5.5	LOS A	3.6	26.3
9	R2	44	0.0	0.460	9.6	LOS A	3.6	26.3
Approach		549	4.5	0.460	5.9	LOS A	3.6	26.3
West: Beach Road								
10	L2	32	0.0	0.158	8.8	LOS A	1.2	8.1
11	T1	9	0.0	0.158	9.8	LOS A	1.2	8.1
12	R2	99	0.0	0.158	14.0	LOS B	1.2	8.1
Approach		140	0.0	0.158	12.5	LOS B	1.2	8.1
All Vehicles		1771	3.7	0.721	6.2	LOS A	9.2	66.9

MOVEMENT SUMMARY

Site: 101 [Beach Road and Channel Hwy - Morning with development]

New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Channel Highway								
1	L2	106	0.0	0.420	4.5	LOS A	3.6	25.3
2	T1	449	0.0	0.420	4.7	LOS A	3.6	25.3
3	R2	43	0.0	0.420	8.8	LOS A	3.6	25.3
Approach		599	0.0	0.420	5.0	LOS A	3.6	25.3
East: Commerical leg								
4	L2	7	0.0	0.036	13.1	LOS B	0.3	1.8
5	T1	2	0.0	0.036	13.3	LOS B	0.3	1.8
6	R2	5	0.0	0.036	17.5	LOS B	0.3	1.8
Approach		15	0.0	0.036	14.7	LOS B	0.3	1.8
North: Channel Highway								
7	L2	4	0.0	0.780	10.5	LOS B	11.6	81.1
8	T1	761	0.0	0.780	10.8	LOS B	11.6	81.1
9	R2	55	0.0	0.780	14.9	LOS B	11.6	81.1
Approach		820	0.0	0.780	11.1	LOS B	11.6	81.1
West: Beach Road								
10	L2	45	0.0	0.040	5.7	LOS A	0.2	1.5
11	T1	8	0.0	0.251	6.7	LOS A	1.6	11.2
12	R2	267	0.0	0.251	10.8	LOS B	1.6	11.2
Approach		321	0.0	0.251	10.0	LOS B	1.6	11.2
All Vehicles		1755	0.0	0.780	8.8	LOS A	11.6	81.1

MOVEMENT SUMMARY

Site: 101 [Beach Road and Channel Hwy - Evening with development]

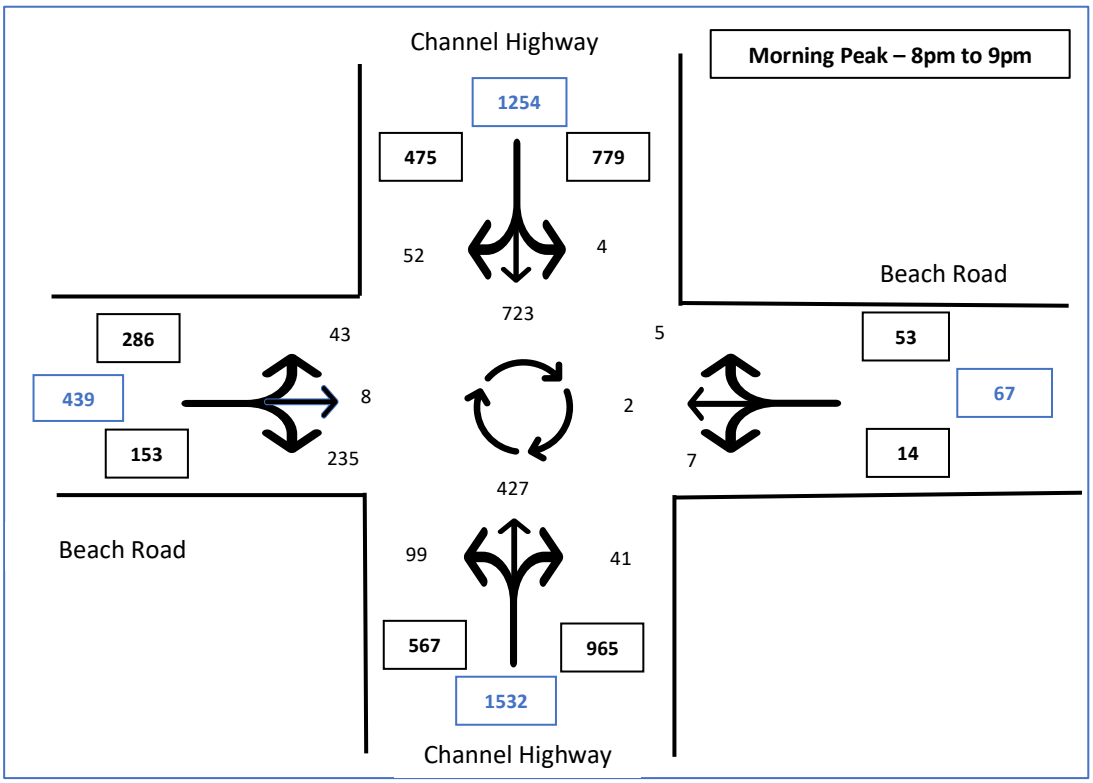
New Site
Site Category: (None)
Roundabout

