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29 July 2024

P2841 Chisholm Early Learning Centre

HPC Planning
1024 Ann Street
Fortitude Valley, QLD 4006

Attn: Chris Lewis

Dear Chris

Proposed Childcare Centre, 581 & 651 Raymond Terrace Road, Chisholm, NSW.

We have now completed our site work and review of the documentation provided for the proposed childcare centre at 581 and 651 Raymond Terrace Road, Chisholm and provide the following assessment of parking demands, traffic generation and access arrangements for the development. This assessment has been completed with regard to the relevant requirements outlined in the Maitland Development Control Plan (2011) (MDCP), with reference to the Guide to Traffic Generating Developments (GtTGD) and Australian Standard AS2890.1: Off-street Car Parking Facilities.

Background

The subject site is located as part of a new subdivision being a part of Lots 581 and 651 Raymond Terrace Road, as shown below in Figure 1.

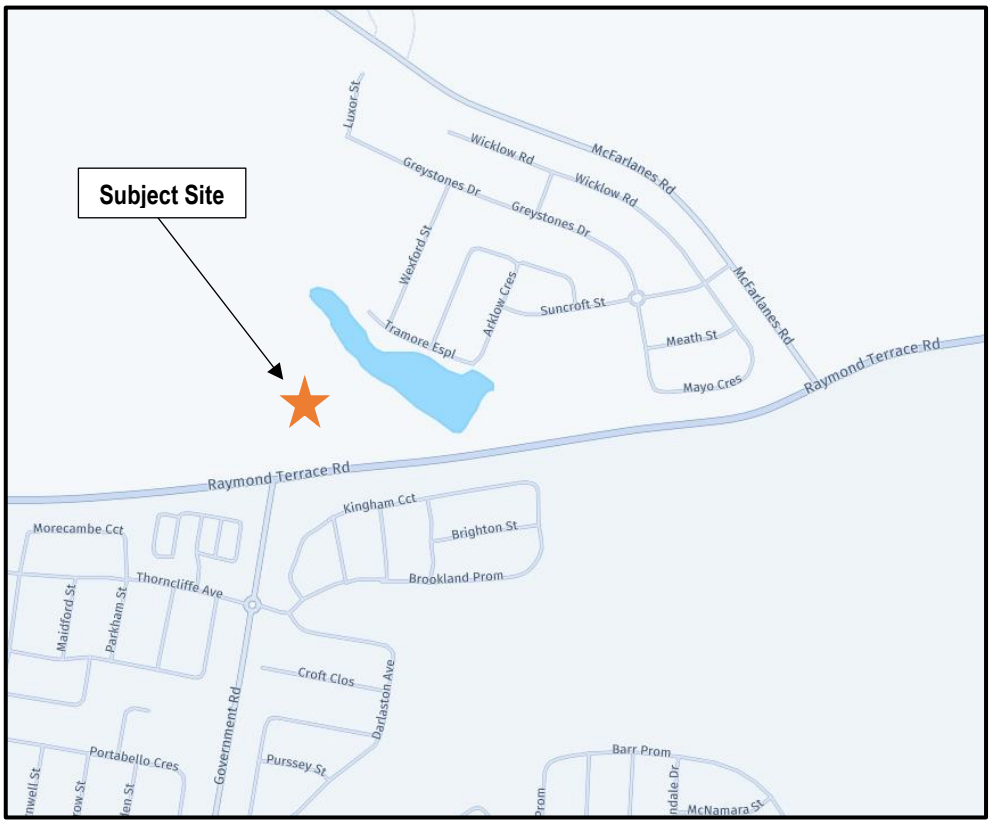

Figure 1 – Subject site in the context of the local road network

Figure 2 Sophia Waters Masterplan (source: allam.com.au)

The subject site consists of an undeveloped site shown in the masterplan as lot 205. The surrounding land shall primarily be low density residential development associated with the Sophie Waters residential subdivision.

The site has frontage only to the future Ballymore Drive. This shall provide one of the main collector roads through the estate.

Road Hierarchy

Raymond Terrace Road is the major road passing through the locality. If forms part of the state road network (MR104) and provides the primary link between Raymond Terrace to the east and East Maitland to the west. In the vicinity of the site, it operates under the posted speed limit of 80km/hr and generally provides a single lane of travel in each direction with a cycle lane marked in the wide shoulders that can also cater for vehicle breakdowns. Upgrades will see additional travel lanes and dedicated right turn lanes and left turn slips provided within the vicinity of the site. The posted speed limit may also be reduced to 50 or 60km/h as part of the ongoing development in this location. Kerb and guttering is provided along the road in the vicinity of the various residential estates however this is intermittent with no kerb and guttering elsewhere reflecting its rural nature. Widening at intersections provides additional capacity. Street lighting is provided at the various upgraded intersections, with short lengths of pedestrian footpath provided to connect to various bus stops.

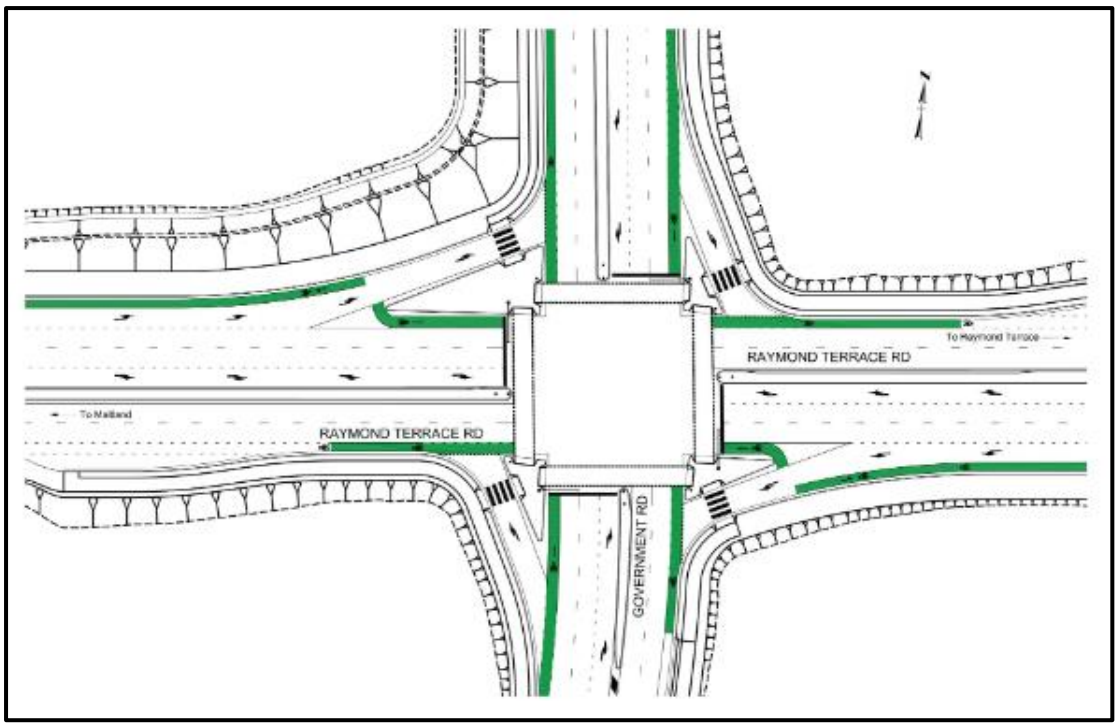

Figure 3 Schematic of intersection upgrade to Raymond Terrace Road and Government Road

Government Road and **McFarlanes Road** are local roads under the care and control of Maitland City Council. Government Road to the south of the subdivision and McFarlanes Road to the east both distribute local traffic to Raymond Terrace Road and the New England Highway, to the south. McFarlanes Road has a posted speed limit of 80km/h and Government Road has a 50km/h speed limit.