Movement Performance - Vehicles

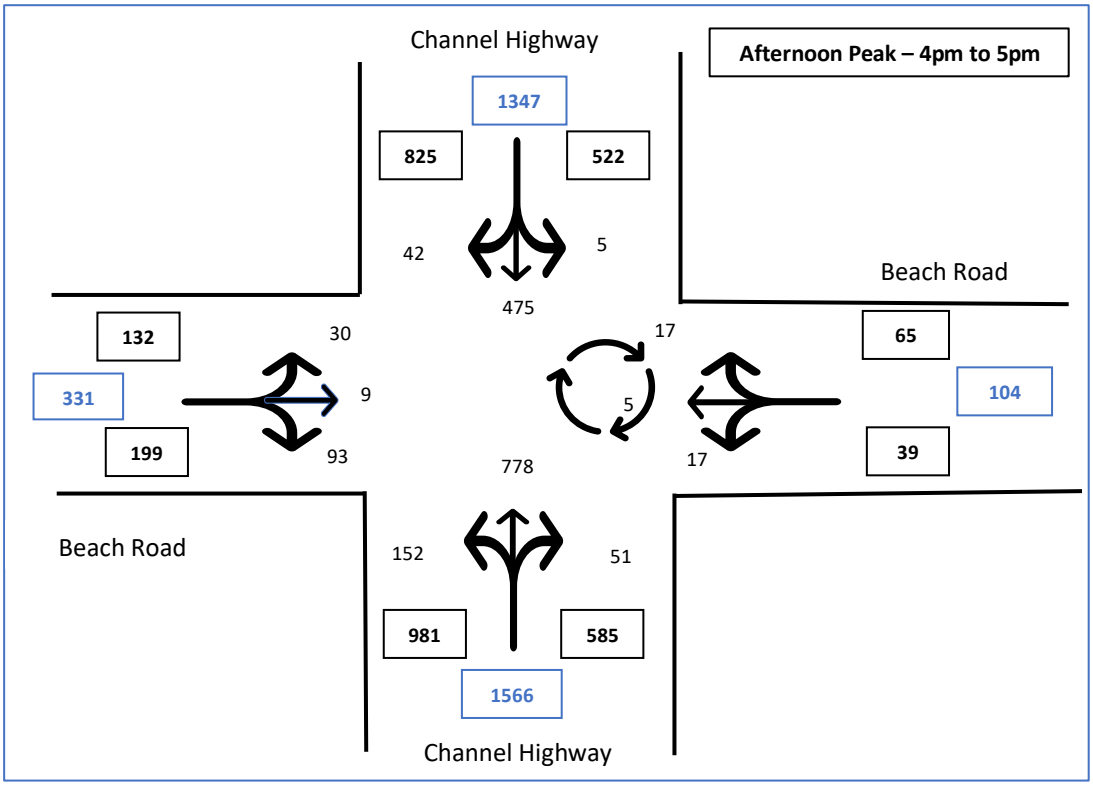
Mov ID	Turn	Demand Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m
South: Channel Highway								
1	L2	181	0.0	0.730	4.9	LOS A	9.6	69.2
2	T1	819	5.0	0.730	5.2	LOS A	9.6	69.2
3	R2	54	0.0	0.730	9.2	LOS A	9.6	69.2
Approach		1054	3.9	0.730	5.3	LOS A	9.6	69.2
East: Commerical leg								
4	L2	18	0.0	0.054	7.7	LOS A	0.3	2.2
5	T1	5	0.0	0.054	8.0	LOS A	0.3	2.2
6	R2	18	0.0	0.054	12.1	LOS B	0.3	2.2
Approach		41	0.0	0.054	9.7	LOS A	0.3	2.2
North: Channel Highway								
7	L2	5	0.0	0.460	5.2	LOS A	3.6	26.3
8	T1	500	5.0	0.460	5.6	LOS A	3.6	26.3
9	R2	44	0.0	0.460	9.6	LOS A	3.6	26.3
Approach		549	4.5	0.460	5.9	LOS A	3.6	26.3
West: Beach Road								
10	L2	32	0.0	0.160	8.8	LOS A	1.2	8.2
11	T1	9	0.0	0.160	9.8	LOS A	1.2	8.2
12	R2	100	0.0	0.160	14.0	LOS B	1.2	8.2
Approach		141	0.0	0.160	12.5	LOS B	1.2	8.2
All Vehicles		1785	3.7	0.730	6.2	LOS A	9.6	69.2

11. Appendix B – Traffic flow diagrams at key sites

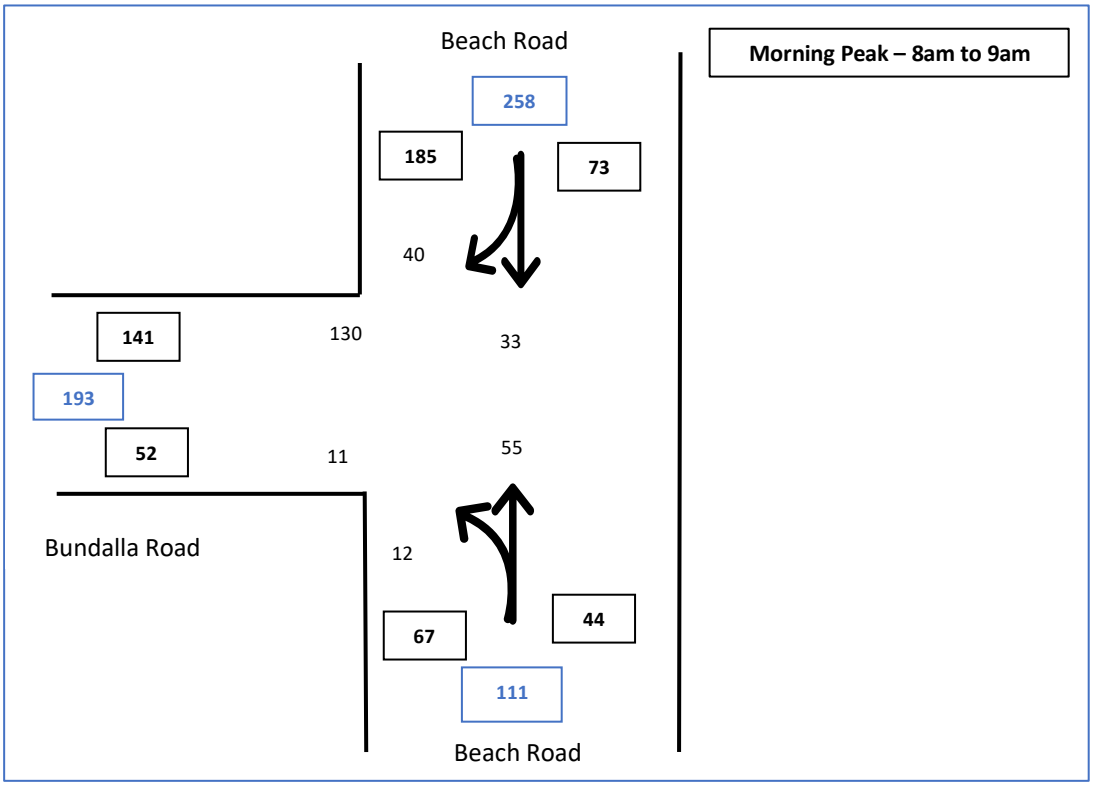
Morning peak hour traffic movements – Beach Road and Channel Highway roundabout



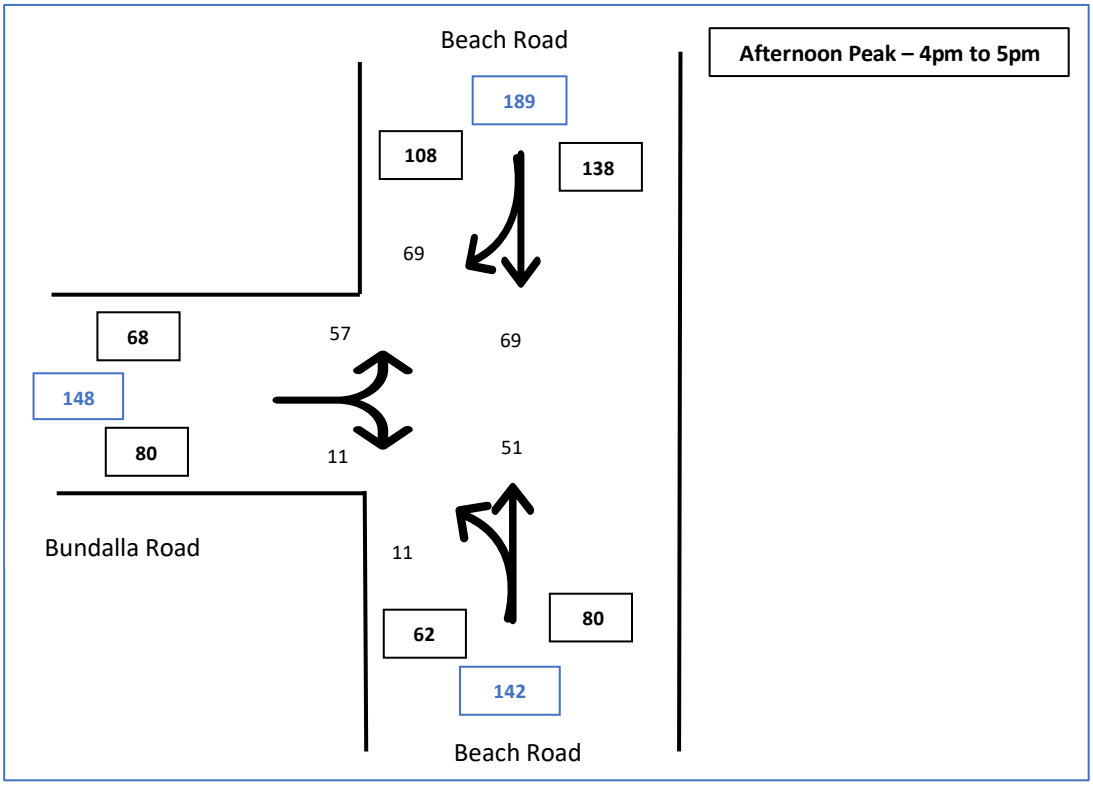
Evening peak hour traffic movements – Beach Road and Channel Highway roundabout