Ballymore Drive shall be a local road with a north-south orientation connecting with Raymond Terrace Road becoming the fourth leg of the new signal-controlled intersection with Government Road. This intersection shall allow for all turning movements. Based on the masterplan (Figure 2) it shall operate as a trunk collector or spine road through the housing estate providing one lane of travel in each direction. To the north of the site there shall be a roundabout connecting Ballymore Drive with Dublin Drive and Ballure Road. Ballymore Drive shall be designed and constructed in accordance with Maitland City Council engineering standards.

Road Upgrades

There has been extensive traffic modelling completed as part of the development of Thornton North Urban Release Area (Parsons Brinckerhoff 2003) which has identified appropriate road upgrades to maintain capacity along this important road link.

Upgrades are being undertaken (July 2024) at the intersection of Raymond Terrace Road and Government Road, Thornton. Council web site advises this is part of the long term strategy for the Thornton Road Network, which involves the delivering of critical traffic infrastructure to cater for the rising population throughout the areas of Thornton and Chisholm.

The upgrades include:

- Installing traffic lights to aid traffic flow
- Adding dedicated right hand turning lanes and left hand turn slip lanes
- Widening both Raymond Terrace Road and Government Road for two through lanes in each direction
- Adding a northern leg to make the intersection four way

It is this northern leg that shall provide access to the subdivision.

Current Road Network Operation

As part of this assessment SECA Solution has undertaken morning traffic surveys (7AM-9AM) on Raymond Terrace Road west of Government Road on Tuesday 4th June 2024. Based on the traffic surveys completed, the peak period for vehicle movements was determined as 7.45AM-8.45AM as shown in **Error! Reference source not found.**.

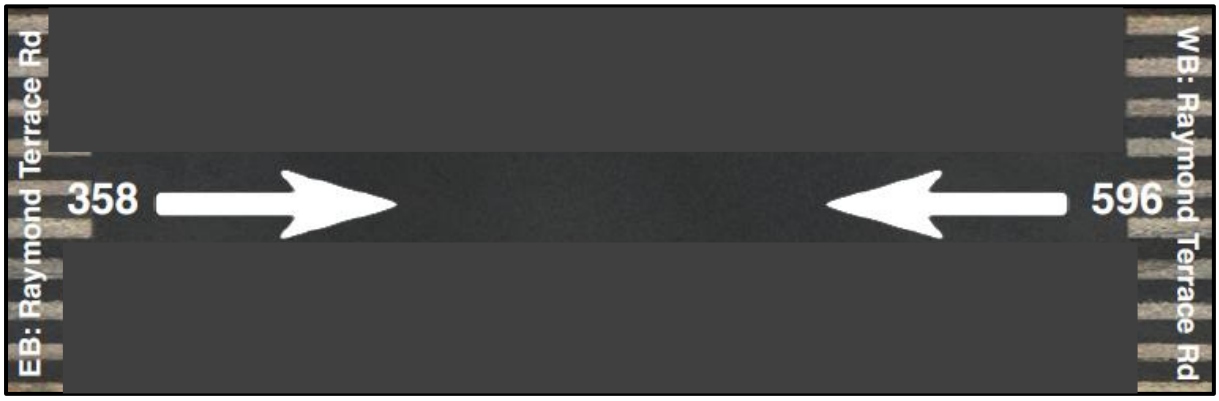

Figure 4 Morning peak hour flows on Raymond Terrace Road (7.45AM-8.45AM)

Two-way flows are 954 vehicles per hour (vph) with a dominant flow westbound (62%) associated with commuter demands. These flows are expected to be tidal with the dominant flow eastbound in the afternoon peak.

Car Parking

On-street carparking is likely to be available along the local roads surrounding the site with typical restrictions associated with driveways and intersections.

Public Transport

As a new subdivision there are no bus services operating within the immediate vicinity however a bus stop is provided along the site frontage and services along Raymond Terrace Road are expected to be routed through the subdivision.

The location of this bus stop has been considered in the siting of the access with the bus stop 26 metres south of the driveway.

The closest train station is at Thornton, 2 kilometres south of the site.

Other Developments

Ongoing development throughout the Thornton North Urban Release Area will see the release of further residential lots. Modelling has been undertaken as part of the approvals for these land releases with ongoing upgrades to roads provided for in S7.11 contributions.

Proposed Development

The proposed development is for the construction of a childcare centre with up to 106 places and 18 staff. The centre will operate as a long day care centre, providing a wide spread of drop off and pick up times for parents and carers. The plans for the development show provision for 27 parking spaces on site.

A concept plan for the proposed childcare centre is included in **Attachment A**.

Access and Circulation

A single driveway allowing two-way movement shall provide access to the site. The driveway is to be located on the northern side of the site. The width of this driveway (7.5 metres) meets the required width of 6-9 metres per Table 3.2 from AS2890.1, for a car park with between 25 and 100 spaces accessed off a local road.

The carpark has a single aisle with a width of 6.5 metres. This shall allow for two-way movement with a turning bay provided part way within the site. This turning bay shall operate as a loading bay outside peak pick up and drop off periods allowing for the efficient use of this area.

As the subdivision roads have not yet been built sight lines cannot be reviewed however the road frontage appears to provide a straight alignment to allow for appropriate visibility for vehicles exiting the site or approaching along these roads. Sight distance requirements for an access driveway are prescribed by Australian Standard AS2890.1:2004 Parking Facilities (Off-street Car Parking), which requires a minimum sight distance of 45 metres for a posted speed limit of 50 km/hr, with a desirable sight distance of 69 metres.

Visibility to the right (north) out of the site is likely to extend through the roundabout intersection of Ballymore Drive with Dublin Drive, whilst visibility to the south (left) extends beyond the minimum distance. Whilst sight lines to the south are likely to be between the 45 and 69 metres (minimum and desirable sight lines under AS2890.1), sight lines to the north are potentially limited by the roundabout intersection with the driveway some 45 metres south of the roundabout. At this point vehicles will however be negotiating the roundabout at a lower speed than 50km/hr with the available sight distance therefore appropriate given the SSD for a 40km/hr road frontage is 35m.

Two pedestrian entries to the childcare centre connect with a pedestrian footpath running along the frontage to the site enabling safe access from surrounding streets as well as the bus stop on Ballymore Drive along the site frontage.

Parking

A total of 27 parking spaces are to be provided within the carpark on site, one of which is accessible. Eight of the spaces are in stacked/tandem layout providing staff parking only. This is appropriate as they can be managed on site as required.

MDCP specifies a carparking requirement for a childcare centre of 1 car space for every four children in attendance.

This would equate to 27 parking spaces allowing 100% attendance with no concessions for illness and holidays or for siblings travelling together given the broad spread of ages attending.

The provision of 27 parking spaces on site therefore meets this requirement.

The MDCP nominates parking for a childcare centre to be designed to meet the following:

Parking area dimensions and parking layout shall comply with Australian standard 2890.1 – 2004 User Class 3 (being 2.6 metres wide). A minimum aisle width of 6.5m shall be provided.

The aisle meets this requirement as does 14 parking spaces with the balance (12 staff and 1 accessible space) being 2400mm which is in accordance with AS2890.1 for employee parking and AS2890.6 for the accessible space.

Site Servicing

Site servicing shall be minimal with the majority of materials brought to site by staff.

The main servicing requirement is waste collection that shall occur outside peak pick up and drop off times when the garbage collection can occur within the site. The provision of a loading bay for use outside these peak times shall allow for the manoeuvring of a garbage truck within the site.

The small number of deliveries to the site, typically by van or small truck, shall also be scheduled to occur outside the peak times with either the loading bay or visitor parking available for use.

There is therefore no requirement to separate the service access from car parking drop off.

Traffic Analysis

Traffic Generation

The Guide to Traffic Generating Developments specifies the following traffic generation rates for a long day care centre:

- Morning commuter peak hour trips - 0.8 trips per child in attendance.
- Evening commuter peak hour trips - 0.7 trips per child in attendance.
- No daily rates specified.

Allowing for the maximum capacity of 106 children attending the centre each day, the proposal could generate up to:

- 85 trips during the morning peak
- 75 trips during the evening peak.