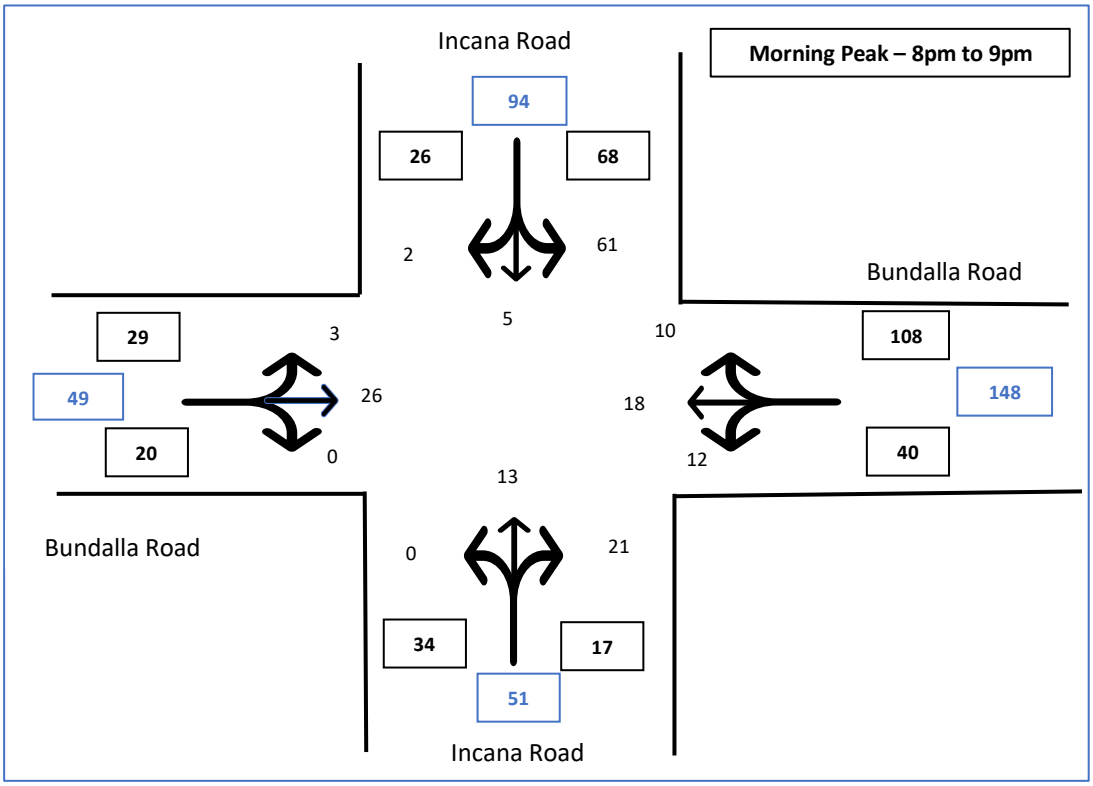
Morning traffic flow at Beach Road and Bundalla Road junction



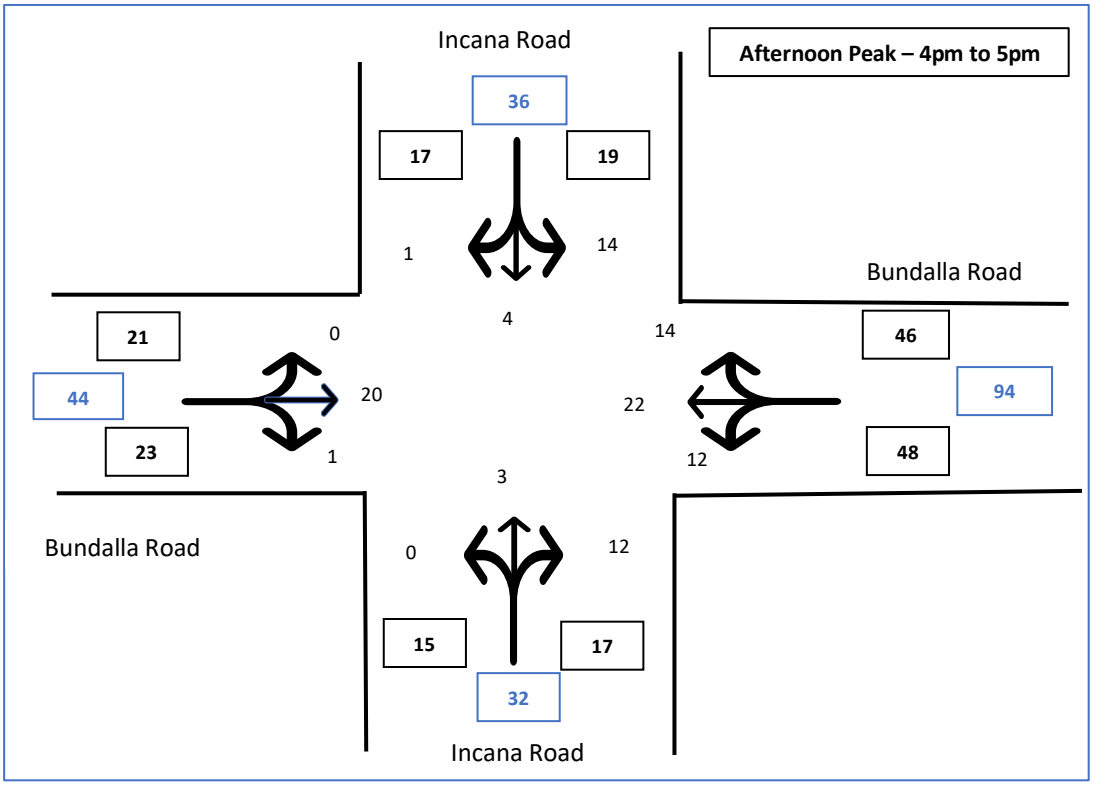
Evening peak hour flows at Beach Road and Bundalla Road junction