The above rates do not include discounts for absenteeism nor for shared trips for siblings enrolled in the centre. Allowing up to 10% for absenteeism and shared trips with siblings, the proposed development could generate:

- 77 vehicle trips in the morning peak hour and
- 67 vehicle trips during the afternoon peak hour.

Daily trips would be based on 4 trips per day per child in attendance to allow for drop off and pick up and 2 trips per staff (18 staff). Total daily trips for the childcare centre would be 420 (210 inbound 210 outbound).

A large percentage of the traffic generated by the proposal however is expected to be diverted trips being passing traffic associated with parents and carers who live in the surrounding area dropping off their children as part of their commute or local workers travelling along Raymond Terrace Road to work. These vehicles would already be travelling in the locality of the site as part of their journey to work etc and would therefore have a negligible impact upon the broader road network.

Given this, the extent of *additional* traffic movements generated by the development would be much lower than allowed for above. Allowing for 50% of the childcare centre trips to be local diverted trips, this would reduce the number of additional traffic movements on the road network to:

- 39 vehicle trips in the morning peak hour and
- 34 vehicle trips during the afternoon peak hour.

Traffic Distribution

Given the layout of the residential development the majority of local trips are expected to already be on Ballymore Drive with the additional local demands diverting to Ballymore Drive instead of using Macfarlanes Road to connect with Raymond Terrace Road. This is likely to represent 10% of the additional trips with the balance (40%) being trips diverted from Raymond Terrace Road.

Overall

- 60% of childcare centre trips would be local and have an origin/destination from the north. These trips are expected to approach from the north and exit south to join Raymond Terrace Road and at the end of the day would approach from the south to turn right into the site.
- 40% of childcare centre trips have an origin/destination from the south (diverted from Raymond Terrace Road including Government Road)

Table 1 - Distribution of traffic in AM and PM

	AM (77vph)		PM (67vph)	
Origin / Destination	**INBOUND**	**OUTBOUND**	**INBOUND**	**OUTBOUND**
To / From the north	23 (19 + 4)		-	20
To / From the south	16	38	33	14
Total	39	38	33	34

All trips have been based on journeys continuing in the original direction of travel. There is some potential for trip containment within the subdivision with some of these potentially being pedestrian movements which could reduce the of vehicle movements.

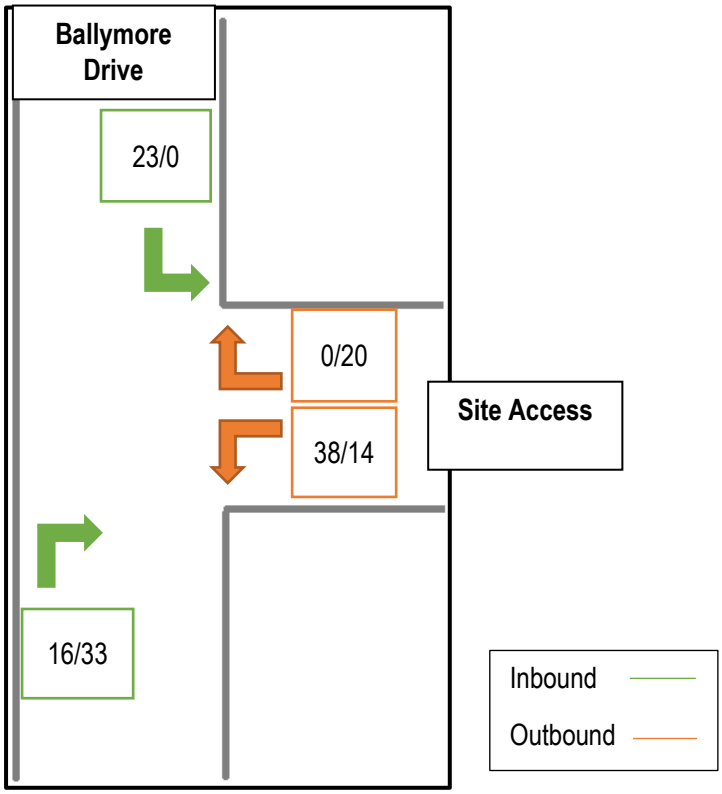

*Figure 3 – Distribution of development traffic including diverted trip (AM/**PM**)*

In the morning peak hour this would see an additional 31 trips (16 inbound/15 outbound) with an origin/destination to the south using the intersections of Raymond Terrace Road/Ballymore Drive to connect with the childcare centre. Similarly, eight additional local trips with an origin from the north would be diverted to the site via Ballymore Drive to also then travel south to Raymond Terrace Road.