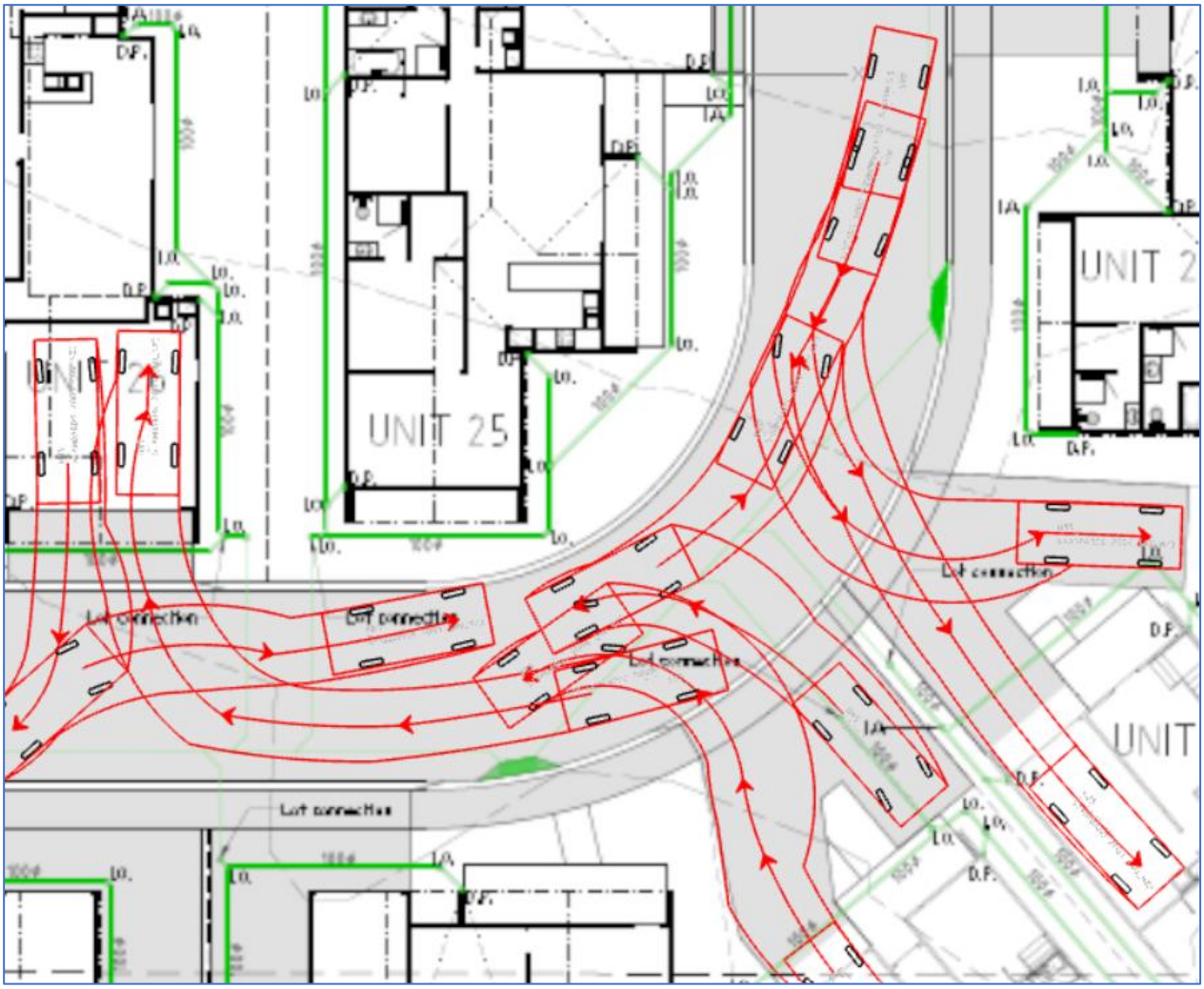
Morning peak hour traffic movements – Incana Road and Bundalla Road



Evening peak hour traffic movements – Incana Road and Bundalla Road

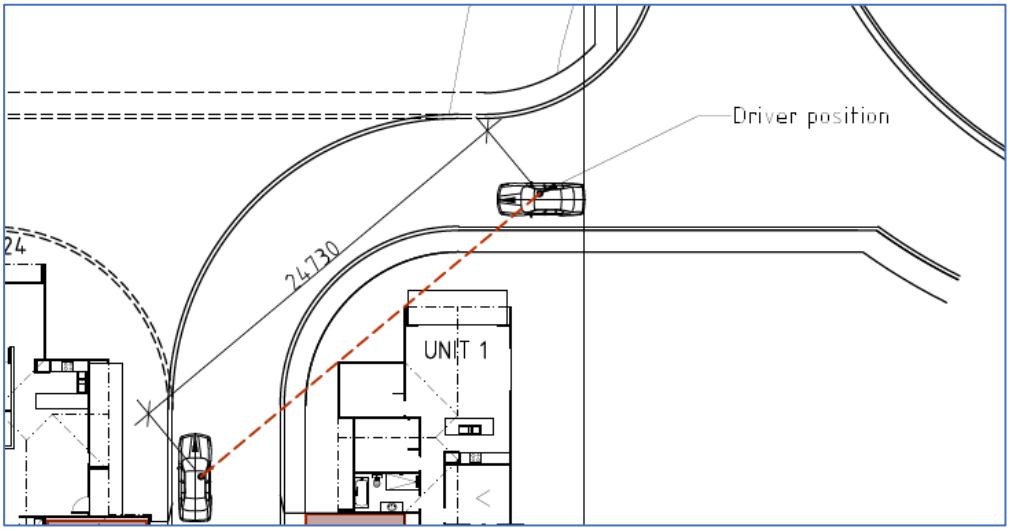


12. Appendix C – Sample of vehicle swept path

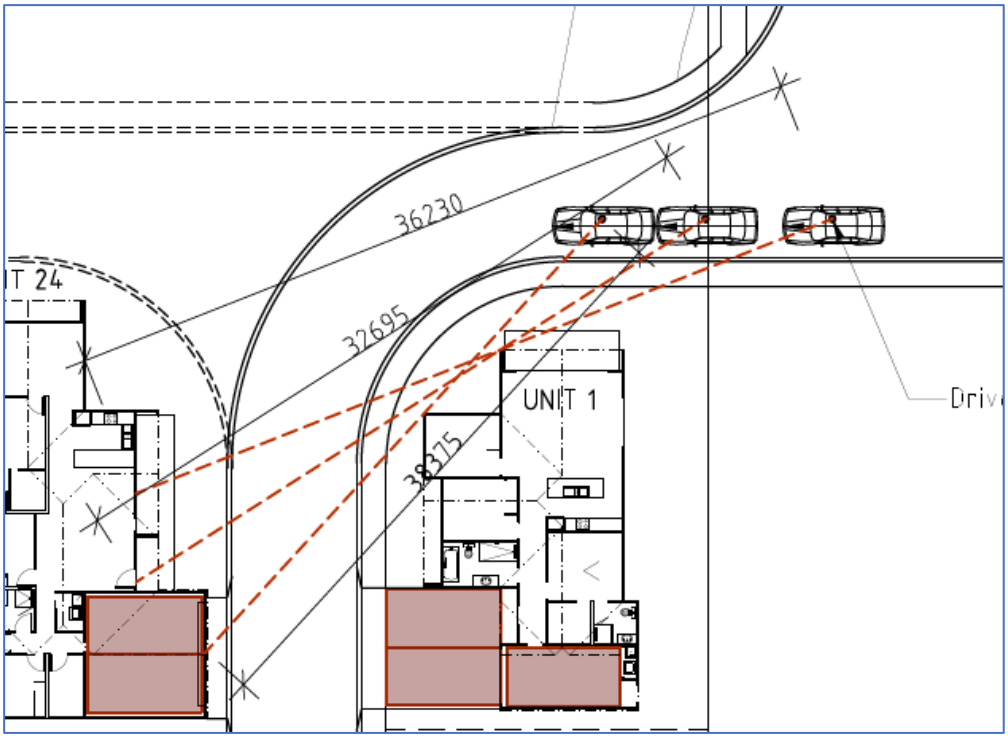


13. Appendix D – Sight distance through horizontal bends

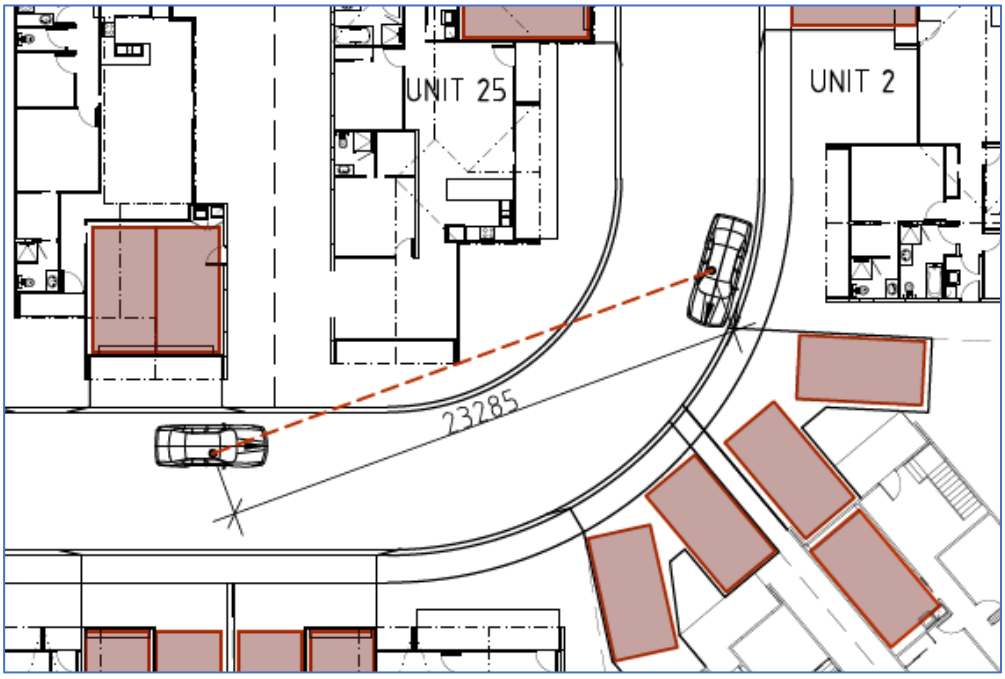
First bend – Vehicle to vehicle



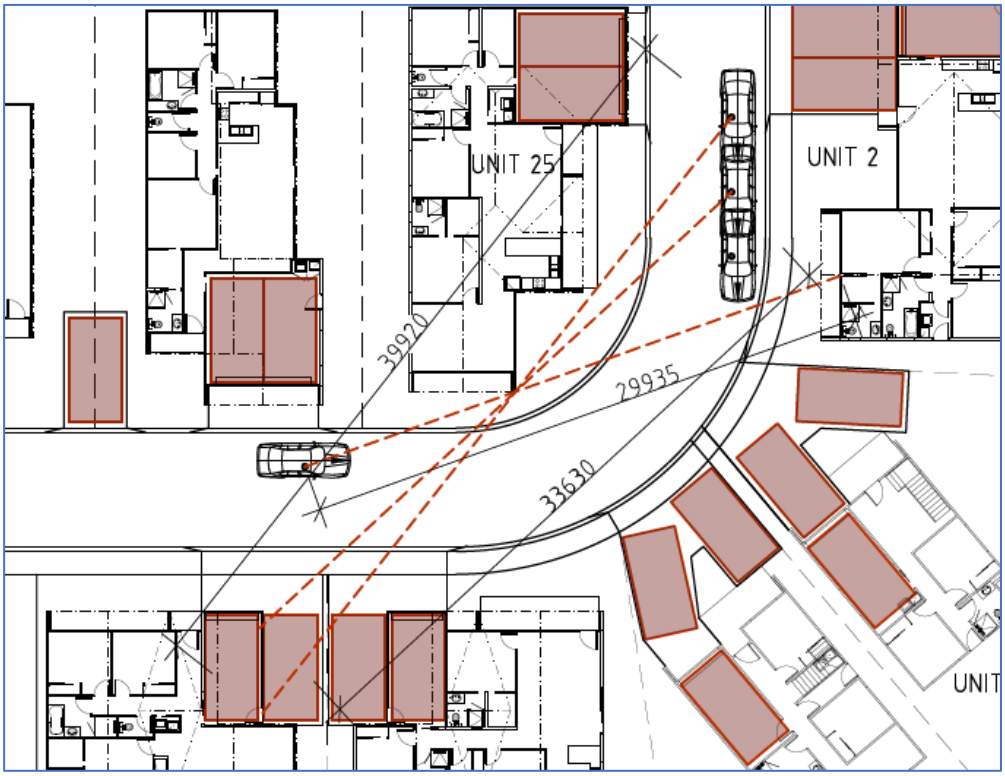
First bend – Driver to parking accesses



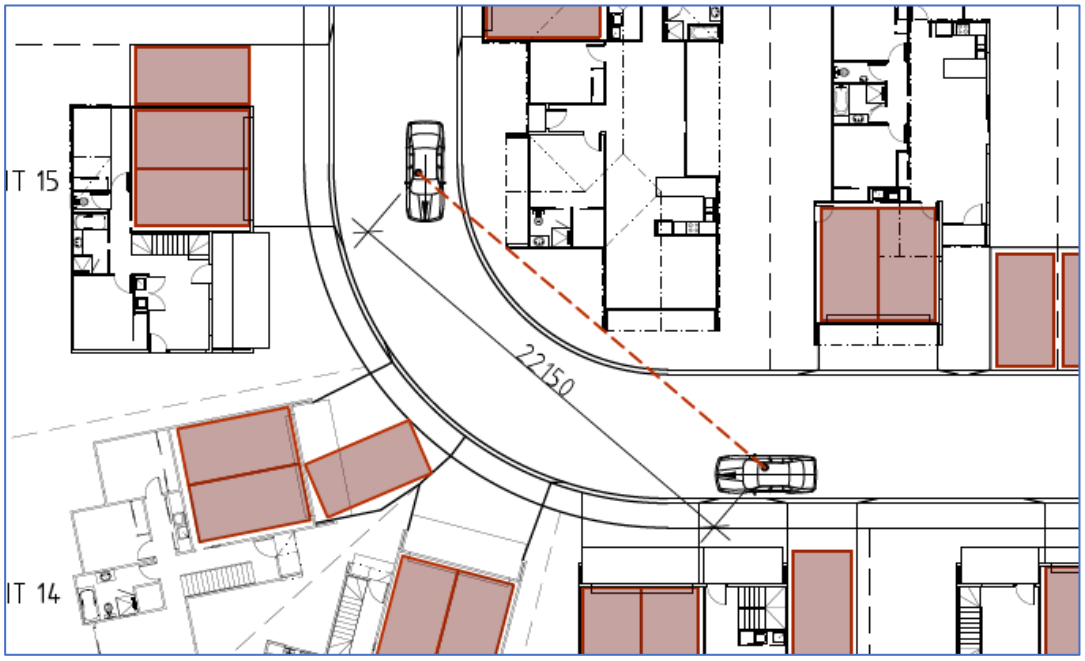
Second bend – Vehicle to vehicle



Second bend – driver to parking spaces



Third bend – Vehicle to Vehicle



Third bend – Driver to parking spaces

14. Appendix E – Manual traffic survey data

Location – Junction of Bundalla Road and Beach Road

Date – Wednesday 24 September 2025

Morning	Left out Beach Rd	Right out Beach Rd	Right into Bundalla Rd	Left into Bundalla Rd	Beach Rd Westbound	Beach Rd Eastbound
7:30 to 7:45am	28	1	6	1	11	4
7:45 to 8:00am	23	1	2	0	8	7
8:00 to 8:15am	34	2	3	1	14	9
8:15 to 8:30am	30	2	11	4	8	8
8:30 to 8:45am	32	1	13	4	20	7
8:45 to 9:00am	34	6	13	3	13	9
Total	**181**	**13**	**48**	**13**	**74**	**44**
Afternoon	**Left out Beach Rd**	**Right out Beach Rd**	**Right into Bundalla Rd**	**Left into Bundalla Rd**	**Beach Rd Westbound**	**Beach Rd Eastbound**
4:00 to 4:15pm	11	0	14	2	6	15
4:15 to 4:30pm	14	1	12	3	10	9
4:30 to 4:45pm	11	2	16	0	14	15
4:45 to 5:00pm	11	5	17	6	11	13
5:00 to 5:15pm	10	3	10	0	10	17
5:15 to 5:30pm	9	4	16	3	3	14
Total	**66**	**15**	**85**	**14**	**54**	**83**