In the afternoon peak hour diverted trips would all approach from the south with trips associated with local dwellings continuing north whilst the balance of trips (14 outbound) would return along Ballymore Drive to rejoin Raymond Terrace Road.

At the intersection of Raymond Terrace Road trips would be distributed to both the east and west as these diverted trips continued their journey. As these motorists are already on this road there would be no change to overall flows on Raymond Terrace Road except within the immediate vicinity of the site.

Impact on Daily Traffic Flows

The development would result in an increase in peak hour flows along Ballymore Drive. South of the site traffic flows could increase by an additional 35 trips in the AM and 30 trips in the PM. The impact of these additional trips on this short length of road is expected to be well within its capacity with the increase in daily traffic being 188 additional trips (94 inbound/94 outbound).

As the motorists associated with the development are typically already either on Raymond Terrace Road and being diverted into the site or join Raymond Terrace Road as part of the local traffic, there will be minimal change to overall flows on Raymond Terrace Road.

Peak Hour Impact on Intersections

The development will result in a small increase in vehicle movements at the intersection of Raymond Terrace Road and Ballymore Drive. These would primarily be motorists who would otherwise have connected to Raymond Terrace Road at Macfarlanes Road but instead have diverted via Ballymore Drive or who would have turned onto Raymond Terrace Road from Government Road but instead travel through the intersection. This signalised intersection has been developed to cater for the rising population throughout the areas of Thornton and Chisholm including the demands of Sophie Waters Estate and has adequate spare capacity to accommodate these additional diverted trips. The balance of development traffic is already using these signals and so shall have no additional impact.

The additional demands for vehicles turning right into the site may see some delays as vehicles judge a gap in southbound traffic on Ballymore Drive. To reduce the risk of queuing, right turns into the site shall be banned with the access allowing for left turns in and all movements (left and right) out of the site. Right turn demands into the site can be accommodated by using the roundabout at Dublin Drive to undertake a U-turn to then approach from the north, turning left into the site. This will also reduce outbound delays for right turning motorists, particularly in the afternoon. Any queues associated with outbound vehicles shall be contained within the site.

Conclusion

Overall, the proposed childcare centre will have a minimal and acceptable impact upon traffic and parking in the local area with no impediment to approval.

The Maitland DCP indicates that 27 parking spaces are desirable with this number provided. The proposed access and circulation through the car park can be provided in a manner consistent with the requirements of AS2890 and taking into consideration the Council DCP.

Traffic demands will consist of mostly diverted traffic from within the local area including trips diverted from Raymond Terrace Road. The upgraded intersection of Raymond Terrace Road and Government Road/Ballymore Drive has been designed to accommodate the demands associated with the residential subdivision with adequate capacity to provide for these diverted trips. A large number of the childcare centre trips are expected to be generated by the surrounding housing estate and shall primarily be diverted trips with some potentially contained within the subdivision. Whilst the additional trips associated with this development will have a minimal impact upon the overall operation of the surrounding roads and intersections, the access shall be restricted to left in/left out/ right out only with no right turns permitted into the site. The detailed design for the access and the option to restrict the right turn in shall be discussed and agreed with Council as part of the detailed design stage of the project.

Please feel free to contact our office on 4032 7979 should you require any additional information.

Yours sincerely,

Cathy Thomas

Director

Version	Date	Description	Prepared by	Reviewed and Approved for Issue
Ver01	18/7/24	Draft	C. Thomas	S. Morgan
Ver02	29/7/24	Final	C. Thomas	S. Morgan

Attachment A: Site Plan