Location – Roundabout of Beach Road and Channel Highway

Date – Wednesday 24 September 2025

Morning	Beach Road						Channel Highway					
	Right into Channel Hwy north	Northbound	Left into Channel Hwy south	Right into Channel Hwy south	Southbound	Left into Channel Hwy north	Right into Beach Rd east	Eastbound	Left into Beach Rd west	Right into Beach Rd west	Westbound	Left into Beach Rd east
7:30-7:45am	59	3	7	0	0	1	11	189	0	11	65	11
7:45-8:00am	54	1	4	1	1	1	4	170	2	14	82	13
8:00-8:15am	70	3	7	1	1	0	7	214	0	11	97	18
8:15-8:30am	61	2	8	4	1	2	11	173	1	13	95	23
8:30-8:45am	42	2	19	0	0	3	17	165	2	9	122	29
8:45-9:00am	62	1	9	0	0	2	17	171	1	8	113	29
Total count	**348**	**12**	**54**	**6**	**3**	**9**	**67**	**1082**	**6**	**66**	**574**	**123**
Peak hour	**235**	**8**	**43**	**5**	**2**	**7**	**52**	**723**	**4**	**41**	**427**	**99**
Afternoon	**Beach Road**						**Channel Highway**					
	Right into Channel Hwy north	**Northbound**	**Left into Channel Hwy south**	**Right into Channel Hwy south**	**Southbound**	**Left into Channel Hwy north**	**Right into Beach Rd east**	**Eastbound**	**Left into Beach Rd west**	**Right into Beach Rd west**	**Westbound**	**Left into Beach Rd east**
4:00-4:15pm	28	1	7	3	1	6	10	126	0	11	178	33
4:15-4:30pm	24	2	7	3	1	1	8	114	1	14	206	38
4:30-4:45pm	20	4	12	5	3	6	12	129	3	14	198	36
4:45-5:00pm	21	2	4	6	0	4	12	109	2	12	196	45
5:00-5:15pm	24	2	1	3	0	3	4	94	2	13	188	34
5:15-5:30pm	15	1	3	1	0	5	13	88	2	7	186	46
Total count	**132**	**12**	**34**	**21**	**5**	**25**	**59**	**660**	**10**	**71**	**1152**	**232**
Peak hour	**93**	**9**	**30**	**17**	**5**	**17**	**42**	**478**	**6**	**51**	**778**	**152**

Location – Intersection of Bundalla Road and Incana Road

Date – Wednesday 24 September 2025

Morning	Bundalla Road Travelling South			Bundalla Road Travelling North			Incana Road Travelling West			Incana Road Travelling East		
	Right into Incana Rd	Southbound Straight	Left into Incana Rd	Right into Incana Rd	Northbound Straight	Left into Incana Rd	Right into Bundalla Rd	Westbound Straight	Left into Bundalla Rd	Right into Bundalla Rd	Eastbound Straight	Left into Bundalla Rd
7:30-7:45am	1	4	1	5	2	0	0	4	0	0	0	11
7:45-8:00am	2	0	0	4	0	0	0	3	0	1	0	9
8:00-8:15am	1	1	1	5	2	0	0	7	0	0	1	17
8:15-8:30am	3	7	1	2	4	0	0	5	0	0	1	13
8:30-8:45am	5	5	6	8	7	0	0	10	1	2	2	12
8:45-9:00am	1	5	4	6	0	0	0	4	1	0	1	19
Total count	**13**	**22**	**13**	**30**	**15**	**0**	**0**	**33**	**2**	**3**	**5**	**81**
Peak hour	**10**	**18**	**12**	**21**	**13**	**0**	**0**	**26**	**2**	**2**	**5**	**61**
Morning	**Bundalla Road Travelling South**			**Bundalla Road Travelling North**			**Incana Road Travelling West**			**Incana Road Travelling East**		
	Right into Incana Rd	**Southbound Straight**	**Left into Incana Rd**	**Right into Incana Rd**	**Northbound**	**Left into Incana Rd**	**Right into Bundalla Rd**	**Westbound**	**Left into Bundalla Rd**	**Right into Bundalla Rd**	**Eastbound**	**Left into Bundalla Rd**
4:00-4:15pm	2	6	5	4	2	0	1	5	0	0	1	1
4:15-4:30pm	3	3	2	2	0	0	0	8	0	0	1	1
4:30-4:45pm	3	6	3	1	0	0	0	3	0	0	1	4
4:45-5:00pm	6	7	2	5	1	0	0	4	0	1	1	8
5:00-5:15pm	0	3	7	3	0	0	0	7	0	0	1	2
5:15-5:30pm	7	3	3	2	0	0	0	4	0	0	2	4
Total count	**21**	**28**	**22**	**17**	**3**	**0**	**1**	**31**	**0**	**1**	**7**	**20**
Peak hour	**14**	**22**	**12**	**12**	**3**	**0**	**1**	**20**	**0**	**1**	**4**	**14**